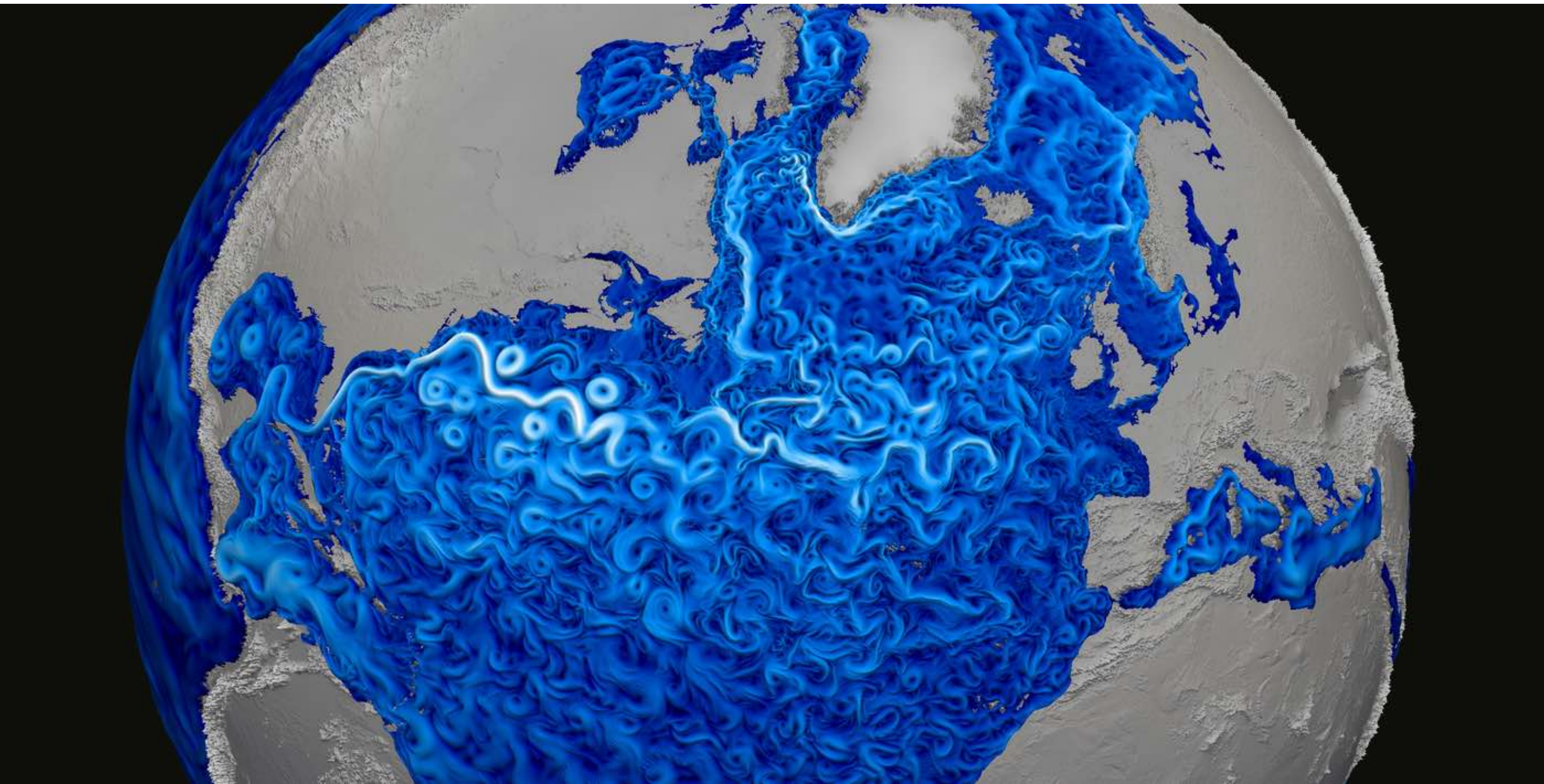
MPAS-O
Model for Prediction Across Scales

MPAS-Ocean User's Guide
Version: 7.0

Climate, Ocean, Sea-Ice Modeling Team

Los Alamos National Laboratory

April 18, 2018



Copyright

Foreword

The Model for Prediction Across Scales-Ocean (MPAS-Ocean) is an unstructured-mesh ocean model capable of using enhanced horizontal resolution in selected regions of the ocean domain. Model domains may be spherical with bottom topography to simulate the earth's oceans, or on Cartesian domains for idealized experiments. The global meshes, created using Spherical Centroidal Voronoi Tesselations (Ringler et al., 2008, 2011) consist of gridcells that vary smoothly from low to high resolution regions. Numerical algorithms specifically designed for these grids guarantee that mass, tracers, potential vorticity (in isopycnal mode) and energy are conserved (Thuburn et al., 2009; Ringler et al., 2010). MPAS-Ocean high-resolution and variable-resolution global simulations, as well as descriptions of mesh generation, model capabilities, and algorithms, are presented in Ringler et al. (2013a). The vertical grid is detailed in Petersen et al. (2014), including the Arbitrary Lagrangian Eulerian method, a variety of vertical coordinates, and results from five test cases.

MPAS-Ocean is one component within the MPAS framework of climate models that is developed in cooperation between Los Alamos National Laboratory (LANL) and the National Center for Atmospheric Research (NCAR). Functionality that is required by all cores, such as i/o, time management, block decomposition, etc, is developed collaboratively, and this code is shared across cores within the same repository. Each core then solves its own differential equations and physical parameterizations within this framework. This user's guide reflects the spirit of this collaborative process, where Part I, "The MPAS Framework", applies to all cores, and the remaining parts apply to MPAS-Ocean.

This release of the ocean model corresponds with the initial release of the Energy Exascale Earth System Model (E3SM) by the U.S. Department of Energy (see https://e3sm.org/). E3SM includes MPAS components for ocean, sea ice, and land ice. Each component may be run as a stand-alone model, or coupled within E3SM. MPAS-Ocean now includes biogeochemistry modules, and the ability to control groups of tracers.

Information about MPAS-Ocean, including the most recent code, user's guide, and test cases, may be found at `http://mpas-dev.github.com`. This user's guide refers to version 7.0.

Contributors to this guide:
Mark R. Petersen, Xylar S. Asay-Davis, Douglas W. Jacobsen, Mathew E. Maltrud, Todd D. Ringler, Luke P. Van Roekel, Phillip J. Wolfram
Additional contributors to MPAS Framework sections:
Michael Duda, Matthew Hoffman

This research was supported as part of the Energy Exascale Earth System Model (E3SM) project, funded by the U.S. Department of Energy, Office of Science, Office of Biological and Environmental Research.

LA-UR-13-24348. Cover image created by M. Petersen and P. Wolfram.

History

A history of MPAS-Ocean releases follows. Each MPAS core does not participate in all releases, which is why some numbers are missing.

version	date	description of new additions
6.0	April 18, 2018	Ability to couple with E3SM. New in-situ analysis computations. Division of tracers into groups to control output, algorithms, and forcing. Addition of biogeochemistry tracers and column computations.
3.0	November 18th, 2014	GM mesoscale eddy parameterization, CVMix vertical mixing module (includes KPP), forward/analysis modes, variable pools data structures, and run-time configurable i/o streams
2.0	November 15th, 2013	Surface forcing capabilities, Arbitrary Lagrangian-Eulerian vertical grid for z-level, z-star, z-tilde, sigma, idealized isopycnal
1.0	June 14th, 2013	Primitive equation (hydrostatic) ocean model for idealized and realistic global domains using split-explicit time-stepping, flux-corrected transport advection, Jackett-McDougall EOS, harmonic/biharmonic horizontal mixing, and implicit Richardson number-based vertical mixing. Vertical coordinate may be z-level or z-star with partial bottom cells, or idealized isopycnal.
0.0	June 14th, 2013	Initial pre-release of MPAS

Chapter 1

MPAS-Ocean Quick Start Guide

This chapter provides MPAS-Ocean users with a quick start description of how to build and run the model. It is meant merely as a brief overview of the process, while the more detailed descriptions of each step are provided in later sections.

In general, the build process follows the following steps. See Chapter 15 for recommended versions.

1. Build MPI Layer (OpenMPI, MVAPICH2, etc.)
2. Build serial NetCDF library
3. Build Parallel-NetCDF library
4. Build Parallel I/O library
5. (Optional) Build METIS library and executables
6. Checkout MPAS-Ocean from repository
7. Build ocean core (e.g. `make CORE=ocean`)

After step 7, an executable should be created called ocean_model. Once the executable is built, one can begin the run process as follows:

1. Download a run directory from `http://mpas-dev.github.com`, "MPAS-Ocean Download"
2. Copy or link executable to run directory.
3. (Optional) Edit namelist.ocean to have the proper parameters. In particular, you may change the simulation length with `config_run_duration = '0000_06:00:00'`, which shows `DAYS_H:M:S`.
4. (Optional) Create additional graph files using METIS executable (pmetis or gpmetis depending on version). A graph file is required for each processor count you want to use. See Section 4.5
5. Run MPAS-Ocean (e.g. `mpirun -np 8 ocean_model`).
6. If run was successful, last line of `log.ocean.0000.out` shows `Logging complete.`
7. Visualize output file and perform analysis. Output file is typically named `output.nc`. See Chapters 7 and 13.

Chapter 2

Support Policy

Please see the E3SM support policy at https://e3sm.org/resources/policies/support-policy, part of which is copied here.

The E3SM project fully realizes and embraces the importance of making the model source code, the data and the application software tools publicly available, and of communicating and informing the scientific community and the public about all stages of the project, its research and future plans.

As the model code becomes an open development project, we cannot commit ourselves to increased support to cover developmental versions. We are committed though to provide limited support for the scientifically validated simulations from which the data will be publicly released.

Part I

The MPAS Framework

Chapter 3

MPAS Framework Overview

The MPAS Framework provides the foundation for a generalized geophysical fluid dynamics model on unstructured spherical and planar meshes. On top of the framework, implementations specific to the modeling of a particular physical system (e.g., land ice, ocean) are created as MPAS *cores*. To date, MPAS cores for atmosphere (Skamarock et al., 2012), ocean (Ringler et al., 2013b; Petersen et al., 2015, 2018), shallow water (Ringler et al., 2011), sea ice (Turner et al., 2018), and land ice (Hoffman et al., 2018) have been implemented. The MPAS design philosophy is to leverage the efforts of developers from the various MPAS cores to provide common framework functionality with minimal effort, allowing MPAS core developers to focus on development of the physics and features relevant to their application.

The framework code includes shared modules for fundamental model operation. Significant capabilities include:

- *Description of model data types.* MPAS uses a handful of fundamental Fortran derived types for basic model functionality. Core-specific model variables are handled through custom groupings of model fields called *pools*, for which custom accessor routines exist. Core-specific variables are easily defined in XML syntax in a *Registry*, and the framework parses the Registry, defines variables, and allocates memory as needed.

- *Description of the mesh specification.* MPAS requires 36 fields to fully describe the mesh used in a simulation. These include the position, area, orientation, and connectivity of all cells, edges, and vertices in the mesh. The mesh specification can flexibly describe both spherical and planar meshes. More details are provided in the next section.

- *Distributed memory parallelization and domain decomposition.* The MPAS Framework provides needed routines for exchanging information between processors in a parallel environment using Message Passing Interface (MPI). This includes halo updates, global reductions, and global broadcasts. MPAS also supports decomposing multiple domain blocks on each processor to, for example, optimize model performance by minimizing transfer of data from disk to memory. Shared memory parallelization through OpenMP is also supported, but the implementation is left up to each core.

- *Parallel input and output capabilities.* MPAS performs parallel input and output of data from and to disk through the commonly used libraries of NetCDF, Parallel NetCDF (pnetcdf), and Parallel Input/Output (PIO) (Dennis et al., 2012). The Registry definitions control which fields can be input and/or output, and a framework *streams* functionality provides easy run-time configuration of what fields are to be written to what file name and at what frequency through an XML streams file. The MPAS framework includes additional functionality specific to providing a flexible model restart capability.

- *Advanced timekeeping.* MPAS uses a customized version of the timekeeping functionality of the Earth System Modeling Framework (ESMF), which includes a robust set of time and calendar tools used by many Earth System Models (ESMs). This allows explicit definition of model epochs in terms of years, months, days, hours, minutes, seconds, and fractional seconds and can be set to three different calendar types: Gregorian, Gregorian no leap, and 360 day. This flexibility helps enable multi-scale physics and simplifies coupling to ESMs. To manage the complex date/time types that ensue, MPAS framework provides routines for arithmetic of time intervals and the definition of alarm objects for handling events (e.g., when to write output, when the simulation should end).

- *Run-time configurable control of model options.* Model options are configured through *namelist* files that use standard Fortran namelist file format, and input/output are configured through *streams* files that use XML format. Both are completely adjustable at run time.

- *Online, run-time analysis framework.* A system for defining analysis of model states during run time, reducing the need for post-processing and model output.

Additionally, a number of shared operators exist to perform common operations on model data. These include geometric operations (e.g., length, area, and angle operations on the sphere or the plane), interpolation (linear, barycentric, Wachspress, radial basis functions, spline), vector and tensor operations (e.g., cross products, divergence), and vector reconstruction (e.g., interpolating from cell edges to cell centers). Most operators work on both spherical and planar meshes.

Chapter 4

Building MPAS

4.1 Prequisites

To build MPAS, compatible C and Fortran compilers are required. Additionally, the MPAS software relies on the PIO parallel I/O library to read and write model fields, and the PIO library requires the standard netCDF library as well as the parallel-netCDF library from Argonne National Labs. All libraries must be compiled with the same compilers that will be used to build MPAS. Section 4.2 summarizes the basic procedure of installing the required I/O libraries for MPAS.

In order for the MPAS makefiles to find the PIO, parallel-netCDF, and netCDF include files and libraries, the environment variables `PIO`, `PNETCDF`, and `NETCDF` should be set to the root installation directories of the PIO, parallel-netCDF, and netCDF installations, respectively. Newer versions of the netCDF library use a separate Fortran interface library; the top-level MPAS Makefile attempts to add `-lnetcdff` to the linker flags, but some linkers require that `-lnetcdff` appear before `-lnetcdf`, in which case `-lnetcdff` will need to be manually added just before `-lnetcdf` in the specification of `LIBS` in the top-level Makefile.

An MPI installation such as MPICH or OpenMPI is also required, and there is no option to build a serial version of the MPAS executables. There is currently no support for shared-memory parallelism with OpenMP within the MPAS framework.

4.2 Compiling I/O Libraries

NOTE: It's important to note the MPAS Developers are not responsible for any of the libraries that are used within MPAS. Support for specific libraries should be taken up with the respective developer groups.

Although most recent versions of the I/O libraries should work, the most tested versions of these libraries are: netCDF 4.1.3, parallel-netCDF 1.3.1, and PIO 1.4.1. The netCDF and parallel-netCDF libraries must be installed before building PIO library.

All commands are presented for csh, and will not work if pasted into another shell. Please translate them to the appropraite commands in your shell.

4.2.1 netCDF

Version 4.1.3 of the netCDF library may be downloaded from `http://www.unidata.ucar.edu/downloads/netcdf/netcdf-4_1_3/index.jsp`. Assuming the gfortran and gcc compilers will be used, the following shell commands are generally sufficient to install netCDF.

```
> setenv FC gfortran
> setenv F77 gfortran
> setenv F90 gfortran
> setenv CC gcc
> ./configure --prefix=XXXXX --disable-dap --disable-netcdf-4 --disable-cxx
--disable-shared --enable-fortran
> make all check
> make install
```

Here, `XXXXX` should be replaced with the directory that will serve as the root installation directory for netCDF. *Before proceeding to compile PIO the* `NETCDF_PATH` *environment variable should be set to the netCDF root installation directory.*

Certain compilers require addition flags in the CPPFLAGS environment variable. Please refer to the netCDF installation instructions for these flags.

4.2.2 parallel-netCDF

Version 1.3.1 of the parallel-netCDF library may be downloaded from https://trac.mcs.anl.gov/projects/parallel-netcdf/wiki/Download. Assuming the gfortran and gcc compilers will be used, the following shell commands are generally sufficient to install parallel-netCDF.

```
> setenv MPIF90 mpif90
> setenv MPIF77 mpif90
> setenv MPICC mpicc
> ./configure --prefix=XXXXX
> make
> make install
```

Here, `XXXXX` should be replaced with the directory that will serve as the root installation directory for parallel-netCDF. *Before proceeding to compile PIO the* `PNETCDF_PATH` *environment variable should be set to the parallel-netCDF root installation directory.*

4.2.3 PIO

Instructions for building PIO can be found at http://www.cesm.ucar.edu/models/pio/. Please refer to these instructions for building PIO.

After PIO is built, and installed the PIO enviroment variable needs to be defined to point at the directory PIO is installed into. Older versions of PIO cannot be installed, and the PIO environment variable needs to be set to the directory where PIO was built instead.

4.3 Compiling MPAS

Before compiling MPAS, the* `NETCDF`*,* `PNETCDF`*, and* `PIO` *environment variables must be set to the library installation directories as described in the previous section. A* `CORE` *variable also needs to either be defined or passed in during the make process. If* `CORE` *is not specified, the build process will fail.

The MPAS code uses only the 'make' utility for compilation. Rather than employing a separate configuration step before building the code, all information about compilers, compiler flags, etc., is contained in the top-level `Makefile`; each supported combination of compilers (i.e., a configuration) is included in the `Makefile` as a separate make target, and the user selects among these configurations by running `make` with the name of a build target specified on the command-line, e.g.,

```
> make gfortran
```

to build the code using the GNU Fortran and C compilers. Some of the available targets are listed in the table below, and additional targets can be added by simply editing the `Makefile` in the top-level directory.

Target	Fortran compiler	C compiler	MPI wrappers
`xlf`	xlf90	xlc	mpxlf90 / mpcc
`pgi`	pgf90	pgcc	mpif90 / mpicc
`ifort`	ifort	gcc	mpif90 / mpicc
`gfortran`	gfortran	gcc	mpif90 / mpicc
`g95`	g95	gcc	mpif90 / mpicc

In order to get a more complete and up-to-date list of available tagets, one can use the following command within the top-level of MPAS. **NOTE:** This command is known to not work with Mac OSX.

```
> make -rpn | sed -n -e '/^$/ { n ; /^[^ ]*:/p }' | sed "s/: *.*$//g"
```

The MPAS framework supports multiple *cores* — currently a shallow water model, an ocean model, a non-hydrostatic atmosphere model, a non-hydrostatic atmosphere initialization core, and a land ice core — so the build process must be told which core to build. This is done by either setting the environment variable `CORE` to the name of the model core to build, or by specifying the core to be built explicitly on the command-line when running `make`. For the shallow water core, for example, one may run either

```
> setenv CORE sw
> make gfortran
```

or

```
> make gfortran CORE=sw
```

If the `CORE` environment variable is set and a core is specified on the command-line, the command-line value takes precedence; if no core is specified, either on the command line or via the `CORE` environment variable, the build process will stop with an error message stating such. Assuming compilation is successful, the model executable, named `${CORE}_model` (e.g., `sw_model`), should be created in the top-level MPAS directory.

In order to get a list of available cores, one can simply run the top-level `Makefile` without setting the `CORE` environment variable, or passing the core via the command-line. And example of the output from this can be seen below.

```
> make
```

```
( make error )
make[1]: Entering directory 'mpas'

Usage: make target CORE=[core] [options]

Example targets:
ifort
gfortran
xlf
pgi

Availabe Cores:
atmosphere
init_atmosphere
landice
ocean
sw

Available Options:
DEBUG=true    - builds debug version. Default is optimized version.
USE_PAPI=true - builds version using PAPI for timers. Default is off.
TAU=true      - builds version using TAU hooks for profiling. Default is off.

Ensure that NETCDF, PNETCDF, PIO, and PAPI (if USE_PAPI=true) are environment variables
that point to the absolute paths for the libraries.

************ ERROR ************
No CORE specified. Quitting.
************ ERROR ************

make[1]: Leaving directory 'mpas'
```

4.4 Cleaning

To remove all files that were created when the model was built, including the model executable itself, `make` may be run for the 'clean' target:

```
> make clean
```

As with compiling, the core to be cleaned is specified by the `CORE` environment variable, or by specifying a core explicitly on the command-line with `CORE=`.

4.5 Graph partitioning with METIS

Before MPAS can be run in parallel, a mesh decomposition file with an appropriate number of partitions (equal to the number of MPI tasks that will be used) is required in the run directory. A limited number of mesh decomposition files (`graph.info.part.*`) are provided with each test case. In order to create new mesh decomposition files for your desired number of partitions, begin with the provided `graph.info` file and partition with METIS software (http://glaros.dtc.umn.edu/gkhome/views/metis). The serial graph partitioning program, METIS (rather than ParMETIS or hMETIS) should be sufficient for quickly partitioning any SCVT produced by the grid_gen mesh generator.

After installing METIS, a `graph.info` file may be partitioned into N partitions by running

```
> gpmetis graph.info N
```

The resulting file, `graph.info.part.`N, can then be copied into the MPAS run directory before running the model with N MPI tasks.

Chapter 5

Grid Description

This chapter provides a brief introduction to the common types of grids used in the MPAS framework.

The MPAS grid system requires the definition of seven elements. These seven elements are composed of two types of *cells*, two types of *lines*, and three types of *points*. These elements are depicted in Figure 5.1 and defined in Table 5.1. These elements can be defined on either the plane or the surface of the sphere. The two types of cells form two meshes, a primal mesh composed of Voronoi regions and a dual mesh composed of Delaunay triangles. Each corner of a primal mesh cell is uniquely associated with the "center" of a dual mesh cell and vice versa. So we define the two mesh as either a primal mesh (composed of cells P_i) or a dual mesh (composed of cells D_v). The center of any primal mesh cell, P_i, is denoted by $\mathbf{x}_i$ and the center of any the dual mesh cell, D_v, is denoted by $\mathbf{x}_v$. The boundary of a given primal mesh cell P_i is composed of the set of lines that connect the $\mathbf{x}_v$ locations of associated dual mesh cells D_v. Similarly, the boundary of a given dual mesh cell D_v is composed of the set of lines that connect the $\mathbf{x}_i$ locations of the associated primal mesh cells P_i.

As shown in Figure 5.1, a line segment that connects two primal mesh cell centers is uniquely associated with a line segment that connects two dual mesh cell centers. We assume that these two line segments cross and the point of intersection is labeled as $\mathbf{x}_e$. In addition, we assume that these two line segments are orthogonal as indicated in Figure 5.1. Each $\mathbf{x}_e$ is associated with two distances: d_e measures the distance between the primal mesh cells sharing $\mathbf{x}_e$ and l_e measures the distance between the dual mesh cells sharing $\mathbf{x}_e$.

Since the two line segments crossing at $\mathbf{x}_e$ are orthogonal, these line segments form a convenient local coordinate system for each edge. At each $\mathbf{x}_e$ location a unit vector $\mathbf{n}_e$ is defined to be parallel to the line connecting primal mesh cells. A second unit vector $\mathbf{t}_e$ is defined such that $\mathbf{t}_e = \mathbf{k} \times \mathbf{n}_e$.

In addition to these seven element types, we require the definition of *sets of elements*. In all, eight different types of sets are required and these are defined and explained in Table 5.2 and Figure 5.2. The notation is always of the form of, for example, $i \in CE(e)$, where the LHS indicates the type of element to be gathered (cells) based on the RHS relation to another type of element (edges).

Table 5.3 provides the names of all *elements* and all *sets of elements* as used in the MPAS framework. Elements appear twice in the table when described in the grid file in more than one way, e.g. points are described with both cartesian and latitude/longitude coordinates. An "ncdump -h" of any MPAS grid, output or restart file will contain all variable names shown in second column of Table 5.3.

Table 5.1: Definition of elements used to build the MPAS grid.

Element	*Type*	*Definition*
$\mathbf{x}_i$	point	location of center of primal-mesh cells
$\mathbf{x}_v$	point	location of center of dual-mesh cells
$\mathbf{x}_e$	point	location of edge points where velocity is defined
d_e	line segment	distance between neighboring $\mathbf{x}_i$ locations
l_e	line segment	distance between neighboring $\mathbf{x}_v$ locations
P_i	cell	a cell on the primal-mesh
D_v	cell	a cell on the dual-mesh

Table 5.2: Definition of element groups used to reference connections in the MPAS grid. Examples are provided in Figure 5.2.

Syntax	*ouptut*
$e \in EC(i)$	set of edges that define the boundary of P_i.
$e \in EV(v)$	set of edges that define the boundary of D_v.
$i \in CE(e)$	two primal-mesh cells that share edge e.
$i \in CV(v)$	set of primal-mesh cells that form the vertices of dual mesh cell D_v.
$v \in VE(e)$	the two dual-mesh cells that share edge e.
$v \in VI(i)$	the set of dual-mesh cells that form the vertices of primal-mesh cell P_i.
$e \in ECP(e)$	edges of cell pair meeting at edge e.
$e \in EVC(v,i)$	edge pair associated with vertex v and mesh cell i.

Table 5.3: Variable names used to describe a MPAS grid.

Element	*Name*	*Size*	*Comment*
$\mathbf{x}_i$	{x,y,z}Cell	nCells	cartesian location of $\mathbf{x}_i$
$\mathbf{x}_i$	{lon,lat}Cell	nCells	longitude and latitude of $\mathbf{x}_i$
$\mathbf{x}_v$	{x,y,z}Vertex	nVertices	cartesian location of $\mathbf{x}_v$
$\mathbf{x}_v$	{lon,lat}Vertex	nVertices	longitude and latitude of $\mathbf{x}_v$
$\mathbf{x}_e$	{x,y,z}Edge	nEdges	cartesian location of $\mathbf{x}_e$
$\mathbf{x}_e$	{lon,lat}Edge	nEdges	longitude and latitude of $\mathbf{x}_e$
d_e	dcEdge	nEdges	distance between $\mathbf{x}_i$ locations
l_e	dvEdge	nEdges	distance between $\mathbf{x}_v$ locations
$e \in EC(i)$	edgesOnCell	(nEdgesMax,nCells)	edges that define P_i.
$e \in EV(v)$	edgesOnVertex	(3,nCells)	edges that define D_v.
$i \in CE(e)$	cellsOnEdge	(2,nEdges)	primal-mesh cells that share edge e.
$i \in CV(v)$	cellsOnVertex	(3,nVertices)	primal-mesh cells that define D_v.
$v \in VE(e)$	verticesOnEdge	(2,nEdges)	dual-mesh cells that share edge e.
$v \in VI(i)$	verticesOnCell	(nEdgesMax,nCells)	vertices that define P_i.

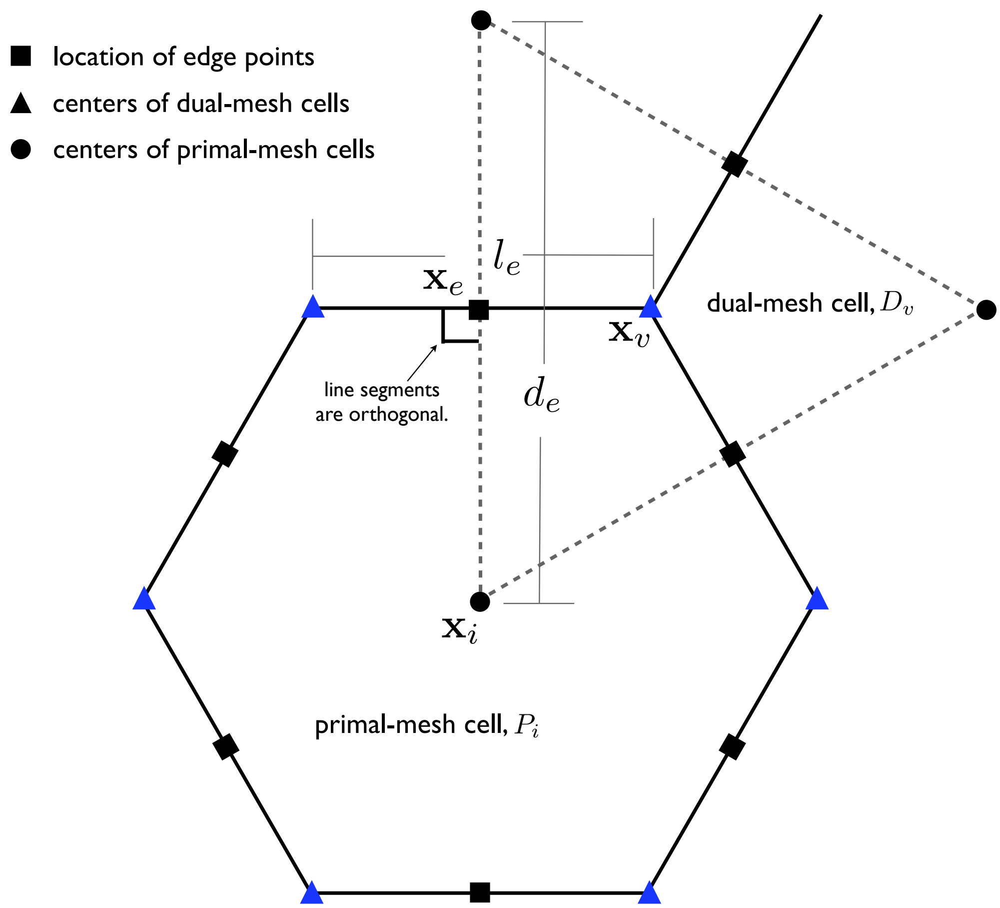
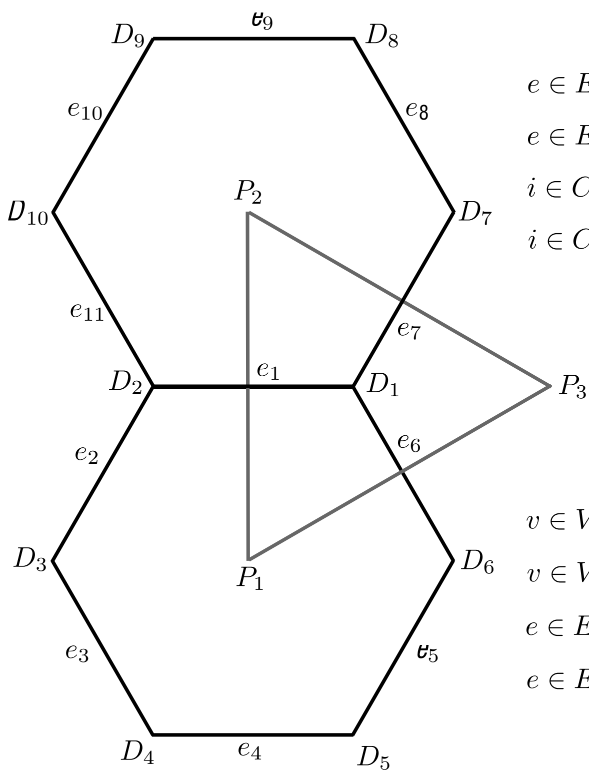


Figure 5.1: Definition of elements used to build the MPAS grid. Also see Table 5.1.



$$e \in EC(P_1) = [e_1, e_2, e_3, e_4, e_5, e_6]$$
$$e \in EV(D_1) = [e_1, e_6, e_7]$$
$$i \in CE(e_1) = [P_1, P_2]$$
$$i \in CV(D_1) = [P_1, P_2, P_3]$$

$$v \in VE(e_1) = [D_1, D_2]$$
$$v \in VC(P_1) = [D_1, D_2, D_3, D_4, D_4, D_5, D_6]$$
$$e \in ECP(e_1) = [e_1, e_2, e_3, e_4, e_5, e_6, e_7, e_8, e_9, e_{10}, e_{11}]$$
$$e \in ECV(P_1, D_1) = [e_1, e_6]$$

Figure 5.2: Definition of element groups used to reference connections in the MPAS grid. Also see Table 5.2.

Chapter 6

Configuring Model Input and Output

The reading and writing of model fields in MPAS is handled by user-configurable *streams*. A stream represents a fixed set of model fields, together with dimensions and attributes, that are all written or read together to or from the same file or set of files. Each MPAS model core may define its own set of default streams that it typically uses for reading initial conditions, for writing and reading restart fields, and for writing additional model history fields. Besides these default streams, users may define new streams to, e.g., write certain diagnostic fields at a higher temporal frequency than the usual model history fields.

Streams are defined in XML configuration files that are created at build time for each model core. The name of this XML file is simply 'streams.' suffixed with the name of the core. For example, the streams for the *sw* (shallow-water) core are defined in a file named 'streams.sw'. An XML stream file may further reference other text files that contain lists of the model fields that are read or written in each of the streams defined in the XML stream file.

Changes to the XML stream configuration file will take effect the next time an MPAS core is run; there is no need to re-compile after making modifications to the XML files. As described in the next section, it is therefore possible, e.g., to change the interval at which a stream is written, the template for the filenames associated with a stream, or the set of fields that are written to a stream, without the need to re-compile any code.

Two classes of streams exist in MPAS: *immutable* streams and *mutable* streams. Immutable streams are those for which the set of fields that belong to the stream may not be modified at model run-time; however, it is possible to modify the interval at which the stream is read or written, the filename template describing the files containing the stream on disk, and several other parameters of the stream. In contrast, all aspects of mutable streams, including the set of fields that belong to the stream, may be modified at run-time. The motivation for the creation of two stream classes is the idea that an MPAS core may not function correctly if certain fields are not read in upon model start-up or written to restart files, and it is therefore not reasonable for users to modify this set of required fields at run-time. An MPAS core developer may choose to implement such streams as immutable streams. Since fields may not be added to an immutable stream at run-time, new immutable streams may not be defined at run-time, and the only type of new stream that may be defined at run-time is the mutable stream type.

6.1 XML stream configuration files

The XML stream configuration file for an MPAS core always has a parent XML *element* named `streams`, within which individual streams are defined:

```
<streams>

    ... one or more stream definitions ...

</streams>
```

Immutable streams are defined with the `immutable_stream` element, and mutable streams are defined with the `stream` element:

```
<immutable_stream name="initial_conditions"
                  type="input"
                  filename_template="init.nc"
                  input_interval="initial_only"
                  />


<stream name="history"
        type="output"
        filename_template="output.$Y-$M-$D_$h.$m.$s.nc"
        output_interval="6:00:00" >

    ... model fields belonging to this stream ...

</stream>
```

As shown in the example stream definitions, above, both classes of stream have the following required attributes:

- `name` — A unique name used to refer to the stream.
- `type` — The type of stream, either `"input"`, `"output"`, `"input;output"`, or `"none"`. A stream may be both an input and an output stream (i.e., `"input;output"`) if, for example, it is read once at model start-up to provide initial conditions and thereafter written periodically to provide model checkpoints. A stream may be defined as neither input nor output (i.e., `"none"`) for the purposes of defining a set of fields for inclusion other streams. Note that, for immutable streams, the type attribute may not be changed at run-time.
- `filename_template` — The template for files that exist or will be created by the stream. The filename template may include any of the following variables, which are expanded based on the simulated time at which files are first created.
  - `$Y` — Year
  - `$M` — Month
  - `$D` — Day of the month
  - `$d` — Day of the year
  - `$h` — Hour

– `$m` — Minute

– `$s` — Second

A filename template may include either a relative or an absolute path, in which case MPAS will attempt to create any directories in the path that do not exist, subject to filesystem permissions.

- `input_interval` — For streams that have type `"input"` or `"input;output"`, the interval, beginning at the model initial time, at which the stream will be read. Possible values include a time interval specification in the format `"YYYY-MM-DD_hh:mm:ss"`; the value `"initial_only"`, which specifies that the stream is read only once at the model initial time; or the value `"none"`, which specifies that the stream is not read during a model run.
- `output_interval` — For streams that have type `"output"` or `"input;output"`, the interval, beginning at the model initial time, at which the stream will be written. Possible values include a time interval specification in the format `"YYYY-MM-DD_hh:mm:ss"`; the value `"initial_only"`, which specifies that the stream is written only once at the model initial time; or the value `"none"`, which specifies that the stream is not written during a model run.

Finally, the set of fields that belong to a mutable stream may be specified with any combination of the following elements. Note that, for immutable streams, no fields are specified at run-time in the XML configuration file.

- `var` — Associates the specified variable with the stream. The variable may be any of those defined in an MPAS core's Registry.xml file, but may not include individual constituent arrays from a var_array.
- `var_array` — Associates all constituent variables in a var_array, defined in an MPAS core's Registry.xml file, with the stream.
- `var_struct` — Associates all variables in a var_struct, defined in an MPAS core's Registry.xml file, with the stream.
- `stream` — Associates all explicitly associated fields in the specified stream with the stream; streams are not recursively included.
- `file` — Associates all variables listed in the specified text file, with one field per line, with the stream.

6.2 Optional stream attributes

Besides the required attributes described in the preceding section, several additional, optional attributes may be added to the definition of a stream.

- `filename_interval` — The interval between the timestamps used in the construction of the names of files associated with a stream. Possible values include a time interval specification in the format `"YYYY-MM-DD_hh:mm:ss"`; the value `"none"`, indicating that only one file containing all times is associated with the stream; the value `"input_interval"` that, for input type streams, indicates that each time to be read from the stream will come from a unique file; or the value `"output_interval"` that, for output type streams, indicates that each time to be written to the stream will go to a unique file whose name is based on the timestamp of the data being written. The default value is `"input_interval"` for input type streams and `"output_interval"` for output type streams. For streams of type `"input;output"`, the default filename interval is `"input_interval"` if the input interval is an interval (i.e., not `"initial_only"`), or `"output_interval"` otherwise. Refer to Section 6.3.1 for an example of the use of the filename_interval attribute.

- `reference_time` — A time that is an integral number of filename intervals from the timestamp of any file associated with the stream. The default value is the start time of the model simulation. Refer to Section 6.3.3 for an example of the use of the reference_time attribute.

- `clobber_mode` — Specifies how a stream should handle attempts to write to a file that already exists. Possible values for the mode include:

  - `"overwrite"` — The stream is allowed to overwrite records in existing files and to append new records to existing files; records not explicitly written to are left untouched.
  - `"truncate"` or `"replace_files"` — The stream is allowed to overwrite existing files, which are first truncated to remove any existing records; this is equivalent to replacing any existing files with newly created files of the same name.
  - `"append"` — The stream is only allowed to append new records to existing files; existing records may not be overwritten.
  - `"never_modify"` — The stream is not allowed to modify existing files in any way.

  The default clobber mode for streams is `"never_modify"`. Refer to Section 6.3.2 for an example of the use of the clobber_mode attribute.

- `precision` — The precision with which real-valued fields will be written or read in a stream. Possible values include `"single"` for 4-byte real values, `"double"` for 8-byte real values, or `"native"`, which specifies that real-valued fields will be written or read in whatever precision the MPAS core was compiled. The default value is `"native"`. Refer to Section 6.3.1 for an example of the use of the precision attribute.

- `packages` — A list of packages attached to the stream. A stream will be active (i.e., read or written) only if at least one of the packages attached to it is active, or if no packages at all are attached. Package names are provided as a semi-colon-separated list. Note that packages may only be defined in an MPAS core's Registry.xml file at build time. By default, no packages are attached to a stream.

- `io_type` — The underlying library and file format that will be used to read or write a stream. Possible values include:

  - `"pnetcdf"` — Read/write the stream with classic large-file NetCDF files (CDF-2) using the ANL Parallel-NetCDF library.
  - `"pnetcdf,cdf5"` — Read/write the stream with large-variable files (CDF-5) using the ANL Parallel-NetCDF library.
  - `"netcdf"` — Read/write the stream with classic large-file NetCDF files (CDF-2) using the Unidata serial NetCDF library.
  - `"netcdf4"` — Read/write the stream with HDF-5 files using the Unidata parallel NetCDF-4 library.

Note that the PIO library must have been built with support for the selected io_type. By default, all input and output streams are read and written using the "pnetcdf" option.

6.3 Stream definition examples

This section provides several example streams that make use of the optional stream attributes described in Section 6.2. All examples are of output streams, since it is more likely that a user will need to write additional fields than to read additional fields, which a model would need to be aware of; however, the concepts that are illustrated here translate directly to input streams as well.

6.3.1 Example: a single-precision output stream with one month of data per file

In this example, the optional attribute specification filename_interval="01-00_00:00:00" is added to force a new output file to be created for the stream every month. Note that the general format for time interval specifications is YYYY-MM-DD_hh:mm:ss, where any leading terms can be omitted; in this case, the year part of the interval is omitted. To reduce the file size, the specification precision="single" is also added to force real-valued fields to be written as 4-byte floating-point values, rather than the default of 8 bytes.

```
<stream name="diagnostics"
        type="output"
        filename_template="diagnostics.$Y-$M.nc"
        filename_interval="01-00_00:00:00"
        precision="single"
        output_interval="6:00:00" >

     <var name="u10"/>
     <var name="v10"/>
     <var name="t2"/>
     <var name="q2"/>

</stream>
```

The only fields that will be written to this stream are the hypothetical 10-m diagnosed wind components, the 2-m temperature, and the 2-m specific humidity variables. Also, note that the filename template only includes the year and month from the model valid time; this can be problematic when the simulation starts in the middle of a month, and a solution for this problem is illustrated in the example of Section 6.3.3.

6.3.2 Example: appending records to existing output files

By default, streams will never modify existing files whose filenames match the name of a file that would otherwise be written during the course of a simulation. However, when restarting a simulation that is expected to add more records to existing output files, it can be useful to instruct the MPAS I/O system to append these records, thereby modifying existing files. This may be accomplished with the clobber_mode attribute.

```
<stream name="diagnostics"
        type="output"
        filename_template="diagnostics.$Y-$M.nc"
        filename_interval="01-00_00:00:00"
        precision="single"
        clobber_mode="append"
        output_interval="6:00:00" >

     <var name="u10"/>
     <var name="v10"/>
     <var name="t2"/>
     <var name="q2"/>

</stream>
```

In general, if MPAS were to attempt to write a record at a time that already existed in an output file, a clobber_mode of 'append' would not permit the write to take place, since this would modify existing data; in 'append' mode, only new records may be added. However, due to a peculiarity in the implementation of the 'append' clobber mode, it may be possible for an output file to contain duplicate times. This can happen when the first record that is appended to an existing file has a timestamp not matching any in the file, after which, any record that is written — regardless of whether its timestamp matches one already in the file — will be appended to the end of the file. This situation may arise, for example, when restarting a model simulation with a shorter `output_interval` than was used in the original model simulation with an MPAS core that does not write the first output time for restart runs.

6.3.3 Example: referencing filename intervals to a time other than the start time

The example stream of the previous sections creates a new file each month during the simulation, and the filenames contain only the year and month of the timestamp when the file was created. If a simulation begins at 00 UTC on the first day of a month, then each file in the diagnostic stream will contain only output times that fall within the month in the filename. However, if a simulation were to begin in the middle of a month — for example, the month of June, 2014 — the first diagnostics output file would have a filename of 'diagnostics.2014-06.nc', but rather than containing only output fields valid in June, it would contain all fields written between the middle of June and the middle of July, at which point one month of simulation would have elapsed, and a new output file, 'diagnostics.2014-07.nc', would be created.

In order to ensure that the file 'diagnostics.2014-06.nc' contained only data from June 2014, the `reference_time` attribute may be added such that the day, hour, minute, and second in the date and time represent the first day of the month at 00 UTC. In this example, the year and month of the reference time are not important, since the purpose of the reference time here is to describe to MPAS that the monthly filename interval begins (i.e., is referenced to) the first day of the month.

```
<stream name="diagnostics"
        type="output"
        filename_template="diagnostics.$Y-$M.nc"
```

```
        filename_interval="01-00_00:00:00"
        reference_time="2014-01-01_00:00:00"
        precision="single"
        clobber_mode="append"
        output_interval="6:00:00" >

     <var name="u10"/>
     <var name="v10"/>
     <var name="t2"/>
     <var name="q2"/>

</stream>
```

In general, the components of a timestamp, `YYYY-MM-DD_hh:mm:ss`, that are less significant than (i.e., to the right of) those contained in a filename template are important in a reference_time. For example, with a `filename_template` that contained only the year, the month component of the `reference_time` would become important to identify the month of the year on which the yearly basis for filenames would begin.

Chapter 7

Visualization

This chapter discusses visualization tools that may be used by all cores.

7.1 ParaView

ParaView may be used to visualize MPAS initialization, output, and restart files. It includes a reader that was specifically designed to read MPAS NetCDF files, including Cartesian and spherical domains. At this time, only cell-centered quantities may be plotted with ParaView. Variables located at edges and vertices must be interpolated to cell centers for visualization.

ParaView is freely available for download at `http://www.paraview.org`. Binary installations are available for Windows, Mac, and Linux, as well as source code files and tutorials. From the ParaView website:

> ParaView is an open-source, multi-platform data analysis and visualization application. ParaView users can quickly build visualizations to analyze their data using qualitative and quantitative techniques. The data exploration can be done interactively in 3D or programmatically using ParaView's batch processing capabilities. ParaView was developed to analyze extremely large datasets using distributed memory computing resources. It can be run on supercomputers to analyze datasets of terascale as well as on laptops for smaller data.

To visualize an MPAS cell-centered variable in ParaView, open the file and choose `MPAS NetCDF (Unstructured)` as the file format. In the lower left Object Inspector panel, choose your variables of interest (Figure 7.1). For large data sets, loading fewer variables will result in less wait time. Options are available for latitude-longitude projections, vertical level, etc. Click the 'Apply' button to load the data set. In the toolbars at the top, choose the variable to plot from the pull-down menu, and 'Surface' for the type of visualization. The color bar button displays a color bar, and the color scale editor button allows the user to manually change the color bar type and extents. The Filters menu provides computational tools for interactive data manipulation. Movies, in avi format or as individual frames, may be conveniently created with the `Save Animation` tool in the File menu.

Paraview may be used to view the grid from any MPAS NetCDF file by choosing `Wireframe` or `Suface With Edges` from the visualization-type pull-down menu (Figure 7.2). This produces a view of the Delaunay triangulation, which is the dual mesh to the primal Voronoi cell grid (Figure 5.1). Paraview plots all variables by interpolating colors between each corner of the Delaunay triangles. These corners are the cell-center locations of the primal grid.

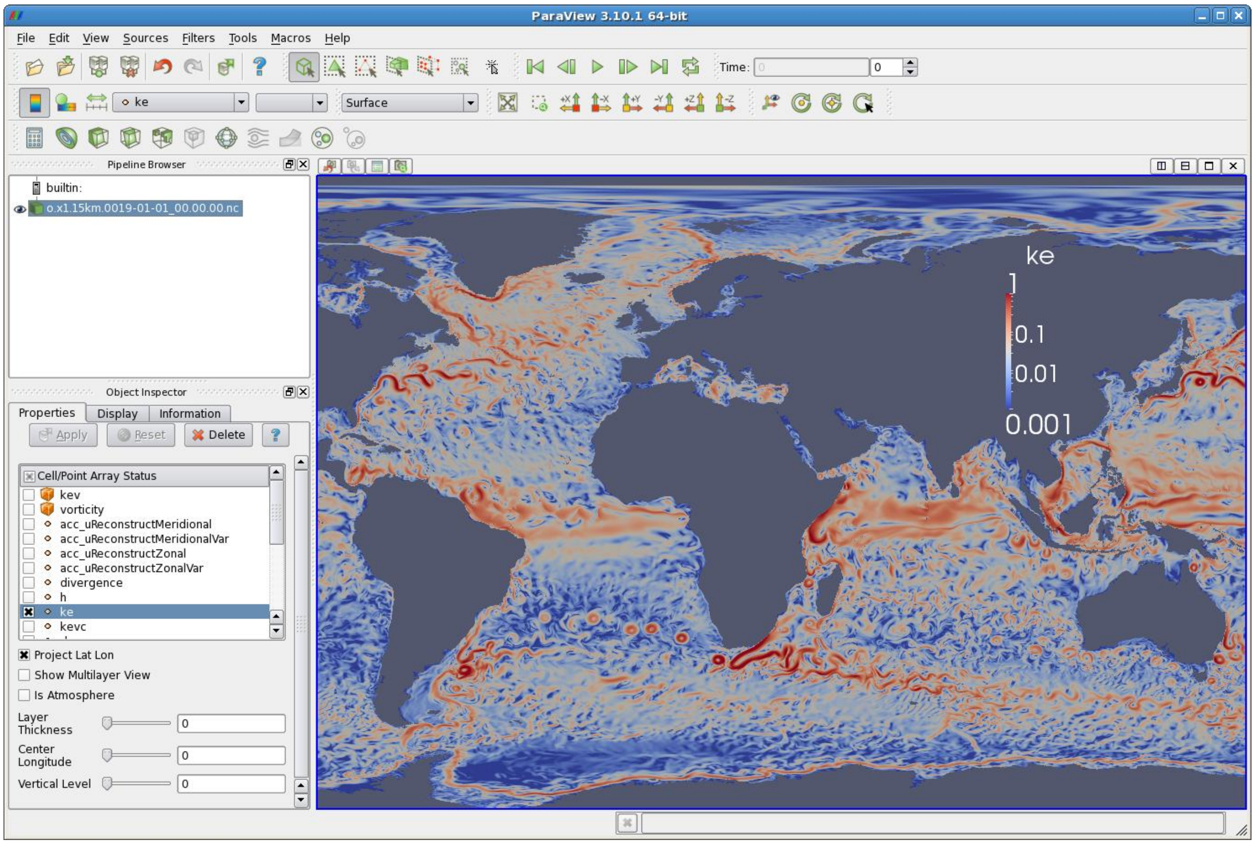


Figure 7.1: Example of ParaView to view an MPAS NetCDF file.

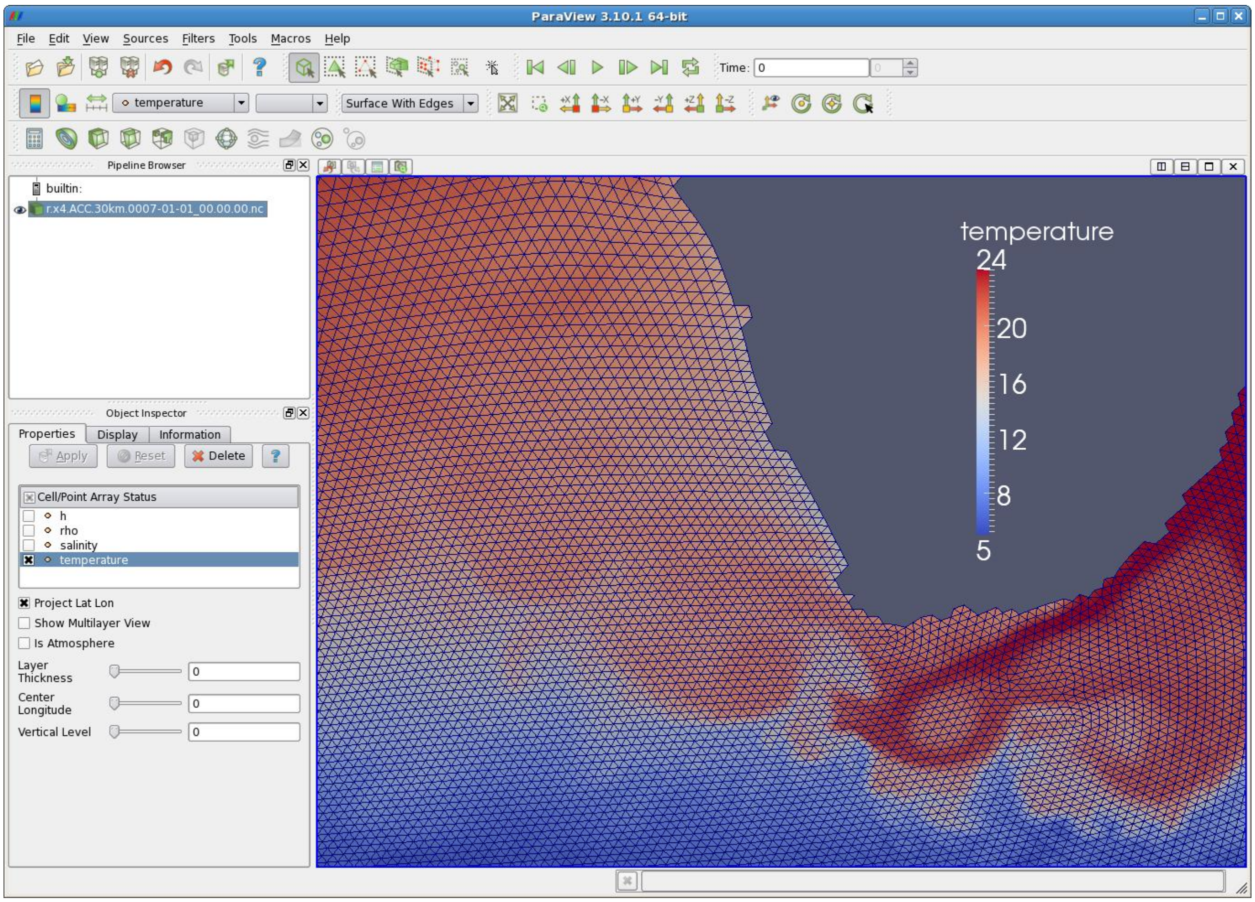


Figure 7.2: Example of visualizing the dual mesh from an MPAS NetCDF file.

Part II

MPAS-Ocean

Chapter 8

Governing Equations

The governing equations for MPAS-Ocean are

momentum equation:

$$\frac{\partial \mathbf{u}}{\partial t} + \eta \mathbf{k} \times \mathbf{u} + w\frac{\partial \mathbf{u}}{\partial z} = -\frac{1}{\rho_0}\nabla p - \frac{\rho g}{\rho_0}\nabla z^{mid} - \nabla K + \mathbf{D}_h^u + \mathbf{D}_v^u + \mathcal{F}^u \tag{8.1}$$

thickness equation:

$$\frac{\partial h}{\partial t} + \nabla \cdot \left(h\overline{\mathbf{u}}^z\right) + w|_{z=s^{top}} - w|_{z=s^{bot}} = 0 \tag{8.2}$$

tracer equation:

$$\frac{\partial}{\partial t} h\overline{\varphi}^z + \nabla \cdot \left(h\overline{\varphi \mathbf{u}}^z\right) + \varphi w|_{z=s^{top}} - \varphi w|_{z=s^{bot}} = D_h^\varphi + D_v^\varphi + \mathcal{F}^\varphi \tag{8.3}$$

hydrostatic condition:

$$p(x,y,z) = p^s(x,y) + \int_z^{z^s} \rho g dz' \tag{8.4}$$

equation of state:

$$\rho = f_{eos}(\Theta, S, p) \tag{8.5}$$

Equations 8.1 through 8.5 are a normal expression of the primitive equations; i.e. the incompressible Boussinesq equations in hydrostatic balance. Variable definitions are in Tables 8.1 and 8.2. The momentum advection and Coriolis terms in (8.1) are presented in vorticity-kinetic energy form (Ringler et al., 2010, eqn 5). The thickness and tracer equations describe a single layer in the vertical, where the operator $\overline{(\cdot)}^z$ is a vertical average over that layer (see derivation in Appedix A.2 of Ringler et al. (2013a)). Otherwise, 8.1–8.5 are the model equations in continuous form. Details of the conversion to fully discretized equations are given in the appendices of Ringler et al. (2013a).

Table 8.1: Latin variables used in prognostic equation set. Column 3 shows the native horizontal grid location. All variables are located at the center of the layer in the vertical unless noted.

symbol	name	grid	notes
$\mathbf{D}_h^u$, $\mathbf{D}_v^u$	mom. diffusion terms	edge	h horizonal, v vertical
D_h^φ, D_v^φ	tracer diff. terms	cell	
f	Coriolis parameter	vertex	
f_{eos}	equation of state	-	
$\mathcal{F}^u$	momentum forcing	edge	
$\mathcal{F}^\varphi$	tracer forcing	cell	
g	grav. acceleration	constant	
h	layer thickness	cell	
$\mathbf{k}$	vertical unit vector		
K	kinetic energy	edge	$K = \lvert\mathbf{u}\rvert^2/2$
p	pressure	cell	
p^s	surface pressure	cell	
q	potential vorticity	vertex	$q = \eta/h$
s^{bot}	z-location of bottom of layer	cell	
s^{top}	z-location of top of layer	cell	
S	salinity	cell	a tracer φ
t	time	-	
u	horizontal velocity	edge	normal component to edge
$\mathbf{u}$	horizontal velocity	-	
$\mathbf{v}$	3D velocity	-	
w	vertical transport	cell	top of layer in vertical
z	vertical coordinate	-	positive upward
z^{mid}	z-location of middle of layer	cell	
z^s	z-location of sea surface	cell	

Table 8.2: Greek variables used in prognostic equation set. Column 3 shows the native horizontal grid location. All variables are located at the center of the layer in the vertical.

symbol	name	grid	notes
δ	horizontal divergence	cell	$\delta = \nabla \cdot \mathbf{u}$
ζ	sea surface height	cell	
ω	relative vorticity	vertex	$\omega = \mathbf{k} \cdot (\nabla \times \mathbf{u})$
η	absolute vorticity	vertex	$\eta = \omega + f$
Θ	potential temperature	cell	a tracer φ
κ_h, κ_v	tracer diffusion	cell	horizontal and vertical
ν_h, ν_v	viscosity	edge	horizontal and vertical
ρ	density	cell	
ρ_0	reference density	constant	
φ	generic tracer	cell	e.g. Θ, S

Chapter 9

Tracer Infrastructure

Both active and passive tracers in MPAS-Ocean are governed by equation 8.3. In the current version of the code, there are five specific groups of tracers:

- **activeTracers:** Potential temperature and salinity.
- **debugTracers:** A passive tracer used primarily for testing conservation and monotonicity of tracer advection.
- **ecosysTracers:** Ocean biogeochemistry and ecosystem dynamics based on the Biogeochemical Elemental Cycling (BEC) model of Moore.
- **DMSTracers:** Extension of BEC for prognostic sulfur cycling focused on calculating the flux of dimethyl sulfide (DMS) from the ocean to the atmosphere.
- **MacroMoleculesTracers:** Extension of BEC that computes the evolution of subclasses of dissolved organic carbon (DOC), such as lipids, proteins, and poly saccharides, that can affect air-sea transfer and the formation of cloud condensation nuclei.

Each tracer group has an associated namelist named tracer_forcing_[groupName] (for example, tracer_forcing_ecosysTracers). To activate a tracer group, set config_use_[groupName] = .true. The activeTracers group is the only one that is turned on by default. Both the DMS and MacroMolecules groups rely on the ecosys tracers to be enabled, but ecosys does not require DMS or MacroMolecules to be active.

In keeping with the MPAS-O philosophy of maximum flexibility, every tracer is configured to allow for 6 different types of forcing which the user can mix and match at will:

- **surface_bulk_forcing:** Surface flux will be applied. It can be supplied by reading in a field from a file, calculating in a user-created routine, passed from another model component (for example, by the E3SM flux coupler), or a combination of these.
- **surface_restoring:** Surface layer tracer is linearly restored to a climatological field.
- **interior_restoring:** Full 3D tracer is linearly restored to a climatological field, except for the surface layer.
- **exponential_decay:** Tracer will decay at an exponential rate. Intended for radioactive tracers and, for example, simple models of oil degradation.

- **ideal-Age_forcing:** Tracer is Ideal Age, where the surface value is reset to zero and interior values are incremented by dt every timestep.
- **ttd_forcing:** Tracer surface field is reset to a specified value every timestep. Intended for simulating Time Transit Distribution functions (TTDs).

Each type of forcing requires 1 or more associated fields (10 total) to be defined for each tracer (a spatially varying surface restoring rate or a mask defining where TTD forcing is applied), though they won't be allocated memory unless they are needed. As a result, there are a large number of fields that are defined in Registry_[groupName].xml that will likely never actually be used. For example, the ecosysTracers group is made up of 30 individual tracers and each of them must have 10 associated forcing fields defined, resulting in 300 defined arrays, the vast majority of which will never be used. Again, these unused fields don't get allocated any memory, but they still must be defined to avoid a runtime error.

Another idiosyncrasy of the tracer implementation in MPAS-O concerns output. Due to the way tracer groups have been defined using the constructs of the MPAS framework, it isn't possible to directly output specific tracers within a group to an output stream; the entire group must be designated. For temperature and salinity, for example, this isn't a major issue since they are both typically desired for output. However, it can be an issue for other groups such as ecosysTracers when the user may only want a subset of prognostic fields (for example, nutrients and chlorophyll), but is required to output either all 30 tracers or none at all, which has significant storage implications. This feature will be addressed as soon as possible.

Chapter 10

Namelist options

Embedded links point to more detailed namelist information in the appendix.

10.1 run_modes

MPAS-Ocean may be run in forward or analysis mode. Forward mode is the default, and invokes the time stepping routine to run through the specified time duration. Analysis mode simply reads in files upon initialization, runs all enabled analysis members, writes output, and shuts down.

Name	Description
config_ocean_run_mode	Determines which run mode will be used for the ocean model.

10.2 time_management

General time management is handled by the time_management namelist record. Included options handle time-related parts of MPAS, such as the calendar and if the simulation is a restart or not.

Users should use this record to specify the beginning time of the simulation, and either the duration or the end of the simulation. Only the end or the duration need to be specified as the other is derived within MPAS from the beginning time and other specified one.

If both the run duration and stop time are specified, run duration is used in place of stop time.

Name	Description
config_do_restart	Determines if the initial conditions should be read from a restart file, or an input file.
config_restart_timestamp_name	Path to the filename for restart timestamps to be read and written from.

Name	Description (Continued)
config_start_time	Timestamp describing the initial time of the simulation. If it is set to 'file', the initial time is read from restart_timestamp.
config_stop_time	Timestamp descriping the final time of the simulation. If it is set to 'none' the final time is determined from config_start_time and config_run_duration.
config_run_duration	Timestamp describing the length of the simulation. If it is set to 'none' the duration is determined from config_start_time and config_stop_time. config_run_duration overrides inconsistent values of config_stop_time.
config_calendar_type	Selection of the type of calendar that should be used in the simulation.
config_output_reference_time	Reference time used in the units attribute of Time in output files.

10.3 io

The io namelist record provides options for modifications to the I/O system of MPAS. These include frequency, file name, and parallelization options.

Name	Description
config_write_output_on_startup	Logical flag determining if an output file should be written prior to the first time step.
config_pio_num_iotasks	Integer specifying how many IO tasks should be used within the PIO library. A value of 0 causes all MPI tasks to also be IO tasks. IO tasks are requried to write contiguous blocks of data to a file.
config_pio_stride	Integer specifying the stride of each IO task.

10.4 decomposition

MPAS handles decomposing all variables into computational blocks. The decomposition used needs to be specified at run time and is computed by an external tool (e.g. metis). Additionally, MPAS supports multiple computational blocks per MPI process, and the user may specify an additional decomposition file which can specify the assignment of blocks to MPI processes. Run-time parameters that control the run-time decomposition used are specified within the decomposition namelist record.

Name	Description

Name	Description (Continued)
config_num_halos	Determines the number of halo cells extending from a blocks owned cells (Called the 0-Halo). The default of 3 is the minimum that can be used with monotonic advection.
config_block_decomp_file_prefix	Defines the prefix for the block decomposition file. Can include a path. The number of blocks is appended to the end of the prefix at run-time.
config_number_of_blocks	Determines the number of blocks a simulation should be run with. If it is set to 0, the number of blocks is the same as the number of MPI tasks at run-time.
config_explicit_proc_decomp	Determines if an explicit processor decomposition should be used. This is only useful if multiple blocks per processor are used.
config_proc_decomp_file_prefix	Defines the prefix for the processor decomposition file. This file is only read if config_explicit_proc_decomp is .true. The number of processors is appended to the end of the prefix at run-time.

10.5 time_integration

The time integration namelist controls parameters that pertain to all time-stepping methods. Options that are specific to a particular time-stepping method are contained in a separate namelist for that method, below.

Name	Description
config_dt	Length of model time-step.
config_time_integrator	Time integration method.
config_number_of_time_levels	The number of time levels in the time-stepping scheme. This is used for array allocation.

10.6 hmix

There are several choices of horizontal mixing schemes available for the momentum and tracer equations. Each of these is a turbulence closure, and attempts to account for subgrid-scale mixing and diffusion. These schemes have the practical effect of reducing grid-scale noise in the velocity and tracer fields, and improving numerical stability.

Each horizontal mixing scheme has its own namelist, and may be turned on with the `_use_` logical configuration flags. Multiple schemes may be run simultaneously. The horizontal mixing terms in the governing equations (8.1, 8.3) are $\mathbf{D}_h^u$ for momentum and D_h^φ for tracers. No horizontal mixing is applied to the thickness equation.

All horizontal mixing coefficients can be set to scale with the mesh as $\rho_m^{-3/4}$ in equations (10.2, 10.3, 10.4, 10.5). The mesh density, ρ_m, is a variable in the input and restart file. It can vary between zero and one, and is one in the highest resolution region. Scaling with the mesh can be turned off, as described in the options below.

The anticipated potential Vorticity (APV) method is a parameterization of the effects of subgrid or unresolved scales on those explicitly resolved (Vallis and Hua, 1988). It contributes an upstream bias to the vorticity in the del2 and del4 momentum terms as follows,

$$\eta_{apv} = \eta - c_{apv} dt \left(\mathbf{u} \cdot \nabla \eta \right), \tag{10.1}$$

where the altered vorticity η_{apv} is used in equations (10.2, 10.8, 10.11).

Name	Description
config_hmix_scaleWithMesh	If false, del2 and del4 coefficients are constant throughout the mesh (equivalent to setting $\rho_m = 1$ throughout the mesh). If true, these coefficients scale as mesh density to the -3/4 power.
config_maxMeshDensity	Global maximum of the mesh density
config_hmix_use_ref_cell_width	If true, hmix coefficient values are set with reference to config_hmix_ref_cell_width. If false, hmix coefficient values are referenced to smallest gridcell in the mesh. The false setting is for backwards compatilibity. When false, hmix coefficient flags must be adjusted for every new mesh with a different minimum-sized cell.
config_hmix_ref_cell_width	Reference cell width. If config_hmix_use_ref_cell_width = .true., then hmix coefficients are set to be nu_{2h} = config_mom_del2*(cellWidth / config_hmix_use_ref_cell_width) and nu_{4h} = config_mom_del4*(cellWidth / config_hmix_use_ref_cell_width)^3 where cellWidth is the effective cell width computed as 2*sqrt(areaCell/pi). See Hoch et al 2020 JAMES eq 1,2. This relation applies within a simulation, but also generally among multiple simulations, so the parameters config_mom_del2, config_mom_del4, and config_hmix_use_ref_cell_width can generally remain at their standard values, and just be adjusted for fine tuning.
config_apvm_scale_factor	Anticipated potential vorticity (APV) method scale factor, c_{apv}. When zero, APV is off.

10.7 hmix_del2

The "del2", or Laplacian, turbulence closures are

$$\mathbf{D}_h^u = \frac{\nu_h}{\rho_m^{3/4}} \nabla^2 \mathbf{u} = \frac{\nu_h}{\rho_m^{3/4}} (\nabla \delta + \mathbf{k} \times \nabla \eta), \tag{10.2}$$

$$D_h^\varphi = \nabla \cdot \left(h \frac{\kappa_h}{\rho_m^{3/4}} \nabla \varphi \right) \tag{10.3}$$

for momentum and tracers, respectively. Variable definitions appear in Tables 8.1 and 8.2. The momentum diffusion is in divergence-vorticity form because it is a natural discretization of the vector Laplacian operator with a C-grid staggering.

The Laplacian operator smooths the momentum and tracer fields, and smooths more strongly at small scales than at large scales. This operator is the two dimensional form of the heat equation, $u_t = \nu u_{xx}$, described in introductory books on partial differential equations. The strength of mixing is controlled by the viscosity, ν_h, for the momentum equation, and the diffusion, κ_h, for the tracer equation.

Name	Description
config_use_mom_del2	If true, Laplacian horizontal mixing is used on the momentum equation.
config_mom_del2	Horizontal viscosity, ν_{2h}. If config_hmix_use_ref_cell_width = .true. then ν_h = config_mom_del2*(cellWidth / config_hmix_use_ref_cell_width). If config_hmix_use_ref_cell_width = .false. then it is referenced to the smallest cell.
config_use_tracer_del2	If true, Laplacian horizontal mixing is used on the tracer equation.
config_tracer_del2	Horizontal diffusion, κ_{2h}. If config_hmix_use_ref_cell_width = .true. then κ_h = config_tracer_del2*(cellWidth / config_hmix_use_ref_cell_width). If config_hmix_use_ref_cell_width = .false. then it is referenced to the smallest cell.

10.8 hmix_del4

The "del4", or biharmonic, turbulence closures are

$$\mathbf{D}_h^u = -\frac{\nu_h}{\rho_m^{3/4}} \nabla^4 \mathbf{u} \tag{10.4}$$

$$D_h^\varphi = -\nabla \cdot \left(h \frac{\kappa_h}{\rho_m^{3/4}} \nabla \left[\nabla \cdot (h \nabla \varphi) \right] \right) \tag{10.5}$$

for momentum and tracers These are both computed by applying the Laplacian operator twice. For momentum, this can be written in terms of divergence and vorticity as

$$\delta = \nabla \cdot \mathbf{u} \tag{10.6}$$

$$\eta = \mathbf{k} \cdot (\nabla \times \mathbf{u}) + f \tag{10.7}$$

$$\nabla^2 \mathbf{u} = (\nabla \delta + \mathbf{k} \times \nabla \eta) \tag{10.8}$$

$$\delta_2 = \nabla \cdot (\nabla^2 \mathbf{u}) \tag{10.9}$$

$$\eta_2 = \mathbf{k} \cdot \left(\nabla \times (\nabla^2 \mathbf{u}) \right) + f \tag{10.10}$$

$$\mathbf{D}_h^u = \frac{\nu_h}{\rho_m^{3/4}} (\nabla \delta_2 + \mathbf{k} \times \nabla \eta_2). \tag{10.11}$$

The biharmonic operator is similar to the Laplacian operator, but smooths more strongly at high wavenumbers.

Name	Description
config_use_mom_del4	If true, biharmonic horizontal mixing is used on the momentum equation.
config_mom_del4	Coefficient for horizontal biharmonic operator on momentum. If config_hmix_use_ref_cell_width = .true. then ν_{4h} = config_mom_del4*(cellWidth / config_hmix_use_ref_cell_width)^3. If config_hmix_use_ref_cell_width = .false. then it is referenced to the smallest cell.
config_mom_del4_div_factor	The divergence portion of the del4 operator is scaled by this factor.
config_use_tracer_del4	If true, biharmonic horizontal mixing is used on the tracer equation.
config_tracer_del4	Coefficient for horizontal biharmonic operator on tracers. If config_hmix_use_ref_cell_width = .true. then ν_{4h} = config_tracer_del4*(cellWidth / config_hmix_use_ref_cell_width)^3. If config_hmix_use_ref_cell_width = .false. then it is referenced to the smallest cell.

10.9 hmix_Leith

The Leith (1996) closure is the enstrophy-cascade analogy to the Smagorinsky (1963) energy-cascade closure, i.e. the Leith closure assumes an inertial range of enstrophy flux moving toward the grid scale. The assumption of an enstrophy cascade and dimensional analysis produces right-hand-side dissipation, $\mathbf{D^u_h}$, of velocity of the form

$$\mathbf{D}_h^u = \nabla \cdot (\nu_h \nabla \mathbf{u}) = \nabla \cdot \left(\Gamma \left| \nabla \omega \right| (\Delta x)^3 \nabla \mathbf{u} \right) \tag{10.12}$$

where ω is the relative vorticity, $\mathbf{u}$ is the horizontal velocity, Δx is the local grid spacing and Γ is a non-dimensional, $O(1)$ parameter. This beta release approximates the RHS of the 10.12 as

$$\mathbf{D^u_h} = \nu_* \nabla^2_{\mathbf{h}} \mathbf{u} \tag{10.13}$$

where the $\nabla^2 \mathbf{u}$ is computed using the form shown in 10.8. Future releases will remove this approximation by computing the rate-of-strain, i.e. $\nabla \mathbf{u}$, directly.

Name	Description
config_use_Leith_del2	If true, the Leith enstrophy-cascade closure is turned on
config_Leith_parameter	Non-dimensional Leith closure parameter
config_Leith_dx	Characteristic length scale, usually the smallest dx in the mesh
config_Leith_visc2_max	Upper bound on the allowable value of Leith-computed viscosity

10.10 Redi_isopycnal_mixing

Name	Description
config_use_Redi	If true, Redi isopycnal mixing is turned on
config_Redi_closure	Control what type of function is used for Redi κ. For 'equalGM', RediKappa is set to gmBolusKappa, so picks up the closure used by GM. Note that equalGM should only be used with 2D GM schemes (e.g. config_GM_closure=constant or Visbeck), not with EdenGreatbatch.
config_Redi_constant_kappa	The Redi diffusion coefficient. Only used when config_Redi_closure = 'constant'.
config_Redi_maximum_slope	value of maximum allowed isopycnal slope from Danabasoglu et al 2008 equation (2)
config_Redi_use_slope_taper	If true, Redi is tapered based on Danabasoglu and McWilliams 1995 (slope tapering)
config_Redi_use_surface_taper	If true, Redi slope is tapered near sfc based on Large et al 1997
config_Redi_limit_term1	If true, the N2 limiting is applied to the horizontal diffusion term
config_Redi_use_quasi_-monotone_limiter	If true, fluxes are reduced to prevent tracers from violating monotonicity. Cross-term fluxes are scaled toward zero to prevent tracers from under/overshooting the min/max values in adjacent cells and layers
config_Redi_quasi_monotone_-safety_factor	A safety factor applied to flux scaling when monotonicity is violated. Smaller values scale fluxes toward zero more aggressively.
config_Redi_min_layers_diag_-terms	Redi diagonal terms (2 and 3) are turned off from layer 1 through config_Redi_min_layers_diag_terms-1, and on from config_Redi_min_layers_diag_terms to nVertLevels. The Redi diagonal terms are not guaranteed to produce bounded tracer fields, and in practice produce growing temperatures in a few columns with fewer than 5 vertical cells. Redi is meant for isopycnal mixing in the deep ocean, so not applying Redi diagonal terms in very shallow regions is an acceptable solution.
config_Redi_horizontal_taper	Control how the Redi κ value varies as a function of horizontal resolution. 'none' is constant, 'ramp' is strictly based on resolution, 'RossbyRadius' follows Hallberg (2013) - https://doi.org/10.1016/j.ocemod.2013.08.007
config_Redi_horizontal_ramp_min	Minimum value in grid cell size for Redi κ ramp function. Here cell size refers to dcEdge. Used when config_Redi_horizontal_taper is set to ramp.
config_Redi_horizontal_ramp_-max	Maximum value in grid cell size for Redi κ ramp function. Here cell size refers to dcEdge. Used when config_Redi_horizontal_taper is set to ramp.

10.11 submesoscale_eddy_parameterization

Name	Description
config_submesoscale_enable	flag to enable the FK2011 parameterization for submesoscale eddies
config_submesoscale_tau	timescale for frictional slumping of front (in seconds)
config_submesoscale_Ce	efficiency of submesoscale eddies

Name	Description (Continued)
config_submesoscale_Lfmin	minimum frontal width (meters)
config_submesoscale_ds_max	maximum grid scale to scale up buoyancy gradient

10.12 GM_eddy_parameterization

Name	Description
config_use_GM	If true, the standard GM for the tracer advection and mixing is turned on.
config_GM_closure	Control what method used to compute GM κ. Both 'constant' and 'N2_dependent' use the method in Ferrari et al. 2010 (https://doi.org/10.1016/j.ocemod.2010.01.004). 'constant' uses a constant kappa in eqn 16a, while 'N2_dependent' varies kappa in the vertical according to Danabasoglu and Marshall 2007 (https://doi.org/10.1016/j.ocemod.2007.03.006). 'Visbeck' implements a horizontally varying diffusivity of Visbeck et al 1997. EdenGreatbatch implements a simplified form of the EKE scheme in Eden and Greatbatch (2008) Ocean modeling
config_GM_constant_kappa	Coefficient of standard GM parametrization of eddy transport (Bolus component), κ. Only used when config_GM_closure is set to constant.
config_GM_constant_bclModeSpeed	The parameter setting for the first baroclinic mode speed for the vertical stream function boundary value problem. This appears as c in eqn 16a of Ferrari et al. 2010 (https://doi.org/10.1016/j.ocemod.2010.01.004).
config_GM_minBclModeSpeed_method	Determines how the GM setting for the minimum of the first baroclinic mode speed is computed. If 'constant' then use config_GM_constant_bclModeSpeed. If 'computed' then compute at every edge at every time step using the Brunt-Vaisala frequency
config_GM_spatially_variable_min_kappa	minimum value of bolus diffusivity for spatially variable GM schemes. Used for all choices of config_GM_closure other than 'constant'.
config_GM_spatially_variable_max_kappa	minimum value of bolus diffusivity for spatially variable GM schemes. Used for all choices of config_GM_closure other than 'constant'.
config_GM_spatially_variable_baroclinic_mode	baroclinic wave mode chosen for the Ferrari et al 2010 calculation. Used for all choices of config_GM_closure other than 'constant'.
config_GM_Visbeck_alpha	scaling factor on the Visbeck diffusivity parameterization
config_GM_Visbeck_max_depth	minimum depth for calculation of vertical average
config_GM_EG_riMin	minimum Richardson number to prevent overly large bolus Kappa values
config_GM_EG_kappa_factor	factor to scale diffusivity for Eden Greatbach scheme
config_GM_EG_Rossby_factor	factor multiplying the Rossby length in the scheme from Eden Greatbatch (2008) Ocean Modeling – Equation (28)
config_GM_EG_Rhines_factor	factor multiplying the Rhines length in the scheme from Eden Greatbatch (2008) Ocean Modeling – Equation (28)

Name	Description (Continued)
config_GM_horizontal_taper	Control how the GM Bolus value varies as a function of horizontal resolution. 'none' is constant, 'ramp' is strictly based on resolution, 'RossbyRadius' follows Hallberg (2013) - https://doi.org/10.1016/j.ocemod.2013.08.007
config_GM_horizontal_ramp_min	Minimum value in grid cell size for GM κ ramp function. Here cell size refers to dcEdge. Used when config_GM_horizontal_taper is set to ramp.
config_GM_horizontal_ramp_max	Maximum value in grid cell size for GM κ ramp function. Here cell size refers to dcEdge. Used when config_GM_horizontal_taper is set to ramp.
config_GMRedi_Rossby_ramp_min	Minimum value of the ratio between grid-cell size (dcEdge) and Rossby radius for GM and Redi κ ramp functions. Used when config_GM_horizontal_taper and/or config_Redi_horizontal_taper are set to RossbyRadius.
config_GMRedi_Rossby_ramp_max	Maximum value of the ratio between grid-cell size (dcEdge) and Rossby radius for GM and Redi κ ramp functions. Used when config_GM_horizontal_taper and/or config_Redi_horizontal_taper are set to RossbyRadius.

10.13 eddy_parameterization

Name	Description
config_eddyMLD_dens_threshold	potential density change relative to surface for mixed layer depth threshold method. This calculation is used for the Redi tapering, GM N2_dependent bolus kappa, and the submesoscale eddy parameterization
config_eddyMLD_reference_depth	reference depth for threshold computation
config_eddyMLD_reference_pressure	reference pressure for original mixed layer depth calculation
config_eddyMLD_use_old	switches from old dThreshMLD calculation to new (fixed one)

10.14 cvmix

There are several choices of vertical mixing schemes available for the momentum and tracer equations. The CVMix namelist record is intended to control the Community Vertical Mixing package `https://github.com/CVMix`. CVMix is a collection of individual vertical mixing parameterizations intended to model background, convective, shear, tidal, double diffusion and ocean boundary layer processes. The output of each CVMix parameterization is a vertical profile of viscosity/diffusivity for a specific process. The CVMix parameterizations are constructed and implemented as "stand-alone" modules, so each parameterization can be toggled on/off without directly impacting the use of other parameterizations. The net viscosity/diffusivity used by the ocean model is the sum of all of the individual viscosity/diffusivity profiles. The one exception to this rule is when KPP is used when config_cvmix_kpp_matching is set to "MatchBoth"; in this instance the KPP-computed viscosity/diffusivity is the only contribution to mixing from the surface to the bottom of the ocean boundary layer.

All supported schemes are part of the Community Vertical Mixing (CVMix) library. A few legacy MPAS specific options are included, but are not officially supported and may be depracated in a future release. The use of CVMix is strongly encouraged and most legacy mixing schemes can be reproduced within CVMix.

Implicit vertical mixing is required in ocean models because vertical mixing between unstably stratified layers occurs at timescales faster that other model processes. The timestep requirement for explicit timestepping is usually set by the horizontal advective CFL condition. In order to include realistic vertical mixing without very small time steps, we use operator splitting so that the vertical momentum and tracer diffusion terms are treated with an implicit timestep, while the remaining terms of the momentum and tracer equations use an explicit method.

Each vertical mixing scheme has its own namelist, and may be turned on with the `_use_` logical configuration flags. Multiple schemes may be run simultaneously. The vertical mixing terms in the governing equations (8.1, 8.3) are

$$\mathbf{D}_v^u = \frac{\partial}{\partial z}\left(\nu_v \frac{\partial \mathbf{u}}{\partial z}\right), \tag{10.14}$$

$$D_v^\varphi = \rho \frac{\partial}{\partial z}\left(\kappa_v \frac{\partial \varphi}{\partial z}\right), \tag{10.15}$$

for momentum and tracers, respectively. No vertical mixing is applied to the thickness equation.

Note that some CVMix functionality is not yet available. A few namelist options exist as place-holders for these future additions, *i.e.*, config_use_cvmix_tidal_mixing and config_use_cvmix_double_diffusion. Finally, config_cvmix_kpp_stop_OBL_search has no impact on the behavior of CVMix.

Name	**Description**
config_use_cvmix	If true, use the Community Vertical MIXing routines to compute vertical diffusivity and viscosity
config_cvmix_prandtl_number	Prandtl number to be used within the CVMix parameterization suite
config_cvmix_background_scheme	Scheme for background diffusivity, 'constant' for constant with depth and space, 'BryanLewis' for vertically variable, 'none' for no background diffusivity
config_cvmix_background_diffusion	Background vertical diffusion applied to tracer quantities
config_cvmix_background_viscosity	Background vertical viscosity applied to horizontal velocity
config_cvmix_BryanLewis_bl1	near surface diffusivity for the Bryan and Lewis (1979) profile
config_cvmix_BryanLewis_bl2	increase in diffusivity at depth for Bryan Lewis (1979) scheme
config_cvmix_BryanLewis_transitionDepth	depth at which the diffusivity transitions to the higher value
config_cvmix_BryanLewis_transitionWidth	width of transition in Bryan Lewis (1979) scheme

Name	Description (Continued)
config_use_cvmix_convection	If true, convective diffusivity and viscosity is computed using CVMix
config_cvmix_convective_diffusion	Convective vertical diffusion applied to tracer quantities
config_cvmix_convective_viscosity	Convective vertical viscosity applied to horizontal velocity components
config_cvmix_convective_basedOnBVF	If true, convection is triggered based on value of config_cvmix_convective_triggerBVF
config_cvmix_convective_triggerBVF	Value of Brunt Viasala frequency squared below which convective mixing is triggered
config_use_cvmix_shear	If true, shear-based mixing is computed using CVMix
config_cvmix_num_ri_smooth_loops	Number of smoothing passes over RiTopOfCell for LMD94 shear instability mixing
config_cvmix_use_BLD_smoothing	If true KPP bld is smoothed with a laplacian filter
config_cvmix_shear_mixing_scheme	Choose between Pacanowski/Philander or Large et al. shear mixing
config_cvmix_shear_PP_nu_zero	Numerator of Pacanowski and Philander (1981) Eq (1)
config_cvmix_shear_PP_alpha	Alpha values used in Pacanowski and Philander (1981) Eqs (1) and (2)
config_cvmix_shear_PP_exp	Exponent used in denominator of Pacanowski and Philander (1981) Eqs (1)
config_cvmix_shear_KPP_nu_zero	Maximum diffusivity produced by shear-generated mixing
config_cvmix_shear_KPP_Ri_zero	Theshold gradient Richardson number to produced enhanced diffusivities, See Large et al. (1994) Eq (28a,b,c)
config_cvmix_shear_KPP_exp	Exponent relating diffusivities to Ri_g. Referred to as p_1 in Large et al. (1994) Eq (28b)
config_use_cvmix_tidal_mixing	If true, diffusivity and viscosity is computed using CVMix tidal mixing
config_use_cvmix_double_diffusion	If true, diffusivity and viscosity is computed using CVMix double diffusion
config_use_cvmix_kpp	If true, diffusivity and viscosity is computed using CVMix KPP
config_use_cvmix_fixed_boundary_layer	If true, boundary layer depth is specified as config_cvmix_kpp_boundary_layer_depth
config_cvmix_kpp_boundary_layer_depth	If config_use_cvmix_fixed_boundary_layer, then KPP OBL calculation is overwritten with this value
config_cvmix_kpp_criticalBulkRichardsonNumber	Critical bulk Richardson number used to determine bottom of ocean mixed layer
config_cvmix_kpp_matching	Determines how the KPP diffusivities are matched to values at base of boundary layer
config_cvmix_kpp_EkmanOBL	If true, boundary layer depth is limited by Ekman layer depth
config_cvmix_kpp_MonObOBL	If true, boundary layer depth is limited by Monin-Obukhov layer depth
config_cvmix_kpp_interpolationOMLType	Determine bottom of ocean mixed layer using linear, quadratic or cubic interpolation
config_cvmix_kpp_surface_layer_extent	The non-dimensional extent of the surface layer, measured as fraction of boundary layer depth
config_cvmix_kpp_surface_layer_averaging	The thickness over which to average when computing surface-averaged velocity and buoyancy
configure_cvmix_kpp_minimum_OBL_under_sea_ice	The minimum allowable boundary layer depth with sea-ice is present

Name	**Description** (Continued)
config_cvmix_kpp_stop_OBL_search	The search for boundary layer depth is terminated when bulk Richardson number is greater than config_cvmix_kpp_stop_OBL_search*config_cvmix_kpp_criticalBulkRichardsonNumber
config_cvmix_kpp_use_enhanced_diff	Flag for use of enhanced diffusion at boundary layer base as in Large et al (1994)
config_cvmix_kpp_nonlocal_with_implicit_mix	flag that moves the non-local computation and application of tendency to after main timestep loop
config_cvmix_kpp_use_theory_wave	Flag for use of theory-wave in Li et al. (2017) to approximate the Langmuir number and enhancement factor
config_cvmix_kpp_langmuir_mixing_opt	Option of Langmuir enhanced mixing parameterization
config_cvmix_kpp_langmuir_entrainment_opt	Option of Langmuir enhanced entrainment parameterization
config_cvmix_kpp_use_active_wave	Flag for Langmuir enchancement factor using prognostic waves. Requires config_use_active_wave = .true.

10.15 wave_coupling

Name	**Description**
config_use_active_wave	Flag for using prognostic waves. Controls the allocation of wave arrays and computation of Stokes drift profiles.
config_n_stokes_drift_wavenumber_partitions	Number of wavenumber partitions to be used in reconstructing wave-induced Stokes drift profile

10.16 gotm

Name	**Description**
config_use_gotm	If true, use the General Ocean Turbulence Model routines to compute vertical diffusivity and viscosity
config_gotm_namelist_file	File name of GOTM turbulence namelist
config_gotm_constant_surface_roughness_length	The constant surface roughness length scale.
config_gotm_constant_bottom_roughness_length	The constant bottom roughness length scale.
config_gotm_constant_bottom_drag_coeff	The constant bottom drag coefficient.

10.17 forcing

Forcing may be applied to the RHS of the momentum equation (8.1) through the term

$$\mathcal{F}^u = \frac{1}{\rho_0 h}\tau \tag{10.16}$$

where τ is typically the wind stress in N/m^2 applied to the top layer. More generally, momentum forcing may be applied to any layer in the ocean. The momentum forcing may be constant or monthly, as described in the configuration settings below. When running within the E3SM, the wind stress is provided by the coupler (see Chapter 14).

Temperature and salinity restoring are applied to the tracer equation (8.3) through the term

$$\mathcal{F}^\varphi = -h\frac{\varphi - \varphi_r}{\tau_r} \tag{10.17}$$

where φ_r is the tracer restoring value and τ_r is the restoring timescale. This term is only applied at the top layer, and may be constant or monthly, as described in the configuration settings below. When running within the E3SM, the coupler provides surface heat, salinity, and freshwater fluxes rather than a restoring in this form (see Chapter 14).

Name	Description
config_use_variable_drag	Controls if variable drag is enabled.
config_use_bulk_wind_stress	Controls if zonal and meridional components of windstress are used to build surface wind stress.
config_use_bulk_thickness_flux	Controls if a bulk thickness flux will be computed for surface forcing.
config_flux_attenuation_coefficient	The length scale of exponential decay of surface fluxes. Fluxes are multiplied by $e^{z/\gamma}$, where this coefficient is γ.
config_flux_attenuation_coefficient_runoff	The length scale of exponential decay of river runoff. Fluxes are multiplied by $e^{z/\gamma}$, where this coefficient is γ.

10.18 time_varying_forcing

Name	Description
config_use_time_varying_atmospheric_forcing	If true calculate input forcing fields.
config_time_varying_atmospheric_forcing_type	Atmospheric forcing type.
config_time_varying_atmospheric_forcing_start_time	Forcing time to use at the simulation start time

Name	Description (Continued)
config_time_varying_atmospheric_forcing_reference_time	Reference time for the forcing
config_time_varying_atmospheric_forcing_cycle_start	Start time for the forcing cycle.
config_time_varying_atmospheric_forcing_cycle_duration	Duration of the forcing cycle.
config_time_varying_atmospheric_forcing_interval	Time between forcing inputs
config_time_varying_atmospheric_forcing_ramp	Number of days to ramp up time varying forcing
config_time_varying_atmospheric_forcing_ramp_delay	Number of days to delay ramp time varying forcing
config_use_time_varying_land_ice_forcing	If true calculate input forcing fields.
config_time_varying_land_ice_forcing_start_time	Forcing time to use at the simulation start time
config_time_varying_land_ice_forcing_reference_time	Reference time for the forcing
config_time_varying_land_ice_forcing_cycle_start	Start time for the forcing cycle.
config_time_varying_land_ice_forcing_cycle_duration	Duration of the forcing cycle.
config_time_varying_land_ice_forcing_interval	Time between forcing inputs

10.19 coupling

Name	Description
config_ssh_grad_relax_timescale	Timescale for relaxation of the ssh gradient for coupling. A value of 0.0 (default) removes any relaxation and gives instantaneous response.
config_remove_AIS_coupler_runoff	If true, solid and liquid runoff from the Antarctic Ice Sheet (below 60S latitude) coming from the coupled is zeroed in the coupler import routines. To be used with data iceberg fluxes coming from the sea ice model.

10.20 shortwaveRadiation

Name	Description
config_sw_absorption_type	Name of shortwave absorption type used in simulation.
config_jerlov_water_type	Integer value defining the water type used in Jerlov short wave absorption.
config_surface_buoyancy_depth	Depth over which to apply penetrating SW to sfcBuoyancyFlux
config_enable_shortwave_-energy_fixer	Flag to enable the shortwave energy fixer for shallow ocean cells

10.21 tidal_forcing

Name	Description
config_use_tidal_forcing	Controls if tidal forcing is used.
config_use_tidal_forcing_tau	Controls time scale for relaxation of tidal forcing.
config_tidal_forcing_type	Selects the way tidal forcing is applied.
config_tidal_forcing_model	Selects the mode in which tidal forcing is computed.
config_tidal_forcing_-monochromatic_amp	Value of amplitude of monochromatic tide.
config_tidal_forcing_-monochromatic_period	Value of period of monochromatic tide.
config_tidal_forcing_-monochromatic_phaseLag	Value of phase of monochromatic tide.
config_tidal_forcing_-monochromatic_baseline	Value of baseline monochromatic tide, e.g., sea level rise.

10.22 self_attraction_loading

Name	Description
config_use_self_attraction_loading	Controls if self-attraction and loading is applied to ssh
config_self_attraction_loading_-smoothing_width	Defines region over which ssh is smoothed to zero at coasts for SAL calculation.
config_mpas_to_grid_weights_file	Location of the file containing the interpolation weights for transformation from the MPAS mesh to a Gaussian Grid.
config_grid_to_mpas_weights_file	Location of the file containing the interpolation weights for transformation from a Gaussian Grid to the MPAS mesh.
config_self_attraction_loading_-compute_interval	Interval for computing full SAL.
config_nLatitude	Numer of latitude points in the Gaussian Grid.
config_nLongitude	Numer of longitude points in the Gaussian Grid.

Name	Description (Continued)
config_use_parallel_self_attraction_loading	Controls if self-attraction and loading is computed with parallel or serial algorithm
config_parallel_self_attraction_loading_order	Controls the order of the sperical harmonic expansion used in the parallel self attraction and loading algorithm
config_parallel_self_attraction_loading_n_cells_per_block	Controls the number of blocks used for spherical harmonics calculation
config_parallel_self_attraction_loading_bfb	Controls whether a reproducible sum is used for the parallel spherical harmonics calculations

10.23 tidal_potential_forcing

Name	Description
config_use_tidal_potential_forcing	Controls if tidal potential forcing is used.
config_tidal_potential_reference_time	Timestamp describing the time used to initialize nodal factors.
config_use_tidal_potential_forcing_M2	Controls if tidal potential forcing for the M2 constituent is used.
config_use_tidal_potential_forcing_S2	Controls if tidal potential forcing for the S2 constituent is used.
config_use_tidal_potential_forcing_N2	Controls if tidal potential forcing for the N2 constituent is used.
config_use_tidal_potential_forcing_K2	Controls if tidal potential forcing for the K2 constituent is used.
config_use_tidal_potential_forcing_K1	Controls if tidal potential forcing for the K1 constituent is used.
config_use_tidal_potential_forcing_O1	Controls if tidal potential forcing for the O1 constituent is used.
config_use_tidal_potential_forcing_Q1	Controls if tidal potential forcing for the Q1 constituent is used.
config_use_tidal_potential_forcing_P1	Controls if tidal potential forcing for the P1 constituent is used.
config_tidal_potential_ramp	Number of days over which the tidal potential forcing is ramped
config_self_attraction_and_loading_beta	Coefficient for SAL scalar approximation

10.24 frazil_ice

Name	Description
config_use_frazil_ice_formation	Controls if fluxes related to frazil ice process are computed.
config_frazil_in_open_ocean	If frazil formation is used, controls if frazil fluxes are computed in the open ocean (as opposed to under land ice).
config_frazil_under_land_ice	If frazil formation is used, controls if frazil fluxes are computed under land ice.
config_frazil_heat_of_fusion	Energy per kilogram released when sea water freezes. NOTE: test and make consistent with E3SM.
config_frazil_ice_density	Assumed density of frazil. NOTE: test and make consistent with E3SM.
config_frazil_fractional_-thickness_limit	maximum fraction of layer thickness than can be used or created at an instant by frazil.
config_specific_heat_sea_water	Energy per kilogram per C needed to raise ocean temperature 1 C. NOTE: test and make consistent with E3SM.
config_frazil_maximum_depth	maximum depth for the formation of frazil
config_frazil_sea_ice_reference_-salinity	assumed salinity of frazil ice in the open ocean.
config_frazil_land_ice_-reference_salinity	assumed salinity of frazil ice under land ice.
config_frazil_maximum_-freezing_temperature	Maximum freezing temperature for the creation of frazil
config_frazil_use_surface_pressure	Flag that controls if frazil formation will exert a surface pressure as it is formed.

10.25 land_ice_fluxes

MPAS-Ocean supports the option to compute fluxes across the land ice-ocean interface in either "standalone" or "coupled" mode.

In either mode, quadratic top drag is applied as a surface stress in (10.16), where

$$\tau = \rho_0 C_{\mathrm{D,top}} \overline{(|u|u)}^{\mathrm{BL}}, \tag{10.18}$$

and where $C_{\mathrm{D,top}}$ is the dimensionless top drag coefficient and the operator $\overline{(\cdot)}^{\mathrm{BL}}$ indicates the vertical average over the boundary layer below land ice, which has a depth H_{BL}. Several additional diagnostics are computed in either mode:

$$u_* = \sqrt{C_{\mathrm{D,top}} \overline{(|u|^2 + u_{\mathrm{tidal}}^2)}^{\mathrm{BL}}}, \tag{10.19}$$

$$\Theta_{\mathrm{BL}} = \overline{(\Theta)}^{\mathrm{BL}}, \tag{10.20}$$

$$S_{\mathrm{BL}} = \overline{(S)}^{\mathrm{BL}}. \tag{10.21}$$

The boundary conditions at the ice-ocean interface arise from conservation of enthalpy and salt across the interface and the requirement that the interface be at the pressure- and salinity-dependent potential freezing point:

$$\rho_{\mathrm{fw}} L m_w = \mathcal{F}_{\mathrm{H,ice}} - \rho_{\mathrm{sw}} c_p \gamma_\Theta \left(\Theta_b - \Theta_{\mathrm{BL}}\right), \tag{10.22}$$

$$\rho_{\mathrm{fw}} m_w S_b = -\rho_{\mathrm{sw}} \gamma_S \left(S_b - S_{\mathrm{BL}}\right), \tag{10.23}$$

$$\Theta_b = \Theta_f(S, p), \tag{10.24}$$

(10.25)

where $\rho_{\rm fw}$ is the density of freshwater, L is the latent heat of fusion of water, $\mathcal{F}_{\rm H,ice}$ is the sensible heat flux into the ice (always negative), $\rho_{\rm sw}$ is the reference denstiy of seawater c_p is the heat capacity of seawater γ_Θ and γ_S are thermal- and salt-transfer velocities, Θ_f is the freezing potential temperature and Θ_b, S_b and m_w are the unknown potential temperature and salinity at the boundary and the melt rate (expressed in water-equivalent). The associated surface freshwater, heat and salt fluxes are

$$\mathcal{F}_{\rm fw} = \rho_{\rm fw} m_w, \tag{10.26}$$

$$\mathcal{F}_{\rm H} = c_p \left[F_{\rm fw}\Theta_b + \rho_{\rm sw}\gamma_\Theta\left(\Theta_b - \Theta_{\rm BL}\right)\right], \tag{10.27}$$

$$\mathcal{F}_{\rm S} = 0. \tag{10.28}$$

In "coupled" mode, the time-averaged values of $\Theta_{\rm BL}$, $S_{\rm BL}$, γ_Θ and γ_S are computed in MPAS-Ocean, and the fluxes are computed in the coupler.

In "standalone" mode, the boundary conditions are solved and the fluxes computed in MPAS-Ocean. Three flux formulations are supported, "isomip", "jenkins" and "hollandJenkins", each with its own definition of the freezing potential temperature and the transfer velocities.

isomip:
The ISOMIP formulation (Hunter, 2006) is the simplest, using the boundary-layer salinity to compute the freezing potential temperature and a velocity independent heat-transfer velocity:

$$\Theta_f = \lambda_1 S_{\rm BL} + \lambda_2 + \lambda_3 p_b, \tag{10.29}$$

$$\gamma_\Theta = \gamma_{\rm ISO}. \tag{10.30}$$

The salt-transfer velocity γ_S and the salinity at the boundary S_b are not needed for the flux computation and are not computed for this formulation.

jenkins:
The Jenkins et al. (2010) boundary conditions are more sophisticated, using the interface salinity in the freezing potential temperature and including the spatially variable friction velocity in the computation of heat and salt transfer across the boundary layer:

$$\Theta_f = \lambda_1 S_b + \lambda_2 + \lambda_3 p_b, \tag{10.31}$$

$$\gamma_\Theta = u_* \Gamma_\Theta, \tag{10.32}$$

$$\gamma_S = u_* \Gamma_S, \tag{10.33}$$

where Γ_Θ and Γ_S are constants calibrated from observations (e.g. Jenkins et al., 2010).

holland-jenkins:
The Holland and Jenkins (1999) formulation includes slightly nonlinear velocity dependence in heat and salt transfer velocities, and is commonly used in many studies. The boundary conditions are as in the "jenkins" case except that Γ_Θ and Γ_S are not constants, but are given by

$$\Gamma_{\Theta,S} = \frac{1}{\Lambda_{\rm turb} + \Lambda_{\rm mol}^{\Theta,S}}, \tag{10.34}$$

$$\Lambda_{\rm turb} = \frac{1}{k}\ln\left(\frac{u_*\xi_N}{f h_\nu}\right) + \frac{1}{2\xi_N} - \frac{1}{k}, \tag{10.35}$$

$$\Lambda_{\rm mol}^{\Theta,S} = 12.5\ \left({\rm Pr},{\rm Sc}\right)^{2/3} - 6, \tag{10.36}$$

$$h_\nu = 5\frac{\nu}{u_*}, \tag{10.37}$$

where the various parameters k, ξ_n, h_ν, Pr and Sc have the values defined in Holland and Jenkins (1999).

The sensible heat flux $\mathcal{F}_{\mathrm{H,ice}}$ into the ice in (10.22) is not known in "standalone" mode. This flux is generally small, with the dominant balance between latent heat released through melting and ocean sensible heat fluxes. The default assumption is that $\mathcal{F}_{\mathrm{H,ice}} = 0$, meaning that the ice is perfectly insulating. An alternative is to use the advection-diffusion method of Holland and Jenkins (1999), where the ice is assumed to advect vertically at the melt rate and its temperature is assumed to be at a reference surface temperature under melting conditions and at the freezing point for freezing conditions.

Name	Description
config_land_ice_flux_mode	Selects the mode in which land-ice fluxes are computed.
config_land_ice_flux_formulation	Name of land-ice flux formulation.
config_land_ice_flux_use-HollandJenkinsAdvDiff	If .true. then uses the advection/diffusion scheme of Holland and Jenkins (1999) for ice-shelf heat fluxes
config_land_ice_flux_-attenuation_coefficient	The vertical length scale of exponential decay for surface fluxes under land ice.
config_land_ice_flux_boundary-LayerThickness	The thickness of the sub-ice-shelf boundary layer, over which T and S will be averaged.
config_land_ice_flux_boundary-LayerNeighborWeight	The for horizontal neighbors used to horizontally smooth boundary layer T and S.
config_land_ice_flux_cp_ice	The specific heat capacity for ice.
config_land_ice_flux_rho_ice	The density of land ice.
config_land_ice_flux_explicit_-topDragCoeff	The top drag coefficient if config_use_implicit_top_drag_coeff is false.
config_land_ice_flux_-ISOMIP_gammaT	The constant heat transport velocity through the boundary layer under land ice used in the ISOMIP test cases.
config_land_ice_flux_rms_-tidal_velocity	Parameterization of tidal velocity used in computing the sub-ice-shelf friction velocity
config_land_ice_flux_jenkins_-heat_transfer_coefficient	constant nondimensional heat transfer coefficient across the ice-ocean boundary layer
config_land_ice_flux_jenkins_-salt_transfer_coefficient	constant nondimensional salt transfer coefficient across the ice-ocean boundary layer

10.26 advection

Three-dimensional tracer advection can be computed using 2^{nd}, 3^{rd} or 4^{th} flux reconstructions in the horizontal and vertical. In the horizontal, the high-order (i.e. 3^{rd} or 4^{th}) flux reconstruction is done following Skamarock and Gassmann (2011). Typically, the scheme is implemented with an upwind-bias (β=0.25 in (11) from Skamarock and Gassmann (2011)) to produce a 3^{rd}-order accurate reconstruction of tracer flux divergence on uniform hexagonal meshes. In the vertical, high-order estimates of tracer values at layer edges are reconstructed using a cubic spline. Monotone transport is guaranteed by blending these high-order flux approximations with the 1^{st}-order, upstream flux using the Zalesak (1979) flux-corrected transport scheme.

Name	Description
config_vert_advection_method	Method for advecting tracers, momentum, and thickness vertically.
config_vert_remap_order	Order of remapping method used for momentum and tracer advection
config_vert_remap_interval	Number of timesteps between each remapping. If 0, remapping occurs every timestep
config_vert_tracer_adv_flux_order	Order of polynomial used for tracer reconstruction at layer edges for flux-form method
config_horiz_tracer_adv_order	Order of polynomial used for tracer reconstruction at cell edges
config_coef_3rd_order	Reconstruction of 3rd-order reconstruction to blend with 4th-order reconstuction
config_flux_limiter	Slope limiter for the flux-form advection scheme.
config_remap_limiter	Slope limiter for the vertical remap advection scheme.
config_thickness_flux_type	If 'upwind', use upwind to evaluate the edge-value for layerThickness, i.e., layerThickEdgeFlux. The standard MPAS-O approach is 'centered'. For 'constant', uses constant thickness in time from restingThickness, for linear test problems. Note that these two flags are set together for linearized test cases: config_thickness_flux_type = 'constant' linearizes the thickness equation, and config_disable_vel_hadv = .true. linearizes the momentum equation if there is no assumed mean background velocity.

10.27 bottom_drag

The bottom drag is applied as a bottom boundary condition within the implicit solve of vertical mixing in the momentum equation (8.1), as

$$\lim_{z \to z_{bot}} \nu_v \frac{\partial u}{\partial z} = c_{drag} \, |u| \, u, \qquad (10.38)$$

where c_{drag} is the dimensionless bottom drag coefficient, and z_{bot} is the z-location of the ocean bottom.

Name	Description
config_bottom_drag_mode	Formulation of the bottom drag.
config_implicit_bottom_drag_type	Type of implicit bottom drag used.
config_implicit_constant_bottom_drag_coeff	Dimensionless bottom drag coefficient, c_{drag}.
config_use_implicit_top_drag	If true, implicit top drag is used on the momentum equation.
config_implicit_top_drag_coeff	Dimensionless top drag coefficient, c_{drag}.
config_loglaw_bottom_roughness	Bottom roughness, z_0, in meters.
config_loglaw_layer_depth_max	Maximum distance above the seafloor at which log-law drag is applied.
config_loglaw_bottom_drag_min	Dimensionless bottom drag minimum used in log-law parameterization.

Name	Description (Continued)
config_loglaw_bottom_drag_max	Dimensionless bottom drag maximum used in log-law parameterization.
config_explicit_bottom_drag_coeff	Dimensionless explicit bottom drag coefficient, c_{drag}.
config_use_topographic_wave_drag	If true, topographic wave drag is used on the momentum equation.
config_topographic_wave_drag_coeff	Dimensionless topographic wave drag coefficient, c_{topo}.
config_thickness_drag_type	The type of layerThickness averaging to use on the drag term. The standard MPAS-O approach is 'centered'.

10.28 Rayleigh_damping

A linear damping toward a state of rest is available with this namelist option. It is implemented with a term on the RHS of the momentum equation (8.1) of the form

$$\mathcal{F}^u = -c_R \mathbf{u}. \tag{10.39}$$

Name	Description
config_Rayleigh_damping_coeff	Inverse-time coefficient for the Rayleigh damping term, c_R, applied at every depth level.
config_Rayleigh_damping_depth_variable	If true applies r h^{-}1 instead of just r.
config_Rayleigh_bottom_friction	If true, Rayleigh friction is only applied to the bottom
config_Rayleigh_bottom_damping_coeff	Inverse-time coefficient for the Rayleigh damping term, c_R, only applied at the bottom.

10.29 vegetation_drag

Name	Description
config_use_vegetation_drag	Controls if vegetation_drag is used to compute Manning's roughness coefficient.
config_vegetation_drag_coefficient	Vegetation drag coefficient

10.30 wetting_drying

Name	Description
config_use_wetting_drying	If true, use wetting and drying algorithm to allow for dry cells to config_min_cell_height.
config_prevent_drying	If true, prevent cells from drying past config_min_cell_height.
config_drying_min_cell_height	Minimum allowable cell height under drying. Cell to be kept wet to at least this thickness. When ramp is applied this is the min edge height
config_zero_drying_velocity	If true, just zero out velocity that is contributing to drying for cell that is drying. This option can be used to estimate acceptable minimum thicknesses for a run.
config_zero_drying_velocity_ramp	If true, ramp velocities and tendencies to zero rather than applying a simple on/off switch.
config_zero_drying_velocity_ramp_hmin	Minimum layer thickness at which velocities and tendencies are ramped toward zero. Recommended value equal to config_drying_min_cell_height.
config_zero_drying_velocity_ramp_hmax	Maximum layer thickness at which velocities and tendencies are ramped toward zero. Recommended values between 2x and 10x config_drying_min_cell_height.
config_verify_not_dry	If true, verify that cells are at least config_min_cell_height thick.
config_drying_safety_height	Safety factor on minimum cell height to ensure the minimum height is not violated due to round-off.

10.31 ocean_constants

Name	Description
config_density0	Density used as a coefficient of the pressure gradient terms, ρ_0. This is a constant due to the Boussinesq approximation.

10.32 lts

Name	Description

Name	Description (Continued)
config_dt_scaling_LTS	The ratio between the dt on the coarse region and the dt on the fine region. Specifically, it is the positive integer M that defines dtFine for LTS, dtFine = dt / M.

10.33 pressure_gradient

There are several formulations for the pressure gradient.

config_pressure_gradient_type = 'pressure_and_zmid'

This is the standard setting, and may be used for most configurations. Here the pressure gradient terms in the momentum equation will have the form

$$-\frac{1}{\rho_0}\nabla_z p = -\frac{1}{\rho_0}\nabla_s p - \frac{\rho g}{\rho_0}\nabla_s z^{mid}. \tag{10.40}$$

where ∇_z is the horizonal gradient along a constant z surface and ∇_s is the gradient along a layer, which is a natural way to compute horizontal derivatives within the model. Note that if a layer's depth is constant in the horizontal, then the second term is zero.

config_pressure_gradient_type = 'Jacobian_from_density'

In this formulation the pressure gradient is rewritten in terms of a sea surface height gradient and the vertical integral of a Jacobian,

$$-\frac{1}{\rho_0}\nabla_z p = -\frac{\rho_s g}{\rho_0}\nabla_s \zeta - \frac{g}{\rho_0}\int_z^{\zeta} \mathcal{J}(\rho, z) ds, \tag{10.41}$$

$$\mathcal{J}(\rho, z) = \left.\frac{\partial \rho}{\partial x}\right|_s \frac{\partial z}{\partial s} - \frac{\partial \rho}{\partial s}\left.\frac{\partial z}{\partial x}\right|_s \tag{10.42}$$

where x is a general horizontal direction between two cell centers and s is the vertical coordinate reference, i.e. s is constant within a layer. There are many methods to discretize the Jacobian term. In the common level method, the density is linearly interpolated or extrapolated within each vertical column to a common level z_γ (see Figure 10.1):

$$-\int_z^{\zeta} \mathcal{J}(\rho, z) ds = \overline{\Delta z}\left(\rho^L - \rho^R\right) \tag{10.43}$$

$$\overline{\Delta z} = \frac{1}{2}\left(z_2 - z_1 + z_4 - z_3\right) \tag{10.44}$$

$$\rho^L = \frac{\rho_1\left(z_2 - z_\gamma\right) + \rho_2\left(z_\gamma - z_1\right)}{z_2 - z_1} \tag{10.45}$$

$$\rho^R = \frac{\rho_3\left(z_4 - z_\gamma\right) + \rho_4\left(z_\gamma - z_3\right)}{z_4 - z_3} \tag{10.46}$$

$$z_\gamma = \left(1 - \gamma\right) z_* + \gamma z_c \tag{10.47}$$

$$z_* = \frac{z_4 z_2 - z_3 z_1}{z_4 - z_3 + z_2 - z_1} \tag{10.48}$$

$$z_c = \frac{z_1 + z_2 + z_3 + z_4}{4} \tag{10.49}$$

where z_c is the depth for the weighted Jacobian method by Song (1998), and z_* is the depth for the standard Jacobian method, which is the depth of intersection of the diagonals of the trapezoidal element in Figure 10.1. Here γ weights the choice between these two methods for computing the common level z_γ. This formulation for the pressure gradient is described in detail in Shchepetkin and McWilliams (2003), Section 2, method 2, and Section 4. They found that a coefficient of $\gamma = 0.5$, which gives equal weights to the standard and weighted Jacobian methods, minimizes the errors in a seamount test problem.

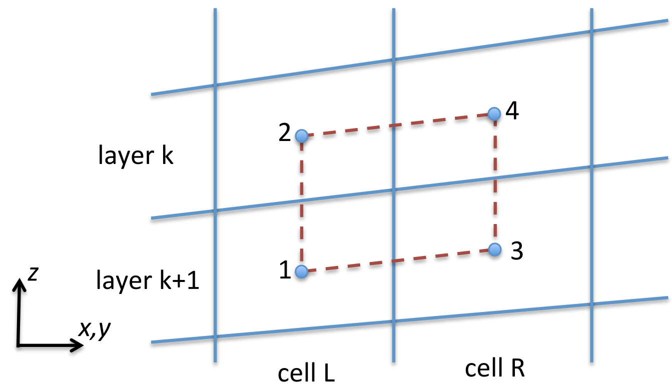


Figure 10.1: Vertical cross-section of ocean grid cells, showing index locations for common level method. The dots are placed at cell centers in the horizontal and layer mid-depth in the vertical.

config_pressure_gradient_type = 'Jacobian_from_TS'
This formulation is the same as the previous, except that the Jacobian is computed using a linear expansion in potential temperature and salinity. This option must be used when layers are extremely tilted, such as with sigma coordinates or under an ice shelf, in combination with a nonlinear equation of state.

$$\mathcal{J}(\rho, z) = -\alpha \mathcal{J}(\theta, z) + \beta \mathcal{J}(S, z), \tag{10.50}$$

where

$$\alpha(\theta, S, p) = -\left.\frac{\partial \rho}{\partial \theta}\right|_{S,p} \tag{10.51}$$

$$\beta(\theta, S, p) = \left.\frac{\partial \rho}{\partial S}\right|_{\theta,p} \tag{10.52}$$

are the thermal expansion and saline contraction coefficients, computed at a particular (θ, S, p) by the equation of state (Shchepetkin and McWilliams, 2003, eqn 7.16).

config_pressure_gradient_type = 'MontgomeryPotential'
For isopycnal vertical coordinates, the user may choose to use the Montgomery potential,

$$M = \frac{1}{\rho} p + gz \tag{10.53}$$

and replace the pressure terms above with

$$-\nabla_s M. \tag{10.54}$$

See Higdon (2005, section 2.1) for details on the derivation and computation of the Montgomery potential.

Name	Description
config_pressure_gradient_type	Form of pressure gradient terms in momentum equation. For most applications, the gradient of pressure and layer mid-depth are appropriate. For isopycnal coordinates, one may use the gradient of the Montgomery potential. The sea surface height gradient (ssh_gradient) option is for barotropic, depth-averaged pressure.
config_common_level_weight	The weight between standard Jacobian and weighted Jacobian, γ.
config_zonal_ssh_grad	The zonal (x) ssh gradient to be applied.
config_meridional_ssh_grad	The meridional (y) ssh gradient to be applied.

10.34 eos

Two forms of EOS are supported. The full EOS from Jackett and McDougall (1995) and a linear EOS. When using the full EOS, options are available to compute density after an adiabatic displacement of the particle to a different vertical level.

Name	Description
config_eos_type	Character string to choose EOS formulation
config_open_ocean_freezing_temperature_coeff_0	The freezing temperature at zero pressure and salinity in open ocean.
config_open_ocean_freezing_temperature_coeff_S	The coefficient for the term proportional to salinity in the freezing temperature in the open ocean.
config_open_ocean_freezing_temperature_coeff_p	The coefficient for the term proportional to the pressure in the freezing temperature in the open ocean.
config_open_ocean_freezing_temperature_coeff_pS	The coefficient for the term proportional to salinity times pressure in the freezing temperature in the open ocean.
config_open_ocean_freezing_temperature_coeff_mushy_az1_liq	The coefficient for the mushy sea-ice physics term az1_liq in the open ocean.
config_land_ice_cavity_freezing_temperature_coeff_0	The freezing temperature at zero pressure and salinity in land-ice cavities.
config_land_ice_cavity_freezing_temperature_coeff_S	The coefficient for the term proportional to salinity in the freezing temperature in land-ice cavities.
config_land_ice_cavity_freezing_temperature_coeff_p	The coefficient for the term proportional to the pressure in the freezing temperature in land-ice cavities.
config_land_ice_cavity_freezing_temperature_coeff_pS	The coefficient for the term proportional to salinity times pressure in the freezing temperature in land-ice cavities.

10.35 eos_linear

The linear equation of state (leos) is specified as follows:

$$\rho = \rho_{ref} - \alpha_{leos}(T - T_{ref}) + \beta_{leos}(S - S_{ref}) \tag{10.55}$$

Name	Description
config_eos_linear_alpha	Linear thermal expansion coefficient
config_eos_linear_beta	Linear haline contraction coefficient
config_eos_linear_Tref	Reference temperature
config_eos_linear_Sref	Reference salinity
config_eos_linear_densityref	Reference density, i.e. density when T=Tref and S=Sref

10.36 eos_wright

Name	Description
config_eos_wright_ref_pressure	Reference pressure for potential density

10.37 split_timestep_share

Name	Description
config_n_ts_iter	number of large iterations over stages 1-3; For the split_explicit_ab2 time integrator, this value only affects the first time step when it is not a restart run. For restart runs, this value has no effect on the split_explicit_ab2 time integrator.
config_n_bcl_iter_beg	number of iterations of stage 1 (baroclinic solve) on the first split timestepping iteration
config_n_bcl_iter_mid	number of iterations of stage 1 (baroclinic solve) on any split timestepping iterations between first and last
config_n_bcl_iter_end	number of iterations of stage 1 (baroclinic solve) on the last split timestepping iteration

10.38 split_explicit_ts

The split explicit time-stepping method solves the barotropic (vertically-integrated) velocities separately from the remaining baroclinic velocities. The time step for the barotropic solve is limited by fast surface gravity waves, and so is subcycled within a large timestep of the baroclinic velocity solve. This provides a 10 to 12-times speed-up over fourth-order Runge-Kutta time stepping.

A single large timestep in the split explicit algorithm may be summarized as

- Stage 1: solve for baroclinic velocity (3D)
- Stage 2: solve for barotropic velocity (2D) with explicit sub-cycling

- Stage 3: update thickness, tracers, density and pressure

The algorithm includes iterations within stage 1, within each subcycle of stage 2, and over the full three-stage process. Further details are provided in Ringler et al. (2013a, Appendix A.5)

Name	Description
config_btr_dt	Timestep to use for the barotropic mode in the split explicit time integrator
config_n_btr_cor_iter	number of iterations of the velocity corrector step in stage 2
config_vel_correction	If true, the velocity correction term is included in the horizontal advection of thickness and tracers
config_btr_subcycle_loop_factor	Barotropic subcycles proceed from t to $t + n\Delta t$, where n is this configuration option.
config_btr_gam1_velWt1	Weighting of velocity in the SSH predictor step in stage 2. When zero, previous subcycle time is used; when one, new subcycle time is used.
config_btr_gam2_SSHWt1	Weighting of SSH in the velocity corrector step in stage 2. When zero, previous subcycle time is used; when one, new subcycle time is used.
config_btr_gam3_velWt2	Weighting of velocity in the SSH corrector step in stage 2. When zero, previous subcycle time is used; when one, new subcycle time is used.
config_btr_solve_SSH2	If true, execute the SSH corrector step in stage 2

10.39 split_implicit_ts

Name	Description
config_btr_si_preconditioner	Type of preconditioner for the barotropic mode solver
config_btr_si_tolerance	Tolerance for the barotropic mode solver
config_n_btr_si_large_iter	number of large barotropic system iterations
config_btr_si_partition_-match_mode	If true, the split-implicit method uses the Jacobi preconditioner with the bit-for-bit all-reduce. This is less performant, so should only be used for testing.

10.40 ALE_vertical_grid

The MPAS-Ocean vertical grid is structured, and uses the arbitrary Lagrangian-Eulerian (ALE) method Petersen et al. (2014). ALE provides a great deal of freedom in the choice of vertical coordinate: when fully Eulerian, MPAS-Ocean is a z-level model with fixed thicknesses; when fully Lagrangian, there is no vertical transport between layers, and layers expand and contract like an isopycnal ocean model. In between are many additional options, such as z-star where layers expand in proportion to the sea surface height, and sigma, where coordinates are terrain-following.

MPAS-Ocean employs the continuity equation,

$$\frac{\partial h_k}{\partial t} + D_k + w_k^t - w_{k+1}^t = 0 \tag{10.56}$$

for the ALE formulation, where variables are defined in Table 10.41. The ALE algorithm is as follows:

1. ALE step: Compute desired thickness for the new time,

$$h_k^{ALE} = h_k^{rest} + h_k^{SSH} + h_k^{hf} + h_k^{min} \tag{10.57}$$

2. ALE step: Solve for vertical transport w^t from (10.56),

$$w_k^t = w_{k+1}^t - D_k - \frac{h_k^{ALE} - h_k^n}{\Delta t} \tag{10.58}$$

3. Solve for new thickness, h_k^{n+1}, using the continuity equation (10.56) within the time integration routine.

The redundancy in steps 2 and 3 are intentional, so that step 2 is isolated within the ALE subroutine, and step 3 is solved in the timestepping subroutine in the identical manner as the tracer equation (8.3).

The desired ALE thickness includes contributions from four terms (10.57):

1. **Resting thickness**, h^{rest}, is the layer thickness when the ocean is at rest, i.e. without SSH or internal perturbations. For z-type coordinates, the resting thickness is constant in each horizontal layer.

2. **SSH alteration**, h^{SSH}, alters layer thicknesses so that they change in proportion to the sea surface height (SSH),

$$h_k^{SSH} = \zeta \frac{W_k h_k^{rest}}{\sum_{k'=1}^{kmax} W_{k'} h_{k'}^{rest}} \tag{10.59}$$

   The weights W_k determine how SSH oscillations are distributed amongst the layers, as described in Table 10.40.

3. **High-frequency thickness**, h^{hf}, allows high-frequency thickness oscillations, such as internal gravity waves, to be treated in a Lagrangian manner. This is the "z-tilde" scheme of Leclair and Madec (2011) described in the next section.

4. **Minimum thickness alteration**, h^{min}, is the change in thickness required to enforce the minimum thickness in each cell. When a cell is too thin, h^{min} is positive, while nearby cells in the vertical incur a corresponding negative h^{min} to conserve volume in the column.

Of the four terms, resting thickness is always positive, while the others are small alterations about zero. Summing a column,

$$\begin{aligned} \sum_{k=1}^{kmax} h_k^{ALE} &= \sum_{k=1}^{kmax} h_k^{rest} + \sum_{k=1}^{kmax} h_k^{SSH} + \sum_{k=1}^{kmax} h_k^{hf} + \sum_{k=1}^{kmax} h_k^{min} \\ &= H + \zeta + 0 + 0. \end{aligned}$$

Thus the first two terms are always included so that the column thickness sums to $H + \zeta$, while the second two terms are optional and may be turned on with flags.

In order to assist users in choosing the correct settings, we provide a description of traditional vertical coordinate names in Table 10.40. The vertical coordinate type also depends upon the set-up of the layerThickness variable in the initial condition file. For all Z-type vertical coordinates, initial layer thicknesses are horizontally constant. For sigma coordinates, layers are terrain-following and all layers are employed. In this case, the user may still choose amongst the flags in SSH may be distributed through the column just like with z-type models in Table 10.40.

In order to run an isopycnal configuration, use config_vert_coord_movement='impermeable_interfaces' and set initial temperature and salinity to be constant within each layer. All vertical tracer diffusion must be off so that the density in each layer remains constant. For an isopycnal set-up, the equation of state is still called at each timestep, so a linear equation of state is recommended to avoid depth-dependancy of the density. The user may choose a Montgomery Potential (10.53) or standard pressure gradient (10.40); Montgomery Potential is a more common choice for isopycnal configurations, but both are tested and functional. MPAS-Ocean does not support massless layers at this time, so isopycnal vertical coordinates may only be used for idealized domains.

Table 10.40: Vertical coordinate settings for traditional names.

flag name	**Z-Level**	**Z-star**	**weighted Z-star**	**isopycnal**
config_vert_coord_movement	'fixed'	'uniform_stretching'	'user_specified'	'impermeable_interfaces'
weights	$W_k = \begin{cases} 1 & k=1 \\ 0 & k>1 \end{cases}$	$W_k = 1 \ \forall \ k$	input file	not applicable

Name	**Description**
config_vert_coord_movement	Determines the vertical coordinate movement type. 'uniform_stretching' distributes SSH perturbations through all vertical levels (z-star vertical coordinate); 'fixed' places them all in the top level (z-level vertical coordinate); 'user_specified' allows the input file to determine the distribution using the variable vertCoordMovementWeights (weighted z-star vertical coordinate); and 'impermeable_interfaces' makes the vertical transport between layers zero, i.e. $w^t = 0$ (idealized isopycnal).
config_ALE_thickness_proportionality	When config_vert_coord_movement='uniform_stretching' (z-star type coordinate), determines whether ALE layer thickness is proportional to the resting thickness times weights, or just the weights. The first is standard for global runs and is what is specified in Petersen et al 2015 eqns 4 and 6. The second is useful for wetting/drying test cases where resting thickness may be zero at the coastlines.
config_vert_taper_weight_depth_1	Vertical coordinate taper weight is one above this depth, linearly decreases to zero below.

Name	Description (Continued)
config_vert_taper_weight_depth_2	Vertical coordinate taper weight is zero below this depth, linearly increases to one above.
config_use_min_max_thickness	If true, a minimum and maximum thicknesses are enforced to prevent massless and very thick layers.
config_min_thickness	Minimum thickness allowed.
config_max_thickness_factor	Maximum thickness allowed. This is a factor times the resting thickness, i.e., maximum thickness = config_max_thickness_factor*h^{rest}.
config_dzdk_positive	Determines if the positive Z axis is aligned with the positive K index direction.

10.41 ALE_frequency_filtered_thickness

The high-frequency thickness alteration, h^{hf}, in (10.57) allows the thicknesses to oscillate so that high-frequency motions, such as internal gravity waves, are treated in a Lagrangian manner. Low-freqency motions, such as seasonal changes or slow motions of water masses, are treated in an Eulerian manner. This is the "z-tilde" scheme of Leclair and Madec (2011), which generally reduces spurious vertical mixing and preserves water mass properties. Simulations using z-tilde in MPAS-Ocean are shown in Petersen et al. (2014) for both idealized and real-world configurations.

Two additional prognostic equations are solved when config_use_freq_filtered_thickness is true,

$$\frac{\partial D_k^{lf}}{\partial t} = -\frac{2\pi}{\tau_{Dlf}}\left(D_k^{lf} - D_k'\right), \tag{10.60}$$

$$\frac{\partial h_k^{hf}}{\partial t} = -D_k^{hf} - \frac{2\pi}{\tau_{hhf}} h_k^{hf} + \nabla_h \cdot \left(\kappa_{hhf} \nabla_h h_k^{hf}\right) \tag{10.61}$$

where τ_{Dlf} is the filter timescale and other variables are defined in Table 10.41. This may be used in addition to any of the z-type or sigma-type vertical coordinates in Table 10.40. Some combination of thickness restoring and diffusion are recommended to avoid long-term drift of h^{hf} away from zero.

Name	Description
config_use_freq_filtered_thickness	If true, h^{hf} is included in the desired ALE thickness, and the prognostic equations for D^{lf} and h^{hf} are integrated in the code.
config_thickness_filter_timescale	Filter time scale for the low-frequency baroclinic divergence, τ_{Dlf}.
config_use_highFreqThick_restore	If true, the high frequency thickness prognostic equation (h^{hf}) includes term 2 on the RHS, the restoring term. The high frequency thickness is restored to zero with time scale τ_{hhf}.
config_highFreqThick_restore_-time	Restoring time scale for high-frequency thickness, τ_{hhf}.
config_use_highFreqThick_del2	If true, high frequency thickness prognostic equation (h^{hf}) includes term 3 on the RHS, the diffusion term.
config_highFreqThick_del2	Horizontal high frequency thickness diffusion, κ_{hhf}.

Table 10.41: Variables used in ALE equation sets. Column 3 shows the native horizontal grid location. A subscript k indicates indicates the layer index. The ∇ indicates a horizontal gradient within a single layer.

symbol	name	grid	notes
D	thickness-weighted divergence	cell	$D_k = \nabla \cdot (h_k \mathbf{u}_k)$
$\bar{D}$	barotropic divergence	cell	$\overline{D} = \sum_{k=1}^{kmax} D_k$
D'	baroclinic divergence	cell	$D'_k = D_k - \frac{h_k}{H}\bar{D}$
D^{lf}	low-frequency divergence	cell	see (10.60)
D^{hf}	high-frequency divergence	cell	$D^{hf}_k = D'_k - D^{lf}_k$
h	layer thickness	cell	
h^{ALE}	desired ALE thickness	cell	see (10.57)
h^{rest}	resting thickness	cell	
h^{SSH}	SSH thickness alteration	cell	see (10.59)
h^{hf}	high-freq. thickness alteration	cell	see (10.61)
h^{min}	minimum thickness alteration	cell	
H	total resting thickness	cell	$H = \sum_{k=1}^{kmax} h^{rest}_k$
$\mathbf{u}$	velocity	edge	
w^t	vertical transport	cell	top of layer in vertical
W	SSH thickness weights	cell	
τ_{Dlf}	frequency filter time scale	constant	
τ_{hhf}	restoring time scale for h^{hf}	constant	
κ_{hhf}	h^{hf} diffusion	constant	
ζ	sea surface height	cell	$\zeta = \sum_{k=1}^{kmax} h^{rest}_k - H$

10.42 debug

At run-time a user can enable debugging features within MPAS-Ocean. These features include disabling any tendencies to help determine why an issue might be happening. Debugging options also include various checks on certain fields, and the ability to prescribe both a thickness and velocity field at run-time which are constant throughout a simulation. All options that control these debugging features are specified within the debug namelist record.

Name	**Description**
config_check_zlevel_consistency	Enables a run-time check for consistency for a zlevel grid. Ensures relevant variables correctly define the bottom of the ocean.
config_check_ssh_consistency	Enables a run-time check to determine if the SSH is within 2m of the surface. See equation for ζ_i.
config_filter_btr_mode	Enables filtering of the barotropic mode.
config_prescribe_velocity	Enables a prescribed velocity field. This velocity field is read on input, and remains constant through a simulation.

Name	Description (Continued)
config_prescribe_thickness	Enables a prescribed thickness field. This thickness field is read on input, and remains constant through a simulation.
config_include_KE_vertex	If true, the kinetic energy in each cell is computed by blending cell-based and vertex-based values of kinetic energy.
config_check_tracer_monotonicity	Enables a change on tracer monotonicity at the end of the monotonic advection routine. Only used if config_flux_limiter is set to monotonic
config_compute_active_tracer_budgets	Enables the computation of tracer budget terms
config_disable_thick_all_tend	Disables all tendencies on the thickness field.
config_disable_thick_hadv	Disable tendencies on the thickness field from horizontal advection.
config_disable_thick_vadv	Disables tendencies on the thickness field from vertical advection.
config_disable_thick_sflux	Disables tendencies on the thickness field from surface fluxes.
config_disable_vel_all_tend	Disables all tendencies on the velocity field.
config_disable_vel_hadv	Disables tendencies on the velocity field from the horizontal momentum advection. Note that these two flags are set together for linearized test cases: config_thickness_flux_type = 'constant' linearizes the thickness equation, and config_disable_vel_hadv = .true. linearizes the momentum equation if there is no assumed mean background velocity.
config_disable_vel_coriolis	Disables tendencies on the velocity field from the Coriolis force.
config_disable_vel_pgrad	Disables tendencies on the velocity field from the horizontal pressure gradient.
config_disable_vel_hmix	Disables tendencies on the velocity field from horizontal mixing.
config_disable_vel_surface_stress	Disables tendencies on the velocity field from horizontal surface stresses (e.g. wind stress and top drag).
config_disable_vel_topographic_wave_drag	Disables tendencies on the velocity field from topographic wave drag
config_disable_vel_explicit_bottom_drag	Disables tendencies on the velocity field from explicit bottom drag
config_disable_vel_vmix	Disables tendencies on the velocity field from vertical mixing.
config_disable_vel_vadv	Disables tendencies on the velocity field from vertical advection.
config_disable_tr_all_tend	Disables all tendencies on tracer fields.
config_disable_tr_adv	Disables tendencies on tracer fields from advection, both horizontal and vertical.
config_disable_tr_hmix	Disables tendencies on tracer fields from horizontal mixing.
config_disable_tr_vmix	Disables tendencies on tracer fields from vertical mixing.
config_disable_tr_sflux	Disables tendencies on tracer fields from surface fluxes.
config_disable_tr_nonlocalflux	Disables tendencies on the tracer fields from CVMix/KPP nonlocal fluxes.
config_disable_redi_k33	If true, disables k33 portion of Redi neutral surface mixing.
config_read_nearest_restart	This flag is intended for the expert user. If false, forward model will error out if time given by config_start_time (or Restart_timestamp file if config_start_time='file') does not match any xtime strings in the restart file. If true, forward model will read in record with xtime nearest to config_start_time. Note that the restart file name is still given by config_start_time (or Restart_timestamp file), regardless of the state of this flag.

10.43 testing

Upon start-up, a series of tests may be run to confirm normal operations. Some tests may require specific domains in order to produce reasonable error statistics. Available tests include the following.

1. **Tensor test** verifies subroutines that compute the gradient of a vector and the divergence of a tensor. Differences between computed and analytic solutions are printed to the log file. All test functions beginning with 'sph' should be run on a spherical domain without land, and all others should be run on a plane periodic Cartesian domain. The test has the following workflow:
   - compute tangential velocity at each edge, v_e
   - compute strain rate tensor at a cell center, $\sigma_i = [\dot{\epsilon}]_i = \nabla \mathbf{u}$
   - interpolate strain rate tensor to edge, $[\dot{\epsilon}]_e$
   - compute divergence of tensor at cell center, $[\nabla \cdot \sigma]_i$
   - interpolate to edge, $[\nabla \cdot \sigma]_i$
   - compute normal and tangential components, $\mathbf{n}_e \cdot [\nabla \cdot \sigma]_e$
   - compute rms of difference between computed and analytic solution, when available for that test case.

Name	Description
config_conduct_tests	If true, run testing suite. This is the overarching control on the test suite. Individual flags must be set to true below to conduct each test.
config_test_tensors	If true, tensor operations are tested upon start-up.
config_tensor_test_function	Character string to choose tensor test fuction

10.44 transport_tests

Name	Description
config_transport_tests_vert_levels	Number of vertical levels in transport_tests. Typical value is 3 for 2D tests.
config_transport_tests_-temperature	Temperature of the ocean.
config_transport_tests_salinity	Salinity of the ocean.
config_transport_tests_flow_id	integer id of transport test.

10.45 init_mode_vert_levels

Name	Description
config_vert_levels	Number of vertical levels to create within the configuration.

10.46 manufactured_solution

Name	Description
config_use_manufactured_solution	This flag includes additional thickness and velocity tendencies necessary for testing with a manufactured solution.
config_manufactured_solution_wavelength_x	Wavelength of manufactured solution in the x direction
config_manufactured_solution_wavelength_y	Wavelength of manufactured solution in the y direction
config_manufactured_solution_amplitude	Amplitude of the manufactured solution

10.47 tracer_forcing_activeTracers

Name	Description
config_use_activeTracers	if true, the 'activeTracers' category is enabled for the run
config_use_activeTracers_surface_bulk_forcing	if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'activeTracers' category
config_use_activeTracers_surface_restoring	if true, surface restoring source is applied to tracers in 'activeTracers' category
config_use_activeTracers_interior_restoring	if true, interior restoring source is applied to tracers in 'activeTracers' category
config_use_activeTracers_exponential_decay	if true, exponential decay source is applied to tracers in 'activeTracers' category
config_use_activeTracers_idealAge_forcing	if true, idealAge forcing source is applied to tracers in 'activeTracers' category
config_use_activeTracers_ttd_forcing	if true, transit time distribution forcing source is applied to tracers in 'activeTracers' category

Name	Description (Continued)
config_use_surface_salinity_monthly_restoring	If true, apply monthly salinity restoring using a uniform piston velocity, defined at run-time by config_salinity_restoring_constant_piston_velocity. When false, salinity piston velocity is specified in the input file by salinityPistonVelocity, which may be spatially variable.
config_surface_salinity_monthly_restoring_compute_interval	Time interval to compute salinity restoring tendency.
config_salinity_restoring_constant_piston_velocity	When config_use_surface_salinity_monthly_restoring is true, this flag provides a run-time override of the salinityPistonVelocity variable in the input files. It is uniform over the domain, and controls the rate at which salinity is restored to salinitySurfaceRestoringValue
config_salinity_restoring_max_difference	Maximum allowable difference between surface salinity and climatology, in grams salt per kilogram seawater.
config_salinity_restoring_under_sea_ice	Flag to enable salinity restoring under sea ice. The default setting is false, where salinity restoring tapers from full restoring in the open ocean (iceFraction=0.0) to zero restoring below full sea ice coverage (iceFraction=1.0); below partial sea ice coverage, restoring is in proportion to iceFraction. If true, full salinity restoring is used everywhere, regardless of iceFraction value

10.48 tracer_forcing_debugTracers

Name	Description
config_use_debugTracers	if true, the 'debugTracers' category is enabled for the run
config_reset_debugTracers_near_surface	if true, the reset 'debugTracers' in the top n layers, where n is set by config_reset_debugTracers_top_nLayers
config_reset_debugTracers_top_nLayers	Integer specifying number of layers at top to reset 2 at end of each timestep. Default is 20, chosen to be near a typical mixed layer depth of 200m.
config_use_debugTracers_surface_bulk_forcing	if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'debugTracers' category
config_use_debugTracers_surface_restoring	if true, surface restoring source is applied to tracers in 'debugTracers' category
config_use_debugTracers_interior_restoring	if true, interior restoring source is applied to tracers in 'debugTracers' category
config_use_debugTracers_exponential_decay	if true, exponential decay source is applied to tracers in 'debugTracers' category
config_use_debugTracers_idealAge_forcing	if true, idealAge forcing source is applied to tracers in 'debugTracers' category
config_use_debugTracers_ttd_forcing	if true, transit time distribution forcing source is applied to tracers in 'debugTracers' category

10.49 tracer_forcing_ecosysTracers

Name	Description
config_use_ecosysTracers	if true, the 'ecosysGRP' category is enabled for the run
config_ecosys_atm_co2_option	sets how atm co2 is set
config_ecosys_atm_alt_co2_option	sets how alt atm co2 is set
config_ecosys_atm_alt_co2_use_eco	determines whether DIC_ALT is affected by ecosystem dynamics
config_ecosys_atm_co2_constant_value	value of atm co2 when config_ecosys_atm_co2_option = constant
config_use_ecosysTracers_surface_bulk_forcing	if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'ecosysGRP' category
config_use_ecosysTracers_surface_restoring	if true, surface restoring source is applied to tracers in 'ecosysGRP' category
config_use_ecosysTracers_interior_restoring	if true, interior restoring source is applied to tracers in 'ecosysGRP' category
config_use_ecosysTracers_exponential_decay	if true, exponential decay source is applied to tracers in 'ecosysGRP' category
config_use_ecosysTracers_idealAge_forcing	if true, idealAge forcing source is applied to tracers in 'ecosysGRP' category
config_use_ecosysTracers_ttd_forcing	if true, transit time distribution forcing source is applied to tracers in 'ecosysGRP' category
config_use_ecosysTracers_surface_value	if true, surface value is computed for 'ecosysGRP' category
config_use_ecosysTracers_river_inputs_from_coupler	if true, get river nutrient inputs from the coupler, else from ecosys monthly forcing file
config_use_ecosysTracers_sea_ice_coupling	if true, couple ecosys fields with sea ice
config_ecosysTracers_diagnostic_fields_level1	if true, make variables in ecosysDiagFieldsLevel1 available for output
config_ecosysTracers_diagnostic_fields_level2	if true, make variables in ecosysDiagFieldsLevel2 available for output
config_ecosysTracers_diagnostic_fields_level3	if true, make variables in ecosysDiagFieldsLevel3 available for output
config_ecosysTracers_diagnostic_fields_level4	if true, make variables in ecosysDiagFieldsLevel4 available for output
config_ecosysTracers_diagnostic_fields_level5	if true, make variables in ecosysDiagFieldsLevel5 available for output

10.50 tracer_forcing_DMSTracers

Name	Description
config_use_DMSTracers	if true, the 'DMSGRP' category is enabled for the run
config_use_DMSTracers_surface_bulk_forcing	if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'DMSGRP' category
config_use_DMSTracers_surface_restoring	if true, surface restoring source is applied to tracers in 'DMSGRP' category
config_use_DMSTracers_interior_restoring	if true, interior restoring source is applied to tracers in 'DMSGRP' category
config_use_DMSTracers_exponential_decay	if true, exponential decay source is applied to tracers in 'DMSGRP' category
config_use_DMSTracers_idealAge_forcing	if true, idealAge forcing source is applied to tracers in 'DMSGRP' category
config_use_DMSTracers_ttd_forcing	if true, transit time distribution forcing source is applied to tracers in 'DMSGRP' category
config_use_DMSTracers_surface_value	if true, surface value is computed for 'DMSGRP' category
config_use_DMSTracers_sea_ice_coupling	if true, couple DMS fields with sea ice

10.51 tracer_forcing_MacroMoleculesTracers

Name	Description
config_use_MacroMoleculesTracers	if true, the 'MacroMoleculesGRP' category is enabled for the run
config_use_MacroMoleculesTracers_surface_bulk_forcing	if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'MacroMoleculesGRP' category
config_use_MacroMoleculesTracers_surface_restoring	if true, surface restoring source is applied to tracers in 'MacroMoleculesGRP' category
config_use_MacroMoleculesTracers_interior_restoring	if true, interior restoring source is applied to tracers in 'MacroMoleculesGRP' category
config_use_MacroMoleculesTracers_exponential_decay	if true, exponential decay source is applied to tracers in 'MacroMoleculesGRP' category
config_use_MacroMoleculesTracers_idealAge_forcing	if true, idealAge forcing source is applied to tracers in 'MacroMoleculesGRP' category
config_use_MacroMoleculesTracers_ttd_forcing	if true, transit time distribution forcing source is applied to tracers in 'MacroMoleculesGRP' category
config_use_MacroMoleculesTracers_surface_value	if true, surface value is computed for 'MacroMoleculesGRP' category
config_use_MacroMoleculesTracers_sea_ice_coupling	if true, couple MacroMolecules fields with sea ice

10.52 tracer_forcing_idealAgeTracers

Name	Description
config_use_idealAgeTracers	if true, the 'idealAgeTracers' category is enabled for the run
config_use_idealAgeTracers_-surface_bulk_forcing	if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'idealAgeTracers' category
config_use_idealAgeTracers_-surface_restoring	if true, surface restoring source is applied to tracers in 'idealAgeTracers' category
config_use_idealAgeTracers_-interior_restoring	if true, interior restoring source is applied to tracers in 'idealAgeTracers' category
config_use_idealAgeTracers_-exponential_decay	if true, exponential decay source is applied to tracers in 'idealAgeTracers' category
config_use_idealAgeTracers_-idealAge_forcing	if true, idealAge forcing source is applied to tracers in 'idealAgeTracers' category
config_use_idealAgeTracers_-ttd_forcing	if true, transit time distribution forcing source is applied to tracers in 'idealAgeTracers' category

10.53 tracer_forcing_CFCTracers

Name	Description
config_use_CFCTracers	if true, the 'CFCGRP' category is enabled for the run
config_use_CFCTracers_-surface_bulk_forcing	if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'CFCGRP' category
config_use_CFCTracers_-surface_restoring	if true, surface restoring source is applied to tracers in 'CFCGRP' category
config_use_CFCTracers_-interior_restoring	if true, interior restoring source is applied to tracers in 'CFCGRP' category
config_use_CFCTracers_-exponential_decay	if true, exponential decay source is applied to tracers in 'CFCGRP' category
config_use_CFCTracers_ideal-Age_forcing	if true, idealAge forcing source is applied to tracers in 'CFCGRP' category
config_use_CFCTracers_ttd_-forcing	if true, transit time distribution forcing source is applied to tracers in 'CFCGRP' category
config_use_CFC11	if true, CFC11 is enabled for the run
config_use_CFC12	if true, CFC12 is enabled for the run

10.54 AM_globalStats

Name	Description
config_AM_globalStats_enable	If true, ocean analysis member global_stats is called.
config_AM_globalStats_-compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_globalStats_-compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_globalStats_write_-on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_globalStats_text_file	If true, print global stats to a text file as well as streams.
config_AM_globalStats_directory	subdirectory to write eddy census text files
config_AM_globalStats_-output_stream	Name of the stream that the globalStats analysis member should get information from.

10.55 AM_surfaceAreaWeightedAverages

This analysis members computes areal-averages, areal-minimum and areal-maximum of two dimensional fields that are defined primarily at the surface. Let R represent some subset to ocean surface cells and f be some field defined on these ocean cells. Then the total area of region R is given as

$$sumArea(R) = \sum_{i \in R} areaCell(i) \tag{10.62}$$

where i denotes any ocean surface cell and $areaCell(i)$ is the area of that cell. For any function f defined at ocean surface cells we have

$$avg(f(R)) = \frac{\sum_{i \in R} f(i) * areaCell(i)}{sumArea(R)} \tag{10.63}$$

In addition to computing averages, the analysis member also computes the minimum and maximum values of f with region R as

$$minval(f(R)) = min(f(i)) \; \forall i \in R \tag{10.64}$$

$$maxval(f(R)) = max(f(i)) \; \forall i \in R \tag{10.65}$$

To be added to AM before release 5.0 .....
The region R is defined using surfaceRegionMask that have values of 0 for cells not in region R and a values of 1 for cells within region R. As a result, the analysis member operates on an arbitrary number regions.

Name	Description
config_AM_surfaceArea-WeightedAverages_enable	If true, ocean analysis member surface_area_weighted_average is called.
config_AM_surfaceArea-WeightedAverages_compute_-on_startup	Logical flag determining if an analysis member computation occurs on start-up.

Name	Description (Continued)
config_AM_surfaceAreaWeightedAverages_write_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_surfaceAreaWeightedAverages_compute_interval	Time interval the determines how frequently the surface area weighted averages analysis member should be computed.
config_AM_surfaceAreaWeightedAverages_output_stream	Name of the stream the surface area weighted averages analysis member should be tied to.

10.56 AM_waterMassCensus

Name	Description
config_AM_waterMassCensus_enable	If true, ocean analysis member water mass census is called.
config_AM_waterMassCensus_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_waterMassCensus_output_stream	Name of the stream the water mass census analysis member should be tied to.
config_AM_waterMassCensus_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_waterMassCensus_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_waterMassCensus_minTemperature	minimum temperature used in water mass census
config_AM_waterMassCensus_maxTemperature	maximum temperature used in water mass census
config_AM_waterMassCensus_minSalinity	minimum salinity used in water mass census
config_AM_waterMassCensus_maxSalinity	maximum salinity used in water mass census
config_AM_waterMassCensus_compute_predefined_regions	Computes predefined regions. (Does not require a region mask file.)
config_AM_waterMassCensus_region_group	The name of the region group, for which the WMC should be computed in addition to the existing WMC.

10.57 AM_layerVolumeWeightedAverage

This analysis members computes areal-averages, areal-minimum and areal-maximum of three dimensional fields at each vertical level. Except for the loop over the vertical index k, this analysis member is self-similar to that described in Section **??**. As the vertical index increases, the area associated with the region might reduce. Let R contain the cells within some subset to ocean surface cells and $R(k)$ to contain the ocean cells that are contained in R at vertical index k. Then the total volume of region $R(k)$ is given as

$$sumVolume(R(k)) = \sum_{i \in R \ \& \ k \leq maxLevelCell(i)} layerThickness(k,i) * areaCell(i) \tag{10.66}$$

where i denotes any ocean surface cell, $areaCell(i)$ is the area of that cell and $maxLevelCell(i)$ is the vertical depth of cell i measured in index space. The variable $layerThickness$ represent the vertical depth of cell i at depth k.

For any function $g(k,i)$ representing a 3D field (e.g. temperature) we have

$$avg(g(R(k))) = \sum_{i \in R \ \& \ k \leq maxLevelCell(i)} g(k,i)*layerThickness(i,k)*areaCell(i)/sumVolume(R(k)) \tag{10.67}$$

In addition to computing averages for each region at each depth index, the analysis member also computes the minimum and maximum values of g with region $R(k)$ as

$$minval(g(R)) = min(g(i)) \ \forall i \in R \ \& \ k \leq maxLevelCell(i) \tag{10.68}$$

$$maxval(g(R)) = max(g(i)) \ \forall i \in R \ \& \ k \leq maxLevelCell(i) \tag{10.69}$$

To be added to AM before release 5.0 .....
The region R is defined using surfaceRegionMask that has values of 0 for cells not in region R and a values of 1 for cells within region R. As a result, the analysis member operates on an arbitrary number regions.

Name	Description
config_AM_layerVolumeWeightedAverage_enable	If true, ocean analysis member layer-volume weighted is called.
config_AM_layerVolumeWeightedAverage_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_layerVolumeWeightedAverage_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_layerVolumeWeightedAverage_write_on_startup	Logical flag determining if an analysis member output write occurs on start-up.
config_AM_layerVolumeWeightedAverage_output_stream	Name of the string that should be tied to the layer volume weighted average analysis member

10.58 AM_zonalMean

Name	Description
config_AM_zonalMean_enable	If true, ocean analysis member zonal_mean is called.
config_AM_zonalMean_-compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_zonalMean_write_-on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_zonalMean_-compute_interval	Interval that determines frequency of computation for the zonal mean analysis member.
config_AM_zonalMean_-output_stream	Name of stream the zonal mean analysis member should be tied to.
config_AM_zonalMean_num_bins	Number of bins used for zonal mean. Must be less than or equal to the dimension nZonalMeanBins (set in Registry).
config_AM_zonalMean_min_bin	minimum bin boundary value. If set to -1.0e34, the minimum value in the domain is found.
config_AM_zonalMean_max_bin	maximum bin boundary value. If set to -1.0e34, the maximum value in the domain is found.

10.59 AM_okuboWeiss

Name	Description
config_AM_okuboWeiss_enable	If true, ocean analysis member okubo_weiss is called.
config_AM_okuboWeiss_-compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_okuboWeiss_write_-on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_okuboWeiss_-compute_interval	Time stamp for frequency of computation of the okubo weiss analysis member.
config_AM_okuboWeiss_-output_stream	Name of stream the okubo weiss analysis member should be tied to
config_AM_okuboWeiss_directory	subdirectory to write eddy census text files
config_AM_okuboWeiss_-threshold_value	Threshold below which normalized OW values are counted as eddies, typically -0.2
config_AM_okuboWeiss_-normalization	Parameter by which the OW values are normalized, typically the standard deviation of OW
config_AM_okuboWeiss_-lambda2_normalization	Parameter by which the lambda_2 values are normalized, typically the standard deviation of lambda_2
config_AM_okuboWeiss_use_-lat_lon_coords	If true, latitude/longitude coordinates are output for eddy census. Otherwise x/y/z coordinates are used. Ignored if not on a sphere.
config_AM_okuboWeiss_-compute_eddy_census	If true, connected components of thresholded OW values are computed, and used to compute an eddy census.
config_AM_okuboWeiss_eddy_-min_cells	Minimum number of cells that a connected component must contain to be considered an eddy. This needs to be scaled based on expected eddy size given a grid resolution.

10.60 AM_meridionalHeatTransport

This analysis members computes the meridional heat transport (MHT), i.e. the northward flow of thermal energy across a given latitude line. The MHT in a single layer, using continuous variables, is

$$MHT(\phi, z) \quad = \quad \rho_0 c_p \int_{\phi'=-90^o}^{\phi} A\nabla \cdot (huT) d\phi' \tag{10.70}$$

where ϕ is latitude, h is layer thickness, u is velocity, T is temperature, ρ_0 is the reference density, and c_p is the specific heat of ocean water, and$A$ is the surface area. MHT has units of watts in these equations, and model output is in petawatts.

Now discretize into cells with index i, edges with index e, and vertical index k. Separate the earth into zonal stripes, Ω_j, extending from latitudinal boundaries ϕ_j to ϕ_{j+1}, where $\phi_1, \phi_2, \ldots \phi_n$ are monotonically increasing from south to north. The MHT at ϕ_n in layer k is

$$MHT_{n,k} \quad = \quad \rho_0 c_p \sum_{j=1}^{n} \sum_{i \in \Omega_j} A_i \left[\nabla \cdot \left(\overline{h}_{e,k} u_{e,k} \overline{T}_{e,k} \right) \right]_{i,k} \tag{10.71}$$

where the overbar indicates an averaging from cell centers to edge. For MHT over the full depth, just sum in k,

$$MHT_n \quad = \quad \rho_0 c_p \sum_{k=1}^{kMax} \sum_{j=1}^{n} \sum_{i \in \Omega_j} A_i \left[\nabla \cdot \left(\overline{h}_{e,k} u_{e,k} \overline{T}_{e,k} \right) \right]_{i,k} \tag{10.72}$$

Name	Description
config_AM_meridionalHeat-Transport_enable	If true, ocean analysis member meridional_heat_transport is called.
config_AM_meridionalHeat-Transport_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_meridionalHeat-Transport_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_meridionalHeat-Transport_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_meridionalHeat-Transport_output_stream	Name of the stream that the meridional heat transport analysis member should be tied to.
config_AM_meridionalHeat-Transport_num_bins	Number of bins used for meridional heat transport.
config_AM_meridionalHeat-Transport_min_bin	minimum bin boundary value. If set to -1.0e34, the minimum value in the domain is found.
config_AM_meridionalHeat-Transport_max_bin	maximum bin boundary value. If set to -1.0e34, the maximum value in the domain is found.
config_AM_meridionalHeat-Transport_region_group	The name of the region group, for which the MHT should be computed in addition to the global MHT.

10.61 AM_testComputeInterval

Name	Description
config_AM_testCompute-Interval_enable	If true, ocean analysis member test_compute_interval is called.
config_AM_testCompute-Interval_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_testCompute-Interval_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_testCompute-Interval_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.
config_AM_testCompute-Interval_output_stream	Name of the stream that should be tied to the test_compute_interval analysis member

10.62 AM_highFrequencyOutput

Name	Description
config_AM_highFrequency-Output_enable	If true, ocean analysis member highFrequencyOutput is called.
config_AM_highFrequency-Output_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_highFrequency-Output_output_stream	Name of the stream that the highFrequencyOutput analysis member should be tied to.
config_AM_highFrequency-Output_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_highFrequency-Output_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.

10.63 AM_timeFilters

The time filter analysis member can partition a given field into high and low pass components via a recursive filter design. The simplest use case is to directly calculate the mean and eddy velocities in-situ within a simulation.

This analysis member implements a simple recursive filtering approach based on an impulse model. Let V be the velocity signal and V_L the low-pass filtered velocity, corresponding to some timescale τ such that $\tau > \Delta t$, the time step. Thus, this process can be represented by a simple ODE for the impulse $I = V - V_L$:

$$\frac{dV_L}{dt} = \frac{I}{\tau} = \frac{V - V_L}{\tau}, \tag{10.73}$$

where the initial condition is that $V_L(t = t_0) = V(t = t_0)$. Discretizing in terms of the current time step level n and previous time step level $n-1$ yields

$$\frac{V_L^n - V_L^{n-1}}{\Delta t} = \frac{V^n - V_L^n}{\tau}, \tag{10.74}$$

with rearrangement yielding

$$V_L^n = V_L^{n-1}\left(1 - \frac{\Delta t}{\tau}\right) + \frac{\Delta t}{\tau} V^n. \tag{10.75}$$

In the limit that $\tau \to \Delta t$, $V_L \to V$ and for $\tau \to \infty$, $V_L \to V(t = t_0)$. Additional filtering techniques using V^{n-1} could also be used but are avoided to maintain conceptual simplicity. The high-pass filtered value V_H is then given by

$$V_H^n = V^n - V_L^n. \tag{10.76}$$

The filter is implemented within the time filter analysis member via Equations (10.75) and (10.76). V_L terms will be designated via the variable prefix `LowPass` and V_H by `HighPass`. This requires initialization of the following fields in the analysis member registry:

- normalVelocityLowPass
- normalVelocityHighPass

These fields can then be utilized by other analysis members, e.g., LIGHT for high-performance particle tracking.

The analysis member is easily extensible to any field because the filter is an element-wise operation.

Name	**Description**
config_AM_timeFilters_enable	If true, ocean analysis member timeFilters is called.
config_AM_timeFilters_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_timeFilters_output_stream	Name of the stream that the timeFilters analysis member should be tied to.
config_AM_timeFilters_restart_stream	Name of the stream that the timeFilters analysis member should use to perform restarts.
config_AM_timeFilters_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_timeFilters_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.
config_AM_timeFilters_initialize_filters	Logical flag determining if filters should be initialized on start-up.
config_AM_timeFilters_tau	Cutoff time scale τ for high and low pass filtering (default is 90 days).
config_AM_timeFilters_compute_cell_centered_values	Logical flag determining if cell centered values should be computed.

10.64 AM_lagrPartTrack

The Lagrangian In-situ Global High-performance particle Tracking (LIGHT) (Wolfram et al., 2015) analysis member computes particle trajectories on-line, providing a Lagrangian description of the flow that is comparable to the flow computed with the Eulerian dynamic core. Interpolation schemes and time integration used to advect particles are described in Wolfram et al. (2015).

10.64.1 Different particle transport modes

There are several different particle modes which are specified by assigning values to the **verticalTreatment** particle variable. These modes are used to determine the method used to assign the horizontal velocity for each particle's location, relative to its horizontal location and associated cell:

1. **indexLevel** – specifies that particles are constrained to a specified **indexLevel** variable.
2. **fixedZLevel** – specifies that particles are constrained to a specified z-level (**fixedZLevel**).
3. **passiveFloat** – particles are advected by the full three-dimensional velocity field and are passive floats.
4. **buoyancySurface** – particles are constrained to buoyancy surfaces designated by the **buoyancyParticle** potential density surface. For example, this approach was used in Wolfram et al. (2015).

The horizontal interpolation scheme is specified by the **vertexReconstMethod** and **horizontalTreatment** variables. Currently all horizontal interpolations are performed by interpolating cell-centered Radial Basis Function (RBF) values onto cell vertices via linear interpolation (specified by **vertexReconstMethod**) with Wachspress interpolation used to interpolate vertex-located velocities onto arbitrary points within each cell (specified by the **horizontalTreatment** variable).

10.64.2 Parallel decomposition

Particle transport is dependent upon *a priori* knowledge of the block decomposition used in the host Eulerian dynamic core and this information is specified via the **currentBlock** variable which is used at run-time to determine the destination block for particle computations. Input/output blocks are automatically assigned based on a uniform decomposition of particle across blocks. The number of times each particle is transferred across computational blocks is stored via the **transfered** variable.

10.64.3 Particle time stepping

Particle time stepping is accomplished via sub-steps in between Eulerian dynamic core time steps and is specified by **dtParticle**.

10.64.4 Storage of buoyancy-surface velocities and depth

LIGHT can also interpolate the Eulerian dynamical core velocity field onto buoyancy surfaces. The number of buoyancy surfaces is specified by the dimension **nBuoyancySurfaces** and the values of the buoyancy surfaces designated by **buoyancySurfaceValues**. Velocities are returned via **buoyancySurfaceVelocityZonal** and **buoyancySurfaceVelocityMeridional** and buoyancy surface depth in **buoyancySurfaceDepth**.

10.64.5 Pre-filtering of the Eulerian velocity field

Unstructured second-order Shapiro filters are used to low-pass filter the Eulerian velocity fields (Wolfram et al., 2015; Wolfram and Fringer, 2013). The number of filter passes, which determines the attenuation of high-frequencies, is specified via the **config_lagrangian_particle_tracking_filter_number** namelist configuration option. Filtered velocities are stored in the **filteredVelocityU** and **filteredVelocityV** variables.

10.64.6 Computation of Lagrangian mean, eddy velocities, and integral timescales

LIGHT also provides the capability to store summed velocities and velocity products, useful in determining mean velocities, eddy velocities, and Lagrangian timescales: **sumU**, **sumV**, **sumUU**, **sumUV**, and **sumVV** corresponding to the time-integrated u, v, uu, uv, and vv velocity components.

Name	Description
config_AM_lagrPartTrack_enable	If true, ocean analysis member lagrPartTrack is called.
config_AM_lagrPartTrack_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_lagrPartTrack_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_lagrPartTrack_output_stream	Name of the stream that the lagrPartTrack analysis member should be tied to.
config_AM_lagrPartTrack_restart_stream	Name of the stream that the lagrPartTrack analysis member should use to perform restarts.
config_AM_lagrPartTrack_input_stream	Name of the stream that the lagrPartTrack analysis member should read only in a non-restart run.
config_AM_lagrPartTrack_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.
config_AM_lagrPartTrack_filter_number	Number of times to apply filtering operation.
config_AM_lagrPartTrack_timeIntegration	type of temporal interpolation with possible_values='EE(1), RK2(2), RK4(4)' as ENUMs
config_AM_lagrPartTrack_reset_criteria	Specify whether particles should not be reset ('none'), be reset on a timer for each particle ('particle_time'), be reset on config_AM_lagrPartTrack_reset_time_globally value ('global_time'), be reset based on regions ('region'), or be reset for all conditions ('all').
config_AM_lagrPartTrack_reset_global_timestamp	Specify reset global timestamp interval.
config_AM_lagrPartTrack_region_stream	Name of the stream that has region arrays resetOutsideRegionMaskValue1 and resetInsideRegionMaskValue1 for region-based particle resets.
config_AM_lagrPartTrack_reset_if_outside_region	Specify whether particles should be reset when they leave the resetOutsideRegionMaskValue1 mask.
config_AM_lagrPartTrack_reset_if_inside_region	Specify whether particles should be reset when they enter the resetInsideRegionMaskValue1 mask.
config_AM_lagrPartTrack_sample_horizontal_interp	If true, particles horizontally interpolate sample quantities.

Name	Description (Continued)
config_AM_lagrPartTrack_sample_temperature	If true, particles sample temperature.
config_AM_lagrPartTrack_sample_salinity	If true, particles sample salinity.
config_AM_lagrPartTrack_sample_DIC	If true, particles sample DIC.
config_AM_lagrPartTrack_sample_ALK	If true, particles sample ALK.
config_AM_lagrPartTrack_sample_PO4	If true, particles sample PO4.
config_AM_lagrPartTrack_sample_NO3	If true, particles sample NO3.
config_AM_lagrPartTrack_sample_SiO3	If true, particles sample SiO3.
config_AM_lagrPartTrack_sample_NH4	If true, particles sample NH4.
config_AM_lagrPartTrack_sample_Fe	If true, particles sample Fe.
config_AM_lagrPartTrack_sample_O2	If true, particles sample O2.

10.65 AM_eliassenPalm

This analysis member computes the Eliassen-Palm flux tensor and related quantities (Young, 2012; Maddison and Marshall, 2013), which represents forces from eddy-mean flow interactions in the thickness-weighted averaged (TWA) Boussinesq momentum equations. The notation used here is based on that used in Young (2012) and Saenz et al. (2015). The Eliassen-Palm flux tensor (EPFT), $\mathbf{E}$, is given by

$$\mathbf{E} = \begin{pmatrix} \widehat{u''u''} + \frac{1}{2\overline{\sigma}}\overline{\zeta'^2} & \widehat{u''v''} & 0 \\ \widehat{u''v''} & \widehat{v''v''} + \frac{1}{2\overline{\sigma}}\overline{\zeta'^2} & 0 \\ \widehat{u''\varpi''} + \frac{1}{\overline{\sigma}}\overline{\zeta' m'_{\tilde{x}}} & \widehat{v''\varpi''} + \frac{1}{\overline{\sigma}}\overline{\zeta' m'_{\tilde{y}}} & 0 \end{pmatrix}. \quad (10.77)$$

In the current implementation, $\widehat{u''\varpi''}$ and $\widehat{v''\varpi''}$ are assumed to be zero. Ertel potential vorticity associated with the residual mean flow is defined as

$$\Pi^\sharp = \frac{f + \frac{\partial \hat{v}}{\partial \tilde{x}} - \frac{\partial \hat{u}}{\partial \tilde{y}}}{\overline{\sigma}}. \quad (10.78)$$

The time tendency of Ertel potential vorticity caused by eddy-mean flow interactions, $\nabla \cdot \mathbf{F}^\sharp$, with the Ertel potential vorticity flux defines as

$$\mathbf{F}^\sharp = \frac{\nabla \cdot \mathbf{E}^v}{\overline{\sigma}}\overline{\mathbf{e}}_\mathbf{1} - \frac{\nabla \cdot \mathbf{E}^u}{\overline{\sigma}}\overline{\mathbf{e}}_\mathbf{2}, \quad (10.79)$$

where $\mathbf{E}^u$ and $\mathbf{E}^v$ are the first and second columns of the EPFT, respectively.

Calculations are performed in buoyancy coordinates by interpolating the state to a reference vertical grid `potentialDensityMidRef` with `nBuoyancyLayers` layers uniformly distributed between `rhomin` and `rhomax`. The user must set `rhomin` and `rhomax` so that potential density in the model run is within rhomin and rhomax. A running time average of relevant quantities is updated every compute_interval.

Diagnosed quantities include, among others:

- the reference potential density used as vertical coordinate in the calculations, potentialDensityMidRef, potentialDensityTopRef;
- ensemble averages sigmaEA, the montgomery potential montgPotBuoyCoorEA and its gradients montgPotGradZonalEA and montgPotGradMeridEA;
- TWA velocities uTWA and vTWA and their vertical gradients duTWAdz and duTWAdz;
- the EPFT EPFT and, for ease of manipulation in output files, quantities required to reconstruct terms of the EPFT, namely uuTWACorr, vvTWACorr, uvTWACorr, epeTWA, eddyFormDragZonal, eddyFormDragMerid;
- the forces on the TWA momentum equations, given by the divergence of the EPFT, divEPFT, and its components divEPFTshear1, divEPFTshear2, divEPFTdrag1, divEPFTdrag2;
- Ertel potential vorticity flux, ErtelPVFlux;
- the Ertel potential vorticity tendency by the eddy-mean flow interactions, ErtelPVTendency;
- and the Ertel potential vorticity ErtelPV and its divergence ErtelPVGradZonal, ErtelPVGradMerid.

Name	**Description**
config_AM_eliassenPalm_enable	If true, ocean analysis member eliassenPalm is called.
config_AM_eliassenPalm_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_eliassenPalm_output_stream	Name of the stream that the eliassenPalm analysis member should be tied to.
config_AM_eliassenPalm_restart_stream	Name of the stream that the eliassenPalm analysis member will use to performing restarts.
config_AM_eliassenPalm_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_eliassenPalm_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.
config_AM_eliassenPalm_debug	If true, debugging code is turned on.
config_AM_eliassenPalm_nBuoyancyLayers	Number of reference buoyancy layers.
config_AM_eliassenPalm_rhomin_buoycoor	Minimum density used in defining the first buoyancy coordinate layer
config_AM_eliassenPalm_rhomax_buoycoor	Maximum density used in defining the last buoyancy coordinate layer

10.66 AM_mixedLayerDepths

Name	Description
config_AM_mixedLayerDepths_enable	If true, ocean analysis member mixedLayerDepth is called.
config_AM_mixedLayerDepths_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_mixedLayerDepths_output_stream	Name of the stream that the temPlate analysis member should be tied to.
config_AM_mixedLayerDepths_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.
config_AM_mixedLayerDepths_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up
config_AM_mixedLayerDepths_Tthreshold	Logical flag that determines if MLDs are calculated using a critical temperature threshold
config_AM_mixedLayerDepths_crit_temp_threshold	temperature change relative to surface for threshold method
config_AM_mixedLayerDepths_reference_pressure	reference pressure for threshold computation
config_AM_mixedLayerDepths_Tgradient	Logical flag controlling whether or not to compute MLDs via the temperature gradient
config_AM_mixedLayerDepths_Dgradient	Logical flag controlling whether or not to compute MLDs via the density gradient
config_AM_mixedLayerDepths_temp_gradient_threshold	temp gradient crit value, if not exceeded max gradient used
config_AM_mixedLayerDepths_den_gradient_threshold	potential density gradient crit value. If not exceeded max gradient used
config_AM_mixedLayerDepths_interp_method	flag specifying which interpolation method to use in computations

10.67 AM_regionalStatsDaily

Name	Description
config_AM_regionalStatsDaily_enable	If true, ocean analysis member regional stats is called.
config_AM_regionalStatsDaily_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_regionalStatsDaily_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_regionalStatsDaily_compute_interval	Interval that determines frequency of computation for the regional stats analysis member.

Name	Description (Continued)
config_AM_regionalStatsDaily_output_stream	Name of stream the regional stats analysis member will operate on that contains the list of input fields (and will be modified to contain the output stats fields).
config_AM_regionalStatsDaily_restart_stream	Name of stream the regional stats analysis member will use for the mask/region data.
config_AM_regionalStatsDaily_input_stream	Name of stream the regional stats analysis member will use for the mask/region data.
config_AM_regionalStatsDaily_operation	An operation describing the statistic to apply to all variables in the output stream.
config_AM_regionalStatsDaily_region_type	The reduced dimension of the region masks that will be used during the regional stats operation. Needs to be the last dimension, and the same dimension as all of the reduced fields, weight fields, and masks.
config_AM_regionalStatsDaily_region_group	The name of the group of region masks that will be used to subset the mesh during the regional stats operation.
config_AM_regionalStatsDaily_1d_weighting_function	An operation applied to every element in a region WITHOUT a vertical dimension, with a 1D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).
config_AM_regionalStatsDaily_2d_weighting_function	An operation applied to every element in a region WITH a vertical dimension, with a 2D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).
config_AM_regionalStatsDaily_1d_weighting_field	A 1D real field used in conjunction with the 1D weighting function, to be used as a weighting scale factor (like area).
config_AM_regionalStatsDaily_2d_weighting_field	A 2D real field used in conjunction with the 2D weighting function, to be used as a weighting scale factor (like area).
config_AM_regionalStatsDaily_vertical_mask	An additional 2D vertical integer mask field, which is used in conjunction with the regional masks. Used in cases when an input field has a second dimension that matches the vertical mask dimension.
config_AM_regionalStatsDaily_vertical_dimension	The second dimension to be used for additional vertical mask.

10.68 AM_regionalStatsWeekly

Name	Description
config_AM_regionalStatsWeekly_enable	If true, ocean analysis member regional stats is called.
config_AM_regionalStatsWeekly_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_regionalStatsWeekly_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_regionalStatsWeekly_compute_interval	Interval that determines frequency of computation for the regional stats analysis member.

Name	Description (Continued)
config_AM_regionalStats-Weekly_output_stream	Name of stream the regional stats analysis member will operate on that contains the list of input fields (and will be modified to contain the output stats fields).
config_AM_regionalStats-Weekly_restart_stream	Name of stream the regional stats analysis member will use for the mask/region data.
config_AM_regionalStats-Weekly_input_stream	Name of stream the regional stats analysis member will use for the mask/region data.
config_AM_regionalStats-Weekly_operation	An operation describing the statistic to apply to all variables in the output stream.
config_AM_regionalStats-Weekly_region_type	The reduced dimension of the region masks that will be used during the regional stats operation. Needs to be the last dimension, and the same dimension as all of the reduced fields, weight fields, and masks.
config_AM_regionalStats-Weekly_region_group	The name of the group of region masks that will be used to subset the mesh during the regional stats operation.
config_AM_regionalStats-Weekly_1d_weighting_function	An operation applied to every element in a region WITHOUT a vertical dimension, with a 1D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).
config_AM_regionalStats-Weekly_2d_weighting_function	An operation applied to every element in a region WITH a vertical dimension, with a 2D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).
config_AM_regionalStats-Weekly_1d_weighting_field	A 1D real field used in conjunction with the 1D weighting function, to be used as a weighting scale factor (like area).
config_AM_regionalStats-Weekly_2d_weighting_field	A 2D real field used in conjunction with the 2D weighting function, to be used as a weighting scale factor (like area).
config_AM_regionalStats-Weekly_vertical_mask	An additional 2D vertical integer mask field, which is used in conjunction with the regional masks. Used in cases when an input field has a second dimension that matches the vertical mask dimension.
config_AM_regionalStats-Weekly_vertical_dimension	The second dimension to be used for additional vertical mask.

10.69 AM_regionalStatsMonthly

Name	Description
config_AM_regionalStats-Monthly_enable	If true, ocean analysis member regional stats is called.
config_AM_regionalStats-Monthly_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_regionalStats-Monthly_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_regionalStats-Monthly_compute_interval	Interval that determines frequency of computation for the regional stats analysis member.

Name	Description (Continued)
config_AM_regionalStats-Monthly_output_stream	Name of stream the regional stats analysis member will operate on that contains the list of input fields (and will be modified to contain the output stats fields).
config_AM_regionalStats-Monthly_restart_stream	Name of stream the regional stats analysis member will use for the mask/region data.
config_AM_regionalStats-Monthly_input_stream	Name of stream the regional stats analysis member will use for the mask/region data.
config_AM_regionalStats-Monthly_operation	An operation describing the statistic to apply to all variables in the output stream.
config_AM_regionalStats-Monthly_region_type	The reduced dimension of the region masks that will be used during the regional stats operation. Needs to be the last dimension, and the same dimension as all of the reduced fields, weight fields, and masks.
config_AM_regionalStats-Monthly_region_group	The name of the group of region masks that will be used to subset the mesh during the regional stats operation.
config_AM_regionalStats-Monthly_1d_weighting_function	An operation applied to every element in a region WITHOUT a vertical dimension, with a 1D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).
config_AM_regionalStats-Monthly_2d_weighting_function	An operation applied to every element in a region WITH a vertical dimension, with a 2D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).
config_AM_regionalStats-Monthly_1d_weighting_field	A 1D real field used in conjunction with the 1D weighting function, to be used as a weighting scale factor (like area).
config_AM_regionalStats-Monthly_2d_weighting_field	A 2D real field used in conjunction with the 2D weighting function, to be used as a weighting scale factor (like area).
config_AM_regionalStats-Monthly_vertical_mask	An additional 2D vertical integer mask field, which is used in conjunction with the regional masks. Used in cases when an input field has a second dimension that matches the vertical mask dimension.
config_AM_regionalStats-Monthly_vertical_dimension	The second dimension to be used for additional vertical mask.

10.70 AM_regionalStatsCustom

Name	Description
config_AM_regionalStats-Custom_enable	If true, ocean analysis member regional stats is called.
config_AM_regionalStats-Custom_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_regionalStats-Custom_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_regionalStats-Custom_compute_interval	Interval that determines frequency of computation for the regional stats analysis member.

Name	Description (Continued)
config_AM_regionalStats-Custom_output_stream	Name of stream the regional stats analysis member will operate on that contains the list of input fields (and will be modified to contain the output stats fields).
config_AM_regionalStats-Custom_restart_stream	Name of stream the regional stats analysis member will use for the mask/region data.
config_AM_regionalStats-Custom_input_stream	Name of stream the regional stats analysis member will use for the mask/region data.
config_AM_regionalStats-Custom_operation	An operation describing the statistic to apply to all variables in the output stream.
config_AM_regionalStats-Custom_region_type	The reduced dimension of the region masks that will be used during the regional stats operation. Needs to be the last dimension, and the same dimension as all of the reduced fields, weight fields, and masks.
config_AM_regionalStats-Custom_region_group	The name of the group of region masks that will be used to subset the mesh during the regional stats operation.
config_AM_regionalStats-Custom_1d_weighting_function	An operation applied to every element in a region WITHOUT a vertical dimension, with a 1D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).
config_AM_regionalStats-Custom_2d_weighting_function	An operation applied to every element in a region WITH a vertical dimension, with a 2D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).
config_AM_regionalStats-Custom_1d_weighting_field	A 1D real field used in conjunction with the 1D weighting function, to be used as a weighting scale factor (like area).
config_AM_regionalStats-Custom_2d_weighting_field	A 2D real field used in conjunction with the 2D weighting function, to be used as a weighting scale factor (like area).
config_AM_regionalStats-Custom_vertical_mask	An additional 2D vertical integer mask field, which is used in conjunction with the regional masks. Used in cases when an input field has a second dimension that matches the vertical mask dimension.
config_AM_regionalStats-Custom_vertical_dimension	The second dimension to be used for additional vertical mask.

10.71 AM_timeSeriesStatsDaily

Name	Description
config_AM_timeSeriesStats-Daily_enable	If true, ocean analysis member time series stats is called.
config_AM_timeSeriesStats-Daily_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).
config_AM_timeSeriesStats-Daily_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.

Name	Description (Continued)
config_AM_timeSeriesStats-Daily_compute_interval	Interval that determines frequency of computation for the time series stats analysis member.
config_AM_timeSeriesStats-Daily_output_stream	Name of stream the time series stats analysis member will operate on.
config_AM_timeSeriesStats-Daily_restart_stream	Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.
config_AM_timeSeriesStats-Daily_operation	An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.
config_AM_timeSeriesStats-Daily_reference_times	A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)
config_AM_timeSeriesStats-Daily_duration_intervals	A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.
config_AM_timeSeriesStats-Daily_repeat_intervals	A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.
config_AM_timeSeriesStats-Daily_reset_intervals	A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.
config_AM_timeSeriesStats-Daily_backward_output_offset	Backward offset for filename timestamps when writing the output stream

10.72 AM_timeSeriesStatsMonthly

Name	Description
config_AM_timeSeriesStats-Monthly_enable	If true, ocean analysis member time series stats is called.
config_AM_timeSeriesStats-Monthly_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).
config_AM_timeSeriesStats-Monthly_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_timeSeriesStats-Monthly_compute_interval	Interval that determines frequency of computation for the time series stats analysis member.
config_AM_timeSeriesStats-Monthly_output_stream	Name of stream the time series stats analysis member will operate on.
config_AM_timeSeriesStats-Monthly_restart_stream	Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.

Name	Description (Continued)
config_AM_timeSeriesStats-Monthly_operation	An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.
config_AM_timeSeriesStats-Monthly_reference_times	A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)
config_AM_timeSeriesStats-Monthly_duration_intervals	A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.
config_AM_timeSeriesStats-Monthly_repeat_intervals	A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.
config_AM_timeSeriesStats-Monthly_reset_intervals	A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.
config_AM_timeSeriesStats-Monthly_backward_output_offset	Backward offset for filename timestamps when writing the output stream

10.73 AM_timeSeriesStatsClimatology

Name	Description
config_AM_timeSeriesStats-Climatology_enable	If true, ocean analysis member time series stats is called.
config_AM_timeSeriesStats-Climatology_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).
config_AM_timeSeriesStats-Climatology_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_timeSeriesStats-Climatology_compute_interval	Interval that determines frequency of computation for the time series stats analysis member.
config_AM_timeSeriesStats-Climatology_output_stream	Name of stream the time series stats analysis member will operate on.
config_AM_timeSeriesStats-Climatology_restart_stream	Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.
config_AM_timeSeriesStats-Climatology_operation	An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.
config_AM_timeSeriesStats-Climatology_reference_times	A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)

Name	Description (Continued)
config_AM_timeSeriesStats-Climatology_duration_intervals	A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.
config_AM_timeSeriesStats-Climatology_repeat_intervals	A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.
config_AM_timeSeriesStats-Climatology_reset_intervals	A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.
config_AM_timeSeriesStats-Climatology_backward_output_-offset	Backward offset for filename timestamps when writing the output stream

10.74 AM_timeSeriesStatsMonthlyMax

Name	Description
config_AM_timeSeriesStats-MonthlyMax_enable	If true, ocean analysis member time series stats is called.
config_AM_timeSeriesStats-MonthlyMax_compute_on_-startup	Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).
config_AM_timeSeriesStats-MonthlyMax_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_timeSeriesStats-MonthlyMax_compute_interval	Interval that determines frequency of computation for the time series stats analysis member.
config_AM_timeSeriesStats-MonthlyMax_output_stream	Name of stream the time series stats analysis member will operate on.
config_AM_timeSeriesStats-MonthlyMax_restart_stream	Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.
config_AM_timeSeriesStats-MonthlyMax_operation	An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.
config_AM_timeSeriesStats-MonthlyMax_reference_times	A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)
config_AM_timeSeriesStats-MonthlyMax_duration_intervals	A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.

Name	Description (Continued)
config_AM_timeSeriesStats-MonthlyMax_repeat_intervals	A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.
config_AM_timeSeriesStats-MonthlyMax_reset_intervals	A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.
config_AM_timeSeriesStats-MonthlyMax_backward_-output_offset	Backward offset for filename timestamps when writing the output stream

10.75 AM_timeSeriesStatsMonthlyMin

Name	Description
config_AM_timeSeriesStats-MonthlyMin_enable	If true, ocean analysis member time series stats is called.
config_AM_timeSeriesStats-MonthlyMin_compute_on_-startup	Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).
config_AM_timeSeriesStats-MonthlyMin_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_timeSeriesStats-MonthlyMin_compute_interval	Interval that determines frequency of computation for the time series stats analysis member.
config_AM_timeSeriesStats-MonthlyMin_output_stream	Name of stream the time series stats analysis member will operate on.
config_AM_timeSeriesStats-MonthlyMin_restart_stream	Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.
config_AM_timeSeriesStats-MonthlyMin_operation	An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.
config_AM_timeSeriesStats-MonthlyMin_reference_times	A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)
config_AM_timeSeriesStats-MonthlyMin_duration_intervals	A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.
config_AM_timeSeriesStats-MonthlyMin_repeat_intervals	A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.

Name	Description (Continued)
config_AM_timeSeriesStats-MonthlyMin_reset_intervals	A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.
config_AM_timeSeriesStats-MonthlyMin_backward_-output_offset	Backward offset for filename timestamps when writing the output stream

10.76 AM_timeSeriesStatsCustom

Name	Description
config_AM_timeSeriesStats-Custom_enable	If true, ocean analysis member time series stats is called.
config_AM_timeSeriesStats-Custom_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).
config_AM_timeSeriesStats-Custom_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_timeSeriesStats-Custom_compute_interval	Interval that determines frequency of computation for the time series stats analysis member.
config_AM_timeSeriesStats-Custom_output_stream	Name of stream the time series stats analysis member will operate on.
config_AM_timeSeriesStats-Custom_restart_stream	Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.
config_AM_timeSeriesStats-Custom_operation	An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.
config_AM_timeSeriesStats-Custom_reference_times	A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)
config_AM_timeSeriesStats-Custom_duration_intervals	A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.
config_AM_timeSeriesStats-Custom_repeat_intervals	A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.
config_AM_timeSeriesStats-Custom_reset_intervals	A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.
config_AM_timeSeriesStats-Custom_backward_output_offset	Backward offset for filename timestamps when writing the output stream

10.77 AM_pointwiseStats

Name	Description
config_AM_pointwiseStats_enable	If true, ocean analysis member pointwiseStats is called.
config_AM_pointwiseStats_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_pointwiseStats_output_stream	Name of the stream that the pointwiseStats analysis member should be tied to.
config_AM_pointwiseStats_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_pointwiseStats_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.

10.78 AM_debugDiagnostics

Name	Description
config_AM_debugDiagnostics_enable	If true, ocean analysis member debugDiagnostics is called.
config_AM_debugDiagnostics_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_debugDiagnostics_output_stream	Name of the stream that the debugDiagnostics analysis member should be tied to.
config_AM_debugDiagnostics_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_debugDiagnostics_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.
config_AM_debugDiagnostics_check_state	Logical flag determining if state checking happens when the debug diagnostics AM is called.

10.79 AM_rpnCalculator

Name	Description
config_AM_rpnCalculator_enable	If true, ocean analysis member RPN calculator is called.
config_AM_rpnCalculator_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.

Name	Description (Continued)
config_AM_rpnCalculator_write_on_startup	Logical flag determining if an analysis member output occurs on start-up.
config_AM_rpnCalculator_compute_interval	Interval that determines frequency of computation for the RPN calculator analysis member.
config_AM_rpnCalculator_output_stream	Name of stream the RPN calculator analysis member put output fields.
config_AM_rpnCalculator_variable_a	Name of a 0D or 1D real field that is bound to name 'a' in an RPN expression.
config_AM_rpnCalculator_variable_b	Name of a 0D or 1D real field that is bound to name 'b' in an RPN expression.
config_AM_rpnCalculator_variable_c	Name of a 0D or 1D real field that is bound to name 'c' in an RPN expression.
config_AM_rpnCalculator_variable_d	Name of a 0D or 1D real field that is bound to name 'd' in an RPN expression.
config_AM_rpnCalculator_variable_e	Name of a 0D or 1D real field that is bound to name 'e' in an RPN expression.
config_AM_rpnCalculator_variable_f	Name of a 0D or 1D real field that is bound to name 'f' in an RPN expression.
config_AM_rpnCalculator_variable_g	Name of a 0D or 1D real field that is bound to name 'g' in an RPN expression.
config_AM_rpnCalculator_variable_h	Name of a 0D or 1D real field that is bound to name 'h' in an RPN expression.
config_AM_rpnCalculator_expression_1	An RPN expression using fields bound to variable names.
config_AM_rpnCalculator_expression_2	An RPN expression using fields bound to variable names.
config_AM_rpnCalculator_expression_3	An RPN expression using fields bound to variable names.
config_AM_rpnCalculator_expression_4	An RPN expression using fields bound to variable names.
config_AM_rpnCalculator_output_name_1	The name of the output field resulting from RPN expression 1.
config_AM_rpnCalculator_output_name_2	The name of the output field resulting from RPN expression 2.
config_AM_rpnCalculator_output_name_3	The name of the output field resulting from RPN expression 3.
config_AM_rpnCalculator_output_name_4	The name of the output field resulting from RPN expression 4.

10.80 AM_transectTransport

Name	Description
config_AM_transectTransport_enable	If true, ocean analysis member transectTransport is called.

Name	**Description** (Continued)
config_AM_transectTransport_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_transectTransport_output_stream	Name of the stream that the transectTransport analysis member should be tied to.
config_AM_transectTransport_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_transectTransport_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.
config_AM_transectTransport_transect_group	The name of the transect group that holds the transects for which the transport should be caclulated.

10.81 AM_eddyProductVariables

Name	**Description**
config_AM_eddyProductVariables_enable	If true, ocean analysis member eddyProductVariables is called.
config_AM_eddyProductVariables_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_eddyProductVariables_output_stream	Name of the stream that the eddyProductVariables analysis member should be tied to.
config_AM_eddyProductVariables_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_eddyProductVariables_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.

10.82 AM_mocStreamfunction

Name	**Description**
config_AM_mocStreamfunction_enable	If true, ocean analysis member MOC streamfunction is called.
config_AM_mocStreamfunction_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_mocStreamfunction_output_stream	Name of the stream that the mocStreamfunction analysis member should be tied to.
config_AM_mocStreamfunction_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.

Name	Description (Continued)
config_AM_moc-Streamfunction_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.
config_AM_moc-Streamfunction_min_bin	minimum bin boundary value. If set to -1.0e34, the minimum value in the domain is found.
config_AM_moc-Streamfunction_max_bin	maximum bin boundary value. If set to -1.0e34, the maximum value in the domain is found.
config_AM_moc-Streamfunction_num_bins	Number of bins in South-to-North direction used for moc streamfunction calculation.
config_AM_moc-Streamfunction_region_group	The name of the region group, for which the moc should be computed in addition to the global MOC.
config_AM_moc-Streamfunction_transect_group	The name of the transect group that holds the boundaries for the regions in the region group, configured in 'config_AM_mocStreamfunction_region_group'. Please note, that these two should have the same amount of entries.

10.83 AM_oceanHeatContent

Name	Description
config_AM_oceanHeatContent_-enable	If true, ocean analysis member ocean heat content is called.
config_AM_oceanHeatContent_-compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_oceanHeatContent_-output_stream	Name of the stream that the oceanHeatContent analysis member should be tied to.
config_AM_oceanHeatContent_-compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_oceanHeatContent_-write_on_startup	Logical flag determining if an analysis member write occurs on start-up.

10.84 AM_mixedLayerHeatBudget

Name	Description
config_AM_mixedLayerHeat-Budget_enable	If true, ocean analysis member mixedLayerHeatBudget is called.
config_AM_mixedLayerHeat-Budget_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_mixedLayerHeat-Budget_output_stream	Name of the stream that the mixedLayerHeatBudget analysis member should be tied to.

Name	Description (Continued)
config_AM_mixedLayerHeat-Budget_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_mixedLayerHeat-Budget_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.

10.85 AM_sedimentFluxIndex

Name	Description
config_AM_sedimentFlux-Index_enable	If true, ocean analysis member sedimentFluxIndex is called.
config_AM_sedimentFlux-Index_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_sedimentFlux-Index_write_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_sedimentFlux-Index_compute_interval	Time stamp for frequency of computation of the sedimentFluxIndex analysis member.
config_AM_sedimentFlux-Index_output_stream	Name of stream the sedimentFluxIndex analysis member should be tied to
config_AM_sedimentFlux-Index_directory	subdirectory to write text files (might useful)
config_AM_sedimentFlux-Index_use_lat_lon_coords	If true, latitude/longitude coordinates are output for eddy census. Otherwise x/y/z coordinates are used. Ignored if not on a sphere.

10.86 AM_sedimentTransport

Name	Description
config_AM_sediment-Transport_enable	If true, ocean analysis member sedimentTransport is called.
config_AM_sediment-Transport_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_sediment-Transport_write_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_sediment-Transport_compute_interval	Time stamp for frequency of computation of the sedimentTransport analysis member.
config_AM_sediment-Transport_output_stream	Name of stream the sedimentTransport analysis member should be tied to
config_AM_sediment-Transport_directory	subdirectory to write text files (might useful)

Name	Description (Continued)
config_AM_sediment-Transport_grain_size	dimaeter of a spherical sediment particle
config_AM_sediment-Transport_ws_formula	options of different settling velocity formulae
config_AM_sediment-Transport_bedld_formula	options of diffrent sediment bedload transport formulae
config_AM_sediment-Transport_SSC_ref_formula	options of diffrent near-bottom suspended sediment concentration formulae
config_AM_sediment-Transport_drag_coefficient	drag coefficient used for bottom shear stress computation
config_AM_sediment-Transport_erate	bed surface erosion rate
config_AM_sediment-Transport_tau_ce	critical shear for erosion
config_AM_sediment-Transport_tau_cd	critical shear for deposition
config_AM_sediment-Transport_Manning_coef	Manning roughness coefficient
config_AM_sediment-Transport_grain_porosity	sediment porosity
config_AM_sediment-Transport_water_density	water density
config_AM_sediment-Transport_grain_density	sediment density
config_AM_sediment-Transport_alpha	A parameter related to the sediment property, with typical values of O(1e-4 1e-3)
config_AM_sediment-Transport_kinematic_viscosity	kinematic viscosity of the fluild
config_AM_sediment-Transport_vertical_diffusion_-coefficient	vertical diffsuion coefficient
config_AM_sediment-Transport_bedload	Logical flag determining if bedload transport is to be computed.
config_AM_sediment-Transport_suspended	Logical flag determining if suspended transport is to be computed.
config_AM_sediment-Transport_use_lat_lon_coords	If true, latitude/longitude coordinates are output for eddy census. Otherwise x/y/z coordinates are used. Ignored if not on a sphere.

10.87 AM_harmonicAnalysis

Name	Description
config_AM_harmonicAnalysis_-enable	If true, ocean analysis member harmonicAnalysis is called.
config_AM_harmonicAnalysis_-compute_interval	Timestamp determining how often harmonic analysis computation should be performed.

Name	**Description** (Continued)
config_AM_harmonicAnalysis_start_delay	Number of days after start of simulation when harmonic analysis begins. This is referenced relative to the start of the original simulation, not the restart date.
config_AM_harmonicAnalysis_duration	Length of harmonic analysis period. The analysis begins after config_AM_harmonicAnalysis_start_delay days and ends after config_AM_harmonicAnalysis_start_delay + config_AM_harmonicAnalysis_duration days relative to the start of the original simulation, not the restart date.
config_AM_harmonicAnalysis_output_stream	Name of the stream that the harmonicAnalysis analysis member should be tied to.
config_AM_harmonicAnalysis_restart_stream	Name of the stream that the harmonicAnalysis analysis member restart informaion should be tied to.
config_AM_harmonicAnalysis_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.
config_AM_harmonicAnalysis_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.
config_AM_harmonicAnalysis_use_M2	Controls if M2 constituent is used in harmonic analysis
config_AM_harmonicAnalysis_use_S2	Controls if S2 constituent is used in harmonic analysis
config_AM_harmonicAnalysis_use_N2	Controls if N2 constituent is used in harmonic analysis
config_AM_harmonicAnalysis_use_K2	Controls if K2 constituent is used in harmonic analysis
config_AM_harmonicAnalysis_use_K1	Controls if K1 constituent is used in harmonic analysis
config_AM_harmonicAnalysis_use_O1	Controls if O1 constituent is used in harmonic analysis
config_AM_harmonicAnalysis_use_Q1	Controls if Q1 constituent is used in harmonic analysis
config_AM_harmonicAnalysis_use_P1	Controls if P1 constituent is used in harmonic analysis

10.88 AM_conservationCheck

Name	**Description**
config_AM_conservationCheck_enable	If true, ocean analysis member conservationCheck is called.
config_AM_conservationCheck_compute_interval	Timestamp determining how often analysis member computation should be performed.
config_AM_conservationCheck_output_stream	Name of the stream that the conservationCheck analysis member should be tied to.
config_AM_conservationCheck_compute_on_startup	Logical flag determining if an analysis member computation occurs on start-up.

Name	Description (Continued)
config_AM_conservationCheck_write_on_startup	Logical flag determining if an analysis member write occurs on start-up.
config_AM_conservationCheck_write_to_logfile	Logical flag determining if the conservation check is written to the log file.
config_AM_conservationCheck_restart_stream	Name of the restart stream the analysis member will use to initialize itself if restart is enabled.

10.89 baroclinic_channel

Name	Description
config_baroclinic_channel_vert_levels	Number of vertical levels in baroclinic channel test case. Typical value is 20.
config_baroclinic_channel_use_distances	Logical flag that determines if locations of features are defined by distances of fractions. False means fractions.
config_baroclinic_channel_surface_temperature	Temperature of the surface in the northern half of the domain.
config_baroclinic_channel_bottom_temperature	Temperature of the bottom in the northern half of the domain.
config_baroclinic_channel_temperature_difference	Difference in the temperature field between the northern and southern halves of the domain.
config_baroclinic_channel_gradient_width_frac	Fraction of domain in Y direction the temperature gradient should be linear over.
config_baroclinic_channel_gradient_width_dist	Width of the temperature gradient around the center sin wave. Default value is relative to a 500km domain in Y.
config_baroclinic_channel_bottom_depth	Depth of the bottom of the ocean for the baroclinic channel test case.
config_baroclinic_channel_salinity	Salinity of the water in the entire domain.
config_baroclinic_channel_coriolis_parameter	Coriolis parameter for entrie domain.

10.90 lock_exchange

Name	Description
config_lock_exchange_vert_levels	Number of vertical levels in lock exchange test case. Typical value is 20.
config_lock_exchange_bottom_depth	Depth of the bottom of the ocean in the lock exchange test case.

Name	Description (Continued)
config_lock_exchange_cold_-temperature	Temperature of water in the cold half of the domain.
config_lock_exchange_warm_-temperature	Temperature of water in the warm half of the domain.
config_lock_exchange_direction	If y, warm/cold changes in the y-direction. If z, warm/cold changes in z-direction.
config_lock_exchange_salinity	Salinity of the water in the entire domain.
config_lock_exchange_layer_type	Vertical grid type
config_lock_exchange_-isopycnal_min_thickness	minimum layer thickness for isopycnal case

10.91 internal_waves

Name	Description
config_internal_waves_vert_levels	Number of vertical levels in internal waves test case. Typical value is 20.
config_internal_waves_use_-distances	Logical flag that determines if locations of features are defined by distances of fractions. False means fractions.
config_internal_waves_surface_-temperature	Temperature of the surface in the northern half of the domain.
config_internal_waves_bottom_-temperature	Temperature of the bottom in the northern half of the domain.
config_internal_waves_-temperature_difference	Maximum temperature difference in the amplitude.
config_internal_waves_-amplitude_width_frac	Percent of domain in Y direction the initial amplitude should exist over.
config_internal_waves_-amplitude_width_dist	Width in Y direction the initial amplitude should exist over. Default is relative to a 250km domain.
config_internal_waves_bottom_-depth	Depth of the bottom of the ocean for the internal waves test case.
config_internal_waves_salinity	Salinity of the water in the entire domain.
config_internal_waves_layer_type	Logical flag that controls how the initial conditions should be generated.
config_internal_waves_-isopycnal_displacement	Max distance isopycnal layers are displaced upwards.

10.92 overflow

Name	Description
config_overflow_vert_levels	Number of vertical levels in overflow test case. Typical values are 40 and 100.
config_overflow_use_distances	Logical flag that determines if locations of features are defined by distances of fractions. False means fractions.
config_overflow_bottom_depth	Depth of the bottom of the ocean in the overflow test case.
config_overflow_ridge_depth	Depth of the bottom of the ocean on the ridge in the over flow test case.
config_overflow_plug_temperature	Temperature of water in plug at the southern end of the domain.
config_overflow_domain_-temperature	Temperature of water outside of the plug.
config_overflow_salinity	Salinity of the water in the entire domain.
config_overflow_plug_width_frac	Fraction of the domain the plug should take up initially. Only in the y direction.
config_overflow_slope_center_frac	Location of the center of the slope. Given as a fraction of the total y domain range. Position is relative to the minimum y value.
config_overflow_slope_width_frac	Half width of the slope. Given as a fraction of the total y domain range.
config_overflow_plug_width_dist	Distance from the minimum Y value of the domain the plug should take up initially. Default is relative to a 200km domain.
config_overflow_slope_center_dist	Location of the center of the slope. Given as a distance from the minimum y value. Default is relative to a 200km domain.
config_overflow_slope_width_dist	Half width of the slope. Default is relative to a 200km domain.
config_overflow_layer_type	Logical flag that controls how the initial conditions should be generated.
config_overflow_isopycnal_-min_thickness	minimum layer thickness

10.93 dam_break

Name	Description
config_dam_break_vert_levels	Number of vertical levels in dam_break case. Default value is 1.
config_dam_break_eta0	Depth of the domain (H).
config_dam_break_dc	grid resolution in meters (dc).
config_dam_break_R0	max wave propagation radius in 10.0s.
config_dam_break_Xl	The length of dam along the X-direction.
config_dam_break_Yl	The length of dam along the Y-direction.
config_dam_break_Inlet	The width of inlet (dam mouth).

10.94 global_ocean

Name	Description
config_global_ocean_minimum_depth	Minimum depth where column contains all water-filled cells. The first layer with refBottomDepth greater than this value is included in whole, i.e. no partial bottom cells are used in this layer.
config_global_ocean_depth_file	Path to the depth initial condition file.
config_global_ocean_depth_dimname	Name of the dimension defining the number of vertical levels in input files.
config_global_ocean_depth_varname	Name of the variable containing mid-depth of levels in temperature and salinity initial condition files.
config_global_ocean_depth_conversion_factor	Conversion factor for depth levels. Should convert units on input depth levels to meters.
config_global_ocean_temperature_file	Path to the temperature initial condition file. Must be interpolated to vertical layers defined in depth file.
config_global_ocean_salinity_file	Path to the salinity initial condition file. Must be interpolated to vertical layers defined in depth file.
config_global_ocean_tracer_nlat_dimname	Name of the dimension that determines number of latitude lines in tracer initial condition files.
config_global_ocean_tracer_nlon_dimname	Name of the dimension that determines number of longitude lines in tracer initial condition files.
config_global_ocean_tracer_ndepth_dimname	Name of the dimension that determines number of vertical levels in tracer initial condition files.
config_global_ocean_tracer_depth_conversion_factor	Conversion factor for tracer initial condition depth levels. Should convert units on input depth levels to meters.
config_global_ocean_tracer_vert_levels	Number of vertical levels in tracer initial condition file. Set to -1 to read from file with config_global_ocean_tracer_ndepth_dimname
config_global_ocean_temperature_varname	Name of the variable containing temperature in temperature initial condition file.
config_global_ocean_salinity_varname	Name of the variable containing salinity in salinity initial condition file.
config_global_ocean_tracer_latlon_degrees	Logical flag that controls if the Lat/Lon fields for tracers should be converted to radians. True means input is degrees, false means input is radians.
config_global_ocean_tracer_lat_varname	Name of the variable containing latitude coordinates for tracer values in temperature initial condition file.
config_global_ocean_tracer_lon_varname	Name of the variable containing longitude coordinates for tracer values in temperature initial condition file.
config_global_ocean_tracer_depth_varname	Name of the variable containing depth coordinates for tracer values in temperature initial condition file.
config_global_ocean_tracer_method	Method to interpolate tracer data to MPAS mesh.
config_global_ocean_smooth_TS_iterations	Number of smoothing iterations on temperature and salinity.
config_global_ocean_swData_file	Name of the file containing shortwaveData (chlA, zenith Angle, clear sky radiation)
config_global_ocean_swData_nlat_dimname	Name of the dimension that determines number of latitude lines in swData initial condition files.
config_global_ocean_swData_nlon_dimname	Name of the dimension that determines number of longitude lines in swData initial condition files.
config_global_ocean_swData_lat_varname	Name of the variable containing latitude coordinates for swData values in swData initial condition file.
config_global_ocean_swData_lon_varname	Name of the variable containing longitude coordinates for swData values in swData initial condition file.

Name	Description (Continued)
config_global_ocean_swData_latlon_degrees	Logical flag that controls if the Lat/Lon fields for swData should be converted to radians. True means input is degrees, false means input is radians.
config_global_ocean_swData_method	Method to interpolate shortwave data to MPAS mesh.
config_global_ocean_chlorophyll_varname	Name of the variable containing chlorophyll in sw Data initial condition file.
config_global_ocean_zenithAngle_varname	Name of the variable containing zenith angle in swData initial condition file.
config_global_ocean_clearSky_varname	Name of the variable containing clear sky radiation in clear sky radiation initial condition file.
config_global_ocean_piston_velocity	Parameter controlling rate to which SST and SST are restored.
config_global_ocean_interior_restore_rate	Parameter controlling rate to which interior temperature and salinity are restored.
config_global_ocean_topography_source	If 'latlon_file', reads in topography from file specified in config_global_ocean_topography_file. If 'mpas_variable', reads in topography from mpas variable bed_elevation, and optionally oceanFracObserved, landIceDraftObserved, landIceThkObserved, landIceFracObserved, and landIceGroundedFracObserved
config_global_ocean_topography_file	Path to the topography initial condition file.
config_global_ocean_topography_nlat_dimname	Dimension name for the latitude in the topography file.
config_global_ocean_topography_nlon_dimname	Dimension name for the longitude in the topography file.
config_global_ocean_topography_latlon_degrees	Logical flag that controls if the Lat/Lon fields for topography should be converted to radians. True means input is degrees, false means input is radians.
config_global_ocean_topography_lat_varname	Variable name for the latitude in the topography file.
config_global_ocean_topography_lon_varname	Variable name for the longitude in the topography file.
config_global_ocean_topography_varname	Variable name for the topography in the topography file.
config_global_ocean_topography_has_ocean_frac	Logical flag that controls if topography file contains a field for the fraction of each cell that contains ocean (vs. land or grounded ice).
config_global_ocean_topography_ocean_frac_varname	Variable name for the ocean mask in the topography file.
config_global_ocean_topography_method	Method to interpolate topography data to MPAS mesh.
config_global_ocean_fill_bathymetry_holes	Logical flag that controls if deep holes in the bathymetry should be filled after interpolation to the MPAS mesh.
config_global_ocean_topography_smooth_iterations	How many iterations of topography smoothing by weighted averaging of cellsOnCell to perform.
config_global_ocean_topography_smooth_weight	The weight given to the central cell during smoothing. The n cellsOnCell are given a weight (1-weight)/n.
config_global_ocean_deepen_critical_passages	Logical flag that controls if critical passages are deepened to a minimum depth.
config_global_ocean_depress_by_land_ice	Logical flag that controls if sea surface pressure and layer thicknesses should be altered by an overlying ice sheet/shelf.

Name	Description (Continued)
config_global_ocean_land_ice_-topo_file	Path to the land ice topography initial condition file.
config_global_ocean_land_ice_-topo_nlat_dimname	Dimension name for the latitude in the land ice topography file.
config_global_ocean_land_ice_-topo_nlon_dimname	Dimension name for the longitude in the land ice topography file.
config_global_ocean_land_ice_-topo_latlon_degrees	Logical flag that controls if the Lat/Lon fields for land ice topography should be converted to radians. True means input is degrees, false means input is radians.
config_global_ocean_land_ice_-topo_lat_varname	Variable name for the latitude in the land ice topography file.
config_global_ocean_land_ice_-topo_lon_varname	Variable name for the longitude in the land ice topography file.
config_global_ocean_land_ice_-topo_thickness_varname	Variable name for the land ice thickness in the land ice topography file.
config_global_ocean_land_ice_-topo_draft_varname	Variable name for the land ice draft in the land ice topography file.
config_global_ocean_land_ice_-topo_ice_frac_varname	Variable name for the land ice fraction in the land ice topography file.
config_global_ocean_land_ice_-topo_grounded_frac_varname	Variable name for the grounded land ice fraction in the land ice topography file.
config_global_ocean_use_-constant_land_ice_cavity_-temperature	Logical flag that controls if ocean temperature in land-ice cavities is set to a constant temperature.
config_global_ocean_constant_-land_ice_cavity_temperature	The constant temperature value to be used under land ice, typically something close to the freezing point.
config_global_ocean_cull_-inland_seas	Logical flag that controls if inland seas should be removed.
config_global_ocean_-windstress_file	Path to the windstress initial condition file.
config_global_ocean_-windstress_nlat_dimname	Dimension name for the latitude in the windstress file.
config_global_ocean_-windstress_nlon_dimname	Dimension name for the longitude in the windstress file.
config_global_ocean_-windstress_latlon_degrees	Logical flag that controls if the Lat/Lon fields for windstress should be converted to radians. True means input is degrees, false means input is radians.
config_global_ocean_-windstress_lat_varname	Variable name for the latitude in the windstress file.
config_global_ocean_-windstress_lon_varname	Variable name for the longitude in the windstress file.
config_global_ocean_-windstress_zonal_varname	Variable name for the zonal component of windstress in the windstress file.
config_global_ocean_-windstress_meridional_varname	Variable name for the meridional component of windstress in the windstress file.
config_global_ocean_-windstress_method	Method to interpolate windstress data to MPAS mesh.
config_global_ocean_-windstress_conversion_factor	Factor to convert input windstress to $N\ m^{-1}$
config_global_ocean_ecosys_file	Name of file containing global values of ecosys variables
config_global_ocean_ecosys_-forcing_file	Name of file containing global values of ecosys forcing fields

Name	Description (Continued)
config_global_ocean_ecosys_-nlat_dimname	Name of the dimension that determines number of latitude lines in ecosys initial condition files.
config_global_ocean_ecosys_-nlon_dimname	Name of the dimension that determines number of longitude lines in ecosys initial condition files.
config_global_ocean_ecosys_-ndepth_dimname	Name of the dimension that determines number of vertical levels in ecosys initial condition files.
config_global_ocean_ecosys_-depth_conversion_factor	Conversion factor for ecosys initial condition depth levels. Should convert units on input depth levels to meters.
config_global_ocean_ecosys_-vert_levels	Number of vertical levels in ecosys initial condition file. Set to -1 to read from file with config_global_ocean_ecosys_ndepth_dimname
config_global_ocean_ecosys_-lat_varname	Name of the variable containing latitude coordinates for ecosys values in ecosys initial condition file.
config_global_ocean_ecosys_-lon_varname	Name of the variable containing longitude coordinates for ecosys values in ecosys initial condition file.
config_global_ocean_ecosys_-depth_varname	Name of the variable containing depth coordinates for ecosys values in ecosys initial condition file.
config_global_ocean_ecosys_-latlon_degrees	Logical flag that controls if the Lat/Lon fields for ecosys should be converted to radians. True means input is degrees, false means input is radians.
config_global_ocean_ecosys_-method	Method to interpolate shortwave data to MPAS mesh.
config_global_ocean_ecosys_-forcing_time_dimname	Name of the dimension that determines the times in ecosys forcing files.
config_global_ocean_smooth_-ecosys_iterations	Number of smoothing iterations on ecosystem variables.

10.95 cvmix_WSwSBF

Name	Description
config_cvmix_WSwSBF_vert_-levels	Number of vertical levels in cvmix WSwSBF unit test case.
config_cvmix_WSwSBF_-surface_temperature	Temperature of the surface of the ocean.
config_cvmix_WSwSBF_-surface_salinity	Salinity of the surface of the ocean.
config_cvmix_WSwSBF_-surface_restoring_temperature	Temperature to restore towards when surface restoring is turned on.
config_cvmix_WSwSBF_-surface_restoring_salinity	Salinity to restore towards when surface restoring is turned on.
config_cvmix_WSwSBF_-temperature_piston_velocity	Piston velocity to control rate of restoring toward config_cvmix_WSwSBF_surface_restoring_temperature.
config_cvmix_WSwSBF_-salinity_piston_velocity	Piston velocity to control rate of restoring toward config_cvmix_WSwSBF_surface_restoring_salinity.
config_cvmix_WSwSBF_-sensible_heat_flux	Net sensible heat flux applied when bulk forcing is used. Positive values indicate a net input of heat to ocean.

Name	Description (Continued)
config_cvmix_WSwSBF_latent_heat_flux	Net latent heat flux applied when bulk forcing is used. Positive values indicate a net input of heat to ocean.
config_cvmix_WSwSBF_shortwave_heat_flux	Net solar shortwave heat flux applied when bulk forcing is used. Positive values indicate a net input of heat to ocean.
config_cvmix_WSwSBF_rain_flux	Net surface rain flux when bulk forcing is used. Positive values indicate a net input of water to ocean.
config_cvmix_WSwSBF_evaporation_flux	Net surface evaporation when bulk forcing is used. Positive values indicate a net input of water to ocean.
config_cvmix_WSwSBF_interior_temperature_restoring_rate	Rate at which temperature is restored toward the initial condition.
config_cvmix_WSwSBF_interior_salinity_restoring_rate	Rate at which salinity is restored toward the initial condition.
config_cvmix_WSwSBF_temperature_gradient	d/dz of temperature.
config_cvmix_WSwSBF_salinity_gradient	d/dz of salinity.
config_cvmix_WSwSBF_temperature_gradient_mixed_layer	d/dz of temperature in mixed temperature layer
config_cvmix_WSwSBF_salinity_gradient_mixed_layer	d/dz of salinity in mixed salinity layer
config_cvmix_WSwSBF_mixed_layer_depth_temperature	depth mixed temperature layer
config_cvmix_WSwSBF_mixed_layer_depth_salinity	depth mixed salinity layer
config_cvmix_WSwSBF_mixed_layer_temperature_change	temperature jump when moving downward across the mixed layer interface
config_cvmix_WSwSBF_mixed_layer_salinity_change	salinity jump when moving downward across the mixed layer interface
config_cvmix_WSwSBF_vertical_grid	prescription of setting the vertical resolution of the test case
config_cvmix_WSwSBF_bottom_depth	Depth of the bottom of the ocean for the CVMix WSwSBF unit test case.
config_cvmix_WSwSBF_max_windstress	Maximum surface windstress over the domain.
config_cvmix_WSwSBF_coriolis_parameter	Coriolis parameter for WSwSBF test case

10.96 iso

Name	Description
config_iso_vert_levels	Number of vertical levels in ISO.
config_iso_main_channel_depth	Depth of the main channel in the ISO.
config_iso_north_wall_lat	Latitude of the vertical north wall in the ISO domain.

Name	Description (Continued)
config_iso_south_wall_lat	Latitude of the top of the main channel south wall wall in the ISO domain.
config_iso_ridge_flag	Logical flag that controls if a ridge is used or not.
config_iso_ridge_center_lon	Longitude of the center of the ridge in the ISO.
config_iso_ridge_height	Maximum height of the ridge at the zonal middle of the ISO domain.
config_iso_ridge_width	Width of the ridge at the zonal middle of the ISO domain.
config_iso_plateau_flag	Logical flag that controls if a plateau is used or not.
config_iso_plateau_center_lon	Longitude of the center of the plateau in the ISO.
config_iso_plateau_center_lat	Latitude of the center of the plateau in the ISO.
config_iso_plateau_height	Height of the top of the plateau in the ISO domain.
config_iso_plateau_radius	Radius at the top of the plateau in the ISO domain.
config_iso_plateau_slope_width	Width of the sloping region of the plateau in the ISO domain.
config_iso_shelf_flag	Logical flag that controls if a shelf is used or not.
config_iso_shelf_depth	Depth of the shelf in the ISO.
config_iso_shelf_width	Width of the shelf in the ISO.
config_iso_cont_slope_flag	Logical flag that controls if a continental slope is used or not.
config_iso_max_cont_slope	Maximum slope of the continental slope in the ISO.
config_iso_embayment_flag	Logical flag that controls if an embayment is used or not.
config_iso_embayment_center_lon	Longitude of the center of the embayment in the ISO.
config_iso_embayment_center_lat	Latitude of the center of the embayment in the ISO.
config_iso_embayment_radius	Radius of the embayment in the ISO.
config_iso_embayment_depth	Depth of the embayment in the ISO.
config_iso_depression_flag	Logical flag to add a depresseion between embayment and main channel.
config_iso_depression_center_lon	Longitude of the center of the depression in the ISO.
config_iso_depression_south_lat	Latitude of the south end of the depression in the ISO.
config_iso_depression_north_lat	Latitude of the north end of the depression in the ISO.
config_iso_depression_width	Width of the depression in the ISO.
config_iso_depression_depth	Depth of the depression in the ISO.
config_iso_salinity	Salinity of the water in the ISO.
config_iso_wind_stress_max	Maximum zonal windstress value.
config_iso_acc_wind	Maximum zonal windstress value over the Antarctic Circumpolar Current.
config_iso_asf_wind	Maximum zonal windstress value over the Antarctic Slope Front.
config_iso_wind_trans	Latitude of the transition region between easterly and westerly winds.
config_iso_heat_flux_south	Heat flux into the ocean over the south side of the main channel.
config_iso_heat_flux_middle	Heat flux into the ocean over the middle of the main channel.
config_iso_heat_flux_north	Heat flux into the ocean over the north side of the main channel.
config_iso_heat_flux_lat_ss	Latitude of southern point of heat flux region on the south.
config_iso_heat_flux_lat_sm	Latitude of transition point between heat flux regions on the south and middle.
config_iso_heat_flux_lat_mn	Latitude of transition point between heat flux regions on the middel and north.
config_iso_region1_center_lon	Longitude of center region 1.
config_iso_region1_center_lat	Latitude of center of region 1.
config_iso_region2_center_lon	Longitude of center of region 2.
config_iso_region2_center_lat	Latitude of center of region 2.
config_iso_region3_center_lon	Longitude of center of region 3.
config_iso_region3_center_lat	Latitude of center of region 3.

Name	Description (Continued)
config_iso_region4_center_lon	Longitude of center of region 4.
config_iso_region4_center_lat	Latitude of center of region 2.
config_iso_heat_flux_region1_flag	Logical flag controlling use of heat flux in region 1.
config_iso_heat_flux_region1	Heat flux into of the ocean over a localized region 1.
config_iso_heat_flux_region1_-radius	Radius of heat flux localized region 1.
config_iso_heat_flux_region2_flag	Logical flag controlling use of heat flux in region 2.
config_iso_heat_flux_region2	Heat flux into of the ocean over localized region 2.
config_iso_heat_flux_region2_-radius	Radius of heat flux localized region 2.
config_iso_surface_-temperature_piston_velocity	Surface temperature restoring piston velocity.
config_iso_initial_temp_t1	Maximum temperature parameter for the initial temperature profile.
config_iso_initial_temp_t2	Amplitude parameter for the initial temperature profile.
config_iso_initial_temp_h0	Depth parameter for the initial temperature profile.
config_iso_initial_temp_h1	Depth parameter for the initial temperature profile.
config_iso_initial_temp_mt	Slope parameter for the initial temperature profile.
config_iso_initial_temp_latS	Southern latitude used to linearly scale the initial temperature field in the horizontal.
config_iso_initial_temp_latN	Southern latitude used to linearly scale the initial temperature field in the horizontal.
config_iso_temperature_sponge_t1	Parameter for the sponge vertical temperature profile.
config_iso_temperature_-sponge_h1	E-folding distance parameter for the sponge vertical temperature profile.
config_iso_temperature_sponge_l1	Horizontal e-folding distance parameter for the sponge weights.
config_iso_temperature_-sponge_tau1	Sponge layer restoring time scale, used to calculate interior restoring rate.
config_iso_temperature_-restore_region1_flag	Logical flag controlling use of temperature restoring in region 1.
config_iso_temperature_restore_t1	Restoring temperature in region 1
config_iso_temperature_-restore_lcx1	Zonal length scale of the restoring region 1
config_iso_temperature_-restore_lcy1	Meridional length scale of the restoring region 1
config_iso_temperature_-restore_region2_flag	Logical flag controlling use of temperature restoring in region 2.
config_iso_temperature_restore_t2	Restoring temperature in region 2
config_iso_temperature_-restore_lcx2	Zonal length scale of the restoring region 2
config_iso_temperature_-restore_lcy2	Meridional length scale of the restoring region 2
config_iso_temperature_-restore_region3_flag	Logical flag controlling use of temperature restoring in region 3.
config_iso_temperature_restore_t3	Restoring temperature in region 3
config_iso_temperature_-restore_lcx3	Zonal length scale of the restoring region 3
config_iso_temperature_-restore_lcy3	Meridional length scale of the restoring region 3
config_iso_temperature_-restore_region4_flag	Logical flag controlling use of temperature restoring in region 4.

Name	Description (Continued)
config_iso_temperature_restore_t4	Restoring temperature in region 4
config_iso_temperature_restore_lcx4	Zonal length scale of the restoring region 4
config_iso_temperature_restore_lcy4	Meridional length scale of the restoring region 4

10.97 soma

Name	Description
config_soma_vert_levels	Number of vertical levels in SOMA.
config_soma_domain_width	Approximate radius of the SOMA domain.
config_soma_center_latitude	Latitude for the center of the SOMA basin.
config_soma_center_longitude	Longitude for the center of the SOMA basin.
config_soma_phi	Scale factor controlling width of continential slope. Typically around 0.1
config_soma_bottom_depth	Depth of the bottom of the ocean for the SOMA test case.
config_soma_shelf_width	Non-dimensional measure of continential shelf. Typically negative.
config_soma_shelf_depth	Depth of the continential shelf.
config_soma_ref_density	Reference density for the SOMA test case.
config_soma_density_difference	Density difference between surface and bottom waters for the SOMA test case.
config_soma_thermocline_depth	Depth over which majority of initial stratification is placed.
config_soma_density_difference_linear	Fraction of stratification put into linear profile extending from surface to bottom.
config_soma_surface_temperature	Surface temperature value used in initial condition.
config_soma_surface_salinity	Surface salinity value used in initial condition.
config_soma_use_surface_temp_restoring	Logical flag that determines if surface temperature restoring is to be used.
config_soma_surface_temp_restoring_at_center_latitude	Surface restoring temperature value at center latitutde.
config_soma_surface_temp_restoring_latitude_gradient	Surface restoring temperature gradient in latitudal direction.
config_soma_restoring_temp_piston_vel	Restoring piston velocity for surface temperature.

10.98 ziso

Name	Description

Name	Description (Continued)
config_ziso_vert_levels	Number of vertical levels in ziso. Typical value is 100.
config_ziso_add_easterly_-wind_stress_ASF	Logical flag to determine if an easterly windstress is added
config_ziso_wind_transition_-position	meridional position where windstress switches to easterly
config_ziso_antarctic_shelf_-front_width	meridional extent over which the easterly wind stress is applied
config_ziso_wind_stress_shelf_-front_max	Maximum zonal windstress value in the shelf front region, following Stewart et al. 2013
config_ziso_use_slopping_-bathymetry	Logical flag that determines if sloping bathymetery is used.
config_ziso_meridional_extent	Meridional extent of the domain (L).
config_ziso_zonal_extent	Zonal extent of the domain (W).
config_ziso_bottom_depth	Depth of the domain (H).
config_ziso_shelf_depth	Shelf depth in the domain (H_s).
config_ziso_slope_half_width	Shelf half width (W_s).
config_ziso_slope_center_position	Slope center posiiton (Y_s).
config_ziso_reference_coriolis	Reference coriolis parameter f_0. Note $f = f_0 + \beta * y$.
config_ziso_coriolis_gradient	Meridional gradient of coriolis parameter β.
config_ziso_wind_stress_max	Maximum zonal windstress value τ_0.
config_ziso_mean_restoring_temp	Mean restoring temperature T_m in $T_r(y) = T_m + T_a \tanh\left(2\frac{y-L/2}{L/2}\right) + T_b\frac{y-L/2}{L/2}$.
config_ziso_restoring_temp_-dev_ta	Temperature deviation T_a in surface temp. $T_r(y) = T_m + T_a \tanh\left(2\frac{y-L/2}{L/2}\right) + T_b\frac{y-L/2}{L/2}$.
config_ziso_restoring_temp_-dev_tb	Linear temperature deviation T_b in surface temp. $T_r(y) = T_m + T_a \tanh\left(2\frac{y-L/2}{L/2}\right) + T_b\frac{y-L/2}{L/2}$.
config_ziso_restoring_temp_tau	Time scale for interior restoring of temperature.
config_ziso_restoring_temp_-piston_vel	Restoring piston velocity for surface temperature.
config_ziso_restoring_temp_ze	Vertical $e-$folding scale in T_s for northern wall: $T_s \exp(z/z_e)$.
config_ziso_restoring_sponge_l	E-folding distance parameter for the sponge vertical temperature profile.
config_ziso_initial_temp_t1	Initial temperature profile constant T_1 in $T(z, t = 0) = T_1 + T_2 \tanh(z/h_1) + m_T z$.
config_ziso_initial_temp_t2	Initial temperature profile constant T_2 in $T(z, t = 0) = T_1 + T_2 \tanh(z/h_1) + m_T z$.
config_ziso_initial_temp_h1	Initial temperature profile constant h_1 in $T(z, t = 0) = T_1 + T_2 \tanh(z/h_1) + m_T z$.
config_ziso_initial_temp_mt	Initial temperature profile constant m_T in $T(z, t = 0) = T_1 + T_2 \tanh(z/h_1) + m_T z$.
config_ziso_frazil_enable	A logical to overload (and largely overwrite) this test case to evaluate frazil. In almost all uses of this test case, this configure option should be false.
config_ziso_frazil_temperature_-anomaly	Temperature anomaly to produce frazil

10.99 sub_ice_shelf_2D

Name	Description
config_sub_ice_shelf_2D_vert_levels	Number of vertical levels in sub_ice_shelf_2D. Typical value is 22.
config_sub_ice_shelf_2D_bottom_depth	Depth of the bottom of the ocean for the this test case.
config_sub_ice_shelf_2D_cavity_thickness	Vertical thickness of ocean sub-ice cavity.
config_sub_ice_shelf_2D_slope_height	Vertical thickness of fixed slope.
config_sub_ice_shelf_2D_edge_width	Horizontal width of angled part of the ice.
config_sub_ice_shelf_2D_y1	cavity edge in y
config_sub_ice_shelf_2D_y2	shelf edge in y
config_sub_ice_shelf_2D_temperature	Temperature of the surface in the northern half of the domain.
config_sub_ice_shelf_2D_surface_salinity	Salinity of the water in the entire domain.
config_sub_ice_shelf_2D_bottom_salinity	Salinity of the water in the entire domain.

10.100 periodic_planar

Name	Description
config_periodic_planar_vert_levels	Number of vertical levels in periodic_planar. Typical value is 1.
config_periodic_planar_bottom_depth	Bottom depth.
config_periodic_planar_velocity_strength	Strenght of velocity field.

10.101 ecosys_column

Name	Description

Name	Description (Continued)
config_ecosys_column_vert_levels	Number of vertical levels in ecosys column unit test case.
config_ecosys_column_vertical_grid	prescription of setting the vertical resolution of the test case
config_ecosys_column_TS_filename	Name of file containing column values of temperature and salinity
config_ecosys_column_ecosys_filename	Name of file containing column values of ecosys variables
config_ecosys_column_bottom_depth	Depth of the bottom of the ocean for the ecosys column unit test case.

10.102 sea_mount

Name	Description
config_sea_mount_vert_levels	Number of vertical levels in sea mount test case.
config_sea_mount_layer_type	Logical flag that controls the vertical coordinate initializaton
config_sea_mount_stratification_type	Logical flag that controls how the vertical profile of tracers. See Beckmann and Haidvogel 1993 eqn 15-16.
config_sea_mount_density_coef_linear	Density coefficient for linear vertical stratification
config_sea_mount_density_coef_exp	Density coefficient for exponential vertical stratification
config_sea_mount_density_gradient_linear	Density gradient for linear vertical stratification, $\Delta_z\rho$ in Beckmann Haidvogel eqn 15
config_sea_mount_density_gradient_exp	Density gradient for exponential vertical stratification, $\Delta_z\rho$ in Beckmann Haidvogel eqn 16
config_sea_mount_density_depth_linear	Density reference depth for linear vertical stratification
config_sea_mount_density_depth_exp	Density reference depth for exponential vertical stratification
config_sea_mount_density_ref	Density reference for eos to initialize temperature
config_sea_mount_density_Tref	Reference temperature for eos to initialize temperature
config_sea_mount_density_alpha	Linear thermal expansion coefficient to initialize temperature
config_sea_mount_bottom_depth	Depth of the bottom of the ocean for the sea mount test case.
config_sea_mount_height	Height of sea mount, H_0
config_sea_mount_radius	Radius of sea mount
config_sea_mount_width	Width parameter of sea mount, L.
config_sea_mount_salinity	Salinity of the water in the entire domain.
config_sea_mount_coriolis_parameter	Coriolis parameter for entrie domain.

10.103 isomip

Name	Description
config_isomip_vert_levels	Number of vertical levels in test case.
config_isomip_vertical_level_distribution	The distribution of vertical levels, either constant (all equal thickness) or boundary layer (decreasing toward top and bottom).
config_isomip_bottom_depth	Depth of the ocean in the test case.
config_isomip_temperature	Temperature of the ocean for isomip initial conditions.
config_isomip_salinity	Salinity of the ocean for isomip initial conditions.
config_isomip_restoring_temperature	Temperature for surface restoring.
config_isomip_temperature_piston_velocity	Piston velocity for surface restoring of temperature
config_isomip_restoring_salinity	Salinity for surface restoring.
config_isomip_salinity_piston_velocity	Piston velocity for surface restoring of salinity
config_isomip_coriolis_parameter	Coriolis parameter for entrie domain.
config_isomip_southern_boundary	The y location of the southern boundary.
config_isomip_northern_boundary	The y location of the northern boundary.
config_isomip_western_boundary	The x location of the western boundary.
config_isomip_eastern_boundary	The x location of the eastern boundary.
config_isomip_y1	The first y value in the piecewise linear ice draft.
config_isomip_z1	The first z value in the piecewise linear ice draft.
config_isomip_ice_fraction1	The first ice fraction value in the piecewise linear fit.
config_isomip_y2	The second y value in the piecewise linear ice draft.
config_isomip_z2	The second z value in the piecewise linear.
config_isomip_ice_fraction2	The second ice fraction value in the piecewise linear fit.
config_isomip_y3	The third y value in the piecewise linear ice draft.
config_isomip_z3	The third z value in the piecewise linear.
config_isomip_ice_fraction3	The third ice fraction value in the piecewise linear fit.

10.104 isomip_plus

Name	Description
config_isomip_plus_vert_levels	Number of vertical levels in test case.
config_isomip_plus_vertical_level_distribution	The distribution of vertical levels, currently only constant (all equal thickness).
config_isomip_plus_max_bottom_depth	Maximum depth of the ocean in the test case.
config_isomip_plus_minimum_levels	Minimum number of vertical levels in a column.

Name	Description (Continued)
config_isomip_plus_min_-column_thickness	Minimum thickness of the inital ocean column (to prevent 'drying').
config_isomip_plus_min_-ocean_fraction	Minimum fraction of a cell that contains ocean (as opposed to land or grounded land ice) in order for it to be an active ocean cell.
config_isomip_plus_-topography_file	Path to the topography initial condition file.
config_isomip_plus_init_top_temp	Initial temperature at sea level.
config_isomip_plus_init_bot_temp	Initial temperature in deepest cells.
config_isomip_plus_init_top_sal	Initial salinity at sea level.
config_isomip_plus_init_bot_sal	Initial salinity in deepest cells.
config_isomip_plus_restore_-top_temp	Restoring temperature at sea level.
config_isomip_plus_restore_-bot_temp	Restoring temperature in deepest cells.
config_isomip_plus_restore_-top_sal	Restoring salinity at sea level.
config_isomip_plus_restore_-bot_sal	Restoring salinity in deepest cells.
config_isomip_plus_restore_rate	Restoring salinity in deepest cells.
config_isomip_plus_restore_-evap_rate	Evaporation rate used to maintain sea level near zero.
config_isomip_plus_restore_xMin	Southern boundary of restoring region.
config_isomip_plus_restore_xMax	Northern boundary of restoring region.
config_isomip_plus_coriolis_-parameter	Coriolis parameter for entrie domain.
config_isomip_plus_effective_-density	Initial value for the effective density for entrie domain.

10.105 hurricane

Name	Description
config_hurricane_vert_levels	Number of vertical levels for hurricane.
config_hurricane_min_depth	Minimum depth for hurricane mesh bathymetry.
config_hurricane_max_depth	Maximum depth for hurricane mesh bathymetry.
config_hurricane_gaussian_-hump_amplitude	Amplitude of gaussian wave.
config_hurricane_use_-gaussian_hump	Use of idealized gaussian hump 'hurricane' initial condition.
config_hurricane_gaussian_-lon_center	Longitude of center of gaussian wave.
config_hurricane_gaussian_lat_-center	Latitude of center of gaussian wave.
config_hurricane_gaussian_width	Width scale of gaussian wave.
config_hurricane_gaussian_-amplitude	Amplitude of gaussian wave.

Name	Description (Continued)
config_hurricane_gaussian_slr_amp	Amplitude of sea level rise.
config_hurricane_land_z_limit	Vertical elevation corresponding to increased drag on land (bottom depth positive).
config_hurricane_marsh_z_limit	Vertical elevation corresponding to increased drag on marsh (bottom depth positive).
config_hurricane_land_drag	Value of land drag for either Cd or Manning's n above config_land_z_limit.
config_hurricane_marsh_drag	Value of marsh drag between config_marsh_z_limit and config_land_z_limit for either Cd or Manning's n.
config_hurricane_channel_drag	Value of channel drag below config_marsh_z_limit for either Cd or Manning's n.
config_hurricane_sea_level_rise_adjustment	Crude factor to account for sea level rise. This is uniformly added to the bathymetric depth.

10.106 tidal_boundary

Name	Description
config_tidal_boundary_vert_levels	Number of vertical levels in tidal_boundary test case. Typical values are 40 and 100.
config_tidal_boundary_min_vert_levels	Number of vertical levels where zstar coordinates transition to sigma.
config_tidal_boundary_layer_type	Vertical coordinate to be used.
config_tidal_boundary_right_bottom_depth	Depth of the bottom of the ocean in northern-most end.
config_tidal_start_dry	Logical to determine if channel should be started dry.
config_tidal_boundary_use_distances	Logical to determine if channel dimensions should to specific values.
config_tidal_boundary_left_value	Coordinate of the southern-most end.
config_tidal_boundary_right_value	Coordinate of the northern-most end.
config_tidal_boundary_left_bottom_depth	Depth of the bottom of the ocean in southern-most end.
config_tidal_boundary_salinity	Salinity of the water in the entire domain.
config_tidal_boundary_domain_temperature	Temperature of water outside of the plug.
config_tidal_boundary_plug_temperature	Temperature of water in plug.
config_tidal_boundary_plug_width_frac	Fraction of the domain the plug should take up initially. Only in the y direction.
config_tidal_forcing_left_Cd_or_n	Bottom drag of left side of the boundary.
config_tidal_forcing_right_Cd_or_n	Bottom drag of right side of the boundary.
config_use_idealized_transect	Logical to determine if idealized tidal flat profile is defined.
config_idealized_transect_Lshore	Ratio of shore length in the idealized coastal profile.

Name	Description (Continued)
config_idealized_transect_Sshore	Shore slope.
config_idealized_transect_Lcoast	Ratio of coast length in the idealized coastal profile
config_idealized_transect_Scoast	Coast slope.
config_idealized_transect_Lmarsh	Ratio of marsh length in the idealized coastal profile.
config_idealized_transect_Smarsh	Marsh slope
config_idealized_transect_-roughness	Bottom roughness (Cd or Manning roughness) at non-vegetated region
config_idealized_transect_-roughness_marsh	Bottom roughness (Cd or Manning roughness) at vegetated region
config_idealized_vegetation_-diameter	Constant vegetation diameter for idealized transect case
config_idealized_vegetation_-height	Constant vegetation height for idealized transect case
config_idealized_vegetation_-density	Constant vegetation density for indealized transect case

10.107 cosine_bell

Name	Description
config_cosine_bell_temperature	Temperature of the ocean.
config_cosine_bell_salinity	Salinity of the ocean.
config_cosine_bell_lat_center	latitude center of cosine bell
config_cosine_bell_lon_center	longitude center of cosine bell
config_cosine_bell_psi0	hill max of tracer
config_cosine_bell_radius	radius of cosine bell
config_cosine_bell_vel_pd	time for bell to transit equator once

10.108 mixed_layer_eddy

Name	Description
config_mixed_layer_eddy_-vert_levels	Number of vertical levels in mixed layer eddy test case. Typical value is 60.
config_mixed_layer_eddy_-bottom_depth	Depth of the bottom of the domain for the mixed layer eddy test case.
config_mixed_layer_eddy_-mixed_layer_depth	Depth of the mixed layer for the mixed layer eddy test case.
config_mixed_layer_eddy_-base_temperature	Temperature at the base of the mixed layer.

Name	Description (Continued)
config_mixed_layer_eddy_temperature_stratification_mixed_layer	Vertical temperature gradient in the mixed layer.
config_mixed_layer_eddy_temperature_stratification_interior	Vertical temperature gradient in the interior.
config_mixed_layer_eddy_temperature_horizontal_gradient	Horizontal temperature gradient in the mixed layer.
config_mixed_layer_eddy_temperature_front_width	Width of the temperature front.
config_mixed_layer_eddy_temperature_perturbation_magnitude	Magnitude of random perturbation in temperature.
config_mixed_layer_eddy_salinity	Salinity of the water in the entire domain.
config_mixed_layer_eddy_two_fronts	Logical flag that determines if the initial fields has two fronts.
config_mixed_layer_eddy_restoring_width	E-folding width of the restoring region at meridional boundaries, only used for single front.
config_mixed_layer_eddy_restoring_tau	Time scale for restoring at meridional boundaries, only used for single front.
config_mixed_layer_eddy_heat_flux	Surface heat flux.
config_mixed_layer_eddy_evaporation_flux	Evaporative flux
config_mixed_layer_eddy_wind_stress_zonal	Surface zonal wind stress.
config_mixed_layer_eddy_wind_stress_meridional	Surface meridional wind stress.
config_mixed_layer_eddy_coriolis_parameter	Coriolis parameter for entrie domain.

10.109 test_sht

Name	Description
config_test_sht_function_option	Function to apply forward and inverse transformations to
config_test_sht_cosine_bell_lat_center	latitude center of cosine bell
config_test_sht_cosine_bell_lon_center	longitude center of cosine bell
config_test_sht_cosine_bell_psi0	hill max of tracer
config_test_sht_cosine_bell_radius	radius of cosine bell
config_test_sht_function3_cell_width_equator	cell width at equator for config_test_sht_function_option = 3
config_test_sht_function3_cell_width_pole	cell width at pole for config_test_sht_function_option = 3

Name	**Description** (Continued)
config_test_sht_function3_lat_-transition_start	transition start for config_test_sht_function_option = 3
config_test_sht_function3_lat_-transition_width	transition width for config_test_sht_function_option = 3
config_test_sht_n_iterations	number of times to run forward/inverse transformation for timings

10.110 parabolic_bowl

Name	**Description**
config_parabolic_bowl_vert_levels	Number of vertical levels in parabolic bowl.
config_parabolic_bowl_-Coriolis_parameter	Coriolis paramter
config_parabolic_bowl_eta0	surface elevation magnitude
config_parabolic_bowl_b0	maximum water depth
config_parabolic_bowl_omega	Angular frequency of oscillation
config_parabolic_bowl_gravity	Gravitational accerlation
config_parabolic_bowl_adjust_-domain_center	Flag to adjust mesh coordinates

10.111 partial_cells

Name	**Description**
config_alter_ICs_for_pcs	If true, initial conditions are altered according to the config_pc_alteration_type flag.
config_pc_alteration_type	Determines the method of initial condition alteration for partial bottom (and possibly top) cells. 'partial_cell' alters layerThickness, interpolates all tracers in the bottom (and top) cell based on the bottomDepth (or ssh) variable, and alters bottomDepth (or ssh) to enforce the minimum pc fraction. 'full_cell' alters bottomDepth (or ssh) to have full cells everywhere, based on the refBottomDepth variable.
config_min_pc_fraction	Determines the minimum fraction of a cell altering the initial conditions can create.

10.112 init_setup

Name	Description
config_init_configuration	Name of configuration to create.
config_expand_sphere	Logical flag that controls if a spherical mesh is expanded to an earth sized sphere or not.
config_realistic_coriolis_-parameter	Logical flag that controls if a spherical mesh will get realistic coriolis parameters or not.
config_write_cull_cell_mask	Logicial flag that controls if the cullCell field is written to output.
config_vertical_grid	Name of vertical grid to use in configuration generation

10.113 CVTgenerator

Name	Description
config_1dCVTgenerator_stretch1	Parameter for the 1D CVT vertical grid generator.
config_1dCVTgenerator_stretch2	Parameter for the 1D CVT vertical grid generator.
config_1dCVTgenerator_dzSeed	Seed thickness of the first layer for the 1D CVT vertical grid generator.

10.114 init_vertical_grid

Name	Description
config_init_vertical_grid_type	Which vertical grid to initialize with. Without ice-shelf cavities (i.e. ssh=0 everywhere), 'z-star' and 'z-level' are the same.

10.115 constrain_Haney_number

Name	Description
config_rx1_outer_iter_count	The number of outer iterations (first smoothing then rx1 constraint) during initialization of the vertical grid.
config_rx1_inner_iter_count	The number of iterations used to constrain rx1 in each layer.
config_rx1_init_inner_weight	The weight by which layer thicknesses are altered at the beginning of inner iteration. This weight linearly increases to 1.0 by the final iteration.
config_rx1_max	The maximum value rx1Max of the Haney number (rx1) after modification of the vertical grid
config_rx1_horiz_smooth_weight	Relative weight of horizontal neighbors compared to this cell when smoothing vertical stretching
config_rx1_vert_smooth_weight	Relative weight of vertical neighbors compared to this cell when smoothing vertical stretching
config_rx1_slope_weight	Weight used to nudge level interfaces toward being flat (thus decreasing the Haney number)
config_rx1_zstar_weight	Weight used to nudge vertical stretching toward z-star during each outer iteration
config_rx1_horiz_smooth_open_ocean_cells	The size (in cells) of a buffer region around land ice for smoothing. Smoothing is performed under land ice and in the buffer region of open ocean.
config_rx1_min_levels	The minimum number of layers in the ocean column in the smoothed region.
config_rx1_min_layer_thickness	The minimum layer thickness in the smoothed region.

Chapter 11

Variable definitions

Embedded links point to more detailed variable information in the appendix.

11.1 state

The state data structure contains a set of prognostic and diagnostic fields that are time dependent. The fields contained inside of state have two time levels available in the default version of MPAS-Ocean.

Name	Description
normalVelocity	horizontal velocity, normal component to an edge
layerThickness	layer thickness
ssh	sea surface height
highFreqThickness	high frequency-filtered layer thickness
lowFreqDivergence	low frequency-filtered divergence
accumulatedFrazilIceMass	Mass per unit area of frazil ice produced. Reset to zero at each coupling interval
accumulatedFrazilIceSalinity	Salinity associated with accumulatedFrazilIceMass. Reset to zero at each coupling interval
accumulatedLandIceFrazil-Salinity	Salinity associated with accumulatedFrazilIceMass. Reset to zero at each coupling interval
accumulatedLandIceMass	Mass per unit area of land ice produced at land ice-ocean interface. Only computed in 'standalone' mode where land-ice fluxes are computed in MPAS-O.
accumulatedLandIceHeat	Heat per unit area stored in land ice produced at land ice-ocean interface. Only computed in 'standalone' mode where land-ice fluxes are computed in MPAS-O.
accumulatedLandIceFrazilMass	Mass per unit area of frazil ice produced under land ice. Only computed when not coupled to a dynamic land-ice model.
normalBarotropicVelocity	barotropic velocity, used in split-explicit time-stepping
normalBarotropicVelocity-Subcycle	barotropic velocity, used in subcycling in stage 2 of split-explicit time-stepping
sshSubcycle	sea surface height, used in subcycling in stage 2 of split-explicit time-stepping
normalBaroclinicVelocity	baroclinic velocity, used in split-explicit time-stepping

Name	Description (Continued)
effectiveDensityInLandIce	The effective ocean density within ice shelves based on Archimedes' principle.
gotmVertViscTopOfCell	GOTM: vertical viscosity defined at the cell center (horizontally) and top (vertically)
gotmVertDiffTopOfCell	GOTM: vertical diffusion defined at the cell center (horizontally) and top (vertically)
gotmTKETopOfCell	GOTM: turbulent kenetic energy defined at the cell center (horizontally) and top (vertically)
gotmKbTopOfCell	GOTM: (half) buoyancy variance defined at the cell center (horizontally) and top (vertically)
gotmEpsbTopOfCell	GOTM: destruction of buoyancy variance defined at the cell center (horizontally) and top (vertically)
gotmDissTopOfCell	GOTM: rate of dissipation defined at the cell center (horizontally) and top (vertically)
gotmLengthTopOfCell	GOTM: turbulent length scale defined at the cell center (horizontally) and top (vertically)
layerThicknessLag	The layerThickness after the Lagrangian step, prior to remapping.
temperature	potential temperature
salinity	salinity in grams salt per kilogram seawater
tracer1	tracer for debugging purposes
tracer2	tracer for debugging purposes
tracer3	tracer for debugging purposes
PO4	Dissolved Inorganic Phosphate
NO3	Dissolved Inorganic Nitrate
SiO3	Dissolved Inorganic Silicate
NH4	Dissolved Ammonia
Fe	Dissolved Inorganic Iron
Lig	Iron Binding Ligand
O2	Dissolved Oxygen
DIC	Dissolved Inorganic Carbon
DIC_ALT_CO2	Dissolved Inorganic Carbon, Alternative CO2
ALK	Alkalinity
ALK_ALT_CO2	Alkalinity Alternative CO2
DOC	Dissolved Organic Carbon
DON	Dissolved Organic Nitrogen
DOP	Dissolved Organic Phosphorus
DOPr	Refractory DOP
DONr	Refractory DON
DOCr	Refractory DOC
zooC	Zooplankton Carbon
spChl	Small Phytoplankton Chlorophyll
spC	Small Phytoplankton Carbon
spFe	Small Phytoplankton Iron
spP	Small Phytoplankton Phosphorus
spCaCO3	Small Phytoplankton Calcium Carbonate
diatChl	Diatom Chlorophyll
diatC	Diatom Carbon
diatFe	Diatom Iron
diatP	Diatom Phosphorus
diatSi	Diatom Silicate
diazChl	Diazotroph Chlorophyll

Name	Description (Continued)
diazC	Diazotroph Carbon
diazFe	Diazotroph Iron
diazP	Diazotroph Phosphorus
DMS	Dimethyl Sulfide
DMSP	Dimethyl Sulfoniopropionate
PROT	Proteins
POLY	Polysaccharides
LIP	Lipids
iAge	tracer for ideal age
CFC11	CFC11
CFC12	CFC12

11.2 mesh

The mesh data type contains a single time level. The fields inside the mesh structure are not assumed to be time dependent. This data structure contains fields that describe the mesh, and the connectivity of the mesh. Several of the fields contained in this structure are shared throughout all MPAS dynamical cores.

Name	Description
latCell	Latitude location of cell centers in radians.
lonCell	Longitude location of cell centers in radians.
xCell	X Coordinate in cartesian space of cell centers.
yCell	Y Coordinate in cartesian space of cell centers.
zCell	Z Coordinate in cartesian space of cell centers.
indexToCellID	List of global cell IDs.
latEdge	Latitude location of edge midpoints in radians.
lonEdge	Longitude location of edge midpoints in radians.
xEdge	X Coordinate in cartesian space of edge midpoints.
yEdge	Y Coordinate in cartesian space of edge midpoints.
zEdge	Z Coordinate in cartesian space of edge midpoints.
indexToEdgeID	List of global edge IDs.
latVertex	Latitude location of vertices in radians.
lonVertex	Longitude location of vertices in radians.
xVertex	X Coordinate in cartesian space of vertices.
yVertex	Y Coordinate in cartesian space of vertices.
zVertex	Z Coordinate in cartesian space of vertices.
indexToVertexID	List of global vertex IDs.
meshDensity	Value of density function used to generate a particular mesh at cell centers.
meshScalingDel2	Coefficient to Laplacian mixing terms in momentum and tracer equations, so that viscosity and diffusion scale with mesh.
meshScalingDel4	Coefficient to biharmonic mixing terms in momentum and tracer equations, so that biharmonic viscosity and diffusion coefficients scale with mesh.

Name	**Description** (Continued)
cellsOnEdge	List of cells that straddle each edge.
nEdgesOnCell	Number of edges that border each cell.
nEdgesOnEdge	Number of edges that surround each of the cells that straddle each edge. These edges are used to reconstruct the tangential velocities.
edgesOnCell	List of edges that border each cell.
edgesOnEdge	List of edges that border each of the cells that straddle each edge.
weightsOnEdge	Reconstruction weights associated with each of the edgesOnEdge, used to reconstruct the tangentialVelocity from normalVelocities on neighboring edges.
dvEdge	Length of each edge, computed as the distance between verticesOnEdge.
dcEdge	Length of each edge, computed as the distance between cellsOnEdge.
angleEdge	Angle the edge normal makes with local eastward direction.
areaCell	Area of each cell in the primary grid.
areaTriangle	Area of each cell (triangle) in the dual grid.
edgeNormalVectors	Normal unit vector defined at an edge.
edgeTangentVectors	Tangent unit vector defined at an edge.
localVerticalUnitVectors	Unit surface normal vectors defined at cell centers.
cellTangentPlane	The two vectors that define a tangent plane at a cell center.
cellsOnCell	List of cells that neighbor each cell.
verticesOnCell	List of vertices that border each cell.
verticesOnEdge	List of vertices that straddle each edge.
edgesOnVertex	List of edges that share a vertex as an endpoint.
cellsOnVertex	List of cells that share a vertex.
kiteAreasOnVertex	Area of the portions of each dual cell that are part of each cellsOnVertex.
fEdge	Coriolis parameter at edges.
fVertex	Coriolis parameter at vertices.
fCell	Coriolis parameter at cell centers.
bed_elevation	Depth of the bottom of the ocean. Given as negative distance from sea level. Used as input to replace topography input file.
bottomDepth	Depth of the bottom of the ocean. Given as a positive distance from sea level.
bottomDepthObserved	Depth of the bottom of the ocean, before any alterations for modeling purposes. Given as a positive distance from sea level.
oceanFracObserved	fraction of each cell containing ocean, used to determine which cells are culled as land.
coeffs_reconstruct	Coefficients to reconstruct velocity vectors at cells centers.
minLevelCell	Index to the first active ocean cell in each column.
maxLevelCell	Index to the last active ocean cell in each column.
minLevelEdgeTop	Index to the first edge in a column with at least one active ocean cell on either side of it.
maxLevelEdgeTop	Index to the last edge in a column with active ocean cells on both sides of it.
minLevelEdgeBot	Index to the first edge in a column with active ocean cells on both sides of it.
maxLevelEdgeBot	Index to the last edge in a column with at least one active ocean cell on either side of it.
minLevelVertexTop	Index to the first vertex in a column with at least one active ocean cell around it.

Name	Description (Continued)
maxLevelVertexTop	Index to the last vertex in a column with all active cells around it.
minLevelVertexBot	Index to the first vertex in a column with all active cells around it.
maxLevelVertexBot	Index to the last vertex in a column with at least one active ocean cell around it.
refBottomDepth	Reference depth of ocean for each vertical level. Used in 'z-level' type runs.
refBottomDepthTopOfCell	Reference depth of ocean for each vertical interface. Used in 'z-level' type runs.
vertCoordMovementWeights	Weights used for distribution of sea surface height perturbations through multiple vertical levels.
boundaryEdge	Mask for determining boundary edges. A boundary edge has only one active ocean cell neighboring it.
boundaryVertex	Mask for determining boundary vertices. A boundary vertex has at least one inactive cell neighboring it.
boundaryCell	Mask for determining boundary cells. A boundary cell has at least one inactive cell neighboring it.
edgeMask	Mask on edges that determines if computations should be done on edges.
vertexMask	Mask on vertices that determines if computations should be done on vertices.
cellMask	Mask on cells that determines if computations should be done on cells.
edgeSignOnCell	Sign of edge contributions to a cell for each edge on cell. Used for bit-reproducible loops. Represents directionality of vector connecting cells.
edgeSignOnVertex	Sign of edge contributions to a vertex for each edge on vertex. Used for bit-reproducible loops. Represents directionality of vector connecting vertices.
kiteIndexOnCell	Index of kite in dual grid, based on verticesOnCell.
cullCell	Array to hold integers that represent logicals determining if a cell should be culled or not by the MpasCellCuller tool.
distanceToCoast	Distance of each cell to nearest coastline cell.

11.3 verticalMesh

The vertical mesh data type contains a single time level. The fields inside the vertical mesh structure are not assumed to be time dependent. This data structure contains fields that describe the vertical mesh and are used for various types of vertical meshes.

Name	Description
restingThickness	Layer thickness when the ocean is at rest, i.e. without SSH or internal perturbations.
refZMid	Reference mid z-coordinate of ocean for each vertical level. This has a negative value.
refLayerThickness	Reference layerThickness of ocean for each vertical level.

11.4 tend

The tend data structure represents the tendencies used to time step the prognostic variables within the state structure.

Name	Description
tendNormalVelocity	time tendency of normal component of velocity
tendLayerThickness	time tendency of layer thickness
tendSSH	time tendency of sea-surface height
tendHighFreqThickness	time tendency of high frequency-filtered layer thickness
tendLowFreqDivergence	time tendency of low frequency-filtered divergence
temperatureTend	time tendency of potential temperature measured as change in degrees times layerThickness per second
salinityTend	time tendency of salinity measured as change in practical salinity units times layerThickness per second
tracer1Tend	Tendency for tracer1
tracer2Tend	Tendency for tracer2
tracer3Tend	Tendency for tracer3
PO4Tend	Dissolved Inorganic Phosphate Tendency
NO3Tend	Dissolved Inorganic Nitrate Tendency
SiO3Tend	Dissolved Inorganic Silicate Tendency
NH4Tend	Dissolved Ammonia Tendency
FeTend	Dissolved Inorganic Iron Tendency
LigTend	Ligand Tendency
O2Tend	Dissolved Oxygen Tendency
DICTend	Dissolved Inorganic Carbon Tendency
DIC_ALT_CO2Tend	Dissolved Inorganic Carbon, Alternative CO2 Tendency
ALKTend	Alkalinity Tendency
ALK_ALT_CO2Tend	Alkalinity Tendency, Alternative CO2 Tendency
DOCTend	Dissolved Organic Carbon Tendency
DONTend	Dissolved Organic Nitrogen Tendency
DOPTend	Dissolved Organic Phosphorus Tendency
DOPrTend	Refractory DOP Tendency
DONrTend	Refractory DON Tendency
DOCrTend	Refractory DOC Tendency
zooCTend	Zooplankton Carbon Tendency
spChlTend	Small Phytoplankton Chlorophyll Tendency
spCTend	Small Phytoplankton Carbon Tendency
spFeTend	Small Phytoplankton Iron Tendency
spPTend	Small Phytoplankton Phosphorus Tendency
spCaCO3Tend	Small Phytoplankton Calcium Carbonate Tendency
diatChlTend	Diatom Chlorophyll Tendency
diatCTend	Diatom Carbon Tendency
diatFeTend	Diatom Iron Tendency
diatPTend	Diatom Phosphorus Tendency
diatSiTend	Diatom Silicate Tendency
diazChlTend	Diazotroph Chlorophyll Tendency
diazCTend	Diazotroph Carbon Tendency
diazFeTend	Diazotroph Iron Tendency

Name	Description (Continued)
diazPTend	Diazotroph Phosphorus Tendency
DMSTend	Dimethyl Sulfide Tendency
DMSPTend	Dimethyl Sulfoniopropionate Tendency
PROTTend	Proteins Tendency
POLYTend	Polysaccharides Tendency
LIPTend	Lipids Tendency
iAgeTend	Tendency for iAge
CFC11Tend	CFC11 Tendency
CFC12Tend	CFC12 Tendency

11.5 diagnostics

The diagnostics type contains a set of diagnostics variables that are only generally used in specific parts of MPAS-Ocean.

Name	Description
xtime	model time, with format 'YYYY-MM-DD_HH:MM:SS'
Time	time
Time_bnds	time bounds
simulationStartTime	start time of first simulation, with format 'YYYY-MM-DD_HH:MM:SS'
daysSinceStartOfSim	Time since simulationStartTime, for plotting
salinitySurfaceRestoringTendency	salinity tendency due to surface restoring
temperatureSurfaceFluxTendency	potential temperature tendency due to surface fluxes
salinitySurfaceFluxTendency	salinity tendency due to surface fluxes
temperatureShortWaveTendency	potential temperature tendency due to penetrating shortwave
temperatureHorMixTendency	potential temperature tendency due to horizontal mixing (including Redi)
salinityHorMixTendency	salinity tendency due to horizontal mixing (including Redi)
temperatureNonLocalTendency	potential temperature tendency due to kpp non-local flux
salinityNonLocalTendency	salinity tendency due to kpp non-local flux
temperatureVerticalAdvection-TopFlux	potential temperature vertical advective flux through top of cell
salinityVerticalAdvectionTop-Flux	salinity advective vertical advective flux through top of cell
temperatureHorizontalAdvection-EdgeFlux	potential temperature advective flux due to horizontal advection through edges
salinityHorizontalAdvectionEdge-Flux	salinity advective flux due to horizontal advection through edges
temperatureHorizontalAdvection-Tendency	potential temperature tendency due to horizontal advection
salinityHorizontalAdvection-Tendency	salinity tendency due to horizontal advection
temperatureVerticalAdvection-Tendency	potential temperature tendency due to vertical advection

Name	Description (Continued)
salinityVerticalAdvection-Tendency	salinity tendency due to vertical advection
temperatureVertMixTendency	potential temperature tendency due to vertical mixing
salinityVertMixTendency	salinity tendency due to vertical mixing
temperatureSurfaceValue	potential temperature extrapolated to ocean surface
salinitySurfaceValue	salinity extrapolated to ocean surface
temperatureSurfaceLayerValue	potential temperature averaged over ocean surface layer (generally 0.1 of the ocean boundary layer)
salinitySurfaceLayerValue	salinity averaged over ocean surface layer (generally 0.1 of the ocean boundary layer)
normalVelocitySurfaceLayer	normal velocity averaged over ocean surface layer (generally 0.1 of the ocean boundary layer)
surfaceVelocityZonal	Zonal surface velocity reconstructed at cell centers
surfaceVelocityMeridional	Meridional surface velocity reconstructed at cell centers
surfacePressure	Pressure at the sea surface due to atmosphere, sea ice, frazil and land ice
SSHGradientZonal	Zonal gradient of SSH reconstructed at cell centers
SSHGradientMeridional	Meridional gradient of SSH reconstructed at cell centers
zMid	z-coordinate of the mid-depth of the layer
zTop	z-coordinate of the top of the layer
density	density
displacedDensity	Density displaced adiabatically to the mid-depth one layer deeper. That is, layer k has been displaced to the depth of layer k+1.
potentialDensity	potential density: density displaced adiabatically to the mid-depth of top layer
inSituThermalExpansionCoeff	Thermal expansion coefficient (alpha), defined as $-1/\rho d\rho/dT$ (note negative sign). This is in situ, i.e. not displaced to another depth.
inSituSalineContractionCoeff	Saline contraction coefficient (beta), defined as $1/\rho d\rho/dS$. This is also called the haline contraction coefficient. This is in situ, i.e. not displaced to another depth.
BruntVaisalaFreqTop	Brunt Vaisala frequency defined at the center (horizontally) and top (vertically) of cell
montgomeryPotential	Montgomery potential, may be used as the pressure for isopycnal coordinates.
pressure	pressure used in the momentum equation
modifyLandIcePressureMask	A mask indicating where landIcePressure can be modified during iterative init. The mask is 1 under (and perhaps near) ice shelves and 0 elsewhere.
normalTransportVelocity	horizontal velocity used to transport mass and tracers
wettingVelocityFactor	Scaling factor for normalVelocity and its tendency to prevent drying of cell between 0 (no scaling) and 1 (normalVelocity and tendency set to 0).
vertAleTransportTop	vertical transport through the layer interface at the top of the cell
vertVelocityTop	vertical velocity defined at center (horizontally) and top (vertically) of cell
vertTransportVelocityTop	vertical tracer-transport velocity defined at center (horizontally) and top (vertically) of cell. This is not the vertical ALE transport, but is Eulerian (fixed-frame) in the vertical, and computed from the continuity equation from the horizontal total tracer-transport velocity.

Name	**Description** (Continued)
vertGMBolusVelocityTop	vertical tracer-transport velocity defined at center (horizontally) and top (vertically) of cell. This is not the vertical ALE transport, but is Eulerian (fixed-frame) in the vertical, and computed from the continuity equation from the horizontal GM Bolus velocity.
vertMLEBolusVelocityTop	vertical tracer-transport velocity defined at center (horizontally) and top (vertically) of cell. This is not the vertical ALE transport, but is Eulerian (fixed-frame) in the vertical, and computed from the continuity equation from the horizontal MLE (submesoscale) Bolus velocity.
tangentialVelocity	horizontal velocity, tangential to an edge
layerThicknessEdgeDrag	layer thickness to be used for drag terms
layerThicknessEdgeMean	layer thickness averaged from cell center to edges
layerThicknessEdgeFlux	layer thickness used for fluxes through edges. May be centered, upwinded, or a combination of the two.
layerThicknessVertex	layer thickness averaged from cell center to vertices
kineticEnergyCell	kinetic energy of horizontal velocity on cells
viscosity	horizontal viscosity
divergence	divergence of horizontal velocity
circulation	area-integrated vorticity
relativeVorticity	curl of horizontal velocity, defined at vertices
relativeVorticityCell	curl of horizontal velocity, averaged from vertices to cell centers
normalizedRelativeVorticityEdge	curl of horizontal velocity divided by layer thickness, averaged from vertices to edges
normalizedPlanetaryVorticity-Edge	earth's rotational rate (Coriolis parameter, f) divided by layer thickness, averaged from vertices to edges
normalizedRelativeVorticityCell	curl of horizontal velocity divided by layer thickness, averaged from vertices to cell centers
barotropicForcing	Barotropic tendency computed from the baroclinic equations in stage 1 of the split-explicit algorithm.
barotropicThicknessFlux	Barotropic thickness flux at each edge, used to advance sea surface height in each subcycle of stage 2 of the split-explicit algorithm.
velocityX	component of horizontal velocity in the x-direction (cartesian)
velocityY	component of horizontal velocity in the y-direction (cartesian)
velocityZ	component of horizontal velocity in the z-direction (cartesian)
velocityZonal	component of horizontal velocity in the eastward direction
velocityMeridional	component of horizontal velocity in the northward direction
transportVelocityX	component of horizontal velocity used to transport mass and tracers in the x-direction (cartesian)
transportVelocityY	component of horizontal velocity used to transport mass and tracers in the y-direction (cartesian)
transportVelocityZ	component of horizontal velocity used to transport mass and tracers in the z-direction (cartesian)
transportVelocityZonal	component of horizontal velocity used to transport mass and tracers in the eastward direction
transportVelocityMeridional	component of horizontal velocity used to transport mass and tracers in the northward direction
gradSSH	Gradient of sea surface height at edges.
gradSSHX	X Component of the gradient of sea surface height at cell centers.
gradSSHY	Y Component of the gradient of sea surface height at cell centers.
gradSSHZ	Z Component of the gradient of sea surface height at cell centers.

Name	**Description** (Continued)
gradSSHZonal	Zonal Component of the gradient of sea surface height at cell centers.
gradSSHMeridional	Meridional Component of the gradient of sea surface height at cell centers.
normalGMBolusVelocity	Bolus velocity in Gent-McWilliams eddy parameterization
normalMLEvelocity	Velocity from mixed layer eddies (fox kemper 2011 submesoscale parameterization)
cGMphaseSpeed	phase speed for the bolus velocity calculation
betaEdge	meridional gradient of the coriolis parameter, used in the mesoscale eddy parameterization schemes
gmKappaScaling	spatially and depth varying GM kappa. The scaling is based on the Brunt Vaisala Frequency relative to a maximum value below the mixed layer, follows from Danabasoglu and Marshall 2007. If config_GM_closure is not set to N2_dependent the scaling value is set to 1 everywhere.
RediKappaSfcTaper	Scaling coefficient for Redi kappa. Varies from 0 to 1.
rediLimiterCount	count of times redi limiter is invoked on a timestep
gradDensityEddy	horizontal gradient of density at cell edge and interfaces in vertical. this is used for the GM parameterization and the submesoscale eddy parameterization
mleVelocityZonal	Bolus velocity in fox-kemper mle parameterization, zonal-direction
mleVelocityMeridional	Bolus velocity in fox-kemper mle parameterization, meridional-direction
eddyVelocityX	Bolus velocity in Gent-McWilliams eddy or submesoscale parameterization, x-direction
eddyVelocityY	Bolus velocity in Gent-McWilliams or submesoscale eddy parameterization, y-direction
eddyVelocityZ	eddy Bolus velocity in Gent-McWilliams or submesoscale eddy parameterization, z-direction
GMBolusVelocityZonal	Bolus velocity in Gent-McWilliams eddy parameterization, zonal-direction
GMBolusVelocityMeridional	Bolus velocity in Gent-McWilliams eddy parameterization, meridional-direction
RiTopOfCell	gradient Richardson number defined at the center (horizontally) and top (vertically)
RiTopOfEdge	gradient Richardson number defined at the edge (horizontally) and top (vertically)
vertViscTopOfEdge	vertical viscosity defined at the edge (horizontally) and top (vertically)
vertViscTopOfCell	vertical viscosity defined at the cell center (horizontally) and top (vertically)
vertDiffTopOfCell	vertical diffusion defined at the cell center (horizontally) and top (vertically)
bulkRichardsonNumber	CVMix/KPP: bulk Richardson number
bulkRichardsonNumberBuoy	CVMix/KPP: contribution of buoyancy to bulk Richardson number
bulkRichardsonNumberShear	CVMix/KPP: contribution of shear to bulk Richardson number
unresolvedShear	CVMix/KPP: contribution of unresolved velocity to vertical shear
boundaryLayerDepth	CVMix/KPP: diagnosed depth of the ocean surface boundary layer
boundaryLayerDepthSmooth	CVMix/KPP: smoothed boundary layer depth
boundaryLayerDepthEdge	CVMix/KPP: diagnosed depth of the ocean surface boundary layer averaged to cell edges

Name	Description (Continued)
vertNonLocalFluxTemp	CVMix/KPP: nonlocal boundary layer mixing term for temperature
indexBoundaryLayerDepth	CVMix/KPP: int(indexBoundaryLayerDepth) is vertical layer within which boundaryLayerDepth resides. mod(indexBoundaryLayerDepth) indicates whether boundaryLayerDepth resides above layer center (value = 0.25) or below layer center (value=0.75)
indexSurfaceLayerDepth	CVMix/KPP: surface layer entirely encompasses int(indexSurfaceLayerDepth) vertical layers and fraction(indexSurfaceLayerDepth) of the int(indexSurfaceLayerDepth)+1 layer.
surfaceFrictionVelocity	CVMix/KPP: diagnosed surface friction velocity defined as square root of (mag(wind stress) / reference density)
penetrativeTemperatureFluxOBL	CVMix/KPP: Penetrative temperature flux at the bottom of boundary layer due to solar radiation. Positive is into the ocean.
bottomLayerShortwave-TemperatureFlux	Solar flux that reaches bottom of the ocean and does not impact temperature
surfaceBuoyancyForcing	CVMix/KPP: diagnosed surface buoyancy flux due to heat, salt and freshwater fluxes. Positive flux increases buoyancy.
indMLD	index of model where mixed layer depth occurs (always one past)
dThreshMLD	mixed layer depth based on density threshold
slopeTriadUp	Magnitude of slope of isopycnal surface, using triad through this cell and edge, angled up. Uses expansion of equation of state.
slopeTriadDown	Magnitude of slope of isopycnal surface, using triad through this cell and edge, angled up. Uses expansion of equation of state.
limiterUp	Magnitude of slope of isopycnal surface, using triad through this cell and edge, angled up. Uses expansion of equation of state.
limiterDown	Magnitude of slope of isopycnal surface, using triad through this cell and edge, angled up. Uses expansion of equation of state.
k33	The (3,3) entry of the Redi diffusion tensor. Added to the model vertical diffusion. Defined at the top of cell k
gmStreamFuncTopOfEdge	GM stream function
GMStreamFuncX	GM stream function
GMStreamFuncY	GM stream function
GMStreamFuncZ	GM stream function
GMStreamFuncZonal	GM stream function
GMStreamFuncMeridional	GM stream function
gmBolusKappa	GM Bolus Kappa value. On output, it has NOT been multiplied by the horizontal taper array gmHorizontalTaper, because that is applied at the end to the normalGMBolusVelocity variable, not to the gmBolusKappa.
RediKappa	Redi Kappa value. On output, it has already been multiplied by the horizontal taper array RediHorizontalTaper (as opposed to gmBolusKappa, which has not been multiplied by the horizontal taper).
RediHorizontalTaper	Horizontal tapering for Redi. Varies between 0 and 1.
gmHorizontalTaper	Horizontal tapering for GM. Varies between 0 and 1.
RossbyRadius	Rossby Radius, computed in GM routine for some settings
surfaceFluxAttenuation-Coefficient	The spatially-dependent length scale of exponential decay of surface fluxes. Fluxes are multiplied by $e^{z/\gamma}$, where this coefficient is γ.
surfaceFluxAttenuation-CoefficientRunoff	The spatially-dependent length scale of exponential decay of river runoff. Fluxes are multiplied by $e^{z/\gamma}$, where this coefficient is γ.

Name	**Description** (Continued)
topographic_wave_drag	wave drag coefficient or 1/(rinv) where rinv is the e-folding time used in HyCOM
landIceFrictionVelocity	The friction velocity u_* under land ice
topDrag	Top drag at the surface of the ocean defined at edge midpoints. Magnitude in direction of edge normal.
topDragMagnitude	Magnitude of top drag at the surface of the ocean, at cell centers.
landIceBoundaryLayer-Temperature	The temperature averaged over the sub-ice-shelf boundary layer
landIceBoundaryLayerSalinity	The salinity averaged over the sub-ice-shelf boundary layer
landIceHeatTransferVelocity	friction velocity times nondimensional heat transfer coefficient
landIceSaltTransferVelocity	friction velocity times nondimensional salt transfer coefficient
rx1Cell	The Haney number (rx1), a measure of hydrostatic consistency, at cell centers.
rx1Edge	The Haney number (rx1), a measure of hydrostatic consistency, at edges.
rx1MaxCell	The Haney number (rx1) is ratio of vertical displacement to cell thickness between two neighboring horizontal cells. It is computed at each edge. This cell-based value is the maximum over all edges and vertical levels of each cell.
rx1MaxEdge	The maximum Haney number (rx1) in a vertical column, measured at edges.
globalRx1Max	The global maximum Haney number (rx1).
globalVerticalStretchMax	The global maximum stretching of the vertical grid compared with z-level.
globalVerticalStretchMin	The global minimum stretching of the vertical grid compared with z-level.
rx1InitSmoothingMask	A mask indicating where layer interface and thickness smoothing is to be performed during Haney number constrained initializaiton.
verticalStretch	the stretch factor of each layer compared with the default z-level coordinate
pressureAdjustedSSH	sea surface height adjusted by sea surface pressure
barotropicCoriolisTerm	f * uPerp for the split-implicit time stepping
SIvec_r0	A vector used in the split-implicit barotropic mode solver
SIvec_r1	A vector used in the split-implicit barotropic mode solver
SIvec_rh0	A vector used in the split-implicit barotropic mode solver
SIvec_rh1	A vector used in the split-implicit barotropic mode solver
SIvec_r00	A vector used in the split-implicit barotropic mode solver
SIvec_ph0	A vector used in the split-implicit barotropic mode solver
SIvec_ph1	A vector used in the split-implicit barotropic mode solver
SIvec_v0	A vector used in the split-implicit barotropic mode solver
SIvec_s0	A vector used in the split-implicit barotropic mode solver
SIvec_s1	A vector used in the split-implicit barotropic mode solver
SIvec_sh0	A vector used in the split-implicit barotropic mode solver
SIvec_sh1	A vector used in the split-implicit barotropic mode solver
SIvec_w0	A vector used in the split-implicit barotropic mode solver
SIvec_w1	A vector used in the split-implicit barotropic mode solver
SIvec_wh0	A vector used in the split-implicit barotropic mode solver
SIvec_wh1	A vector used in the split-implicit barotropic mode solver
SIvec_q0	A vector used in the split-implicit barotropic mode solver
SIvec_q1	A vector used in the split-implicit barotropic mode solver
SIvec_qh0	A vector used in the split-implicit barotropic mode solver

Name	Description (Continued)
SIvec_qh1	A vector used in the split-implicit barotropic mode solver
SIvec_z0	A vector used in the split-implicit barotropic mode solver
SIvec_z1	A vector used in the split-implicit barotropic mode solver
SIvec_zh0	A vector used in the split-implicit barotropic mode solver
SIvec_zh1	A vector used in the split-implicit barotropic mode solver
SIvec_t0	A vector used in the split-implicit barotropic mode solver
SIvec_t1	A vector used in the split-implicit barotropic mode solver
SIvec_y0	A vector used in the split-implicit barotropic mode solver
ssh_sal	sea surface height perturbation from self-attraction and loading
ssh_sal_grad	gradient of sea surface height perturbation from self-attraction and loading
normalVelocityTendOld	time tendency of normal component of velocity at the previous time step used in the split-explicit AB2 time stepping
CoriolisTermOld	Coriolis term at the previous time step used in the split-explicit AB2 time stepping

11.6 shortwave

Name	Description
chlorophyllData	concentration of chlorophyll data
zenithAngle	the cos of the solar zenith angle
clearSkyRadiation	the fractional cloudiness (between 0 and 1)

11.7 forcing

The forcing data type contains a single time level. The forcing structure contains fields related to surface fluxes, wind stress, and fields that can be used to compute surface fluxes.

Name	Description
surfaceStress	The component of the total surface stress on the ocean defined at edge midpoints and pointing in the direction of the edge normal. This field the sum of constituent stresses (e.g. wind stress and top drag) and is used to compute a tendency in the normal velocity.
surfaceStressMagnitude	Magnitude of surface stress, at cell centers.
surfaceThicknessFlux	Flux of mass through the ocean surface. Positive into ocean.
surfaceThicknessFluxRunoff	Flux of mass through the ocean surface due to river runoff. Positive into ocean.
windStressZonal	Zonal (eastward) component of wind stress at cell centers from coupler. Positive eastward.

Name	**Description** (Continued)
windStressMeridional	Meridional (northward) component of wind stress at cell centers from coupler. Positive northward.
bottomDrag	Bottom drag Cd coefficient in cells.
nForcingGroupCounter	**MISSING**
forcingGroupNames	**MISSING**
forcingGroupRestartTimes	**MISSING**
seaIcePressure	Pressure at the sea surface due to sea ice.
atmosphericPressure	Pressure at the sea surface due to the atmosphere.
seaIceEnergy	Energy per unit area trapped in frazil ice formation. Always ≥ 0.0.
penetrativeTemperatureFlux	Penetrative temperature flux at the surface due to solar radiation. Positive is into the ocean.
fractionAbsorbed	Divergence of transmission through interfaces of surface fluxes below the surface layer at cell centers. These are not applied to short wave.
fractionAbsorbedRunoff	Divergence of transmission through interfaces of surface fluxes below the surface layer at cell centers. These are applied only to river runoff.
latentHeatFlux	Latent heat flux at cell centers from coupler. Positive into the ocean.
sensibleHeatFlux	Sensible heat flux at cell centers from coupler. Positive into the ocean.
longWaveHeatFluxUp	Upward long wave heat flux at cell centers from coupler. Positive into the ocean.
longWaveHeatFluxDown	Downward long wave heat flux at cell centers from coupler. Positive into the ocean.
seaIceHeatFlux	Sea ice heat flux at cell centers from coupler. Positive into the ocean.
icebergHeatFlux	Iceberg heat flux at cell centers from coupler. Positive into the ocean.
shortWaveHeatFlux	Short wave flux at cell centers from coupler. Positive into the ocean.
rainTemperatureFlux	Heat flux associated with rain at cell centers sent to coupler. Positive into the ocean.
evapTemperatureFlux	Heat flux associated with Evaporation at cell centers sent to coupler. Positive into the ocean.
seaIceTemperatureFlux	Heat flux associated with sea ice melt water at cell centers sent to coupler. Positive into the ocean.
icebergTemperatureFlux	Heat flux associated with iceberg melt at cell centers sent to coupler. Positive into the ocean.
totalFreshWaterTemperatureFlux	Sum of heat fluxes associated with water fluxes cell centers sent to coupler. Positive into the ocean.
evaporationFlux	Evaporation flux at cell centers from coupler. Positive into the ocean.
seaIceSalinityFlux	Sea ice salinity flux at cell centers from coupler. Positive into the ocean.
seaIceFreshWaterFlux	Fresh water flux from sea ice at cell centers from coupler. Positive into the ocean.
icebergFreshWaterFlux	Fresh water flux from iceberg melt at cell centers from coupler. Positive into the ocean.
riverRunoffFlux	Fresh water flux from river runoff at cell centers from coupler. Positive into the ocean.

Name	Description (Continued)
removedRiverRunoffFlux	Fresh water flux from river runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.
totalRemovedRiverRunoffFlux	Global sum of fresh water flux from river runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.
iceRunoffFlux	Fresh water flux from ice runoff at cell centers from coupler. Positive into the ocean.
removedIceRunoffFlux	Fresh water flux from ice runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.
totalRemovedIceRunoffFlux	Global sum of fresh water flux from ice runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.
rainFlux	Fresh water flux from rain at cell centers from coupler. Positive into the ocean.
snowFlux	Fresh water flux from snow at cell centers from coupler. Positive into the ocean.
iceFraction	Fraction of sea ice coverage at cell centers from coupler. Positive into the ocean.
windSpeed10m	Wind speed at 10 meter.
stokesDriftZonal	Zonal component of the wave-induced Stokes drift current.
stokesDriftMeridional	Meridional component of the wave-induced Stokes drift current.
stokesDriftSurfaceZonal	Zonal component of the wave-induced Stokes surface drift current.
stokesDriftSurfaceMeridional	Meridional component of the wave-induced Stokes surface drift current.
significantWaveHeight	Significant wave height is the average of the highest 1/3 of the waves
peakWaveFrequency	Frequency of peak of wave spectrum
peakWaveDirection	Direction of peak of wave spectrum
langmuirNumber	Projected surface layer averaged Langmuir number from Van Roekel et al. 2012.
stokesDriftZonalWavenumber	Zonal component of the partitioned wave-induced Stokes drift current. Wavenumbers 1-6 are used to recontruct the full depth-dependent Stokes drift profile
stokesDriftMeridional-Wavenumber	Meridional component of the partitioned wave-induced Stokes drift current. Wavenumbers 1-6 are used to recontruct the full depth-dependent Stokes drift profile
nAccumulatedCoupled	Number of accumulations in time averaging of coupler fields
avgTemperatureSurfaceValue	Time averaged potential temperature extrapolated to ocean surface
avgSalinitySurfaceValue	Time averaged salinity extrapolated to ocean surface
avgSurfaceVelocityZonal	Time averaged zonal surface velocity
avgSurfaceVelocityMeridional	Time averaged meridional surface velocity
avgSSHGradientZonal	Time averaged zonal gradient of SSH
avgSSHGradientMeridional	Time averaged meridional gradient of SSH
filteredSSHGradientZonal	Time filtered zonal gradient of SSH
filteredSSHGradientMeridional	Time filtered meridional gradient of SSH
avgTotalFreshWaterTemperature-Flux	Sum of heat fluxes associated with water fluxes cell centers sent to coupler. Positive into the ocean.
landIceFraction	The fraction of each cell covered by land ice
landIceMask	Mask indicating where land-ice is present (1) or absent (0)

Name	**Description** (Continued)
landIceFloatingFraction	The fraction of each cell covered by an ice shelf
landIceFloatingMask	Mask indicating where an ice shelf is present (1) or absent (0)
landIcePressure	Pressure defined at the sea surface due to land ice.
landIceDraft	The elevation of the interface between land ice and the ocean.
landIceSurfaceTemperature	temperature at the surface of land ice
landIceInterfaceTemperature	The temperature at the land ice-ocean interface (the local freezing temperature)
landIceInterfaceSalinity	The salinity at the land ice-ocean interface
landIceFreshwaterFlux	Flux of mass through the ocean surface. Positive into ocean.
landIceHeatFlux	Flux of heat into the ocean at land ice-ocean interface. Positive into ocean.
heatFluxToLandIce	Flux of heat out of ice at land ice-ocean interface. Positive into ocean.
avgLandIceBoundaryLayer-Temperature	The time-averaged temperature averaged over the sub-ice-shelf boundary layer
avgLandIceBoundaryLayer-Salinity	The time-averaged salinity averaged over the sub-ice-shelf boundary layer
avgLandIceHeatTransferVelocity	time-averaged friction velocity times nondimensional heat transfer coefficient
avgLandIceSaltTransferVelocity	time-averaged friction velocity times nondimensional salt transfer coefficient
avgEffectiveDensityInLandIce	The time-averaged effective ocean density within ice shelves based on Archimedes' principle.
dataLandIceFreshwaterFlux	Flux of mass through the ocean surface, as read in from a forcing file. Positive into ocean.
dataLandIceHeatFlux	Flux of heat into the ocean at land ice-ocean interface, as read in from a forcing file. Positive into ocean.
tidalInputMask	Input mask for application of tidal forcing where 1 is applied tidal forcing
tidalBCValue	Value of ssh height in cell for tidal boundary condition
vegetationHeight	Stem height of the vegetation
vegetationDiameter	Stem diameter of the vegetation
vegetationDensity	Stem density of the vegetation per unit area
vegetationMask	Mask value 1 as vegetated cell, and 0 as non-vegetated cell
vegetationManning	Manning roughness coefficient induced by vegetation
tidalLayerThicknessTendency	layer thickness tendency due to tidal forcing
frazilLayerThicknessTendency	layer thickness tendency due to frazil processes
frazilTemperatureTendency	temperature tendency due to frazil processes
frazilSalinityTendency	salinity tendency due to frazil processes
frazilSurfacePressure	surface pressure forcing due to weight of frazil ice
tidalPotentialEta	Equilibrium tidal potential
tidalPotentialConstituent-Frequency	Frequency of tidal constituents
tidalPotentialConstituent-Amplitude	Amplitude of tidal constituents
tidalPotentialConstituentLove-Numbers	Love number combinations for tidal constituents
tidalPotentialConstituentNodal-Amplitude	Amplitude nodal factor for tidal constituents
tidalPotentialConstituentNodal-Phase	Phase nodal factor for tidal constituents

Name	Description (Continued)
tidalPotentialConstituent-Astronomical	Astronomical argument for tidal constituents
tidalPotentialConstituentType	Spieces code for tidal constituents: long-period = 0, diurnal = 1, semi-diurnal = 2
tidalPotentialLatitudeFunction	Latitude function for tidal constituents: long-period = $3\sin^2(\phi)-1$, diurnal = $\sin(2\phi)$, semi-diurnal = $\cos^2(\phi)$
sshSubcycleCurWithTides	SSH - tidal potential in split explicit
sshSubcycleNewWithTides	SSH - tidal potential in split explicit
coastalSmoothingFactor	Multiplication factors to smooth ssh at coastlines for SAL caculation
temperatureSurfaceFlux	Flux of temperature through the ocean surface. Positive into ocean.
salinitySurfaceFlux	Flux of salinity through the ocean surface. Positive into ocean.
temperatureSurfaceFluxRunoff	Flux of temperature through the ocean surface due to river runoff. Positive into ocean.
salinitySurfaceFluxRunoff	Flux of salinity through the ocean surface due to river runoff. Positive into ocean.
temperatureSurfaceFluxRemoved	Flux of temperature that is ignored coming into the ocean. Positive into ocean.
salinitySurfaceFluxRemoved	Flux of salinity that is ignored coming into the ocean. Positive into ocean.
nonLocalTemperatureSurfaceFlux	total flux of temperature (including thickness contributions) through ocean surface
nonLocalSalinitySurfaceFlux	total flux of salinity (including thickness contributions) through ocean surface
temperaturePistonVelocity	A non-negative field controlling the rate at which temperature is restored to temperatureSurfaceRestoringValue
salinityPistonVelocity	A non-negative field controlling the rate at which salinity is restored to salinitySurfaceRestoringValue
temperatureSurfaceRestoring-Value	Temperature is restored toward this field at a rate controlled by temperaturePistonVelocity.
salinitySurfaceRestoringValue	Salinity is restored toward this field at a rate controlled by salinityPistonVelocity.
temperatureInteriorRestoringRate	A non-negative field controlling the rate at which temperature is restored to temperatureInteriorRestoringValue
salinityInteriorRestoringRate	A non-negative field controlling the rate at which salinity is restored to salinityInteriorRestoringValue
temperatureInteriorRestoring-Value	Temperature is restored toward this field at a rate controlled by temperatureInteriorRestoringRate.
salinityInteriorRestoringValue	Salinity is restored toward this field at a rate controlled by salinityInteriorRestoringRate.
temperatureExponentialDecay-Rate	A non-negative field controlling the exponential decay of temperature
salinityExponentialDecayRate	A non-negative field controlling the exponential decay of salinity
temperatureIdealAgeMask	In top layer, temperature is reset to temperature * temperatureIdealAgeMask, valid values of temperatureIdealAgeMask or 0 and 1
salinityIdealAgeMask	In top layer, salinity is reset to salinity * salinityIdealAgeMask, valid values of salinityIdealAgeMask or 0 and 1
temperatureTTDMask	In top layer, temperature is reset to TTDMask, valid values of temperatureTTDMask or 0 and 1
salinityTTDMask	In top layer, salinity is reset to salinityTTDMask, valid values of salinityTTDMask or 0 and 1

Name	Description (Continued)
tracer1SurfaceFlux	Flux of tracer1 through the ocean surface. Positive into ocean.
tracer2SurfaceFlux	Flux of tracer2 through the ocean surface. Positive into ocean.
tracer3SurfaceFlux	Flux of tracer3 through the ocean surface. Positive into ocean.
tracer1SurfaceFluxRunoff	Flux of tracer1 through the ocean surface due to river runoff. Positive into ocean.
tracer2SurfaceFluxRunoff	Flux of tracer2 through the ocean surface due to river runoff. Positive into ocean.
tracer3SurfaceFluxRunoff	Flux of tracer3 through the ocean surface due to river runoff. Positive into ocean.
tracer1SurfaceFluxRemoved	Flux of tracer1 that is ignored coming into the ocean. Positive into ocean.
tracer2SurfaceFluxRemoved	Flux of tracer2 that is ignored coming into the ocean. Positive into ocean.
tracer3SurfaceFluxRemoved	Flux of tracer3 that is ignored coming into the ocean. Positive into ocean.
tracer1PistonVelocity	A non-negative field controlling the rate at which tracer1 is restored to tracer1SurfaceRestoringValue
tracer2PistonVelocity	A non-negative field controlling the rate at which tracer2 is restored to tracer2SurfaceRestoringValue
tracer3PistonVelocity	A non-negative field controlling the rate at which tracer3 is restored to tracer3SurfaceRestoringValue
tracer1SurfaceRestoringValue	tracer1 is restored toward this field at a rate controlled by tracer1PistonVelocity.
tracer2SurfaceRestoringValue	tracer2 is restored toward this field at a rate controlled by tracer2PistonVelocity.
tracer3SurfaceRestoringValue	tracer3 is restored toward this field at a rate controlled by tracer3PistonVelocity.
tracer1InteriorRestoringRate	A non-negative field controlling the rate at which tracer1 is restored to tracer1InteriorRestoringValue
tracer2InteriorRestoringRate	A non-negative field controlling the rate at which tracer2 is restored to tracer2InteriorRestoringValue
tracer3InteriorRestoringRate	A non-negative field controlling the rate at which tracer3 is restored to tracer3InteriorRestoringValue
tracer1InteriorRestoringValue	tracer1 is restored toward this field at a rate controlled by tracer1InteriorRestoringRate.
tracer2InteriorRestoringValue	tracer2 is restored toward this field at a rate controlled by tracer2InteriorRestoringRate.
tracer3InteriorRestoringValue	tracer3 is restored toward this field at a rate controlled by tracer3InteriorRestoringRate.
tracer1ExponentialDecayRate	A non-negative field controlling the exponential decay of tracer1
tracer2ExponentialDecayRate	A non-negative field controlling the exponential decay of tracer2
tracer3ExponentialDecayRate	A non-negative field controlling the exponential decay of tracer3
tracer1IdealAgeMask	In top layer, tracer1 is reset to tracer1 * tracer1IdealAgeMask, valid values of tracer1IdealAgeMask or 0 and 1
tracer2IdealAgeMask	In top layer, tracer2 is reset to tracer2 * tracer2IdealAgeMask, valid values of tracer2IdealAgeMask or 0 and 1
tracer3IdealAgeMask	In top layer, tracer3 is reset to tracer3 * tracer3IdealAgeMask, valid values of tracer3IdealAgeMask or 0 and 1
tracer1TTDMask	In top layer, tracer1 is reset to TTDMask, valid values of tracer1TTDMask or 0 and 1
tracer2TTDMask	In top layer, tracer2 is reset to TTDMask, valid values of tracer2TTDMask or 0 and 1

Name	Description (Continued)
tracer3TTDMask	In top layer, tracer3 is reset to TTDMask, valid values of tracer3TTDMask or 0 and 1
PO4SurfaceFlux	Dissolved Inorganic Phosphate Surface Flux
NO3SurfaceFlux	Dissolved Inorganic Nitrate Surface Flux
SiO3SurfaceFlux	Dissolved Inorganic Silicate Surface Flux
NH4SurfaceFlux	Dissolved Ammonia Surface Flux
FeSurfaceFlux	Dissolved Inorganic Iron Surface Flux
LigSurfaceFlux	Ligand Surface Flux
O2SurfaceFlux	Dissolved Oxygen Surface Flux
DICSurfaceFlux	Dissolved Inorganic Carbon Surface Flux
DIC_ALT_CO2SurfaceFlux	Dissolved Inorganic Carbon, Alternative CO2 Surface Flux
ALKSurfaceFlux	Alkalinity Surface Flux
ALK_ALT_CO2SurfaceFlux	Alkalinity Surface Flux, Alternative CO2
DOCSurfaceFlux	Dissolved Organic Carbon Surface Flux
DONSurfaceFlux	Dissolved Organic Nitrogen Surface Flux
DOPSurfaceFlux	Dissolved Organic Phosphorus Surface Flux
DOPrSurfaceFlux	Refractory DOP Surface Flux
DONrSurfaceFlux	Refractory DON Surface Flux
DOCrSurfaceFlux	Zooplankton Carbon Surface Flux
zooCSurfaceFlux	Zooplankton Carbon Surface Flux
spChlSurfaceFlux	Small Phytoplankton Chlorophyll Surface Flux
spCSurfaceFlux	Small Phytoplankton Carbon Surface Flux
spFeSurfaceFlux	Small Phytoplankton Iron Surface Flux
spPSurfaceFlux	Small Phytoplankton Phosphorus Surface Flux
spCaCO3SurfaceFlux	Small Phytoplankton Calcium Carbonate Surface Flux
diatChlSurfaceFlux	Diatom Chlorophyll Surface Flux
diatCSurfaceFlux	Diatom Carbon Surface Flux
diatFeSurfaceFlux	Diatom Iron Surface Flux
diatPSurfaceFlux	Diatom Phosphorus Surface Flux
diatSiSurfaceFlux	Diatom Silicate Surface Flux
diazChlSurfaceFlux	Diazotroph Chlorophyll Surface Flux
diazCSurfaceFlux	Diazotroph Carbon Surface Flux
diazFeSurfaceFlux	Diazotroph Iron Surface Flux
diazPSurfaceFlux	Diazotroph Phosphorus Surface Flux
PO4SurfaceFluxRunoff	Dissolved Inorganic Phosphate Surface Flux Due to Runoff
NO3SurfaceFluxRunoff	Dissolved Inorganic Nitrate Surface Flux Due to Runoff
SiO3SurfaceFluxRunoff	Dissolved Inorganic Silicate Surface Flux Due to Runoff
NH4SurfaceFluxRunoff	Dissolved Ammonia Surface Flux Due to Runoff
FeSurfaceFluxRunoff	Dissolved Inorganic Iron Surface Flux Due to Runoff
LigSurfaceFluxRunoff	Ligand Surface Flux Due to Runoff
O2SurfaceFluxRunoff	Dissolved Oxygen Surface Flux Due to Runoff
DICSurfaceFluxRunoff	Dissolved Inorganic Carbon Surface Flux Due to Runoff
DIC_ALT_CO2SurfaceFlux-Runoff	Dissolved Inorganic Carbon, Alternative CO2 Surface Flux Due to Runoff
ALKSurfaceFluxRunoff	Alkalinity Surface Flux Due to Runoff
ALK_ALT_CO2SurfaceFlux-Runoff	Alkalinity Surface Flux Due to Runoff, Alternative CO2
DOCSurfaceFluxRunoff	Dissolved Organic Carbon Surface Flux Due to Runoff
DONSurfaceFluxRunoff	Dissolved Organic Nitrogen Surface Flux Due to Runoff
DOPSurfaceFluxRunoff	Dissolved Organic Phosphorus Surface Flux Due to Runoff
DOPrSurfaceFluxRunoff	Refractory DOP Surface Flux Due to Runoff

Name	**Description** (Continued)
DONrSurfaceFluxRunoff	Refractory DON Surface Flux Due to Runoff
DOCrSurfaceFluxRunoff	Zooplankton Carbon Surface Flux Due to Runoff
zooCSurfaceFluxRunoff	Zooplankton Carbon Surface Flux Due to Runoff
spChlSurfaceFluxRunoff	Small Phytoplankton Chlorophyll Surface Flux Due to Runoff
spCSurfaceFluxRunoff	Small Phytoplankton Carbon Surface Flux Due to Runoff
spFeSurfaceFluxRunoff	Small Phytoplankton Iron Surface Flux Due to Runoff
spPSurfaceFluxRunoff	Small Phytoplankton Phosphorus Surface Flux Due to Runoff
spCaCO3SurfaceFluxRunoff	Small Phytoplankton Calcium Carbonate Surface Flux Due to Runoff
diatChlSurfaceFluxRunoff	Diatom Chlorophyll Surface Flux Due to Runoff
diatCSurfaceFluxRunoff	Diatom Carbon Surface Flux Due to Runoff
diatFeSurfaceFluxRunoff	Diatom Iron Surface Flux Due to Runoff
diatPSurfaceFluxRunoff	Diatom Phosphorus Surface Flux Due to Runoff
diatSiSurfaceFluxRunoff	Diatom Silicate Surface Flux Due to Runoff
diazChlSurfaceFluxRunoff	Diazotroph Chlorophyll Surface Flux Due to Runoff
diazCSurfaceFluxRunoff	Diazotroph Carbon Surface Flux Due to Runoff
diazFeSurfaceFluxRunoff	Diazotroph Iron Surface Flux Due to Runoff
diazPSurfaceFluxRunoff	Diazotroph Phosphorus Surface Flux Due to Runoff
PO4SurfaceFluxRemoved	Dissolved Inorganic Phosphate Surface Flux that is ignored
NO3SurfaceFluxRemoved	Dissolved Inorganic Nitrate Surface Flux that is ignored
SiO3SurfaceFluxRemoved	Dissolved Inorganic Silicate Surface Flux that is ignored
NH4SurfaceFluxRemoved	Dissolved Ammonia Surface Flux that is ignored
FeSurfaceFluxRemoved	Dissolved Inorganic Iron Surface Flux that is ignored
LigSurfaceFluxRemoved	Dissolved Oxygen Surface Flux that is ignored
O2SurfaceFluxRemoved	Dissolved Oxygen Surface Flux that is ignored
DICSurfaceFluxRemoved	Dissolved Inorganic Carbon Surface Flux that is ignored
DIC_ALT_CO2SurfaceFlux-Removed	Dissolved Inorganic Carbon, Alternative CO2 Surface Flux that is ignored
ALKSurfaceFluxRemoved	Alkalinity Surface Flux that is ignored
ALK_ALT_CO2SurfaceFlux-Removed	Alkalinity Surface Flux that is ignored, Alternative CO2
DOCSurfaceFluxRemoved	Dissolved Organic Carbon Surface Flux that is ignored
DONSurfaceFluxRemoved	Dissolved Organic Nitrogen Surface Flux that is ignored
DOPSurfaceFluxFluxRemoved	Dissolved Organic Phosphorus Surface Flux that is ignored
DOPrSurfaceFluxRemoved	Refractory DOP Surface Flux that is ignored
DONrSurfaceFluxRemoved	Refractory DON Surface Flux that is ignored
DOCrSurfaceFluxRemoved	Refractory DOC Surface Flux that is ignored
zooCSurfaceFluxRemoved	Zooplankton Carbon Surface Flux that is ignored
spChlSurfaceFluxRemoved	Small Phytoplankton Chlorophyll Surface Flux that is ignored
spCSurfaceFluxRemoved	Small Phytoplankton Carbon Surface Flux that is ignored
spFeSurfaceFluxRemoved	Small Phytoplankton Iron Surface Flux that is ignored
spPSurfaceFluxRemoved	Small Phytoplankton Phosphorus Surface Flux that is ignored
spCaCO3SurfaceFluxRemoved	Small Phytoplankton Calcium Carbonate Surface Flux that is ignored
diatChlSurfaceFluxRemoved	Diatom Chlorophyll Surface Flux that is ignored
diatCSurfaceFluxRemoved	Diatom Carbon Surface Flux that is ignored
diatFeSurfaceFluxRemoved	Diatom Iron Surface Flux that is ignored
diatPSurfaceFluxRemoved	Diatom Phosphorus Surface Flux that is ignored
diatSiSurfaceFluxRemoved	Diatom Silicate Surface Flux that is ignored
diazChlSurfaceFluxRemoved	Diazotroph Chlorophyll Surface Flux that is ignored
diazCSurfaceFluxRemoved	Diazotroph Carbon Surface Flux that is ignored

Name	**Description** (Continued)
diazFeSurfaceFluxRemoved	Diazotroph Iron Surface Flux that is ignored
diazPSurfaceFluxRemoved	Diazotroph Phosphorus Surface Flux that is ignored
PH_PREV_3D	pH (3D) from previous timestep
PH_PREV_ALT_CO2_3D	pH (3D) of alternate CO2 from previous timestep
FESEDFLUX	Sedimentary Fe Flux
dust_FLUX_IN	Surface Dust Flux
IRON_FLUX_IN	Surface Fe Flux
PAR_surface	Photosynthetically Available Radiation at Ocean Surface
windSpeedSquared10m	Wind Speed at 10m Squared
atmosphericCO2	Atmospheric CO2 Concentration
atmosphericCO2_ALT_CO2	Atmospheric CO2 Concentration for Alternate CO2
PH_PREV	pH (2D) from previous timestep
PH_PREV_ALT_CO2	pH (2D) of alternate CO2 from previous timestep
depositionFluxNO3	Atmospheric Deposition of NO3
depositionFluxNH4	Atmospheric Deposition of NH4
pocToSed	Flux of POC into bottom sediments
riverFluxNO3	River Runoff Flux of NO3
riverFluxPO4	River Runoff Flux of PO4
riverFluxSiO3	River Runoff Flux of SiO3
riverFluxFe	River Runoff Flux of Fe
riverFluxDOC	River Runoff Flux of DOC
riverFluxDON	River Runoff Flux of DON
riverFluxDOP	River Runoff Flux of DOP
riverFluxDIC	River Runoff Flux of DIC
riverFluxALK	River Runoff Flux of ALK
CO2_gas_flux	CO2 Gas Flux
CO2_alt_gas_flux	CO2 Gas Flux for Alternate CO2
avgCO2_gas_flux	CO2 Gas Flux averaged over a coupling interval
total_Chl	Total depth-integrated chlorophyll
avgOceanSurfacePhytoC	Ocean Surface phytoplankton carbon concentration: (1,2,3) corresponds to (diat,sp,phaeo)
avgOceanSurfaceDIC	Ocean Surface DIC concentration
avgOceanSurfaceDOCSemiLabile	Total Ocean Surface DOC semi-labile concentration
avgOceanSurfaceNO3	Ocean Surface NO3 concentration
avgOceanSurfaceSiO3	Ocean Surface SiO3 concentration
avgOceanSurfaceNH4	Ocean Surface NH4 concentration
avgOceanSurfaceDOCr	Ocean Surface DOCr (Humics) concentration
avgOceanSurfaceFeParticulate	Ocean Surface particulate Fe concentration (set to zero)
avgOceanSurfaceFeDissolved	Ocean Surface dissolved bioavailable Fe concentration
iceFluxPhytoC	Surface phytoplankton carbon flux from sea ice: (1,2,3) corresponds to (diat,sp,phaeo)
iceFluxDIC	Surface DIC flux from sea ice
iceFluxNO3	Surface NO3 flux from sea ice
iceFluxSiO3	Surface SiO3 flux from sea ice
iceFluxNH4	Surface NH4 flux from sea ice
iceFluxDOCr	Surface DOCr (Humics) flux from sea ice
iceFluxFeParticulate	Surface particulate Fe flux from sea ice (set to zero)
iceFluxFeDissolved	Surface dissolved bioavailable Fe flux from sea ice
iceFluxDust	Surface dust flux from sea ice
iceFluxDOC	Surface Organics flux from sea ice: (1,2,3)=¿(polysaccharides,lipids,proteins)

Name	**Description** (Continued)
iceFluxDON	Surface Organic Proteins flux from sea ice
ecosys_diag_photoC_TOT_zint	Total C Fixation Vertical Integral
ecosys_diag_photoC_NO3_TOT_zint	Total C Fixation from NO3 Vertical Integral
ecosys_diag_O2_ZMIN	Vertical Minimum of O2
ecosys_diag_O2_ZMIN_DEPTH	Depth of Vertical Minimum of O2
ecosys_diag_Chl_TOT_zint_100m	Vertical Integral of Total Chlorophyll in Top 100m
ecosys_diag_Jint_Ctot	Vertical Integral of Conservative Subterms of Source Sink Term for Ctot
ecosys_diag_Jint_Ntot	Vertical Integral of Conservative Subterms of Source Sink Term for Ntot
ecosys_diag_Jint_Ptot	Vertical Integral of Conservative Subterms of Source Sink Term for Ptot
ecosys_diag_Jint_Sitot	Vertical Integral of Conservative Subterms of Source Sink Term for Sitot
ecosys_diag_Jint_Fetot	Vertical Integral of Conservative Subterms of Source Sink Term for Fetot
ecosys_diag_photoC_zint	C Fixation Vertical Integral for sp, diat, diaz, phaeo
ecosys_diag_photoC_NO3_zint	C Fixation from NO3 Vertical Integral for sp, diat, diaz, phaeo
ecosys_diag_PAR_avg	PAR Average over Model Cell
ecosys_diag_POC_FLUX_IN	POC Flux into Cell
ecosys_diag_POP_FLUX_IN	POP Flux into Cell
ecosys_diag_CaCO3_FLUX_IN	CaCO3 Flux into Cell
ecosys_diag_CaCO3_ALT_CO2_FLUX_IN	Alt CO2 CaCO3 Flux into Cell
ecosys_diag_graze_auto_TOT	Total Autotroph Grazing
ecosys_diag_zoo_loss	Zooplankton Loss
ecosys_diag_zoo_loss_poc	Zooplankton Loss to particles
ecosys_diag_zoo_loss_doc	Zooplankton Loss to DOC
ecosys_diag_graze_zoo	Zooplankton Grazing
ecosys_diag_graze_zoo_poc	Zooplankton Grazing of particles
ecosys_diag_graze_zoo_doc	Zooplankton Grazing of DOC
ecosys_diag_graze_zoo_zoo	Zooplankton Grazing of ZooC
ecosys_diag_x_graze_zoo	Zooplankton Grazing Gain of ZooC
ecosys_diag_photoC_TOT	Total C Fixation Vertical Integral
ecosys_diag_photoC_NO3_TOT	Total C Fixation from NO3 Vertical Integral
ecosys_diag_NITRIF	Nitrification
ecosys_diag_DENITRIF	Denitrification
ecosys_diag_calcToSed	CaCO3 Flux to Sediments
ecosys_diag_calcToSed_ALT_CO2	CaCO3 Flux to Sediments for Alternate CO2
ecosys_diag_pocToSed	POC Flux to Sediments
ecosys_diag_pfeToSed	Fe Flux to Sediments
ecosys_diag_SedDenitrif	Nitrogen Loss in Sediments
ecosys_diag_tot_Nfix	Total N Fixation
ecosys_diag_O2_PRODUCTION	O2 Production
ecosys_diag_O2_CONSUMPTION	O2 Consumption
ecosys_diag_AOU	Apparent O2 Utilization
ecosys_diag_pH_3D	pH
ecosys_diag_POC_PROD	POC Production
ecosys_diag_POC_REMIN_DOCr	POC Remineralization to DOCr

Name	Description (Continued)
ecosys_diag_POC_REMIN_DIC	POC Remineralization to DIC
ecosys_diag_POC_ACCUM	POC Accumulation
ecosys_diag_POP_FLUX_IN	POP Flux into cell
ecosys_diag_POP_PROD	POP Production
ecosys_diag_POP_REMIN_DOPr	POP Remineralization to DOPr
ecosys_diag_POP_REMIN_PO4	POP Remineralization to PO4
ecosys_diag_PON_REMIN_DONr	PON Remineralization to DONr
ecosys_diag_PON_REMIN_NH4	PON Remineralization to NH4
ecosys_diag_Qp	P/C Ratio
ecosys_diag_N_lim_surf	N Surface Limitation for sp, diat, diaz, phaeo
ecosys_diag_P_lim_surf	P Surface Limitation for sp, diat, diaz, phaeo
ecosys_diag_Fe_lim_surf	Fe Surface Limitation for sp, diat, diaz, phaeo
ecosys_diag_SiO3_lim_surf	SiO3 Surface Limitation for sp, diat, diaz, phaeo
ecosys_diag_light_lim_surf	Light Surface Limitation for sp, diat, diaz, phaeo
ecosys_diag_photoC	C Fixation for sp, diat, diaz, phaeo
ecosys_diag_photoC_NO3	C Fixation from NO3 for sp, diat, diaz, phaeo
ecosys_diag_photoFe	Fe Uptake
ecosys_diag_photoNO3	NO3 Uptake
ecosys_diag_photoNH4	NH4 Uptake
ecosys_diag_DOP_uptake	DOP Uptake
ecosys_diag_PO4_uptake	PO4 Uptake
ecosys_diag_auto_graze	Grazing for sp, diat, diaz, phaeo
ecosys_diag_auto_graze_poc	Grazing loss to poc for sp, diat, diaz, phaeo
ecosys_diag_auto_graze_doc	Grazing loss to doc for sp, diat, diaz, phaeo
ecosys_diag_auto_graze_zoo	Grazing by zoo plankton for sp, diat, diaz, phaeo
ecosys_diag_auto_loss	Loss for sp, diat, diaz, phaeo
ecosys_diag_auto_loss_poc	Loss to POC for sp, diat, diaz, phaeo
ecosys_diag_auto_loss_doc	Loss to DOC for sp, diat, diaz, phaeo
ecosys_diag_auto_agg	Aggregate for sp, diat, diaz, phaeo
ecosys_diag_Nfix	N Fixation for sp, diat, diaz, phaeo
ecosys_diag_pistonVel_O2	Piston Velocity for O2 Surface Flux
ecosys_diag_pistonVel_CO2	Piston Velocity for CO2 Surface Flux
ecosys_diag_Schmidt_O2	O2 Schmidt Number
ecosys_diag_Schmidt_CO2	CO2 Schmidt Number
ecosys_diag_O2_saturation	Surface O2 Saturation
ecosys_diag_xkw	Schmidt Number Independent Piston Velocity Factor
ecosys_diag_u10sqr	10 meter wind squared seen by ecosys
ecosys_diag_ifrac	Ice Fraction seen by ecosys
ecosys_diag_atmPressure	Atmospheric Pressure Seen by ecosys
ecosys_diag_CO2star	CO2 Star
ecosys_diag_dCO2star	d CO2 Star
ecosys_diag_pCO2surface	Surface pCO2
ecosys_diag_dpCO2	d Surface pCO2
ecosys_diag_CO2star_ALT_CO2	CO2 Star for Alternate CO2
ecosys_diag_dCO2star_ALT_CO2	d CO2 Star for Alternate CO2
ecosys_diag_pCO2surface_-ALT_CO2	Surface pCO2 for Alternate CO2
ecosys_diag_dpCO2_ALT_CO2	d Surface pCO2 for Alternate CO2
ecosys_diag_tot_bSi_form	Si Uptake
ecosys_diag_SiO2_FLUX_IN	SiO2 Flux into Cell
ecosys_diag_SiO2_PROD	SiO2 Production

Name	Description (Continued)
ecosys_diag_SiO2_REMIN	SiO2 Remineralization
ecosys_diag_dust_FLUX_IN	Dust Flux into Cell
ecosys_diag_dust_REMIN	Dust Remineralization
ecosys_diag_P_iron_FLUX_IN	P_iron Flux into Cell
ecosys_diag_P_iron_PROD	P_iron Production
ecosys_diag_P_iron_REMIN	P_iron Remineralization
ecosys_diag_DOC_prod	DOC Production
ecosys_diag_DOC_remin	DOC Remineralization
ecosys_diag_DOCr_remin	DOCr Remineralization
ecosys_diag_DON_prod	DON Production
ecosys_diag_DON_remin	DON Remineralization
ecosys_diag_DOP_prod	DOP Production
ecosys_diag_DOP_remin	DOP Remineralization
ecosys_diag_Fe_scavenge	Iron Scavenging
ecosys_diag_Fe_scavenge_rate	Iron Scavenging Rate
ecosys_diag_Lig_prod	Ligand Production
ecosys_diag_Lig_loss	Ligand Loss
ecosys_diag_Lig_scavenge	Ligand Scavenging
ecosys_diag_Fefree	Free Iron
ecosys_diag_Lig_photochem	Ligand Photochemistry
ecosys_diag_Lig_deg	Ligand Degradation
ecosys_diag_DONr_remin	DONr Remineralization
ecosys_diag_DOPr_remin	DOPr Remineralization
ecosys_diag_ponToSed	N Burial Flux to Sediments
ecosys_diag_popToSed	P Flux to Sediments
ecosys_diag_bsiToSed	Biogenic Si Flux to Sediments
ecosys_diag_dustToSed	Dust Flux to Sediments
ecosys_diag_OtherRemin	Non-Oxic, Non-Dentr Remineralization in Sediments
ecosys_diag_bSi_form	Si Uptake for sp, diat, diaz, phaeo
ecosys_diag_tot_CaCO3_form_-zint	Total CaCO3 Formation Vertical Integral
ecosys_diag_zsatcalc	Calcite Saturation Depth
ecosys_diag_zsatarag	Aragonite Saturation Depth
ecosys_diag_CaCO3_form_zint	CaCO3 Formation Vertical Integral for sp, diat, diaz, phaeo
ecosys_diag_CaCO3_PROD	CaCO3 Production
ecosys_diag_CaCO3_REMIN	CaCO3 Remineralization
ecosys_diag_CaCO3_ALT_-CO2_PROD	CaCO3 Production for Alternate CO2
ecosys_diag_CaCO3_ALT_-CO2_REMIN	CaCO3 Remineralization for Alternate CO2
ecosys_diag_tot_CaCO3_form	Total CaCO3 Formation
ecosys_diag_CO3	Carbonate Ion Concentration
ecosys_diag_HCO3	Bicarbonate Ion Concentration
ecosys_diag_H2CO3	Carbonic Acid Concentration
ecosys_diag_CO3_ALT_CO2	Carbonate Ion Concentration, Alternative CO2
ecosys_diag_HCO3_ALT_CO2	Bicarbonate Ion Concentration, Alternative CO2
ecosys_diag_H2CO3_ALT_CO2	Carbonic Acid Concentration, Alternative CO2
ecosys_diag_pH_3D_ALT_CO2	pH, Alternative CO2
ecosys_diag_co3_sat_calc	CO3 concentration at calcite saturation
ecosys_diag_co3_sat_arag	CO3 concentration at aragonite saturation
ecosys_diag_CaCO3_form	CaCO3 Formation for sp, diat, diaz, phaeo

Name	Description (Continued)
ecosys_diag_PO4_RESTORE	PO4 Restoring
ecosys_diag_NO3_RESTORE	NO3 Restoring
ecosys_diag_SiO3_RESTORE	SiO3 Restoring
PO4PistonVelocity	A non-negative field controlling the rate at which PO4 is restored to PO4SurfaceRestoringValue
NO3PistonVelocity	A non-negative field controlling the rate at which NO3 is restored to NO3SurfaceRestoringValue
SiO3PistonVelocity	A non-negative field controlling the rate at which SiO3 is restored to SiO3SurfaceRestoringValue
NH4PistonVelocity	A non-negative field controlling the rate at which NH4 is restored to NH4SurfaceRestoringValue
FePistonVelocity	A non-negative field controlling the rate at which Fe is restored to FeSurfaceRestoringValue
LigPistonVelocity	A non-negative field controlling the rate at which Lig is restored to LigSurfaceRestoringValue
O2PistonVelocity	A non-negative field controlling the rate at which O2 is restored to O2SurfaceRestoringValue
DICPistonVelocity	A non-negative field controlling the rate at which DIC is restored to DICSurfaceRestoringValue
DIC_ALT_CO2PistonVelocity	A non-negative field controlling the rate at which DIC_ALT_CO2 is restored to DIC_ALT_CO2SurfaceRestoringValue
ALKPistonVelocity	A non-negative field controlling the rate at which ALK is restored to ALKSurfaceRestoringValue
ALK_ALT_CO2PistonVelocity	A non-negative field controlling the rate at which ALK is restored to ALKSurfaceRestoringValue, Alternative CO2
DOCPistonVelocity	A non-negative field controlling the rate at which DOC is restored to DOCSurfaceRestoringValue
DONPistonVelocity	A non-negative field controlling the rate at which DON is restored to DONSurfaceRestoringValue
DOPPistonVelocity	A non-negative field controlling the rate at which DOP is restored to DOPSurfaceRestoringValue
DOPrPistonVelocity	A non-negative field controlling the rate at which DOPr is restored to DOPrSurfaceRestoringValue
DONrPistonVelocity	A non-negative field controlling the rate at which DONr is restored to DONrSurfaceRestoringValue
DOCrPistonVelocity	A non-negative field controlling the rate at which DOCr is restored to DOCrSurfaceRestoringValue
zooCPistonVelocity	A non-negative field controlling the rate at which zooC is restored to zooCSurfaceRestoringValue
spChlPistonVelocity	A non-negative field controlling the rate at which spChl is restored to spChlSurfaceRestoringValue
spCPistonVelocity	A non-negative field controlling the rate at which spC is restored to spCSurfaceRestoringValue
spFePistonVelocity	A non-negative field controlling the rate at which spFe is restored to spFeSurfaceRestoringValue
spPPistonVelocity	A non-negative field controlling the rate at which spP is restored to spPSurfaceRestoringValue
spCaCO3PistonVelocity	A non-negative field controlling the rate at which spCaCO3 is restored to spCaCO3SurfaceRestoringValue
diatChlPistonVelocity	A non-negative field controlling the rate at which diatChl is restored to diatChlSurfaceRestoringValue

Name	**Description** (Continued)
diatCPistonVelocity	A non-negative field controlling the rate at which diatC is restored to diatCSurfaceRestoringValue
diatFePistonVelocity	A non-negative field controlling the rate at which diatFe is restored to diatFeSurfaceRestoringValue
diatPPistonVelocity	A non-negative field controlling the rate at which diatP is restored to diatPSurfaceRestoringValue
diatSiPistonVelocity	A non-negative field controlling the rate at which diatSi is restored to diatSiSurfaceRestoringValue
diazChlPistonVelocity	A non-negative field controlling the rate at which diazChl is restored to diazChlSurfaceRestoringValue
diazCPistonVelocity	A non-negative field controlling the rate at which diazC is restored to diazCSurfaceRestoringValue
diazFePistonVelocity	A non-negative field controlling the rate at which diazFe is restored to diazFeSurfaceRestoringValue
diazPPistonVelocity	A non-negative field controlling the rate at which diazP is restored to diazPSurfaceRestoringValue
PO4SurfaceRestoringValue	A non-negative field controlling the rate at which PO4 is restored to PO4SurfaceRestoringValue
NO3SurfaceRestoringValue	A non-negative field controlling the rate at which NO3 is restored to NO3SurfaceRestoringValue
SiO3SurfaceRestoringValue	A non-negative field controlling the rate at which SiO3 is restored to SiO3SurfaceRestoringValue
NH4SurfaceRestoringValue	A non-negative field controlling the rate at which NH4 is restored to NH4SurfaceRestoringValue
FeSurfaceRestoringValue	A non-negative field controlling the rate at which Fe is restored to FeSurfaceRestoringValue
LigSurfaceRestoringValue	A non-negative field controlling the rate at which Lig is restored to LigSurfaceRestoringValue
O2SurfaceRestoringValue	A non-negative field controlling the rate at which O2 is restored to O2SurfaceRestoringValue
DICSurfaceRestoringValue	A non-negative field controlling the rate at which DIC is restored to DICSurfaceRestoringValue
DIC_ALT_CO2SurfaceRestoring-Value	A non-negative field controlling the rate at which DIC_ALT_CO2 is restored to DIC_ALT_CO2SurfaceRestoringValue
ALKSurfaceRestoringValue	A non-negative field controlling the rate at which ALK is restored to ALKSurfaceRestoringValue
ALK_ALT_CO2Surface-RestoringValue	A non-negative field controlling the rate at which ALK is restored to ALKSurfaceRestoringValue, Alternative CO2
DOCSurfaceRestoringValue	A non-negative field controlling the rate at which DOC is restored to DOCSurfaceRestoringValue
DONSurfaceRestoringValue	A non-negative field controlling the rate at which DON is restored to DONSurfaceRestoringValue
DOPSurfaceRestoringValue	A non-negative field controlling the rate at which DOP is restored to DOPSurfaceRestoringValue
DOPrSurfaceRestoringValue	A non-negative field controlling the rate at which DOPr is restored to DOPrSurfaceRestoringValue
DONrSurfaceRestoringValue	A non-negative field controlling the rate at which DONr is restored to DOPrSurfaceRestoringValue
DOCrSurfaceRestoringValue	A non-negative field controlling the rate at which DOCr is restored to DOCrSurfaceRestoringValue
spChlSurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

Name	**Description** (Continued)
spCSurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue
spFeSurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue
spPSurfaceRestoringValue	A non-negative field controlling the rate at which spP is restored to spPSurfaceRestoringValue
spCaCO3SurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue
diatChlSurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue
diatCSurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue
diatFeSurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue
diatPSurfaceRestoringValue	A non-negative field controlling the rate at which diatP is restored to diatPSurfaceRestoringValue
diatSiSurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue
diazChlSurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue
diazCSurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue
diazFeSurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue
diazPSurfaceRestoringValue	A non-negative field controlling the rate at which diazP is restored to diazPSurfaceRestoringValue
zooCSurfaceRestoringValue	A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue
PO4InteriorRestoringRate	A non-negative field controlling the rate at which PO4 is restored to PO4InteriorRestoringValue
NO3InteriorRestoringRate	A non-negative field controlling the rate at which NO3 is restored to NO3InteriorRestoringValue
SiO3InteriorRestoringRate	A non-negative field controlling the rate at which SiO3 is restored to SiO3InteriorRestoringValue
NH4InteriorRestoringRate	A non-negative field controlling the rate at which NH4 is restored to NH4InteriorRestoringValue
FeInteriorRestoringRate	A non-negative field controlling the rate at which Fe is restored to FeInteriorRestoringValue
LigInteriorRestoringRate	A non-negative field controlling the rate at which Lig is restored to LigInteriorRestoringValue
O2InteriorRestoringRate	A non-negative field controlling the rate at which O2 is restored to O2InteriorRestoringValue
DICInteriorRestoringRate	A non-negative field controlling the rate at which DIC is restored to DICInteriorRestoringValue
DIC_ALT_CO2Interior-RestoringRate	A non-negative field controlling the rate at which DIC_ALT_CO2 is restored to DIC_ALT_CO2InteriorRestoringValue
ALKInteriorRestoringRate	A non-negative field controlling the rate at which ALK is restored to ALKInteriorRestoringValue
ALK_ALT_CO2Interior-RestoringRate	A non-negative field controlling the rate at which ALK is restored to ALKInteriorRestoringValue, Alternative CO2
DOCInteriorRestoringRate	A non-negative field controlling the rate at which DOC is restored to DOCInteriorRestoringValue

Name	Description (Continued)
DONInteriorRestoringRate	A non-negative field controlling the rate at which DON is restored to DONInteriorRestoringValue
DOPInteriorRestoringRate	A non-negative field controlling the rate at which DOP is restored to DOPInteriorRestoringValue
DOPrInteriorRestoringRate	A non-negative field controlling the rate at which DOPr is restored to DOPrInteriorRestoringValue
DONrInteriorRestoringRate	A non-negative field controlling the rate at which DONr is restored to DONrInteriorRestoringValue
DOCrInteriorRestoringRate	A non-negative field controlling the rate at which DOCr is restored to DOCrInteriorRestoringValue
zooCInteriorRestoringRate	A non-negative field controlling the rate at which zooC is restored to zooCInteriorRestoringValue
spChlInteriorRestoringRate	A non-negative field controlling the rate at which spChl is restored to spChlInteriorRestoringValue
spCInteriorRestoringRate	A non-negative field controlling the rate at which spC is restored to spCInteriorRestoringValue
spFeInteriorRestoringRate	A non-negative field controlling the rate at which spFe is restored to spFeInteriorRestoringValue
spPInteriorRestoringRate	A non-negative field controlling the rate at which spP is restored to spPInteriorRestoringValue
spCaCO3InteriorRestoringRate	A non-negative field controlling the rate at which spCaCO3 is restored to spCaCO3InteriorRestoringValue
diatChlInteriorRestoringRate	A non-negative field controlling the rate at which diatChl is restored to diatChlInteriorRestoringValue
diatCInteriorRestoringRate	A non-negative field controlling the rate at which diatC is restored to diatCInteriorRestoringValue
diatFeInteriorRestoringRate	A non-negative field controlling the rate at which diatFe is restored to diatFeInteriorRestoringValue
diatPInteriorRestoringRate	A non-negative field controlling the rate at which diatP is restored to diatPInteriorRestoringValue
diatSiInteriorRestoringRate	A non-negative field controlling the rate at which diatSi is restored to diatSiInteriorRestoringValue
diazChlInteriorRestoringRate	A non-negative field controlling the rate at which diazChl is restored to diazChlInteriorRestoringValue
diazCInteriorRestoringRate	A non-negative field controlling the rate at which diazC is restored to diazCInteriorRestoringValue
diazFeInteriorRestoringRate	A non-negative field controlling the rate at which diazFe is restored to diazFeInteriorRestoringValue
diazPInteriorRestoringRate	A non-negative field controlling the rate at which diazP is restored to diazPInteriorRestoringValue
PO4InteriorRestoringValue	Tracer is restored toward this field at a rate controlled by PO4InteriorRestoringRate.
NO3InteriorRestoringValue	Tracer is restored toward this field at a rate controlled by NO3InteriorRestoringRate.
SiO3InteriorRestoringValue	Tracer is restored toward this field at a rate controlled by SiO3InteriorRestoringRate.
NH4InteriorRestoringValue	Tracer is restored toward this field at a rate controlled by NH4InteriorRestoringRate.
FeInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by FeInteriorRestoringRate.
LigInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by LigInteriorRestoringRate.

Name	**Description** (Continued)
O2InteriorRestoringValue	Tracer is restored toward this field at a rate controlled by O2InteriorRestoringRate.
DICInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by DICInteriorRestoringRate.
DIC_ALT_CO2InteriorRestoringValue	Tracer is restored toward this field at a rate controlled by DIC_ALT_CO2InteriorRestoringRate.
ALKInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by ALKInteriorRestoringRate.
ALK_ALT_CO2InteriorRestoringValue	Tracer is restored toward this field at a rate controlled by ALKInteriorRestoringRate, Alternative CO2
DOCInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by DOCInteriorRestoringRate.
DONInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by DONInteriorRestoringRate.
DOPInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by DOPInteriorRestoringRate.
DOPrInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by DOPrInteriorRestoringRate.
DONrInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by DONrInteriorRestoringRate.
DOCrInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by DOCrInteriorRestoringRate.
zooCInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by zooCInteriorRestoringRate.
spChlInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by spChlInteriorRestoringRate.
spCInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by spCInteriorRestoringRate.
spFeInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by spFeInteriorRestoringRate.
spPInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by spPInteriorRestoringRate.
spCaCO3InteriorRestoringValue	Tracer is restored toward this field at a rate controlled by spCaCO3InteriorRestoringRate.
diatChlInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by diatChlInteriorRestoringRate.
diatCInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by diatCInteriorRestoringRate.
diatFeInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by diatFeInteriorRestoringRate.
diatPInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by diatPInteriorRestoringRate.
diatSiInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by diatSiInteriorRestoringRate.
diazChlInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by diazChlInteriorRestoringRate.
diazCInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by diazCInteriorRestoringRate.
diazFeInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by diazFeInteriorRestoringRate.
diazPInteriorRestoringValue	diazP is restored toward this field at a rate controlled by diazPInteriorRestoringRate.

Name	Description (Continued)
PO4ExponentialDecayRate	A non-negative field controlling the exponential decay of PO4
NO3ExponentialDecayRate	A non-negative field controlling the exponential decay of NO3
SiO3ExponentialDecayRate	A non-negative field controlling the exponential decay of SiO3
NH4ExponentialDecayRate	A non-negative field controlling the exponential decay of NH4
FeExponentialDecayRate	A non-negative field controlling the exponential decay of Fe
LigExponentialDecayRate	A non-negative field controlling the exponential decay of Lig
O2ExponentialDecayRate	A non-negative field controlling the exponential decay of O2
DICExponentialDecayRate	A non-negative field controlling the exponential decay of DIC
DIC_ALT_CO2ExponentialDecayRate	A non-negative field controlling the exponential decay of DIC_ALT_CO2
ALKExponentialDecayRate	A non-negative field controlling the exponential decay of ALK
ALK_ALT_CO2ExponentialDecayRate	A non-negative field controlling the exponential decay of ALK, Alternative CO2
DOCExponentialDecayRate	A non-negative field controlling the exponential decay of DOC
DONExponentialDecayRate	A non-negative field controlling the exponential decay of DON
DOPExponentialDecayRate	A non-negative field controlling the exponential decay of DOP
DOPrExponentialDecayRate	A non-negative field controlling the exponential decay of DOPr
DONrExponentialDecayRate	A non-negative field controlling the exponential decay of DONr
DOCrExponentialDecayRate	A non-negative field controlling the exponential decay of DOCr
zooCExponentialDecayRate	A non-negative field controlling the exponential decay of zooC
spChlExponentialDecayRate	A non-negative field controlling the exponential decay of spChl
spCExponentialDecayRate	A non-negative field controlling the exponential decay of spC
spFeExponentialDecayRate	A non-negative field controlling the exponential decay of spFe
spPExponentialDecayRate	A non-negative field controlling the exponential decay of spP
spCaCO3ExponentialDecayRate	A non-negative field controlling the exponential decay of spCaCO3
diatChlExponentialDecayRate	A non-negative field controlling the exponential decay of diatChl
diatCExponentialDecayRate	A non-negative field controlling the exponential decay of diatC
diatFeExponentialDecayRate	A non-negative field controlling the exponential decay of diatFe
diatPExponentialDecayRate	A non-negative field controlling the exponential decay of diatP
diatSiExponentialDecayRate	A non-negative field controlling the exponential decay of diatSi
diazChlExponentialDecayRate	A non-negative field controlling the exponential decay of diazChl
diazCExponentialDecayRate	A non-negative field controlling the exponential decay of diazC
diazFeExponentialDecayRate	A non-negative field controlling the exponential decay of diazFe
PO4IdealAgeMask	In top layer, PO4 is reset to PO4 * PO4IdealAgeMask, valid values of PO4IdealAgeMask or 0 and 1
NO3IdealAgeMask	In top layer, NO3 is reset to NO3 * NO3IdealAgeMask, valid values of NO3IdealAgeMask or 0 and 1
SiO3IdealAgeMask	In top layer, SiO3 is reset to SiO3 * SiO3IdealAgeMask, valid values of SiO3IdealAgeMask or 0 and 1
NH4IdealAgeMask	In top layer, NH4 is reset to NH4 * NH4IdealAgeMask, valid values of NH4IdealAgeMask or 0 and 1
FeIdealAgeMask	In top layer, Fe is reset to Fe * FeIdealAgeMask, valid values of FeIdealAgeMask or 0 and 1
LigIdealAgeMask	In top layer, Lig is reset to Lig * LigIdealAgeMask, valid values of LigIdealAgeMask or 0 and 1
O2IdealAgeMask	In top layer, O2 is reset to O2 * O2IdealAgeMask, valid values of O2IdealAgeMask or 0 and 1
DICIdealAgeMask	In top layer, DIC is reset to DIC * DICIdealAgeMask, valid values of DICIdealAgeMask or 0 and 1

Name	Description (Continued)
DIC_ALT_CO2IdealAgeMask	In top layer, DIC_ALT_CO2 is reset to DIC_ALT_CO2 * DIC_ALT_CO2IdealAgeMask, valid values of DIC_ALT_CO2IdealAgeMask or 0 and 1
ALKIdealAgeMask	In top layer, ALK is reset to ALK * ALKIdealAgeMask, valid values of ALKIdealAgeMask or 0 and 1
ALK_ALT_CO2IdealAgeMask	In top layer, ALK is reset to ALK * ALKIdealAgeMask, valid values of ALKIdealAgeMask or 0 and 1, Alternative CO2
DOCIdealAgeMask	In top layer, DOC is reset to DOC * DOCIdealAgeMask, valid values of DOCIdealAgeMask or 0 and 1
DONIdealAgeMask	In top layer, DON is reset to DON * DONIdealAgeMask, valid values of DONIdealAgeMask or 0 and 1
DOPIdealAgeMask	In top layer, DOP is reset to DOP * DOPIdealAgeMask, valid values of DOPIdealAgeMask or 0 and 1
DOPrIdealAgeMask	In top layer, DOPr is reset to DOPr * DOPrIdealAgeMask, valid values of DOPrIdealAgeMask or 0 and 1
DONrIdealAgeMask	In top layer, DONr is reset to DONr * DONrIdealAgeMask, valid values of DONrIdealAgeMask or 0 and 1
DOCrIdealAgeMask	In top layer, DOCr is reset to DOCr * DOCrIdealAgeMask, valid values of DOCrIdealAgeMask or 0 and 1
zooCIdealAgeMask	In top layer, zooC is reset to zooC * zooCIdealAgeMask, valid values of zooCIdealAgeMask or 0 and 1
spChlIdealAgeMask	In top layer, spChl is reset to spChl * spChlIdealAgeMask, valid values of spChlIdealAgeMask or 0 and 1
spCIdealAgeMask	In top layer, spC is reset to spC * spCIdealAgeMask, valid values of spCIdealAgeMask or 0 and 1
spFeIdealAgeMask	In top layer, spFe is reset to spFe * spFeIdealAgeMask, valid values of spFeIdealAgeMask or 0 and 1
spPIdealAgeMask	In top layer, spP is reset to spP * spPIdealAgeMask, valid values of spPIdealAgeMask or 0 and 1
spCaCO3IdealAgeMask	In top layer, spCaCO3 is reset to spCaCO3 * spCaCO3IdealAgeMask, valid values of spCaCO3IdealAgeMask or 0 and 1
diatChlIdealAgeMask	In top layer, diatChl is reset to diatChl * diatChlIdealAgeMask, valid values of diatChlIdealAgeMask or 0 and 1
diatCIdealAgeMask	In top layer, diatC is reset to diatC * diatCIdealAgeMask, valid values of diatCIdealAgeMask or 0 and 1
diatFeIdealAgeMask	In top layer, diatFe is reset to diatFe * diatFeIdealAgeMask, valid values of diatFeIdealAgeMask or 0 and 1
diatPIdealAgeMask	In top layer, diatP is reset to diatP * diatPIdealAgeMask, valid values of diatPIdealAgeMask or 0 and 1
diatSiIdealAgeMask	In top layer, diatSi is reset to diatSi * diatSiIdealAgeMask, valid values of diatSiIdealAgeMask or 0 and 1
diazChlIdealAgeMask	In top layer, diazChl is reset to diazChl * diazChlIdealAgeMask, valid values of diazChlIdealAgeMask or 0 and 1
diazCIdealAgeMask	In top layer, diazC is reset to diazC * diazCIdealAgeMask, valid values of diazCIdealAgeMask or 0 and 1
diazFeIdealAgeMask	In top layer, diazFe is reset to diazFe * diazFeIdealAgeMask, valid values of diazFeIdealAgeMask or 0 and 1
diazPIdealAgeMask	In top layer, diazP is reset to diazP * diazPIdealAgeMask, valid values of diazPIdealAgeMask or 0 and 1
PO4TTDMask	In top layer, PO4 is reset to TTDMask, valid values of PO4TTDMask or 0 and 1

Name	**Description** (Continued)
NO3TTDMask	In top layer, NO3 is reset to TTDMask, valid values of NO3TTDMask or 0 and 1
SiO3TTDMask	In top layer, SiO3 is reset to TTDMask, valid values of SiO3TTDMask or 0 and 1
NH4TTDMask	In top layer, NH4 is reset to TTDMask, valid values of NH4TTDMask or 0 and 1
FeTTDMask	In top layer, Fe is reset to TTDMask, valid values of FeTTDMask or 0 and 1
LigTTDMask	In top layer, Lig is reset to TTDMask, valid values of LigTTDMask or 0 and 1
O2TTDMask	In top layer, O2 is reset to TTDMask, valid values of O2TTDMask or 0 and 1
DICTTDMask	In top layer, DIC is reset to TTDMask, valid values of DICTTD-Mask or 0 and 1
DIC_ALT_CO2TTDMask	In top layer, DIC_ALT_CO2 is reset to TTDMask, valid values of DIC_ALT_CO2TTDMask or 0 and 1
ALKTTDMask	In top layer, ALK is reset to TTDMask, valid values of ALKTTD-Mask or 0 and 1
ALK_ALT_CO2TTDMask	In top layer, ALK is reset to TTDMask, valid values of ALKTTD-Mask or 0 and 1, Alternative CO2
DOCTTDMask	In top layer, DOC is reset to TTDMask, valid values of DOCTTD-Mask or 0 and 1
DONTTDMask	In top layer, DON is reset to TTDMask, valid values of DONTTD-Mask or 0 and 1
DOPTTDMask	In top layer, DOP is reset to TTDMask, valid values of DOPTTD-Mask or 0 and 1
DOPrTTDMask	In top layer, DOPr is reset to TTDMask, valid values of DO-PrTTDMask or 0 and 1
DONrTTDMask	In top layer, DONr is reset to TTDMask, valid values of DON-rTTDMask or 0 and 1
DOCrTTDMask	In top layer, DOCr is reset to TTDMask, valid values of DOCrTTDMask or 0 and 1
zooCTTDMask	In top layer, zooC is reset to TTDMask, valid values of zooCTTD-Mask or 0 and 1
spChlTTDMask	In top layer, spChl is reset to TTDMask, valid values of spChlTTD-Mask or 0 and 1
spCTTDMask	In top layer, spC is reset to TTDMask, valid values of spCTTD-Mask or 0 and 1
spFeTTDMask	In top layer, spFe is reset to TTDMask, valid values of spFeTTD-Mask or 0 and 1
spPTTDMask	In top layer, spP is reset to TTDMask, valid values of spPTTD-Mask or 0 and 1
spCaCO3TTDMask	In top layer, spCaCO3 is reset to TTDMask, valid values of sp-CaCO3TTDMask or 0 and 1
diatChlTTDMask	In top layer, diatChl is reset to TTDMask, valid values of di-atChlTTDMask or 0 and 1
diatCTTDMask	In top layer, diatC is reset to TTDMask, valid values of diatCTTD-Mask or 0 and 1
diatFeTTDMask	In top layer, diatFe is reset to TTDMask, valid values of diat-FeTTDMask or 0 and 1
diatPTTDMask	In top layer, diatP is reset to TTDMask, valid values of diatPTTD-Mask or 0 and 1

Name	Description (Continued)
diatSiTTDMask	In top layer, diatSi is reset to TTDMask, valid values of diatSiTTDMask or 0 and 1
diazChlTTDMask	In top layer, diazChl is reset to TTDMask, valid values of diazChlTTDMask or 0 and 1
diazCTTDMask	In top layer, diazC is reset to TTDMask, valid values of diazCTTDMask or 0 and 1
diazFeTTDMask	In top layer, diazFe is reset to TTDMask, valid values of diazFeTTDMask or 0 and 1
diazPTTDMask	In top layer, diazP is reset to TTDMask, valid values of diazPTTDMask or 0 and 1
DMSSurfaceFlux	Dimethyl Sulfide Surface Flux
DMSPSurfaceFlux	Dimethyl Sulfoniopropionate Surface Flux
DMSSurfaceFluxRunoff	Dimethyl Sulfide Surface Flux Due to Runoff
DMSPSurfaceFluxRunoff	Dimethyl Sulfoniopropionate Surface Flux Due to Runoff
DMSSurfaceFluxRemoved	Dimethyl Sulfide Surface Flux that is ignored
DMSPSurfaceFluxRemoved	Dimethyl Sulfoniopropionate Surface Flux that is ignored
avgOceanSurfaceDMS	Ocean Surface DMS concentration
avgOceanSurfaceDMSP	Ocean Surface DMSP concentration
iceFluxDMS	Surface DMS flux from sea ice
iceFluxDMSP	Surface DMSP flux from sea ice
dms_flux_diag_ifrac	Ice Fraction used in DMS flux calculation
dms_flux_diag_xkw	XKW used in DMS flux calculation
dms_flux_diag_atm_press	Atm Pressure used in DMS flux calculation
dms_flux_diag_pv	Piston Velocity used in DMS flux calculation
dms_flux_diag_schmidt	Schmidt Number used in DMS flux calculation
dms_flux_diag_sat	DMS Saturation used in DMS flux calculation
dms_flux_diag_surf	Surface DMS Values used in DMS flux calculation
dms_flux_diag_ws	Wind Speed used in DMS flux calculation
DMSPistonVelocity	A non-negative field controlling the rate at which DMS is restored to DMSSurfaceRestoringValue
DMSPPistonVelocity	A non-negative field controlling the rate at which DMSP is restored to DMSPSurfaceRestoringValue
DMSSurfaceRestoringValue	Tracer is restored toward this field at a rate controlled by DMSPistonVelocity.
DMSPSurfaceRestoringValue	Tracer is restored toward this field at a rate controlled by DMSPPistonVelocity.
DMSInteriorRestoringRate	A non-negative field controlling the rate at which DMS is restored to DMSInteriorRestoringValue
DMSPInteriorRestoringRate	A non-negative field controlling the rate at which DMSP is restored to DMSPInteriorRestoringValue
DMSInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by DMSInteriorRestoringRate.
DMSPInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by DMSPInteriorRestoringRate.
DMSExponentialDecayRate	A non-negative field controlling the exponential decay of DMS
DMSPExponentialDecayRate	A non-negative field controlling the exponential decay of DMSP
DMSIdealAgeMask	In top layer, DMS is reset to DMS * DMSIdealAgeMask, valid values of DMSIdealAgeMask or 0 and 1
DMSPIdealAgeMask	In top layer, DMSP is reset to DMSP * DMSPIdealAgeMask, valid values of DMSPIdealAgeMask or 0 and 1

Name	Description (Continued)
DMSTTDMask	In top layer, DMS is reset to TTDMask, valid values of DMSTTDMask or 0 and 1
DMSPTTDMask	In top layer, DMSP is reset to DMSPTTDMask, valid values of DMSPTTDMask or 0 and 1
PROTSurfaceFlux	Proteins Surface Flux
POLYSurfaceFlux	Polysaccharides Surface Flux
LIPSurfaceFlux	Lipids Surface Flux
PROTSurfaceFluxRunoff	Proteins Surface Flux Due to Runoff
POLYSurfaceFluxRunoff	Polysaccharides Surface Flux Due to Runoff
LIPSurfaceFluxRunoff	Lipids Surface Flux Due to Runoff
PROTSurfaceFluxRemoved	Proteins Surface Flux that is ignored
POLYSurfaceFluxRemoved	Polysaccharides Surface Flux that is ignored
LIPSurfaceFluxRemoved	Lipids Surface Flux that is ignored
avgOceanSurfaceDOC	Ocean Surface Organics concentration: (1,2,3)=¿(polysaccharides,lipids,proteins)
avgOceanSurfaceDON	Ocean Surface Organic Proteins concentration
PROTPistonVelocity	A non-negative field controlling the rate at which PROT is restored to PROTSurfaceRestoringValue
POLYPistonVelocity	A non-negative field controlling the rate at which POLY is restored to POLYSurfaceRestoringValue
LIPPistonVelocity	A non-negative field controlling the rate at which LIP is restored to LIPSurfaceRestoringValue
PROTSurfaceRestoringValue	Tracer is restored toward this field at a rate controlled by PROTPistonVelocity.
POLYSurfaceRestoringValue	Tracer is restored toward this field at a rate controlled by POLYPistonVelocity.
LIPSurfaceRestoringValue	Tracer is restored toward this field at a rate controlled by LIPPistonVelocity.
PROTInteriorRestoringRate	A non-negative field controlling the rate at which PROT is restored to PROTInteriorRestoringValue
POLYInteriorRestoringRate	A non-negative field controlling the rate at which POLY is restored to POLYInteriorRestoringValue
LIPInteriorRestoringRate	A non-negative field controlling the rate at which LIP is restored to LIPInteriorRestoringValue
PROTInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by PROTInteriorRestoringRate.
POLYInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by POLYInteriorRestoringRate.
LIPInteriorRestoringValue	Tracer is restored toward this field at a rate controlled by LIPInteriorRestoringRate.
PROTExponentialDecayRate	A non-negative field controlling the exponential decay of PROT
POLYExponentialDecayRate	A non-negative field controlling the exponential decay of POLY
LIPExponentialDecayRate	A non-negative field controlling the exponential decay of LIP
PROTIdealAgeMask	In top layer, PROT is reset to PROT * PROTIdealAgeMask, valid values of PROTIdealAgeMask or 0 and 1
POLYIdealAgeMask	In top layer, POLY is reset to POLY * POLYIdealAgeMask, valid values of POLYIdealAgeMask or 0 and 1
LIPIdealAgeMask	In top layer, LIP is reset to LIP * LIPIdealAgeMask, valid values of LIPIdealAgeMask or 0 and 1
PROTTTDMask	In top layer, PROT is reset to TTDMask, valid values of PROTTTDMask or 0 and 1

Name	Description (Continued)
POLYTTDMask	In top layer, POLY is reset to TTDMask, valid values of POLYTTDMask or 0 and 1
LIPTTDMask	In top layer, LIP is reset to LIPTTDMask, valid values of LIPTTDMask or 0 and 1
iAgeSurfaceFlux	Flux of iAge through the ocean surface. Positive into ocean.
iAgeSurfaceFluxRunoff	Flux of iAge through the ocean surface due to river runoff. Positive into ocean.
iAgeSurfaceFluxRemoved	Flux of iAge that is ignored coming into the ocean. Positive into ocean.
iAgePistonVelocity	A non-negative field controlling the rate at which iAge is restored to iAgeSurfaceRestoringValue
iAgeSurfaceRestoringValue	iAge is restored toward this field at a rate controlled by iAgePistonVelocity.
iAgeInteriorRestoringRate	A non-negative field controlling the rate at which iAge is restored to iAgeInteriorRestoringValue
iAgeInteriorRestoringValue	iAge is restored toward this field at a rate controlled by iAgeInteriorRestoringRate.
iAgeExponentialDecayRate	A non-negative field controlling the exponential decay of iAge
iAgeIdealAgeMask	In top layer, iAge is reset to iAge * iAgeIdealAgeMask, valid values of iAgeIdealAgeMask or 0 and 1
iAgeTTDMask	In top layer, iAge is reset to TTDMask, valid values of iAgeTTDMask or 0 and 1
CFC11SurfaceFlux	CFC11 Surface Flux
CFC12SurfaceFlux	CFC12 Surface Flux
CFCSurfaceFluxRunoff	CFC11 Surface Flux Due to Runoff
CFC12SurfaceFluxRunoff	CFC12 Surface Flux Due to Runoff
CFCSurfaceFluxRemoved	CFC11 Surface Flux that is ignored
CFC12SurfaceFluxRemoved	CFC12 Surface Flux that is ignored
CFC11_flux_ifrac	Ice Fraction used in CFC11 flux calculation
CFC11_flux_xkw	XKW used in CFC11 flux calculation
CFC11_flux_atm_press	Atm Pressure used in CFC11 flux calculation
CFC11_flux_pv	Piston Velocity used in CFC11 flux calculation
CFC11_flux_schmidt	Schmidt Number used in CFC11 flux calculation
CFC11_flux_sat	CFC11 Saturation used in CFC11 flux calculation
CFC11_flux_surf	Surface CFC11 Values used in CFC11 flux calculation
CFC11_flux_ws	Wind Speed used in CFC11 flux calculation
CFC12_flux_ifrac	Ice Fraction used in CFC12 flux calculation
CFC12_flux_xkw	XKW used in CFC12 flux calculation
CFC12_flux_atm_press	Atm Pressure used in CFC12 flux calculation
CFC12_flux_pv	Piston Velocity used in CFC12 flux calculation
CFC12_flux_schmidt	Schmidt Number used in CFC12 flux calculation
CFC12_flux_sat	CFC12 Saturation used in CFC12 flux calculation
CFC12_flux_surf	Surface CFC12 Values used in CFC12 flux calculation
CFC12_flux_ws	Wind Speed used in CFC12 flux calculation
CFC11PistonVelocity	A non-negative field controlling the rate at which CFC11 is restored to CFC11SurfaceRestoringValue
CFC12PistonVelocity	A non-negative field controlling the rate at which CFC12 is restored to CFC12SurfaceRestoringValue
CFC11SurfaceRestoringValue	Tracer is restored toward this field at a rate controlled by CFC11PistonVelocity.

Name	Description (Continued)
CFC12SurfaceRestoringValue	Tracer is restored toward this field at a rate controlled by CFC12PistonVelocity.
CFC11InteriorRestoringRate	A non-negative field controlling the rate at which CFC11 is restored to CFC11InteriorRestoringValue
CFC12InteriorRestoringRate	A non-negative field controlling the rate at which CFC12 is restored to CFC12InteriorRestoringValue
CFC11InteriorRestoringValue	Tracer is restored toward this field at a rate controlled by CFC11InteriorRestoringRate.
CFC12InteriorRestoringValue	Tracer is restored toward this field at a rate controlled by CFC12InteriorRestoringRate.
CFC11ExponentialDecayRate	A non-negative field controlling the exponential decay of CFC11
CFC12ExponentialDecayRate	A non-negative field controlling the exponential decay of CFC12
CFC11IdealAgeMask	In top layer, CFC11 is reset to CFC11 * CFC11IdealAgeMask, valid values of CFC11IdealAgeMask or 0 and 1
CFC12IdealAgeMask	In top layer, CFC12 is reset to CFC12 * CFC12IdealAgeMask, valid values of CFC12IdealAgeMask or 0 and 1
CFC11TTDMask	In top layer, CFC11 is reset to TTDMask, valid values of CFC11TTDMask or 0 and 1
CFC12TTDMask	In top layer, CFC12 is reset to CFC12TTDMask, valid values of CFC12TTDMask or 0 and 1
pCFC11	Mole Fraction of Atmospheric CFC11
pCFC12	Mole Fraction of Atmospheric CFC12
windSpeedSquared10mCFC	10 meter atmospheric wind speed squared

11.8 timeVaryingForcing

Name	Description
windSpeedU	Zonal (eastward) component of wind speed at cell centers from coupler. Positive easthward.
windSpeedV	Meridional (northward) component of wind speed at cell centers from coupler. Positive northward.
windSpeedMagnitude	Magnitude of wind speed at cell centers from coupler.
atmosPressure	Pressure at the sea surface due to the atmosphere.
landIceFractionForcing	The fraction of each cell covered by land ice
landIceFloatingFractionForcing	The fraction of each cell covered by land ice
landIcePressureForcing	Pressure defined at the sea surface due to land ice.
landIceDraftForcing	The elevation of the interface between land ice and the ocean.

11.9 scratch

The scratch data type contains a single time level. The scratch structure contains fields that are used in various parts of the ocean model. All fields in the scratch structure are defined as scratch variables, meaning they are not allocated unless explicitly allocated in the source code. Variables defined in the scratch structure are intended to be used as temporary work arrays.

Name	Description
normalVelocityTest	horizontal velocity, normal component to an edge, for testing
tangentialVelocityTest	horizontal velocity, tangential component to an edge, for testing
strainRateR3Cell	strain rate tensor at cell center, R3, in symmetric 6-index form
strainRateR3CellSolution	strain rate solution tensor at cell center, R3, in symmetric 6-index form
strainRateR3Edge	strain rate tensor at edge, R3, in symmetric 6-index form
strainRateLonLatRCell	strain rate tensor at cell center, 3D, lon-lat-r in symmetric 6-index form, Temporary only
strainRateLonLatRCellSolution	strain rate tensor at cell center, 3D, lon-lat-r in symmetric 6-index form, Temporary only
strainRateLonLatREdge	strain rate tensor at edge, 3D, lon-lat-r in symmetric 6-index form, Temporary only
divTensorR3Cell	divergence of the tensor at cell center, as an R3 vector
divTensorR3CellSolution	divergence of the tensor solution at cell center, as an R3 vector
divTensorLonLatRCell	divergence of the tensor at cell center, as a lon-lat-r vector
divTensorLonLatRCellSolution	divergence of the tensor at cell center, as a lon-lat-r vector, solution
outerProductEdge	Outer product, $u_e \otimes n_e$, at each edge.
smoothedField	the smoothed version of a field on cells during iterative smoothing
zInterfaceScratch	location of layer interfaces at cell centers, used for thickening layers constrained by the Haney number (rx1)
goalStretchScratch	the goal stretch field for the vertical coordinate
goalWeightScratch	the sum of weights used to determine the goal stretch field
zTopScratch	location of the upper layer used to compute the Haney number (rx1), equal to ssh for top layer and zMid of the layer for subsequent layers
zBotScratch	location of the lower layer used to compute the Haney number (rx1), equal zMid of the layer lower layer (but a 1D filed is needed for halo exchanges)
zBotNewScratch	updated location of the lower layer used to compute the Haney number (rx1), needed so update is agnostic to the order in which cells are accessed
smoothingMaskNewScratch	a copy of the smoothing mask used to iteratively expand the field into a buffer region of open ocean around land ice.
cullStack	Temporary space to hold a stack for culling inland seas.
touchedCell	Temporary space to a hold mask if the cell has been touched or not, when culling inland seas.
oceanCell	Temporary space to a hold mask if the cell is an active ocean cell or not.
cullStackSize	Integer to hold the size of the cullStack for each block.
interpActiveTracer	temporary space for holding one tracer at a time as part of horizontal interpolation
interpEcosysTracer	temporary space for holding one tracer at a time as part of horizontal interpolation
interpActiveTracerSmooth	temporary space for holding one tracer at a time as part of horizontal interpolation

Name	Description (Continued)
interpEcosysTracerSmooth	temporary space for holding one tracer at a time as part of horizontal interpolation
isomip_bottomPressure	Temporary space to hold the pressure at the bottom of the ocean, used to compute estimated sea-surface pressure under landice.

11.10 pointLocations

Name	Description
pointCellGlobalID	List of global cell IDs in point set.
pointCellLocalID	List of local cell IDs in point set.
indexToPointCellLocalID	Index to list of local cell IDs in point set.
pointNames	The names of each point.
pointGroupNames	The names of each point group.
nPointsInGroup	The number of points in each point group.
pointsInGroup	The indices of each point in a each group.
xPoint	X Coordinate in cartesian space of point locations.
yPoint	Y Coordinate in cartesian space of point locations.
zPoint	Z Coordinate in cartesian space of point locations.
latPoint	Latitude of point locations.
lonPoint	Longitude of point locations.

11.11 regions

Name	Description
regionCellMasks	The region masks for each cell.
regionVertexMasks	The region masks for each vertex.
regionsInGroup	The list of region indices in each group.
nRegionsInGroup	The number of regions in each group.
regionNames	The name for each region.
regionGroupNames	The name for each region group.

11.12 transects

Name	Description
transectEdgeMasks	Mask of edges for measuring transport across transects
transectEdgeMaskSigns	Sign of normalVelocity on edge for this transect
transectsInGroup	The list of transect indices in each group.
nTransectsInGroup	The number of transects in each group.
transectNames	The name for each transect.
transectGroupNames	The name for each transect group.

11.13 LTS

Name	Description
LTSRegion	Definition of LTS regions. This is read from the initial condition file (typically named init.nc), and set up with a pre-processing step. The values are: 1 = fine; 2 = coarse; 3 = interface layer one; 4 = interface layer two; 5 = fine close to interface layer one.
cellsInLTSRegion	Cell mask for each region. For the first two dimensions, the regions in the array are defined as follows: (1,1): fine, (1,2) interface layer one, (1,3) fine close to interface layer one, (2,2) interface layer two, (2,1) coarse.
nCellsInLTSRegion	Number of cells in each region of cellsInLTSRegion.
edgesInLTSRegion	Edge mask for each region. For the first two dimensions, the regions in the array are defined as follows: (1,1): fine, (1,2) interface layer one, (1,3) fine close to interface layer one, (2,2) interface layer two, (2,1) coarse.
nEdgesInLTSRegion	Number of edges in each region of edgesInLTSRegion.

11.14 surfaceSalinityMonthlyForcing

Name	Description
surfaceSalinityMonthly-ClimatologyValue	monthly surface salinity climatology interpolated to current timestep

11.15 ecosysMonthlyForcing

Name	Description
depositionFluzNO3	Atmospheric Deposition of NO3
depositionFluzNH4	Atmospheric Deposition of NH4
riverFluzNO3	River Runoff Fluz of NO3
riverFluzPO4	River Runoff Fluz of PO4
riverFluzSiO3	River Runoff Fluz of SiO3
riverFluzFe	River Runoff Fluz of Fe
riverFluzDOC	River Runoff Fluz of DOC
riverFluzDON	River Runoff Fluz of DON
riverFluzDOP	River Runoff Fluz of DOP
riverFluzDIC	River Runoff Fluz of DIC
riverFluzALK	River Runoff Fluz of ALK
dust_FLUZ_IN	Surface Dust Flux
IRON_FLUZ_IN	Surface Fe Flux

11.16 CFCAnnualForcing

Name	Description
atmCFC11	Mole Fraction of Atmospheric CFC11
atmCFC12	Mole Fraction of Atmospheric CFC12

11.17 globalStatsAM

Name	Description
areaCellGlobal	sum of the areaCell variable over the full domain, used to normalize global statistics
areaEdgeGlobal	sum of the areaEdge variable over the full domain, used to normalize global statistics
areaTriangleGlobal	sum of the areaTriangle variable over the full domain, used to normalize global statistics
volumeCellGlobal	sum of the volumeCell variable over the full domain, used to normalize global statistics
volumeEdgeGlobal	sum of the volumeEdge variable over the full domain, used to normalize global statistics
CFLNumberGlobal	maximum CFL number over the full domain
landIceFloatingAreaSum	sum of areaCell where landIceMask == 1, used to normalize global statistics in land-ice cavities
layerThicknessMin	Minimum global value of layerThickness in ocean cells.
normalVelocityMin	Minimum global value of normalVelocity on ocean edges.

Name	Description (Continued)
tangentialVelocityMin	Minimum global value of tangentialVelocity on ocean edges.
layerThicknessEdgeMin	Minimum global value of layerThicknessEdgeMean on ocean edges.
relativeVorticityMin	Minimum global value of relativeVorticity on ocean vertices.
enstrophyMin	Minimum global value of enstrophy in ocean cells.
kineticEnergyCellMin	Minimum global value of kineticEnergy in ocean cells.
normalizedAbsoluteVorticityMin	Minimum global value of normalizedAbsoluteVorticity on ocean vertices.
pressureMin	Minimum global value of pressure in ocean cells.
montgomeryPotentialMin	Minimum global value of the Montgomery Potential in ocean cells.
vertVelocityTopMin	Minimum global value of vertVelocityTop in ocean cells.
vertAleTransportTopMin	Minimum global value of vertAleTransportTop in ocean cells.
lowFreqDivergenceMin	Minimum global value of lowFreqDivergence in ocean cells.
highFreqThicknessMin	Minimum global value of highFreqThickness in ocean cells.
temperatureMin	Minimum global value of temperature in ocean cells.
salinityMin	Minimum global value of salinity in ocean cells.
layerThicknessPreviousTimestep-Min	Minimum global value of previous step layerThickness in ocean cells.
frazilLayerThicknessTendencyMin	Minimum global value of layer thickness tendency due to frazil formation in ocean cells.
evaporationFluxMin	Minimum global value of evaporationFlux in ocean cells.
rainFluxMin	Minimum global value of rainFlux in ocean cells.
snowFluxMin	Minimum global value of snowFlux in ocean cells.
seaIceFreshWaterFluxMin	Minimum global value of seaIceFreshWaterFlux in ocean cells.
icebergFreshWaterFluxMin	Minimum global value of icebergFreshWaterFlux in ocean cells.
riverRunoffFluxMin	Minimum global value of riverRunoffFlux in ocean cells.
iceRunoffFluxMin	Minimum global value of iceRunoffFlux in ocean cells.
temperatureFluxMin	Minimum global value of temperatureFlux in ocean cells.
salinityFluxMin	Minimum global value of salinityFlux in ocean cells.
salinityRestoringFluxMin	Minimum global value of salinityRestoringFlux in ocean cells.
landIceFreshwaterFluxMin	Minimum global value of landIceFreshwaterFlux in ocean cells.
accumulatedLandIceMassMin	Minimum global value of accumulatedLandIceMass in ocean cells.
accumulatedLandIceHeatMin	Minimum global value of accumulatedLandIceHeat in ocean cells.
accumulatedLandIceFrazilMass-Min	Minimum global value of accumulatedLandIceFrazilMass in ocean cells.
layerThicknessMax	Maximum global value of layerThickness in ocean cells.
normalVelocityMax	Maximum global value of normalVelocity on ocean edges.
tangentialVelocityMax	Maximum global value of tangentialVelocity on ocean edges.
layerThicknessEdgeMax	Maximum global value of layerThicknessEdgeMean on ocean edges.
relativeVorticityMax	Maximum global value of relativeVorticity on ocean vertices.
enstrophyMax	Maximum global value of enstrophy in ocean cells.
kineticEnergyCellMax	Maximum global value of kineticEnergy in ocean cells.
normalizedAbsoluteVorticityMax	Maximum global value of normalizedAbsoluteVorticity on ocean vertices.
pressureMax	Maximum global value of pressure in ocean cells.
montgomeryPotentialMax	Maximum global value of the Montgomery Potential in ocean cells.
vertVelocityTopMax	Maximum global value of vertVelocityTop in ocean cells.
vertAleTransportTopMax	Maximum global value of vertAleTransportTop in ocean cells.
lowFreqDivergenceMax	Maximum global value of lowFreqDivergence in ocean cells.
highFreqThicknessMax	Maximum global value of highFreqThickness in ocean cells.
temperatureMax	Maximum global value of temperature in ocean cells.
salinityMax	Maximum global value of salinity in ocean cells.

Name	Description (Continued)
layerThicknessPreviousTimestep-Max	Maximum global value of previous step layerThickness in ocean cells.
frazilLayerThicknessTendencyMax	Maximum global value of layer thickness tendency due to frazil formation in ocean cells.
evaporationFluxMax	Maximum global value of evaporationFlux in ocean cells.
rainFluxMax	Maximum global value of rainFlux in ocean cells.
snowFluxMax	Maximum global value of snowFlux in ocean cells.
seaIceFreshWaterFluxMax	Maximum global value of seaIceFreshWaterFlux in ocean cells.
icebergFreshWaterFluxMax	Maximum global value of icebergFreshWaterFlux in ocean cells.
riverRunoffFluxMax	Maximum global value of riverRunoffFlux in ocean cells.
iceRunoffFluxMax	Maximum global value of iceRunoffFlux in ocean cells.
temperatureFluxMax	Maximum global value of temperatureFlux in ocean cells.
salinityFluxMax	Maximum global value of salinityFlux in ocean cells.
salinityRestoringFluxMax	Maximum global value of salinityRestoringFlux in ocean cells.
landIceFreshwaterFluxMax	Maximum global value of landIceFreshwaterFlux in ocean cells.
accumulatedLandIceMassMax	Maximum global value of accumulatedLandIceMass in ocean cells.
accumulatedLandIceHeatMax	Maximum global value of accumulatedLandIceHeat in ocean cells.
accumulatedLandIceFrazilMass-Max	Maximum global value of accumulatedLandIceFrazilMass in ocean cells.
layerThicknessSum	Accumulated global value of layerThickness in ocean cells.
normalVelocitySum	Accumulated global value of normalVelocity on ocean edges.
tangentialVelocitySum	Accumulated global value of tangentialVelocity on ocean edges.
layerThicknessEdgeSum	Accumulated global value of layerThicknessEdgeMean on ocean edges.
relativeVorticitySum	Accumulated global value of relativeVorticity on ocean vertices.
enstrophySum	Accumulated global value of enstrophy in ocean cells.
kineticEnergyCellSum	Accumulated global value of kineticEnergy in ocean cells.
normalizedAbsoluteVorticitySum	Accumulated global value of normalizedAbsoluteVorticity on ocean vertices.
pressureSum	Accumulated global value of pressure in ocean cells.
montgomeryPotentialSum	Accumulated global value of the Montgomery Potential in ocean cells.
vertVelocityTopSum	Accumulated global value of vertVelocityTop in ocean cells.
vertAleTransportTopSum	Accumulated global value of vertAleTransportTop in ocean cells.
lowFreqDivergenceSum	Accumulated global value of lowFreqDivergence in ocean cells.
highFreqThicknessSum	Accumulated global value of highFreqThickness in ocean cells.
temperatureSum	Accumulated global value of temperature in ocean cells.
salinitySum	Accumulated global value of salinity in ocean cells.
layerThicknessPreviousTimestep-Sum	Accumulated global value of previous step layerThickness in ocean cells.
frazilLayerThicknessTendency-Sum	Accumulated global value of layer thickness tendency due to frazil formation in ocean cells.
evaporationFluxSum	Accumulated global value of evaporationFlux in ocean cells.
rainFluxSum	Accumulated global value of rainFlux in ocean cells.
snowFluxSum	Accumulated global value of snowFlux in ocean cells.
seaIceFreshWaterFluxSum	Accumulated global value of seaIceFreshWaterFlux in ocean cells.
icebergFreshWaterFluxSum	Accumulated global value of icebergFreshWaterFlux in ocean cells.
riverRunoffFluxSum	Accumulated global value of riverRunoffFlux in ocean cells.
iceRunoffFluxSum	Accumulated global value of iceRunoffFlux in ocean cells.
temperatureFluxSum	Accumulated global value of temperatureFlux in ocean cells.
salinityFluxSum	Accumulated global value of salinityFlux in ocean cells.

Name	Description (Continued)
salinityRestoringFluxSum	Accumulated global value of salinityRestoringFlux in ocean cells.
landIceFreshwaterFluxSum	Accumulated global value of landIceFreshwaterFlux in ocean cells.
accumulatedLandIceMassSum	Accumulated global value of accumulatedLandIceMass in ocean cells.
accumulatedLandIceHeatSum	Accumulated global value of accumulatedLandIceHeat in ocean cells.
accumulatedLandIceFrazilMass-Sum	Accumulated global value of accumulatedLandIceFrazilMass in ocean cells.
layerThicknessRms	Global root mean square value of layerThickness in ocean cells.
normalVelocityRms	Global root mean square value of normalVelocity on ocean edges.
tangentialVelocityRms	Global root mean square value of tangentialVelocity on ocean edges.
layerThicknessEdgeRms	Global root mean square value of layerThicknessEdgeMean on ocean edges.
relativeVorticityRms	Global root mean square value of relativeVorticity on ocean vertices.
enstrophyRms	Global root mean square value of enstrophy in ocean cells.
kineticEnergyCellRms	Global root mean square value of kineticEnergy in ocean cells.
normalizedAbsoluteVorticityRms	Global root mean square value of normalizedAbsoluteVorticity on ocean vertices.
pressureRms	Global root mean square value of pressure in ocean cells.
montgomeryPotentialRms	Global root mean square value of the Montgomery Potential in ocean cells.
vertVelocityTopRms	Global root mean square value of vertVelocityTop in ocean cells.
vertAleTransportTopRms	Global root mean square value of vertAleTransportTop in ocean cells.
lowFreqDivergenceRms	Global root mean square value of lowFreqDivergence in ocean cells.
highFreqThicknessRms	Global root mean square value of highFreqThickness in ocean cells.
temperatureRms	Global root mean square value of temperature in ocean cells.
salinityRms	Global root mean square value of salinity in ocean cells.
layerThicknessPreviousTimestep-Rms	Global root mean square value of previous step layerThickness in ocean cells.
frazilLayerThicknessTendencyRms	Global root mean square value of layer thickness tendency due to frazil formation in ocean cells.
evaporationFluxRms	Global root mean square value of evaporationFlux in ocean cells.
rainFluxRms	Global root mean square value of rainFlux in ocean cells.
snowFluxRms	Global root mean square value of snowFlux in ocean cells.
seaIceFreshWaterFluxRms	Global root mean square value of seaIceFreshWaterFlux in ocean cells.
icebergFreshWaterFluxRms	Global root mean square value of icebergFreshWaterFlux in ocean cells.
riverRunoffFluxRms	Global root mean square value of riverRunoffFlux in ocean cells.
iceRunoffFluxRms	Global root mean square value of iceRunoffFlux in ocean cells.
temperatureFluxRms	Global root mean square value of temperatureFlux in ocean cells.
salinityFluxRms	Global root mean square value of salinityFlux in ocean cells.
salinityRestoringFluxRms	Global root mean square value of salinityRestoringFlux in ocean cells.
landIceFreshwaterFluxRms	Global root mean square value of landIceFreshwaterFlux in ocean cells.
accumulatedLandIceMassRms	Global root mean square value of accumulatedLandIceMass in ocean cells.

Name	Description (Continued)
accumulatedLandIceHeatRms	Global root mean square value of accumulatedLandIceHeat in ocean cells.
accumulatedLandIceFrazilMass-Rms	Global root mean square value of accumulatedLandIceFrazilMass in ocean cells.
layerThicknessAvg	Average value of layerThickness in ocean cells.
normalVelocityAvg	Average value of normalVelocity on ocean edges.
tangentialVelocityAvg	Average value of tangentialVelocity on ocean edges.
layerThicknessEdgeAvg	Average value of layerThicknessEdgeMean on ocean edges.
relativeVorticityAvg	Average value of relativeVorticity on ocean vertices.
enstrophyAvg	Average value of enstrophy in ocean cells.
kineticEnergyCellAvg	Average value of kineticEnergy in ocean cells.
normalizedAbsoluteVorticityAvg	Average value of normalizedAbsoluteVorticity on ocean vertices.
pressureAvg	Average value of pressure in ocean cells.
montgomeryPotentialAvg	Average value of the Montgomery Potential in ocean cells.
vertVelocityTopAvg	Average value of vertVelocityTop in ocean cells.
vertAleTransportTopAvg	Average value of vertAleTransportTop in ocean cells.
lowFreqDivergenceAvg	Average value of lowFreqDivergence in ocean cells.
highFreqThicknessAvg	Average value of highFreqThickness in ocean cells.
temperatureAvg	Average value of temperature in ocean cells.
salinityAvg	Average value of salinity in ocean cells.
layerThicknessPreviousTimestep-Avg	Average value of previous step layerThickness in ocean cells.
frazilLayerThicknessTendencyAvg	Average value of layer thickness tendency due to frazil formation in ocean cells.
evaporationFluxAvg	Average value of evaporationFlux in ocean cells.
rainFluxAvg	Average value of rainFlux in ocean cells.
snowFluxAvg	Average value of snowFlux in ocean cells.
seaIceFreshWaterFluxAvg	Average value of seaIceFreshWaterFlux in ocean cells.
icebergFreshWaterFluxAvg	Average value of icebergFreshWaterFlux in ocean cells.
riverRunoffFluxAvg	Average value of riverRunoffFlux in ocean cells.
iceRunoffFluxAvg	Average value of iceRunoffFlux in ocean cells.
temperatureFluxAvg	Average value of temperatureFlux in ocean cells.
salinityFluxAvg	Average value of salinityFlux in ocean cells.
salinityRestoringFluxAvg	Average value of salinityRestoringFlux in ocean cells.
landIceFreshwaterFluxAvg	Average value of landIceFreshwaterFlux in ocean cells.
accumulatedLandIceMassAvg	Average value of accumulatedLandIceMass in ocean cells.
accumulatedLandIceHeatAvg	Average value of accumulatedLandIceHeat in ocean cells.
accumulatedLandIceFrazilMass-Avg	Average value of accumulatedLandIceFrazilMass in ocean cells.
layerThicknessMinVertSum	Minimum vertical sum of layerThickness in ocean cells.
normalVelocityMinVertSum	Minimum vertical sum of normalVelocity on ocean edges.
tangentialVelocityMinVertSum	Minimum vertical sum of tangentialVelocity on ocean edges.
layerThicknessEdgeMinVertSum	Minimum vertical sum of layerThicknessEdgeMean on ocean edges.
relativeVorticityMinVertSum	Minimum vertical sum of relativeVorticity on ocean vertices.
enstrophyMinVertSum	Minimum vertical sum of enstrophy in ocean cells.
kineticEnergyCellMinVertSum	Minimum vertical sum of kineticEnergy in ocean cells.
normalizedAbsoluteVorticityMin-VertSum	Minimum vertical sum of normalizedAbsoluteVorticity on ocean vertices.
pressureMinVertSum	Minimum vertical sum of pressure in ocean cells.
montgomeryPotentialMinVert-Sum	Minimum vertical sum of the Montgomery Potential in ocean cells.

Name	**Description** (Continued)
vertVelocityTopMinVertSum	Minimum vertical sum of vertVelocityTop in ocean cells.
vertAleTransportTopMinVert-Sum	Minimum vertical sum of vertAleTransportTop in ocean cells.
lowFreqDivergenceMinVertSum	Minimum vertical sum of lowFreqDivergence in ocean cells.
highFreqThicknessMinVertSum	Minimum vertical sum of highFreqThickness in ocean cells.
temperatureMinVertSum	Minimum vertical sum of temperature in ocean cells.
salinityMinVertSum	Minimum vertical sum of salinity in ocean cells.
layerThicknessPreviousTimestep-MinVertSum	Minimum vertical sum of previous step layerThickness in ocean cells.
frazilLayerThicknessTendencyMin-VertSum	Minimum vertical sum of layer thickness tendency due to frazil formation in ocean cells.
evaporationFluxMinVertSum	Minimum vertical sum of evaporationFlux in ocean cells.
rainFluxMinVertSum	Minimum vertical sum of rainFlux in ocean cells.
snowFluxMinVertSum	Minimum vertical sum of snowFlux in ocean cells.
seaIceFreshWaterFluxMinVert-Sum	Minimum vertical sum of seaIceFreshWaterFlux in ocean cells.
icebergFreshWaterFluxMinVert-Sum	Minimum vertical sum of icebergFreshWaterFlux in ocean cells.
riverRunoffFluxMinVertSum	Minimum vertical sum of riverRunoffFlux in ocean cells.
iceRunoffFluxMinVertSum	Minimum vertical sum of iceRunoffFlux in ocean cells.
temperatureFluxMinVertSum	Minimum vertical sum of temperatureFlux in ocean cells.
salinityFluxMinVertSum	Minimum vertical sum of salinityFlux in ocean cells.
salinityRestoringFluxMinVert-Sum	Minimum vertical sum of salinityRestoringFlux in ocean cells.
landIceFreshwaterFluxMinVert-Sum	Minimum vertical sum of landIceFreshwaterFlux in ocean cells.
accumulatedLandIceMassMinVert-Sum	Minimum vertical sum of accumulatedLandIceMass in ocean cells.
accumulatedLandIceHeatMinVert-Sum	Minimum vertical sum of accumulatedLandIceHeat in ocean cells.
accumulatedLandIceFrazilMass-MinVertSum	Minimum vertical sum of accumulatedLandIceFrazilMass in ocean cells.
layerThicknessMaxVertSum	Maximum vertical sum of layerThickness in ocean cells.
normalVelocityMaxVertSum	Maximum vertical sum of normalVelocity on ocean edges.
tangentialVelocityMaxVertSum	Maximum vertical sum of tangentialVelocity on ocean edges.
layerThicknessEdgeMaxVertSum	Maximum vertical sum of layerThicknessEdgeMean on ocean edges.
relativeVorticityMaxVertSum	Maximum vertical sum of relativeVorticity on ocean vertices.
enstrophyMaxVertSum	Maximum vertical sum of enstrophy in ocean cells.
kineticEnergyCellMaxVertSum	Maximum vertical sum of kineticEnergy in ocean cells.
normalizedAbsoluteVorticityMax-VertSum	Maximum vertical sum of normalizedAbsoluteVorticity on ocean vertices.
pressureMaxVertSum	Maximum vertical sum of pressure in ocean cells.
montgomeryPotentialMaxVert-Sum	Maximum vertical sum of the Montgomery Potential in ocean cells.
vertVelocityTopMaxVertSum	Maximum vertical sum of vertVelocityTop in ocean cells.
vertAleTransportTopMaxVert-Sum	Maximum vertical sum of vertAleTransportTop in ocean cells.
lowFreqDivergenceMaxVertSum	Maximum vertical sum of lowFreqDivergence in ocean cells.
highFreqThicknessMaxVertSum	Maximum vertical sum of highFreqThickness in ocean cells.
temperatureMaxVertSum	Maximum vertical sum of temperature in ocean cells.
salinityMaxVertSum	Maximum vertical sum of salinity in ocean cells.

Name	Description (Continued)
layerThicknessPreviousTimestep-MaxVertSum	Maximum vertical sum of previous step layerThickness in ocean cells.
frazilLayerThicknessTendencyMax-VertSum	Maximum vertical sum of layer thickness tendency due to frazil formation in ocean cells.
evaporationFluxMaxVertSum	Maximum vertical sum of evaporationFlux in ocean cells.
rainFluxMaxVertSum	Maximum vertical sum of rainFlux in ocean cells.
snowFluxMaxVertSum	Maximum vertical sum of snowFlux in ocean cells.
seaIceFreshWaterFluxMaxVert-Sum	Maximum vertical sum of seaIceFreshWaterFlux in ocean cells.
icebergFreshWaterFluxMaxVert-Sum	Maximum vertical sum of icebergFreshWaterFlux in ocean cells.
riverRunoffFluxMaxVertSum	Maximum vertical sum of riverRunoffFlux in ocean cells.
iceRunoffFluxMaxVertSum	Maximum vertical sum of iceRunoffFlux in ocean cells.
temperatureFluxMaxVertSum	Maximum vertical sum of temperatureFlux in ocean cells.
salinityFluxMaxVertSum	Maximum vertical sum of salinityFlux in ocean cells.
salinityRestoringFluxMaxVert-Sum	Maximum vertical sum of salinityRestoringFlux in ocean cells.
landIceFreshwaterFluxMaxVert-Sum	Maximum vertical sum of landIceFreshwaterFlux in ocean cells.
accumulatedLandIceMassMax-VertSum	Maximum vertical sum of accumulatedLandIceMass in ocean cells.
accumulatedLandIceHeatMaxVert-Sum	Maximum vertical sum of accumulatedLandIceHeat in ocean cells.
accumulatedLandIceFrazilMass-MaxVertSum	Maximum vertical sum of accumulatedLandIceFrazilMass in ocean cells.
totalVolumeChange	Total volume change of the ocean relative to previous timestep
netFreshwaterInput	Net fresh water change (input-output) over the timestep due to surface fluxes and frazil formation
absoluteFreshWaterConservation	Difference between change in ocean volume and freshwater input
relativeFreshWaterConservation	Difference between change in ocean volume and freshwater input divided by volume change

11.18 surfaceAreaWeightedAveragesAM

Name	Description
minSurfaceMaskValue	Minimum value of region mask (should always be 1 for valid regions)
minSurfaceArea	Minimum area of a surface cell in each region
minLatentHeatFlux	Minimum latent heat flux in each region
minSensibleHeatFlux	Minimum sensible heat flux in each region
minLongWaveHeatFluxUp	Minimum upwelling long wave heat flux in each region
minLongWaveHeatFluxDown	Minimum downwelling long wave heat flux in each region
minSeaIceHeatFlux	Minimum sea ice heat flux in each region
minIcebergHeatFlux	Minimum iceberg heat flux in each region
minShortWaveHeatFlux	Minimum short wave heat flux in each region

Name	**Description** (Continued)
minEvaporationFlux	Minimum evaporation in each region
minSeaIceFreshWaterFlux	Minimum sea ice melt rate in each region
minIcebergFreshWaterFlux	Minimum iceberg melt rate in each region
minRiverRunoffFlux	Minimum river run off in each region
minIceRunoffFlux	Minimum ice run off in each region
minRainFlux	Minimum rain flux in each region
minSnowFlux	Minimum snow flux in each region
minSeaIceEnergy	Minimum sea ice energy in each region
minSurfaceThicknessFlux	Minimum surface thickness flux in each region
minSurfaceTemperatureFlux	Minimum surface temperature flux in each region
minSurfaceSalinityFlux	Minimum surface salinity flux in each region
minSeaIceSalinityFlux	Minimum sea ice salinity flux in each region
minSurfaceWindStressMagnitude	Minimum wind stress magnitude in each region
minWindStressZonal	Minimum zonal wind stress in each region
minWindStressMeridional	Minimum meridional wind stress in each region
minSeaSurfacePressure	Minimum sea surface pressure in each region
minSurfaceSSH	Minimum sea-surface height in each region
minSurfaceTemperature	Minimum surface temperature in each region
minSurfaceSalinity	Minimum surface salinity in each region
minBoundaryLayerDepth	Minimum surface boundary layer depth in each region
minSurfaceNetHeatFlux	Minimum net surface heat flux in each region
minSurfaceNetSalinitFlux	Minimum net surface salinity flux in each region
minSurfaceNetFreshWaterFlux	Minimum net surface fresh water flux in each region
maxSurfaceMaskValue	Maximum value of region mask (should always be 1 for valid regions)
maxSurfaceArea	Maximum area of a surface cell in each region
maxLatentHeatFlux	Maximum latent heat flux in each region
maxSensibleHeatFlux	Maximum sensible heat flux in each region
maxLongWaveHeatFluxUp	Maximum upwelling long wave heat flux in each region
maxLongWaveHeatFluxDown	Maximum downwelling long wave heat flux in each region
maxSeaIceHeatFlux	Maximum sea ice heat flux in each region
maxIcebergHeatFlux	Maximum iceberg heat flux in each region
maxShortWaveHeatFlux	Maximum short wave heat flux in each region
maxEvaporationFlux	Maximum evaporation in each region
maxSeaIceFreshWaterFlux	Maximum sea ice melt rate in each region
maxIcebergFreshWaterFlux	Maximum iceberg melt rate in each region
maxRiverRunoffFlux	Maximum river run off in each region
maxIceRunoffFlux	Maximum ice run off in each region
maxRainFlux	Maximum rain flux in each region
maxSnowFlux	Maximum snow flux in each region
maxSeaIceEnergy	Maximum sea ice energy in each region
maxSurfaceThicknessFlux	Maximum surface thickness flux in each region
maxSurfaceTemperatureFlux	Maximum surface temperature flux in each region
maxSurfaceSalinityFlux	Maximum surface salinity flux in each region
maxSeaIceSalinityFlux	Maximum sea ice salinity flux in each region
maxSurfaceWindStressMagnitude	Maximum wind stress magnitude in each region
maxWindStressZonal	Maximum zonal wind stress in each region
maxWindStressMeridional	Maximum meridional wind stress in each region
maxSeaSurfacePressure	Maximum sea surface pressure in each region
maxSurfaceSSH	Maximum sea-surface height
maxSurfaceTemperature	Maximum surface temperature in each region

Name	Description (Continued)
maxSurfaceSalinity	Maximum surface salinity in each region
maxBoundaryLayerDepth	Maximum surface boundary layer depth in each region
maxSurfaceNetHeatFlux	Maximum net surface heat flux in each region
maxSurfaceNetSalinitFlux	Maximum net surface salinity flux in each region
maxSurfaceNetFreshWaterFlux	Maximum net surface fresh water flux in each region
sumSurfaceMaskValue	Sum of region mask, represents total number of cells in region
avgSurfaceArea	Average area of a surface cell
avgLatentHeatFlux	Surface area-weighted average of latent heat flux in each region
avgSensibleHeatFlux	Surface area-weighted average of sensible heat flux in each region
avgLongWaveHeatFluxUp	Surface area-weighted average of upwelling long wave heat flux in each region
avgLongWaveHeatFluxDown	Surface area-weighted average of downwelling long wave heat flux in each region
avgSeaIceHeatFlux	Surface area-weighted average of sea ice heat flux in each region
avgIcebergHeatFlux	Surface area-weighted average of iceberg heat flux in each region
avgShortWaveHeatFlux	Surface area-weighted average of short wave heat flux in each region
avgEvaporationFlux	Surface area-weighted average of evaporation in each region
avgSeaIceFreshWaterFlux	Surface area-weighted average of sea ice melt rate in each region
avgIcebergFreshWaterFlux	Surface area-weighted average of iceberg melt rate in each region
avgRiverRunoffFlux	Surface area-weighted average of river run off in each region
avgIceRunoffFlux	Surface area-weighted average of ice run off in each region
avgRainFlux	Surface area-weighted average of rain flux in each region
avgSnowFlux	Surface area-weighted average of snow flux in each region
avgSeaIceEnergy	Surface area-weighted average of sea ice energy in each region
avgSurfaceThicknessFlux	Surface area-weighted average of surface thickness flux in each region
avgSurfaceTemperatureFlux	Surface area-weighted average of surface temperature flux in each region
avgSurfaceSalinityFlux	Surface area-weighted average of surface salinity flux in each region
avgSeaIceSalinityFlux	Surface area-weighted average of sea ice salinity flux in each region
avgSurfaceWindStressMagnitude	Surface area-weighted average of wind stress magnitude in each region
avgWindStressZonal	Surface area-weighted average of zonal wind stress in each region
avgWindStressMeridional	Surface area-weighted average of meridional wind stress in each region
avgSeaSurfacePressure	Surface area-weighted average of sea surface pressure in each region
avgSurfaceSSH	Surface area-weighted average of sea-surface height
avgSurfaceTemperature	Surface area-weighted average of surface temperature in each region
avgSurfaceSalinity	Surface area-weighted average of surface salinity in each region
avgBoundaryLayerDepth	Surface area-weighted average of surface boundary layer depth in each region
avgSurfaceNetHeatFlux	Surface area-weighted average of net surface heat flux in each region
avgSurfaceNetSalinitFlux	Surface area-weighted average of net surface salinity flux in each region
avgSurfaceNetFreshWaterFlux	Surface area-weighted average of net surface fresh water flux in each region

11.19 surfaceAreaWeightedAveragesAMScratch

Name	Description
workMask	temporary array of 0 or 1 to mask data via multiplication
workArray	temporary array to hold data to be analyzed
workMin	temporary array to hold minimum values
workMax	temporary array to hold maximum values
workSum	temporary array to hold sum of values

11.20 waterMassCensusAM

Name	Description
waterMassCensusTemperature-Values	temperature values defining edges of temperature bins
waterMassCensusSalinityValues	salinity values defining edges of temperature bins
waterMassFractionalDistribution	fraction of water volume contained within each temperature and salinity bin
potentialDensityOfTSDiagram	volume-weighted potential density of each (T,S) bin
zPositionOfTSDiagram	volume-weighted vertical position of each (T,S) bin
waterMassCensusTemperature-ValuesRegion	temperature values defining edges of temperature bins
waterMassCensusSalinityValues-Region	salinity values defining edges of temperature bins
waterMassFractionalDistribution-Region	fraction of water volume contained within each temperature and salinity bin
potentialDensityOfTSDiagram-Region	volume-weighted potential density of each (T,S) bin
zPositionOfTSDiagramRegion	volume-weighted vertical position of each (T,S) bin

11.21 layerVolumeWeightedAverageAM

Name	Description
minLayerMaskValue	Minimum value of mask within region layer (should always be 1 for valid layers)
minLayerArea	Minimum area of cell within region layer
minLayerThickness	Minimum thickness within region layer

Name	Description (Continued)
minLayerDensity	Minimum in-situ density within region layer
minLayerPotentialDensity	Minimum potential density within region layer
minLayerBruntVaisalaFreqTop	Minimum Brunt Vaisala frequency within region layer
minLayerVelocityZonal	Minimum zonal velocity within region layer
minLayerVelocityMeridional	Minimum meridional velocity within region layer
minLayerVertVelocityTop	Minimum vertical velocity within region layer
minLayerTemperature	Minimum surface temperature within region layer
minLayerSalinity	Minimum surface salinity within region layer
minLayerKineticEnergyCell	Minimum kinetic energy within region layer
minLayerRelativeVorticityCell	Minimum relative vorticity within region layer
minLayerDivergence	Minimum divergence within region layer
minLayerRelativeEnstrophyCell	Minimum relative enstrophy within region layer
minLayerTemperatureHorAdv	Minimum horizontal temperature advection within region layer
minLayerSalinityHorAdv	Minimum horizontal salinity advection within region layer
minLayerTemperatureVertAdv	Minimum vertical temperature advection within region layer
minLayerSalinityVertAdv	Minimum vertical salinity advection within region layer
minLayerTemperatureSfcFlux	Minimum temperature surface flux tend within region layer
minLayerSalinitySfcFlux	Minimum salinity surface flux tend within region layer
minLayerTemperatureSW	Minimum temperature short wave tend within region layer
minLayerTemperatureNL	Minimum temperature non local tend within region layer
minLayerSalinityNL	Minimum salinity kpp non local tend within region layer
minLayerTemperatureVertMix	Minimum temperature vertical mixing within region layer
minLayerSalinityVertMix	Minimum salinity vertical mixing within region layer
minVolumeMaskValue	Minimum value of mask within region volume (should always be 1 for valid volumes)
minVolumeArea	Minimum area of cell within region volume
minVolumeThickness	Minimum thickness within region volume
minVolumeDensity	Minimum in-situ density within region volume
minVolumePotentialDensity	Minimum potential density within region volume
minVolumeBruntVaisalaFreqTop	Minimum Brunt Vaisala frequency within region volume
minVolumeVelocityZonal	Minimum zonal velocity within region volume
minVolumeVelocityMeridional	Minimum meridional velocity within region volume
minVolumeVertVelocityTop	Minimum vertical velocity within region volume
minVolumeTemperature	Minimum surface temperature within region volume
minVolumeSalinity	Minimum surface salinity within region volume
minVolumeKineticEnergyCell	Minimum kinetic energy within region volume
minVolumeRelativeVorticityCell	Minimum relative vorticity within region volume
minVolumeDivergence	Minimum divergence within region volume
minVolumeRelativeEnstrophyCell	Minimum relative enstrophy within region volume
minVolumeTemperatureHorAdv	Minimum horizontal temperature advection within region volumeMins
minVolumeSalinityHorAdv	Minimum horizontal salinity advection within region volumeMins
minVolumeTemperatureVertAdv	Minimum vertical temperature advection within region volumeMins
minVolumeSalinityVertAdv	Minimum vertical salinity advection within region volumeMins
minVolumeTemperatureSfcFlux	Minimum temperature surface flux tend within region volumeMins
minVolumeSalinitySfcFlux	Minimum salinity surface flux tend within region volumeMins
minVolumeTemperatureSW	**MISSING**
minVolumeTemperatureNL	Minimum temperature kpp non local tend within region volumeMins
minVolumeSalinityNL	Minimum salinity kpp non local tend within region volumeMins

Name	Description (Continued)
minVolumeTemperatureVertMix	Minimum temperature vertical mixing within region volumeMins
minVolumeSalinityVertMix	Minimum salinity vertical mixing within region volumeMins
maxLayerMaskValue	Maximum value of mask within region layer (should always be 1 for valid layers)
maxLayerArea	Maximum area of cell within region layer
maxLayerThickness	Maximum thickness within region layer
maxLayerDensity	Maximum in-situ density within region layer
maxLayerPotentialDensity	Maximum potential density within region layer
maxLayerBruntVaisalaFreqTop	Maximum Brunt Vaisala frequency within region layer
maxLayerVelocityZonal	Maximum zonal velocity within region layer
maxLayerVelocityMeridional	Maximum meridional velocity within region layer
maxLayerVertVelocityTop	Maximum vertical velocity within region layer
maxLayerTemperature	Maximum surface temperature within region layer
maxLayerSalinity	Maximum surface salinity within region layer
maxLayerKineticEnergyCell	Maximum kinetic energy within region layer
maxLayerRelativeVorticityCell	Maximum relative vorticity within region layer
maxLayerDivergence	Maximum divergence within region layer
maxLayerRelativeEnstrophyCell	Maximum relative enstrophy within region layer
maxLayerTemperatureHorAdv	Maximum horizontal temperature advection within region layer
maxLayerSalinityHorAdv	Maximum horizontal salinity advection within region layer
maxLayerTemperatureVertAdv	Maximum vertical temperature advection within region layer
maxLayerSalinityVertAdv	Maximum vertical salinity advection within region layer
maxLayerTemperatureSfcFlux	Maximum temperature surface flux tend within region layer
maxLayerSalinitySfcFlux	Maximum salinity surface flux tend within region layer
maxLayerTemperatureSW	Maximum temperature short wave tend within region layer
maxLayerTemperatureNL	Maximum temperature non local tend within region layer
maxLayerSalinityNL	Maximum salinity non local tend within region layer
maxLayerTemperatureVertMix	Maximum temperature vertical mixing within region layer
maxLayerSalinityVertMix	Maximum salinity vertical mixing within region layer
maxVolumeMaskValue	Maximum value of mask within region volume (should always be 1 for valid volumes)
maxVolumeArea	Maximum area of cell within region volume
maxVolumeThickness	Maximum thickness within region volume
maxVolumeDensity	Maximum in-situ density within region volume
maxVolumePotentialDensity	Maximum potential density within region volume
maxVolumeBruntVaisalaFreqTop	Maximum Brunt Vaisala frequency within region volume
maxVolumeVelocityZonal	Maximum zonal velocity within region volume
maxVolumeVelocityMeridional	Maximum meridional velocity within region volume
maxVolumeVertVelocityTop	Maximum vertical velocity within region volume
maxVolumeTemperature	Maximum surface temperature within region volume
maxVolumeSalinity	Maximum surface salinity within region volume
maxVolumeKineticEnergyCell	Maximum kinetic energy within region volume
maxVolumeRelativeVorticityCell	Maximum relative vorticity within region volume
maxVolumeDivergence	Maximum divergence within region volume
maxVolumeRelativeEnstrophy-Cell	Maximum relative enstrophy within region volume
maxVolumeTemperatureHorAdv	Maximum horizontal temperature advection within region volume
maxVolumeSalinityHorAdv	Maximum horizontal salinity advection within region volume
maxVolumeTemperatureVertAdv	Maximum vertical temperature advection within region volume
maxVolumeSalinityVertAdv	Maximum vertical salinity advection within region volume
maxVolumeTemperatureSfcFlux	Maximum temperature surface flux tend within region volume

Name	Description (Continued)
maxVolumeSalinitySfcFlux	Maximum salinity surface flux tend within region volume
maxVolumeTemperatureSW	Maximum temperature short wave tend within region volume
maxVolumeTemperatureNL	Maximum temperature non local tend within region volume
maxVolumeSalinityNL	Maximum salinity non local tend within region volume
maxVolumeTemperatureVertMix	Maximum temperature vertical mixing within region volume
maxVolumeSalinityVertMix	Maximum salinity vertical mixing within region volume
sumLayerMaskValue	Sum value of mask within region volume (should always be greater than 0 for valid layer)
avgLayerArea	Average area of cell within region layer
avgLayerThickness	Average thickness within region layer
avgLayerDensity	Average in-situ density within region layer
avgLayerPotentialDensity	Average potential density within region layer
avgLayerBruntVaisalaFreqTop	Average Brunt Vaisala frequency within region layer
avgLayerVelocityZonal	Average zonal velocity within region layer
avgLayerVelocityMeridional	Average meridional velocity within region layer
avgLayerVertVelocityTop	Average vertical velocity within region layer
avgLayerTemperature	Average surface temperature within region layer
avgLayerSalinity	Average surface salinity within region layer
avgLayerKineticEnergyCell	Average kinetic energy within region layer
avgLayerRelativeVorticityCell	Average relative vorticity within region layer
avgLayerDivergence	Average divergence within region layer
avgLayerRelativeEnstrophyCell	Average relative enstrophy within region layer
avgLayerTemperatureHorAdv	Average horizontal temperature advection within region layer
avgLayerSalinityHorAdv	Average horizontal salinity advection within region layer
avgLayerTemperatureVertAdv	Average vertical temperature advection within region layer
avgLayerSalinityVertAdv	Average vertical salinity advection within region layer
avgLayerTemperatureSfcFlux	Average temperature surface flux tend within region layer
avgLayerSalinitySfcFlux	Average salinity surface flux tend within region layer
avgLayerTemperatureSW	Average temperature shortwave tend within region layer
avgLayerTemperatureNL	Average temperature non local tend within region layer
avgLayerSalinityNL	Average salinity non local tend within region layer
avgLayerTemperatureVertMix	Average temperature vertical mixing within region layer
avgLayerSalinityVertMix	Average salinity vertical mixing within region layer
sumVolumeMaskValue	Sum value of mask within region volume (should always be greater than 0 for valid volumes)
avgVolumeArea	Average area of cell within region volume
avgVolumeThickness	Average thickness within region volume
avgVolumeDensity	Average in-situ density within region volume
avgVolumePotentialDensity	Average potential density within region volume
avgVolumeBruntVaisalaFreqTop	Average Brunt Vaisala frequency within region volume
avgVolumeVelocityZonal	Average zonal velocity within region volume
avgVolumeVelocityMeridional	Average meridional velocity within region volume
avgVolumeVertVelocityTop	Average vertical velocity within region volume
avgVolumeTemperature	Average surface temperature within region volume
avgVolumeSalinity	Average surface salinity within region volume
avgVolumeKineticEnergyCell	Average kinetic energy within region volume
avgVolumeRelativeVorticityCell	Average relative vorticity within region volume
avgVolumeDivergence	Average divergence within region volume
avgVolumeRelativeEnstrophyCell	Average relative enstrophy within region volume
avgVolumeTemperatureHorAdv	Average horizontal temperature advection within region volume
avgVolumeSalinityHorAdv	Average horizontal salinity advection within region volume

Name	Description (Continued)
avgVolumeTemperatureVertAdv	Average vertical temperature advection within region volume
avgVolumeSalinityVertAdv	Average vertical salinity advection within region volume
avgVolumeTemperatureSfcFlux	Average temperature surface flux tend within region volume
avgVolumeSalinitySfcFlux	Average salinity surface flux tend within region volume
avgVolumeTemperatureSW	Average temperature shortwave tend within region volume
avgVolumeTemperatureNL	Average temperature non local tend within region volume
avgVolumeSalinitySfcNL	Average salinity non local tend within region volume
avgVolumeTemperatureVertMix	Average temperature vertical mixing within region volume
avgVolumeSalinityVertMix	Average salinity vertical mixing within region volume

11.22 layerVolumeWeightedAverageAMScratch

Name	Description
workMaskLayerVolume	temporary array of 0 or 1 to mask data via multiplication
workArrayLayerVolume	temporary array to hold data to be analyzed
workMinLayerVolume	temporary array to hold minimum values
workMaxLayerVolume	temporary array to hold maximum values
workSumLayerVolume	temporary array to hold sum of values

11.23 zonalMeanAM

Name	Description
binCenterZonalMean	Central coordinate of zonal mean bin, either in latitude or y, for plotting.
binBoundaryZonalMean	Coordinate of lower edge of zonal mean bin, either in latitude or y, for plotting.
velocityZonalZonalMean	Zonal mean of component of horizontal velocity in the eastward direction
velocityMeridionalZonalMean	Zonal mean of component of horizontal velocity in the northward direction
temperatureZonalMean	Zonal mean of potential temperature
salinityZonalMean	Zonal mean of salinity in grams salt per kilogram seawater
tracer1ZonalMean	Zonal mean of tracer

11.24 okuboWeissScratch

Name	Description
thresholdedOkuboWeiss	Thresholded Okubo-Weiss value
velocityGradient	Gradient of velocity field
shearAndStrain	Shear and strain
lambda1	Lambda 1, first eigenvalue of 2d strain rate tensor
lambda2	Lambda 2, second eigenvalue of 2d strain rate tensor
lambda2R3	Lambda 2, second eigenvalue of full 3d strain rate tensor

11.25 okuboWeissAM

Name	Description
okuboWeiss	The Okubo-Weiss value
eddyID	ID of eddy connected component
vorticity	Vorticity

11.26 meridionalHeatTransportAM

Name	Description
binBoundaryMerHeatTrans	Coordinate of southern edge of meridional heat transport bin, either in latitude or y, for plotting.
meridionalHeatTransportLatZ	Northward heat transport at locations defined at the binBoundaryMerHeatTrans coordinates by vertical level.
merHeatTransLatZRegion	Northward heat transport by vertical level and region.
meridionalHeatTransportLat	Northward heat transport at locations defined at the binBoundaryMerHeatTrans coordinates.
merHeatTransLatRegion	Northward heat transport at locations defined at the binBoundaryMerHeatTrans coordinates, by region.
minMaxLatRegionMHT	Coordinates of the southern and northern edge of each region (for drawing).

11.27 testComputeIntervalAM

Name	Description
testComputeIntervalCounter	number of times test_compute_interval has been called

11.28 highFrequencyOutputAM

Name	Description
kineticEnergyAtSurface	kinetic energy at surface
vertGMvelocitySFC	vertical velocity due to GM parameterization
vertTransportVelocitySFC	vertical velocity due to normal transport velocity divergence
vertVelSFC	vertical velocity due to normal velocity divergence
vertGMvelocityAt250m	vertical velocity due to GM parameterization at approximately 250m
vertTransportVelocityAt250m	vertical velocity due to normal transport velocity divergence at approximately 250m
vertVelAt250m	vertical velocity due to normal velocity divergence at approximately 250m
normalVelAtSFC	normal velocity at surface
normalVelAt250m	normal velocity at approximately 250m
normalVelAtBottom	normal velocity at approximately Bottom
tangentialVelAtSFC	tangential velocity at surface
tangentialVelAt250m	tangential velocity at approximately 250m
tangentialVelAtBottom	tangential velocity at approximately Bottom
zonalVelAtSFC	zonal velocity at surface
zonalVelAt250m	zonal velocity at approximately 250m
zonalVelAtBottom	zonal velocity at approximately Bottom
zonalAreaWeightedCellVelAtSFC	area-weighted cell zonal velocity at surface
zonalAreaWeightedCellVelAt250m	area-weighted cell zonal velocity at approximately 250m
zonalAreaWeightedCellVelAtBottom	area-weighted cell zonal velocity at approximately Bottom
meridionalVelAtSFC	meridional velocity at surface
meridionalVelAt250m	meridional velocity at approximately 250m
meridionalVelAtBottom	meridional velocity at approximately Bottom
meridionalAreaWeightedCellVelAtSFC	area-weighted cell meridional velocity at surface
meridionalAreaWeightedCellVelAt250m	area-weighted cell meridional velocity at approximately 250m
meridionalAreaWeightedCellVelAtBottom	area-weighted cell meridional velocity at approximately Bottom
normalBarotropicVel	normal barotropic velocity

Name	Description (Continued)
tangentialBarotropicVel	tangential barotropic velocity
zonalBarotropicVel	zonal barotropic velocity
meridionalBarotropicVel	meridional barotropic velocity
normalBaroclinicVelAtSFC	normal baroclinic velocity at surface
normalBaroclinicVelAt250m	normal baroclinic velocity at 250m
normalBaroclinicVelAtBottom	normal baroclinic velocity at bottom
tangentialBaroclinicVelAtSFC	tangential baroclinic velocity at surface
tangentialBaroclinicVelAt250m	tangential baroclinic velocity at 250m
tangentialBaroclinicVelAtBottom	tangential baroclinic velocity at bottom
zonalBaroclinicVelAtSFC	zonal baroclinic velocity at surface
zonalBaroclinicVelAt250m	zonal baroclinic velocity at 250m
zonalBaroclinicVelAtBottom	zonal baroclinic velocity at bottom
meridionalBaroclinicVelAtSFC	meridional baroclinic velocity at surface
meridionalBaroclinicVelAt250m	meridional baroclinic velocity at 250m
meridionalBaroclinicVelAt-Bottom	meridional baroclinic velocity at bottom
normalGMBolusVelAtSFC	normal Bolus velocity in Gent-McWilliams eddy parameterization at the surface
normalGMBolusVelAt250m	normal Bolus velocity in Gent-McWilliams eddy parameterization at 250m
normalGMBolusVelAtBottom	normal Bolus velocity in Gent-McWilliams eddy parameterization at the bottom
tangentialGMBolusVelAtSFC	tangential Bolus velocity in Gent-McWilliams eddy parameterization at the surface
tangentialGMBolusVelAt250m	tangential Bolus velocity in Gent-McWilliams eddy parameterization at 250m
tangentialGMBolusVelAtBottom	tangential Bolus velocity in Gent-McWilliams eddy parameterization at the bottom
zonalGMBolusVelAtSFC	zonal Bolus velocity in Gent-McWilliams eddy parameterization at the surface
zonalGMBolusVelAt250m	zonal Bolus velocity in Gent-McWilliams eddy parameterization at 250m
zonalGMBolusVelAtBottom	zonal Bolus velocity in Gent-McWilliams eddy parameterization at the bottom
meridionalGMBolusVelAtSFC	meridional Bolus velocity in Gent-McWilliams eddy parameterization at the surface
meridionalGMBolusVelAt250m	meridional Bolus velocity in Gent-McWilliams eddy parameterization at 250m
meridionalGMBolusVelAtBottom	meridional Bolus velocity in Gent-McWilliams eddy parameterization at the bottom
BruntVaisalaFreqTopAtSFC	Brunt Vaisala Frequency at surface
BruntVaisalaFreqTopAt250m	Brunt Vaisala Frequency at approximately 250m
BruntVaisalaFreqTopAtBottom	Brunt Vaisala Frequency at approximately Bottom
kineticEnergyAt250m	kinetic energy at a depth of approximately 250 m
barotropicSpeed	speed = sqrt(2*ke), where kinetic energy is computed from barotropic velocity = sum(h*u)/sum(h) over the full depth of an edge
columnIntegratedSpeed	speed = sum(h*sqrt(2*ke)), where ke is kineticEnergyCell and the sum is over the full column at cell centers.
relativeVorticityAt250m	relative vorticity at cell centers at a depth of approximately 250 m
divergenceAt250m	divergence at cell centers at a depth of approximately 250 m

Name	Description (Continued)
divergenceTransportVelAt250m	divergence of transport velocity at cell centers at a depth of approximately 250 m
relativeVorticityVertexAt250m	relative vorticity at cell vertices at a depth of approximately 250 m
temperatureAtSurface	ocean temperature at top layer
salinityAtSurface	salinity at top layer
temperatureAt250m	ocean temperature at 250 m
salinityAt250m	salinity at 250 m
temperatureAtBottom	ocean temperature at bottom
salinityAtBottom	salinity at bottom
kineticEnergyAtBottom	kinetic energy at cell centers at bottom
relativeVorticityAtBottom	relative vorticity at cell centers at bottom
divergenceAtBottom	divergence at cell centers at bottom
temperatureAvgTopto0100	ocean temperature averaged between surface and 100 m
salinityAvgTopto0100	salinity averaged between surface and 100 m
temperatureAvg0100to0250	ocean temperature averaged between surface and 100 m
salinityAvg0100to0250	salinity averaged between surface and 100 m
temperatureAvg0250to0700	ocean temperature averaged between surface and 100 m
salinityAvg0250to0700	salinity averaged between surface and 100 m
temperatureAvg0700to2000	ocean temperature averaged between surface and 100 m
salinityAvg0700to2000	salinity averaged between surface and 100 m
temperatureAvg2000toBottom	ocean temperature averaged between surface and 100 m
salinityAvg2000toBottom	salinity averaged between surface and 100 m

11.29 timeFiltersAM

Name	Description
normalVelocityLowPass	Low-pass filtered normal velocity.
normalVelocityHighPass	High-pass filtered normal velocity.
normalVelocityFilterTest	normalVelocityTest (for testing purposes).
velocityZonalLowPass	Low-pass time filtered component of horizontal velocity in the eastward direction
velocityMeridionalLowPass	Low-pass time filtered component of horizontal velocity in the northward direction
velocityZonalHighPass	High-pass time filtered component of horizontal velocity in the eastward direction
velocityMeridionalHighPass	High-pass time filtered component of horizontal velocity in the northward direction
velocityXLowPass	Low-pass time filtered component of horizontal velocity in the x-direction (cartesian)
velocityYLowPass	Low-pass time filtered component of horizontal velocity in the x-direction (cartesian)
velocityZLowPass	Low-pass time filtered component of horizontal velocity in the x-direction (cartesian)

Name	Description (Continued)
velocityXHighPass	High-pass time filtered component of horizontal velocity in the x-direction (cartesian)
velocityYHighPass	High-pass time filtered component of horizontal velocity in the x-direction (cartesian)
velocityZHighPass	High-pass time filtered component of horizontal velocity in the x-direction (cartesian)

11.30 lagrPartTrackRegions

Name	Description
resetOutsideRegionMaskValue1	Mask for particle resets that leave this particular region (specified by 1)
resetInsideRegionMaskValue1	Mask for particle resets that enter this particular region (specified by 1)

11.31 lagrPartTrackScalars

Name	Description
globalResetTimeValue	Time in s for a global reset.

11.32 lagrPartTrackFields

Name	Description
uVertexVelocity	recostructed u horizontal velocity at vertices
vVertexVelocity	recostructed v horizontal velocity at vertices
wVertexVelocity	recostructed w horizontal velocity at vertices
buoyancy	buoyancy values at cell mid points, currently proxy for density

11.33 lagrPartTrackCells

Name	Description
cellOwnerBlock	designates ownership of cell in terms of computational block
filteredVelocityW	filtered u horizontal velocity at cells
filteredVelocityV	filtered v horizontal velocity at cells
filteredVelocityU	filtered w horizontal velocity at cells
buoyancySurfaceVelocityZonal	horizontal zonal velocity on buoyancy surface
buoyancySurfaceVelocity-Meridional	horizontal meridional velocity on buoyancy surface
buoyancySurfaceDepth	depth of buoyancy surface
buoyancySurfaceValues	definition of buoyancy surfaces in terms of potential density
wachspressAreaB	cached polygon subarea B_i used in Wachspess calculation

11.34 lagrPartTrackHalo

Name	Description
ioBlock	input / output Proc for particle
currentBlock	current block a particle is on
currentCell	current local cell a particle is on
currentCellGlobalID	current global cell a particle is on
indexToParticleID	designates global ID for a particle
xParticle	x location of horizontal particle position
yParticle	y location of horizontal particle position
zParticle	z location of horizontal particle position
lonParticle	longitude location of horizontal particle position
latParticle	latitude location of horizontal particle position
zLevelParticle	z-level for vertical elevation of particle position
xParticleReset	reset x location of horizontal particle position
yParticleReset	reset y location of horizontal particle position
zParticleReset	reset z location of horizontal particle position
zLevelParticleReset	reset z-level for vertical elevation of particle position
currentBlockReset	reset block for a particle
currentCellReset	reset cell for a particle
timeSinceReset	time (in seconds) since last particle reset
resetTime	reset timer (in seconds) for particles
numTimesReset	flag to specify how many times the particle was reset
verticalTreatment	select type of vertical treatment to be used, with possible_values='indexLevel','fixedZLevel','passiveFloat','buoyancySurface','argoFloat' (ENUM)
indexLevel	0 if particle is fixed, or index level if particle is free-floating
dtParticle	Any positive real value, but limited by CFL condition.

Name	Description (Continued)
buoyancyParticle	buoyancy values for particle, currently proxy for density
transfered	flag to monitor if the particle was transfered
particleTemperature	sampled temperature for particle
particleSalinity	sampled salinity for particle in grams salt per kilogram seawater
particleDIC	sampled dissolved inorganic carbon for particle
particleALK	sampled alkalinity for particle
particlePO4	sampled dissolved inorganic phosphate for particle
particleNO3	sampled dissolved inorganic nitrate for particle
particleSiO3	sampled dissolved inorganic silicate for particle
particleNH4	sampled dissolved inorganic ammonia for particle
particleFe	sampled dissolved inorganic iron for particle
particleO2	sampled dissolved oxygen for particle

11.35 lagrPartTrackScratch

Name	Description
ucReconstructX	reconstructed cell center velocity- x component
ucReconstructY	reconstructed cell center velocity- y component
ucReconstructZ	reconstructed cell center velocity- z component
ucTemp	cell velocity
ucX	cell velocity- x component
ucY	cell velocity- y component
ucZ	cell velocity- z component
uvX	vertex velocity- x component
uvY	vertex velocity- y component
uvZ	vertex velocity- z component
ucReconstructMeridional	reconstructed cell center velocity- meridional component
ucReconstructZonal	reconstructed cell center velocity- zonal component
boundaryVertexGlobal	Mask for determining boundary vertices, but global. A boundary vertex has at least one inactive cell neighboring it.
boundaryCellGlobal	Mask for determining boundary cells, but global. A boundary cell has at least one inactive cell neighboring it.

11.36 eliassenPalmAM

Name	Description
potentialDensityMidRef	Potential density target values of buoyancy coordinate layers
potentialDensityTopRef	Potential density at top of buoyancy coordinate layers

Name	**Description** (Continued)
buoyancyMidRef	Buoyancy of buoyancy coordinate layers
buoyancyInterfaceRef	Buoyancy at interfaces of buoyancy coordinate layers
buoyancyMaskEA	ensemble average of the buoyancy mask
sigmaEA	Inverse of the derivative of buoyancy wrt z, or thickness per unit buoyancy, aka thickness, in buoyancy coordinates, ensemble average
nSamplesEA	Number of samples used in the ensamble average
heightMidBuoyCoorEA	z-coordinate of each buoyancy layer, ensemble average
montgPotGradZonalEA	Zonal gradient of montgomery potential at cell center in buoyancy coordinates, ensemble average
montgPotGradMeridEA	Meridional gradient of montgomery potential at cell center in buoyancy coordinates, ensemble average
heightMidBuoyCoorSqEA	z-coordinate of each buoyancy layer, squared, ensemble average
montgPotBuoyCoorEA	Montgomery potential in buoyancy coordinates, ensemble average
heightMGradZonalEA	Height times zonal gradient of Montgomery potential in buoyancy coordinates, ensemble average
heightMGradMeridEA	Height times meridional gradient of Montgomery potential in buoyancy coordinates, ensemble average
usigmaEA	Zonal velocity times sigma, ensemble average
vsigmaEA	Meridional velocity times sigma, ensemble average
varpisigmaEA	Vertical velocity in buoyancy coordinates times sigma, ensemble average
uusigmaEA	Zonal velocity times zonal velocity times sigma, ensemble average
vvsigmaEA	Meridional velocity times meridional velocity times sigma, ensemble average
uvsigmaEA	Zonal velocity times meridional velocity times sigma, ensemble average
uvarpisigmaEA	Zonal velocity times vertical velocity in buoyancy coordinates times sigma, ensemble average
vvarpisigmaEA	Meridional velocity times vertical velocity in buoyancy coordinates times sigma, ensemble average
uTWA	Zonal velocity, thickness weighted
vTWA	Meridional velocity, thickness weighted
varpiTWA	Vertical velocity, thickness weighted
duTWAdz	Derivative of thickness weighted zonal velocity with respect to z (vertical coordinate).
dvTWAdz	Derivative of thickness weighted meridional velocity with respect to z (vertical coordinate).
EPFT	Eliassen-Palm flux tensor
uuTWACorr	Thickness-weighted averaged eddy u-u correlation.
vvTWACorr	Thickness-weighted averaged eddy v-v correlation.
uvTWACorr	Thickness-weighted averaged eddy u-v correlation.
epeTWA	Thickness-weighted averaged eddy potential energy.
eddyFormDragZonal	Thickness-weighted averaged eddy form drag in x
eddyFormDragMerid	Thickness-weighted averaged eddy form drag in y
divEPFT	Divergence of the Eliassen-Palm flux tensor, in buoyancy coordinates
divEPFT1	First component of the divergence of the Eliassen-Palm flux tensor, in buoyancy coordinates
divEPFT2	Second component of the divergence of the Eliassen-Palm flux tensor, in buoyancy coordinates

Name	Description (Continued)
divEPFTshear1	First component of divergence of shear components of the Eliassen-Palm flux tensor, in buoyancy coordinates
divEPFTshear2	Second component of divergence of shear components of the Eliassen-Palm flux tensor, in buoyancy coordinates
divEPFTdrag1	First component of divergence of form drag components of the Eliassen-Palm flux tensor, in buoyancy coordinates
divEPFTdrag2	Second component of divergence of form drag components of the Eliassen-Palm flux tensor, in buoyancy coordinates
ErtelPVFlux	Ertel potential vorticity flux in buoyancy coordinates
ErtelPVFlux1	First component of the Ertel potential vorticity flux in buoyancy coordinates
ErtelPVFlux2	Second component of the Ertel potential vorticity flux in buoyancy coordinates
ErtelPVTendency	Tendency of Ertel PV due to divergence of eddy PV fluxes
ErtelPV	Ertel PV on buoyancy surfaces
ErtelPVGradZonal	Ertel PV on buoyancy surfaces
ErtelPVGradMerid	Ertel PV on buoyancy surfaces

11.37 eliassenPalmAMPKGScratch

Name	Description
firstLayerBuoyCoor	index, in buoyancy coordinates, of the first layer in column for a given cell
lastLayerBuoyCoor	index, in buoyancy coordinates, of the last layer in column for a given cell
heightMidBuoyCoor	Height (z-coordinate) of buoyancy layer
heightTopBuoyCoor	Height (z-coordinate) at top of buoyancy layer
heightInterfaceBuoyCoor	Height (z-coordinate) of the interfaces of buoyancy layer
sigma	Inverse of the derivative of buoyancy wrt z, aka thickness, in buoyancy coordinates
montgPotBuoyCoor	Montgomery potential in buoyancy coordinates
montgPotNormalGradOnEdge	Normal gradient of the montgomery potential in buoyancy coordinates
uMidBuoyCoor	Longitudinal velocity at middle of layers in buoyancy coordinates
vMidBuoyCoor	Meridional velocity at the middle of layers in buoyancy coordinates
densityMidBuoyCoor	In-situ density at middle of layers in buoyancy coordinates
densityTopBuoyCoor	In-situ density at top of layers in buoyancy coordinates
buoyancyMask	mask in buoyancy coordinates, ocean cells are 1
montgPotGradX	x component of gradient of montgomery potential at cell center in buoyancy coordinates
montgPotGradY	y component of gradient of montgomery potential at cell center in buoyancy coordinates
montgPotGradZ	z component of gradient of montgomery potential at cell center in buoyancy coordinates

Name	Description (Continued)
montgPotGradZonal	Zonal component of gradient of montgomery potential at cell center in buoyancy coordinates
montgPotGradMerid	Meridional component of gradient of montgomery potential at cell center in buoyancy coordinates
wrk3DnVertLevelsP1	work array
wrk3DnVertLevels	work array
wrk3DBuoyCoor	work array
ErtelPVNormalGradOnEdge	Normal gradient of EPV in buoyancy coordinates
ErtelPVGradX	X component of gradient of EPV in buoyancy coordinates
ErtelPVGradY	Y component of gradient of EPV in buoyancy coordinates
ErtelPVGradZ	Z component of gradient of EPV in buoyancy coordinates
wrkVector	Work vector array
wrkTensor	Work tensor array
array1_3D	test array 1, in depth coordinates
array2_3D	test array 2, in depth coordinates
array3_3D	test array 3, in depth coordinates
array1_3Dbuoy	test array 1, in buoyancy coordinates
array2_3Dbuoy	test array 2, in buoyancy coordinates
PVMidBuoyCoor	Potential vorticity at cell center, in buoyancy coordinates
PVMidBuoyCoorEA	Potential vorticity at cell center, in buoyancy coordinates, ensemble average
uMidBuoyCoorEA	Zonal velocity at cell center, in buoyancy coordinates, ensemble average
vMidBuoyCoorEA	Meridional velocity at cell center, in buoyancy coordinates, ensemble average
uPVMidBuoyCoorEA	Zonal velocity times Potential vorticity at cell center, in buoyancy coordinates, ensemble average
vPVMidBuoyCoorEA	Meridional velocity times Potential vorticity at cell center, in buoyancy coordinates, ensemble average
PVFluxTest	Potential vorticity flux test vector, in buoyancy coordinates

11.38 mixedLayerDepthsAM

Name	Description
tThreshMLD	mixed layer depth based on temperature threshold
tGradMLD	mixed layer depth based on gradient of temperature
dGradMLD	mixed layer depth based on gradient of density

11.39 mixedLayerDepthAMScratch

Name	Description
pressureAdjustedForLandIce-Scratch	temporary array to hold pressure

11.40 regionalStatsAM

Name	Description
regionalStatsOneString	a placeholder string so that regionalStats has a memory to duplicate per instance
regionalStatsOneInteger	a placeholder integer so that regionalStats has a memory to duplicate per instance
regionalStatsOneReal	a placeholder real so that regionalStats has a memory to duplicate per instance

11.41 timeSeriesStatsAM

Name	Description
timeSeriesStatsOneString	**MISSING**
timeSeriesStatsOneInteger	**MISSING**
timeSeriesStatsOneReal	**MISSING**

11.42 transectTransportAM

Name	Description
transectEdgeMasksMax	max of transectEdgeMasks for this processor.
transectVolumeTransport	Transport through transect of edges.
transectVolumeTransportZ	Transport through transect of edges, with depth coordinate.

11.43 eddyProductVariablesAM

Name	Description
SSHSquared	cell-wise square of sea surface height
velocityZonalSquared	cell-wise square of component of horizontal velocity in the eastward direction
velocityMeridionalSquared	cell-wise square of component of horizontal velocity in the northward direction
velocityZonalTimesTemperature	cell-wise product of component of horizontal velocity in the eastward direction and temperature
velocityMeridionalTimesTemperature	cell-wise product of component of horizontal velocity in the northward direction and temperature
normalVelocitySquared	edge based square of normal velocity
normalVelocityTimesTemperature	edge based product of normal velocity and temperature
velocityZonalTimesTemperature_GM	cell-wise product of component of horizontal bolus velocity in the eastward direction and temperature
velocityMeridionalTimesTemperature_GM	cell-wise product of component of horizontal bolus velocity in the northward direction and temperature
normalGMBolusVelocitySquared	edge based square of normal velocity
normalGMBolusVelocityTimesTemperature	edge based product of normal velocity and temperature
velocityZonalTimesSalinity	cell-wise product of component of horizontal velocity in the eastward direction and salinity
velocityMeridionalTimesSalinity	cell-wise product of component of horizontal velocity in the northward direction and salinity
normalVelocityTimesSalinity	edge based product of normal velocity and salinity
velocityZonalTimesSalinity_GM	cell-wise product of component of horizontal bolus velocity in the eastward direction and salinity
velocityMeridionalTimesSalinity_GM	cell-wise product of component of horizontal bolus velocity in the northward direction and salinity
normalGMBolusVelocityTimesSalinity	edge based product of normal velocity and salinity
velocityZonalTimesTemperature_MLE	cell-wise product of component of horizontal submeso velocity in the eastward direction and temperature
velocityMeridionalTimesTemperature_MLE	cell-wise product of component of horizontal submeso velocity in the northward direction and temperature
normalMLEVelocityTimesTemperature	edge based product of normal velocity and temperature
velocityZonalTimesSalinity_MLE	cell-wise product of component of horizontal submeso velocity in the eastward direction and salinity
velocityMeridionalTimesSalinity_MLE	cell-wise product of component of horizontal submeso velocity in the northward direction and salinity
normalMLEVelocityTimesSalinity	edge based product of normal velocity and salinity

11.44 mocStreamfunctionAM

Name	Description
mocStreamvalLatAndDepth	The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension)
mocStreamvalLatAndDepth-Region	The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension)
mocStreamvalLatAndDepthGM	The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension) based on the Gent McWilliams Bolus Velocity
mocStreamvalLatAndDepthMLE	The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension) based on the Submesoscale eddy Bolus Velocity
mocStreamvalLatAndDepth-RegionGM	The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension) based on the Gent McWilliams Bolus Velocity
mocStreamvalLatAndDepth-RegionMLE	The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension) based on the Submesoscale eddy Bolus Velocity
binBoundaryMocStreamfunction	Coordinate of southern edge of meridional heat transport bin, either in latitude or y, for plotting.
minMaxLatRegion	Coordinates of the southern and northern boundaries of each region (for drawing).

11.45 layeredOceanHeatContent

Name	Description
oceanHeatContentSfcToBot	Integrated heat content from surface to bottom
oceanHeatContentSfcTo700m	Integrated heat content from the surface to 700m
oceanHeatContent700mTo2000m	Integrated heat content from the 700m to 2000m
oceanHeatContent2000mToBot	Integrated heat content from the 2000m to bottom

11.46 mixedLayerHeatBudgetAM

Name	Description

Name	Description (Continued)
temperatureHorAdvection-MLTend	ML average horizontal advection tendency for temperature
salinityHorAdvectionMLTend	ML average horizontal advection tendency for salinity
temperatureVertAdvection-MLTend	ML average vertical advection tendency for temperature
salinityVertAdvectionMLTend	ML average vertical advection tendency for salinity
temperatureVertMixMLTend	ML average vertical mixing tendency for temperature
salinityVertMixMLTend	ML average vertical mxiing tendency for salinity
temperatureHorMixMLTend	ML average horizontal mixing tendency for temperature
salinityHorMixMLTend	ML average horizontal mxiing tendency for salinity
temperatureNonLocalMLTend	ML average non local kpp tendency for temperature
salinityNonLocalMLTend	ML average nonlocal KPP tendency for salinity
temperatureForcingMLTend	ML average forcing tendency (including shortwave) for temperature
salinityForcingMLTend	ML average forcing tendency (non thickness flux changes) for salinity
temperatureML	ML average temperature
salinityML	ML average salinity
temperatureTendML	ML average temperature
salinityTendML	ML average salinity
bruntVaisalaFreqML	ML average BVF

11.47 sedimentFluxIndexAM

Name	Description
sedimentFluxIndexVAX	Index of Vertically-Averaged sediment flux in X-direction
sedimentFluxIndexVAY	Index of Vertically-Averaged sediment flux in Y-direction
sedimentFluxIndexBX	Index of Bottom sediment flux in X-direction
sedimentFluxIndexBY	Index of Bottom sediment flux in Y-direction

11.48 sedimentTransportAM

Name	Description
sedimentFallVelocity	Sediment settling velocity in the water column
sedimentErosionFlux	bed sediment erosion flux
sedimentDepositionFlux	bed sediment deposition flux
sedimentFluxVAX	Vertically-Averaged sediment flux in X-direction
sedimentFluxVAY	Vertically-Averaged sediment flux in Y-direction
sedimentFluxBX	Bottom sediment flux in X-direction

Name	Description (Continued)
sedimentFluxBY	Bottom sediment flux in Y-direction
sedimentBedloadX	Sediment bedload transport rate in X-direction
sedimentBedloadY	Sediment bedload transport rate in Y-direction
sedimentBottomReference-Concentration	near-bottom suspended sediment concentration (reference concentration)
sedimentConcentration	suspended sediment concentration in water column

11.49 harmonicAnalysisAM

Name	Description
nAnalysisConstituents	Number of tidal constituents used in analysis
analysisConstituentFrequency	Frequency of each constituent
analysisConstituentNodal-Amplitude	Frequency of each constituent
analysisConstituentNodalPhase	Frequency of each constituent
leastSquaresLHSMatrix	Frequency of each constituent
leastSquaresRHSVector	Frequency of each constituent
decomposedConstituent-Amplitude	Amplitude of each tidal constituent at each cell center
decomposedConstituentPhase	Phase of each tidal constituent at each cell center
M2Amplitude	Amplitude of M2 tidal constituent at each cell center
M2Phase	Phase of M2 tidal constituent at each cell center
S2Amplitude	Amplitude of S2 tidal constituent at each cell center
S2Phase	Phase of S2 tidal constituent at each cell center
N2Amplitude	Amplitude of N2 tidal constituent at each cell center
N2Phase	Phase of N2 tidal constituent at each cell center
K2Amplitude	Amplitude of K2 tidal constituent at each cell center
K2Phase	Phase of K2 tidal constituent at each cell center
K1Amplitude	Amplitude of K1 tidal constituent at each cell center
K1Phase	Phase of K1 tidal constituent at each cell center
O1Amplitude	Amplitude of O1 tidal constituent at each cell center
O1Phase	Phase of O1 tidal constituent at each cell center
Q1Amplitude	Amplitude of Q1 tidal constituent at each cell center
Q1Phase	Phase of Q1 tidal constituent at each cell center
P1Amplitude	Amplitude of P1 tidal constituent at each cell center
P1Phase	Phase of P1 tidal constituent at each cell center

11.50 conservationCheckAM

Name	Description
performConservationPrecompute	**MISSING**

11.51 conservationCheckEnergyAM

Name	Description
initialEnergy	Total initial energy of ice and snow
finalEnergy	Total final energy of ice and snow
energyChange	Total energy change of ice and snow during time step
netEnergyFlux	Net energy flux to ice
absoluteEnergyError	Absolute energy conservation error
relativeEnergyError	Relative energy conservation error
accumulatedLatentHeatFlux	Latent heat flux from coupler, integrated in space and time. Positive into the ocean.
accumulatedSensibleHeatFlux	Sensible heat flux from coupler, integrated in space and time. Positive into the ocean.
accumulatedLongWaveHeatFlux-Up	Upward long Wave heat flux from coupler, integrated in space and time. Positive into the ocean.
accumulatedLongWaveHeatFlux-Down	Downward long wave heat flux from coupler, integrated in space and time. Positive into the ocean.
accumulatedShortWaveHeatFlux	shortwave heat flux from coupler, integrated in space and time. Positive into the ocean.
accumulatedSeaIceHeatFlux	Sea ice heat flux from coupler, integrated in space and time. Positive into the ocean.
accumulatedMeltingSnowHeat-Flux	This is snowFlux * latent_heat_fusion_mks. Positive into the ocean.
accumulatedMeltingIceRunoff-HeatFlux	This is iceRunoffFlux * latent_heat_fusion_mks. Positive into the ocean.
accumulatedRemovedIceRunoff-HeatFlux	This is iceRunoffFlux * latent_heat_fusion_mks. Positive into the ocean.
accumulatedIcebergHeatFlux	Iceberg heat flux from coupler, integrated in space and time. Positive into the ocean.
accumulatedFrazilHeatFlux	Heat flux from frazil, integrated in space and time, given to couipler. Positive into the ocean.
accumulatedLandIceHeatFlux	Land ice heat flux, integrated in space and time. Positive into the ocean.
accumulatedLandIceFrazilHeat-Flux	Land ice heat flux from frazil, integrated in space and time, given to couipler. Positive into the ocean.
accumulatedRainTemperature-Flux	Heat flux associated with rain. Positive into the ocean.
accumulatedEvapTemperature-Flux	Heat flux associated with Evaporation. Positive into the ocean.
accumulatedSeaIceTemperature-Flux	Heat flux associated with sea ice melt water. Positive into the ocean.
accumulatedRiverRunoff-TemperatureFlux	Heat flux associated with river runoff. Positive into the ocean.

Name	Description (Continued)
accumulatedIcebergTemperature-Flux	Heat flux associated with iceberg melt. Positive into the ocean.

11.52 conservationCheckMassAM

Name	Description
initialMass	Total initial mass of ice and snow
finalMass	Total final mass of ice and snow
massChange	Total mass change of ice and snow during time step
netMassFlux	Net mass flux to ice
absoluteMassError	Absolute mass conservation error
relativeMassError	Relative mass conservation error
accumulatedRainFlux	Fresh water flux from rain from coupler. Positive into the ocean.
accumulatedSnowFlux	Fresh water flux from snow from coupler. Positive into the ocean.
accumulatedEvaporationFlux	Evaporation flux from coupler. Positive into the ocean.
accumulatedSeaIceFlux	Fresh water flux from sea ice from coupler. Positive into the ocean.
accumulatedRiverRunoffFlux	Fresh water flux from river runoff from coupler. Positive into the ocean.
accumulatedIceRunoffFlux	Fresh water flux from ice runoff from coupler. Positive into the ocean.
accumulatedRemovedRiverRunoff-Flux	Fresh water flux from river runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.
accumulatedRemovedIceRunoff-Flux	Fresh water flux from ice runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.
accumulatedIcebergFlux	Fresh water flux from iceberg melt from coupler. Positive into the ocean.
accumulatedFrazilFlux	Fresh water flux from frazil freezing under sea ice. Positive into the ocean.
accumulatedLandIceFlux	Fresh water flux from land ice melt from coupler. Positive into the ocean.
accumulatedLandIceFrazilFlux	Fresh water flux from frazil freezing under land ice. Positive into the ocean.

11.53 conservationCheckSaltAM

Name	Description
initialSalt	Total initial salt of ice and snow

Name	Description (Continued)
finalSalt	Total final salt of ice and snow
saltChange	Total salt change of ice and snow during time step
netSaltFlux	Net salt flux to ice
absoluteSaltError	Absolute salt conservation error
relativeSaltError	Relative salt conservation error
accumulatedSeaIceSalinityFlux	Sea ice salinity flux from coupler. Positive into the ocean.
accumulatedFrazilSalinityFlux	Salinity flux from frazil to sea ice, given to coupler. Positive into the ocean.
accumulatedLandIceFrazil-SalinityFlux	Salinity flux from frazil to Land Ice, given to coupler. Positive into the ocean.

11.54 conservationCheckCarbonAM

Name	Description
initialCarbon	Total ocean carbon at start of conservation interval
finalCarbon	Total ocean carbon at end of conservation interval
carbonChange	Change in ocean carbon over conservation interval
netCarbonFlux	Net surface flux of ocean carbon over conservation interval
absoluteCarbonError	Absolute carbon conservation error over conservation interval
relativeCarbonError	Relative carbon conservation error over conservation interval
accumulatedAbsoluteCarbon-Error	Accumulated absolute carbon conservation error over entire simulation
accumulatedRelativeCarbonError	Accumulated relative carbon conservation error over entire simulation
accumulatedCarbonSourceSink	Volume integral of all carbon source-sink terms from MarBL
accumulatedCarbonSedimentFlux	Surface integral of all carbon sediment fluxes
accumulatedCarbonSurfaceFlux	Surface integral of all carbon ocean surface fluxes
accumulatedCarbonTend	Volume integral of all carbon-containing prognostic variable tendencies
accumulatedCO2gasFlux	Surface integral of air-sea CO2 gas flux
accumulatedIceOceanOrganic-CarbonFlux	Surface integral of all organic ice-ocean carbon fluxes
accumulatedIceOceanInorganic-CarbonFlux	Surface integral of all inorganic ice-ocean carbon fluxes

11.55 landIceInit

Name	Description
landIceDraftObserved	z-coordinate of land ice bottom, read in from data file

Name	Description (Continued)
landIceThkObserved	Thickness of land ice, read in from data file
landIceFracObserved	Fraction of land ice, read in from data file
landIceGroundedFracObserved	Fraction of grounded land ice, read in from data file

11.56 criticalPassages

Name	Description
transectCellMasks	Masks for transects describing critical passages
depthTransects	Minimum depth of critical passages
criticalPassageLevel	the vertical level corresponding to the depth of the critical passage

Chapter 12

Test Cases

All test cases can be downloaded from http://mpas-dev.github.com The test cases for this version of the code are available at
http://mpas-dev.github.com/ocean/release_7.0/release_7.0..

12.1 Baroclinic Channel

This section describes a periodic channel, that is driven by a baroclinic instability generated via meridional temperature gradient. This test case comes from Ilicak et al. (2012). The domain is a planar channel that is periodic in the longitudinal direction with no-slip boundary conditions along the north and south boundaries. The longitudinal extent is 160 km while the latitudinal extent is 500 km. The vertical depth of the domain is 1000 m with a flat bottom. The channel is on a f-plane, with the Coriolis parameter $f = 1.2 \times 10^{-4}\ s^{-1}$.

Temperature decreases downward and in the meridional direction. A cosine shape temperature perturbation with a wavelength 120 km in the zonal direction is used to instigate the baroclinic instability.

Provided Files

Three resolutions of the baroclinic channel are provided for exploration. First is a 10 km horizontal resolution, second is a 4 km horizontal resolution, and third is a 1 km horizontal resolution. All three horizontal resolutions have 20 vertical levels with uniform vertical resolution of 50 m.

Each resolution is provided in it's own tar file, which when extracted creates a "run directory" that is only missing the ocean_model.exe executable. Included in each tar file are the following files.

- grid.nc:
  This is the input grid file that includes initial conditions.
  It can be visualized in the same way output files can to see the initial conditions.

- graph.info:
  This file is a graph of all of the cells in the mesh.
  It is used to decompose the mesh into partition files.

- graph.info.part.n:
  This is a partition file for use with an n processor run, where n is a typical number for the given resolution.

- namelist.ocean:
  This is the namelist file with all parameters for the run.
  It has a default setup which when run provides the results in the next section.

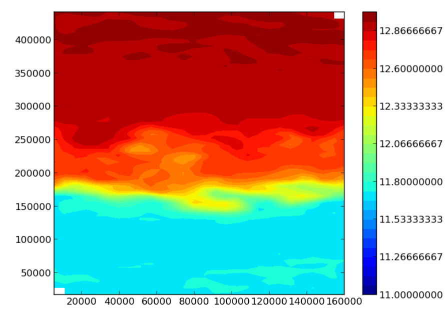
- visualize_channel.py:
  Python visualization script. See Section 13.1.

Results

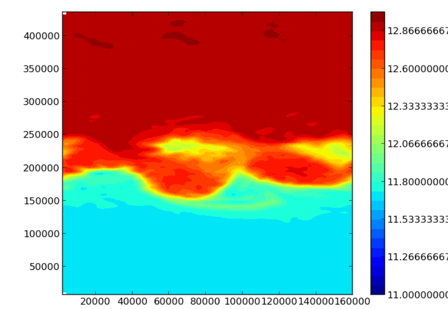
The surface temperature fields at day 10 from the 10km, 4 km, and 1 km simulations are shown in Figure 12.1. This results should be reproduced using the default "run_directory" for the 10 km, 4 km, and 1 km resolutions. The python script used to visualize the output is included with the tar file, and described in Section 13.1.

Figure 12.1: Baroclinic channel test case results. Surface temperature field after 10 simulation days using default included namelists.

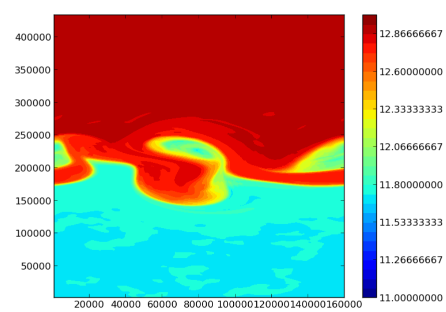
(a) 10km horizontal resolution temperature field after 10 simulation days.



(b) 4km horizontal resolution temperature field after 10 simulation days.



(c) 1km horizontal resolution temperature field after 10 simulation days.



12.2 Overflow

The overflow test case is an idealized domain designed to investigate the impact of topography on spurious mixing, and is similar to those found in Haidvogel and Beckmann (1999) and Ilicak et al. (2012, section 4). The domain is on a Cartesian plane of regularly spaced hexagons in the horizonal. It is effectively two-dimensional, with dynamics occuring in the y-z plane, while the x-direction is four cells wide and periodic.

This test case is useful for parameter studies to compare resolution, vertical mixing schemes, strength and types of horizontal mixing, partial bottom cells, and choice of vertical coordinate. More advanced statistics, like the resting potential energy (Ilicak et al., 2012), may be used to produce quantitative assessments of these comparisons. The included test cases follow the parameters in Ilicak et al. (2012, section 4) and use zero explicit tracer mixing, Laplacian horizontal mixing of momentum with a viscosity of 10^3 m^2/s, and constant vertical mixing of momentum with a viscosity of 10^{-4} m^2/s. The equation of state is linear, and vertical coordinate is z-star (Adcroft and Campin, 2004).

Provided Files

- grid.nc:
  This is the input grid file that includes initial conditions.
  It can be visualized in the same way output files can to see the initial conditions.

- graph.info:
  This file is a graph of all of the cells in the mesh.
  It is used to decompose the mesh into partition files.

- graph.info.part.n:
  This is a partition file for use with an n processor run, where n is a typical number for the given resolution.

- namelist.ocean:
  This is the namelist file with all parameters for the run.
  It has a default setup which when run provides the results in the next section.

- visualize_overflow.py:
  Python visualization script. See Section 13.1.

Results

Initially, a cold, dense volume of water is released at the top of a sill. Within the course of an 18-hour simulation the cold water descends the steep mount and continues northward along the bottom. The Coriolis parameter is set to zero so that rotational effects do not occur. The speed of descent, or equivalently the time to reach the bottom, is a simple way to measure the amount of mixing that occurs as the plug of water descends. In the two cases included with this release, the cold front reaches the bottom of the sill after eight hours for the high resolution case (1 km horizontal mesh, 100 layers), but after 16 hours for the low resolution case (10 km horizontal mesh, 40 layers). Visualizations show that some ten-degree water remains after nine hours for the high-resolution case (Figure 12.2), but has all mixed out for the low-resolution case (not shown).

The python script `visualize_overflow.py` is included in the test case files to visualize cross-sections of cell-centered variables, like those shown in Figure 12.2. These plots may be created at the unix prompt with, for example,

```
python visualize_overflow.py -f output.nc -v temperature --min=10 --max=20 --time=9
```

The python scripts are further described in Section 13.1.

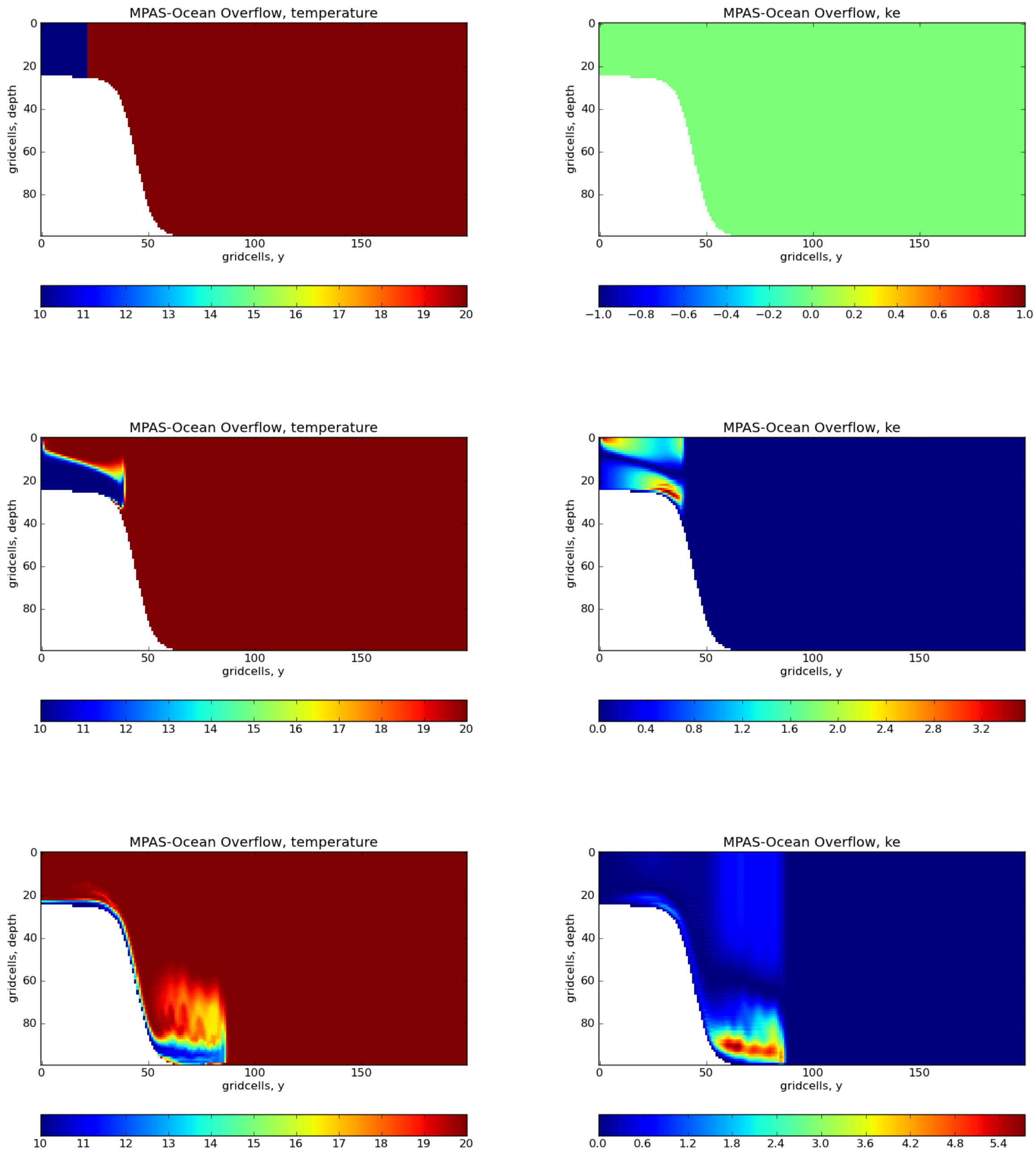


Figure 12.2: Overflow test case results for the high resolution case (1 km horizontal grid-cells), showing vertical cross-sections of temperature (left) and kinetic energy (right). Rows show initial condition (top), 3 hours (middle) and 9 hours (bottom).

12.3 Real World Configuration

Files are provided to run real-world simulations with realistic topography, wind forcing, and temperature and salinity restoring. Most of the horizontal grids are quasi-uniform over the globe, with simulations performed at nominal grid cell widths of 240, 120, 60, 30, and 15 km. These grids are based on Voronoi tessellations with uniform grid density, which results in grid that is almost all hexagons. An additional grid file is provided for a variable resolution simulation that has 15 km gridcells in the North Atlantic and 75 km gridcells elsewhere, with a smooth transition in between (Ringler et al., 2013a, Figure 2).

Initial distributions of potential temperature and salinity are obtained from the annual mean WOCE climatology (Gouretski and Koltermann, 2004). Initial velocities are zero, and the simulations are spun up for ten years using a constant wind stress obtained from "Normal Year" forcing data from the Coordinated Ocean Reference Experiment (CORE, Large and Yeager (2004)), and surface temperature and salinity are restored to the initial condition with a time scale of 30 days.

Simulations are similar to those presented in Ringler et al. (2013a), and include the following: z-star vertical coordinate with 40 vertical layers, ranging in thickness from 10 m near the surface to 250 m in the deep ocean; quadratic bottom drag with a coefficient of 0.01; nonlinear equation of state by Jackett and McDougall (1995); monotonic flux-corrected tracer transport (Skamarock and Gassmann, 2011), with third order reconstruction of the tracer values at the cell edges. The horizontal turbulence closure is a simple hyperviscosity ($-\nabla^4$) operator with coefficients of $\nu_h = \nu_0(\Delta x/\Delta x_0)^3$ with $\nu_0 = 5 \times 10^{10}$ and $\Delta x_0 = 15$ km grid cells. Zero horizontal diffusion is applied to the tracers. The vertical mixing is Richardson number-based, with background viscosity and diffusion of 10^{-4} and 10^{-5} m^2 s^{-1}, respectively.

Provided Files

- ocean_QU_15km.nc, ocean_NA_15km_75km.nc, etc:
  These are the input grid files that include conditions after the initial ten year spin-up. They can be visualized in the same way output files can to see the initial conditions. File names indicate a quasi-uniform mesh (QU) or North Atlantic variable resolution mesh (NA), and the nominal grid cell size is specified.

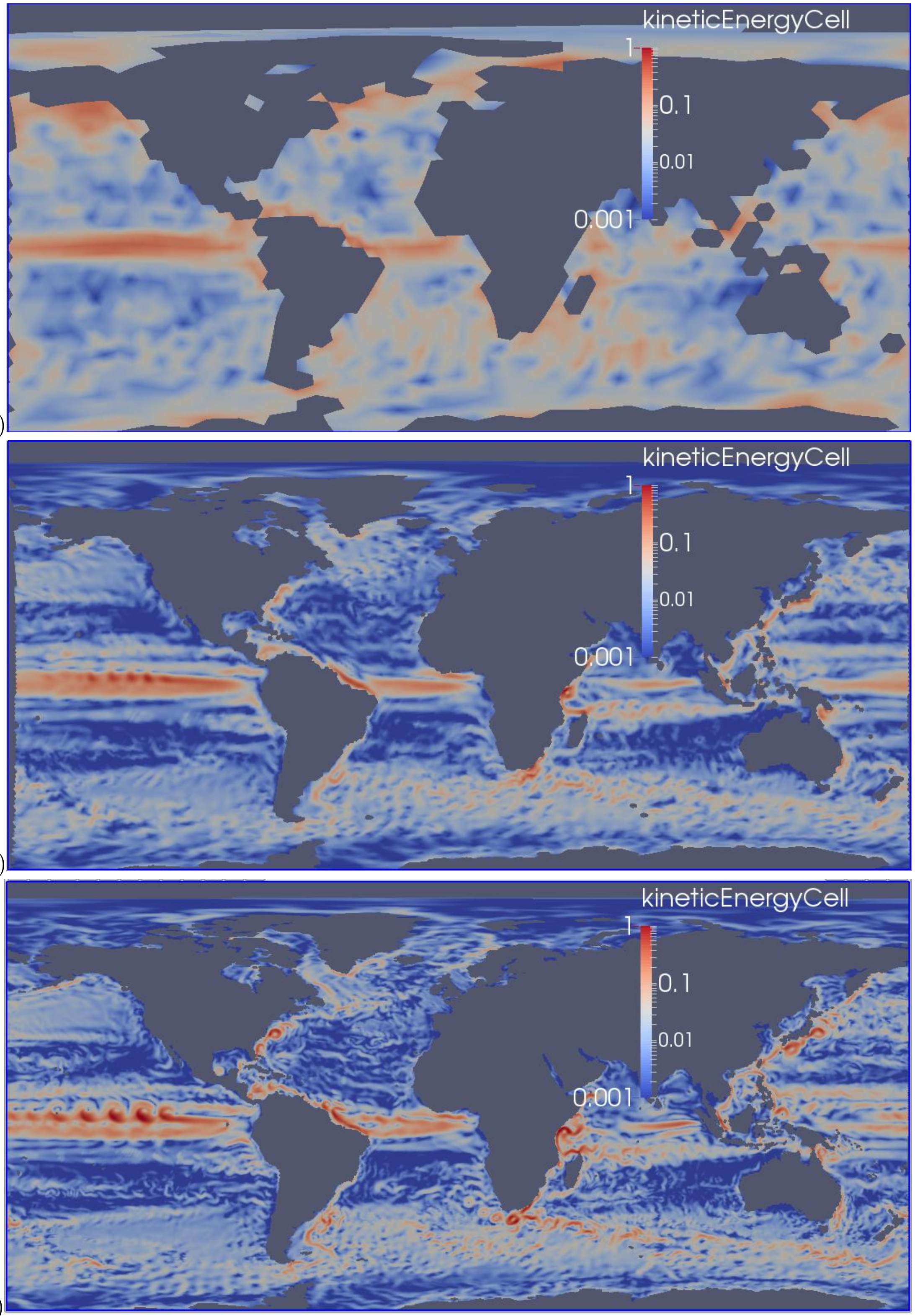
- graph.info:
  This file is a graph of all of the cells in the mesh.
  It is used to decompose the mesh into partition files.

- graph.info.part.n:
  This is a partition file for use with an n processor run, where n is a typical number for the given resolution. For example, the 240 km mesh may be run on 1 to 16 processors, while the 15 km requires thousands of processors.

- namelist.ocean:
  This is the namelist file with all parameters for the run.
  It has a default setup which when run provides the results in the next section.

Results

The simulations were run for one year using the provided files, and visualized using Paraview (see Chapter 7).



(a)
(b)
(c)

Figure 12.3: Kinetic energy in $m^2\ s^{-2}$ at the surface for real world test cases. Resolutions are quasi-uniform and increase from top to bottom with: (a) 240 km, (b) 120 km, (c) 60 km

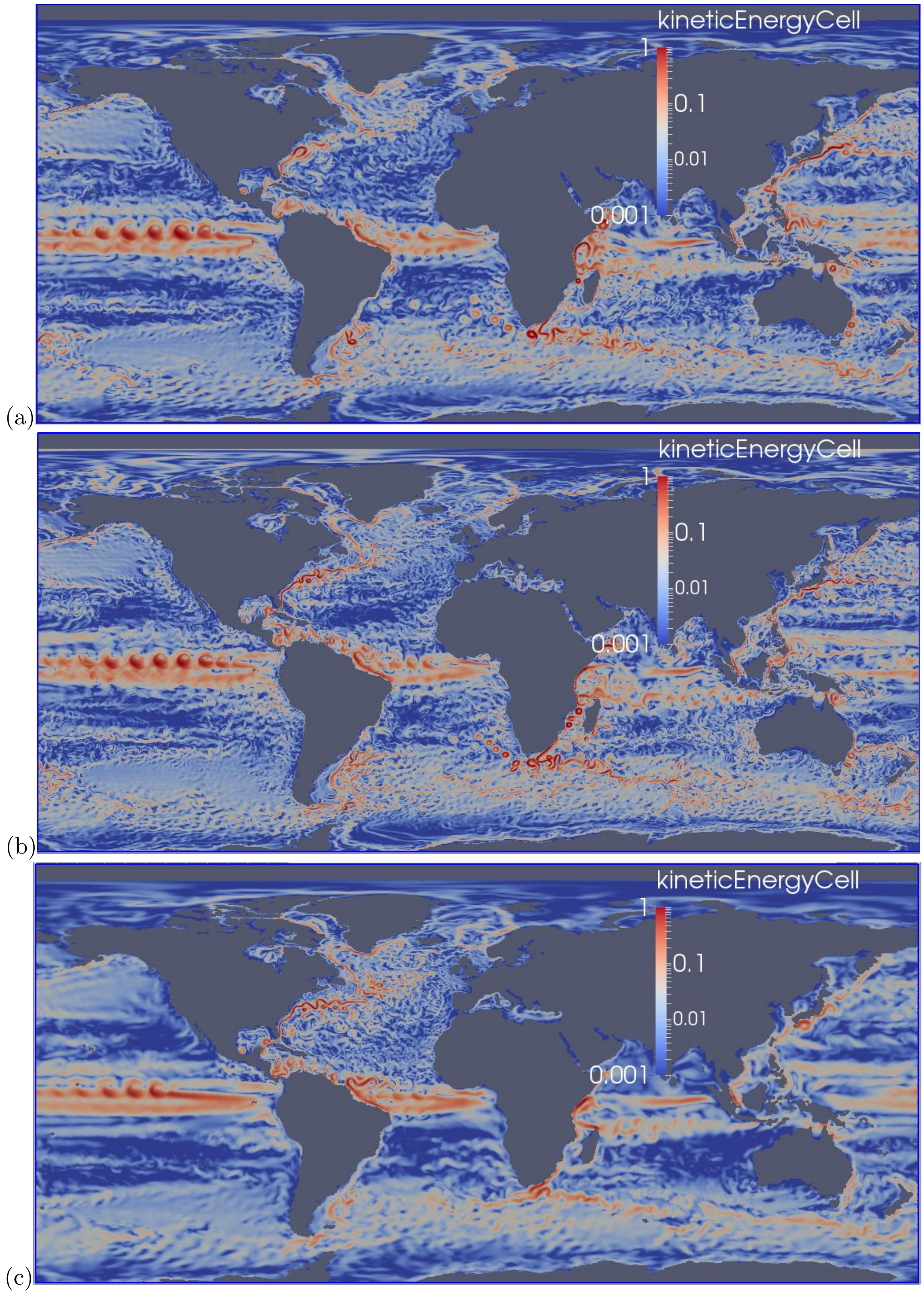
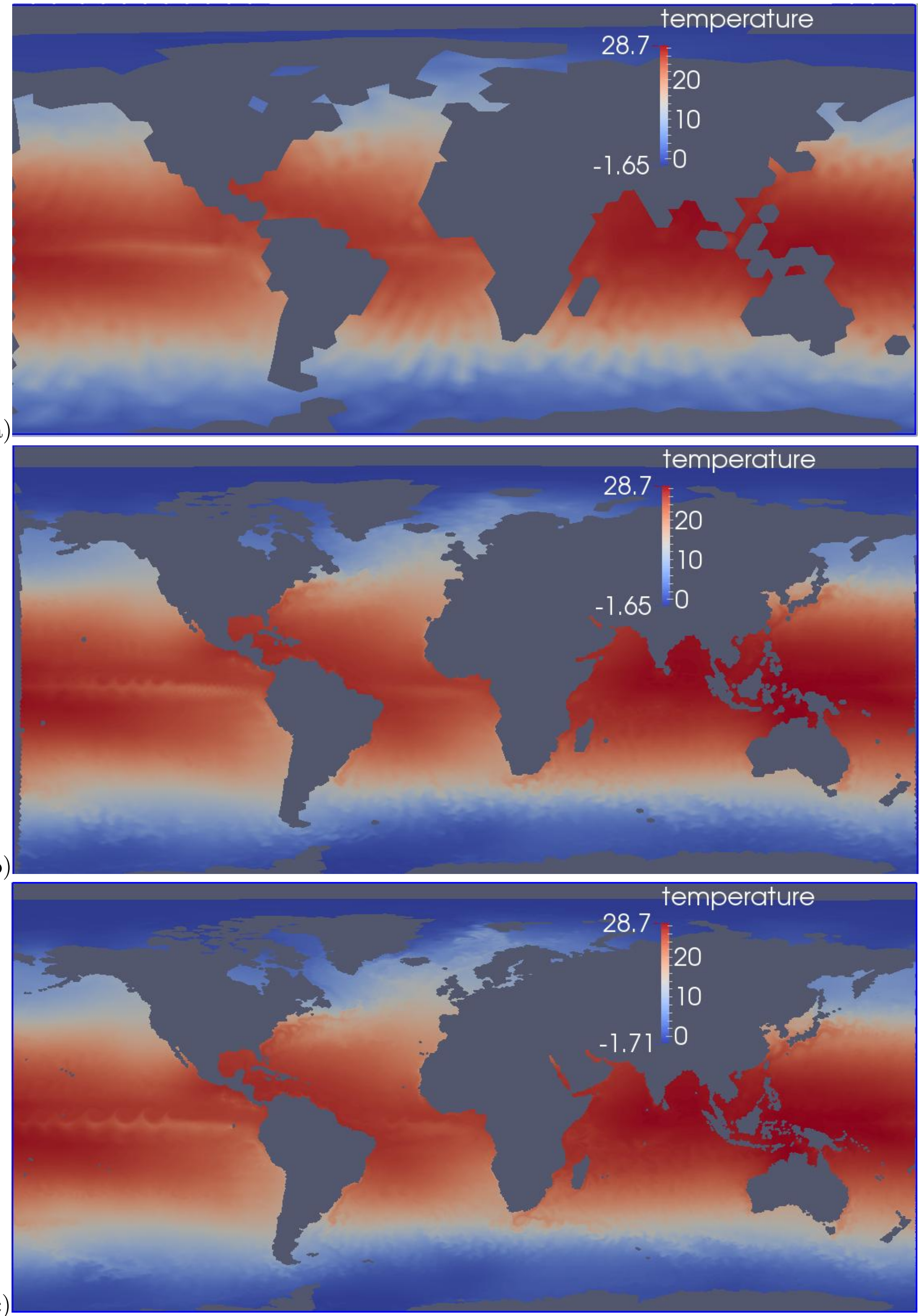
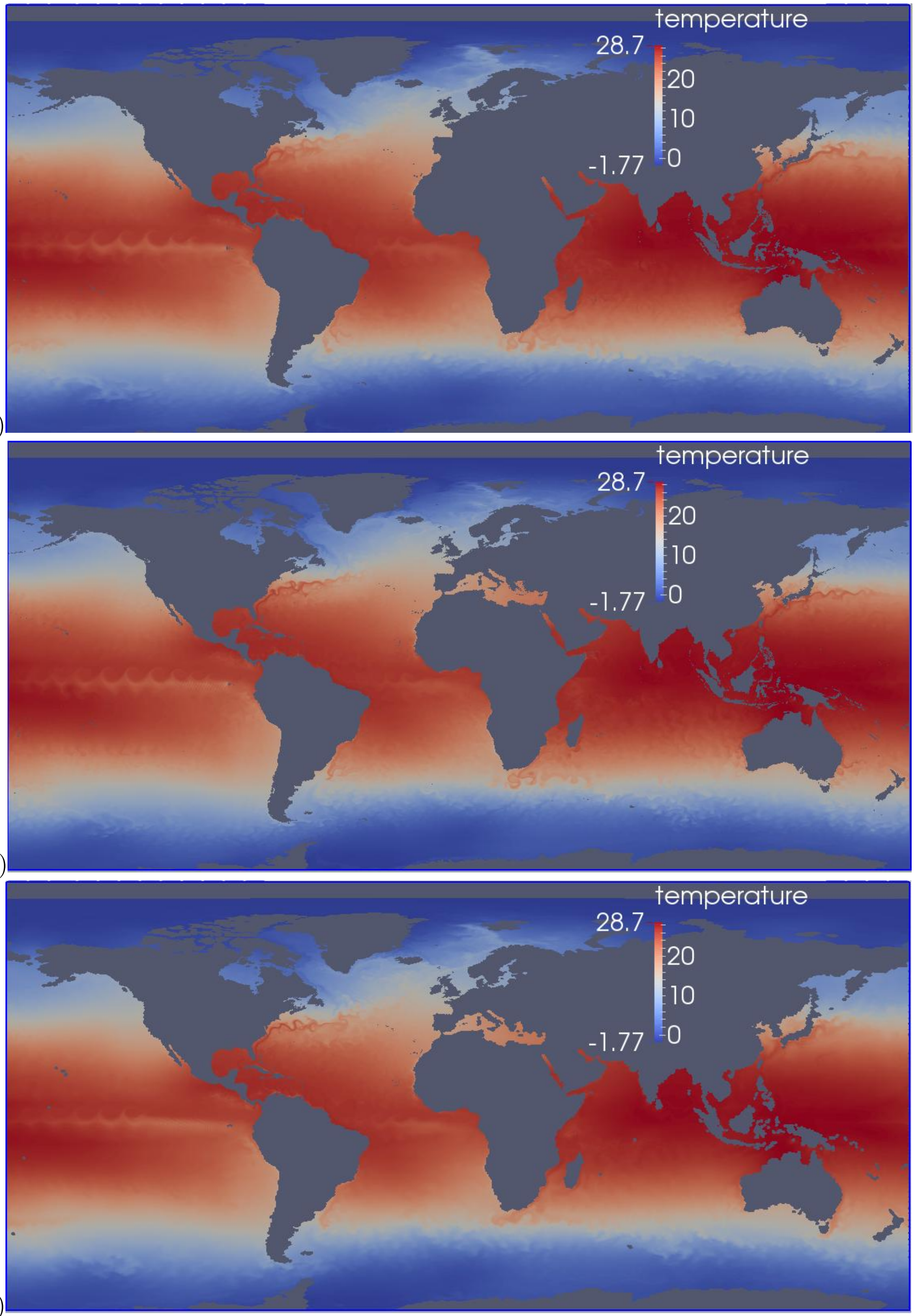


Figure 12.4: Kinetic energy in $m^2\ s^{-2}$ at the surface for real world test cases. Resolutions increase from top to bottom with: (a) 30 km, (b) 15 km, both quasi-uniform, and (c) variable resolution with 15 km grid cells in the North Atlantic and 75 km grid cells elsewhere.



(a)
(b)
(c)

Figure 12.5: Surface temperature, C, for real world test cases. Resolutions are quasi-uniform and increase from top to bottom with: (a) 240 km, (b) 120 km, (c) 60 km



(a) (b) (c)

Figure 12.6: Surface temperature, C, for real world test cases. Resolutions increase from top to bottom with: (a) 30 km, (b) 15 km, both quasi-uniform, and (c) variable resolution with 15 km grid cells in the North Atlantic and 75 km grid cells elsewhere.

Chapter 13

Ocean Visualization

This chapter discusses visualization tools that are specific to the ocean core. For instructions on visualization tools that may be used by all cores, such as Paraview, see Chapter 7.

13.1 Python

Python visualization scripts are provided with the tar files for the baroclinic channel and overflow test cases. In order to use these scripts, the following python modules are required:

- matplotlib, see http://matplotlib.org
- numpy, see http://www.numpy.org
- pylab, see www.scipy.org
- netCDF4, see http://code.google.com/p/netcdf4-python

A convenient way to install all these libraries at once is to purchase the Enthought Python Distribution (EPD), available at https://www.enthought.com/products/epd. Many institutions have Python-EPD installed on their compute clusters.

Examples of output from python visualization scripts are shown in Figures 12.1 and 12.2. Options for each script may be found using, e.g.

```
python visualize_overflow.py --help
```

These scripts are easily customizable by the user. Within the python script the specified variable is read from the NetCDF file using the commands

```
f = NetCDFFile(options.filename,'r')
field = f.variables[options.variable]
```

The plot is created with the matplotlib command `plt.imshow`, as described in the following tutorials:

- http://matplotlib.org/api/pyplot_api.html#matplotlib.pyplot.imshow
- http://matplotlib.org/users/image_tutorial.html

Text is then added with the commands `xlabel`, `ylabel`, `title`; colorbar is added using `plt.colorbar`; and the figure is saved to the local directory as a png file useing `plt.savefig`.

Chapter 14

Running MPAS-Ocean within the E3SM

In order to run MPAS-Ocean within E3SM, please see the instructions for E3SM: https://e3sm.org.

Chapter 15

Tested Configurations

This chapter will list configurations that MPAS-Ocean has been tested and verified to work on.

Compiler Name	Compiler Version	MPI Layer Name	MPI Version	NetCDF Version	Parallel-NetCDF Version	Parallel I/O Version
GFortran	5.3.0	OpenMPI	1.10.5	4.1.1	1.5.0	1.7.2
intel	17.0.1	OpenMPI	1.10.5	4.1.1	1.5.0	1.7.2

Part III

Bibliography

Bibliography

Adcroft, A. and J.-M. Campin, 2004: Rescaled height coordinates for accurate representation of free-surface flows in ocean circulation models. *Ocean Modelling*, **7**, 269–284, doi:10.1016/j.ocemod.2003.09.003.
URL http://adsabs.harvard.edu/abs/2004OcMod...7..269A

Dennis, J. M., J. Edwards, R. Loy, R. Jacob, A. A. Mirin, A. P. Craig, and M. Vertenstein, 2012: An application-level parallel I/O library for Earth system models. *The International Journal of High Performance Computing Applications*, **26**, 43–53, doi:10.1177/1094342011428143.

Gouretski, V. and K. P. Koltermann, 2004: WOCE global hydrographic climatology. *Berichte des BSH*, **35**, 1–52.

Haidvogel, D. and A. Beckmann, 1999: *Numerical Ocean Circulation Modeling*. Imperial College Press, London.

Higdon, R. L., 2005: A two-level time-stepping method for layered ocean circulation models: further development and testing. *Journal of Computational Physics*, **206**, 463–504, doi:10.1016/j.jcp.2004.12.011.
URL http://adsabs.harvard.edu/abs/2005JCoPh.206..463H

Hoffman, M. J., M. Perego, S. F. Price, W. H. Lipscomb, D. Jacobsen, I. Tezaur, A. G. Salinger, R. Tuminaro, and T. Zhang, 2018: MPAS-Albany Land Ice (MALI): A variable resolution ice sheet model for Earth system modeling using Voronoi grids. *Geoscientific Model Development Discussions*, **in review**, 1–47, doi:10.5194/gmd-2018-78.
URL https://www.geosci-model-dev-discuss.net/gmd-2018-78/

Holland, D. M. and A. Jenkins, 1999: Modeling Thermodynamic Ice–Ocean Interactions at the Base of an Ice Shelf. *Journal of Physical Oceanography*, **29**, 1787–1800.
URL http://journals.ametsoc.org/doi/abs/10.1175/1520-0485(1999)029<1787:MTIOIA>2.0.CO;2

Hunter, J., 2006: Specification for test models of ice shelf cavities. Technical Report June, Antarctic Climate & Ecosystems Cooperative Research Centre Private.
URL http://staff.acecrc.org.au/~johunter/isomip/test_cavities.pdf

Ilicak, M., A. J. Adcroft, S. M. Griffies, and R. W. Hallberg, 2012: Spurious dianeutral mixing and the role of momentum closure. *Ocean Modelling*, **45**, 37–58, doi:10.1016/j.ocemod.2011.10.003.
URL http://adsabs.harvard.edu/abs/2012OcMod..45...37I

Jackett, D. R. and T. J. McDougall, 1995: Minimal Adjustment of Hydrographic Profiles to Achieve Static Stability. *Journal of Atmospheric and Oceanic Technology*, **12**, 381, doi:10.1175/1520-

0426(1995)012¡0381:MAOHPT¿2.0.CO;2.
URL http://adsabs.harvard.edu/abs/1995JAtOT..12..381J

Jenkins, A., K. W. Nicholls, and H. F. J. Corr, 2010: Observation and Parameterization of Ablation at the Base of Ronne Ice Shelf, Antarctica. *Journal of Physical Oceanography*, **40**, 2298–2312, doi:10.1175/2010JPO4317.1.
URL http://journals.ametsoc.org/doi/abs/10.1175/2010JPO4317.1

Large, W. G. and S. Yeager, 2004: Diurnal to Decadal Global Forcing For Ocean and Sea-Ice Models:The Data Sets and Flux Climatologies.

Leclair, M. and G. Madec, 2011: -Coordinate, an Arbitrary Lagrangian-Eulerian coordinate separating high and low frequency motions. *Ocean Modelling*, **37**, 139–152.
URL http://adsabs.harvard.edu/abs/2011OcMod..37..139L

Leith, C., 1996: Stochastic models of chaotic systems. *Physica D: Nonlinear Phenomena*, **98**, 481–491.

Maddison, J. R. and D. P. Marshall, 2013: The eliassen–palm flux tensor. *Journal of Fluid Mechanics*, doi:http://dx.doi.org/10.1017/jfm.2013.259.

Petersen, M., D. Jacobsen, T. Ringler, M. Maltrud, and M. Hecht, 2014: Evaluation of the Arbitrary Langrangian-Eulerian vertical coordinate in the MPAS-Ocean Model. *Ocean Modelling*, in press.

Petersen, M. R., X. Asay-Davis, D. Jacobsen, P. Jones, M. Maltrud, T. D. Ringler, A. K. Turner, L. Van Roekel, M. Veneziani, J. Wolfe, and P. J. Wolfram, 2018: An evaluation of the ocean and sea ice climate of E3SM using MPAS and interannual CORE-II forcing. *Journal of Advances in Modeling Earth Systems*, **in prep.**

Petersen, M. R., D. W. Jacobsen, T. D. Ringler, M. W. Hecht, and M. E. Maltrud, 2015: Evaluation of the arbitrary Lagrangian-Eulerian vertical coordinate method in the MPAS-Ocean model. *Ocean Modelling*, **86**, 93–113, doi:10.1016/j.ocemod.2014.12.004.
URL http://dx.doi.org/10.1016/j.ocemod.2014.12.004

Ringler, T., L. Ju, and M. Gunzburger, 2008: A multiresolution method for climate system modeling: application of spherical centroidal Voronoi tessellations. *Ocean Dynamics*, **58**, 475–498, doi:10.1007/s10236-008-0157-2.

Ringler, T., M. Petersen, R. Higdon, D. Jacobsen, P. Jones, and M. Maltrud, 2013a: A multi-resolution approach to global ocean modeling. *Ocean Modelling*, **69**, 211–232, doi:http://dx.doi.org/10.1016/j.ocemod.2013.04.010.
URL http://www.sciencedirect.com/science/article/pii/S1463500313000760

Ringler, T., M. Petersen, R. L. Higdon, D. Jacobsen, P. W. Jones, and M. Maltrud, 2013b: A multi-resolution approach to global ocean modeling. *Ocean Modelling*, **69**, 211–232, doi:10.1016/j.ocemod.2013.04.010.
URL http://dx.doi.org/10.1016/j.ocemod.2013.04.010

Ringler, T. D., D. Jacobsen, M. Gunzburger, L. Ju, M. Duda, and W. Skamarock, 2011: Exploring a Multiresolution Modeling Approach within the Shallow-Water Equations. *Monthly Weather Review*, **139**, 3348–3368, doi:10.1175/MWR-D-10-05049.1.
URL http://adsabs.harvard.edu/abs/2011MWRv..139.3348R

Ringler, T. D., D. Jacobsen, M. Gunzburger, L. Ju, M. Duda, and W. Skamarock, 2011: Exploring a Multiresolution Modeling Approach within the Shallow-Water Equations. *Monthly Weather Review*, **139**, 3348–3368, doi:10.1175/MWR-D-10-05049.1.

Ringler, T. D., J. Thuburn, J. B. Klemp, and W. C. Skamarock, 2010: A unified approach to energy conservation and potential vorticity dynamics for arbitrarily-structured C-grids. *J. Comp. Physics*, **229**, 3065–3090, doi:10.1016/j.jcp.2009.12.007.

Saenz, J. A., Q. Chen, and T. Ringler, 2015: Prognostic residual-mean flow in an ocean general circulation model and its relation to prognostic eulerian-mean flow. *Journal of Physical Oceanography*, doi:http://dx.doi.org/10.1175/JPO-D-15-0024.1.

Shchepetkin, A. F. and J. C. McWilliams, 2003: A method for computing horizontal pressure-gradient force in an oceanic model with a nonaligned vertical coordinate. *Journal of Geophysical Research (Oceans)*, **108**, 3090, doi:10.1029/2001JC001047.

Skamarock, W. and A. Gassmann, 2011: Conservative Transport Schemes for Spherical Geodesic Grids: High-Order Flux Operators for ODE-Based Time Integration. *Monthly Weather Review*, **139**, 2962–2975.

Skamarock, W. C. and A. Gassmann, 2011: Conservative Transport Schemes for Spherical Geodesic Grids: High-Order Flux Operators for ODE-Based Time Integration. *Monthly Weather Review*, **139**, 2962–2975, doi:10.1175/MWR-D-10-05056.1.
URL http://adsabs.harvard.edu/abs/2011MWRv..139.2962S

Skamarock, W. C., J. B. Klemp, M. G. Duda, L. D. Fowler, S.-H. Park, and T. D. Ringler, 2012: A Multiscale Nonhydrostatic Atmospheric Model Using Centroidal Voronoi Tesselations and C-Grid Staggering. *Monthly Weather Review*, **140**, 3090–3105, doi:10.1175/MWR-D-11-00215.1.
URL http://journals.ametsoc.org/doi/abs/10.1175/MWR-D-11-00215.1

Smagorinsky, J., 1963: General circulation experiments with the primitive equations. *Monthly Weather Review*, **91**, 99–164.

Song, Y. T., 1998: A General Pressure Gradient Formulation for Ocean Models. Part I: Scheme Design and Diagnostic Analysis. *Monthly Weather Review*, **126**, 3213, doi:10.1175/1520-0493(1998)126¡3213:AGPGFF¿2.0.CO;2.

Thuburn, J., T. D. Ringler, W. C. Skamarock, and J. B. Klemp, 2009: Numerical representation of geostrophic modes on arbitrarily structured C-grids. *Journal of Computational Physics*, **228**, 8321–8335, doi:10.1016/j.jcp.2009.08.006.

Turner, A. K., W. H. Lipscomb, E. C. Hunke, D. W. Jacobsen, N. Jeffery, T. D. Ringler, and J. D. Wolfe, 2018: MPAS-Seaice: a new variable resolution sea-ice model. *Journal of Advances in Modeling Earth Systems*, submitted.

Vallis, G. K. and B.-L. Hua, 1988: Eddy viscosity of the anticipated potential vorticity method. *Journal of Atmospheric Sciences*, **45**, 617–627, doi:10.1175/1520-0469(1988)045¡0617:EVOTAP¿2.0.CO;2.
URL http://adsabs.harvard.edu/abs/1988JAtS...45..617V

Wolfram, P., T. Ringler, M. Maltrud, D. Jacobsen, and M. Petersen, 2015: Diagnosing isopycnal diffusivity in an eddying, idealized mid-latitude ocean basin via Lagrangian In-situ, Global, High-performance particle Tracking (LIGHT). *Journal of Physical Oceanography*, doi:http://dx.doi.org/10.1175/JPO-D-14-0260.1.

Wolfram, P. J. and O. B. Fringer, 2013: Mitigating horizontal divergence "checker-board" oscillations on unstructured triangular c-grids for nonlinear hydrostatic and nonhydrostatic flows. *Ocean Modelling*, **69**, 64–78.

Young, W. R., 2012: An exact thickness-weighted average formulation of the boussinesq equations. *Journal of Physical Oceanography*, doi:http://dx.doi.org/10.1175/JPO-D-11-0102.1.

Zalesak, S., 1979: Fully multidimensional flux-corrected transport algorithms for fluids. *Journal of Computational Physics*, **31**, 335–362.

Part IV

Appendices

Appendix A

Namelist options

Embedded links point to information in chapter 10

A.1 run_modes

A.1.1 config_ocean_run_mode

Type:	character
Units:	–
Default Value:	forward
Possible Values:	’forward’ and ’analysis’

Table A.1: config_ocean_run_mode: Determines which run mode will be used for the ocean model.

A.2 time_management

A.2.1 config_do_restart

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.2: config_do_restart: Determines if the initial conditions should be read from a restart file, or an input file.

A.2.2 config_restart_timestamp_name

Type:	character
Units:	–

Default Value:	Restart_timestamp
Possible Values:	Path to a file.

Table A.3: config_restart_timestamp_name: Path to the filename for restart timestamps to be read and written from.

A.2.3 config_start_time

Type:	character
Units:	–
Default Value:	0001-01-01_00:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS' or 'file'

Table A.4: config_start_time: Timestamp describing the initial time of the simulation. If it is set to 'file', the initial time is read from restart_timestamp.

A.2.4 config_stop_time

Type:	character
Units:	–
Default Value:	none
Possible Values:	'YYYY-MM-DD_HH:MM:SS' or 'none'

Table A.5: config_stop_time: Timestamp descriping the final time of the simulation. If it is set to 'none' the final time is determined from config_start_time and config_run_duration.

A.2.5 config_run_duration

Type:	character
Units:	–
Default Value:	0010_00:00:00
Possible Values:	'DDDD_HH:MM:SS' or 'none'

Table A.6: config_run_duration: Timestamp describing the length of the simulation. If it is set to 'none' the duration is determined from config_start_time and config_stop_time. config_run_duration overrides inconsistent values of config_stop_time.

A.2.6 config_calendar_type

Type:	character
Units:	–
Default Value:	noleap
Possible Values:	'gregorian', 'noleap'

Table A.7: config_calendar_type: Selection of the type of calendar that should be used in the simulation.

A.2.7 config_output_reference_time

Type:	character
Units:	–
Default Value:	0001-01-01_00:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS'

Table A.8: config_output_reference_time: Reference time used in the units attribute of Time in output files.

A.3 io

A.3.1 config_write_output_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.9: config_write_output_on_startup: Logical flag determining if an output file should be written prior to the first time step.

A.3.2 config_pio_num_iotasks

Type:	integer
Units:	–
Default Value:	0
Possible Values:	Any positive integer value greater than or equal to 0.

Table A.10: config_pio_num_iotasks: Integer specifying how many IO tasks should be used within the PIO library. A value of 0 causes all MPI tasks to also be IO tasks. IO tasks are requried to write contiguous blocks of data to a file.

A.3.3 config_pio_stride

Type:	integer
Units:	–
Default Value:	1
Possible Values:	Any positive integer value greater than 0.

Table A.11: config_pio_stride: Integer specifying the stride of each IO task.

A.4 decomposition

A.4.1 config_num_halos

Type:	integer
Units:	–
Default Value:	3
Possible Values:	Any positive integer value.

Table A.12: config_num_halos: Determines the number of halo cells extending from a blocks owned cells (Called the 0-Halo). The default of 3 is the minimum that can be used with monotonic advection.

A.4.2 config_block_decomp_file_prefix

Type:	character
Units:	–
Default Value:	graph.info.part.
Possible Values:	Any path/prefix to a block decomposition file.

Table A.13: config_block_decomp_file_prefix: Defines the prefix for the block decomposition file. Can include a path. The number of blocks is appended to the end of the prefix at run-time.

A.4.3 config_number_of_blocks

Type:	integer
Units:	–
Default Value:	0
Possible Values:	Any integer greater than or equal to 0.

Table A.14: config_number_of_blocks: Determines the number of blocks a simulation should be run with. If it is set to 0, the number of blocks is the same as the number of MPI tasks at run-time.

A.4.4 config_explicit_proc_decomp

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.15: config_explicit_proc_decomp: Determines if an explicit processor decomposition should be used. This is only useful if multiple blocks per processor are used.

A.4.5 config_proc_decomp_file_prefix

Type:	character
Units:	–
Default Value:	graph.info.part.
Possible Values:	Any path/prefix to a processor decomposition file.

Table A.16: config_proc_decomp_file_prefix: Defines the prefix for the processor decomposition file. This file is only read if config_explicit_proc_decomp is .true. The number of processors is appended to the end of the prefix at run-time.

A.5 time_integration

A.5.1 config_dt

Type:	character
Units:	–
Default Value:	00:05:00

Possible Values:	Any time stamp in 'YYYY-MM-DD_hh:mm:ss' format. Items can be removed from the left if they are unused.

Table A.17: config_dt: Length of model time-step.

A.5.2 config_time_integrator

Type:	character
Units:	–
Default Value:	split_explicit_ab2
Possible Values:	'split_explicit', 'RK4', 'unsplit_explicit', 'split_implicit', 'LTS', 'split_explicit_ab2'

Table A.18: config_time_integrator: Time integration method.

A.5.3 config_number_of_time_levels

Type:	integer
Units:	–
Default Value:	2
Possible Values:	Any integer greater than or equal to 2.

Table A.19: config_number_of_time_levels: The number of time levels in the time-stepping scheme. This is used for array allocation.

A.6 hmix

A.6.1 config_hmix_scaleWithMesh

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.20: config_hmix_scaleWithMesh: If false, del2 and del4 coefficients are constant throughout the mesh (equivalent to setting $\rho_m = 1$ throughout the mesh). If true, these coefficients scale as mesh density to the -3/4 power.

A.6.2 config_maxMeshDensity

Type:	real
Units:	–
Default Value:	-1.0
Possible Values:	Any positive real number. If set any negative real number, config_maxMeshDensity is computed during the initialization of each simulation.

Table A.21: config_maxMeshDensity: Global maximum of the mesh density

A.6.3 config_hmix_use_ref_cell_width

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.22: config_hmix_use_ref_cell_width: If true, hmix coefficient values are set with reference to config_hmix_ref_cell_width. If false, hmix coefficient values are referenced to smallest gridcell in the mesh. The false setting is for backwards compatilibity. When false, hmix coefficient flags must be adjusted for every new mesh with a different minimum-sized cell.

A.6.4 config_hmix_ref_cell_width

Type:	real
Units:	m
Default Value:	30.0e3
Possible Values:	Any positive real number, but typically a resolution number such as 30km.

Table A.23: config_hmix_ref_cell_width: Reference cell width. If config_hmix_use_ref_cell_width = .true., then hmix coefficients are set to be nu_{2h} = config_mom_del2*(cellWidth / config_hmix_use_ref_cell_width) and nu_{4h} = config_mom_del4*(cellWidth / config_hmix_use_ref_cell_width)^3 where cellWidth is the effective cell width computed as 2*sqrt(areaCell/pi). See Hoch et al 2020 JAMES eq 1,2. This relation applies within a simulation, but also generally among multiple simulations, so the parameters config_mom_del2, config_mom_del4, and config_hmix_use_ref_cell_width can generally remain at their standard values, and just be adjusted for fine tuning.

A.6.5 config_apvm_scale_factor

Type:	real
Units:	–
Default Value:	0.0
Possible Values:	Any non-negative number, typically between zero and one.

Table A.24: config_apvm_scale_factor: Anticipated potential vorticity (APV) method scale factor, c_{apv}. When zero, APV is off.

A.7 hmix_del2

A.7.1 config_use_mom_del2

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.25: config_use_mom_del2: If true, Laplacian horizontal mixing is used on the momentum equation.

A.7.2 config_mom_del2

Type:	real
Units:	$\mathrm{m}^2\,\mathrm{s}^-1$
Default Value:	1.0e3
Possible Values:	any positive real

Table A.26: config_mom_del2: Horizontal viscosity, ν_{2h}. If config_hmix_use_ref_cell_width = .true. then ν_h = config_mom_del2*(cellWidth / config_hmix_use_ref_cell_width). If config_hmix_use_ref_cell_width = .false. then it is referenced to the smallest cell.

A.7.3 config_use_tracer_del2

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.27: config_use_tracer_del2: If true, Laplacian horizontal mixing is used on the tracer equation.

A.7.4 config_tracer_del2

Type:	real
Units:	$m^2 s^-1$
Default Value:	10.0
Possible Values:	any positive real

Table A.28: config_tracer_del2: Horizontal diffusion, κ_{2h}. If config_hmix_use_ref_cell_width = .true. then κ_h = config_tracer_del2*(cellWidth / config_hmix_use_ref_cell_width). If config_hmix_use_ref_cell_width = .false. then it is referenced to the smallest cell.

A.8 hmix_del4

A.8.1 config_use_mom_del4

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.29: config_use_mom_del4: If true, biharmonic horizontal mixing is used on the momentum equation.

A.8.2 config_mom_del4

Type:	real
Units:	$m^4 s^-1$
Default Value:	1.2e11
Possible Values:	any positive real

Table A.30: config_mom_del4: Coefficient for horizontal biharmonic operator on momentum. If config_hmix_use_ref_cell_width = .true. then ν_{4h} = config_mom_del4*(cellWidth / config_hmix_use_ref_cell_width)^3. If config_hmix_use_ref_cell_width = .false. then it is referenced to the smallest cell.

A.8.3 config_mom_del4_div_factor

Type:	real
Units:	non − dimensional
Default Value:	1.0
Possible Values:	any positive real

Table A.31: config_mom_del4_div_factor: The divergence portion of the del4 operator is scaled by this factor.

A.8.4 config_use_tracer_del4

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.32: config_use_tracer_del4: If true, biharmonic horizontal mixing is used on the tracer equation.

A.8.5 config_tracer_del4

Type:	real
Units:	$\mathrm{m}^4\,\mathrm{s}^-1$
Default Value:	0.0
Possible Values:	any positive real

Table A.33: config_tracer_del4: Coefficient for horizontal biharmonic operator on tracers. If config_hmix_use_ref_cell_width = .true. then ν_{4h} = config_tracer_del4*(cellWidth / config_hmix_use_ref_cell_width)^3. If config_hmix_use_ref_cell_width = .false. then it is referenced to the smallest cell.

A.9 hmix_Leith

A.9.1 config_use_Leith_del2

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.34: config_use_Leith_del2: If true, the Leith enstrophy-cascade closure is turned on

A.9.2 config_Leith_parameter

Type:	real
Units:	non − dimensional
Default Value:	1.0
Possible Values:	any positive real

Table A.35: config_Leith_parameter: Non-dimensional Leith closure parameter

A.9.3 config_Leith_dx

Type:	real
Units:	m
Default Value:	15000.0
Possible Values:	any positive real

Table A.36: config_Leith_dx: Characteristic length scale, usually the smallest dx in the mesh

A.9.4 config_Leith_visc2_max

Type:	real
Units:	$m^2 s^-1$
Default Value:	2.5e3
Possible Values:	any positive real

Table A.37: config_Leith_visc2_max: Upper bound on the allowable value of Leith-computed viscosity

A.10 Redi_isopycnal_mixing

A.10.1 config_use_Redi

Type:	logical
Units:	–

Default Value:	.false.
Possible Values:	.true. or .false.

Table A.38: config_use_Redi: If true, Redi isopycnal mixing is turned on

A.10.2 config_Redi_closure

Type:	character
Units:	–
Default Value:	constant
Possible Values:	'constant', 'equalGM', 'data'

Table A.39: config_Redi_closure: Control what type of function is used for Redi κ. For 'equalGM', RediKappa is set to gmBolusKappa, so picks up the closure used by GM. Note that equalGM should only be used with 2D GM schemes (e.g. config_GM_closure=constant or Visbeck), not with EdenGreatbatch.

A.10.3 config_Redi_constant_kappa

Type:	real
Units:	$m^2 s^-1$
Default Value:	600.0
Possible Values:	Positive real numbers.

Table A.40: config_Redi_constant_kappa: The Redi diffusion coefficient. Only used when config_Redi_closure = 'constant'.

A.10.4 config_Redi_maximum_slope

Type:	real
Units:	$non-dimensional$
Default Value:	0.3
Possible Values:	positive real numbers, but small

Table A.41: config_Redi_maximum_slope: value of maximum allowed isopycnal slope from Danabasoglu et al 2008 equation (2)

A.10.5 config_Redi_use_slope_taper

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.42: config_Redi_use_slope_taper: If true, Redi is tapered based on Danabasoglu and McWilliams 1995 (slope tapering)

A.10.6 config_Redi_use_surface_taper

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.43: config_Redi_use_surface_taper: If true, Redi slope is tapered near sfc based on Large et al 1997

A.10.7 config_Redi_limit_term1

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.44: config_Redi_limit_term1: If true, the N2 limiting is applied to the horizontal diffusion term

A.10.8 config_Redi_use_quasi_monotone_limiter

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.45: config_Redi_use_quasi_monotone_limiter: If true, fluxes are reduced to prevent tracers from violating monotonicity. Cross-term fluxes are scaled toward zero to prevent tracers from under/overshooting the min/max values in adjacent cells and layers

A.10.9 config_Redi_quasi_monotone_safety_factor

Type:	real
Units:	–
Default Value:	0.9
Possible Values:	A value between 0 and 1

Table A.46: config_Redi_quasi_monotone_safety_factor: A safety factor applied to flux scaling when monotonicity is violated. Smaller values scale fluxes toward zero more aggressively.

A.10.10 config_Redi_min_layers_diag_terms

Type:	integer
Units:	–
Default Value:	6
Possible Values:	any integer between 0 (all layers on) and nVertLevels (all layers off)

Table A.47: config_Redi_min_layers_diag_terms: Redi diagonal terms (2 and 3) are turned off from layer 1 through config_Redi_min_layers_diag_terms-1, and on from config_Redi_min_layers_diag_terms to nVertLevels. The Redi diagonal terms are not guaranteed to produce bounded tracer fields, and in practice produce growing temperatures in a few columns with fewer than 5 vertical cells. Redi is meant for isopycnal mixing in the deep ocean, so not applying Redi diagonal terms in very shallow regions is an acceptable solution.

A.10.11 config_Redi_horizontal_taper

Type:	character
Units:	–
Default Value:	ramp
Possible Values:	'none', 'ramp', 'RossbyRadius'

Table A.48: config_Redi_horizontal_taper: Control how the Redi κ value varies as a function of horizontal resolution. 'none' is constant, 'ramp' is strictly based on resolution, 'RossbyRadius' follows Hallberg (2013) - https://doi.org/10.1016/j.ocemod.2013.08.007

A.10.12 config_Redi_horizontal_ramp_min

Type:	real

Units:	m
Default Value:	20e3
Possible Values:	Any positive real value.

Table A.49: config_Redi_horizontal_ramp_min: Minimum value in grid cell size for Redi κ ramp function. Here cell size refers to dcEdge. Used when config_Redi_horizontal_taper is set to ramp.

A.10.13 config_Redi_horizontal_ramp_max

Type:	real
Units:	m
Default Value:	30e3
Possible Values:	Any positive real value.

Table A.50: config_Redi_horizontal_ramp_max: Maximum value in grid cell size for Redi κ ramp function. Here cell size refers to dcEdge. Used when config_Redi_horizontal_taper is set to ramp.

A.11 submesoscale_eddy_parameterization

A.11.1 config_submesoscale_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.51: config_submesoscale_enable: flag to enable the FK2011 parameterization for submesoscale eddies

A.11.2 config_submesoscale_tau

Type:	real
Units:	s
Default Value:	172800
Possible Values:	positive reals, between 1-10 days

Table A.52: config_submesoscale_tau: timescale for frictional slumping of front (in seconds)

A.11.3 config_submesoscale_Ce

Type:	real
Units:	–
Default Value:	0.06
Possible Values:	0.06 - 0.08

Table A.53: config_submesoscale_Ce: efficiency of submesoscale eddies

A.11.4 config_submesoscale_Lfmin

Type:	real
Units:	m
Default Value:	1000.0
Possible Values:	between 200 and 5000m

Table A.54: config_submesoscale_Lfmin: minimum frontal width (meters)

A.11.5 config_submesoscale_ds_max

Type:	real
Units:	m
Default Value:	100000.0
Possible Values:	around 1 degree

Table A.55: config_submesoscale_ds_max: maximum grid scale to scale up buoyancy gradient

A.12 GM_eddy_parameterization

A.12.1 config_use_GM

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.56: config_use_GM: If true, the standard GM for the tracer advection and mixing is turned on.

A.12.2 config_GM_closure

Type:	character
Units:	–
Default Value:	EdenGreatbatch
Possible Values:	'constant', 'N2_dependent', 'Visbeck', 'EdenGreatbatch'

Table A.57: config_GM_closure: Control what method used to compute GM κ. Both 'constant' and 'N2_dependent' use the method in Ferrari et al. 2010 (https://doi.org/10.1016/j.ocemod.2010.01.004). 'constant' uses a constant kappa in eqn 16a, while 'N2_dependent' varies kappa in the vertical according to Danabasoglu and Marshall 2007 (https://doi.org/10.1016/j.ocemod.2007.03.006). 'Visbeck' implements a horizontally varying diffusivity of Visbeck et al 1997. EdenGreatbatch implements a simplified form of the EKE scheme in Eden and Greatbatch (2008) Ocean modeling

A.12.3 config_GM_constant_kappa

Type:	real
Units:	$\mathrm{m}^2\,\mathrm{s}^-1$
Default Value:	600.0
Possible Values:	**MISSING**

Table A.58: config_GM_constant_kappa: Coefficient of standard GM parametrization of eddy transport (Bolus component), κ. Only used when config_GM_closure is set to constant.

A.12.4 config_GM_constant_bclModeSpeed

Type:	real
Units:	$\mathrm{m}\,\mathrm{s}^-1$
Default Value:	0.3
Possible Values:	Positive real numbers

Table A.59: config_GM_constant_bclModeSpeed: The parameter setting for the first baroclinic mode speed for the vertical stream function boundary value problem. This appears as c in eqn 16a of Ferrari et al. 2010 (https://doi.org/10.1016/j.ocemod.2010.01.004).

A.12.5 config_GM_minBclModeSpeed_method

Type:	character

Units:	–
Default Value:	constant
Possible Values:	'constant' and 'computed'

Table A.60: config_GM_minBclModeSpeed_method: Determines how the GM setting for the minimum of the first baroclinic mode speed is computed. If 'constant' then use config_GM_constant_bclModeSpeed. If 'computed' then compute at every edge at every time step using the Brunt-Vaisala frequency

A.12.6 config_GM_spatially_variable_min_kappa

Type:	real
Units:	$m^2 s^-1$
Default Value:	300.0
Possible Values:	values around 100s

Table A.61: config_GM_spatially_variable_min_kappa: minimum value of bolus diffusivity for spatially variable GM schemes. Used for all choices of config_GM_closure other than 'constant'.

A.12.7 config_GM_spatially_variable_max_kappa

Type:	real
Units:	$m^2 s^-1$
Default Value:	1800.0
Possible Values:	values around 100s

Table A.62: config_GM_spatially_variable_max_kappa: minimum value of bolus diffusivity for spatially variable GM schemes. Used for all choices of config_GM_closure other than 'constant'.

A.12.8 config_GM_spatially_variable_baroclinic_mode

Type:	real
Units:	–
Default Value:	1.0
Possible Values:	small positive numbers

Table A.63: config_GM_spatially_variable_baroclinic_mode: baroclinic wave mode chosen for the Ferrari et al 2010 calculation. Used for all choices of config_GM_closure other than 'constant'.

A.12.9 config_GM_Visbeck_alpha

Type:	real
Units:	–
Default Value:	0.005
Possible Values:	small positive numbers

Table A.64: config_GM_Visbeck_alpha: scaling factor on the Visbeck diffusivity parameterization

A.12.10 config_GM_Visbeck_max_depth

Type:	real
Units:	m
Default Value:	1000.0
Possible Values:	values between zero and bottom depth

Table A.65: config_GM_Visbeck_max_depth: minimum depth for calculation of vertical average

A.12.11 config_GM_EG_riMin

Type:	real
Units:	–
Default Value:	200.0
Possible Values:	numbers greater than zero

Table A.66: config_GM_EG_riMin: minimum Richardson number to prevent overly large bolus Kappa values

A.12.12 config_GM_EG_kappa_factor

Type:	real
Units:	–

Default Value:	3.0
Possible Values:	small positive reals

Table A.67: config_GM_EG_kappa_factor: factor to scale diffusivity for Eden Greatbach scheme

A.12.13 config_GM_EG_Rossby_factor

Type:	real
Units:	–
Default Value:	2.0
Possible Values:	small values greater than or equal to one

Table A.68: config_GM_EG_Rossby_factor: factor multiplying the Rossby length in the scheme from Eden Greatbatch (2008) Ocean Modeling – Equation (28)

A.12.14 config_GM_EG_Rhines_factor

Type:	real
Units:	–
Default Value:	0.3
Possible Values:	small positive values less than equal to one

Table A.69: config_GM_EG_Rhines_factor: factor multiplying the Rhines length in the scheme from Eden Greatbatch (2008) Ocean Modeling – Equation (28)

A.12.15 config_GM_horizontal_taper

Type:	character
Units:	–
Default Value:	ramp
Possible Values:	'none', 'ramp', 'RossbyRadius'

Table A.70: config_GM_horizontal_taper: Control how the GM Bolus value varies as a function of horizontal resolution. 'none' is constant, 'ramp' is strictly based on resolution, 'RossbyRadius' follows Hallberg (2013) - https://doi.org/10.1016/j.ocemod.2013.08.007

A.12.16 config_GM_horizontal_ramp_min

Type:	real
Units:	m
Default Value:	20e3
Possible Values:	Any positive real value.

Table A.71: config_GM_horizontal_ramp_min: Minimum value in grid cell size for GM κ ramp function. Here cell size refers to dcEdge. Used when config_GM_horizontal_taper is set to ramp.

A.12.17 config_GM_horizontal_ramp_max

Type:	real
Units:	m
Default Value:	30e3
Possible Values:	Any positive real value.

Table A.72: config_GM_horizontal_ramp_max: Maximum value in grid cell size for GM κ ramp function. Here cell size refers to dcEdge. Used when config_GM_horizontal_taper is set to ramp.

A.12.18 config_GMRedi_Rossby_ramp_min

Type:	real
Units:	–
Default Value:	0.5
Possible Values:	Any positive real value.

Table A.73: config_GMRedi_Rossby_ramp_min: Minimum value of the ratio between grid-cell size (dcEdge) and Rossby radius for GM and Redi κ ramp functions. Used when config_GM_horizontal_taper and/or config_Redi_horizontal_taper are set to RossbyRadius.

A.12.19 config_GMRedi_Rossby_ramp_max

Type:	real
Units:	–
Default Value:	3.0
Possible Values:	Any positive real value.

Table A.74: config_GMRedi_Rossby_ramp_max: Maximum value of the ratio between grid-cell size (dcEdge) and Rossby radius for GM and Redi κ ramp functions. Used when config_GM_horizontal_taper and/or config_Redi_horizontal_taper are set to RossbyRadius.

A.13 eddy_parameterization

A.13.1 config_eddyMLD_dens_threshold

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Default Value:	0.03
Possible Values:	suggested range 0.01 less than or equal to thresh less than or equal to 0.5

Table A.75: config_eddyMLD_dens_threshold: potential density change relative to surface for mixed layer depth threshold method. This calculation is used for the Redi tapering, GM N2_dependent bolus kappa, and the submesoscale eddy parameterization

A.13.2 config_eddyMLD_reference_depth

Type:	real
Units:	m
Default Value:	10
Possible Values:	any positive real, near 10

Table A.76: config_eddyMLD_reference_depth: reference depth for threshold computation

A.13.3 config_eddyMLD_reference_pressure

Type:	real
Units:	Pa
Default Value:	1.0e5
Possible Values:	positive reals around 1.0e5

Table A.77: config_eddyMLD_reference_pressure: reference pressure for original mixed layer depth calculation

A.13.4 config_eddyMLD_use_old

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.78: config_eddyMLD_use_old: switches from old dThreshMLD calculation to new (fixed one)

A.14 cvmix

A.14.1 config_use_cvmix

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	True or False

Table A.79: config_use_cvmix: If true, use the Community Vertical MIXing routines to compute vertical diffusivity and viscosity

A.14.2 config_cvmix_prandtl_number

Type:	real
Units:	$non - dimensional$
Default Value:	1.0
Possible Values:	Any non-negative real value.

Table A.80: config_cvmix_prandtl_number: Prandtl number to be used within the CVMix parameterization suite

A.14.3 config_cvmix_background_scheme

Type:	character
Units:	–
Default Value:	constant
Possible Values:	'constant', 'BryanLewis', and 'none'

Table A.81: config_cvmix_background_scheme: Scheme for background diffusivity, 'constant' for constant with depth and space, 'BryanLewis' for vertically variable, 'none' for no background diffusivity

A.14.4 config_cvmix_background_diffusion

Type:	real
Units:	$m^2 s^-1$
Default Value:	1.0e-5
Possible Values:	Any positive real value.

Table A.82: config_cvmix_background_diffusion: Background vertical diffusion applied to tracer quantities

A.14.5 config_cvmix_background_viscosity

Type:	real
Units:	$m^2 s^-1$
Default Value:	1.0e-4
Possible Values:	Any positive real value.

Table A.83: config_cvmix_background_viscosity: Background vertical viscosity applied to horizontal velocity

A.14.6 config_cvmix_BryanLewis_bl1

Type:	real
Units:	m^2/s
Default Value:	8.0e-5
Possible Values:	small positive real numbers

Table A.84: config_cvmix_BryanLewis_bl1: near surface diffusivity for the Bryan and Lewis (1979) profile

A.14.7 config_cvmix_BryanLewis_bl2

Type:	real
Units:	m^2/s
Default Value:	1.05E-4
Possible Values:	small positive real numbers

Table A.85: config_cvmix_BryanLewis_bl2: increase in diffusivity at depth for Bryan Lewis (1979) scheme

A.14.8 config_cvmix_BryanLewis_transitionDepth

Type:	real
Units:	m
Default Value:	2500
Possible Values:	positive real numbers

Table A.86: config_cvmix_BryanLewis_transitionDepth: depth at which the diffusivity transitions to the higher value

A.14.9 config_cvmix_BryanLewis_transitionWidth

Type:	real
Units:	m
Default Value:	222.
Possible Values:	positive real numbers

Table A.87: config_cvmix_BryanLewis_transitionWidth: width of transition in Bryan Lewis (1979) scheme

A.14.10 config_use_cvmix_convection

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	True or False

Table A.88: config_use_cvmix_convection: If true, convective diffusivity and viscosity is computed using CVMix

A.14.11 config_cvmix_convective_diffusion

Type:	real
Units:	$m^2 s^-1$
Default Value:	1.0
Possible Values:	Any positive real value.

Table A.89: config_cvmix_convective_diffusion: Convective vertical diffusion applied to tracer quantities

A.14.12 config_cvmix_convective_viscosity

Type:	real
Units:	$m^2 s^-1$
Default Value:	1.0
Possible Values:	Any positive real value.

Table A.90: config_cvmix_convective_viscosity: Convective vertical viscosity applied to horizontal velocity components

A.14.13 config_cvmix_convective_basedOnBVF

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	True or False

Table A.91: config_cvmix_convective_basedOnBVF: If true, convection is triggered based on value of config_cvmix_convective_triggerBVF

A.14.14 config_cvmix_convective_triggerBVF

Type:	real
Units:	s^-2
Default Value:	0.0
Possible Values:	Any real value

Table A.92: config_cvmix_convective_triggerBVF: Value of Brunt Viasala frequency squared below which convective mixing is triggered

A.14.15 config_use_cvmix_shear

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	True or False

Table A.93: config_use_cvmix_shear: If true, shear-based mixing is computed using CVMix

A.14.16 config_cvmix_num_ri_smooth_loops

Type:	integer
Units:	–
Default Value:	2
Possible Values:	any integer

Table A.94: config_cvmix_num_ri_smooth_loops: Number of smoothing passes over RiTopOfCell for LMD94 shear instability mixing

A.14.17 config_cvmix_use_BLD_smoothing

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.95: config_cvmix_use_BLD_smoothing: If true KPP bld is smoothed with a laplacian filter

A.14.18 config_cvmix_shear_mixing_scheme

Type:	character
Units:	–
Default Value:	PP
Possible Values:	PP or KPP

Table A.96: config_cvmix_shear_mixing_scheme: Choose between Pacanowski/Philander or Large et al. shear mixing

A.14.19 config_cvmix_shear_PP_nu_zero

Type:	real
Units:	$m^2 s^-1$
Default Value:	0.005
Possible Values:	Any positive real value

Table A.97: config_cvmix_shear_PP_nu_zero: Numerator of Pacanowski and Philander (1981) Eq (1)

A.14.20 config_cvmix_shear_PP_alpha

Type:	real
Units:	–
Default Value:	5.0
Possible Values:	Any positive real value

Table A.98: config_cvmix_shear_PP_alpha: Alpha values used in Pacanowski and Philander (1981) Eqs (1) and (2)

A.14.21 config_cvmix_shear_PP_exp

Type:	real
Units:	–
Default Value:	2.0
Possible Values:	Any positive real value

Table A.99: config_cvmix_shear_PP_exp: Exponent used in denominator of Pacanowski and Philander (1981) Eqs (1)

A.14.22 config_cvmix_shear_KPP_nu_zero

Type:	real
Units:	$m^2 s^-1$
Default Value:	0.005
Possible Values:	Any positive real value

Table A.100: config_cvmix_shear_KPP_nu_zero: Maximum diffusivity produced by shear-generated mixing

A.14.23 config_cvmix_shear_KPP_Ri_zero

Type:	real
Units:	non − dimensional
Default Value:	0.7
Possible Values:	Any positive real value

Table A.101: config_cvmix_shear_KPP_Ri_zero: Theshold gradient Richardson number to produced enhanced diffusivities, See Large et al. (1994) Eq (28a,b,c)

A.14.24 config_cvmix_shear_KPP_exp

Type:	real
Units:	–
Default Value:	3
Possible Values:	Any positive real value

Table A.102: config_cvmix_shear_KPP_exp: Exponent relating diffusivities to Ri_g. Referred to as p_1 in Large et al. (1994) Eq (28b)

A.14.25 config_use_cvmix_tidal_mixing

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	True or False

Table A.103: config_use_cvmix_tidal_mixing: If true, diffusivity and viscosity is computed using CVMix tidal mixing

A.14.26 config_use_cvmix_double_diffusion

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	True or False

Table A.104: config_use_cvmix_double_diffusion: If true, diffusivity and viscosity is computed using CVMix double diffusion

A.14.27 config_use_cvmix_kpp

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	True or False

Table A.105: config_use_cvmix_kpp: If true, diffusivity and viscosity is computed using CVMix KPP

A.14.28 config_use_cvmix_fixed_boundary_layer

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	True or False

Table A.106: config_use_cvmix_fixed_boundary_layer: If true, boundary layer depth is specified as config_cvmix_kpp_boundary_layer_depth

A.14.29 config_cvmix_kpp_boundary_layer_depth

Type:	real
Units:	m
Default Value:	30.0
Possible Values:	Any positive real value.

Table A.107: config_cvmix_kpp_boundary_layer_depth: If config_use_cvmix_fixed_boundary_layer, then KPP OBL calculation is overwritten with this value

A.14.30 config_cvmix_kpp_criticalBulkRichardsonNumber

Type:	real
Units:	non – dimensional
Default Value:	0.25
Possible Values:	Any positive real value.

Table A.108: config_cvmix_kpp_criticalBulkRichardsonNumber: Critical bulk Richardson number used to determine bottom of ocean mixed layer

A.14.31 config_cvmix_kpp_matching

Type:	character
Units:	–
Default Value:	SimpleShapes
Possible Values:	MatchBoth, MatchGradient, SimpleShapes

Table A.109: config_cvmix_kpp_matching: Determines how the KPP diffusivities are matched to values at base of boundary layer

A.14.32 config_cvmix_kpp_EkmanOBL

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	True or False

Table A.110: config_cvmix_kpp_EkmanOBL: If true, boundary layer depth is limited by Ekman layer depth

A.14.33 config_cvmix_kpp_MonObOBL

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	True or False

Table A.111: config_cvmix_kpp_MonObOBL: If true, boundary layer depth is limited by Monin-Obukhov layer depth

A.14.34 config_cvmix_kpp_interpolationOMLType

Type:	character
Units:	–
Default Value:	quadratic
Possible Values:	linear, quadratic, cubic

Table A.112: config_cvmix_kpp_interpolationOMLType: Determine bottom of ocean mixed layer using linear, quadratic or cubic interpolation

A.14.35 config_cvmix_kpp_surface_layer_extent

Type:	real
Units:	non − dimensional
Default Value:	0.1
Possible Values:	Any value between 0 and 1

Table A.113: config_cvmix_kpp_surface_layer_extent: The non-dimensional extent of the surface layer, measured as fraction of boundary layer depth

A.14.36 config_cvmix_kpp_surface_layer_averaging

Type:	real
Units:	m
Default Value:	5.0
Possible Values:	Any positive real value, but typically should be between 1 and 20 meters

Table A.114: config_cvmix_kpp_surface_layer_averaging: The thickness over which to average when computing surface-averaged velocity and buoyancy

A.14.37 configure_cvmix_kpp_minimum_OBL_under_sea_ice

Type:	real
Units:	m
Default Value:	10.0
Possible Values:	Any positive real value, but typically should be between 1 and 20 meters

Table A.115: configure_cvmix_kpp_minimum_OBL_under_sea_ice: The minimum allowable boundary layer depth with sea-ice is present

A.14.38 config_cvmix_kpp_stop_OBL_search

Type:	real
Units:	non − dimensional
Default Value:	100.0
Possible Values:	Any positive value

Table A.116: config_cvmix_kpp_stop_OBL_search: The search for boundary layer depth is terminated when bulk Richardson number is greater than config_cvmix_kpp_stop_OBL_search*config_cvmix_kpp_criticalBulkRichardsonNumber

A.14.39 config_cvmix_kpp_use_enhanced_diff

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.117: config_cvmix_kpp_use_enhanced_diff: Flag for use of enhanced diffusion at boundary layer base as in Large et al (1994)

A.14.40 config_cvmix_kpp_nonlocal_with_implicit_mix

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.118: config_cvmix_kpp_nonlocal_with_implicit_mix: flag that moves the non-local computation and application of tendency to after main timestep loop

A.14.41 config_cvmix_kpp_use_theory_wave

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.119: config_cvmix_kpp_use_theory_wave: Flag for use of theory-wave in Li et al. (2017) to approximate the Langmuir number and enhancement factor

A.14.42 config_cvmix_kpp_langmuir_mixing_opt

Type:	character
Units:	–
Default Value:	NONE
Possible Values:	NONE, LWF16, RWHGK16

Table A.120: config_cvmix_kpp_langmuir_mixing_opt: Option of Langmuir enhanced mixing parameterization

A.14.43 config_cvmix_kpp_langmuir_entrainment_opt

Type:	character
Units:	–
Default Value:	NONE
Possible Values:	NONE, LWF16, LF17, RWHGK16

Table A.121: config_cvmix_kpp_langmuir_entrainment_opt: Option of Langmuir enhanced entrainment parameterization

A.14.44 config_cvmix_kpp_use_active_wave

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.122: config_cvmix_kpp_use_active_wave: Flag for Langmuir enchancement factor using prognostic waves. Requires config_use_active_wave = .true.

A.15 wave_coupling

A.15.1 config_use_active_wave

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.123: config_use_active_wave: Flag for using prognostic waves. Controls the allocation of wave arrays and computation of Stokes drift profiles.

A.15.2 config_n_stokes_drift_wavenumber_partitions

Type:	integer
Units:	–
Default Value:	6
Possible Values:	3,4,6

Table A.124: config_n_stokes_drift_wavenumber_partitions: Number of wavenumber partitions to be used in reconstructing wave-induced Stokes drift profile

A.16 gotm

A.16.1 config_use_gotm

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	True or False

Table A.125: config_use_gotm: If true, use the General Ocean Turbulence Model routines to compute vertical diffusivity and viscosity

A.16.2 config_gotm_namelist_file

Type:	character
Units:	–
Default Value:	gotmturb.nml
Possible Values:	gotmturb.nml

Table A.126: config_gotm_namelist_file: File name of GOTM turbulence namelist

A.16.3 config_gotm_constant_surface_roughness_length

Type:	real
Units:	m
Default Value:	0.02
Possible Values:	Any positive real number.

Table A.127: config_gotm_constant_surface_roughness_length: The constant surface roughness length scale.

A.16.4 config_gotm_constant_bottom_roughness_length

Type:	real
Units:	m
Default Value:	0.0015
Possible Values:	Any positive real number.

Table A.128: config_gotm_constant_bottom_roughness_length: The constant bottom roughness length scale.

A.16.5 config_gotm_constant_bottom_drag_coeff

Type:	real
Units:	–
Default Value:	1.e-3
Possible Values:	Any positive real number.

Table A.129: config_gotm_constant_bottom_drag_coeff: The constant bottom drag coefficient.

A.17 forcing

A.17.1 config_use_variable_drag

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.130: config_use_variable_drag: Controls if variable drag is enabled.

A.17.2 config_use_bulk_wind_stress

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.131: config_use_bulk_wind_stress: Controls if zonal and meridional components of wind-stress are used to build surface wind stress.

A.17.3 config_use_bulk_thickness_flux

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.132: config_use_bulk_thickness_flux: Controls if a bulk thickness flux will be computed for surface forcing.

A.17.4 config_flux_attenuation_coefficient

Type:	real
Units:	m
Default Value:	0.001
Possible Values:	Any positive real number.

Table A.133: config_flux_attenuation_coefficient: The length scale of exponential decay of surface fluxes. Fluxes are multiplied by $e^{z/\gamma}$, where this coefficient is γ.

A.17.5 config_flux_attenuation_coefficient_runoff

Type:	real
Units:	m
Default Value:	0.001
Possible Values:	Any positive real number.

Table A.134: config_flux_attenuation_coefficient_runoff: The length scale of exponential decay of river runoff. Fluxes are multiplied by $e^{z/\gamma}$, where this coefficient is γ.

A.18 time_varying_forcing

A.18.1 config_use_time_varying_atmospheric_forcing

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.135: config_use_time_varying_atmospheric_forcing: If true calculate input forcing fields.

A.18.2 config_time_varying_atmospheric_forcing_type

Type:	character
Units:	–
Default Value:	WINDPRES
Possible Values:	'WINDPRES'

Table A.136: config_time_varying_atmospheric_forcing_type: Atmospheric forcing type.

A.18.3 config_time_varying_atmospheric_forcing_start_time

Type:	character
Units:	–
Default Value:	0001-01-01_00:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS

Table A.137: config_time_varying_atmospheric_forcing_start_time: Forcing time to use at the simulation start time

A.18.4 config_time_varying_atmospheric_forcing_reference_time

Type:	character
Units:	–
Default Value:	0001-01-01_00:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS

Table A.138: config_time_varying_atmospheric_forcing_reference_time: Reference time for the forcing

A.18.5 config_time_varying_atmospheric_forcing_cycle_start

Type:	character
Units:	–
Default Value:	0001-01-01_00:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS

Table A.139: config_time_varying_atmospheric_forcing_cycle_start: Start time for the forcing cycle.

A.18.6 config_time_varying_atmospheric_forcing_cycle_duration

Type:	character
Units:	–
Default Value:	2-00-00_00:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS

Table A.140: config_time_varying_atmospheric_forcing_cycle_duration: Duration of the forcing cycle.

A.18.7 config_time_varying_atmospheric_forcing_interval

Type:	character
Units:	–
Default Value:	01:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS

Table A.141: config_time_varying_atmospheric_forcing_interval: Time between forcing inputs

A.18.8 config_time_varying_atmospheric_forcing_ramp

Type:	real
Units:	days
Default Value:	10.0
Possible Values:	Any positive real number

Table A.142: config_time_varying_atmospheric_forcing_ramp: Number of days to ramp up time varying forcing

A.18.9 config_time_varying_atmospheric_forcing_ramp_delay

Type:	real
Units:	days
Default Value:	0.0
Possible Values:	Any positive real number

Table A.143: config_time_varying_atmospheric_forcing_ramp_delay: Number of days to delay ramp time varying forcing

A.18.10 config_use_time_varying_land_ice_forcing

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.144: config_use_time_varying_land_ice_forcing: If true calculate input forcing fields.

A.18.11 config_time_varying_land_ice_forcing_start_time

Type:	character
Units:	–
Default Value:	0001-01-01_00:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS

Table A.145: config_time_varying_land_ice_forcing_start_time: Forcing time to use at the simulation start time

A.18.12 config_time_varying_land_ice_forcing_reference_time

Type:	character
Units:	–
Default Value:	0001-01-01_00:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS

Table A.146: config_time_varying_land_ice_forcing_reference_time: Reference time for the forcing

A.18.13 config_time_varying_land_ice_forcing_cycle_start

Type:	character
Units:	–
Default Value:	0001-01-01_00:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS

Table A.147: config_time_varying_land_ice_forcing_cycle_start: Start time for the forcing cycle.

A.18.14 config_time_varying_land_ice_forcing_cycle_duration

Type:	character
Units:	–
Default Value:	2-00-00_00:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS

Table A.148: config_time_varying_land_ice_forcing_cycle_duration: Duration of the forcing cycle.

A.18.15 config_time_varying_land_ice_forcing_interval

Type:	character
Units:	–
Default Value:	01:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS

Table A.149: config_time_varying_land_ice_forcing_interval: Time between forcing inputs

A.19 coupling

A.19.1 config_ssh_grad_relax_timescale

Type:	real
Units:	seconds
Default Value:	0.0
Possible Values:	Any positive real number.

Table A.150: config_ssh_grad_relax_timescale: Timescale for relaxation of the ssh gradient for coupling. A value of 0.0 (default) removes any relaxation and gives instantaneous response.

A.19.2 config_remove_AIS_coupler_runoff

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.151: config_remove_AIS_coupler_runoff: If true, solid and liquid runoff from the Antarctic Ice Sheet (below 60S latitude) coming from the coupled is zeroed in the coupler import routines. To be used with data iceberg fluxes coming from the sea ice model.

A.20 shortwaveRadiation

A.20.1 config_sw_absorption_type

Type:	character
Units:	–
Default Value:	none
Possible Values:	'jerlov' or 'ohlmann00' or 'none'

Table A.152: config_sw_absorption_type: Name of shortwave absorption type used in simulation.

A.20.2 config_jerlov_water_type

Type:	integer
Units:	–
Default Value:	3
Possible Values:	Integer values between 1 and 5

Table A.153: config_jerlov_water_type: Integer value defining the water type used in Jerlov short wave absorption.

A.20.3 config_surface_buoyancy_depth

Type:	real
Units:	m
Default Value:	1
Possible Values:	Real Values greater than zero less than bottomDepth

Table A.154: config_surface_buoyancy_depth: Depth over which to apply penetrating SW to sfcBuoyancyFlux

A.20.4 config_enable_shortwave_energy_fixer

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.155: config_enable_shortwave_energy_fixer: Flag to enable the shortwave energy fixer for shallow ocean cells

A.21 tidal_forcing

A.21.1 config_use_tidal_forcing

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.156: config_use_tidal_forcing: Controls if tidal forcing is used.

A.21.2 config_use_tidal_forcing_tau

Type:	real
Units:	s
Default Value:	10000
Possible Values:	Real non-zero value.

Table A.157: config_use_tidal_forcing_tau: Controls time scale for relaxation of tidal forcing.

A.21.3 config_tidal_forcing_type

Type:	character
Units:	–
Default Value:	off
Possible Values:	'thickness_source','direct'

Table A.158: config_tidal_forcing_type: Selects the way tidal forcing is applied.

A.21.4 config_tidal_forcing_model

Type:	character
Units:	–
Default Value:	off
Possible Values:	'off','monochromatic'

Table A.159: config_tidal_forcing_model: Selects the mode in which tidal forcing is computed.

A.21.5 config_tidal_forcing_monochromatic_amp

Type:	real
Units:	m
Default Value:	2.0
Possible Values:	Any positive real number.

Table A.160: config_tidal_forcing_monochromatic_amp: Value of amplitude of monochromatic tide.

A.21.6 config_tidal_forcing_monochromatic_period

Type:	real
Units:	days
Default Value:	0.5
Possible Values:	Any positive real number.

Table A.161: config_tidal_forcing_monochromatic_period: Value of period of monochromatic tide.

A.21.7 config_tidal_forcing_monochromatic_phaseLag

Type:	real
Units:	–
Default Value:	0.0
Possible Values:	Any real number between.

Table A.162: config_tidal_forcing_monochromatic_phaseLag: Value of phase of monochromatic tide.

A.21.8 config_tidal_forcing_monochromatic_baseline

Type:	real
Units:	days
Default Value:	0.0
Possible Values:	Any positive real number.

Table A.163: config_tidal_forcing_monochromatic_baseline: Value of baseline monochromatic tide, e.g., sea level rise.

A.22 self_attraction_loading

A.22.1 config_use_self_attraction_loading

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.164: config_use_self_attraction_loading: Controls if self-attraction and loading is applied to ssh

A.22.2 config_self_attraction_loading_smoothing_width

Type:	real
Units:	km
Default Value:	1.0
Possible Values:	Any positive real number.

Table A.165: config_self_attraction_loading_smoothing_width: Defines region over which ssh is smoothed to zero at coasts for SAL calculation.

A.22.3 config_mpas_to_grid_weights_file

Type:	character
Units:	–
Default Value:	mpas_to_grid.nc
Possible Values:	Any file name string

Table A.166: config_mpas_to_grid_weights_file: Location of the file containing the interpolation weights for transformation from the MPAS mesh to a Gaussian Grid.

A.22.4 config_grid_to_mpas_weights_file

Type:	character
Units:	–
Default Value:	grid_to_mpas.nc
Possible Values:	Any file name string

Table A.167: config_grid_to_mpas_weights_file: Location of the file containing the interpolation weights for transformation from a Gaussian Grid to the MPAS mesh.

A.22.5 config_self_attraction_loading_compute_interval

Type:	character
Units:	–
Default Value:	0000-00-00_00:30:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS'

Table A.168: config_self_attraction_loading_compute_interval: Interval for computing full SAL.

A.22.6 config_nLatitude

Type:	integer
Units:	–
Default Value:	128
Possible Values:	Any positive integer value.

Table A.169: config_nLatitude: Numer of latitude points in the Gaussian Grid.

A.22.7 config_nLongitude

Type:	integer
Units:	–
Default Value:	256
Possible Values:	Any positive integer value.

Table A.170: config_nLongitude: Numer of longitude points in the Gaussian Grid.

A.22.8 config_use_parallel_self_attraction_loading

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.171: config_use_parallel_self_attraction_loading: Controls if self-attraction and loading is computed with parallel or serial algorithm

A.22.9 config_parallel_self_attraction_loading_order

Type:	integer
Units:	–
Default Value:	10
Possible Values:	Any positive integer value.

Table A.172: config_parallel_self_attraction_loading_order: Controls the order of the sperical harmonic expansion used in the parallel self attraction and loading algorithm

A.22.10 config_parallel_self_attraction_loading_n_cells_per_block

Type:	integer
Units:	–
Default Value:	600
Possible Values:	Any positive integer value.

Table A.173: config_parallel_self_attraction_loading_n_cells_per_block: Controls the number of blocks used for spherical harmonics calculation

A.22.11 config_parallel_self_attraction_loading_bfb

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.174: config_parallel_self_attraction_loading_bfb: Controls whether a reproducible sum is used for the parallel spherical harmonics calculations

A.23 tidal_potential_forcing

A.23.1 config_use_tidal_potential_forcing

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.175: config_use_tidal_potential_forcing: Controls if tidal potential forcing is used.

A.23.2 config_tidal_potential_reference_time

Type:	character
Units:	–
Default Value:	0001-01-01_00:00:00
Possible Values:	'YYYY-MM-DD_HH:MM:SS'

Table A.176: config_tidal_potential_reference_time: Timestamp describing the time used to initialize nodal factors.

A.23.3 config_use_tidal_potential_forcing_M2

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.177: config_use_tidal_potential_forcing_M2: Controls if tidal potential forcing for the M2 constituent is used.

A.23.4 config_use_tidal_potential_forcing_S2

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.178: config_use_tidal_potential_forcing_S2: Controls if tidal potential forcing for the S2 constituent is used.

A.23.5 config_use_tidal_potential_forcing_N2

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.179: config_use_tidal_potential_forcing_N2: Controls if tidal potential forcing for the N2 constituent is used.

A.23.6 config_use_tidal_potential_forcing_K2

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.180: config_use_tidal_potential_forcing_K2: Controls if tidal potential forcing for the K2 constituent is used.

A.23.7 config_use_tidal_potential_forcing_K1

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.181: config_use_tidal_potential_forcing_K1: Controls if tidal potential forcing for the K1 constituent is used.

A.23.8 config_use_tidal_potential_forcing_O1

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.182: config_use_tidal_potential_forcing_O1: Controls if tidal potential forcing for the O1 constituent is used.

A.23.9 config_use_tidal_potential_forcing_Q1

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.183: config_use_tidal_potential_forcing_Q1: Controls if tidal potential forcing for the Q1 constituent is used.

A.23.10 config_use_tidal_potential_forcing_P1

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.184: config_use_tidal_potential_forcing_P1: Controls if tidal potential forcing for the P1 constituent is used.

A.23.11 config_tidal_potential_ramp

Type:	real
Units:	days
Default Value:	10.0
Possible Values:	Any positive real number

Table A.185: config_tidal_potential_ramp: Number of days over which the tidal potential forcing is ramped

A.23.12 config_self_attraction_and_loading_beta

Type:	real
Units:	–
Default Value:	0.09
Possible Values:	0.0 to turn off, 0.09 is typical value to use for scalar approximation

Table A.186: config_self_attraction_and_loading_beta: Coefficient for SAL scalar approximation

A.24 frazil_ice

A.24.1 config_use_frazil_ice_formation

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.187: config_use_frazil_ice_formation: Controls if fluxes related to frazil ice process are computed.

A.24.2 config_frazil_in_open_ocean

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.188: config_frazil_in_open_ocean: If frazil formation is used, controls if frazil fluxes are computed in the open ocean (as opposed to under land ice).

A.24.3 config_frazil_under_land_ice

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.189: config_frazil_under_land_ice: If frazil formation is used, controls if frazil fluxes are computed under land ice.

A.24.4 config_frazil_heat_of_fusion

Type:	real
Units:	$\mathrm{J\,kg^{-}1}$
Default Value:	3.34e5
Possible Values:	Any positive real number.

Table A.190: config_frazil_heat_of_fusion: Energy per kilogram released when sea water freezes. NOTE: test and make consistent with E3SM.

A.24.5 config_frazil_ice_density

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Default Value:	1000.0
Possible Values:	Any positive real number.

Table A.191: config_frazil_ice_density: Assumed density of frazil. NOTE: test and make consistent with E3SM.

A.24.6 config_frazil_fractional_thickness_limit

Type:	real
Units:	$\mathrm{non-dimensional}$
Default Value:	0.1
Possible Values:	Any positive real number between 0 and 1.

Table A.192: config_frazil_fractional_thickness_limit: maximum fraction of layer thickness than can be used or created at an instant by frazil.

A.24.7 config_specific_heat_sea_water

Type:	real
Units:	$\mathrm{J\,kg^{-}1\,C^{-}1}$
Default Value:	3985.0
Possible Values:	Any positive real number.

Table A.193: config_specific_heat_sea_water: Energy per kilogram per C needed to raise ocean temperature 1 C. NOTE: test and make consistent with E3SM.

A.24.8 config_frazil_maximum_depth

Type:	real
Units:	m
Default Value:	100.0
Possible Values:	Any positive real number.

Table A.194: config_frazil_maximum_depth: maximum depth for the formation of frazil

A.24.9 config_frazil_sea_ice_reference_salinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Default Value:	4.0
Possible Values:	Any positive real number.

Table A.195: config_frazil_sea_ice_reference_salinity: assumed salinity of frazil ice in the open ocean.

A.24.10 config_frazil_land_ice_reference_salinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Default Value:	0.0
Possible Values:	Any non-negative real number.

Table A.196: config_frazil_land_ice_reference_salinity: assumed salinity of frazil ice under land ice.

A.24.11 config_frazil_maximum_freezing_temperature

Type:	real
Units:	C
Default Value:	0.0
Possible Values:	Any real number.

Table A.197: config_frazil_maximum_freezing_temperature: Maximum freezing temperature for the creation of frazil

A.24.12 config_frazil_use_surface_pressure

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.198: config_frazil_use_surface_pressure: Flag that controls if frazil formation will exert a surface pressure as it is formed.

A.25 land_ice_fluxes

A.25.1 config_land_ice_flux_mode

Type:	character
Units:	–
Default Value:	off
Possible Values:	'off','pressure_only', 'data', 'standalone','coupled'

Table A.199: config_land_ice_flux_mode: Selects the mode in which land-ice fluxes are computed.

A.25.2 config_land_ice_flux_formulation

Type:	character
Units:	–
Default Value:	Jenkins
Possible Values:	'ISOMIP', 'Jenkins', 'HollandJenkins'

Table A.200: config_land_ice_flux_formulation: Name of land-ice flux formulation.

A.25.3 config_land_ice_flux_useHollandJenkinsAdvDiff

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. and .false.

Table A.201: config_land_ice_flux_useHollandJenkinsAdvDiff: If .true. then uses the advection/diffusion scheme of Holland and Jenkins (1999) for ice-shelf heat fluxes

A.25.4 config_land_ice_flux_attenuation_coefficient

Type:	real
Units:	m
Default Value:	10.0
Possible Values:	Any positive real number.

Table A.202: config_land_ice_flux_attenuation_coefficient: The vertical length scale of exponential decay for surface fluxes under land ice.

A.25.5 config_land_ice_flux_boundaryLayerThickness

Type:	real
Units:	m
Default Value:	10.0
Possible Values:	Any non-negative real number. A value of 0 means that T and S are taken top level.

Table A.203: config_land_ice_flux_boundaryLayerThickness: The thickness of the sub-ice-shelf boundary layer, over which T and S will be averaged.

A.25.6 config_land_ice_flux_boundaryLayerNeighborWeight

Type:	real
Units:	–
Default Value:	0.0
Possible Values:	Most likely a value between 0 (no smoothing) and 1 (neighbors get same weight as this cell).

Table A.204: config_land_ice_flux_boundaryLayerNeighborWeight: The for horizontal neighbors used to horizontally smooth boundary layer T and S.

A.25.7 config_land_ice_flux_cp_ice

Type:	real
Units:	$\mathrm{J\,C^{-}1\,kg^{-}1}$
Default Value:	2.009e3
Possible Values:	Any positive real number

Table A.205: config_land_ice_flux_cp_ice: The specific heat capacity for ice.

A.25.8 config_land_ice_flux_rho_ice

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Default Value:	918
Possible Values:	Any positive real number

Table A.206: config_land_ice_flux_rho_ice: The density of land ice.

A.25.9 config_land_ice_flux_explicit_topDragCoeff

Type:	real
Units:	–
Default Value:	2.5e-3
Possible Values:	Any positive real number

Table A.207: config_land_ice_flux_explicit_topDragCoeff: The top drag coefficient if config_use_implicit_top_drag_coeff is false.

A.25.10 config_land_ice_flux_ISOMIP_gammaT

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Default Value:	1e-4
Possible Values:	Any positive real number

Table A.208: config_land_ice_flux_ISOMIP_gammaT: The constant heat transport velocity through the boundary layer under land ice used in the ISOMIP test cases.

A.25.11 config_land_ice_flux_rms_tidal_velocity

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Default Value:	5e-2
Possible Values:	Any non-negative real number

Table A.209: config_land_ice_flux_rms_tidal_velocity: Parameterization of tidal velocity used in computing the sub-ice-shelf friction velocity

A.25.12 config_land_ice_flux_jenkins_heat_transfer_coefficient

Type:	real
Units:	–
Default Value:	0.011
Possible Values:	Any positive real number

Table A.210: config_land_ice_flux_jenkins_heat_transfer_coefficient: constant nondimensional heat transfer coefficient across the ice-ocean boundary layer

A.25.13 config_land_ice_flux_jenkins_salt_transfer_coefficient

Type:	real
Units:	–
Default Value:	3.1e-4
Possible Values:	Any positive real number

Table A.211: config_land_ice_flux_jenkins_salt_transfer_coefficient: constant nondimensional salt transfer coefficient across the ice-ocean boundary layer

A.26 advection

A.26.1 config_vert_advection_method

Type:	character
Units:	–
Default Value:	flux-form
Possible Values:	'flux-form' and 'remap'

Table A.212: config_vert_advection_method: Method for advecting tracers, momentum, and thickness vertically.

A.26.2 config_vert_remap_order

Type:	integer
Units:	–
Default Value:	3
Possible Values:	1, 2, 3 and 5

Table A.213: config_vert_remap_order: Order of remapping method used for momentum and tracer advection

A.26.3 config_vert_remap_interval

Type:	integer
Units:	–
Default Value:	0
Possible Values:	Any integer greater than or equal to 0

Table A.214: config_vert_remap_interval: Number of timesteps between each remapping. If 0, remapping occurs every timestep

A.26.4 config_vert_tracer_adv_flux_order

Type:	integer
Units:	–
Default Value:	3
Possible Values:	2, 3 and 4

Table A.215: config_vert_tracer_adv_flux_order: Order of polynomial used for tracer reconstruction at layer edges for flux-form method

A.26.5 config_horiz_tracer_adv_order

Type:	integer
Units:	–
Default Value:	3
Possible Values:	2, 3 and 4

Table A.216: config_horiz_tracer_adv_order: Order of polynomial used for tracer reconstruction at cell edges

A.26.6 config_coef_3rd_order

Type:	real
Units:	–
Default Value:	0.25
Possible Values:	any real between 0 and 1

Table A.217: config_coef_3rd_order: Reconstruction of 3rd-order reconstruction to blend with 4th-order reconstuction

A.26.7 config_flux_limiter

Type:	character

Units:	–
Default Value:	monotonic
Possible Values:	'none','monotonic'

Table A.218: config_flux_limiter: Slope limiter for the flux-form advection scheme.

A.26.8 config_remap_limiter

Type:	character
Units:	–
Default Value:	monotonic
Possible Values:	'none','monotonic','weno'

Table A.219: config_remap_limiter: Slope limiter for the vertical remap advection scheme.

A.26.9 config_thickness_flux_type

Type:	character
Units:	–
Default Value:	centered
Possible Values:	'upwind', 'centered', 'constant'

Table A.220: config_thickness_flux_type: If 'upwind', use upwind to evaluate the edge-value for layerThickness, i.e., layerThickEdgeFlux. The standard MPAS-O approach is 'centered'. For 'constant', uses constant thickness in time from restingThickness, for linear test problems. Note that these two flags are set together for linearized test cases: config_thickness_flux_type = 'constant' linearizes the thickness equation, and config_disable_vel_hadv = .true. linearizes the momentum equation if there is no assumed mean background velocity.

A.27 bottom_drag

A.27.1 config_bottom_drag_mode

Type:	character
Units:	–
Default Value:	implicit
Possible Values:	'implicit','explicit'

Table A.221: config_bottom_drag_mode: Formulation of the bottom drag.

A.27.2 config_implicit_bottom_drag_type

Type:	character
Units:	–
Default Value:	constant
Possible Values:	'constant','constant_and_rayleigh','loglaw','spatially-variable','mannings'

Table A.222: config_implicit_bottom_drag_type: Type of implicit bottom drag used.

A.27.3 config_implicit_constant_bottom_drag_coeff

Type:	real
Units:	–
Default Value:	1.0e-3
Possible Values:	any positive real, typically 1.0e-3

Table A.223: config_implicit_constant_bottom_drag_coeff: Dimensionless bottom drag coefficient, c_{drag}.

A.27.4 config_use_implicit_top_drag

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.224: config_use_implicit_top_drag: If true, implicit top drag is used on the momentum equation.

A.27.5 config_implicit_top_drag_coeff

Type:	real
Units:	–
Default Value:	1.0e-3
Possible Values:	any positive real, typically 1.0e-3

Table A.225: config_implicit_top_drag_coeff: Dimensionless top drag coefficient, c_{drag}.

A.27.6 config_loglaw_bottom_roughness

Type:	real
Units:	m
Default Value:	1.0e-3
Possible Values:	any positive real, typically 1.0e-3

Table A.226: config_loglaw_bottom_roughness: Bottom roughness, z_0, in meters.

A.27.7 config_loglaw_layer_depth_max

Type:	real
Units:	m
Default Value:	10.0
Possible Values:	any positive real, typically 10m

Table A.227: config_loglaw_layer_depth_max: Maximum distance above the seafloor at which log-law drag is applied.

A.27.8 config_loglaw_bottom_drag_min

Type:	real
Units:	–
Default Value:	2.5e-3
Possible Values:	any positive real, typically 2.5e-3

Table A.228: config_loglaw_bottom_drag_min: Dimensionless bottom drag minimum used in log-law parameterization.

A.27.9 config_loglaw_bottom_drag_max

Type:	real
Units:	–
Default Value:	1.0e-1
Possible Values:	any positive real, typically 1.0e-1

Table A.229: config_loglaw_bottom_drag_max: Dimensionless bottom drag maximum used in log-law parameterization.

A.27.10 config_explicit_bottom_drag_coeff

Type:	real
Units:	–
Default Value:	1.0e-3
Possible Values:	any positive real, typically 1.0e-3

Table A.230: config_explicit_bottom_drag_coeff: Dimensionless explicit bottom drag coefficient, c_{drag}.

A.27.11 config_use_topographic_wave_drag

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.231: config_use_topographic_wave_drag: If true, topographic wave drag is used on the momentum equation.

A.27.12 config_topographic_wave_drag_coeff

Type:	real
Units:	–
Default Value:	5.0e-4
Possible Values:	any positive real, typically 5.0e-4

Table A.232: config_topographic_wave_drag_coeff: Dimensionless topographic wave drag coefficient, c_{topo}.

A.27.13 config_thickness_drag_type

Type:	character
Units:	–
Default Value:	centered
Possible Values:	'harmonic-mean', 'centered'

Table A.233: config_thickness_drag_type: The type of layerThickness averaging to use on the drag term. The standard MPAS-O approach is 'centered'.

A.28 Rayleigh_damping

A.28.1 config_Rayleigh_damping_coeff

Type:	real
Units:	s^-1
Default Value:	1.0e-4
Possible Values:	Any positive real value.

Table A.234: config_Rayleigh_damping_coeff: Inverse-time coefficient for the Rayleigh damping term, c_R, applied at every depth level.

A.28.2 config_Rayleigh_damping_depth_variable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.235: config_Rayleigh_damping_depth_variable: If true applies r h^-1 instead of just r.

A.28.3 config_Rayleigh_bottom_friction

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.236: config_Rayleigh_bottom_friction: If true, Rayleigh friction is only applied to the bottom

A.28.4 config_Rayleigh_bottom_damping_coeff

Type:	real
Units:	s^-1
Default Value:	1.0e-4
Possible Values:	Any positive real value.

Table A.237: config_Rayleigh_bottom_damping_coeff: Inverse-time coefficient for the Rayleigh damping term, c_R, only applied at the bottom.

A.29 vegetation_drag

A.29.1 config_use_vegetation_drag

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.238: config_use_vegetation_drag: Controls if vegetation_drag is used to compute Manning's roughness coefficient.

A.29.2 config_vegetation_drag_coefficient

Type:	real
Units:	–
Default Value:	1.09
Possible Values:	O(1)

Table A.239: config_vegetation_drag_coefficient: Vegetation drag coefficient

A.30 wetting_drying

A.30.1 config_use_wetting_drying

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.240: config_use_wetting_drying: If true, use wetting and drying algorithm to allow for dry cells to config_min_cell_height.

A.30.2 config_prevent_drying

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.241: config_prevent_drying: If true, prevent cells from drying past config_min_cell_height.

A.30.3 config_drying_min_cell_height

Type:	real
Units:	m
Default Value:	1.0e-3
Possible Values:	any positive real, typically 1.0e-3

Table A.242: config_drying_min_cell_height: Minimum allowable cell height under drying. Cell to be kept wet to at least this thickness. When ramp is applied this is the min edge height

A.30.4 config_zero_drying_velocity

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.243: config_zero_drying_velocity: If true, just zero out velocity that is contributing to drying for cell that is drying. This option can be used to estimate acceptable minimum thicknesses for a run.

A.30.5 config_zero_drying_velocity_ramp

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.244: config_zero_drying_velocity_ramp: If true, ramp velocities and tendencies to zero rather than applying a simple on/off switch.

A.30.6 config_zero_drying_velocity_ramp_hmin

Type:	real
Units:	–
Default Value:	1e-3
Possible Values:	Any positive real

Table A.245: config_zero_drying_velocity_ramp_hmin: Minimum layer thickness at which velocities and tendencies are ramped toward zero. Recommended value equal to config_drying_min_cell_height.

A.30.7 config_zero_drying_velocity_ramp_hmax

Type:	real
Units:	–
Default Value:	2e-3
Possible Values:	Any positive real

Table A.246: config_zero_drying_velocity_ramp_hmax: Maximum layer thickness at which velocities and tendencies are ramped toward zero. Recommended values between 2x and 10x config_drying_min_cell_height.

A.30.8 config_verify_not_dry

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.247: config_verify_not_dry: If true, verify that cells are at least config_min_cell_height thick.

A.30.9 config_drying_safety_height

Type:	real
Units:	m
Default Value:	1.0e-10
Possible Values:	Real value greater or equal to 0.

Table A.248: config_drying_safety_height: Safety factor on minimum cell height to ensure the minimum height is not violated due to round-off.

A.31 ocean_constants

A.31.1 config_density0

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Default Value:	1026.0
Possible Values:	any positive real, but typically 1000-1035

Table A.249: config_density0: Density used as a coefficient of the pressure gradient terms, ρ_0. This is a constant due to the Boussinesq approximation.

A.32 lts

A.32.1 config_dt_scaling_LTS

Type:	integer
Units:	–
Default Value:	1
Possible Values:	Any positive integer greater than or equal to one. A value of one employs the same dt in all regions.

Table A.250: config_dt_scaling_LTS: The ratio between the dt on the coarse region and the dt on the fine region. Specifically, it is the positive integer M that defines dtFine for LTS, dtFine = dt / M.

A.33 pressure_gradient

A.33.1 config_pressure_gradient_type

Type:	character
Units:	–
Default Value:	pressure_and_zmid
Possible Values:	'ssh_gradient', 'pressure_and_zmid' or 'Jacobian_from_density' or 'Jacobian_from_TS' or 'Montgomery-Potential' or 'constant_forced'

Table A.251: config_pressure_gradient_type: Form of pressure gradient terms in momentum equation. For most applications, the gradient of pressure and layer mid-depth are appropriate. For isopycnal coordinates, one may use the gradient of the Montgomery potential. The sea surface height gradient (ssh_gradient) option is for barotropic, depth-averaged pressure.

A.33.2 config_common_level_weight

Type:	real
Units:	–
Default Value:	0.5
Possible Values:	any real between 0 and 1

Table A.252: config_common_level_weight: The weight between standard Jacobian and weighted Jacobian, γ.

A.33.3 config_zonal_ssh_grad

Type:	real
Units:	–
Default Value:	0.0
Possible Values:	any real

Table A.253: config_zonal_ssh_grad: The zonal (x) ssh gradient to be applied.

A.33.4 config_meridional_ssh_grad

Type:	real
Units:	–
Default Value:	0.0
Possible Values:	any real

Table A.254: config_meridional_ssh_grad: The meridional (y) ssh gradient to be applied.

A.34 eos

A.34.1 config_eos_type

Type:	character
Units:	–
Default Value:	linear
Possible Values:	Jackett McDougall EOS = 'jm', Wright = 'wright', and Linear EOS = 'linear'

Table A.255: config_eos_type: Character string to choose EOS formulation

A.34.2 config_open_ocean_freezing_temperature_coeff_0

Type:	real
Units:	C
Default Value:	0.0
Possible Values:	Any real number

Table A.256: config_open_ocean_freezing_temperature_coeff_0: The freezing temperature at zero pressure and salinity in open ocean.

A.34.3 config_open_ocean_freezing_temperature_coeff_S

Type:	real
Units:	1 e3 C
Default Value:	0.0
Possible Values:	Any real number

Table A.257: config_open_ocean_freezing_temperature_coeff_S: The coefficient for the term proportional to salinity in the freezing temperature in the open ocean.

A.34.4 config_open_ocean_freezing_temperature_coeff_p

Type:	real
Units:	C Pa^-1
Default Value:	0.0
Possible Values:	Any real number

Table A.258: config_open_ocean_freezing_temperature_coeff_p: The coefficient for the term proportional to the pressure in the freezing temperature in the open ocean.

A.34.5 config_open_ocean_freezing_temperature_coeff_pS

Type:	real
Units:	1 e3 C Pa^-1
Default Value:	0.0
Possible Values:	Any real number

Table A.259: config_open_ocean_freezing_temperature_coeff_pS: The coefficient for the term proportional to salinity times pressure in the freezing temperature in the open ocean.

A.34.6 config_open_ocean_freezing_temperature_coeff_mushy_az1_liq

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{C}^{-}1$
Default Value:	-18.48
Possible Values:	Any non-positive number

Table A.260: config_open_ocean_freezing_temperature_coeff_mushy_az1_liq: The coefficient for the mushy sea-ice physics term az1_liq in the open ocean.

A.34.7 config_land_ice_cavity_freezing_temperature_coeff_0

Type:	real
Units:	C
Default Value:	6.22e-2
Possible Values:	Any real number

Table A.261: config_land_ice_cavity_freezing_temperature_coeff_0: The freezing temperature at zero pressure and salinity in land-ice cavities.

A.34.8 config_land_ice_cavity_freezing_temperature_coeff_S

Type:	real
Units:	$1\,\mathrm{e}3\,\mathrm{C}$
Default Value:	-5.63e-2
Possible Values:	Any real number

Table A.262: config_land_ice_cavity_freezing_temperature_coeff_S: The coefficient for the term proportional to salinity in the freezing temperature in land-ice cavities.

A.34.9 config_land_ice_cavity_freezing_temperature_coeff_p

Type:	real
Units:	$\mathrm{C}\,\mathrm{Pa}^{-}1$
Default Value:	-7.43e-8
Possible Values:	Any real number

Table A.263: config_land_ice_cavity_freezing_temperature_coeff_p: The coefficient for the term proportional to the pressure in the freezing temperature in land-ice cavities.

A.34.10 config_land_ice_cavity_freezing_temperature_coeff_pS

Type:	real
Units:	1 e3 C Pa^{-1}
Default Value:	-1.74e-10
Possible Values:	Any real number

Table A.264: config_land_ice_cavity_freezing_temperature_coeff_pS: The coefficient for the term proportional to salinity times pressure in the freezing temperature in land-ice cavities.

A.35 eos_linear

A.35.1 config_eos_linear_alpha

Type:	real
Units:	kg m^{-3} C^{-1}
Default Value:	0.2
Possible Values:	any positive real

Table A.265: config_eos_linear_alpha: Linear thermal expansion coefficient

A.35.2 config_eos_linear_beta

Type:	real
Units:	1 e3 kg m^{-3}
Default Value:	0.8
Possible Values:	any positive real

Table A.266: config_eos_linear_beta: Linear haline contraction coefficient

A.35.3 config_eos_linear_Tref

Type:	real
Units:	C
Default Value:	5.0
Possible Values:	any real

Table A.267: config_eos_linear_Tref: Reference temperature

A.35.4 config_eos_linear_Sref

Type:	real
Units:	$1\,e-3$
Default Value:	35.0
Possible Values:	any real

Table A.268: config_eos_linear_Sref: Reference salinity

A.35.5 config_eos_linear_densityref

Type:	real
Units:	$kg\,m^-3$
Default Value:	1000.0
Possible Values:	any positive real

Table A.269: config_eos_linear_densityref: Reference density, i.e. density when T=Tref and S=Sref

A.36 eos_wright

A.36.1 config_eos_wright_ref_pressure

Type:	real
Units:	$N\,m^-2$
Default Value:	0.0
Possible Values:	any positive real

Table A.270: config_eos_wright_ref_pressure: Reference pressure for potential density

A.37 split_timestep_share

A.37.1 config_n_ts_iter

Type:	integer
Units:	–
Default Value:	2
Possible Values:	any positive integer, but typically 1, 2, or 3

Table A.271: config_n_ts_iter: number of large iterations over stages 1-3; For the split_explicit_ab2 time integrator, this value only affects the first time step when it is not a restart run. For restart runs, this value has no effect on the split_explicit_ab2 time integrator.

A.37.2 config_n_bcl_iter_beg

Type:	integer
Units:	–
Default Value:	1
Possible Values:	any positive integer, but typically 1, 2, or 3

Table A.272: config_n_bcl_iter_beg: number of iterations of stage 1 (baroclinic solve) on the first split timestepping iteration

A.37.3 config_n_bcl_iter_mid

Type:	integer
Units:	–
Default Value:	2
Possible Values:	any positive integer, but typically 1, 2, or 3

Table A.273: config_n_bcl_iter_mid: number of iterations of stage 1 (baroclinic solve) on any split timestepping iterations between first and last

A.37.4 config_n_bcl_iter_end

Type:	integer
Units:	–
Default Value:	2
Possible Values:	any positive integer, but typically 1, 2, or 3

Table A.274: config_n_bcl_iter_end: number of iterations of stage 1 (baroclinic solve) on the last split timestepping iteration

A.38 split_explicit_ts

A.38.1 config_btr_dt

Type:	character
Units:	–
Default Value:	0000_00:00:15
Possible Values:	Any time stamp in 'YYYY-MM-DD_hh:mm:ss' format. Items can be removed from the left if they are unused.

Table A.275: config_btr_dt: Timestep to use for the barotropic mode in the split explicit time integrator

A.38.2 config_n_btr_cor_iter

Type:	integer
Units:	–
Default Value:	2
Possible Values:	any positive integer, but typically 1, 2, or 3

Table A.276: config_n_btr_cor_iter: number of iterations of the velocity corrector step in stage 2

A.38.3 config_vel_correction

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.277: config_vel_correction: If true, the velocity correction term is included in the horizontal advection of thickness and tracers

A.38.4 config_btr_subcycle_loop_factor

Type:	integer
Units:	–
Default Value:	2
Possible Values:	Any positive integer, but typically 1 or 2

Table A.278: config_btr_subcycle_loop_factor: Barotropic subcycles proceed from t to $t+n\Delta t$, where n is this configuration option.

A.38.5 config_btr_gam1_velWt1

Type:	real
Units:	–
Default Value:	0.5333
Possible Values:	between 0 and 1

Table A.279: config_btr_gam1_velWt1: Weighting of velocity in the SSH predictor step in stage 2. When zero, previous subcycle time is used; when one, new subcycle time is used.

A.38.6 config_btr_gam2_SSHWt1

Type:	real
Units:	–
Default Value:	0.5333
Possible Values:	between 0 and 1

Table A.280: config_btr_gam2_SSHWt1: Weighting of SSH in the velocity corrector step in stage 2. When zero, previous subcycle time is used; when one, new subcycle time is used.

A.38.7 config_btr_gam3_velWt2

Type:	real
Units:	–
Default Value:	1.0
Possible Values:	between 0 and 1

Table A.281: config_btr_gam3_velWt2: Weighting of velocity in the SSH corrector step in stage 2. When zero, previous subcycle time is used; when one, new subcycle time is used.

A.38.8 config_btr_solve_SSH2

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.282: config_btr_solve_SSH2: If true, execute the SSH corrector step in stage 2

A.39 split_implicit_ts

A.39.1 config_btr_si_preconditioner

Type:	character
Units:	–
Default Value:	ras
Possible Values:	ras, block_jacobi, jacobi, none

Table A.283: config_btr_si_preconditioner: Type of preconditioner for the barotropic mode solver

A.39.2 config_btr_si_tolerance

Type:	real
Units:	–
Default Value:	1.0e-9
Possible Values:	any positive real, but typically less than 1.0e-9

Table A.284: config_btr_si_tolerance: Tolerance for the barotropic mode solver

A.39.3 config_n_btr_si_large_iter

Type:	integer
Units:	–
Default Value:	1
Possible Values:	any positive integer, but typically 1 and less than 2

Table A.285: config_n_btr_si_large_iter: number of large barotropic system iterations

A.39.4 config_btr_si_partition_match_mode

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.286: config_btr_si_partition_match_mode: If true, the split-implicit method uses the Jacobi preconditioner with the bit-for-bit all-reduce. This is less performant, so should only be used for testing.

A.40 ALE_vertical_grid

A.40.1 config_vert_coord_movement

Type:	character
Units:	–
Default Value:	uniform_stretching
Possible Values:	'uniform_stretching', 'fixed', 'user_specified', 'impermeable_interfaces', 'tapered'

Table A.287: config_vert_coord_movement: Determines the vertical coordinate movement type. 'uniform_stretching' distributes SSH perturbations through all vertical levels (z-star vertical coordinate); 'fixed' places them all in the top level (z-level vertical coordinate); 'user_specified' allows the input file to determine the distribution using the variable vertCoordMovementWeights (weighted z-star vertical coordinate); and 'impermeable_interfaces' makes the vertical transport between layers zero, i.e. $w^t = 0$ (idealized isopycnal).

A.40.2 config_ALE_thickness_proportionality

Type:	character
Units:	–
Default Value:	restingThickness_times_weights
Possible Values:	'restingThickness_times_weights' or 'weights_only'

Table A.288: config_ALE_thickness_proportionality: When config_vert_coord_movement='uniform_stretching' (z-star type coordinate), determines whether ALE layer thickness is proportional to the resting thickness times weights, or just the weights. The first is standard for global runs and is what is specified in Petersen et al 2015 eqns 4 and 6. The second is useful for wetting/drying test cases where resting thickness may be zero at the coastlines.

A.40.3 config_vert_taper_weight_depth_1

Type:	real
Units:	m
Default Value:	250.0
Possible Values:	any positive real value, but typically 100 to 1000 m.

Table A.289: config_vert_taper_weight_depth_1: Vertical coordinate taper weight is one above this depth, linearly decreases to zero below.

A.40.4 config_vert_taper_weight_depth_2

Type:	real
Units:	m
Default Value:	500.0
Possible Values:	any positive real value, but typically 100 to 1000 m and greater than config_vert_taper_weight_depth_1.

Table A.290: config_vert_taper_weight_depth_2: Vertical coordinate taper weight is zero below this depth, linearly increases to one above.

A.40.5 config_use_min_max_thickness

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.291: config_use_min_max_thickness: If true, a minimum and maximum thicknesses are enforced to prevent massless and very thick layers.

A.40.6 config_min_thickness

Type:	real
Units:	m
Default Value:	1.0
Possible Values:	any positive real value, but typically 0.1 to 1 m.

Table A.292: config_min_thickness: Minimum thickness allowed.

A.40.7 config_max_thickness_factor

Type:	real
Units:	–
Default Value:	6.0
Possible Values:	any positive real value, but typically 2-4.

Table A.293: config_max_thickness_factor: Maximum thickness allowed. This is a factor times the resting thickness, i.e., maximum thickness = config_max_thickness_factor*h^{rest}.

A.40.8 config_dzdk_positive

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.294: config_dzdk_positive: Determines if the positive Z axis is aligned with the positive K index direction.

A.41 ALE_frequency_filtered_thickness

A.41.1 config_use_freq_filtered_thickness

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.295: config_use_freq_filtered_thickness: If true, h^{hf} is included in the desired ALE thickness, and the prognostic equations for D^{lf} and h^{hf} are integrated in the code.

A.41.2 config_thickness_filter_timescale

Type:	real
Units:	days
Default Value:	5.0
Possible Values:	any positive real value, but typically 5 days.

Table A.296: config_thickness_filter_timescale: Filter time scale for the low-frequency baroclinic divergence, τ_{Dlf}.

A.41.3 config_use_highFreqThick_restore

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.297: config_use_highFreqThick_restore: If true, the high frequency thickness prognostic equation (h^{hf}) includes term 2 on the RHS, the restoring term. The high frequency thickness is restored to zero with time scale τ_{hhf}.

A.41.4 config_highFreqThick_restore_time

Type:	real
Units:	days
Default Value:	30.0
Possible Values:	any positive real value, but typically 5-30 days.

Table A.298: config_highFreqThick_restore_time: Restoring time scale for high-frequency thickness, τ_{hhf}.

A.41.5 config_use_highFreqThick_del2

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.299: config_use_highFreqThick_del2: If true, high frequency thickness prognostic equation (h^{hf}) includes term 3 on the RHS, the diffusion term.

A.41.6 config_highFreqThick_del2

Type:	real
Units:	$m^2 s^-1$
Default Value:	100.0
Possible Values:	any positive real

Table A.300: config_highFreqThick_del2: Horizontal high frequency thickness diffusion, κ_{hhf}.

A.42 debug

A.42.1 config_check_zlevel_consistency

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.301: config_check_zlevel_consistency: Enables a run-time check for consistency for a zlevel grid. Ensures relevant variables correctly define the bottom of the ocean.

A.42.2 config_check_ssh_consistency

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.302: config_check_ssh_consistency: Enables a run-time check to determine if the SSH is within 2m of the surface. See equation for ζ_i.

A.42.3 config_filter_btr_mode

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.303: config_filter_btr_mode: Enables filtering of the barotropic mode.

A.42.4 config_prescribe_velocity

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.304: config_prescribe_velocity: Enables a prescribed velocity field. This velocity field is read on input, and remains constant through a simulation.

A.42.5 config_prescribe_thickness

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.305: config_prescribe_thickness: Enables a prescribed thickness field. This thickness field is read on input, and remains constant through a simulation.

A.42.6 config_include_KE_vertex

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.306: config_include_KE_vertex: If true, the kinetic energy in each cell is computed by blending cell-based and vertex-based values of kinetic energy.

A.42.7 config_check_tracer_monotonicity

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.307: config_check_tracer_monotonicity: Enables a change on tracer monotonicity at the end of the monotonic advection routine. Only used if config_flux_limiter is set to monotonic

A.42.8 config_compute_active_tracer_budgets

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.308: config_compute_active_tracer_budgets: Enables the computation of tracer budget terms

A.42.9 config_disable_thick_all_tend

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.309: config_disable_thick_all_tend: Disables all tendencies on the thickness field.

A.42.10 config_disable_thick_hadv

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.310: config_disable_thick_hadv: Disable tendencies on the thickness field from horizontal advection.

A.42.11 config_disable_thick_vadv

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.311: config_disable_thick_vadv: Disables tendencies on the thickness field from vertical advection.

A.42.12 config_disable_thick_sflux

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.312: config_disable_thick_sflux: Disables tendencies on the thickness field from surface fluxes.

A.42.13 config_disable_vel_all_tend

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.313: config_disable_vel_all_tend: Disables all tendencies on the velocity field.

A.42.14 config_disable_vel_hadv

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.314: config_disable_vel_hadv: Disables tendencies on the velocity field from the horizontal momentum advection. Note that these two flags are set together for linearized test cases: config_thickness_flux_type = 'constant' linearizes the thickness equation, and config_disable_vel_hadv = .true. linearizes the momentum equation if there is no assumed mean background velocity.

A.42.15 config_disable_vel_coriolis

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.315: config_disable_vel_coriolis: Disables tendencies on the velocity field from the Coriolis force.

A.42.16 config_disable_vel_pgrad

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.316: config_disable_vel_pgrad: Disables tendencies on the velocity field from the horizontal pressure gradient.

A.42.17 config_disable_vel_hmix

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.317: config_disable_vel_hmix: Disables tendencies on the velocity field from horizontal mixing.

A.42.18 config_disable_vel_surface_stress

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.318: config_disable_vel_surface_stress: Disables tendencies on the velocity field from horizontal surface stresses (e.g. wind stress and top drag).

A.42.19 config_disable_vel_topographic_wave_drag

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.319: config_disable_vel_topographic_wave_drag: Disables tendencies on the velocity field from topographic wave drag

A.42.20 config_disable_vel_explicit_bottom_drag

Type:	logical

Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.320: config_disable_vel_explicit_bottom_drag: Disables tendencies on the velocity field from explicit bottom drag

A.42.21 config_disable_vel_vmix

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.321: config_disable_vel_vmix: Disables tendencies on the velocity field from vertical mixing.

A.42.22 config_disable_vel_vadv

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.322: config_disable_vel_vadv: Disables tendencies on the velocity field from vertical advection.

A.42.23 config_disable_tr_all_tend

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.323: config_disable_tr_all_tend: Disables all tendencies on tracer fields.

A.42.24 config_disable_tr_adv

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.324: config_disable_tr_adv: Disables tendencies on tracer fields from advection, both horizontal and vertical.

A.42.25 config_disable_tr_hmix

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.325: config_disable_tr_hmix: Disables tendencies on tracer fields from horizontal mixing.

A.42.26 config_disable_tr_vmix

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.326: config_disable_tr_vmix: Disables tendencies on tracer fields from vertical mixing.

A.42.27 config_disable_tr_sflux

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.327: config_disable_tr_sflux: Disables tendencies on tracer fields from surface fluxes.

A.42.28 config_disable_tr_nonlocalflux

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.328: config_disable_tr_nonlocalflux: Disables tendencies on the tracer fields from CVMix/KPP nonlocal fluxes.

A.42.29 config_disable_redi_k33

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.329: config_disable_redi_k33: If true, disables k33 portion of Redi neutral surface mixing.

A.42.30 config_read_nearest_restart

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.330: config_read_nearest_restart: This flag is intended for the expert user. If false, forward model will error out if time given by config_start_time (or Restart_timestamp file if config_start_time='file') does not match any xtime strings in the restart file. If true, forward model will read in record with xtime nearest to config_start_time. Note that the restart file name is still given by config_start_time (or Restart_timestamp file), regardless of the state of this flag.

A.43 testing

A.43.1 config_conduct_tests

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.331: config_conduct_tests: If true, run testing suite. This is the overarching control on the test suite. Individual flags must be set to true below to conduct each test.

A.43.2 config_test_tensors

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.332: config_test_tensors: If true, tensor operations are tested upon start-up.

A.43.3 config_tensor_test_function

Type:	character
Units:	–
Default Value:	sph_uCosCos
Possible Values:	'linear_x', 'linear_y', 'linear_arb_rot', 'power_x', 'power_y', 'power_arb_rot', 'sin_arb_rot', 'sph_solid_body', 'sph_Williamson', 'sph_uCosCos', 'sph_vCosCos', 'sph_ELonLon_CosCos', 'sph_ELatLat_CosCos', 'sph_ELonLat_CosCos'

Table A.333: config_tensor_test_function: Character string to choose tensor test fuction

A.44 transport_tests

A.44.1 config_transport_tests_vert_levels

Type:	integer
Units:	–
Default Value:	3
Possible Values:	Any positive integer number greater than 0.

Table A.334: config_transport_tests_vert_levels: Number of vertical levels in transport_tests. Typical value is 3 for 2D tests.

A.44.2 config_transport_tests_temperature

Type:	real
Units:	deg C
Default Value:	15.0
Possible Values:	Any real number

Table A.335: config_transport_tests_temperature: Temperature of the ocean.

A.44.3 config_transport_tests_salinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Default Value:	35.0
Possible Values:	Any real number

Table A.336: config_transport_tests_salinity: Salinity of the ocean.

A.44.4 config_transport_tests_flow_id

Type:	integer
Units:	–
Default Value:	0
Possible Values:	1 = rotation, 2 = nondivergent2D, 3 = divergent2D, 4 = correlatedTracers2D

Table A.337: config_transport_tests_flow_id: integer id of transport test.

A.45 init_mode_vert_levels

A.45.1 config_vert_levels

Type:	integer
Units:	–
Default Value:	-1
Possible Values:	Any positive non-zero integer. A value of -1 causes this to be overwritten with the configurations vertical level definition.

Table A.338: config_vert_levels: Number of vertical levels to create within the configuration.

A.46 manufactured_solution

A.46.1 config_use_manufactured_solution

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.339: config_use_manufactured_solution: This flag includes additional thickness and velocity tendencies necessary for testing with a manufactured solution.

A.46.2 config_manufactured_solution_wavelength_x

Type:	real
Units:	m
Default Value:	2000000.0
Possible Values:	Any positive real number

Table A.340: config_manufactured_solution_wavelength_x: Wavelength of manufactured solution in the x direction

A.46.3 config_manufactured_solution_wavelength_y

Type:	real
Units:	m
Default Value:	2000000.0
Possible Values:	Any positive real number

Table A.341: config_manufactured_solution_wavelength_y: Wavelength of manufactured solution in the y direction

A.46.4 config_manufactured_solution_amplitude

Type:	real
Units:	m
Default Value:	1
Possible Values:	Any positive real number

Table A.342: config_manufactured_solution_amplitude: Amplitude of the manufactured solution

A.47 tracer_forcing_activeTracers

A.47.1 config_use_activeTracers

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.343: config_use_activeTracers: if true, the 'activeTracers' category is enabled for the run

A.47.2 config_use_activeTracers_surface_bulk_forcing

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.344: config_use_activeTracers_surface_bulk_forcing: if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'activeTracers' category

A.47.3 config_use_activeTracers_surface_restoring

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.345: config_use_activeTracers_surface_restoring: if true, surface restoring source is applied to tracers in 'activeTracers' category

A.47.4 config_use_activeTracers_interior_restoring

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.346: config_use_activeTracers_interior_restoring: if true, interior restoring source is applied to tracers in 'activeTracers' category

A.47.5 config_use_activeTracers_exponential_decay

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.347: config_use_activeTracers_exponential_decay: if true, exponential decay source is applied to tracers in 'activeTracers' category

A.47.6 config_use_activeTracers_idealAge_forcing

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.348: config_use_activeTracers_idealAge_forcing: if true, idealAge forcing source is applied to tracers in 'activeTracers' category

A.47.7 config_use_activeTracers_ttd_forcing

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.349: config_use_activeTracers_ttd_forcing: if true, transit time distribution forcing source is applied to tracers in 'activeTracers' category

A.47.8 config_use_surface_salinity_monthly_restoring

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.350: config_use_surface_salinity_monthly_restoring: If true, apply monthly salinity restoring using a uniform piston velocity, defined at run-time by config_salinity_restoring_constant_piston_velocity. When false, salinity piston velocity is specified in the input file by salinityPistonVelocity, which may be spatially variable.

A.47.9 config_surface_salinity_monthly_restoring_compute_interval

Type:	character
Units:	–
Default Value:	0000-00-01_00:00:00
Possible Values:	Any valid time stamp or 'dt'

Table A.351: config_surface_salinity_monthly_restoring_compute_interval: Time interval to compute salinity restoring tendency.

A.47.10 config_salinity_restoring_constant_piston_velocity

Type:	real
Units:	m/year
Default Value:	1.585e-5
Possible Values:	any non-negative number

Table A.352: config_salinity_restoring_constant_piston_velocity: When config_use_surface_salinity_monthly_restoring is true, this flag provides a run-time override of the salinityPistonVelocity variable in the input files. It is uniform over the domain, and controls the rate at which salinity is restored to salinitySurfaceRestoringValue

A.47.11 config_salinity_restoring_max_difference

Type:	real
Units:	$1\,\mathrm{e}-3$
Default Value:	100.0
Possible Values:	any non-negative number

Table A.353: config_salinity_restoring_max_difference: Maximum allowable difference between surface salinity and climatology, in grams salt per kilogram seawater.

A.47.12 config_salinity_restoring_under_sea_ice

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.354: config_salinity_restoring_under_sea_ice: Flag to enable salinity restoring under sea ice. The default setting is false, where salinity restoring tapers from full restoring in the open ocean (iceFraction=0.0) to zero restoring below full sea ice coverage (iceFraction=1.0); below partial sea ice coverage, restoring is in proportion to iceFraction. If true, full salinity restoring is used everywhere, regardless of iceFraction value

A.48 tracer_forcing_debugTracers

A.48.1 config_use_debugTracers

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.355: config_use_debugTracers: if true, the 'debugTracers' category is enabled for the run

A.48.2 config_reset_debugTracers_near_surface

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.356: config_reset_debugTracers_near_surface: if true, the reset 'debugTracers' in the top n layers, where n is set by config_reset_debugTracers_top_nLayers

A.48.3 config_reset_debugTracers_top_nLayers

Type:	integer
Units:	–
Default Value:	20
Possible Values:	Any positive integer value greater than or equal to 0.

Table A.357: config_reset_debugTracers_top_nLayers: Integer specifying number of layers at top to reset 2 at end of each timestep. Default is 20, chosen to be near a typical mixed layer depth of 200m.

A.48.4 config_use_debugTracers_surface_bulk_forcing

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.358: config_use_debugTracers_surface_bulk_forcing: if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'debugTracers' category

A.48.5 config_use_debugTracers_surface_restoring

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.359: config_use_debugTracers_surface_restoring: if true, surface restoring source is applied to tracers in 'debugTracers' category

A.48.6 config_use_debugTracers_interior_restoring

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.360: config_use_debugTracers_interior_restoring: if true, interior restoring source is applied to tracers in 'debugTracers' category

A.48.7 config_use_debugTracers_exponential_decay

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.361: config_use_debugTracers_exponential_decay: if true, exponential decay source is applied to tracers in 'debugTracers' category

A.48.8 config_use_debugTracers_idealAge_forcing

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.362: config_use_debugTracers_idealAge_forcing: if true, idealAge forcing source is applied to tracers in 'debugTracers' category

A.48.9 config_use_debugTracers_ttd_forcing

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.363: config_use_debugTracers_ttd_forcing: if true, transit time distribution forcing source is applied to tracers in 'debugTracers' category

A.49 tracer_forcing_ecosysTracers

A.49.1 config_use_ecosysTracers

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.364: config_use_ecosysTracers: if true, the 'ecosysGRP' category is enabled for the run

A.49.2 config_ecosys_atm_co2_option

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	none,constant,prognostic,diagnostic

Table A.365: config_ecosys_atm_co2_option: sets how atm co2 is set

A.49.3 config_ecosys_atm_alt_co2_option

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	none,constant,prognostic,diagnostic

Table A.366: config_ecosys_atm_alt_co2_option: sets how alt atm co2 is set

A.49.4 config_ecosys_atm_alt_co2_use_eco

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.367: config_ecosys_atm_alt_co2_use_eco: determines whether DIC_ALT is affected by ecosystem dynamics

A.49.5 config_ecosys_atm_co2_constant_value

Type:	real
Units:	ppmv
Default Value:	379.0
Possible Values:	positive real number

Table A.368: config_ecosys_atm_co2_constant_value: value of atm co2 when config_ecosys_atm_co2_option = constant

A.49.6 config_use_ecosysTracers_surface_bulk_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.369: config_use_ecosysTracers_surface_bulk_forcing: if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'ecosysGRP' category

A.49.7 config_use_ecosysTracers_surface_restoring

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.370: config_use_ecosysTracers_surface_restoring: if true, surface restoring source is applied to tracers in 'ecosysGRP' category

A.49.8 config_use_ecosysTracers_interior_restoring

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.371: config_use_ecosysTracers_interior_restoring: if true, interior restoring source is applied to tracers in 'ecosysGRP' category

A.49.9 config_use_ecosysTracers_exponential_decay

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.372: config_use_ecosysTracers_exponential_decay: if true, exponential decay source is applied to tracers in 'ecosysGRP' category

A.49.10 config_use_ecosysTracers_idealAge_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.373: config_use_ecosysTracers_idealAge_forcing: if true, idealAge forcing source is applied to tracers in 'ecosysGRP' category

A.49.11 config_use_ecosysTracers_ttd_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.374: config_use_ecosysTracers_ttd_forcing: if true, transit time distribution forcing source is applied to tracers in 'ecosysGRP' category

A.49.12 config_use_ecosysTracers_surface_value

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.375: config_use_ecosysTracers_surface_value: if true, surface value is computed for 'ecosysGRP' category

A.49.13 config_use_ecosysTracers_river_inputs_from_coupler

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.376: config_use_ecosysTracers_river_inputs_from_coupler: if true, get river nutrient inputs from the coupler, else from ecosys monthly forcing file

A.49.14 config_use_ecosysTracers_sea_ice_coupling

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.377: config_use_ecosysTracers_sea_ice_coupling: if true, couple ecosys fields with sea ice

A.49.15 config_ecosysTracers_diagnostic_fields_level1

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.378: config_ecosysTracers_diagnostic_fields_level1: if true, make variables in ecosysDiagFieldsLevel1 available for output

A.49.16 config_ecosysTracers_diagnostic_fields_level2

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.379: config_ecosysTracers_diagnostic_fields_level2: if true, make variables in ecosysDiagFieldsLevel2 available for output

A.49.17 config_ecosysTracers_diagnostic_fields_level3

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.380: config_ecosysTracers_diagnostic_fields_level3: if true, make variables in ecosysDiagFieldsLevel3 available for output

A.49.18 config_ecosysTracers_diagnostic_fields_level4

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.381: config_ecosysTracers_diagnostic_fields_level4: if true, make variables in ecosysDiagFieldsLevel4 available for output

A.49.19 config_ecosysTracers_diagnostic_fields_level5

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.382: config_ecosysTracers_diagnostic_fields_level5: if true, make variables in ecosysDiagFieldsLevel5 available for output

A.50 tracer_forcing_DMSTracers

A.50.1 config_use_DMSTracers

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.383: config_use_DMSTracers: if true, the 'DMSGRP' category is enabled for the run

A.50.2 config_use_DMSTracers_surface_bulk_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.384: config_use_DMSTracers_surface_bulk_forcing: if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'DMSGRP' category

A.50.3 config_use_DMSTracers_surface_restoring

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.385: config_use_DMSTracers_surface_restoring: if true, surface restoring source is applied to tracers in 'DMSGRP' category

A.50.4 config_use_DMSTracers_interior_restoring

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.386: config_use_DMSTracers_interior_restoring: if true, interior restoring source is applied to tracers in 'DMSGRP' category

A.50.5 config_use_DMSTracers_exponential_decay

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.387: config_use_DMSTracers_exponential_decay: if true, exponential decay source is applied to tracers in 'DMSGRP' category

A.50.6 config_use_DMSTracers_idealAge_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.388: config_use_DMSTracers_idealAge_forcing: if true, idealAge forcing source is applied to tracers in 'DMSGRP' category

A.50.7 config_use_DMSTracers_ttd_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.389: config_use_DMSTracers_ttd_forcing: if true, transit time distribution forcing source is applied to tracers in 'DMSGRP' category

A.50.8 config_use_DMSTracers_surface_value

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.390: config_use_DMSTracers_surface_value: if true, surface value is computed for 'DMS-GRP' category

A.50.9 config_use_DMSTracers_sea_ice_coupling

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.391: config_use_DMSTracers_sea_ice_coupling: if true, couple DMS fields with sea ice

A.51 tracer_forcing_MacroMoleculesTracers

A.51.1 config_use_MacroMoleculesTracers

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.392: config_use_MacroMoleculesTracers: if true, the 'MacroMoleculesGRP' category is enabled for the run

A.51.2 config_use_MacroMoleculesTracers_surface_bulk_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.393: config_use_MacroMoleculesTracers_surface_bulk_forcing: if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'MacroMoleculesGRP' category

A.51.3 config_use_MacroMoleculesTracers_surface_restoring

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.394: config_use_MacroMoleculesTracers_surface_restoring: if true, surface restoring source is applied to tracers in 'MacroMoleculesGRP' category

A.51.4 config_use_MacroMoleculesTracers_interior_restoring

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.395: config_use_MacroMoleculesTracers_interior_restoring: if true, interior restoring source is applied to tracers in 'MacroMoleculesGRP' category

A.51.5 config_use_MacroMoleculesTracers_exponential_decay

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.396: config_use_MacroMoleculesTracers_exponential_decay: if true, exponential decay source is applied to tracers in 'MacroMoleculesGRP' category

A.51.6 config_use_MacroMoleculesTracers_idealAge_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.397: config_use_MacroMoleculesTracers_idealAge_forcing: if true, idealAge forcing source is applied to tracers in 'MacroMoleculesGRP' category

A.51.7 config_use_MacroMoleculesTracers_ttd_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.398: config_use_MacroMoleculesTracers_ttd_forcing: if true, transit time distribution forcing source is applied to tracers in 'MacroMoleculesGRP' category

A.51.8 config_use_MacroMoleculesTracers_surface_value

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.399: config_use_MacroMoleculesTracers_surface_value: if true, surface value is computed for 'MacroMoleculesGRP' category

A.51.9 config_use_MacroMoleculesTracers_sea_ice_coupling

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.400: config_use_MacroMoleculesTracers_sea_ice_coupling: if true, couple MacroMolecules fields with sea ice

A.52 tracer_forcing_idealAgeTracers

A.52.1 config_use_idealAgeTracers

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.401: config_use_idealAgeTracers: if true, the 'idealAgeTracers' category is enabled for the run

A.52.2 config_use_idealAgeTracers_surface_bulk_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.402: config_use_idealAgeTracers_surface_bulk_forcing: if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'idealAgeTracers' category

A.52.3 config_use_idealAgeTracers_surface_restoring

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.403: config_use_idealAgeTracers_surface_restoring: if true, surface restoring source is applied to tracers in 'idealAgeTracers' category

A.52.4 config_use_idealAgeTracers_interior_restoring

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.404: config_use_idealAgeTracers_interior_restoring: if true, interior restoring source is applied to tracers in 'idealAgeTracers' category

A.52.5 config_use_idealAgeTracers_exponential_decay

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.405: config_use_idealAgeTracers_exponential_decay: if true, exponential decay source is applied to tracers in 'idealAgeTracers' category

A.52.6 config_use_idealAgeTracers_idealAge_forcing

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.406: config_use_idealAgeTracers_idealAge_forcing: if true, idealAge forcing source is applied to tracers in 'idealAgeTracers' category

A.52.7 config_use_idealAgeTracers_ttd_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.407: config_use_idealAgeTracers_ttd_forcing: if true, transit time distribution forcing source is applied to tracers in 'idealAgeTracers' category

A.53 tracer_forcing_CFCTracers

A.53.1 config_use_CFCTracers

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.408: config_use_CFCTracers: if true, the 'CFCGRP' category is enabled for the run

A.53.2 config_use_CFCTracers_surface_bulk_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.409: config_use_CFCTracers_surface_bulk_forcing: if true, surface bulk forcing from coupler is added to surfaceTracerFlux in 'CFCGRP' category

A.53.3 config_use_CFCTracers_surface_restoring

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.410: config_use_CFCTracers_surface_restoring: if true, surface restoring source is applied to tracers in 'CFCGRP' category

A.53.4 config_use_CFCTracers_interior_restoring

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.411: config_use_CFCTracers_interior_restoring: if true, interior restoring source is applied to tracers in 'CFCGRP' category

A.53.5 config_use_CFCTracers_exponential_decay

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.412: config_use_CFCTracers_exponential_decay: if true, exponential decay source is applied to tracers in 'CFCGRP' category

A.53.6 config_use_CFCTracers_idealAge_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.413: config_use_CFCTracers_idealAge_forcing: if true, idealAge forcing source is applied to tracers in 'CFCGRP' category

A.53.7 config_use_CFCTracers_ttd_forcing

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.414: config_use_CFCTracers_ttd_forcing: if true, transit time distribution forcing source is applied to tracers in 'CFCGRP' category

A.53.8 config_use_CFC11

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.415: config_use_CFC11: if true, CFC11 is enabled for the run

A.53.9 config_use_CFC12

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.416: config_use_CFC12: if true, CFC12 is enabled for the run

A.54 AM_globalStats

A.54.1 config_AM_globalStats_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.417: config_AM_globalStats_enable: If true, ocean analysis member global_stats is called.

A.54.2 config_AM_globalStats_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	'DDDD_HH:MM:SS', 'dt', 'output_interval'

Table A.418: config_AM_globalStats_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.54.3 config_AM_globalStats_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.419: config_AM_globalStats_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.54.4 config_AM_globalStats_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.420: config_AM_globalStats_write_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.54.5 config_AM_globalStats_text_file

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.421: config_AM_globalStats_text_file: If true, print global stats to a text file as well as streams.

A.54.6 config_AM_globalStats_directory

Type:	character
Units:	–
Default Value:	analysis_members
Possible Values:	any valid directory name

Table A.422: config_AM_globalStats_directory: subdirectory to write eddy census text files

A.54.7 config_AM_globalStats_output_stream

Type:	character
Units:	–
Default Value:	globalStatsOutput
Possible Values:	Any existing stream, or 'none'

Table A.423: config_AM_globalStats_output_stream: Name of the stream that the globalStats analysis member should get information from.

A.55 AM_surfaceAreaWeightedAverages

A.55.1 config_AM_surfaceAreaWeightedAverages_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.424: config_AM_surfaceAreaWeightedAverages_enable: If true, ocean analysis member surface_area_weighted_average is called.

A.55.2 config_AM_surfaceAreaWeightedAverages_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.425: config_AM_surfaceAreaWeightedAverages_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.55.3 config_AM_surfaceAreaWeightedAverages_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.426: config_AM_surfaceAreaWeightedAverages_write_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.55.4 config_AM_surfaceAreaWeightedAverages_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.427: config_AM_surfaceAreaWeightedAverages_compute_interval: Time interval the determines how frequently the surface area weighted averages analysis member should be computed.

A.55.5 config_AM_surfaceAreaWeightedAverages_output_stream

Type:	character
Units:	–
Default Value:	surfaceAreaWeightedAveragesOutput
Possible Values:	Any existing stream or 'none'

Table A.428: config_AM_surfaceAreaWeightedAverages_output_stream: Name of the stream the surface area weighted averages analysis member should be tied to.

A.56 AM_waterMassCensus

A.56.1 config_AM_waterMassCensus_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.429: config_AM_waterMassCensus_enable: If true, ocean analysis member water mass census is called.

A.56.2 config_AM_waterMassCensus_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.430: config_AM_waterMassCensus_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.56.3 config_AM_waterMassCensus_output_stream

Type:	character
Units:	–
Default Value:	waterMassCensusOutput
Possible Values:	Any existing stream name or 'none'

Table A.431: config_AM_waterMassCensus_output_stream: Name of the stream the water mass census analysis member should be tied to.

A.56.4 config_AM_waterMassCensus_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.432: config_AM_waterMassCensus_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.56.5 config_AM_waterMassCensus_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.433: config_AM_waterMassCensus_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.56.6 config_AM_waterMassCensus_minTemperature

Type:	real
Units:	C
Default Value:	-2.0
Possible Values:	any real number smaller than config_AM_waterMassCensus_maxTemperature

Table A.434: config_AM_waterMassCensus_minTemperature: minimum temperature used in water mass census

A.56.7 config_AM_waterMassCensus_maxTemperature

Type:	real
Units:	C
Default Value:	30.0
Possible Values:	any real number greater than config_AM_waterMassCensus_minTemperature

Table A.435: config_AM_waterMassCensus_maxTemperature: maximum temperature used in water mass census

A.56.8 config_AM_waterMassCensus_minSalinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Default Value:	32.0
Possible Values:	any real number smaller than config_AM_waterMassCensus_maxSalinity

Table A.436: config_AM_waterMassCensus_minSalinity: minimum salinity used in water mass census

A.56.9 config_AM_waterMassCensus_maxSalinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Default Value:	37.0
Possible Values:	any real number greater than config_AM_waterMassCensus_minSalinity

Table A.437: config_AM_waterMassCensus_maxSalinity: maximum salinity used in water mass census

A.56.10 config_AM_waterMassCensus_compute_predefined_regions

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.438: config_AM_waterMassCensus_compute_predefined_regions: Computes predefined regions. (Does not require a region mask file.)

A.56.11 config_AM_waterMassCensus_region_group

Type:	character
Units:	–
Default Value:	**MISSING**
Possible Values:	'all', ", or the name of a region group.

Table A.439: config_AM_waterMassCensus_region_group: The name of the region group, for which the WMC should be computed in addition to the existing WMC.

A.57 AM_layerVolumeWeightedAverage

A.57.1 config_AM_layerVolumeWeightedAverage_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.440: config_AM_layerVolumeWeightedAverage_enable: If true, ocean analysis member layer-volume weighted is called.

A.57.2 config_AM_layerVolumeWeightedAverage_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	'DDDD_HH:MM:SS'

Table A.441: config_AM_layerVolumeWeightedAverage_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.57.3 config_AM_layerVolumeWeightedAverage_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.442: config_AM_layerVolumeWeightedAverage_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.57.4 config_AM_layerVolumeWeightedAverage_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.443: config_AM_layerVolumeWeightedAverage_write_on_startup: Logical flag determining if an analysis member output write occurs on start-up.

A.57.5 config_AM_layerVolumeWeightedAverage_output_stream

Type:	character
Units:	–
Default Value:	layerVolumeWeightedAverageOutput
Possible Values:	Any existing stream name or 'none'

Table A.444: config_AM_layerVolumeWeightedAverage_output_stream: Name of the string that should be tied to the layer volume weighted average analysis member

A.58 AM_zonalMean

A.58.1 config_AM_zonalMean_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.445: config_AM_zonalMean_enable: If true, ocean analysis member zonal_mean is called.

A.58.2 config_AM_zonalMean_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.446: config_AM_zonalMean_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.58.3 config_AM_zonalMean_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.447: config_AM_zonalMean_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.58.4 config_AM_zonalMean_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.448: config_AM_zonalMean_compute_interval: Interval that determines frequency of computation for the zonal mean analysis member.

A.58.5 config_AM_zonalMean_output_stream

Type:	character
Units:	–
Default Value:	zonalMeanOutput
Possible Values:	Any existing stream or 'none'.

Table A.449: config_AM_zonalMean_output_stream: Name of stream the zonal mean analysis member should be tied to.

A.58.6 config_AM_zonalMean_num_bins

Type:	integer
Units:	–
Default Value:	180
Possible Values:	Any positive integer value less than or equal to nZonalMeanBins.

Table A.450: config_AM_zonalMean_num_bins: Number of bins used for zonal mean. Must be less than or equal to the dimension nZonalMeanBins (set in Registry).

A.58.7 config_AM_zonalMean_min_bin

Type:	real
Units:	varies
Default Value:	-1.0e34
Possible Values:	Any real number.

Table A.451: config_AM_zonalMean_min_bin: minimum bin boundary value. If set to -1.0e34, the minimum value in the domain is found.

A.58.8 config_AM_zonalMean_max_bin

Type:	real
Units:	varies
Default Value:	-1.0e34
Possible Values:	Any real number.

Table A.452: config_AM_zonalMean_max_bin: maximum bin boundary value. If set to -1.0e34, the maximum value in the domain is found.

A.59 AM_okuboWeiss

A.59.1 config_AM_okuboWeiss_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.453: config_AM_okuboWeiss_enable: If true, ocean analysis member okubo_weiss is called.

A.59.2 config_AM_okuboWeiss_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.454: config_AM_okuboWeiss_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.59.3 config_AM_okuboWeiss_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.455: config_AM_okuboWeiss_write_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.59.4 config_AM_okuboWeiss_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any time stamp, 'dt', or 'output_interval'

Table A.456: config_AM_okuboWeiss_compute_interval: Time stamp for frequency of computation of the okubo weiss analysis member.

A.59.5 config_AM_okuboWeiss_output_stream

Type:	character
Units:	–
Default Value:	okuboWeissOutput
Possible Values:	Any existing stream name or 'none'

Table A.457: config_AM_okuboWeiss_output_stream: Name of stream the okubo weiss analysis member should be tied to

A.59.6 config_AM_okuboWeiss_directory

Type:	character
Units:	–
Default Value:	analysis_members
Possible Values:	any valid directory name

Table A.458: config_AM_okuboWeiss_directory: subdirectory to write eddy census text files

A.59.7 config_AM_okuboWeiss_threshold_value

Type:	real
Units:	s^-2
Default Value:	-0.2
Possible Values:	any negative real value

Table A.459: config_AM_okuboWeiss_threshold_value: Threshold below which normalized OW values are counted as eddies, typically -0.2

A.59.8 config_AM_okuboWeiss_normalization

Type:	real
Units:	–
Default Value:	1e-10
Possible Values:	any positive real value

Table A.460: config_AM_okuboWeiss_normalization: Parameter by which the OW values are normalized, typically the standard deviation of OW

A.59.9 config_AM_okuboWeiss_lambda2_normalization

Type:	real
Units:	–
Default Value:	1e-10
Possible Values:	any positive real value

Table A.461: config_AM_okuboWeiss_lambda2_normalization: Parameter by which the lambda_2 values are normalized, typically the standard deviation of lambda_2

A.59.10 config_AM_okuboWeiss_use_lat_lon_coords

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.462: config_AM_okuboWeiss_use_lat_lon_coords: If true, latitude/longitude coordinates are output for eddy census. Otherwise x/y/z coordinates are used. Ignored if not on a sphere.

A.59.11 config_AM_okuboWeiss_compute_eddy_census

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.463: config_AM_okuboWeiss_compute_eddy_census: If true, connected components of thresholded OW values are computed, and used to compute an eddy census.

A.59.12 config_AM_okuboWeiss_eddy_min_cells

Type:	integer
Units:	–
Default Value:	20
Possible Values:	any positive integer value

Table A.464: config_AM_okuboWeiss_eddy_min_cells: Minimum number of cells that a connected component must contain to be considered an eddy. This needs to be scaled based on expected eddy size given a grid resolution.

A.60 AM_meridionalHeatTransport

A.60.1 config_AM_meridionalHeatTransport_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.465: config_AM_meridionalHeatTransport_enable: If true, ocean analysis member meridional_heat_transport is called.

A.60.2 config_AM_meridionalHeatTransport_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.466: config_AM_meridionalHeatTransport_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.60.3 config_AM_meridionalHeatTransport_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.467: config_AM_meridionalHeatTransport_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.60.4 config_AM_meridionalHeatTransport_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.468: config_AM_meridionalHeatTransport_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.60.5 config_AM_meridionalHeatTransport_output_stream

Type:	character
Units:	–
Default Value:	meridionalHeatTransportOutput
Possible Values:	Any existing stream name or 'none'

Table A.469: config_AM_meridionalHeatTransport_output_stream: Name of the stream that the meridional heat transport analysis member should be tied to.

A.60.6 config_AM_meridionalHeatTransport_num_bins

Type:	integer
Units:	–
Default Value:	180
Possible Values:	Any positive integer value less than or equal to nMerHeatTransBins.

Table A.470: config_AM_meridionalHeatTransport_num_bins: Number of bins used for meridional heat transport.

A.60.7 config_AM_meridionalHeatTransport_min_bin

Type:	real
Units:	varies
Default Value:	-1.0e34
Possible Values:	Any real number.

Table A.471: config_AM_meridionalHeatTransport_min_bin: minimum bin boundary value. If set to -1.0e34, the minimum value in the domain is found.

A.60.8 config_AM_meridionalHeatTransport_max_bin

Type:	real
Units:	varies
Default Value:	-1.0e34
Possible Values:	Any real number.

Table A.472: config_AM_meridionalHeatTransport_max_bin: maximum bin boundary value. If set to -1.0e34, the maximum value in the domain is found.

A.60.9 config_AM_meridionalHeatTransport_region_group

Type:	character
Units:	–
Default Value:	**MISSING**
Possible Values:	'all', ", or the name of a region group.

Table A.473: config_AM_meridionalHeatTransport_region_group: The name of the region group, for which the MHT should be computed in addition to the global MHT.

A.61 AM_testComputeInterval

A.61.1 config_AM_testComputeInterval_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.474: config_AM_testComputeInterval_enable: If true, ocean analysis member test_compute_interval is called.

A.61.2 config_AM_testComputeInterval_compute_interval

Type:	character
Units:	–
Default Value:	00-00-01_00:00:00
Possible Values:	Any valid time stamp, 'dt', 'output_interval'

Table A.475: config_AM_testComputeInterval_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.61.3 config_AM_testComputeInterval_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.476: config_AM_testComputeInterval_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.61.4 config_AM_testComputeInterval_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.477: config_AM_testComputeInterval_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.61.5 config_AM_testComputeInterval_output_stream

Type:	character
Units:	–
Default Value:	testComputeIntervalOutput
Possible Values:	Any existing stream name or 'none'

Table A.478: config_AM_testComputeInterval_output_stream: Name of the stream that should be tied to the test_compute_interval analysis member

A.62 AM_highFrequencyOutput

A.62.1 config_AM_highFrequencyOutput_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.479: config_AM_highFrequencyOutput_enable: If true, ocean analysis member highFrequencyOutput is called.

A.62.2 config_AM_highFrequencyOutput_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.480: config_AM_highFrequencyOutput_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.62.3 config_AM_highFrequencyOutput_output_stream

Type:	character
Units:	–
Default Value:	highFrequencyOutput
Possible Values:	Any existing stream name or 'none'

Table A.481: config_AM_highFrequencyOutput_output_stream: Name of the stream that the highFrequencyOutput analysis member should be tied to.

A.62.4 config_AM_highFrequencyOutput_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.482: config_AM_highFrequencyOutput_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.62.5 config_AM_highFrequencyOutput_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.483: config_AM_highFrequencyOutput_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.63 AM_timeFilters

A.63.1 config_AM_timeFilters_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.484: config_AM_timeFilters_enable: If true, ocean analysis member timeFilters is called.

A.63.2 config_AM_timeFilters_compute_interval

Type:	character
Units:	–
Default Value:	dt
Possible Values:	'dt' because filtering should be performed at each time step.

Table A.485: config_AM_timeFilters_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.63.3 config_AM_timeFilters_output_stream

Type:	character
Units:	–
Default Value:	timeFiltersOutput
Possible Values:	Any existing stream name or 'none'

Table A.486: config_AM_timeFilters_output_stream: Name of the stream that the timeFilters analysis member should be tied to.

A.63.4 config_AM_timeFilters_restart_stream

Type:	character
Units:	–
Default Value:	timeFiltersRestart
Possible Values:	Any existing stream name or 'none'

Table A.487: config_AM_timeFilters_restart_stream: Name of the stream that the timeFilters analysis member should use to perform restarts.

A.63.5 config_AM_timeFilters_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.488: config_AM_timeFilters_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.63.6 config_AM_timeFilters_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.489: config_AM_timeFilters_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.63.7 config_AM_timeFilters_initialize_filters

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.490: config_AM_timeFilters_initialize_filters: Logical flag determining if filters should be initialized on start-up.

A.63.8 config_AM_timeFilters_tau

Type:	character
Units:	–
Default Value:	90_00:00:00
Possible Values:	Any time stamp in 'DD_hh:mm:ss' format. Items can be removed from the left if they are unused.

Table A.491: config_AM_timeFilters_tau: Cutoff time scale τ for high and low pass filtering (default is 90 days).

A.63.9 config_AM_timeFilters_compute_cell_centered_values

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.492: config_AM_timeFilters_compute_cell_centered_values: Logical flag determining if cell centered values should be computed.

A.64 AM_lagrPartTrack

A.64.1 config_AM_lagrPartTrack_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.493: config_AM_lagrPartTrack_enable: If true, ocean analysis member lagrPartTrack is called.

A.64.2 config_AM_lagrPartTrack_compute_interval

Type:	character
Units:	–
Default Value:	dt
Possible Values:	'DDDD_HH:MM:SS', 'output', 'dt'

Table A.494: config_AM_lagrPartTrack_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.64.3 config_AM_lagrPartTrack_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.495: config_AM_lagrPartTrack_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.64.4 config_AM_lagrPartTrack_output_stream

Type:	character
Units:	–
Default Value:	lagrPartTrackOutput
Possible Values:	Any existing stream name or 'none'

Table A.496: config_AM_lagrPartTrack_output_stream: Name of the stream that the lagrPartTrack analysis member should be tied to.

A.64.5 config_AM_lagrPartTrack_restart_stream

Type:	character
Units:	–
Default Value:	lagrPartTrackRestart
Possible Values:	Any existing stream name or 'none'

Table A.497: config_AM_lagrPartTrack_restart_stream: Name of the stream that the lagrPartTrack analysis member should use to perform restarts.

A.64.6 config_AM_lagrPartTrack_input_stream

Type:	character

Units:	–
Default Value:	lagrPartTrackInput
Possible Values:	Any existing stream name or 'none'

Table A.498: config_AM_lagrPartTrack_input_stream: Name of the stream that the lagrPartTrack analysis member should read only in a non-restart run.

A.64.7 config_AM_lagrPartTrack_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.499: config_AM_lagrPartTrack_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.64.8 config_AM_lagrPartTrack_filter_number

Type:	integer
Units:	–
Default Value:	0
Possible Values:	0, 1, 2, ...

Table A.500: config_AM_lagrPartTrack_filter_number: Number of times to apply filtering operation.

A.64.9 config_AM_lagrPartTrack_timeIntegration

Type:	integer
Units:	–
Default Value:	2
Possible Values:	1, 2, 4,...

Table A.501: config_AM_lagrPartTrack_timeIntegration: type of temporal interpolation with possible_values='EE(1), RK2(2), RK4(4)' as ENUMs

A.64.10 config_AM_lagrPartTrack_reset_criteria

Type:	character
Units:	–
Default Value:	none
Possible Values:	'none','particle_time','global_time', 'region','all'

Table A.502: config_AM_lagrPartTrack_reset_criteria: Specify whether particles should not be reset ('none'), be reset on a timer for each particle ('particle_time'), be reset on config_AM_lagrPartTrack_reset_time_globally value ('global_time'), be reset based on regions ('region'), or be reset for all conditions ('all').

A.64.11 config_AM_lagrPartTrack_reset_global_timestamp

Type:	character
Units:	–
Default Value:	0000_00:00:00
Possible Values:	timestamps of form 0000_00:00:00

Table A.503: config_AM_lagrPartTrack_reset_global_timestamp: Specify reset global timestamp interval.

A.64.12 config_AM_lagrPartTrack_region_stream

Type:	character
Units:	–
Default Value:	lagrPartTrackRegions
Possible Values:	Any existing stream name or 'none'

Table A.504: config_AM_lagrPartTrack_region_stream: Name of the stream that has region arrays resetOutsideRegionMaskValue1 and resetInsideRegionMaskValue1 for region-based particle resets.

A.64.13 config_AM_lagrPartTrack_reset_if_outside_region

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.false. or .true.

Table A.505: config_AM_lagrPartTrack_reset_if_outside_region: Specify whether particles should be reset when they leave the resetOutsideRegionMaskValue1 mask.

A.64.14 config_AM_lagrPartTrack_reset_if_inside_region

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.false. or .true.

Table A.506: config_AM_lagrPartTrack_reset_if_inside_region: Specify whether particles should be reset when they enter the resetInsideRegionMaskValue1 mask.

A.64.15 config_AM_lagrPartTrack_sample_horizontal_interp

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.507: config_AM_lagrPartTrack_sample_horizontal_interp: If true, particles horizontally interpolate sample quantities.

A.64.16 config_AM_lagrPartTrack_sample_temperature

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.508: config_AM_lagrPartTrack_sample_temperature: If true, particles sample temperature.

A.64.17 config_AM_lagrPartTrack_sample_salinity

Type:	logical
Units:	–

Default Value:	.true.
Possible Values:	.true. or .false.

Table A.509: config_AM_lagrPartTrack_sample_salinity: If true, particles sample salinity.

A.64.18 config_AM_lagrPartTrack_sample_DIC

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.510: config_AM_lagrPartTrack_sample_DIC: If true, particles sample DIC.

A.64.19 config_AM_lagrPartTrack_sample_ALK

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.511: config_AM_lagrPartTrack_sample_ALK: If true, particles sample ALK.

A.64.20 config_AM_lagrPartTrack_sample_PO4

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.512: config_AM_lagrPartTrack_sample_PO4: If true, particles sample PO4.

A.64.21 config_AM_lagrPartTrack_sample_NO3

Type:	logical
Units:	–
Default Value:	.false.

Possible Values:	.true. or .false.

Table A.513: config_AM_lagrPartTrack_sample_NO3: If true, particles sample NO3.

A.64.22 config_AM_lagrPartTrack_sample_SiO3

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.514: config_AM_lagrPartTrack_sample_SiO3: If true, particles sample SiO3.

A.64.23 config_AM_lagrPartTrack_sample_NH4

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.515: config_AM_lagrPartTrack_sample_NH4: If true, particles sample NH4.

A.64.24 config_AM_lagrPartTrack_sample_Fe

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.516: config_AM_lagrPartTrack_sample_Fe: If true, particles sample Fe.

A.64.25 config_AM_lagrPartTrack_sample_O2

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.517: config_AM_lagrPartTrack_sample_O2: If true, particles sample O2.

A.65 AM_eliassenPalm

A.65.1 config_AM_eliassenPalm_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.518: config_AM_eliassenPalm_enable: If true, ocean analysis member eliassenPalm is called.

A.65.2 config_AM_eliassenPalm_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.519: config_AM_eliassenPalm_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.65.3 config_AM_eliassenPalm_output_stream

Type:	character
Units:	–
Default Value:	eliassenPalmOutput
Possible Values:	Any existing stream name or 'none'

Table A.520: config_AM_eliassenPalm_output_stream: Name of the stream that the eliassenPalm analysis member should be tied to.

A.65.4 config_AM_eliassenPalm_restart_stream

Type:	character
Units:	–
Default Value:	eliassenPalmRestart
Possible Values:	Any existing stream name or 'none'

Table A.521: config_AM_eliassenPalm_restart_stream: Name of the stream that the eliassenPalm analysis member will use to performing restarts.

A.65.5 config_AM_eliassenPalm_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.522: config_AM_eliassenPalm_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.65.6 config_AM_eliassenPalm_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.523: config_AM_eliassenPalm_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.65.7 config_AM_eliassenPalm_debug

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.524: config_AM_eliassenPalm_debug: If true, debugging code is turned on.

A.65.8 config_AM_eliassenPalm_nBuoyancyLayers

Type:	integer
Units:	–
Default Value:	45
Possible Values:	any positive real value.

Table A.525: config_AM_eliassenPalm_nBuoyancyLayers: Number of reference buoyancy layers.

A.65.9 config_AM_eliassenPalm_rhomin_buoycoor

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Default Value:	900
Possible Values:	any positive real value.

Table A.526: config_AM_eliassenPalm_rhomin_buoycoor: Minimum density used in defining the first buoyancy coordinate layer

A.65.10 config_AM_eliassenPalm_rhomax_buoycoor

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Default Value:	1080
Possible Values:	any positive real value.

Table A.527: config_AM_eliassenPalm_rhomax_buoycoor: Maximum density used in defining the last buoyancy coordinate layer

A.66 AM_mixedLayerDepths

A.66.1 config_AM_mixedLayerDepths_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.528: config_AM_mixedLayerDepths_enable: If true, ocean analysis member mixedLayerDepth is called.

A.66.2 config_AM_mixedLayerDepths_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.529: config_AM_mixedLayerDepths_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.66.3 config_AM_mixedLayerDepths_output_stream

Type:	character
Units:	–
Default Value:	mixedLayerDepthsOutput
Possible Values:	Any existing stream name or 'none'

Table A.530: config_AM_mixedLayerDepths_output_stream: Name of the stream that the temPlate analysis member should be tied to.

A.66.4 config_AM_mixedLayerDepths_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.531: config_AM_mixedLayerDepths_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.66.5 config_AM_mixedLayerDepths_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.532: config_AM_mixedLayerDepths_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up

A.66.6 config_AM_mixedLayerDepths_Tthreshold

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.533: config_AM_mixedLayerDepths_Tthreshold: Logical flag that determines if MLDs are calculated using a critical temperature threshold

A.66.7 config_AM_mixedLayerDepths_crit_temp_threshold

Type:	real
Units:	C
Default Value:	0.2
Possible Values:	all real positive values, suggested range 0.2 less than or equal to thresh less than or equal to 1

Table A.534: config_AM_mixedLayerDepths_crit_temp_threshold: temperature change relative to surface for threshold method

A.66.8 config_AM_mixedLayerDepths_reference_pressure

Type:	real
Units:	$\mathrm{N\,m^{-}2}$
Default Value:	1.0E5
Possible Values:	any positive real, suggested range .25E5 less than or equal to value less than or equal to 2E5

Table A.535: config_AM_mixedLayerDepths_reference_pressure: reference pressure for threshold computation

A.66.9 config_AM_mixedLayerDepths_Tgradient

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.536: config_AM_mixedLayerDepths_Tgradient: Logical flag controlling whether or not to compute MLDs via the temperature gradient

A.66.10 config_AM_mixedLayerDepths_Dgradient

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.537: config_AM_mixedLayerDepths_Dgradient: Logical flag controlling whether or not to compute MLDs via the density gradient

A.66.11 config_AM_mixedLayerDepths_temp_gradient_threshold

Type:	real
Units:	C Pa$^-$1
Default Value:	5E-7
Possible Values:	all positive reals

Table A.538: config_AM_mixedLayerDepths_temp_gradient_threshold: temp gradient crit value, if not exceeded max gradient used

A.66.12 config_AM_mixedLayerDepths_den_gradient_threshold

Type:	real
Units:	C Pa$^-$1
Default Value:	5E-8
Possible Values:	all positive reals

Table A.539: config_AM_mixedLayerDepths_den_gradient_threshold: potential density gradient crit value. If not exceeded max gradient used

A.66.13 config_AM_mixedLayerDepths_interp_method

Type:	integer

Units:	–
Default Value:	1
Possible Values:	1=linear or 2=quadratic or 3=cubic

Table A.540: config_AM_mixedLayerDepths_interp_method: flag specifying which interpolation method to use in computations

A.67 AM_regionalStatsDaily

A.67.1 config_AM_regionalStatsDaily_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.541: config_AM_regionalStatsDaily_enable: If true, ocean analysis member regional stats is called.

A.67.2 config_AM_regionalStatsDaily_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.542: config_AM_regionalStatsDaily_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.67.3 config_AM_regionalStatsDaily_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.543: config_AM_regionalStatsDaily_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.67.4 config_AM_regionalStatsDaily_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'output_interval', or 'dt'.

Table A.544: config_AM_regionalStatsDaily_compute_interval: Interval that determines frequency of computation for the regional stats analysis member.

A.67.5 config_AM_regionalStatsDaily_output_stream

Type:	character
Units:	–
Default Value:	regionalStatsDailyOutput
Possible Values:	An existing output stream that will be read for input fields. Cannot be 'none', like other analysis members.

Table A.545: config_AM_regionalStatsDaily_output_stream: Name of stream the regional stats analysis member will operate on that contains the list of input fields (and will be modified to contain the output stats fields).

A.67.6 config_AM_regionalStatsDaily_restart_stream

Type:	character
Units:	–
Default Value:	regionalMasksInput
Possible Values:	An existing input stream that will be read for regions/masks. Cannot be 'none', like other analysis members, and should be the same as input_stream to ensure the masks are read on start or restart.

Table A.546: config_AM_regionalStatsDaily_restart_stream: Name of stream the regional stats analysis member will use for the mask/region data.

A.67.7 config_AM_regionalStatsDaily_input_stream

Type:	character
Units:	–
Default Value:	regionalMasksInput

Possible Values:	An existing input stream that will be read for regions/masks. Cannot be 'none', like other analysis members, and should be the same as restart_stream to ensure the masks are read on start or restart.

Table A.547: config_AM_regionalStatsDaily_input_stream: Name of stream the regional stats analysis member will use for the mask/region data.

A.67.8 config_AM_regionalStatsDaily_operation

Type:	character
Units:	–
Default Value:	avg
Possible Values:	An operation, where it can be 'avg', 'min', or 'max', 'sum', or 'sos' (sum of squares).

Table A.548: config_AM_regionalStatsDaily_operation: An operation describing the statistic to apply to all variables in the output stream.

A.67.9 config_AM_regionalStatsDaily_region_type

Type:	character
Units:	–
Default Value:	cell
Possible Values:	The mask reduction dimension, where it can be 'cell' or 'vertex'

Table A.549: config_AM_regionalStatsDaily_region_type: The reduced dimension of the region masks that will be used during the regional stats operation. Needs to be the last dimension, and the same dimension as all of the reduced fields, weight fields, and masks.

A.67.10 config_AM_regionalStatsDaily_region_group

Type:	character
Units:	–
Default Value:	all
Possible Values:	a valid name in the region group names

Table A.550: config_AM_regionalStatsDaily_region_group: The name of the group of region masks that will be used to subset the mesh during the regional stats operation.

A.67.11 config_AM_regionalStatsDaily_1d_weighting_function

Type:	character
Units:	–
Default Value:	mul
Possible Values:	A weight operation, where it can be 'id' (for 'min', 'max', or 'avg') or 'mul' (where 'mul' is restricted to 'avg').

Table A.551: config_AM_regionalStatsDaily_1d_weighting_function: An operation applied to every element in a region WITHOUT a vertical dimension, with a 1D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).

A.67.12 config_AM_regionalStatsDaily_2d_weighting_function

Type:	character
Units:	–
Default Value:	mul
Possible Values:	A weight operation, where it can be 'id' (for 'min', 'max', or 'avg') or 'mul' (where 'mul' is restricted to 'avg').

Table A.552: config_AM_regionalStatsDaily_2d_weighting_function: An operation applied to every element in a region WITH a vertical dimension, with a 2D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).

A.67.13 config_AM_regionalStatsDaily_1d_weighting_field

Type:	character
Units:	–
Default Value:	areaCell
Possible Values:	'none' if 1D weighting function is 'id', otherwise any valid 1D real field with the same horizontal dimensions as the region masks

Table A.553: config_AM_regionalStatsDaily_1d_weighting_field: A 1D real field used in conjunction with the 1D weighting function, to be used as a weighting scale factor (like area).

A.67.14 config_AM_regionalStatsDaily_2d_weighting_field

Type:	character
Units:	–
Default Value:	volumeCell
Possible Values:	'none' if weighting function is 'id', otherwise any valid 2D real field with the same horizontal dimensions as the region masks and the vertical mask (requires that there is a vertical mask and vertical dimension)

Table A.554: config_AM_regionalStatsDaily_2d_weighting_field: A 2D real field used in conjunction with the 2D weighting function, to be used as a weighting scale factor (like area).

A.67.15 config_AM_regionalStatsDaily_vertical_mask

Type:	character
Units:	–
Default Value:	cellMask
Possible Values:	'none' if no vertical mask field is to be used, otherwise any integer 2D field with the configured second vertical dimension

Table A.555: config_AM_regionalStatsDaily_vertical_mask: An additional 2D vertical integer mask field, which is used in conjunction with the regional masks. Used in cases when an input field has a second dimension that matches the vertical mask dimension.

A.67.16 config_AM_regionalStatsDaily_vertical_dimension

Type:	character
Units:	–
Default Value:	nVertLevels
Possible Values:	'none' if no vertical mask field is to be used, otherwise the name of the second dimension in the vertical mask field (where the first has to be the element dimension)

Table A.556: config_AM_regionalStatsDaily_vertical_dimension: The second dimension to be used for additional vertical mask.

A.68 AM_regionalStatsWeekly

A.68.1 config_AM_regionalStatsWeekly_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.557: config_AM_regionalStatsWeekly_enable: If true, ocean analysis member regional stats is called.

A.68.2 config_AM_regionalStatsWeekly_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.558: config_AM_regionalStatsWeekly_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.68.3 config_AM_regionalStatsWeekly_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.559: config_AM_regionalStatsWeekly_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.68.4 config_AM_regionalStatsWeekly_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'output_interval', or 'dt'.

Table A.560: config_AM_regionalStatsWeekly_compute_interval: Interval that determines frequency of computation for the regional stats analysis member.

A.68.5 config_AM_regionalStatsWeekly_output_stream

Type:	character
Units:	–
Default Value:	regionalStatsWeeklyOutput
Possible Values:	An existing output stream that will be read for input fields. Cannot be 'none', like other analysis members.

Table A.561: config_AM_regionalStatsWeekly_output_stream: Name of stream the regional stats analysis member will operate on that contains the list of input fields (and will be modified to contain the output stats fields).

A.68.6 config_AM_regionalStatsWeekly_restart_stream

Type:	character
Units:	–
Default Value:	regionalMasksInput
Possible Values:	An existing input stream that will be read for regions/masks. Cannot be 'none', like other analysis members, and should be the same as input_stream to ensure the masks are read on start or restart.

Table A.562: config_AM_regionalStatsWeekly_restart_stream: Name of stream the regional stats analysis member will use for the mask/region data.

A.68.7 config_AM_regionalStatsWeekly_input_stream

Type:	character
Units:	–
Default Value:	regionalMasksInput
Possible Values:	An existing input stream that will be read for regions/masks. Cannot be 'none', like other analysis members, and should be the same as restart_stream to ensure the masks are read on start or restart.

Table A.563: config_AM_regionalStatsWeekly_input_stream: Name of stream the regional stats analysis member will use for the mask/region data.

A.68.8 config_AM_regionalStatsWeekly_operation

Type:	character
Units:	–
Default Value:	avg
Possible Values:	An operation, where it can be 'avg', 'min', or 'max', 'sum', or 'sos' (sum of squares).

Table A.564: config_AM_regionalStatsWeekly_operation: An operation describing the statistic to apply to all variables in the output stream.

A.68.9 config_AM_regionalStatsWeekly_region_type

Type:	character
Units:	–
Default Value:	cell
Possible Values:	The mask reduction dimension, where it can be 'cell' or 'vertex'

Table A.565: config_AM_regionalStatsWeekly_region_type: The reduced dimension of the region masks that will be used during the regional stats operation. Needs to be the last dimension, and the same dimension as all of the reduced fields, weight fields, and masks.

A.68.10 config_AM_regionalStatsWeekly_region_group

Type:	character
Units:	–
Default Value:	all
Possible Values:	a valid name in the region group names

Table A.566: config_AM_regionalStatsWeekly_region_group: The name of the group of region masks that will be used to subset the mesh during the regional stats operation.

A.68.11 config_AM_regionalStatsWeekly_1d_weighting_function

Type:	character
Units:	–
Default Value:	mul
Possible Values:	A weight operation, where it can be 'id' (for 'min', 'max', or 'avg') or 'mul' (where 'mul' is restricted to 'avg').

Table A.567: config_AM_regionalStatsWeekly_1d_weighting_function: An operation applied to every element in a region WITHOUT a vertical dimension, with a 1D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).

A.68.12 config_AM_regionalStatsWeekly_2d_weighting_function

Type:	character
Units:	–
Default Value:	mul
Possible Values:	A weight operation, where it can be 'id' (for 'min', 'max', or 'avg') or 'mul' (where 'mul' is restricted to 'avg').

Table A.568: config_AM_regionalStatsWeekly_2d_weighting_function: An operation applied to every element in a region WITH a vertical dimension, with a 2D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).

A.68.13 config_AM_regionalStatsWeekly_1d_weighting_field

Type:	character
Units:	–
Default Value:	areaCell
Possible Values:	'none' if 1D weighting function is 'id', otherwise any valid 1D real field with the same horizontal dimensions as the region masks

Table A.569: config_AM_regionalStatsWeekly_1d_weighting_field: A 1D real field used in conjunction with the 1D weighting function, to be used as a weighting scale factor (like area).

A.68.14 config_AM_regionalStatsWeekly_2d_weighting_field

Type:	character
Units:	–
Default Value:	volumeCell
Possible Values:	'none' if weighting function is 'id', otherwise any valid 2D real field with the same horizontal dimensions as the region masks and the vertical mask (requires that there is a vertical mask and vertical dimension)

Table A.570: config_AM_regionalStatsWeekly_2d_weighting_field: A 2D real field used in conjunction with the 2D weighting function, to be used as a weighting scale factor (like area).

A.68.15 config_AM_regionalStatsWeekly_vertical_mask

Type:	character
Units:	–
Default Value:	cellMask
Possible Values:	'none' if no vertical mask field is to be used, otherwise any integer 2D field with the configured second vertical dimension

Table A.571: config_AM_regionalStatsWeekly_vertical_mask: An additional 2D vertical integer mask field, which is used in conjunction with the regional masks. Used in cases when an input field has a second dimension that matches the vertical mask dimension.

A.68.16 config_AM_regionalStatsWeekly_vertical_dimension

Type:	character
Units:	–
Default Value:	nVertLevels
Possible Values:	'none' if no vertical mask field is to be used, otherwise the name of the second dimension in the vertical mask field (where the first has to be the element dimension)

Table A.572: config_AM_regionalStatsWeekly_vertical_dimension: The second dimension to be used for additional vertical mask.

A.69 AM_regionalStatsMonthly

A.69.1 config_AM_regionalStatsMonthly_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.573: config_AM_regionalStatsMonthly_enable: If true, ocean analysis member regional stats is called.

A.69.2 config_AM_regionalStatsMonthly_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.574: config_AM_regionalStatsMonthly_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.69.3 config_AM_regionalStatsMonthly_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.575: config_AM_regionalStatsMonthly_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.69.4 config_AM_regionalStatsMonthly_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'output_interval', or 'dt'.

Table A.576: config_AM_regionalStatsMonthly_compute_interval: Interval that determines frequency of computation for the regional stats analysis member.

A.69.5 config_AM_regionalStatsMonthly_output_stream

Type:	character
Units:	–
Default Value:	regionalStatsMonthlyOutput
Possible Values:	An existing output stream that will be read for input fields. Cannot be 'none', like other analysis members.

Table A.577: config_AM_regionalStatsMonthly_output_stream: Name of stream the regional stats analysis member will operate on that contains the list of input fields (and will be modified to contain the output stats fields).

A.69.6 config_AM_regionalStatsMonthly_restart_stream

Type:	character
Units:	–
Default Value:	regionalMasksInput
Possible Values:	An existing input stream that will be read for regions/masks. Cannot be 'none', like other analysis members, and should be the same as input_stream to ensure the masks are read on start or restart.

Table A.578: config_AM_regionalStatsMonthly_restart_stream: Name of stream the regional stats analysis member will use for the mask/region data.

A.69.7 config_AM_regionalStatsMonthly_input_stream

Type:	character
Units:	–
Default Value:	regionalMasksInput
Possible Values:	An existing input stream that will be read for regions/masks. Cannot be 'none', like other analysis members, and should be the same as restart_stream to ensure the masks are read on start or restart.

Table A.579: config_AM_regionalStatsMonthly_input_stream: Name of stream the regional stats analysis member will use for the mask/region data.

A.69.8 config_AM_regionalStatsMonthly_operation

Type:	character
Units:	–
Default Value:	avg
Possible Values:	An operation, where it can be 'avg', 'min', or 'max', 'sum', or 'sos' (sum of squares).

Table A.580: config_AM_regionalStatsMonthly_operation: An operation describing the statistic to apply to all variables in the output stream.

A.69.9 config_AM_regionalStatsMonthly_region_type

Type:	character
Units:	–
Default Value:	cell
Possible Values:	The mask reduction dimension, where it can be 'cell' or 'vertex'

Table A.581: config_AM_regionalStatsMonthly_region_type: The reduced dimension of the region masks that will be used during the regional stats operation. Needs to be the last dimension, and the same dimension as all of the reduced fields, weight fields, and masks.

A.69.10 config_AM_regionalStatsMonthly_region_group

Type:	character
Units:	–
Default Value:	all
Possible Values:	a valid name in the region group names

Table A.582: config_AM_regionalStatsMonthly_region_group: The name of the group of region masks that will be used to subset the mesh during the regional stats operation.

A.69.11 config_AM_regionalStatsMonthly_1d_weighting_function

Type:	character
Units:	–
Default Value:	mul
Possible Values:	A weight operation, where it can be 'id' (for 'min', 'max', or 'avg') or 'mul' (where 'mul' is restricted to 'avg').

Table A.583: config_AM_regionalStatsMonthly_1d_weighting_function: An operation applied to every element in a region WITHOUT a vertical dimension, with a 1D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).

A.69.12 config_AM_regionalStatsMonthly_2d_weighting_function

Type:	character
Units:	–
Default Value:	mul
Possible Values:	A weight operation, where it can be 'id' (for 'min', 'max', or 'avg') or 'mul' (where 'mul' is restricted to 'avg').

Table A.584: config_AM_regionalStatsMonthly_2d_weighting_function: An operation applied to every element in a region WITH a vertical dimension, with a 2D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).

A.69.13 config_AM_regionalStatsMonthly_1d_weighting_field

Type:	character
Units:	–
Default Value:	areaCell
Possible Values:	'none' if 1D weighting function is 'id', otherwise any valid 1D real field with the same horizontal dimensions as the region masks

Table A.585: config_AM_regionalStatsMonthly_1d_weighting_field: A 1D real field used in conjunction with the 1D weighting function, to be used as a weighting scale factor (like area).

A.69.14 config_AM_regionalStatsMonthly_2d_weighting_field

Type:	character
Units:	–
Default Value:	volumeCell
Possible Values:	'none' if weighting function is 'id', otherwise any valid 2D real field with the same horizontal dimensions as the region masks and the vertical mask (requires that there is a vertical mask and vertical dimension)

Table A.586: config_AM_regionalStatsMonthly_2d_weighting_field: A 2D real field used in conjunction with the 2D weighting function, to be used as a weighting scale factor (like area).

A.69.15 config_AM_regionalStatsMonthly_vertical_mask

Type:	character
Units:	–
Default Value:	cellMask
Possible Values:	'none' if no vertical mask field is to be used, otherwise any integer 2D field with the configured second vertical dimension

Table A.587: config_AM_regionalStatsMonthly_vertical_mask: An additional 2D vertical integer mask field, which is used in conjunction with the regional masks. Used in cases when an input field has a second dimension that matches the vertical mask dimension.

A.69.16 config_AM_regionalStatsMonthly_vertical_dimension

Type:	character
Units:	–
Default Value:	nVertLevels
Possible Values:	'none' if no vertical mask field is to be used, otherwise the name of the second dimension in the vertical mask field (where the first has to be the element dimension)

Table A.588: config_AM_regionalStatsMonthly_vertical_dimension: The second dimension to be used for additional vertical mask.

A.70 AM_regionalStatsCustom

A.70.1 config_AM_regionalStatsCustom_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.589: config_AM_regionalStatsCustom_enable: If true, ocean analysis member regional stats is called.

A.70.2 config_AM_regionalStatsCustom_compute_on_startup

Type:	logical
Units:	–

Default Value:	.false.
Possible Values:	.true. or .false.

Table A.590: config_AM_regionalStatsCustom_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.70.3 config_AM_regionalStatsCustom_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.591: config_AM_regionalStatsCustom_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.70.4 config_AM_regionalStatsCustom_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'output_interval', or 'dt'.

Table A.592: config_AM_regionalStatsCustom_compute_interval: Interval that determines frequency of computation for the regional stats analysis member.

A.70.5 config_AM_regionalStatsCustom_output_stream

Type:	character
Units:	–
Default Value:	regionalStatsCustomOutput
Possible Values:	An existing output stream that will be read for input fields. Cannot be 'none', like other analysis members.

Table A.593: config_AM_regionalStatsCustom_output_stream: Name of stream the regional stats analysis member will operate on that contains the list of input fields (and will be modified to contain the output stats fields).

A.70.6 config_AM_regionalStatsCustom_restart_stream

Type:	character
Units:	–
Default Value:	regionalMasksInput
Possible Values:	An existing input stream that will be read for regions/masks. Cannot be 'none', like other analysis members, and should be the same as input_stream to ensure the masks are read on start or restart.

Table A.594: config_AM_regionalStatsCustom_restart_stream: Name of stream the regional stats analysis member will use for the mask/region data.

A.70.7 config_AM_regionalStatsCustom_input_stream

Type:	character
Units:	–
Default Value:	regionalMasksInput
Possible Values:	An existing input stream that will be read for regions/masks. Cannot be 'none', like other analysis members, and should be the same as restart_stream to ensure the masks are read on start or restart.

Table A.595: config_AM_regionalStatsCustom_input_stream: Name of stream the regional stats analysis member will use for the mask/region data.

A.70.8 config_AM_regionalStatsCustom_operation

Type:	character
Units:	–
Default Value:	avg
Possible Values:	An operation, where it can be 'avg', 'min', or 'max', 'sum', or 'sos' (sum of squares).

Table A.596: config_AM_regionalStatsCustom_operation: An operation describing the statistic to apply to all variables in the output stream.

A.70.9 config_AM_regionalStatsCustom_region_type

Type:	character

Units:	–
Default Value:	cell
Possible Values:	The mask reduction dimension, where it can be 'cell' or 'vertex'

Table A.597: config_AM_regionalStatsCustom_region_type: The reduced dimension of the region masks that will be used during the regional stats operation. Needs to be the last dimension, and the same dimension as all of the reduced fields, weight fields, and masks.

A.70.10 config_AM_regionalStatsCustom_region_group

Type:	character
Units:	–
Default Value:	all
Possible Values:	a valid name in the region group names

Table A.598: config_AM_regionalStatsCustom_region_group: The name of the group of region masks that will be used to subset the mesh during the regional stats operation.

A.70.11 config_AM_regionalStatsCustom_1d_weighting_function

Type:	character
Units:	–
Default Value:	mul
Possible Values:	A weight operation, where it can be 'id' (for 'min', 'max', or 'avg') or 'mul' (where 'mul' is restricted to 'avg').

Table A.599: config_AM_regionalStatsCustom_1d_weighting_function: An operation applied to every element in a region WITHOUT a vertical dimension, with a 1D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).

A.70.12 config_AM_regionalStatsCustom_2d_weighting_function

Type:	character
Units:	–
Default Value:	mul

Possible Values:	A weight operation, where it can be 'id' (for 'min', 'max', or 'avg') or 'mul' (where 'mul' is restricted to 'avg').

Table A.600: config_AM_regionalStatsCustom_2d_weighting_function: An operation applied to every element in a region WITH a vertical dimension, with a 2D weighting field, prior to an average operation. The average is normalized by the sum of the weight field in the region (divided by the sum of regional weight values).

A.70.13 config_AM_regionalStatsCustom_1d_weighting_field

Type:	character
Units:	–
Default Value:	areaCell
Possible Values:	'none' if 1D weighting function is 'id', otherwise any valid 1D real field with the same horizontal dimensions as the region masks

Table A.601: config_AM_regionalStatsCustom_1d_weighting_field: A 1D real field used in conjunction with the 1D weighting function, to be used as a weighting scale factor (like area).

A.70.14 config_AM_regionalStatsCustom_2d_weighting_field

Type:	character
Units:	–
Default Value:	volumeCell
Possible Values:	'none' if weighting function is 'id', otherwise any valid 2D real field with the same horizontal dimensions as the region masks and the vertical mask (requires that there is a vertical mask and vertical dimension)

Table A.602: config_AM_regionalStatsCustom_2d_weighting_field: A 2D real field used in conjunction with the 2D weighting function, to be used as a weighting scale factor (like area).

A.70.15 config_AM_regionalStatsCustom_vertical_mask

Type:	character
Units:	–
Default Value:	cellMask
Possible Values:	'none' if no vertical mask field is to be used, otherwise any integer 2D field with the configured second vertical dimension

Table A.603: config_AM_regionalStatsCustom_vertical_mask: An additional 2D vertical integer mask field, which is used in conjunction with the regional masks. Used in cases when an input field has a second dimension that matches the vertical mask dimension.

A.70.16 config_AM_regionalStatsCustom_vertical_dimension

Type:	character
Units:	–
Default Value:	nVertLevels
Possible Values:	'none' if no vertical mask field is to be used, otherwise the name of the second dimension in the vertical mask field (where the first has to be the element dimension)

Table A.604: config_AM_regionalStatsCustom_vertical_dimension: The second dimension to be used for additional vertical mask.

A.71 AM_timeSeriesStatsDaily

A.71.1 config_AM_timeSeriesStatsDaily_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.605: config_AM_timeSeriesStatsDaily_enable: If true, ocean analysis member time series stats is called.

A.71.2 config_AM_timeSeriesStatsDaily_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.606: config_AM_timeSeriesStatsDaily_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).

A.71.3 config_AM_timeSeriesStatsDaily_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.607: config_AM_timeSeriesStatsDaily_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.71.4 config_AM_timeSeriesStatsDaily_compute_interval

Type:	character
Units:	–
Default Value:	00-00-00_01:00:00
Possible Values:	Any valid time stamp or 'dt'. This must also be less than or equal to output_interval / 2 (i.e., requires at least two samples in a series).

Table A.608: config_AM_timeSeriesStatsDaily_compute_interval: Interval that determines frequency of computation for the time series stats analysis member.

A.71.5 config_AM_timeSeriesStatsDaily_output_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsDailyOutput
Possible Values:	An existing stream that will be modified (existing real fields removed and new time series stats versions added) with time series stats outputs. Cannot be 'none', like other analysis members.

Table A.609: config_AM_timeSeriesStatsDaily_output_stream: Name of stream the time series stats analysis member will operate on.

A.71.6 config_AM_timeSeriesStatsDaily_restart_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsDailyRestart
Possible Values:	A restart stream with state of the time series stats.

Table A.610: config_AM_timeSeriesStatsDaily_restart_stream: Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.

A.71.7 config_AM_timeSeriesStatsDaily_operation

Type:	character
Units:	–
Default Value:	avg
Possible Values:	An operation, where it can be 'avg', 'min', or 'max', 'sum', or 'sos' (sum of squares).

Table A.611: config_AM_timeSeriesStatsDaily_operation: An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.

A.71.8 config_AM_timeSeriesStatsDaily_reference_times

Type:	character
Units:	–
Default Value:	initial_time
Possible Values:	A list of absolute times or 'initial_time's, separated by ;.

Table A.612: config_AM_timeSeriesStatsDaily_reference_times: A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)

A.71.9 config_AM_timeSeriesStatsDaily_duration_intervals

Type:	character
Units:	–
Default Value:	repeat_interval

Possible Values:	A list of time durations in d_h:m:s or 'repeat_interval's, separated by ;. Each must be greater than or equal to compute_interval * 2 and less than or equal to repeat_interval. duration_intervals less than repeat_intervals allow for repeated statistics within the repeat_interval (i.e., for climatologies)

Table A.613: config_AM_timeSeriesStatsDaily_duration_intervals: A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.

A.71.10 config_AM_timeSeriesStatsDaily_repeat_intervals

Type:	character
Units:	–
Default Value:	reset_interval
Possible Values:	**MISSING**

Table A.614: config_AM_timeSeriesStatsDaily_repeat_intervals: A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.

A.71.11 config_AM_timeSeriesStatsDaily_reset_intervals

Type:	character
Units:	–
Default Value:	00-00-01_00:00:00
Possible Values:	A list of time durations in d_h:m:s, separated by ;. Ought to be greater than or equal to output_interval (not verified by the analysis member).

Table A.615: config_AM_timeSeriesStatsDaily_reset_intervals: A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.

A.71.12 config_AM_timeSeriesStatsDaily_backward_output_offset

Type:	character
Units:	–

Default Value:	00-00-01_00:00:00
Possible Values:	A time interval in YYYY-MM-DD_hh:mm:ss.

Table A.616: config_AM_timeSeriesStatsDaily_backward_output_offset: Backward offset for filename timestamps when writing the output stream

A.72 AM_timeSeriesStatsMonthly

A.72.1 config_AM_timeSeriesStatsMonthly_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.617: config_AM_timeSeriesStatsMonthly_enable: If true, ocean analysis member time series stats is called.

A.72.2 config_AM_timeSeriesStatsMonthly_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.618: config_AM_timeSeriesStatsMonthly_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).

A.72.3 config_AM_timeSeriesStatsMonthly_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.619: config_AM_timeSeriesStatsMonthly_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.72.4 config_AM_timeSeriesStatsMonthly_compute_interval

Type:	character
Units:	–
Default Value:	00-00-00_01:00:00
Possible Values:	Any valid time stamp or 'dt'. This must also be less than or equal to output_interval / 2 (i.e., requires at least two samples in a series).

Table A.620: config_AM_timeSeriesStatsMonthly_compute_interval: Interval that determines frequency of computation for the time series stats analysis member.

A.72.5 config_AM_timeSeriesStatsMonthly_output_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsMonthlyOutput
Possible Values:	An existing stream that will be modified (existing real fields removed and new time series stats versions added) with time series stats outputs. Cannot be 'none', like other analysis members.

Table A.621: config_AM_timeSeriesStatsMonthly_output_stream: Name of stream the time series stats analysis member will operate on.

A.72.6 config_AM_timeSeriesStatsMonthly_restart_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsMonthlyRestart
Possible Values:	A restart stream with state of the time series stats.

Table A.622: config_AM_timeSeriesStatsMonthly_restart_stream: Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.

A.72.7 config_AM_timeSeriesStatsMonthly_operation

Type:	character
Units:	–
Default Value:	avg

Possible Values:	An operation, where it can be 'avg', 'min', or 'max', 'sum', or 'sos' (sum of squares).

Table A.623: config_AM_timeSeriesStatsMonthly_operation: An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.

A.72.8 config_AM_timeSeriesStatsMonthly_reference_times

Type:	character
Units:	–
Default Value:	initial_time
Possible Values:	A list of absolute times or 'initial_time's, separated by ;.

Table A.624: config_AM_timeSeriesStatsMonthly_reference_times: A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)

A.72.9 config_AM_timeSeriesStatsMonthly_duration_intervals

Type:	character
Units:	–
Default Value:	repeat_interval
Possible Values:	A list of time durations in d_h:m:s or 'repeat_interval's, separated by ;. Each must be greater than or equal to compute_interval * 2 and less than or equal to repeat_interval. duration_intervals less than repeat_intervals allow for repeated statistics within the repeat_interval (i.e., for climatologies)

Table A.625: config_AM_timeSeriesStatsMonthly_duration_intervals: A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.

A.72.10 config_AM_timeSeriesStatsMonthly_repeat_intervals

Type:	character
Units:	–

Default Value:	reset_interval
Possible Values:	**MISSING**

Table A.626: config_AM_timeSeriesStatsMonthly_repeat_intervals: A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.

A.72.11 config_AM_timeSeriesStatsMonthly_reset_intervals

Type:	character
Units:	–
Default Value:	00-01-00_00:00:00
Possible Values:	A list of time durations in d_h:m:s, separated by ;. Ought to be greater than or equal to output_interval (not verified by the analysis member).

Table A.627: config_AM_timeSeriesStatsMonthly_reset_intervals: A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.

A.72.12 config_AM_timeSeriesStatsMonthly_backward_output_offset

Type:	character
Units:	–
Default Value:	00-01-00_00:00:00
Possible Values:	A time interval in YYYY-MM-DD_hh:mm:ss.

Table A.628: config_AM_timeSeriesStatsMonthly_backward_output_offset: Backward offset for filename timestamps when writing the output stream

A.73 AM_timeSeriesStatsClimatology

A.73.1 config_AM_timeSeriesStatsClimatology_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.629: config_AM_timeSeriesStatsClimatology_enable: If true, ocean analysis member time series stats is called.

A.73.2 config_AM_timeSeriesStatsClimatology_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.630: config_AM_timeSeriesStatsClimatology_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).

A.73.3 config_AM_timeSeriesStatsClimatology_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.631: config_AM_timeSeriesStatsClimatology_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.73.4 config_AM_timeSeriesStatsClimatology_compute_interval

Type:	character
Units:	–
Default Value:	00-00-00_01:00:00
Possible Values:	Any valid time stamp or 'dt'. This must also be less than or equal to output_interval / 2 (i.e., requires at least two samples in a series).

Table A.632: config_AM_timeSeriesStatsClimatology_compute_interval: Interval that determines frequency of computation for the time series stats analysis member.

A.73.5 config_AM_timeSeriesStatsClimatology_output_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsClimatologyOutput
Possible Values:	An existing stream that will be modified (existing real fields removed and new time series stats versions added) with time series stats outputs. Cannot be 'none', like other analysis members.

Table A.633: config_AM_timeSeriesStatsClimatology_output_stream: Name of stream the time series stats analysis member will operate on.

A.73.6 config_AM_timeSeriesStatsClimatology_restart_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsClimatologyRestart
Possible Values:	A restart stream with state of the time series stats.

Table A.634: config_AM_timeSeriesStatsClimatology_restart_stream: Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.

A.73.7 config_AM_timeSeriesStatsClimatology_operation

Type:	character
Units:	–
Default Value:	avg
Possible Values:	An operation, where it can be 'avg', 'min', or 'max', 'sum', or 'sos' (sum of squares).

Table A.635: config_AM_timeSeriesStatsClimatology_operation: An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.

A.73.8 config_AM_timeSeriesStatsClimatology_reference_times

Type:	character
Units:	–

Default Value:	00-03-01_00:00:00;00-06-01_00:00:00;00-09-01_00:00:00;00-12-01_00:00:00
Possible Values:	A list of absolute times or 'initial_time's, separated by ;.

Table A.636: config_AM_timeSeriesStatsClimatology_reference_times: A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)

A.73.9 config_AM_timeSeriesStatsClimatology_duration_intervals

Type:	character
Units:	–
Default Value:	00-03-00_00:00:00;00-03-00_00:00:00;00-03-00_00:00:00;00-03-00_00:00:00
Possible Values:	A list of time durations in d_h:m:s or 'repeat_interval's, separated by ;. Each must be greater than or equal to compute_interval * 2 and less than or equal to repeat_interval. duration_intervals less than repeat_intervals allow for repeated statistics within the repeat_interval (i.e., for climatologies)

Table A.637: config_AM_timeSeriesStatsClimatology_duration_intervals: A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.

A.73.10 config_AM_timeSeriesStatsClimatology_repeat_intervals

Type:	character
Units:	–
Default Value:	01-00-00_00:00:00;01-00-00_00:00:00;01-00-00_00:00:00;01-00-00_00:00:00
Possible Values:	**MISSING**

Table A.638: config_AM_timeSeriesStatsClimatology_repeat_intervals: A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.

A.73.11 config_AM_timeSeriesStatsClimatology_reset_intervals

Type:	character
Units:	–
Default Value:	1000-00-00_00:00:00;1000-00-00_00:00:00;1000-00-00_00:00:00;1000-00-00_00:00:00
Possible Values:	A list of time durations in d_h:m:s, separated by ;. Ought to be greater than or equal to output_interval (not verified by the analysis member).

Table A.639: config_AM_timeSeriesStatsClimatology_reset_intervals: A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.

A.73.12 config_AM_timeSeriesStatsClimatology_backward_output_offset

Type:	character
Units:	–
Default Value:	00-03-00_00:00:00
Possible Values:	A time interval in YYYY-MM-DD_hh:mm:ss.

Table A.640: config_AM_timeSeriesStatsClimatology_backward_output_offset: Backward offset for filename timestamps when writing the output stream

A.74 AM_timeSeriesStatsMonthlyMax

A.74.1 config_AM_timeSeriesStatsMonthlyMax_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.641: config_AM_timeSeriesStatsMonthlyMax_enable: If true, ocean analysis member time series stats is called.

A.74.2 config_AM_timeSeriesStatsMonthlyMax_compute_on_startup

Type:	logical
Units:	–

Default Value:	.false.
Possible Values:	.true. or .false.

Table A.642: config_AM_timeSeriesStatsMonthlyMax_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).

A.74.3 config_AM_timeSeriesStatsMonthlyMax_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.643: config_AM_timeSeriesStatsMonthlyMax_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.74.4 config_AM_timeSeriesStatsMonthlyMax_compute_interval

Type:	character
Units:	–
Default Value:	00-00-00_01:00:00
Possible Values:	Any valid time stamp or 'dt'. This must also be less than or equal to output_interval / 2 (i.e., requires at least two samples in a series).

Table A.644: config_AM_timeSeriesStatsMonthlyMax_compute_interval: Interval that determines frequency of computation for the time series stats analysis member.

A.74.5 config_AM_timeSeriesStatsMonthlyMax_output_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsMonthlyMaxOutput
Possible Values:	An existing stream that will be modified (existing real fields removed and new time series stats versions added) with time series stats outputs. Cannot be 'none', like other analysis members.

Table A.645: config_AM_timeSeriesStatsMonthlyMax_output_stream: Name of stream the time series stats analysis member will operate on.

A.74.6 config_AM_timeSeriesStatsMonthlyMax_restart_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsMonthlyMaxRestart
Possible Values:	A restart stream with state of the time series stats.

Table A.646: config_AM_timeSeriesStatsMonthlyMax_restart_stream: Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.

A.74.7 config_AM_timeSeriesStatsMonthlyMax_operation

Type:	character
Units:	–
Default Value:	max
Possible Values:	An operation, where it can be 'avg', 'min', or 'max', 'sum', or 'sos' (sum of squares).

Table A.647: config_AM_timeSeriesStatsMonthlyMax_operation: An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.

A.74.8 config_AM_timeSeriesStatsMonthlyMax_reference_times

Type:	character
Units:	–
Default Value:	initial_time
Possible Values:	A list of absolute times or 'initial_time's, separated by ;.

Table A.648: config_AM_timeSeriesStatsMonthlyMax_reference_times: A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)

A.74.9 config_AM_timeSeriesStatsMonthlyMax_duration_intervals

Type:	character
Units:	–
Default Value:	repeat_interval
Possible Values:	A list of time durations in d_h:m:s or 'repeat_interval's, separated by ;. Each must be greater than or equal to compute_interval * 2 and less than or equal to repeat_interval. duration_intervals less than repeat_intervals allow for repeated statistics within the repeat_interval (i.e., for climatologies)

Table A.649: config_AM_timeSeriesStatsMonthlyMax_duration_intervals: A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.

A.74.10 config_AM_timeSeriesStatsMonthlyMax_repeat_intervals

Type:	character
Units:	–
Default Value:	reset_interval
Possible Values:	**MISSING**

Table A.650: config_AM_timeSeriesStatsMonthlyMax_repeat_intervals: A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.

A.74.11 config_AM_timeSeriesStatsMonthlyMax_reset_intervals

Type:	character
Units:	–
Default Value:	00-01-00_00:00:00
Possible Values:	A list of time durations in d_h:m:s, separated by ;. Ought to be greater than or equal to output_interval (not verified by the analysis member).

Table A.651: config_AM_timeSeriesStatsMonthlyMax_reset_intervals: A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.

A.74.12 config_AM_timeSeriesStatsMonthlyMax_backward_output_offset

Type:	character
Units:	–
Default Value:	00-01-00_00:00:00
Possible Values:	A time interval in YYYY-MM-DD_hh:mm:ss.

Table A.652: config_AM_timeSeriesStatsMonthlyMax_backward_output_offset: Backward offset for filename timestamps when writing the output stream

A.75 AM_timeSeriesStatsMonthlyMin

A.75.1 config_AM_timeSeriesStatsMonthlyMin_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.653: config_AM_timeSeriesStatsMonthlyMin_enable: If true, ocean analysis member time series stats is called.

A.75.2 config_AM_timeSeriesStatsMonthlyMin_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.654: config_AM_timeSeriesStatsMonthlyMin_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).

A.75.3 config_AM_timeSeriesStatsMonthlyMin_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.655: config_AM_timeSeriesStatsMonthlyMin_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.75.4 config_AM_timeSeriesStatsMonthlyMin_compute_interval

Type:	character
Units:	–
Default Value:	00-00-00_01:00:00
Possible Values:	Any valid time stamp or 'dt'. This must also be less than or equal to output_interval / 2 (i.e., requires at least two samples in a series).

Table A.656: config_AM_timeSeriesStatsMonthlyMin_compute_interval: Interval that determines frequency of computation for the time series stats analysis member.

A.75.5 config_AM_timeSeriesStatsMonthlyMin_output_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsMonthlyMinOutput
Possible Values:	An existing stream that will be modified (existing real fields removed and new time series stats versions added) with time series stats outputs. Cannot be 'none', like other analysis members.

Table A.657: config_AM_timeSeriesStatsMonthlyMin_output_stream: Name of stream the time series stats analysis member will operate on.

A.75.6 config_AM_timeSeriesStatsMonthlyMin_restart_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsMonthlyMinRestart
Possible Values:	A restart stream with state of the time series stats.

Table A.658: config_AM_timeSeriesStatsMonthlyMin_restart_stream: Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.

A.75.7 config_AM_timeSeriesStatsMonthlyMin_operation

Type:	character
Units:	–
Default Value:	min
Possible Values:	An operation, where it can be 'avg', 'min', or 'max', 'sum', or 'sos' (sum of squares).

Table A.659: config_AM_timeSeriesStatsMonthlyMin_operation: An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.

A.75.8 config_AM_timeSeriesStatsMonthlyMin_reference_times

Type:	character
Units:	–
Default Value:	initial_time
Possible Values:	A list of absolute times or 'initial_time's, separated by ;.

Table A.660: config_AM_timeSeriesStatsMonthlyMin_reference_times: A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)

A.75.9 config_AM_timeSeriesStatsMonthlyMin_duration_intervals

Type:	character
Units:	–
Default Value:	repeat_interval
Possible Values:	A list of time durations in d_h:m:s or 'repeat_interval's, separated by ;. Each must be greater than or equal to compute_interval * 2 and less than or equal to repeat_interval. duration_intervals less than repeat_intervals allow for repeated statistics within the repeat_interval (i.e., for climatologies)

Table A.661: config_AM_timeSeriesStatsMonthlyMin_duration_intervals: A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.

A.75.10 config_AM_timeSeriesStatsMonthlyMin_repeat_intervals

Type:	character
Units:	–
Default Value:	reset_interval
Possible Values:	**MISSING**

Table A.662: config_AM_timeSeriesStatsMonthlyMin_repeat_intervals: A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.

A.75.11 config_AM_timeSeriesStatsMonthlyMin_reset_intervals

Type:	character
Units:	–
Default Value:	00-01-00_00:00:00
Possible Values:	A list of time durations in d_h:m:s, separated by ;. Ought to be greater than or equal to output_interval (not verified by the analysis member).

Table A.663: config_AM_timeSeriesStatsMonthlyMin_reset_intervals: A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.

A.75.12 config_AM_timeSeriesStatsMonthlyMin_backward_output_offset

Type:	character
Units:	–
Default Value:	00-01-00_00:00:00
Possible Values:	A time interval in YYYY-MM-DD_hh:mm:ss.

Table A.664: config_AM_timeSeriesStatsMonthlyMin_backward_output_offset: Backward offset for filename timestamps when writing the output stream

A.76 AM_timeSeriesStatsCustom

A.76.1 config_AM_timeSeriesStatsCustom_enable

Type:	logical

Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.665: config_AM_timeSeriesStatsCustom_enable: If true, ocean analysis member time series stats is called.

A.76.2 config_AM_timeSeriesStatsCustom_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.666: config_AM_timeSeriesStatsCustom_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up. You likely want this off for this (time series) analysis member because it will accumulate any state prior to time stepping (double counting the last time step).

A.76.3 config_AM_timeSeriesStatsCustom_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.667: config_AM_timeSeriesStatsCustom_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.76.4 config_AM_timeSeriesStatsCustom_compute_interval

Type:	character
Units:	–
Default Value:	00-00-00_01:00:00
Possible Values:	Any valid time stamp or 'dt'. This must also be less than or equal to output_interval / 2 (i.e., requires at least two samples in a series).

Table A.668: config_AM_timeSeriesStatsCustom_compute_interval: Interval that determines frequency of computation for the time series stats analysis member.

A.76.5 config_AM_timeSeriesStatsCustom_output_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsCustomOutput
Possible Values:	An existing stream that will be modified (existing real fields removed and new time series stats versions added) with time series stats outputs. Cannot be 'none', like other analysis members.

Table A.669: config_AM_timeSeriesStatsCustom_output_stream: Name of stream the time series stats analysis member will operate on.

A.76.6 config_AM_timeSeriesStatsCustom_restart_stream

Type:	character
Units:	–
Default Value:	timeSeriesStatsCustomRestart
Possible Values:	A restart stream with state of the time series stats.

Table A.670: config_AM_timeSeriesStatsCustom_restart_stream: Name of the restart stream the time series stats analysis member will use to initialize itself if restart is enabled.

A.76.7 config_AM_timeSeriesStatsCustom_operation

Type:	character
Units:	–
Default Value:	avg
Possible Values:	An operation, where it can be 'avg', 'min', or 'max', 'sum', or 'sos' (sum of squares).

Table A.671: config_AM_timeSeriesStatsCustom_operation: An operation describing the statistic to apply to the time series for all variables in the output stream, reducing the time dimension.

A.76.8 config_AM_timeSeriesStatsCustom_reference_times

Type:	character
Units:	–
Default Value:	initial_time

Possible Values:	A list of absolute times or 'initial_time's, separated by ;.

Table A.672: config_AM_timeSeriesStatsCustom_reference_times: A list of absolute times describing when to start accumulating statistics. Each time indicates the start of one time window (time series statistic) per variable, in the output stream (i.e., provide four start times if you want quarterly climatologies, only one time is needed for monthly or daily averages, etc.)

A.76.9 config_AM_timeSeriesStatsCustom_duration_intervals

Type:	character
Units:	–
Default Value:	repeat_interval
Possible Values:	A list of time durations in d_h:m:s or 'repeat_interval's, separated by ;. Each must be greater than or equal to compute_interval * 2 and less than or equal to repeat_interval. duration_intervals less than repeat_intervals allow for repeated statistics within the repeat_interval (i.e., for climatologies)

Table A.673: config_AM_timeSeriesStatsCustom_duration_intervals: A list of time durations in d_h:m:s describing how long to accumulate statistics in a time window for each repetition (repeat_interval). It has to match the number of start time tokens in reference_times.

A.76.10 config_AM_timeSeriesStatsCustom_repeat_intervals

Type:	character
Units:	–
Default Value:	reset_interval
Possible Values:	**MISSING**

Table A.674: config_AM_timeSeriesStatsCustom_repeat_intervals: A list of time durations in d_h:m:s describing the accumulation statistic temporal periodicity (time between beginning to accumulate again after it started - duration_interval describes when to stop after starting/restarting). It has to match the number of tokens in reference_times.

A.76.11 config_AM_timeSeriesStatsCustom_reset_intervals

Type:	character
Units:	–

Default Value:	00-00-07_00:00:00
Possible Values:	A list of time durations in d_h:m:s, separated by ;. Ought to be greater than or equal to output_interval (not verified by the analysis member).

Table A.675: config_AM_timeSeriesStatsCustom_reset_intervals: A list of time durations in d_h:m:s describing the statistic reset periodicity (how often to reset/clear/zero the accumulation). It has to match the number of tokens in reference_times.

A.76.12 config_AM_timeSeriesStatsCustom_backward_output_offset

Type:	character
Units:	–
Default Value:	00-00-01_00:00:00
Possible Values:	A time interval in YYYY-MM-DD_hh:mm:ss.

Table A.676: config_AM_timeSeriesStatsCustom_backward_output_offset: Backward offset for filename timestamps when writing the output stream

A.77 AM_pointwiseStats

A.77.1 config_AM_pointwiseStats_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.677: config_AM_pointwiseStats_enable: If true, ocean analysis member pointwiseStats is called.

A.77.2 config_AM_pointwiseStats_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.678: config_AM_pointwiseStats_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.77.3 config_AM_pointwiseStats_output_stream

Type:	character
Units:	–
Default Value:	pointwiseStatsOutput
Possible Values:	Any existing stream name or 'none'

Table A.679: config_AM_pointwiseStats_output_stream: Name of the stream that the pointwiseStats analysis member should be tied to.

A.77.4 config_AM_pointwiseStats_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.680: config_AM_pointwiseStats_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.77.5 config_AM_pointwiseStats_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.681: config_AM_pointwiseStats_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.78 AM_debugDiagnostics

A.78.1 config_AM_debugDiagnostics_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.682: config_AM_debugDiagnostics_enable: If true, ocean analysis member debugDiagnostics is called.

A.78.2 config_AM_debugDiagnostics_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.683: config_AM_debugDiagnostics_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.78.3 config_AM_debugDiagnostics_output_stream

Type:	character
Units:	–
Default Value:	debugDiagnosticsOutput
Possible Values:	Any existing stream name or 'none'

Table A.684: config_AM_debugDiagnostics_output_stream: Name of the stream that the debugDiagnostics analysis member should be tied to.

A.78.4 config_AM_debugDiagnostics_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.685: config_AM_debugDiagnostics_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.78.5 config_AM_debugDiagnostics_write_on_startup

Type:	logical

Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.686: config_AM_debugDiagnostics_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.78.6 config_AM_debugDiagnostics_check_state

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.687: config_AM_debugDiagnostics_check_state: Logical flag determining if state checking happens when the debug diagnostics AM is called.

A.79 AM_rpnCalculator

A.79.1 config_AM_rpnCalculator_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.688: config_AM_rpnCalculator_enable: If true, ocean analysis member RPN calculator is called.

A.79.2 config_AM_rpnCalculator_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.689: config_AM_rpnCalculator_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.79.3 config_AM_rpnCalculator_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.690: config_AM_rpnCalculator_write_on_startup: Logical flag determining if an analysis member output occurs on start-up.

A.79.4 config_AM_rpnCalculator_compute_interval

Type:	character
Units:	–
Default Value:	0010-00-00_00:00:00
Possible Values:	Any valid time stamp, 'output_interval', or 'dt'.

Table A.691: config_AM_rpnCalculator_compute_interval: Interval that determines frequency of computation for the RPN calculator analysis member.

A.79.5 config_AM_rpnCalculator_output_stream

Type:	character
Units:	–
Default Value:	none
Possible Values:	'none' or the name of an output stream

Table A.692: config_AM_rpnCalculator_output_stream: Name of stream the RPN calculator analysis member put output fields.

A.79.6 config_AM_rpnCalculator_variable_a

Type:	character
Units:	–
Default Value:	layerThickness
Possible Values:	'none' or the name of a valid MPAS 0D or 1D real field

Table A.693: config_AM_rpnCalculator_variable_a: Name of a 0D or 1D real field that is bound to name 'a' in an RPN expression.

A.79.7 config_AM_rpnCalculator_variable_b

Type:	character
Units:	–
Default Value:	areaCell
Possible Values:	'none' or the name of a valid MPAS 0D or 1D real field

Table A.694: config_AM_rpnCalculator_variable_b: Name of a 0D or 1D real field that is bound to name 'b' in an RPN expression.

A.79.8 config_AM_rpnCalculator_variable_c

Type:	character
Units:	–
Default Value:	none
Possible Values:	'none' or the name of a valid MPAS 0D or 1D real field

Table A.695: config_AM_rpnCalculator_variable_c: Name of a 0D or 1D real field that is bound to name 'c' in an RPN expression.

A.79.9 config_AM_rpnCalculator_variable_d

Type:	character
Units:	–
Default Value:	none
Possible Values:	'none' or the name of a valid MPAS 0D or 1D real field

Table A.696: config_AM_rpnCalculator_variable_d: Name of a 0D or 1D real field that is bound to name 'd' in an RPN expression.

A.79.10 config_AM_rpnCalculator_variable_e

Type:	character
Units:	–
Default Value:	none
Possible Values:	'none' or the name of a valid MPAS 0D or 1D real field

Table A.697: config_AM_rpnCalculator_variable_e: Name of a 0D or 1D real field that is bound to name 'e' in an RPN expression.

A.79.11 config_AM_rpnCalculator_variable_f

Type:	character
Units:	–
Default Value:	none
Possible Values:	'none' or the name of a valid MPAS 0D or 1D real field

Table A.698: config_AM_rpnCalculator_variable_f: Name of a 0D or 1D real field that is bound to name 'f' in an RPN expression.

A.79.12 config_AM_rpnCalculator_variable_g

Type:	character
Units:	–
Default Value:	none
Possible Values:	'none' or the name of a valid MPAS 0D or 1D real field

Table A.699: config_AM_rpnCalculator_variable_g: Name of a 0D or 1D real field that is bound to name 'g' in an RPN expression.

A.79.13 config_AM_rpnCalculator_variable_h

Type:	character
Units:	–
Default Value:	none
Possible Values:	'none' or the name of a valid MPAS 0D or 1D real field

Table A.700: config_AM_rpnCalculator_variable_h: Name of a 0D or 1D real field that is bound to name 'h' in an RPN expression.

A.79.14 config_AM_rpnCalculator_expression_1

Type:	character
Units:	–
Default Value:	a b *
Possible Values:	'none' or a valid RPN expression described in the documentation

Table A.701: config_AM_rpnCalculator_expression_1: An RPN expression using fields bound to variable names.

A.79.15 config_AM_rpnCalculator_expression_2

Type:	character
Units:	–
Default Value:	none
Possible Values:	'none' or a valid RPN expression described in the documentation

Table A.702: config_AM_rpnCalculator_expression_2: An RPN expression using fields bound to variable names.

A.79.16 config_AM_rpnCalculator_expression_3

Type:	character
Units:	–
Default Value:	none
Possible Values:	'none' or a valid RPN expression described in the documentation

Table A.703: config_AM_rpnCalculator_expression_3: An RPN expression using fields bound to variable names.

A.79.17 config_AM_rpnCalculator_expression_4

Type:	character
Units:	–
Default Value:	none
Possible Values:	'none or a valid RPN expression described in the documentation

Table A.704: config_AM_rpnCalculator_expression_4: An RPN expression using fields bound to variable names.

A.79.18 config_AM_rpnCalculator_output_name_1

Type:	character
Units:	–
Default Value:	volumeCell
Possible Values:	a valid MPAS field output name if expression 1 is set, otherwise 'none'

Table A.705: config_AM_rpnCalculator_output_name_1: The name of the output field resulting from RPN expression 1.

A.79.19 config_AM_rpnCalculator_output_name_2

Type:	character
Units:	–
Default Value:	none
Possible Values:	a valid MPAS field output name if expression 2 is set, otherwise 'none'

Table A.706: config_AM_rpnCalculator_output_name_2: The name of the output field resulting from RPN expression 2.

A.79.20 config_AM_rpnCalculator_output_name_3

Type:	character
Units:	–
Default Value:	none
Possible Values:	a valid MPAS field output name if expression 3 is set, otherwise 'none'

Table A.707: config_AM_rpnCalculator_output_name_3: The name of the output field resulting from RPN expression 3.

A.79.21 config_AM_rpnCalculator_output_name_4

Type:	character
Units:	–
Default Value:	none
Possible Values:	a valid MPAS field output name if expression 4 is set, otherwise 'none'

Table A.708: config_AM_rpnCalculator_output_name_4: The name of the output field resulting from RPN expression 4.

A.80 AM_transectTransport

A.80.1 config_AM_transectTransport_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.709: config_AM_transectTransport_enable: If true, ocean analysis member transectTransport is called.

A.80.2 config_AM_transectTransport_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.710: config_AM_transectTransport_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.80.3 config_AM_transectTransport_output_stream

Type:	character
Units:	–
Default Value:	transectTransportOutput
Possible Values:	Any existing stream name or 'none'

Table A.711: config_AM_transectTransport_output_stream: Name of the stream that the transectTransport analysis member should be tied to.

A.80.4 config_AM_transectTransport_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.712: config_AM_transectTransport_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.80.5 config_AM_transectTransport_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.713: config_AM_transectTransport_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.80.6 config_AM_transectTransport_transect_group

Type:	character
Units:	–
Default Value:	all
Possible Values:	Either of ", 'all' or any valid transect group name.

Table A.714: config_AM_transectTransport_transect_group: The name of the transect group that holds the transects for which the transport should be caclulated.

A.81 AM_eddyProductVariables

A.81.1 config_AM_eddyProductVariables_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.715: config_AM_eddyProductVariables_enable: If true, ocean analysis member eddyProductVariables is called.

A.81.2 config_AM_eddyProductVariables_compute_interval

Type:	character
Units:	–
Default Value:	dt
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.716: config_AM_eddyProductVariables_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.81.3 config_AM_eddyProductVariables_output_stream

Type:	character
Units:	–
Default Value:	eddyProductVariablesOutput
Possible Values:	Any existing stream name or 'none'

Table A.717: config_AM_eddyProductVariables_output_stream: Name of the stream that the eddyProductVariables analysis member should be tied to.

A.81.4 config_AM_eddyProductVariables_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.718: config_AM_eddyProductVariables_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.81.5 config_AM_eddyProductVariables_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.719: config_AM_eddyProductVariables_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.82 AM_mocStreamfunction

A.82.1 config_AM_mocStreamfunction_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.720: config_AM_mocStreamfunction_enable: If true, ocean analysis member MOC streamfunction is called.

A.82.2 config_AM_mocStreamfunction_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.721: config_AM_mocStreamfunction_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.82.3 config_AM_mocStreamfunction_output_stream

Type:	character
Units:	–
Default Value:	mocStreamfunctionOutput
Possible Values:	Any existing stream name or 'none'

Table A.722: config_AM_mocStreamfunction_output_stream: Name of the stream that the mocStreamfunction analysis member should be tied to.

A.82.4 config_AM_mocStreamfunction_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.723: config_AM_mocStreamfunction_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.82.5 config_AM_mocStreamfunction_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.724: config_AM_mocStreamfunction_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.82.6 config_AM_mocStreamfunction_min_bin

Type:	real
Units:	varies
Default Value:	-1.0e34
Possible Values:	Any real number.

Table A.725: config_AM_mocStreamfunction_min_bin: minimum bin boundary value. If set to -1.0e34, the minimum value in the domain is found.

A.82.7 config_AM_mocStreamfunction_max_bin

Type:	real
Units:	varies
Default Value:	-1.0e34
Possible Values:	Any real number.

Table A.726: config_AM_mocStreamfunction_max_bin: maximum bin boundary value. If set to -1.0e34, the maximum value in the domain is found.

A.82.8 config_AM_mocStreamfunction_num_bins

Type:	integer
Units:	–
Default Value:	180
Possible Values:	Any positive integer value less than or equal to nMocStreamfunctionBins.

Table A.727: config_AM_mocStreamfunction_num_bins: Number of bins in South-to-North direction used for moc streamfunction calculation.

A.82.9 config_AM_mocStreamfunction_region_group

Type:	character
Units:	–
Default Value:	all
Possible Values:	Either of ”, ’all’ or any valid region group name.

Table A.728: config_AM_mocStreamfunction_region_group: The name of the region group, for which the moc should be computed in addition to the global MOC.

A.82.10 config_AM_mocStreamfunction_transect_group

Type:	character
Units:	–
Default Value:	all
Possible Values:	Any valid transect group name.

Table A.729: config_AM_mocStreamfunction_transect_group: The name of the transect group that holds the boundaries for the regions in the region group, configured in ’config_AM_mocStreamfunction_region_group’. Please note, that these two should have the same amount of entries.

A.83 AM_oceanHeatContent

A.83.1 config_AM_oceanHeatContent_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.730: config_AM_oceanHeatContent_enable: If true, ocean analysis member ocean heat content is called.

A.83.2 config_AM_oceanHeatContent_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, ’dt’, or ’output_interval’

Table A.731: config_AM_oceanHeatContent_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.83.3 config_AM_oceanHeatContent_output_stream

Type:	character
Units:	–
Default Value:	oceanHeatContentOutput
Possible Values:	Any existing stream name or 'none'

Table A.732: config_AM_oceanHeatContent_output_stream: Name of the stream that the oceanHeatContent analysis member should be tied to.

A.83.4 config_AM_oceanHeatContent_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.733: config_AM_oceanHeatContent_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.83.5 config_AM_oceanHeatContent_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.734: config_AM_oceanHeatContent_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.84 AM_mixedLayerHeatBudget

A.84.1 config_AM_mixedLayerHeatBudget_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.735: config_AM_mixedLayerHeatBudget_enable: If true, ocean analysis member mixedLayerHeatBudget is called.

A.84.2 config_AM_mixedLayerHeatBudget_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.736: config_AM_mixedLayerHeatBudget_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.84.3 config_AM_mixedLayerHeatBudget_output_stream

Type:	character
Units:	–
Default Value:	mixedLayerHeatBudgetOutput
Possible Values:	Any existing stream name or 'none'

Table A.737: config_AM_mixedLayerHeatBudget_output_stream: Name of the stream that the mixedLayerHeatBudget analysis member should be tied to.

A.84.4 config_AM_mixedLayerHeatBudget_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.738: config_AM_mixedLayerHeatBudget_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.84.5 config_AM_mixedLayerHeatBudget_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.739: config_AM_mixedLayerHeatBudget_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.85 AM_sedimentFluxIndex

A.85.1 config_AM_sedimentFluxIndex_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.740: config_AM_sedimentFluxIndex_enable: If true, ocean analysis member sediment-FluxIndex is called.

A.85.2 config_AM_sedimentFluxIndex_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.741: config_AM_sedimentFluxIndex_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.85.3 config_AM_sedimentFluxIndex_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.742: config_AM_sedimentFluxIndex_write_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.85.4 config_AM_sedimentFluxIndex_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any time stamp, 'dt', or 'output_interval'

Table A.743: config_AM_sedimentFluxIndex_compute_interval: Time stamp for frequency of computation of the sedimentFluxIndex analysis member.

A.85.5 config_AM_sedimentFluxIndex_output_stream

Type:	character
Units:	–
Default Value:	sedimentFluxIndexOutput
Possible Values:	Any existing stream name or 'none'

Table A.744: config_AM_sedimentFluxIndex_output_stream: Name of stream the sedimentFluxIndex analysis member should be tied to

A.85.6 config_AM_sedimentFluxIndex_directory

Type:	character
Units:	–
Default Value:	analysis_members
Possible Values:	any valid directory name

Table A.745: config_AM_sedimentFluxIndex_directory: subdirectory to write text files (might useful)

A.85.7 config_AM_sedimentFluxIndex_use_lat_lon_coords

Type:	logical

Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.746: config_AM_sedimentFluxIndex_use_lat_lon_coords: If true, latitude/longitude coordinates are output for eddy census. Otherwise x/y/z coordinates are used. Ignored if not on a sphere.

A.86 AM_sedimentTransport

A.86.1 config_AM_sedimentTransport_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.747: config_AM_sedimentTransport_enable: If true, ocean analysis member sedimentTransport is called.

A.86.2 config_AM_sedimentTransport_compute_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.748: config_AM_sedimentTransport_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.86.3 config_AM_sedimentTransport_write_on_startup

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.749: config_AM_sedimentTransport_write_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.86.4 config_AM_sedimentTransport_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any time stamp, 'dt', or 'output_interval'

Table A.750: config_AM_sedimentTransport_compute_interval: Time stamp for frequency of computation of the sedimentTransport analysis member.

A.86.5 config_AM_sedimentTransport_output_stream

Type:	character
Units:	–
Default Value:	sedimentTransportOutput
Possible Values:	Any existing stream name or 'none'

Table A.751: config_AM_sedimentTransport_output_stream: Name of stream the sedimentTransport analysis member should be tied to

A.86.6 config_AM_sedimentTransport_directory

Type:	character
Units:	–
Default Value:	analysis_members
Possible Values:	any valid directory name

Table A.752: config_AM_sedimentTransport_directory: subdirectory to write text files (might useful)

A.86.7 config_AM_sedimentTransport_grain_size

Type:	real
Units:	m
Default Value:	2.5e-4
Possible Values:	1e-4 1e-3

Table A.753: config_AM_sedimentTransport_grain_size: dimaeter of a spherical sediment particle

A.86.8 config_AM_sedimentTransport_ws_formula

Type:	character
Units:	–
Default Value:	VanRijn1993
Possible Values:	VanRijn1993, Soulsby1997, Cheng1997, Goldstein-Coco2013

Table A.754: config_AM_sedimentTransport_ws_formula: options of different settling velocity formulae

A.86.9 config_AM_sedimentTransport_bedld_formula

Type:	character
Units:	–
Default Value:	Soulsby-Damgaard
Possible Values:	Soulsby-Damgaard, Meyer-Peter-Mueller, Engelund-Hansen

Table A.755: config_AM_sedimentTransport_bedld_formula: options of diffrent sediment bedload transport formulae

A.86.10 config_AM_sedimentTransport_SSC_ref_formula

Type:	character
Units:	–
Default Value:	Lee2004
Possible Values:	Lee2004, Goldstein2014,Zyserman-Fredsoe1994

Table A.756: config_AM_sedimentTransport_SSC_ref_formula: options of diffrent near-bottom suspended sediment concentration formulae

A.86.11 config_AM_sedimentTransport_drag_coefficient

Type:	real
Units:	–
Default Value:	2.5e-3
Possible Values:	any values between 1 2.5e-3

Table A.757: config_AM_sedimentTransport_drag_coefficient: drag coefficient used for bottom shear stress computation

A.86.12 config_AM_sedimentTransport_erate

Type:	real
Units:	kg m⁻2 s⁻1
Default Value:	5.0e-4
Possible Values:	any positive values

Table A.758: config_AM_sedimentTransport_erate: bed surface erosion rate

A.86.13 config_AM_sedimentTransport_tau_ce

Type:	real
Units:	N m⁻2
Default Value:	0.1
Possible Values:	any positive values

Table A.759: config_AM_sedimentTransport_tau_ce: critical shear for erosion

A.86.14 config_AM_sedimentTransport_tau_cd

Type:	real
Units:	N m⁻2
Default Value:	0.1
Possible Values:	any positive values

Table A.760: config_AM_sedimentTransport_tau_cd: critical shear for deposition

A.86.15 config_AM_sedimentTransport_Manning_coef

Type:	real
Units:	s m⁻1/3
Default Value:	0.022
Possible Values:	any positive values,typical values are between 0.012 and 0.025, Kerr et al., 2013

Table A.761: config_AM_sedimentTransport_Manning_coef: Manning roughness coefficient

A.86.16 config_AM_sedimentTransport_grain_porosity

Type:	real
Units:	–
Default Value:	0.5
Possible Values:	any positive value between 0 and 1

Table A.762: config_AM_sedimentTransport_grain_porosity: sediment porosity

A.86.17 config_AM_sedimentTransport_water_density

Type:	real
Units:	$\mathrm{kg\,s\,m^{-}4}$
Default Value:	1020
Possible Values:	any positive value between 1000 and 1030

Table A.763: config_AM_sedimentTransport_water_density: water density

A.86.18 config_AM_sedimentTransport_grain_density

Type:	real
Units:	$\mathrm{kg\,s\,m^{-}4}$
Default Value:	2650
Possible Values:	any positive value

Table A.764: config_AM_sedimentTransport_grain_density: sediment density

A.86.19 config_AM_sedimentTransport_alpha

Type:	real
Units:	$\mathrm{kg\,s\,m^{-}4}$
Default Value:	1e-2
Possible Values:	1e-4 1e-3

Table A.765: config_AM_sedimentTransport_alpha: A parameter related to the sediment property, with typical values of O(1e-4 1e-3)

A.86.20 config_AM_sedimentTransport_kinematic_viscosity

Type:	real
Units:	$m^2 s^-1$
Default Value:	1e-6
Possible Values:	any positive value

Table A.766: config_AM_sedimentTransport_kinematic_viscosity: kinematic viscosity of the fluild

A.86.21 config_AM_sedimentTransport_vertical_diffusion_coefficient

Type:	real
Units:	$m^2 s^-1$
Default Value:	1e-2
Possible Values:	any positive value

Table A.767: config_AM_sedimentTransport_vertical_diffusion_coefficient: vertical diffsuion coefficient

A.86.22 config_AM_sedimentTransport_bedload

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.768: config_AM_sedimentTransport_bedload: Logical flag determining if bedload transport is to be computed.

A.86.23 config_AM_sedimentTransport_suspended

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.769: config_AM_sedimentTransport_suspended: Logical flag determining if suspended transport is to be computed.

A.86.24 config_AM_sedimentTransport_use_lat_lon_coords

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.770: config_AM_sedimentTransport_use_lat_lon_coords: If true, latitude/longitude coordinates are output for eddy census. Otherwise x/y/z coordinates are used. Ignored if not on a sphere.

A.87 AM_harmonicAnalysis

A.87.1 config_AM_harmonicAnalysis_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.771: config_AM_harmonicAnalysis_enable: If true, ocean analysis member harmonicAnalysis is called.

A.87.2 config_AM_harmonicAnalysis_compute_interval

Type:	character
Units:	–
Default Value:	output_interval
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.772: config_AM_harmonicAnalysis_compute_interval: Timestamp determining how often harmonic analysis computation should be performed.

A.87.3 config_AM_harmonicAnalysis_start_delay

Type:	real
Units:	days
Default Value:	20
Possible Values:	any positive real number

Table A.773: config_AM_harmonicAnalysis_start_delay: Number of days after start of simulation when harmonic analysis begins. This is referenced relative to the start of the original simulation, not the restart date.

A.87.4 config_AM_harmonicAnalysis_duration

Type:	real
Units:	days
Default Value:	90
Possible Values:	any positive real number

Table A.774: config_AM_harmonicAnalysis_duration: Length of harmonic analysis period. The analysis begins after config_AM_harmonicAnalysis_start_delay days and ends after config_AM_harmonicAnalysis_start_delay + config_AM_harmonicAnalysis_duration days relative to the start of the original simulation, not the restart date.

A.87.5 config_AM_harmonicAnalysis_output_stream

Type:	character
Units:	–
Default Value:	harmonicAnalysisOutput
Possible Values:	Any existing stream name or 'none'

Table A.775: config_AM_harmonicAnalysis_output_stream: Name of the stream that the harmonicAnalysis analysis member should be tied to.

A.87.6 config_AM_harmonicAnalysis_restart_stream

Type:	character
Units:	–
Default Value:	harmonicAnalysisRestart
Possible Values:	Any existing stream name or 'none'

Table A.776: config_AM_harmonicAnalysis_restart_stream: Name of the stream that the harmonicAnalysis analysis member restart informaion should be tied to.

A.87.7 config_AM_harmonicAnalysis_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.777: config_AM_harmonicAnalysis_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.87.8 config_AM_harmonicAnalysis_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.778: config_AM_harmonicAnalysis_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.87.9 config_AM_harmonicAnalysis_use_M2

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.779: config_AM_harmonicAnalysis_use_M2: Controls if M2 constituent is used in harmonic analysis

A.87.10 config_AM_harmonicAnalysis_use_S2

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.780: config_AM_harmonicAnalysis_use_S2: Controls if S2 constituent is used in harmonic analysis

A.87.11 config_AM_harmonicAnalysis_use_N2

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.781: config_AM_harmonicAnalysis_use_N2: Controls if N2 constituent is used in harmonic analysis

A.87.12 config_AM_harmonicAnalysis_use_K2

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.782: config_AM_harmonicAnalysis_use_K2: Controls if K2 constituent is used in harmonic analysis

A.87.13 config_AM_harmonicAnalysis_use_K1

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.783: config_AM_harmonicAnalysis_use_K1: Controls if K1 constituent is used in harmonic analysis

A.87.14 config_AM_harmonicAnalysis_use_O1

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.784: config_AM_harmonicAnalysis_use_O1: Controls if O1 constituent is used in harmonic analysis

A.87.15 config_AM_harmonicAnalysis_use_Q1

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.785: config_AM_harmonicAnalysis_use_Q1: Controls if Q1 constituent is used in harmonic analysis

A.87.16 config_AM_harmonicAnalysis_use_P1

Type:	logical
Units:	–
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.786: config_AM_harmonicAnalysis_use_P1: Controls if P1 constituent is used in harmonic analysis

A.88 AM_conservationCheck

A.88.1 config_AM_conservationCheck_enable

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	true or false

Table A.787: config_AM_conservationCheck_enable: If true, ocean analysis member conservationCheck is called.

A.88.2 config_AM_conservationCheck_compute_interval

Type:	character
Units:	–
Default Value:	dt
Possible Values:	Any valid time stamp, 'dt', or 'output_interval'

Table A.788: config_AM_conservationCheck_compute_interval: Timestamp determining how often analysis member computation should be performed.

A.88.3 config_AM_conservationCheck_output_stream

Type:	character
Units:	–
Default Value:	conservationCheckOutput
Possible Values:	Any existing stream name or 'none'

Table A.789: config_AM_conservationCheck_output_stream: Name of the stream that the conservationCheck analysis member should be tied to.

A.88.4 config_AM_conservationCheck_compute_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	true or false

Table A.790: config_AM_conservationCheck_compute_on_startup: Logical flag determining if an analysis member computation occurs on start-up.

A.88.5 config_AM_conservationCheck_write_on_startup

Type:	logical
Units:	–
Default Value:	.false.
Possible Values:	true or false

Table A.791: config_AM_conservationCheck_write_on_startup: Logical flag determining if an analysis member write occurs on start-up.

A.88.6 config_AM_conservationCheck_write_to_logfile

Type:	logical

Units:	–
Default Value:	.true.
Possible Values:	true or false

Table A.792: config_AM_conservationCheck_write_to_logfile: Logical flag determining if the conservation check is written to the log file.

A.88.7 config_AM_conservationCheck_restart_stream

Type:	character
Units:	–
Default Value:	conservationCheckRestart
Possible Values:	A restart stream with state of the conservation check.

Table A.793: config_AM_conservationCheck_restart_stream: Name of the restart stream the analysis member will use to initialize itself if restart is enabled.

A.89 baroclinic_channel

A.89.1 config_baroclinic_channel_vert_levels

Type:	integer
Units:	unitless
Default Value:	20
Possible Values:	Any positive integer number greater than 0.

Table A.794: config_baroclinic_channel_vert_levels: Number of vertical levels in baroclinic channel test case. Typical value is 20.

A.89.2 config_baroclinic_channel_use_distances

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.795: config_baroclinic_channel_use_distances: Logical flag that determines if locations of features are defined by distances of fractions. False means fractions.

A.89.3 config_baroclinic_channel_surface_temperature

Type:	real
Units:	deg C
Default Value:	13.1
Possible Values:	Any real number

Table A.796: config_baroclinic_channel_surface_temperature: Temperature of the surface in the northern half of the domain.

A.89.4 config_baroclinic_channel_bottom_temperature

Type:	real
Units:	deg C
Default Value:	10.1
Possible Values:	Any real number

Table A.797: config_baroclinic_channel_bottom_temperature: Temperature of the bottom in the northern half of the domain.

A.89.5 config_baroclinic_channel_temperature_difference

Type:	real
Units:	deg C
Default Value:	1.2
Possible Values:	Any real number

Table A.798: config_baroclinic_channel_temperature_difference: Difference in the temperature field between the northern and southern halves of the domain.

A.89.6 config_baroclinic_channel_gradient_width_frac

Type:	real
Units:	fraction
Default Value:	0.08
Possible Values:	Any real number between 0 and 1.

Table A.799: config_baroclinic_channel_gradient_width_frac: Fraction of domain in Y direction the temperature gradient should be linear over.

A.89.7 config_baroclinic_channel_gradient_width_dist

Type:	real
Units:	m
Default Value:	40e3
Possible Values:	Any positive real number.

Table A.800: config_baroclinic_channel_gradient_width_dist: Width of the temperature gradient around the center sin wave. Default value is relative to a 500km domain in Y.

A.89.8 config_baroclinic_channel_bottom_depth

Type:	real
Units:	m
Default Value:	1000.0
Possible Values:	Any positive real number.

Table A.801: config_baroclinic_channel_bottom_depth: Depth of the bottom of the ocean for the baroclinic channel test case.

A.89.9 config_baroclinic_channel_salinity

Type:	real
Units:	PSU
Default Value:	35.0
Possible Values:	Any real number greater than 0.

Table A.802: config_baroclinic_channel_salinity: Salinity of the water in the entire domain.

A.89.10 config_baroclinic_channel_coriolis_parameter

Type:	real
Units:	s^{-1}
Default Value:	-1.2e-4
Possible Values:	Any real number.

Table A.803: config_baroclinic_channel_coriolis_parameter: Coriolis parameter for entrie domain.

A.90 lock_exchange

A.90.1 config_lock_exchange_vert_levels

Type:	integer
Units:	unitless
Default Value:	20
Possible Values:	Any positive integer number greater than 0.

Table A.804: config_lock_exchange_vert_levels: Number of vertical levels in lock exchange test case. Typical value is 20.

A.90.2 config_lock_exchange_bottom_depth

Type:	real
Units:	m
Default Value:	20.0
Possible Values:	Any positive real value greater than 0.

Table A.805: config_lock_exchange_bottom_depth: Depth of the bottom of the ocean in the lock exchange test case.

A.90.3 config_lock_exchange_cold_temperature

Type:	real
Units:	deg C
Default Value:	5.0
Possible Values:	Any real number

Table A.806: config_lock_exchange_cold_temperature: Temperature of water in the cold half of the domain.

A.90.4 config_lock_exchange_warm_temperature

Type:	real
Units:	deg C
Default Value:	30.0
Possible Values:	Any real number

Table A.807: config_lock_exchange_warm_temperature: Temperature of water in the warm half of the domain.

A.90.5 config_lock_exchange_direction

Type:	character
Units:	unitless
Default Value:	y
Possible Values:	'x', 'y','z"

Table A.808: config_lock_exchange_direction: If y, warm/cold changes in the y-direction. If z, warm/cold changes in z-direction.

A.90.6 config_lock_exchange_salinity

Type:	real
Units:	PSU
Default Value:	35.0
Possible Values:	Any real number greater than 0.

Table A.809: config_lock_exchange_salinity: Salinity of the water in the entire domain.

A.90.7 config_lock_exchange_layer_type

Type:	character
Units:	unitless
Default Value:	z-level
Possible Values:	'z-level', 'isopycnal'

Table A.810: config_lock_exchange_layer_type: Vertical grid type

A.90.8 config_lock_exchange_isopycnal_min_thickness

Type:	real
Units:	m
Default Value:	0.01
Possible Values:	Any positive real number, typically 0.01 to 1.0

Table A.811: config_lock_exchange_isopycnal_min_thickness: minimum layer thickness for isopycnal case

A.91 internal_waves

A.91.1 config_internal_waves_vert_levels

Type:	integer
Units:	unitless
Default Value:	20
Possible Values:	Any positive integer number greater than 0.

Table A.812: config_internal_waves_vert_levels: Number of vertical levels in internal waves test case. Typical value is 20.

A.91.2 config_internal_waves_use_distances

Type:	logical
Units:	unitless
Default Value:	false
Possible Values:	.true. or .false.

Table A.813: config_internal_waves_use_distances: Logical flag that determines if locations of features are defined by distances of fractions. False means fractions.

A.91.3 config_internal_waves_surface_temperature

Type:	real
Units:	deg C
Default Value:	20.1
Possible Values:	Any real number

Table A.814: config_internal_waves_surface_temperature: Temperature of the surface in the northern half of the domain.

A.91.4 config_internal_waves_bottom_temperature

Type:	real
Units:	deg C
Default Value:	10.1
Possible Values:	Any real number

Table A.815: config_internal_waves_bottom_temperature: Temperature of the bottom in the northern half of the domain.

A.91.5 config_internal_waves_temperature_difference

Type:	real
Units:	deg C
Default Value:	2.0
Possible Values:	Any real number

Table A.816: config_internal_waves_temperature_difference: Maximum temperature difference in the amplitude.

A.91.6 config_internal_waves_amplitude_width_frac

Type:	real
Units:	fraction
Default Value:	0.33
Possible Values:	Any real number between 0 and 1.

Table A.817: config_internal_waves_amplitude_width_frac: Percent of domain in Y direction the initial amplitude should exist over.

A.91.7 config_internal_waves_amplitude_width_dist

Type:	real
Units:	m
Default Value:	50e3
Possible Values:	Any positive real number.

Table A.818: config_internal_waves_amplitude_width_dist: Width in Y direction the initial amplitude should exist over. Default is relative to a 250km domain.

A.91.8 config_internal_waves_bottom_depth

Type:	real
Units:	m
Default Value:	500.0
Possible Values:	Any positive real number.

Table A.819: config_internal_waves_bottom_depth: Depth of the bottom of the ocean for the internal waves test case.

A.91.9 config_internal_waves_salinity

Type:	real
Units:	PSU
Default Value:	35.0
Possible Values:	Any real number greater than 0.

Table A.820: config_internal_waves_salinity: Salinity of the water in the entire domain.

A.91.10 config_internal_waves_layer_type

Type:	character
Units:	unitless
Default Value:	z-level
Possible Values:	'z-level', 'isopycnal'

Table A.821: config_internal_waves_layer_type: Logical flag that controls how the initial conditions should be generated.

A.91.11 config_internal_waves_isopycnal_displacement

Type:	real
Units:	m
Default Value:	125.0
Possible Values:	Any positive real number, typically 10 to 100.

Table A.822: config_internal_waves_isopycnal_displacement: Max distance isopycnal layers are displaced upwards.

A.92 overflow

A.92.1 config_overflow_vert_levels

Type:	integer
Units:	unitless
Default Value:	100
Possible Values:	Any positive integer number greater than 0.

Table A.823: config_overflow_vert_levels: Number of vertical levels in overflow test case. Typical values are 40 and 100.

A.92.2 config_overflow_use_distances

Type:	logical
Units:	unitless
Default Value:	false
Possible Values:	.true. or .false.

Table A.824: config_overflow_use_distances: Logical flag that determines if locations of features are defined by distances of fractions. False means fractions.

A.92.3 config_overflow_bottom_depth

Type:	real
Units:	m
Default Value:	2000.0
Possible Values:	Any positive real value greater than 0.

Table A.825: config_overflow_bottom_depth: Depth of the bottom of the ocean in the overflow test case.

A.92.4 config_overflow_ridge_depth

Type:	real
Units:	m
Default Value:	500.0
Possible Values:	Any positive real value greater than 0.

Table A.826: config_overflow_ridge_depth: Depth of the bottom of the ocean on the ridge in the over flow test case.

A.92.5 config_overflow_plug_temperature

Type:	real
Units:	deg C
Default Value:	10.0
Possible Values:	Any real number

Table A.827: config_overflow_plug_temperature: Temperature of water in plug at the southern end of the domain.

A.92.6 config_overflow_domain_temperature

Type:	real
Units:	deg C
Default Value:	20.0
Possible Values:	Any real number

Table A.828: config_overflow_domain_temperature: Temperature of water outside of the plug.

A.92.7 config_overflow_salinity

Type:	real
Units:	PSU
Default Value:	35.0
Possible Values:	Any real number greater than 0.

Table A.829: config_overflow_salinity: Salinity of the water in the entire domain.

A.92.8 config_overflow_plug_width_frac

Type:	real
Units:	fraction
Default Value:	0.10
Possible Values:	Any real number between 0 and 1.

Table A.830: config_overflow_plug_width_frac: Fraction of the domain the plug should take up initially. Only in the y direction.

A.92.9 config_overflow_slope_center_frac

Type:	real
Units:	fraction
Default Value:	0.20
Possible Values:	Any real number between 0 and 1.

Table A.831: config_overflow_slope_center_frac: Location of the center of the slope. Given as a fraction of the total y domain range. Position is relative to the minimum y value.

A.92.10 config_overflow_slope_width_frac

Type:	real
Units:	fraction
Default Value:	0.05
Possible Values:	Any real number between 0 and 1.

Table A.832: config_overflow_slope_width_frac: Half width of the slope. Given as a fraction of the total y domain range.

A.92.11 config_overflow_plug_width_dist

Type:	real
Units:	m
Default Value:	20e3
Possible Values:	Any positive real number.

Table A.833: config_overflow_plug_width_dist: Distance from the minimum Y value of the domain the plug should take up initially. Default is relative to a 200km domain.

A.92.12 config_overflow_slope_center_dist

Type:	real
Units:	m
Default Value:	40e3
Possible Values:	Any positive real number.

Table A.834: config_overflow_slope_center_dist: Location of the center of the slope. Given as a distance from the minimum y value. Default is relative to a 200km domain.

A.92.13 config_overflow_slope_width_dist

Type:	real
Units:	m
Default Value:	7e3
Possible Values:	Any positive real number.

Table A.835: config_overflow_slope_width_dist: Half width of the slope. Default is relative to a 200km domain.

A.92.14 config_overflow_layer_type

Type:	character
Units:	unitless
Default Value:	z-level
Possible Values:	'z-level', 'sigma', 'isopycnal'

Table A.836: config_overflow_layer_type: Logical flag that controls how the initial conditions should be generated.

A.92.15 config_overflow_isopycnal_min_thickness

Type:	real
Units:	m
Default Value:	0.01
Possible Values:	Any positive real number, typically 0.01 to 1.0

Table A.837: config_overflow_isopycnal_min_thickness: minimum layer thickness

A.93 dam_break

A.93.1 config_dam_break_vert_levels

Type:	integer
Units:	unitless
Default Value:	1
Possible Values:	Any positive integer number greater than 0.

Table A.838: config_dam_break_vert_levels: Number of vertical levels in dam_break case. Default value is 1.

A.93.2 config_dam_break_eta0

Type:	real
Units:	m
Default Value:	0.6
Possible Values:	Any real number larger than zero.

Table A.839: config_dam_break_eta0: Depth of the domain (H).

A.93.3 config_dam_break_dc

Type:	real
Units:	m
Default Value:	0.04
Possible Values:	Any real number larger than zero.

Table A.840: config_dam_break_dc: grid resolution in meters (dc).

A.93.4 config_dam_break_R0

Type:	real
Units:	m
Default Value:	24.2
Possible Values:	sqrt(eta*9.8)*10.0.

Table A.841: config_dam_break_R0: max wave propagation radius in 10.0s.

A.93.5 config_dam_break_Xl

Type:	real
Units:	m
Default Value:	1.0
Possible Values:	Any real number larger than or equal to zero.

Table A.842: config_dam_break_Xl: The length of dam along the X-direction.

A.93.6 config_dam_break_Yl

Type:	real
Units:	m
Default Value:	2.0
Possible Values:	Any real number larger than or equal to zero.

Table A.843: config_dam_break_Yl: The length of dam along the Y-direction.

A.93.7 config_dam_break_Inlet

Type:	real
Units:	m
Default Value:	0.4
Possible Values:	Any real number larger than or equal to zero.

Table A.844: config_dam_break_Inlet: The width of inlet (dam mouth).

A.94 global_ocean

A.94.1 config_global_ocean_minimum_depth

Type:	real
Units:	m
Default Value:	15
Possible Values:	Any positive real value greater than 0, but typically greater than 10 m.

Table A.845: config_global_ocean_minimum_depth: Minimum depth where column contains all water-filled cells. The first layer with refBottomDepth greater than this value is included in whole, i.e. no partial bottom cells are used in this layer.

A.94.2 config_global_ocean_depth_file

Type:	character
Units:	unitless
Default Value:	vertical_grid.nc
Possible Values:	path/to/temperature/file.nc

Table A.846: config_global_ocean_depth_file: Path to the depth initial condition file.

A.94.3 config_global_ocean_depth_dimname

Type:	character
Units:	unitless
Default Value:	nVertLevels
Possible Values:	Dim name from input files.

Table A.847: config_global_ocean_depth_dimname: Name of the dimension defining the number of vertical levels in input files.

A.94.4 config_global_ocean_depth_varname

Type:	character
Units:	unitless
Default Value:	refMidDepth
Possible Values:	Variable name from input files.

Table A.848: config_global_ocean_depth_varname: Name of the variable containing mid-depth of levels in temperature and salinity initial condition files.

A.94.5 config_global_ocean_depth_conversion_factor

Type:	real
Units:	variable
Default Value:	1.0
Possible Values:	Any positive real value greater than 0.

Table A.849: config_global_ocean_depth_conversion_factor: Conversion factor for depth levels. Should convert units on input depth levels to meters.

A.94.6 config_global_ocean_temperature_file

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	path/to/temperature/file.nc

Table A.850: config_global_ocean_temperature_file: Path to the temperature initial condition file. Must be interpolated to vertical layers defined in depth file.

A.94.7 config_global_ocean_salinity_file

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	path/to/salinity/file.nc

Table A.851: config_global_ocean_salinity_file: Path to the salinity initial condition file. Must be interpolated to vertical layers defined in depth file.

A.94.8 config_global_ocean_tracer_nlat_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dim name from input files.

Table A.852: config_global_ocean_tracer_nlat_dimname: Name of the dimension that determines number of latitude lines in tracer initial condition files.

A.94.9 config_global_ocean_tracer_nlon_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dim name from input files.

Table A.853: config_global_ocean_tracer_nlon_dimname: Name of the dimension that determines number of longitude lines in tracer initial condition files.

A.94.10 config_global_ocean_tracer_ndepth_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dim name from input files.

Table A.854: config_global_ocean_tracer_ndepth_dimname: Name of the dimension that determines number of vertical levels in tracer initial condition files.

A.94.11 config_global_ocean_tracer_depth_conversion_factor

Type:	real
Units:	variable
Default Value:	1.0
Possible Values:	Any positive real value greater than 0.

Table A.855: config_global_ocean_tracer_depth_conversion_factor: Conversion factor for tracer initial condition depth levels. Should convert units on input depth levels to meters.

A.94.12 config_global_ocean_tracer_vert_levels

Type:	integer
Units:	unitless
Default Value:	-1
Possible Values:	Any positive non-zero integer. A value of -1 causes this to be overwritten with the configurations vertical level definition.

Table A.856: config_global_ocean_tracer_vert_levels: Number of vertical levels in tracer initial condition file. Set to -1 to read from file with config_global_ocean_tracer_ndepth_dimname

A.94.13 config_global_ocean_temperature_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.857: config_global_ocean_temperature_varname: Name of the variable containing temperature in temperature initial condition file.

A.94.14 config_global_ocean_salinity_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.858: config_global_ocean_salinity_varname: Name of the variable containing salinity in salinity initial condition file.

A.94.15 config_global_ocean_tracer_latlon_degrees

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.859: config_global_ocean_tracer_latlon_degrees: Logical flag that controls if the Lat/Lon fields for tracers should be converted to radians. True means input is degrees, false means input is radians.

A.94.16 config_global_ocean_tracer_lat_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.860: config_global_ocean_tracer_lat_varname: Name of the variable containing latitude coordinates for tracer values in temperature initial condition file.

A.94.17 config_global_ocean_tracer_lon_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.861: config_global_ocean_tracer_lon_varname: Name of the variable containing longitude coordinates for tracer values in temperature initial condition file.

A.94.18 config_global_ocean_tracer_depth_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.862: config_global_ocean_tracer_depth_varname: Name of the variable containing depth coordinates for tracer values in temperature initial condition file.

A.94.19 config_global_ocean_tracer_method

Type:	character
Units:	unitless
Default Value:	bilinear_interpolation
Possible Values:	bilinear_interpolation, nearest_neighbor

Table A.863: config_global_ocean_tracer_method: Method to interpolate tracer data to MPAS mesh.

A.94.20 config_global_ocean_smooth_TS_iterations

Type:	integer
Units:	unitless
Default Value:	0
Possible Values:	Any positive integer value greater or equal to 0.

Table A.864: config_global_ocean_smooth_TS_iterations: Number of smoothing iterations on temperature and salinity.

A.94.21 config_global_ocean_swData_file

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	path/to/swData/file.nc

Table A.865: config_global_ocean_swData_file: Name of the file containing shortwaveData (chlA, zenith Angle, clear sky radiation)

A.94.22 config_global_ocean_swData_nlat_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dim name from input files.

Table A.866: config_global_ocean_swData_nlat_dimname: Name of the dimension that determines number of latitude lines in swData initial condition files.

A.94.23 config_global_ocean_swData_nlon_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dim name from input files.

Table A.867: config_global_ocean_swData_nlon_dimname: Name of the dimension that determines number of longitude lines in swData initial condition files.

A.94.24 config_global_ocean_swData_lat_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.868: config_global_ocean_swData_lat_varname: Name of the variable containing latitude coordinates for swData values in swData initial condition file.

A.94.25 config_global_ocean_swData_lon_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.869: config_global_ocean_swData_lon_varname: Name of the variable containing longitude coordinates for swData values in swData initial condition file.

A.94.26 config_global_ocean_swData_latlon_degrees

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.870: config_global_ocean_swData_latlon_degrees: Logical flag that controls if the Lat/Lon fields for swData should be converted to radians. True means input is degrees, false means input is radians.

A.94.27 config_global_ocean_swData_method

Type:	character
Units:	unitless
Default Value:	bilinear_interpolation
Possible Values:	bilinear_interpolation, nearest_neighbor

Table A.871: config_global_ocean_swData_method: Method to interpolate shortwave data to MPAS mesh.

A.94.28 config_global_ocean_chlorophyll_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.872: config_global_ocean_chlorophyll_varname: Name of the variable containing chlorophyll in sw Data initial condition file.

A.94.29 config_global_ocean_zenithAngle_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.873: config_global_ocean_zenithAngle_varname: Name of the variable containing zenith angle in swData initial condition file.

A.94.30 config_global_ocean_clearSky_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.874: config_global_ocean_clearSky_varname: Name of the variable containing clear sky radiation in clear sky radiation initial condition file.

A.94.31 config_global_ocean_piston_velocity

Type:	real
Units:	$m\,s^{-1}$
Default Value:	5.0e-5
Possible Values:	Any real positive number.

Table A.875: config_global_ocean_piston_velocity: Parameter controlling rate to which SST and SST are restored.

A.94.32 config_global_ocean_interior_restore_rate

Type:	real
Units:	s^{-1}
Default Value:	1.0e-7
Possible Values:	Any real positive number.

Table A.876: config_global_ocean_interior_restore_rate: Parameter controlling rate to which interior temperature and salinity are restored.

A.94.33 config_global_ocean_topography_source

Type:	character
Units:	unitless
Default Value:	latlon_file
Possible Values:	'latlon_file' or 'mpas_variable'

Table A.877: config_global_ocean_topography_source: If 'latlon_file', reads in topography from file specified in config_global_ocean_topography_file. If 'mpas_variable', reads in topography from mpas variable bed_elevation, and optionally oceanFracObserved, landIceDraftObserved, landIceThkObserved, landIceFracObserved, and landIceGroundedFracObserved

A.94.34 config_global_ocean_topography_file

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	path/to/topography/file.nc

Table A.878: config_global_ocean_topography_file: Path to the topography initial condition file.

A.94.35 config_global_ocean_topography_nlat_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dimension name from input file.

Table A.879: config_global_ocean_topography_nlat_dimname: Dimension name for the latitude in the topography file.

A.94.36 config_global_ocean_topography_nlon_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dimension name from input file.

Table A.880: config_global_ocean_topography_nlon_dimname: Dimension name for the longitude in the topography file.

A.94.37 config_global_ocean_topography_latlon_degrees

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.881: config_global_ocean_topography_latlon_degrees: Logical flag that controls if the Lat/Lon fields for topography should be converted to radians. True means input is degrees, false means input is radians.

A.94.38 config_global_ocean_topography_lat_varname

Type:	character

Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.882: config_global_ocean_topography_lat_varname: Variable name for the latitude in the topography file.

A.94.39 config_global_ocean_topography_lon_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.883: config_global_ocean_topography_lon_varname: Variable name for the longitude in the topography file.

A.94.40 config_global_ocean_topography_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.884: config_global_ocean_topography_varname: Variable name for the topography in the topography file.

A.94.41 config_global_ocean_topography_has_ocean_frac

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.885: config_global_ocean_topography_has_ocean_frac: Logical flag that controls if topography file contains a field for the fraction of each cell that contains ocean (vs. land or grounded ice).

A.94.42 config_global_ocean_topography_ocean_frac_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.886: config_global_ocean_topography_ocean_frac_varname: Variable name for the ocean mask in the topography file.

A.94.43 config_global_ocean_topography_method

Type:	character
Units:	unitless
Default Value:	bilinear_interpolation
Possible Values:	bilinear_interpolation, nearest_neighbor

Table A.887: config_global_ocean_topography_method: Method to interpolate topography data to MPAS mesh.

A.94.44 config_global_ocean_fill_bathymetry_holes

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.888: config_global_ocean_fill_bathymetry_holes: Logical flag that controls if deep holes in the bathymetry should be filled after interpolation to the MPAS mesh.

A.94.45 config_global_ocean_topography_smooth_iterations

Type:	integer
Units:	unitless
Default Value:	0
Possible Values:	any non-negative integer

Table A.889: config_global_ocean_topography_smooth_iterations: How many iterations of topography smoothing by weighted averaging of cellsOnCell to perform.

A.94.46 config_global_ocean_topography_smooth_weight

Type:	real
Units:	unitless
Default Value:	0.9
Possible Values:	fraction between 0 and 1

Table A.890: config_global_ocean_topography_smooth_weight: The weight given to the central cell during smoothing. The n cellsOnCell are given a weight (1-weight)/n.

A.94.47 config_global_ocean_deepen_critical_passages

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.891: config_global_ocean_deepen_critical_passages: Logical flag that controls if critical passages are deepened to a minimum depth.

A.94.48 config_global_ocean_depress_by_land_ice

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.892: config_global_ocean_depress_by_land_ice: Logical flag that controls if sea surface pressure and layer thicknesses should be altered by an overlying ice sheet/shelf.

A.94.49 config_global_ocean_land_ice_topo_file

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	path/to/land_ice_topography/file.nc

Table A.893: config_global_ocean_land_ice_topo_file: Path to the land ice topography initial condition file.

A.94.50 config_global_ocean_land_ice_topo_nlat_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dimension name from input file.

Table A.894: config_global_ocean_land_ice_topo_nlat_dimname: Dimension name for the latitude in the land ice topography file.

A.94.51 config_global_ocean_land_ice_topo_nlon_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dimension name from input file.

Table A.895: config_global_ocean_land_ice_topo_nlon_dimname: Dimension name for the longitude in the land ice topography file.

A.94.52 config_global_ocean_land_ice_topo_latlon_degrees

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.896: config_global_ocean_land_ice_topo_latlon_degrees: Logical flag that controls if the Lat/Lon fields for land ice topography should be converted to radians. True means input is degrees, false means input is radians.

A.94.53 config_global_ocean_land_ice_topo_lat_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.897: config_global_ocean_land_ice_topo_lat_varname: Variable name for the latitude in the land ice topography file.

A.94.54 config_global_ocean_land_ice_topo_lon_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.898: config_global_ocean_land_ice_topo_lon_varname: Variable name for the longitude in the land ice topography file.

A.94.55 config_global_ocean_land_ice_topo_thickness_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.899: config_global_ocean_land_ice_topo_thickness_varname: Variable name for the land ice thickness in the land ice topography file.

A.94.56 config_global_ocean_land_ice_topo_draft_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.900: config_global_ocean_land_ice_topo_draft_varname: Variable name for the land ice draft in the land ice topography file.

A.94.57 config_global_ocean_land_ice_topo_ice_frac_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.901: config_global_ocean_land_ice_topo_ice_frac_varname: Variable name for the land ice fraction in the land ice topography file.

A.94.58 config_global_ocean_land_ice_topo_grounded_frac_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.902: config_global_ocean_land_ice_topo_grounded_frac_varname: Variable name for the grounded land ice fraction in the land ice topography file.

A.94.59 config_global_ocean_use_constant_land_ice_cavity_temperature

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.903: config_global_ocean_use_constant_land_ice_cavity_temperature: Logical flag that controls if ocean temperature in land-ice cavities is set to a constant temperature.

A.94.60 config_global_ocean_constant_land_ice_cavity_temperature

Type:	real
Units:	C
Default Value:	-1.8
Possible Values:	Any real number.

Table A.904: config_global_ocean_constant_land_ice_cavity_temperature: The constant temperature value to be used under land ice, typically something close to the freezing point.

A.94.61 config_global_ocean_cull_inland_seas

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.905: config_global_ocean_cull_inland_seas: Logical flag that controls if inland seas should be removed.

A.94.62 config_global_ocean_windstress_file

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	path/to/windstress/file.nc

Table A.906: config_global_ocean_windstress_file: Path to the windstress initial condition file.

A.94.63 config_global_ocean_windstress_nlat_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dimension name from input file.

Table A.907: config_global_ocean_windstress_nlat_dimname: Dimension name for the latitude in the windstress file.

A.94.64 config_global_ocean_windstress_nlon_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dimension name from input file.

Table A.908: config_global_ocean_windstress_nlon_dimname: Dimension name for the longitude in the windstress file.

A.94.65 config_global_ocean_windstress_latlon_degrees

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.909: config_global_ocean_windstress_latlon_degrees: Logical flag that controls if the Lat/Lon fields for windstress should be converted to radians. True means input is degrees, false means input is radians.

A.94.66 config_global_ocean_windstress_lat_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.910: config_global_ocean_windstress_lat_varname: Variable name for the latitude in the windstress file.

A.94.67 config_global_ocean_windstress_lon_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.911: config_global_ocean_windstress_lon_varname: Variable name for the longitude in the windstress file.

A.94.68 config_global_ocean_windstress_zonal_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.912: config_global_ocean_windstress_zonal_varname: Variable name for the zonal component of windstress in the windstress file.

A.94.69 config_global_ocean_windstress_meridional_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.913: config_global_ocean_windstress_meridional_varname: Variable name for the meridional component of windstress in the windstress file.

A.94.70 config_global_ocean_windstress_method

Type:	character
Units:	unitless
Default Value:	bilinear_interpolation
Possible Values:	bilinear_interpolation, nearest_neighbor

Table A.914: config_global_ocean_windstress_method: Method to interpolate windstress data to MPAS mesh.

A.94.71 config_global_ocean_windstress_conversion_factor

Type:	real
Units:	variable
Default Value:	1
Possible Values:	Any positive real number.

Table A.915: config_global_ocean_windstress_conversion_factor: Factor to convert input windstress to $N\ m^{-1}$

A.94.72 config_global_ocean_ecosys_file

Type:	character
Units:	unitless
Default Value:	unknown
Possible Values:	ecosys.nc

Table A.916: config_global_ocean_ecosys_file: Name of file containing global values of ecosys variables

A.94.73 config_global_ocean_ecosys_forcing_file

Type:	character
Units:	unitless
Default Value:	unknown
Possible Values:	ecosys_forcing.nc

Table A.917: config_global_ocean_ecosys_forcing_file: Name of file containing global values of ecosys forcing fields

A.94.74 config_global_ocean_ecosys_nlat_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dim name from input files.

Table A.918: config_global_ocean_ecosys_nlat_dimname: Name of the dimension that determines number of latitude lines in ecosys initial condition files.

A.94.75 config_global_ocean_ecosys_nlon_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dim name from input files.

Table A.919: config_global_ocean_ecosys_nlon_dimname: Name of the dimension that determines number of longitude lines in ecosys initial condition files.

A.94.76 config_global_ocean_ecosys_ndepth_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dim name from input files.

Table A.920: config_global_ocean_ecosys_ndepth_dimname: Name of the dimension that determines number of vertical levels in ecosys initial condition files.

A.94.77 config_global_ocean_ecosys_depth_conversion_factor

Type:	real
Units:	variable
Default Value:	1.0
Possible Values:	Any positive real value greater than 0.

Table A.921: config_global_ocean_ecosys_depth_conversion_factor: Conversion factor for ecosys initial condition depth levels. Should convert units on input depth levels to meters.

A.94.78 config_global_ocean_ecosys_vert_levels

Type:	integer
Units:	unitless
Default Value:	-1
Possible Values:	Any positive non-zero integer. A value of -1 causes this to be overwritten with the configurations vertical level definition.

Table A.922: config_global_ocean_ecosys_vert_levels: Number of vertical levels in ecosys initial condition file. Set to -1 to read from file with config_global_ocean_ecosys_ndepth_dimname

A.94.79 config_global_ocean_ecosys_lat_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.923: config_global_ocean_ecosys_lat_varname: Name of the variable containing latitude coordinates for ecosys values in ecosys initial condition file.

A.94.80 config_global_ocean_ecosys_lon_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.924: config_global_ocean_ecosys_lon_varname: Name of the variable containing longitude coordinates for ecosys values in ecosys initial condition file.

A.94.81 config_global_ocean_ecosys_depth_varname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Variable name from input file.

Table A.925: config_global_ocean_ecosys_depth_varname: Name of the variable containing depth coordinates for ecosys values in ecosys initial condition file.

A.94.82 config_global_ocean_ecosys_latlon_degrees

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.926: config_global_ocean_ecosys_latlon_degrees: Logical flag that controls if the Lat/Lon fields for ecosys should be converted to radians. True means input is degrees, false means input is radians.

A.94.83 config_global_ocean_ecosys_method

Type:	character
Units:	unitless
Default Value:	bilinear_interpolation
Possible Values:	bilinear_interpolation, nearest_neighbor

Table A.927: config_global_ocean_ecosys_method: Method to interpolate shortwave data to MPAS mesh.

A.94.84 config_global_ocean_ecosys_forcing_time_dimname

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Dim name from input files.

Table A.928: config_global_ocean_ecosys_forcing_time_dimname: Name of the dimension that determines the times in ecosys forcing files.

A.94.85 config_global_ocean_smooth_ecosys_iterations

Type:	integer
Units:	unitless
Default Value:	0
Possible Values:	Any positive integer value greater or equal to 0.

Table A.929: config_global_ocean_smooth_ecosys_iterations: Number of smoothing iterations on ecosystem variables.

A.95 cvmix_WSwSBF

A.95.1 config_cvmix_WSwSBF_vert_levels

Type:	integer
Units:	unitless
Default Value:	100
Possible Values:	Any positive integer number greater than 0.

Table A.930: config_cvmix_WSwSBF_vert_levels: Number of vertical levels in cvmix WSwSBF unit test case.

A.95.2 config_cvmix_WSwSBF_surface_temperature

Type:	real
Units:	deg C
Default Value:	15.0
Possible Values:	Any real number

Table A.931: config_cvmix_WSwSBF_surface_temperature: Temperature of the surface of the ocean.

A.95.3 config_cvmix_WSwSBF_surface_salinity

Type:	real
Units:	PSU
Default Value:	35.0
Possible Values:	Any real number

Table A.932: config_cvmix_WSwSBF_surface_salinity: Salinity of the surface of the ocean.

A.95.4 config_cvmix_WSwSBF_surface_restoring_temperature

Type:	real
Units:	C
Default Value:	15.0
Possible Values:	Any real number

Table A.933: config_cvmix_WSwSBF_surface_restoring_temperature: Temperature to restore towards when surface restoring is turned on.

A.95.5 config_cvmix_WSwSBF_surface_restoring_salinity

Type:	real
Units:	PSU
Default Value:	35.0
Possible Values:	Any real number

Table A.934: config_cvmix_WSwSBF_surface_restoring_salinity: Salinity to restore towards when surface restoring is turned on.

A.95.6 config_cvmix_WSwSBF_temperature_piston_velocity

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Default Value:	4.0e-6
Possible Values:	Any non-negative real number

Table A.935: config_cvmix_WSwSBF_temperature_piston_velocity: Piston velocity to control rate of restoring toward config_cvmix_WSwSBF_surface_restoring_temperature.

A.95.7 config_cvmix_WSwSBF_salinity_piston_velocity

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Default Value:	4.0e-6
Possible Values:	Any non-negative real number

Table A.936: config_cvmix_WSwSBF_salinity_piston_velocity: Piston velocity to control rate of restoring toward config_cvmix_WSwSBF_surface_restoring_salinity.

A.95.8 config_cvmix_WSwSBF_sensible_heat_flux

Type:	real
Units:	$\mathrm{W\,m^{-2}}$
Default Value:	0.0
Possible Values:	Any real number

Table A.937: config_cvmix_WSwSBF_sensible_heat_flux: Net sensible heat flux applied when bulk forcing is used. Positive values indicate a net input of heat to ocean.

A.95.9 config_cvmix_WSwSBF_latent_heat_flux

Type:	real
Units:	$W m^{-2}$
Default Value:	0.0
Possible Values:	Any real number

Table A.938: config_cvmix_WSwSBF_latent_heat_flux: Net latent heat flux applied when bulk forcing is used. Positive values indicate a net input of heat to ocean.

A.95.10 config_cvmix_WSwSBF_shortwave_heat_flux

Type:	real
Units:	$W m^{-2}$
Default Value:	0.0
Possible Values:	Any real number

Table A.939: config_cvmix_WSwSBF_shortwave_heat_flux: Net solar shortwave heat flux applied when bulk forcing is used. Positive values indicate a net input of heat to ocean.

A.95.11 config_cvmix_WSwSBF_rain_flux

Type:	real
Units:	$kg m^{-2} s^{-1}$
Default Value:	0.0
Possible Values:	Any real number

Table A.940: config_cvmix_WSwSBF_rain_flux: Net surface rain flux when bulk forcing is used. Positive values indicate a net input of water to ocean.

A.95.12 config_cvmix_WSwSBF_evaporation_flux

Type:	real
Units:	$kg m^{-2} s^{-1}$
Default Value:	0.0
Possible Values:	Any real number

Table A.941: config_cvmix_WSwSBF_evaporation_flux: Net surface evaporation when bulk forcing is used. Positive values indicate a net input of water to ocean.

A.95.13 config_cvmix_WSwSBF_interior_temperature_restoring_rate

Type:	real
Units:	s^-1
Default Value:	1.0e-6
Possible Values:	Any non-negative real number

Table A.942: config_cvmix_WSwSBF_interior_temperature_restoring_rate: Rate at which temperature is restored toward the initial condition.

A.95.14 config_cvmix_WSwSBF_interior_salinity_restoring_rate

Type:	real
Units:	s^-2
Default Value:	1.0e-6
Possible Values:	Any non-negative real number

Table A.943: config_cvmix_WSwSBF_interior_salinity_restoring_rate: Rate at which salinity is restored toward the initial condition.

A.95.15 config_cvmix_WSwSBF_temperature_gradient

Type:	real
Units:	$\mathrm{deg\,C\,m^{-1}}$
Default Value:	0.01
Possible Values:	Any real number

Table A.944: config_cvmix_WSwSBF_temperature_gradient: d/dz of temperature.

A.95.16 config_cvmix_WSwSBF_salinity_gradient

Type:	real
Units:	$\mathrm{PSU\,m^{-1}}$
Default Value:	0.0
Possible Values:	Any real number

Table A.945: config_cvmix_WSwSBF_salinity_gradient: d/dz of salinity.

A.95.17 config_cvmix_WSwSBF_temperature_gradient_mixed_layer

Type:	real
Units:	deg C m^{-1}
Default Value:	0.0
Possible Values:	Any real number

Table A.946: config_cvmix_WSwSBF_temperature_gradient_mixed_layer: d/dz of temperature in mixed temperature layer

A.95.18 config_cvmix_WSwSBF_salinity_gradient_mixed_layer

Type:	real
Units:	PSU m^{-1}
Default Value:	0.0
Possible Values:	Any real number

Table A.947: config_cvmix_WSwSBF_salinity_gradient_mixed_layer: d/dz of salinity in mixed salinity layer

A.95.19 config_cvmix_WSwSBF_mixed_layer_depth_temperature

Type:	real
Units:	m
Default Value:	0.0
Possible Values:	Any positive real number but must be less than bottom depth

Table A.948: config_cvmix_WSwSBF_mixed_layer_depth_temperature: depth mixed temperature layer

A.95.20 config_cvmix_WSwSBF_mixed_layer_depth_salinity

Type:	real
Units:	m
Default Value:	0.0
Possible Values:	Any positive real number but less than bottom depth

Table A.949: config_cvmix_WSwSBF_mixed_layer_depth_salinity: depth mixed salinity layer

A.95.21 config_cvmix_WSwSBF_mixed_layer_temperature_change

Type:	real
Units:	deg C
Default Value:	0.0
Possible Values:	Any real number

Table A.950: config_cvmix_WSwSBF_mixed_layer_temperature_change: temperature jump when moving downward across the mixed layer interface

A.95.22 config_cvmix_WSwSBF_mixed_layer_salinity_change

Type:	real
Units:	PSU
Default Value:	0.0
Possible Values:	Any real number

Table A.951: config_cvmix_WSwSBF_mixed_layer_salinity_change: salinity jump when moving downward across the mixed layer interface

A.95.23 config_cvmix_WSwSBF_vertical_grid

Type:	character
Units:	unitless
Default Value:	uniform
Possible Values:	'uniform' and 'stretched100'

Table A.952: config_cvmix_WSwSBF_vertical_grid: prescription of setting the vertical resolution of the test case

A.95.24 config_cvmix_WSwSBF_bottom_depth

Type:	real
Units:	m
Default Value:	400.0
Possible Values:	Any positive real number.

Table A.953: config_cvmix_WSwSBF_bottom_depth: Depth of the bottom of the ocean for the CVMix WSwSBF unit test case.

A.95.25 config_cvmix_WSwSBF_max_windstress

Type:	real
Units:	$\mathrm{N\,m^{-2}}$
Default Value:	0.10
Possible Values:	Any real number.

Table A.954: config_cvmix_WSwSBF_max_windstress: Maximum surface windstress over the domain.

A.95.26 config_cvmix_WSwSBF_coriolis_parameter

Type:	real
Units:	$\mathrm{s^{-1}}$
Default Value:	1.0e-4
Possible Values:	Any real number.

Table A.955: config_cvmix_WSwSBF_coriolis_parameter: Coriolis parameter for WSwSBF test case

A.96 iso

A.96.1 config_iso_vert_levels

Type:	integer
Units:	unitless
Default Value:	100
Possible Values:	Any positive integer greater than 0.

Table A.956: config_iso_vert_levels: Number of vertical levels in ISO.

A.96.2 config_iso_main_channel_depth

Type:	real
Units:	m
Default Value:	4000.0
Possible Values:	Any positive real number.

Table A.957: config_iso_main_channel_depth: Depth of the main channel in the ISO.

A.96.3 config_iso_north_wall_lat

Type:	real
Units:	degrees
Default Value:	-50
Possible Values:	Any real number.

Table A.958: config_iso_north_wall_lat: Latitude of the vertical north wall in the ISO domain.

A.96.4 config_iso_south_wall_lat

Type:	real
Units:	degrees
Default Value:	-70
Possible Values:	Any real number.

Table A.959: config_iso_south_wall_lat: Latitude of the top of the main channel south wall wall in the ISO domain.

A.96.5 config_iso_ridge_flag

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.960: config_iso_ridge_flag: Logical flag that controls if a ridge is used or not.

A.96.6 config_iso_ridge_center_lon

Type:	real
Units:	degrees
Default Value:	180
Possible Values:	Any positive real number.

Table A.961: config_iso_ridge_center_lon: Longitude of the center of the ridge in the ISO.

A.96.7 config_iso_ridge_height

Type:	real
Units:	m
Default Value:	2000.0
Possible Values:	Any positive real number.

Table A.962: config_iso_ridge_height: Maximum height of the ridge at the zonal middle of the ISO domain.

A.96.8 config_iso_ridge_width

Type:	real
Units:	meters
Default Value:	2000000
Possible Values:	Any positive real number.

Table A.963: config_iso_ridge_width: Width of the ridge at the zonal middle of the ISO domain.

A.96.9 config_iso_plateau_flag

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.964: config_iso_plateau_flag: Logical flag that controls if a plateau is used or not.

A.96.10 config_iso_plateau_center_lon

Type:	real
Units:	degrees
Default Value:	300
Possible Values:	Any positive real number.

Table A.965: config_iso_plateau_center_lon: Longitude of the center of the plateau in the ISO.

A.96.11 config_iso_plateau_center_lat

Type:	real
Units:	degrees
Default Value:	-58
Possible Values:	Any positive real number.

Table A.966: config_iso_plateau_center_lat: Latitude of the center of the plateau in the ISO.

A.96.12 config_iso_plateau_height

Type:	real
Units:	meters
Default Value:	2000
Possible Values:	Any positive real number.

Table A.967: config_iso_plateau_height: Height of the top of the plateau in the ISO domain.

A.96.13 config_iso_plateau_radius

Type:	real
Units:	meters
Default Value:	200000
Possible Values:	Any positive real number.

Table A.968: config_iso_plateau_radius: Radius at the top of the plateau in the ISO domain.

A.96.14 config_iso_plateau_slope_width

Type:	real
Units:	meters
Default Value:	1000000
Possible Values:	Any positive real number.

Table A.969: config_iso_plateau_slope_width: Width of the sloping region of the plateau in the ISO domain.

A.96.15 config_iso_shelf_flag

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.970: config_iso_shelf_flag: Logical flag that controls if a shelf is used or not.

A.96.16 config_iso_shelf_depth

Type:	real
Units:	meters
Default Value:	500
Possible Values:	Any positive real number.

Table A.971: config_iso_shelf_depth: Depth of the shelf in the ISO.

A.96.17 config_iso_shelf_width

Type:	real
Units:	meters
Default Value:	120000
Possible Values:	Any positive real number.

Table A.972: config_iso_shelf_width: Width of the shelf in the ISO.

A.96.18 config_iso_cont_slope_flag

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.973: config_iso_cont_slope_flag: Logical flag that controls if a continental slope is used or not.

A.96.19 config_iso_max_cont_slope

Type:	real
Units:	–
Default Value:	0.01
Possible Values:	Any positive real number.

Table A.974: config_iso_max_cont_slope: Maximum slope of the continental slope in the ISO.

A.96.20 config_iso_embayment_flag

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.975: config_iso_embayment_flag: Logical flag that controls if an embayment is used or not.

A.96.21 config_iso_embayment_center_lon

Type:	real
Units:	degrees
Default Value:	60
Possible Values:	Any positive real number.

Table A.976: config_iso_embayment_center_lon: Longitude of the center of the embayment in the ISO.

A.96.22 config_iso_embayment_center_lat

Type:	real
Units:	degrees
Default Value:	-71
Possible Values:	Any positive real number.

Table A.977: config_iso_embayment_center_lat: Latitude of the center of the embayment in the ISO.

A.96.23 config_iso_embayment_radius

Type:	real
Units:	meters
Default Value:	500000
Possible Values:	Any positive real number.

Table A.978: config_iso_embayment_radius: Radius of the embayment in the ISO.

A.96.24 config_iso_embayment_depth

Type:	real
Units:	meters
Default Value:	2000
Possible Values:	Any positive real number.

Table A.979: config_iso_embayment_depth: Depth of the embayment in the ISO.

A.96.25 config_iso_depression_flag

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.980: config_iso_depression_flag: Logical flag to add a depresseion between embayment and main channel.

A.96.26 config_iso_depression_center_lon

Type:	real
Units:	degrees
Default Value:	60
Possible Values:	Any positive real number.

Table A.981: config_iso_depression_center_lon: Longitude of the center of the depression in the ISO.

A.96.27 config_iso_depression_south_lat

Type:	real
Units:	degrees
Default Value:	-72
Possible Values:	Any positive real number.

Table A.982: config_iso_depression_south_lat: Latitude of the south end of the depression in the ISO.

A.96.28 config_iso_depression_north_lat

Type:	real
Units:	degrees
Default Value:	-65
Possible Values:	Any positive real number.

Table A.983: config_iso_depression_north_lat: Latitude of the north end of the depression in the ISO.

A.96.29 config_iso_depression_width

Type:	real
Units:	meters
Default Value:	480000
Possible Values:	Any positive real number.

Table A.984: config_iso_depression_width: Width of the depression in the ISO.

A.96.30 config_iso_depression_depth

Type:	real
Units:	meters
Default Value:	800
Possible Values:	Any positive real number.

Table A.985: config_iso_depression_depth: Depth of the depression in the ISO.

A.96.31 config_iso_salinity

Type:	real
Units:	PSU
Default Value:	35.0
Possible Values:	Any positive real number.

Table A.986: config_iso_salinity: Salinity of the water in the ISO.

A.96.32 config_iso_wind_stress_max

Type:	real
Units:	$\mathrm{N\,m^2}$
Default Value:	0.01
Possible Values:	Any real number.

Table A.987: config_iso_wind_stress_max: Maximum zonal windstress value.

A.96.33 config_iso_acc_wind

Type:	real
Units:	$\mathrm{N\,m^2}$
Default Value:	0.2
Possible Values:	Any real number.

Table A.988: config_iso_acc_wind: Maximum zonal windstress value over the Antarctic Circumpolar Current.

A.96.34 config_iso_asf_wind

Type:	real
Units:	$\mathrm{N\,m^2}$
Default Value:	-0.05
Possible Values:	Any real number.

Table A.989: config_iso_asf_wind: Maximum zonal windstress value over the Antarctic Slope Front.

A.96.35 config_iso_wind_trans

Type:	real
Units:	degrees
Default Value:	-65
Possible Values:	Any real number.

Table A.990: config_iso_wind_trans: Latitude of the transition region between easterly and westerly winds.

A.96.36 config_iso_heat_flux_south

Type:	real
Units:	$\mathrm{W\,m^{-2}}$
Default Value:	-5
Possible Values:	Any real number.

Table A.991: config_iso_heat_flux_south: Heat flux into the ocean over the south side of the main channel.

A.96.37 config_iso_heat_flux_middle

Type:	real
Units:	$\mathrm{W\,m^{-2}}$
Default Value:	10
Possible Values:	Any real number.

Table A.992: config_iso_heat_flux_middle: Heat flux into the ocean over the middle of the main channel.

A.96.38 config_iso_heat_flux_north

Type:	real
Units:	$\mathrm{W\,m^{-2}}$
Default Value:	-5
Possible Values:	Any real number.

Table A.993: config_iso_heat_flux_north: Heat flux into the ocean over the north side of the main channel.

A.96.39 config_iso_heat_flux_lat_ss

Type:	real
Units:	degrees
Default Value:	-70
Possible Values:	Any real number.

Table A.994: config_iso_heat_flux_lat_ss: Latitude of southern point of heat flux region on the south.

A.96.40 config_iso_heat_flux_lat_sm

Type:	real
Units:	degrees
Default Value:	-65
Possible Values:	Any real number.

Table A.995: config_iso_heat_flux_lat_sm: Latitude of transition point between heat flux regions on the south and middle.

A.96.41 config_iso_heat_flux_lat_mn

Type:	real
Units:	degrees
Default Value:	-53
Possible Values:	Any real number.

Table A.996: config_iso_heat_flux_lat_mn: Latitude of transition point between heat flux regions on the middel and north.

A.96.42 config_iso_region1_center_lon

Type:	real
Units:	degrees
Default Value:	60
Possible Values:	Any real number.

Table A.997: config_iso_region1_center_lon: Longitude of center region 1.

A.96.43 config_iso_region1_center_lat

Type:	real
Units:	degrees
Default Value:	-75
Possible Values:	Any real number.

Table A.998: config_iso_region1_center_lat: Latitude of center of region 1.

A.96.44 config_iso_region2_center_lon

Type:	real
Units:	degrees
Default Value:	150
Possible Values:	Any real number.

Table A.999: config_iso_region2_center_lon: Longitude of center of region 2.

A.96.45 config_iso_region2_center_lat

Type:	real
Units:	degrees
Default Value:	-71
Possible Values:	Any real number.

Table A.1000: config_iso_region2_center_lat: Latitude of center of region 2.

A.96.46 config_iso_region3_center_lon

Type:	real
Units:	degrees
Default Value:	240
Possible Values:	Any real number.

Table A.1001: config_iso_region3_center_lon: Longitude of center of region 3.

A.96.47 config_iso_region3_center_lat

Type:	real
Units:	degrees
Default Value:	-71
Possible Values:	Any real number.

Table A.1002: config_iso_region3_center_lat: Latitude of center of region 3.

A.96.48 config_iso_region4_center_lon

Type:	real
Units:	degrees
Default Value:	330
Possible Values:	Any real number.

Table A.1003: config_iso_region4_center_lon: Longitude of center of region 4.

A.96.49 config_iso_region4_center_lat

Type:	real
Units:	degrees
Default Value:	-71
Possible Values:	Any real number.

Table A.1004: config_iso_region4_center_lat: Latitude of center of region 2.

A.96.50 config_iso_heat_flux_region1_flag

Type:	logical
Units:	unitless
Default Value:	false
Possible Values:	.true. or .false.

Table A.1005: config_iso_heat_flux_region1_flag: Logical flag controlling use of heat flux in region 1.

A.96.51 config_iso_heat_flux_region1

Type:	real

Units:	$W\,m^{-2}$
Default Value:	-5
Possible Values:	Any real number.

Table A.1006: config_iso_heat_flux_region1: Heat flux into of the ocean over a localized region 1.

A.96.52 config_iso_heat_flux_region1_radius

Type:	real
Units:	meters
Default Value:	300000
Possible Values:	Any real number.

Table A.1007: config_iso_heat_flux_region1_radius: Radius of heat flux localized region 1.

A.96.53 config_iso_heat_flux_region2_flag

Type:	logical
Units:	unitless
Default Value:	false
Possible Values:	.true. or .false.

Table A.1008: config_iso_heat_flux_region2_flag: Logical flag controlling use of heat flux in region 2.

A.96.54 config_iso_heat_flux_region2

Type:	real
Units:	$W\,m^{-2}$
Default Value:	-5
Possible Values:	Any real number.

Table A.1009: config_iso_heat_flux_region2: Heat flux into of the ocean over localized region 2.

A.96.55 config_iso_heat_flux_region2_radius

Type:	real
Units:	meters

Default Value:	240000
Possible Values:	Any real number.

Table A.1010: config_iso_heat_flux_region2_radius: Radius of heat flux localized region 2.

A.96.56 config_iso_surface_temperature_piston_velocity

Type:	real
Units:	m/s
Default Value:	5.787e-5
Possible Values:	Any real number.

Table A.1011: config_iso_surface_temperature_piston_velocity: Surface temperature restoring piston velocity.

A.96.57 config_iso_initial_temp_t1

Type:	real
Units:	deg C
Default Value:	3.5
Possible Values:	Any real number.

Table A.1012: config_iso_initial_temp_t1: Maximum temperature parameter for the initial temperature profile.

A.96.58 config_iso_initial_temp_t2

Type:	real
Units:	deg C
Default Value:	4.0
Possible Values:	Any real number.

Table A.1013: config_iso_initial_temp_t2: Amplitude parameter for the initial temperature profile.

A.96.59 config_iso_initial_temp_h0

Type:	real

Units:	m
Default Value:	1200
Possible Values:	Any real number.

Table A.1014: config_iso_initial_temp_h0: Depth parameter for the initial temperature profile.

A.96.60 config_iso_initial_temp_h1

Type:	real
Units:	m
Default Value:	500
Possible Values:	Any real number.

Table A.1015: config_iso_initial_temp_h1: Depth parameter for the initial temperature profile.

A.96.61 config_iso_initial_temp_mt

Type:	real
Units:	$\deg \mathrm{C}\, \mathrm{m}^{-1}$
Default Value:	0.000075
Possible Values:	Any real number.

Table A.1016: config_iso_initial_temp_mt: Slope parameter for the initial temperature profile.

A.96.62 config_iso_initial_temp_latS

Type:	real
Units:	degrees
Default Value:	-75
Possible Values:	Any real number.

Table A.1017: config_iso_initial_temp_latS: Southern latitude used to linearly scale the initial temperature field in the horizontal.

A.96.63 config_iso_initial_temp_latN

Type:	real

Units:	degrees
Default Value:	-50
Possible Values:	Any real number.

Table A.1018: config_iso_initial_temp_latN: Southern latitude used to linearly scale the initial temperature field in the horizontal.

A.96.64 config_iso_temperature_sponge_t1

Type:	real
Units:	deg C
Default Value:	10
Possible Values:	Any real number.

Table A.1019: config_iso_temperature_sponge_t1: Parameter for the sponge vertical temperature profile.

A.96.65 config_iso_temperature_sponge_h1

Type:	real
Units:	m
Default Value:	1000
Possible Values:	Any real number.

Table A.1020: config_iso_temperature_sponge_h1: E-folding distance parameter for the sponge vertical temperature profile.

A.96.66 config_iso_temperature_sponge_l1

Type:	real
Units:	m
Default Value:	120000
Possible Values:	Any real number.

Table A.1021: config_iso_temperature_sponge_l1: Horizontal e-folding distance parameter for the sponge weights.

A.96.67 config_iso_temperature_sponge_tau1

Type:	real
Units:	days
Default Value:	10.0
Possible Values:	Any real number.

Table A.1022: config_iso_temperature_sponge_tau1: Sponge layer restoring time scale, used to calculate interior restoring rate.

A.96.68 config_iso_temperature_restore_region1_flag

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.1023: config_iso_temperature_restore_region1_flag: Logical flag controlling use of temperature restoring in region 1.

A.96.69 config_iso_temperature_restore_t1

Type:	real
Units:	deg C
Default Value:	-1
Possible Values:	Any real number.

Table A.1024: config_iso_temperature_restore_t1: Restoring temperature in region 1

A.96.70 config_iso_temperature_restore_lcx1

Type:	real
Units:	m
Default Value:	600000
Possible Values:	Any real number.

Table A.1025: config_iso_temperature_restore_lcx1: Zonal length scale of the restoring region 1

A.96.71 config_iso_temperature_restore_lcy1

Type:	real
Units:	m
Default Value:	600000
Possible Values:	Any real number.

Table A.1026: config_iso_temperature_restore_lcy1: Meridional length scale of the restoring region 1

A.96.72 config_iso_temperature_restore_region2_flag

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.1027: config_iso_temperature_restore_region2_flag: Logical flag controlling use of temperature restoring in region 2.

A.96.73 config_iso_temperature_restore_t2

Type:	real
Units:	deg C
Default Value:	-1
Possible Values:	Any real number.

Table A.1028: config_iso_temperature_restore_t2: Restoring temperature in region 2

A.96.74 config_iso_temperature_restore_lcx2

Type:	real
Units:	m
Default Value:	600000
Possible Values:	Any real number.

Table A.1029: config_iso_temperature_restore_lcx2: Zonal length scale of the restoring region 2

A.96.75 config_iso_temperature_restore_lcy2

Type:	real
Units:	m
Default Value:	250000
Possible Values:	Any real number.

Table A.1030: config_iso_temperature_restore_lcy2: Meridional length scale of the restoring region 2

A.96.76 config_iso_temperature_restore_region3_flag

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.1031: config_iso_temperature_restore_region3_flag: Logical flag controlling use of temperature restoring in region 3.

A.96.77 config_iso_temperature_restore_t3

Type:	real
Units:	deg C
Default Value:	-1
Possible Values:	Any real number.

Table A.1032: config_iso_temperature_restore_t3: Restoring temperature in region 3

A.96.78 config_iso_temperature_restore_lcx3

Type:	real
Units:	m
Default Value:	600000
Possible Values:	Any real number.

Table A.1033: config_iso_temperature_restore_lcx3: Zonal length scale of the restoring region 3

A.96.79 config_iso_temperature_restore_lcy3

Type:	real
Units:	m
Default Value:	250000
Possible Values:	Any real number.

Table A.1034: config_iso_temperature_restore_lcy3: Meridional length scale of the restoring region 3

A.96.80 config_iso_temperature_restore_region4_flag

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.1035: config_iso_temperature_restore_region4_flag: Logical flag controlling use of temperature restoring in region 4.

A.96.81 config_iso_temperature_restore_t4

Type:	real
Units:	deg C
Default Value:	-1
Possible Values:	Any real number.

Table A.1036: config_iso_temperature_restore_t4: Restoring temperature in region 4

A.96.82 config_iso_temperature_restore_lcx4

Type:	real
Units:	m
Default Value:	600000
Possible Values:	Any real number.

Table A.1037: config_iso_temperature_restore_lcx4: Zonal length scale of the restoring region 4

A.96.83 config_iso_temperature_restore_lcy4

Type:	real
Units:	m
Default Value:	250000
Possible Values:	Any real number.

Table A.1038: config_iso_temperature_restore_lcy4: Meridional length scale of the restoring region 4

A.97 soma

A.97.1 config_soma_vert_levels

Type:	integer
Units:	unitless
Default Value:	100
Possible Values:	Any positive integer. Typically 40 or larger.

Table A.1039: config_soma_vert_levels: Number of vertical levels in SOMA.

A.97.2 config_soma_domain_width

Type:	real
Units:	m
Default Value:	1.25e6
Possible Values:	Any real positive number

Table A.1040: config_soma_domain_width: Approximate radius of the SOMA domain.

A.97.3 config_soma_center_latitude

Type:	real
Units:	degrees
Default Value:	35.0
Possible Values:	Any real number between -90.0 and 90.0.

Table A.1041: config_soma_center_latitude: Latitude for the center of the SOMA basin.

A.97.4 config_soma_center_longitude

Type:	real
Units:	degrees
Default Value:	0.0
Possible Values:	Any real number between 0.0 and 360.0.

Table A.1042: config_soma_center_longitude: Longitude for the center of the SOMA basin.

A.97.5 config_soma_phi

Type:	real
Units:	non − dimensional
Default Value:	0.1
Possible Values:	Any real positive number

Table A.1043: config_soma_phi: Scale factor controlling width of continential slope. Typically around 0.1

A.97.6 config_soma_bottom_depth

Type:	real
Units:	m
Default Value:	2500.0
Possible Values:	Any real positive number.

Table A.1044: config_soma_bottom_depth: Depth of the bottom of the ocean for the SOMA test case.

A.97.7 config_soma_shelf_width

Type:	real
Units:	non − dimensional
Default Value:	-0.4
Possible Values:	Any real number

Table A.1045: config_soma_shelf_width: Non-dimensional measure of continential shelf. Typically negative.

A.97.8 config_soma_shelf_depth

Type:	real
Units:	m
Default Value:	100.0
Possible Values:	Any real positive number

Table A.1046: config_soma_shelf_depth: Depth of the continential shelf.

A.97.9 config_soma_ref_density

Type:	real
Units:	$kg\,m^{-3}$
Default Value:	1000.0
Possible Values:	Any real number.

Table A.1047: config_soma_ref_density: Reference density for the SOMA test case.

A.97.10 config_soma_density_difference

Type:	real
Units:	$kg\,m^{-3}$
Default Value:	4.0
Possible Values:	Any real number.

Table A.1048: config_soma_density_difference: Density difference between surface and bottom waters for the SOMA test case.

A.97.11 config_soma_thermocline_depth

Type:	real
Units:	m
Default Value:	300.0
Possible Values:	Any real positive number.

Table A.1049: config_soma_thermocline_depth: Depth over which majority of initial stratification is placed.

A.97.12 config_soma_density_difference_linear

Type:	real
Units:	non − dimensional
Default Value:	0.05
Possible Values:	Any real positive number.

Table A.1050: config_soma_density_difference_linear: Fraction of stratification put into linear profile extending from surface to bottom.

A.97.13 config_soma_surface_temperature

Type:	real
Units:	C
Default Value:	20.0
Possible Values:	Any real positive number.

Table A.1051: config_soma_surface_temperature: Surface temperature value used in initial condition.

A.97.14 config_soma_surface_salinity

Type:	real
Units:	PSU
Default Value:	33.0
Possible Values:	Any real positive number.

Table A.1052: config_soma_surface_salinity: Surface salinity value used in initial condition.

A.97.15 config_soma_use_surface_temp_restoring

Type:	logical
Units:	unitless
Default Value:	false
Possible Values:	.true. or .false.

Table A.1053: config_soma_use_surface_temp_restoring: Logical flag that determines if surface temperature restoring is to be used.

A.97.16 config_soma_surface_temp_restoring_at_center_latitude

Type:	real
Units:	degrees
Default Value:	7.5
Possible Values:	Any real positive number.

Table A.1054: config_soma_surface_temp_restoring_at_center_latitude: Surface restoring temperature value at center latitutde.

A.97.17 config_soma_surface_temp_restoring_latitude_gradient

Type:	real
Units:	degrees C / degrees latitude
Default Value:	0.5
Possible Values:	Any real positive number.

Table A.1055: config_soma_surface_temp_restoring_latitude_gradient: Surface restoring temperature gradient in latitudal direction.

A.97.18 config_soma_restoring_temp_piston_vel

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Default Value:	1.0e-5
Possible Values:	Any real number.

Table A.1056: config_soma_restoring_temp_piston_vel: Restoring piston velocity for surface temperature.

A.98 ziso

A.98.1 config_ziso_vert_levels

Type:	integer
Units:	unitless
Default Value:	100
Possible Values:	Any positive integer number greater than 0.

Table A.1057: config_ziso_vert_levels: Number of vertical levels in ziso. Typical value is 100.

A.98.2 config_ziso_add_easterly_wind_stress_ASF

Type:	logical
Units:	unitless
Default Value:	false
Possible Values:	.true. or .false.

Table A.1058: config_ziso_add_easterly_wind_stress_ASF: Logical flag to determine if an easterly windstress is added

A.98.3 config_ziso_wind_transition_position

Type:	real
Units:	m
Default Value:	800000.0
Possible Values:	Any positive real number, less than config_ziso_meridional_extent

Table A.1059: config_ziso_wind_transition_position: meridional position where windstress switches to easterly

A.98.4 config_ziso_antarctic_shelf_front_width

Type:	real
Units:	m
Default Value:	600000
Possible Values:	any positive real number less than the meridional domain extent

Table A.1060: config_ziso_antarctic_shelf_front_width: meridional extent over which the easterly wind stress is applied

A.98.5 config_ziso_wind_stress_shelf_front_max

Type:	real
Units:	$\mathrm{N\,m^{-2}}$
Default Value:	-0.05
Possible Values:	Any real number less than 0

Table A.1061: config_ziso_wind_stress_shelf_front_max: Maximum zonal windstress value in the shelf front region, following Stewart et al. 2013

A.98.6 config_ziso_use_slopping_bathymetry

Type:	logical
Units:	unitless
Default Value:	false
Possible Values:	.true. or .false.

Table A.1062: config_ziso_use_slopping_bathymetry: Logical flag that determines if sloping bathymetery is used.

A.98.7 config_ziso_meridional_extent

Type:	real
Units:	m
Default Value:	2.0e6
Possible Values:	Any real number larger than zero.

Table A.1063: config_ziso_meridional_extent: Meridional extent of the domain (L).

A.98.8 config_ziso_zonal_extent

Type:	real
Units:	m
Default Value:	1.0e6
Possible Values:	Any real number larger than zero.

Table A.1064: config_ziso_zonal_extent: Zonal extent of the domain (W).

A.98.9 config_ziso_bottom_depth

Type:	real
Units:	m
Default Value:	2500.0

Possible Values:	Any real number larger than zero.

Table A.1065: config_ziso_bottom_depth: Depth of the domain (H).

A.98.10 config_ziso_shelf_depth

Type:	real
Units:	m
Default Value:	500.0
Possible Values:	Any real number.

Table A.1066: config_ziso_shelf_depth: Shelf depth in the domain (H_s).

A.98.11 config_ziso_slope_half_width

Type:	real
Units:	m
Default Value:	1.0e5
Possible Values:	Any real number.

Table A.1067: config_ziso_slope_half_width: Shelf half width (W_s).

A.98.12 config_ziso_slope_center_position

Type:	real
Units:	m
Default Value:	5.0e5
Possible Values:	Any real number.

Table A.1068: config_ziso_slope_center_position: Slope center posiiton (Y_s).

A.98.13 config_ziso_reference_coriolis

Type:	real
Units:	s^{-1}
Default Value:	-1e-4
Possible Values:	Any real number larger.

Table A.1069: config_ziso_reference_coriolis: Reference coriolis parameter f_0. Note $f = f_0 + \beta * y$.

A.98.14 config_ziso_coriolis_gradient

Type:	real
Units:	$\mathrm{m}^{-1}\,\mathrm{s}^{-1}$
Default Value:	1e-11
Possible Values:	Any real number.

Table A.1070: config_ziso_coriolis_gradient: Meridional gradient of coriolis parameter β.

A.98.15 config_ziso_wind_stress_max

Type:	real
Units:	$\mathrm{N\,m}^2$
Default Value:	0.2
Possible Values:	Any real number.

Table A.1071: config_ziso_wind_stress_max: Maximum zonal windstress value τ_0.

A.98.16 config_ziso_mean_restoring_temp

Type:	real
Units:	$^{circ}\mathrm{C}$
Default Value:	3.0
Possible Values:	Any real number.

Table A.1072: config_ziso_mean_restoring_temp: Mean restoring temperature T_m in $T_r(y) = T_m + T_a \tanh\left(2\frac{y-L/2}{L/2}\right) + T_b\frac{y-L/2}{L/2}$.

A.98.17 config_ziso_restoring_temp_dev_ta

Type:	real
Units:	$^{circ}\mathrm{C}$
Default Value:	2.0
Possible Values:	Any real number.

Table A.1073: config_ziso_restoring_temp_dev_ta: Temperature deviation T_a in surface temp. $T_r(y) = T_m + T_a \tanh\left(2\frac{y-L/2}{L/2}\right) + T_b\frac{y-L/2}{L/2}$.

A.98.18 config_ziso_restoring_temp_dev_tb

Type:	real
Units:	^{circ}C
Default Value:	2.0
Possible Values:	Any real number.

Table A.1074: config_ziso_restoring_temp_dev_tb: Linear temperature deviation T_b in surface temp. $T_r(y) = T_m + T_a \tanh\left(2\frac{y-L/2}{L/2}\right) + T_b\frac{y-L/2}{L/2}$.

A.98.19 config_ziso_restoring_temp_tau

Type:	real
Units:	days
Default Value:	30.0
Possible Values:	Any real number.

Table A.1075: config_ziso_restoring_temp_tau: Time scale for interior restoring of temperature.

A.98.20 config_ziso_restoring_temp_piston_vel

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Default Value:	1.93e-5
Possible Values:	Any real number.

Table A.1076: config_ziso_restoring_temp_piston_vel: Restoring piston velocity for surface temperature.

A.98.21 config_ziso_restoring_temp_ze

Type:	real
Units:	m

Default Value:	1250.0
Possible Values:	Any real number.

Table A.1077: config_ziso_restoring_temp_ze: Vertical $e-$folding scale in T_s for northern wall: $T_s \exp(z/z_e)$.

A.98.22 config_ziso_restoring_sponge_l

Type:	real
Units:	m
Default Value:	8.0e4
Possible Values:	Any real number.

Table A.1078: config_ziso_restoring_sponge_l: E-folding distance parameter for the sponge vertical temperature profile.

A.98.23 config_ziso_initial_temp_t1

Type:	real
Units:	^{circ}C
Default Value:	6.0
Possible Values:	Any real number.

Table A.1079: config_ziso_initial_temp_t1: Initial temperature profile constant T_1 in $T(z, t = 0) = T_1 + T_2 \tanh(z/h_1) + m_T z$.

A.98.24 config_ziso_initial_temp_t2

Type:	real
Units:	^{circ}C
Default Value:	3.6
Possible Values:	Any real number.

Table A.1080: config_ziso_initial_temp_t2: Initial temperature profile constant T_2 in $T(z, t = 0) = T_1 + T_2 \tanh(z/h_1) + m_T z$.

A.98.25 config_ziso_initial_temp_h1

Type:	real
Units:	m
Default Value:	300.0
Possible Values:	Any real number.

Table A.1081: config_ziso_initial_temp_h1: Initial temperature profile constant h_1 in $T(z, t = 0) = T_1 + T_2 \tanh(z/h_1) + m_T z$.

A.98.26 config_ziso_initial_temp_mt

Type:	real
Units:	$^{circ}\mathrm{C\,m^{-1}}$
Default Value:	7.5e-5
Possible Values:	Any real number.

Table A.1082: config_ziso_initial_temp_mt: Initial temperature profile constant m_T in $T(z, t = 0) = T_1 + T_2 \tanh(z/h_1) + m_T z$.

A.98.27 config_ziso_frazil_enable

Type:	logical
Units:	logical
Default Value:	false
Possible Values:	true or false

Table A.1083: config_ziso_frazil_enable: A logical to overload (and largely overwrite) this test case to evaluate frazil. In almost all uses of this test case, this configure option should be false.

A.98.28 config_ziso_frazil_temperature_anomaly

Type:	real
Units:	$^{circ}\mathrm{C}$
Default Value:	-3.0
Possible Values:	Any real number.

Table A.1084: config_ziso_frazil_temperature_anomaly: Temperature anomaly to produce frazil

A.99 sub_ice_shelf_2D

A.99.1 config_sub_ice_shelf_2D_vert_levels

Type:	integer
Units:	unitless
Default Value:	20
Possible Values:	Any positive integer number greater than 0.

Table A.1085: config_sub_ice_shelf_2D_vert_levels: Number of vertical levels in sub_ice_shelf_2D. Typical value is 22.

A.99.2 config_sub_ice_shelf_2D_bottom_depth

Type:	real
Units:	m
Default Value:	2000.0
Possible Values:	Any positive real number.

Table A.1086: config_sub_ice_shelf_2D_bottom_depth: Depth of the bottom of the ocean for the this test case.

A.99.3 config_sub_ice_shelf_2D_cavity_thickness

Type:	real
Units:	m
Default Value:	25.0
Possible Values:	Any positive real number.

Table A.1087: config_sub_ice_shelf_2D_cavity_thickness: Vertical thickness of ocean sub-ice cavity.

A.99.4 config_sub_ice_shelf_2D_slope_height

Type:	real
Units:	m
Default Value:	500.0
Possible Values:	Any positive real number.

Table A.1088: config_sub_ice_shelf_2D_slope_height: Vertical thickness of fixed slope.

A.99.5 config_sub_ice_shelf_2D_edge_width

Type:	real
Units:	m
Default Value:	15.0e3
Possible Values:	Any positive real number.

Table A.1089: config_sub_ice_shelf_2D_edge_width: Horizontal width of angled part of the ice.

A.99.6 config_sub_ice_shelf_2D_y1

Type:	real
Units:	m
Default Value:	30.0e3
Possible Values:	Any positive real number.

Table A.1090: config_sub_ice_shelf_2D_y1: cavity edge in y

A.99.7 config_sub_ice_shelf_2D_y2

Type:	real
Units:	m
Default Value:	60.0e3
Possible Values:	Any positive real number.

Table A.1091: config_sub_ice_shelf_2D_y2: shelf edge in y

A.99.8 config_sub_ice_shelf_2D_temperature

Type:	real
Units:	deg C
Default Value:	1.0
Possible Values:	Any real number

Table A.1092: config_sub_ice_shelf_2D_temperature: Temperature of the surface in the northern half of the domain.

A.99.9 config_sub_ice_shelf_2D_surface_salinity

Type:	real
Units:	PSU
Default Value:	34.5
Possible Values:	Any real number greater than 0.

Table A.1093: config_sub_ice_shelf_2D_surface_salinity: Salinity of the water in the entire domain.

A.99.10 config_sub_ice_shelf_2D_bottom_salinity

Type:	real
Units:	PSU
Default Value:	34.7
Possible Values:	Any real number greater than 0.

Table A.1094: config_sub_ice_shelf_2D_bottom_salinity: Salinity of the water in the entire domain.

A.100 periodic_planar

A.100.1 config_periodic_planar_vert_levels

Type:	integer
Units:	unitless
Default Value:	100
Possible Values:	Any positive integer number greater than 0.

Table A.1095: config_periodic_planar_vert_levels: Number of vertical levels in periodic_planar. Typical value is 1.

A.100.2 config_periodic_planar_bottom_depth

Type:	real
Units:	unitless
Default Value:	2500.0
Possible Values:	Any real number

Table A.1096: config_periodic_planar_bottom_depth: Bottom depth.

A.100.3 config_periodic_planar_velocity_strength

Type:	real
Units:	$m^2 s^{-1}$
Default Value:	1.0
Possible Values:	Any real number

Table A.1097: config_periodic_planar_velocity_strength: Strenght of velocity field.

A.101 ecosys_column

A.101.1 config_ecosys_column_vert_levels

Type:	integer
Units:	unitless
Default Value:	100
Possible Values:	100

Table A.1098: config_ecosys_column_vert_levels: Number of vertical levels in ecosys column unit test case.

A.101.2 config_ecosys_column_vertical_grid

Type:	character
Units:	unitless
Default Value:	100layerE3SMv1
Possible Values:	'100layerE3SMv1'

Table A.1099: config_ecosys_column_vertical_grid: prescription of setting the vertical resolution of the test case

A.101.3 config_ecosys_column_TS_filename

Type:	character
Units:	unitless
Default Value:	unknown
Possible Values:	path/PTandS.mpas100levs.singleColumn.forMPASO.renamed.nc

Table A.1100: config_ecosys_column_TS_filename: Name of file containing column values of temperature and salinity

A.101.4 config_ecosys_column_ecosys_filename

Type:	character
Units:	unitless
Default Value:	unknown
Possible Values:	path/ecoIC+phaeo.mpas100levs.singleColumn.forMPASO.renamed.nc

Table A.1101: config_ecosys_column_ecosys_filename: Name of file containing column values of ecosys variables

A.101.5 config_ecosys_column_bottom_depth

Type:	real
Units:	m
Default Value:	6000.0
Possible Values:	6000.

Table A.1102: config_ecosys_column_bottom_depth: Depth of the bottom of the ocean for the ecosys column unit test case.

A.102 sea_mount

A.102.1 config_sea_mount_vert_levels

Type:	integer
Units:	unitless
Default Value:	10
Possible Values:	Any positive integer number greater than 0.

Table A.1103: config_sea_mount_vert_levels: Number of vertical levels in sea mount test case.

A.102.2 config_sea_mount_layer_type

Type:	character
Units:	unitless
Default Value:	sigma
Possible Values:	'z-level', 'sigma'

Table A.1104: config_sea_mount_layer_type: Logical flag that controls the vertical coordinate initializaton

A.102.3 config_sea_mount_stratification_type

Type:	character
Units:	unitless
Default Value:	exponential
Possible Values:	'linear', 'exponential'

Table A.1105: config_sea_mount_stratification_type: Logical flag that controls how the vertical profile of tracers. See Beckmann and Haidvogel 1993 eqn 15-16.

A.102.4 config_sea_mount_density_coef_linear

Type:	real
Units:	$\mathrm{kg\,m^{-3}}$
Default Value:	1024
Possible Values:	Any real number

Table A.1106: config_sea_mount_density_coef_linear: Density coefficient for linear vertical stratification

A.102.5 config_sea_mount_density_coef_exp

Type:	real
Units:	$\mathrm{kg\,m^{-3}}$
Default Value:	1028
Possible Values:	Any real number

Table A.1107: config_sea_mount_density_coef_exp: Density coefficient for exponential vertical stratification

A.102.6 config_sea_mount_density_gradient_linear

Type:	real
Units:	$\mathrm{kg\,m^{-3}}$
Default Value:	0.1
Possible Values:	Any real number

Table A.1108: config_sea_mount_density_gradient_linear: Density gradient for linear vertical stratification, $\Delta_z \rho$ in Beckmann Haidvogel eqn 15

A.102.7 config_sea_mount_density_gradient_exp

Type:	real
Units:	$\mathrm{kg\,m^{-3}}$
Default Value:	3.0
Possible Values:	Any real number

Table A.1109: config_sea_mount_density_gradient_exp: Density gradient for exponential vertical stratification, $\Delta_z \rho$ in Beckmann Haidvogel eqn 16

A.102.8 config_sea_mount_density_depth_linear

Type:	real
Units:	m
Default Value:	4500
Possible Values:	Any real number

Table A.1110: config_sea_mount_density_depth_linear: Density reference depth for linear vertical stratification

A.102.9 config_sea_mount_density_depth_exp

Type:	real
Units:	m
Default Value:	500
Possible Values:	Any real number

Table A.1111: config_sea_mount_density_depth_exp: Density reference depth for exponential vertical stratification

A.102.10 config_sea_mount_density_ref

Type:	real
Units:	$\mathrm{kg\,m^{-3}}$
Default Value:	1028
Possible Values:	Any real number

Table A.1112: config_sea_mount_density_ref: Density reference for eos to initialize temperature

A.102.11 config_sea_mount_density_Tref

Type:	real
Units:	C
Default Value:	5.0
Possible Values:	Any real number

Table A.1113: config_sea_mount_density_Tref: Reference temperature for eos to initialize temperature

A.102.12 config_sea_mount_density_alpha

Type:	real
Units:	$\mathrm{kg\,m^{-3}\,C^{-1}}$
Default Value:	0.2
Possible Values:	Any real number

Table A.1114: config_sea_mount_density_alpha: Linear thermal expansion coefficient to initialize temperature

A.102.13 config_sea_mount_bottom_depth

Type:	real
Units:	m
Default Value:	5000.0
Possible Values:	Any positive real number.

Table A.1115: config_sea_mount_bottom_depth: Depth of the bottom of the ocean for the sea mount test case.

A.102.14 config_sea_mount_height

Type:	real
Units:	m
Default Value:	4500.0
Possible Values:	Any positive real number.

Table A.1116: config_sea_mount_height: Height of sea mount, H_0

A.102.15 config_sea_mount_radius

Type:	real
Units:	m
Default Value:	10.0e3
Possible Values:	Any positive real number.

Table A.1117: config_sea_mount_radius: Radius of sea mount

A.102.16 config_sea_mount_width

Type:	real
Units:	m
Default Value:	40.0e3
Possible Values:	Any positive real number.

Table A.1118: config_sea_mount_width: Width parameter of sea mount, L.

A.102.17 config_sea_mount_salinity

Type:	real
Units:	PSU
Default Value:	35.0
Possible Values:	Any real number greater than 0.

Table A.1119: config_sea_mount_salinity: Salinity of the water in the entire domain.

A.102.18 config_sea_mount_coriolis_parameter

Type:	real
Units:	s^{-1}
Default Value:	-1.0e-4
Possible Values:	Any real number.

Table A.1120: config_sea_mount_coriolis_parameter: Coriolis parameter for entrie domain.

A.103 isomip

A.103.1 config_isomip_vert_levels

Type:	integer
Units:	unitless
Default Value:	30
Possible Values:	Any integer greater than 0.

Table A.1121: config_isomip_vert_levels: Number of vertical levels in test case.

A.103.2 config_isomip_vertical_level_distribution

Type:	character
Units:	unitless
Default Value:	constant
Possible Values:	'constant', 'boundary_layer'

Table A.1122: config_isomip_vertical_level_distribution: The distribution of vertical levels, either constant (all equal thickness) or boundary layer (decreasing toward top and bottom).

A.103.3 config_isomip_bottom_depth

Type:	real
Units:	m
Default Value:	-900.0
Possible Values:	Any negative real number.

Table A.1123: config_isomip_bottom_depth: Depth of the ocean in the test case.

A.103.4 config_isomip_temperature

Type:	real
Units:	deg C
Default Value:	-1.9
Possible Values:	Any real number.

Table A.1124: config_isomip_temperature: Temperature of the ocean for isomip initial conditions.

A.103.5 config_isomip_salinity

Type:	real
Units:	PSU
Default Value:	34.4
Possible Values:	Any real number greater than 0.

Table A.1125: config_isomip_salinity: Salinity of the ocean for isomip initial conditions.

A.103.6 config_isomip_restoring_temperature

Type:	real
Units:	deg C
Default Value:	-1.9
Possible Values:	Any real number.

Table A.1126: config_isomip_restoring_temperature: Temperature for surface restoring.

A.103.7 config_isomip_temperature_piston_velocity

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Default Value:	1.157e-5
Possible Values:	Any positive real number.

Table A.1127: config_isomip_temperature_piston_velocity: Piston velocity for surface restoring of temperature

A.103.8 config_isomip_restoring_salinity

Type:	real
Units:	PSU
Default Value:	34.4
Possible Values:	Any real number greater than 0.

Table A.1128: config_isomip_restoring_salinity: Salinity for surface restoring.

A.103.9 config_isomip_salinity_piston_velocity

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Default Value:	1.157e-5
Possible Values:	Any positive real number.

Table A.1129: config_isomip_salinity_piston_velocity: Piston velocity for surface restoring of salinity

A.103.10 config_isomip_coriolis_parameter

Type:	real
Units:	$\mathrm{s^{-1}}$
Default Value:	-1.4e-4
Possible Values:	Any real number.

Table A.1130: config_isomip_coriolis_parameter: Coriolis parameter for entrie domain.

A.103.11 config_isomip_southern_boundary

Type:	real
Units:	m
Default Value:	0.0
Possible Values:	Any real number.

Table A.1131: config_isomip_southern_boundary: The y location of the southern boundary.

A.103.12 config_isomip_northern_boundary

Type:	real
Units:	m
Default Value:	1000e3
Possible Values:	Any real number.

Table A.1132: config_isomip_northern_boundary: The y location of the northern boundary.

A.103.13 config_isomip_western_boundary

Type:	real
Units:	m
Default Value:	0.0
Possible Values:	Any real number.

Table A.1133: config_isomip_western_boundary: The x location of the western boundary.

A.103.14 config_isomip_eastern_boundary

Type:	real
Units:	m
Default Value:	500e3
Possible Values:	Any real number.

Table A.1134: config_isomip_eastern_boundary: The x location of the eastern boundary.

A.103.15 config_isomip_y1

Type:	real
Units:	m
Default Value:	0.0
Possible Values:	Any real number, between -90 and 90 on spherical meshes.

Table A.1135: config_isomip_y1: The first y value in the piecewise linear ice draft.

A.103.16 config_isomip_z1

Type:	real
Units:	m
Default Value:	-700.0
Possible Values:	Any non-positive real number.

Table A.1136: config_isomip_z1: The first z value in the piecewise linear ice draft.

A.103.17 config_isomip_ice_fraction1

Type:	real

Units:	unitless
Default Value:	1.0
Possible Values:	A real number between 0 and 1.

Table A.1137: config_isomip_ice_fraction1: The first ice fraction value in the piecewise linear fit.

A.103.18 config_isomip_y2

Type:	real
Units:	m
Default Value:	400e3
Possible Values:	Any real number.

Table A.1138: config_isomip_y2: The second y value in the piecewise linear ice draft.

A.103.19 config_isomip_z2

Type:	real
Units:	m
Default Value:	-200.0
Possible Values:	Any non-positive real number.

Table A.1139: config_isomip_z2: The second z value in the piecewise linear.

A.103.20 config_isomip_ice_fraction2

Type:	real
Units:	unitless
Default Value:	1.0
Possible Values:	A real number between 0 and 1.

Table A.1140: config_isomip_ice_fraction2: The second ice fraction value in the piecewise linear fit.

A.103.21 config_isomip_y3

Type:	real
Units:	m

Default Value:	1000e3
Possible Values:	Any real number.

Table A.1141: config_isomip_y3: The third y value in the piecewise linear ice draft.

A.103.22 config_isomip_z3

Type:	real
Units:	m
Default Value:	-200.0
Possible Values:	Any non-positive real number.

Table A.1142: config_isomip_z3: The third z value in the piecewise linear.

A.103.23 config_isomip_ice_fraction3

Type:	real
Units:	unitless
Default Value:	1.0
Possible Values:	A real number between 0 and 1.

Table A.1143: config_isomip_ice_fraction3: The third ice fraction value in the piecewise linear fit.

A.104 isomip_plus

A.104.1 config_isomip_plus_vert_levels

Type:	integer
Units:	unitless
Default Value:	36
Possible Values:	Any integer greater than 0.

Table A.1144: config_isomip_plus_vert_levels: Number of vertical levels in test case.

A.104.2 config_isomip_plus_vertical_level_distribution

Type:	character
Units:	unitless
Default Value:	constant
Possible Values:	'constant'

Table A.1145: config_isomip_plus_vertical_level_distribution: The distribution of vertical levels, currently only constant (all equal thickness).

A.104.3 config_isomip_plus_max_bottom_depth

Type:	real
Units:	m
Default Value:	-720.0
Possible Values:	Any negative real number.

Table A.1146: config_isomip_plus_max_bottom_depth: Maximum depth of the ocean in the test case.

A.104.4 config_isomip_plus_minimum_levels

Type:	integer
Units:	unitless
Default Value:	3
Possible Values:	Any positive integer value greater than 0.

Table A.1147: config_isomip_plus_minimum_levels: Minimum number of vertical levels in a column.

A.104.5 config_isomip_plus_min_column_thickness

Type:	real
Units:	m
Default Value:	10.0
Possible Values:	Any positive real value.

Table A.1148: config_isomip_plus_min_column_thickness: Minimum thickness of the inital ocean column (to prevent 'drying').

A.104.6 config_isomip_plus_min_ocean_fraction

Type:	real
Units:	unitless
Default Value:	0.5
Possible Values:	Any positive real value.

Table A.1149: config_isomip_plus_min_ocean_fraction: Minimum fraction of a cell that contains ocean (as opposed to land or grounded land ice) in order for it to be an active ocean cell.

A.104.7 config_isomip_plus_topography_file

Type:	character
Units:	unitless
Default Value:	input_geometry_processed.nc
Possible Values:	path/to/topography/file.nc

Table A.1150: config_isomip_plus_topography_file: Path to the topography initial condition file.

A.104.8 config_isomip_plus_init_top_temp

Type:	real
Units:	$^\circ$ C
Default Value:	-1.9
Possible Values:	Any real number.

Table A.1151: config_isomip_plus_init_top_temp: Initial temperature at sea level.

A.104.9 config_isomip_plus_init_bot_temp

Type:	real
Units:	$^\circ$ C
Default Value:	-1.9
Possible Values:	Any real number.

Table A.1152: config_isomip_plus_init_bot_temp: Initial temperature in deepest cells.

A.104.10 config_isomip_plus_init_top_sal

Type:	real
Units:	PSU
Default Value:	33.8
Possible Values:	Any positive real number.

Table A.1153: config_isomip_plus_init_top_sal: Initial salinity at sea level.

A.104.11 config_isomip_plus_init_bot_sal

Type:	real
Units:	PSU
Default Value:	34.5
Possible Values:	Any positive real number.

Table A.1154: config_isomip_plus_init_bot_sal: Initial salinity in deepest cells.

A.104.12 config_isomip_plus_restore_top_temp

Type:	real
Units:	° C
Default Value:	-1.9
Possible Values:	Any real number.

Table A.1155: config_isomip_plus_restore_top_temp: Restoring temperature at sea level.

A.104.13 config_isomip_plus_restore_bot_temp

Type:	real
Units:	° C
Default Value:	1.0
Possible Values:	Any real number.

Table A.1156: config_isomip_plus_restore_bot_temp: Restoring temperature in deepest cells.

A.104.14 config_isomip_plus_restore_top_sal

Type:	real
Units:	PSU
Default Value:	33.8
Possible Values:	Any positive real number.

Table A.1157: config_isomip_plus_restore_top_sal: Restoring salinity at sea level.

A.104.15 config_isomip_plus_restore_bot_sal

Type:	real
Units:	PSU
Default Value:	34.7
Possible Values:	Any positive real number.

Table A.1158: config_isomip_plus_restore_bot_sal: Restoring salinity in deepest cells.

A.104.16 config_isomip_plus_restore_rate

Type:	real
Units:	days^{-1}
Default Value:	10.0
Possible Values:	Any positive real number.

Table A.1159: config_isomip_plus_restore_rate: Restoring salinity in deepest cells.

A.104.17 config_isomip_plus_restore_evap_rate

Type:	real
Units:	$\text{m}\,\text{yr}^{-1}$
Default Value:	200
Possible Values:	Any real number.

Table A.1160: config_isomip_plus_restore_evap_rate: Evaporation rate used to maintain sea level near zero.

A.104.18 config_isomip_plus_restore_xMin

Type:	real
Units:	m
Default Value:	790.0e3
Possible Values:	Any real number.

Table A.1161: config_isomip_plus_restore_xMin: Southern boundary of restoring region.

A.104.19 config_isomip_plus_restore_xMax

Type:	real
Units:	m
Default Value:	800.0e3
Possible Values:	Any real number.

Table A.1162: config_isomip_plus_restore_xMax: Northern boundary of restoring region.

A.104.20 config_isomip_plus_coriolis_parameter

Type:	real
Units:	s^{-1}
Default Value:	-1.409e-4
Possible Values:	Any real number.

Table A.1163: config_isomip_plus_coriolis_parameter: Coriolis parameter for entrie domain.

A.104.21 config_isomip_plus_effective_density

Type:	real
Units:	$kg\,m^{-3}$
Default Value:	1026.
Possible Values:	Any non-negative real number.

Table A.1164: config_isomip_plus_effective_density: Initial value for the effective density for entrie domain.

A.105 hurricane

A.105.1 config_hurricane_vert_levels

Type:	integer
Units:	m
Default Value:	3
Possible Values:	Any positive integer number greater than 2.

Table A.1165: config_hurricane_vert_levels: Number of vertical levels for hurricane.

A.105.2 config_hurricane_min_depth

Type:	real
Units:	m
Default Value:	10.0
Possible Values:	Any positive real number greater than 0.

Table A.1166: config_hurricane_min_depth: Minimum depth for hurricane mesh bathymetry.

A.105.3 config_hurricane_max_depth

Type:	real
Units:	m
Default Value:	60.0
Possible Values:	Any positive real number greater than 0.

Table A.1167: config_hurricane_max_depth: Maximum depth for hurricane mesh bathymetry.

A.105.4 config_hurricane_gaussian_hump_amplitude

Type:	real
Units:	m
Default Value:	1.0
Possible Values:	Any positive real number greater than 0.

Table A.1168: config_hurricane_gaussian_hump_amplitude: Amplitude of gaussian wave.

A.105.5 config_hurricane_use_gaussian_hump

Type:	logical
Units:	unitless
Default Value:	false
Possible Values:	.true. or .false.

Table A.1169: config_hurricane_use_gaussian_hump: Use of idealized gaussian hump 'hurricane' initial condition.

A.105.6 config_hurricane_gaussian_lon_center

Type:	real
Units:	degrees
Default Value:	286.0
Possible Values:	Any real number between 0.0 and 360.0.

Table A.1170: config_hurricane_gaussian_lon_center: Longitude of center of gaussian wave.

A.105.7 config_hurricane_gaussian_lat_center

Type:	real
Units:	degrees
Default Value:	38.0
Possible Values:	Any real number between -90.0 and 90.0.

Table A.1171: config_hurricane_gaussian_lat_center: Latitude of center of gaussian wave.

A.105.8 config_hurricane_gaussian_width

Type:	real
Units:	degrees
Default Value:	1.0
Possible Values:	Any real number greater than 0.0

Table A.1172: config_hurricane_gaussian_width: Width scale of gaussian wave.

A.105.9 config_hurricane_gaussian_amplitude

Type:	real
Units:	m
Default Value:	1.0
Possible Values:	Any real number greater than 0.0

Table A.1173: config_hurricane_gaussian_amplitude: Amplitude of gaussian wave.

A.105.10 config_hurricane_gaussian_slr_amp

Type:	real
Units:	m
Default Value:	0.0
Possible Values:	Any real number.

Table A.1174: config_hurricane_gaussian_slr_amp: Amplitude of sea level rise.

A.105.11 config_hurricane_land_z_limit

Type:	real
Units:	m
Default Value:	-2.0
Possible Values:	Any real number.

Table A.1175: config_hurricane_land_z_limit: Vertical elevation corresponding to increased drag on land (bottom depth positive).

A.105.12 config_hurricane_marsh_z_limit

Type:	real
Units:	m
Default Value:	2.0
Possible Values:	Any real number.

Table A.1176: config_hurricane_marsh_z_limit: Vertical elevation corresponding to increased drag on marsh (bottom depth positive).

A.105.13 config_hurricane_land_drag

Type:	real
Units:	$\mathrm{non-dimensional\, or\, Manning's\, n}$
Default Value:	0.1
Possible Values:	Any real number.

Table A.1177: config_hurricane_land_drag: Value of land drag for either Cd or Manning's n above config_land_z_limit.

A.105.14 config_hurricane_marsh_drag

Type:	real
Units:	$\mathrm{non-dimensional\, or\, Manning's\, n}$
Default Value:	0.05
Possible Values:	Any real number.

Table A.1178: config_hurricane_marsh_drag: Value of marsh drag between config_marsh_z_limit and config_land_z_limit for either Cd or Manning's n.

A.105.15 config_hurricane_channel_drag

Type:	real
Units:	$\mathrm{non-dimensional\, or\, Manning's\, n}$
Default Value:	0.02
Possible Values:	Any real number.

Table A.1179: config_hurricane_channel_drag: Value of channel drag below config_marsh_z_limit for either Cd or Manning's n.

A.105.16 config_hurricane_sea_level_rise_adjustment

Type:	real
Units:	m
Default Value:	0.00
Possible Values:	Any real number.

Table A.1180: config_hurricane_sea_level_rise_adjustment: Crude factor to account for sea level rise. This is uniformly added to the bathymetric depth.

A.106 tidal_boundary

A.106.1 config_tidal_boundary_vert_levels

Type:	integer
Units:	unitless
Default Value:	100
Possible Values:	Any positive integer number greater than 0.

Table A.1181: config_tidal_boundary_vert_levels: Number of vertical levels in tidal_boundary test case. Typical values are 40 and 100.

A.106.2 config_tidal_boundary_min_vert_levels

Type:	integer
Units:	unitless
Default Value:	10
Possible Values:	Any positive integer number greater than 0.

Table A.1182: config_tidal_boundary_min_vert_levels: Number of vertical levels where zstar coordinates transition to sigma.

A.106.3 config_tidal_boundary_layer_type

Type:	character
Units:	unitless
Default Value:	zstar
Possible Values:	'zstar', 'sigma', 'hybrid'

Table A.1183: config_tidal_boundary_layer_type: Vertical coordinate to be used.

A.106.4 config_tidal_boundary_right_bottom_depth

Type:	real
Units:	m
Default Value:	10.0
Possible Values:	Any positive real value greater than 0.

Table A.1184: config_tidal_boundary_right_bottom_depth: Depth of the bottom of the ocean in northern-most end.

A.106.5 config_tidal_start_dry

Type:	logical
Units:	m
Default Value:	false
Possible Values:	True or False

Table A.1185: config_tidal_start_dry: Logical to determine if channel should be started dry.

A.106.6 config_tidal_boundary_use_distances

Type:	logical
Units:	m
Default Value:	true
Possible Values:	True or False

Table A.1186: config_tidal_boundary_use_distances: Logical to determine if channel dimensions should to specific values.

A.106.7 config_tidal_boundary_left_value

Type:	real
Units:	m
Default Value:	0.0
Possible Values:	Any positive real value greater than or equal to 0.

Table A.1187: config_tidal_boundary_left_value: Coordinate of the southern-most end.

A.106.8 config_tidal_boundary_right_value

Type:	real
Units:	m
Default Value:	25.0e3
Possible Values:	Any positive real value greater than or equal to 0.

Table A.1188: config_tidal_boundary_right_value: Coordinate of the northern-most end.

A.106.9 config_tidal_boundary_left_bottom_depth

Type:	real
Units:	m
Default Value:	10.0
Possible Values:	Any positive real value greater than 0.

Table A.1189: config_tidal_boundary_left_bottom_depth: Depth of the bottom of the ocean in southern-most end.

A.106.10 config_tidal_boundary_salinity

Type:	real
Units:	PSU
Default Value:	35.0
Possible Values:	Any real number greater than 0.

Table A.1190: config_tidal_boundary_salinity: Salinity of the water in the entire domain.

A.106.11 config_tidal_boundary_domain_temperature

Type:	real
Units:	deg C
Default Value:	20.0
Possible Values:	Any real number

Table A.1191: config_tidal_boundary_domain_temperature: Temperature of water outside of the plug.

A.106.12 config_tidal_boundary_plug_temperature

Type:	real
Units:	deg C
Default Value:	20.0
Possible Values:	Any real number

Table A.1192: config_tidal_boundary_plug_temperature: Temperature of water in plug.

A.106.13 config_tidal_boundary_plug_width_frac

Type:	real
Units:	fraction
Default Value:	0.10
Possible Values:	Any real number between 0 and 1.

Table A.1193: config_tidal_boundary_plug_width_frac: Fraction of the domain the plug should take up initially. Only in the y direction.

A.106.14 config_tidal_forcing_left_Cd_or_n

Type:	real
Units:	unitless
Default Value:	1.0e-3
Possible Values:	Any real number

Table A.1194: config_tidal_forcing_left_Cd_or_n: Bottom drag of left side of the boundary.

A.106.15 config_tidal_forcing_right_Cd_or_n

Type:	real
Units:	unitless
Default Value:	1.0e-3
Possible Values:	Any real number

Table A.1195: config_tidal_forcing_right_Cd_or_n: Bottom drag of right side of the boundary.

A.106.16 config_use_idealized_transect

Type:	logical
Units:	–
Default Value:	false
Possible Values:	True or False

Table A.1196: config_use_idealized_transect: Logical to determine if idealized tidal flat profile is defined.

A.106.17 config_idealized_transect_Lshore

Type:	real
Units:	–
Default Value:	0.6
Possible Values:	Any positive real value between 0 and 1.

Table A.1197: config_idealized_transect_Lshore: Ratio of shore length in the idealized coastal profile.

A.106.18 config_idealized_transect_Sshore

Type:	real
Units:	–
Default Value:	0.001
Possible Values:	Any positive real value, should be a small value.

Table A.1198: config_idealized_transect_Sshore: Shore slope.

A.106.19 config_idealized_transect_Lcoast

Type:	real
Units:	–
Default Value:	0.3
Possible Values:	Any positive real value between 0 and 1.

Table A.1199: config_idealized_transect_Lcoast: Ratio of coast length in the idealized coastal profile

A.106.20 config_idealized_transect_Scoast

Type:	real
Units:	–
Default Value:	0.001
Possible Values:	Any positive real value.

Table A.1200: config_idealized_transect_Scoast: Coast slope.

A.106.21 config_idealized_transect_Lmarsh

Type:	real
Units:	–
Default Value:	0.1
Possible Values:	Lmarsh=1-Lshore-Lcoast; any positive real value between 0 and 1.

Table A.1201: config_idealized_transect_Lmarsh: Ratio of marsh length in the idealized coastal profile.

A.106.22 config_idealized_transect_Smarsh

Type:	real
Units:	–
Default Value:	0.0
Possible Values:	Any real value, can be negative

Table A.1202: config_idealized_transect_Smarsh: Marsh slope

A.106.23 config_idealized_transect_roughness

Type:	real
Units:	–
Default Value:	0.025
Possible Values:	Any real value, can be negative

Table A.1203: config_idealized_transect_roughness: Bottom roughness (Cd or Manning roughness) at non-vegetated region

A.106.24 config_idealized_transect_roughness_marsh

Type:	real
Units:	–
Default Value:	0.075
Possible Values:	Any real value, can be negative

Table A.1204: config_idealized_transect_roughness_marsh: Bottom roughness (Cd or Manning roughness) at vegetated region

A.106.25 config_idealized_vegetation_diameter

Type:	real
Units:	m
Default Value:	0.05
Possible Values:	Any non-negative real value

Table A.1205: config_idealized_vegetation_diameter: Constant vegetation diameter for idealized transect case

A.106.26 config_idealized_vegetation_height

Type:	real
Units:	m
Default Value:	0.2
Possible Values:	Any non-negative real value

Table A.1206: config_idealized_vegetation_height: Constant vegetation height for idealized transect case

A.106.27 config_idealized_vegetation_density

Type:	real
Units:	m^{-2}
Default Value:	1000
Possible Values:	Any non-negative real value

Table A.1207: config_idealized_vegetation_density: Constant vegetation density for indealized transect case

A.107 cosine_bell

A.107.1 config_cosine_bell_temperature

Type:	real
Units:	deg C
Default Value:	15.0
Possible Values:	Any real number

Table A.1208: config_cosine_bell_temperature: Temperature of the ocean.

A.107.2 config_cosine_bell_salinity

Type:	real
Units:	PSU
Default Value:	35.0
Possible Values:	Any real number

Table A.1209: config_cosine_bell_salinity: Salinity of the ocean.

A.107.3 config_cosine_bell_lat_center

Type:	real
Units:	radians
Default Value:	0.0
Possible Values:	Any real number between -pi/2 and pi/2

Table A.1210: config_cosine_bell_lat_center: latitude center of cosine bell

A.107.4 config_cosine_bell_lon_center

Type:	real
Units:	radians
Default Value:	3.141592
Possible Values:	Any non-negative real number between 0 and 2pi

Table A.1211: config_cosine_bell_lon_center: longitude center of cosine bell

A.107.5 config_cosine_bell_psi0

Type:	real
Units:	unitless
Default Value:	1.0
Possible Values:	Any real number

Table A.1212: config_cosine_bell_psi0: hill max of tracer

A.107.6 config_cosine_bell_radius

Type:	real
Units:	m
Default Value:	2123666.667
Possible Values:	Any non-negative real number between 0 and 2pi

Table A.1213: config_cosine_bell_radius: radius of cosine bell

A.107.7 config_cosine_bell_vel_pd

Type:	real
Units:	days
Default Value:	24.0
Possible Values:	Any non-negative real number

Table A.1214: config_cosine_bell_vel_pd: time for bell to transit equator once

A.108 mixed_layer_eddy

A.108.1 config_mixed_layer_eddy_vert_levels

Type:	integer
Units:	unitless
Default Value:	60
Possible Values:	Any positive integer number greater than 0.

Table A.1215: config_mixed_layer_eddy_vert_levels: Number of vertical levels in mixed layer eddy test case. Typical value is 60.

A.108.2 config_mixed_layer_eddy_bottom_depth

Type:	real
Units:	m
Default Value:	300.0
Possible Values:	Any positive real number.

Table A.1216: config_mixed_layer_eddy_bottom_depth: Depth of the bottom of the domain for the mixed layer eddy test case.

A.108.3 config_mixed_layer_eddy_mixed_layer_depth

Type:	real
Units:	m
Default Value:	200.0
Possible Values:	Any positive real number.

Table A.1217: config_mixed_layer_eddy_mixed_layer_depth: Depth of the mixed layer for the mixed layer eddy test case.

A.108.4 config_mixed_layer_eddy_base_temperature

Type:	real
Units:	$\deg C$
Default Value:	16.0
Possible Values:	Any real number.

Table A.1218: config_mixed_layer_eddy_base_temperature: Temperature at the base of the mixed layer.

A.108.5 config_mixed_layer_eddy_temperature_stratification_mixed_layer

Type:	real
Units:	$\deg C\,m^{-1}$
Default Value:	1e-4
Possible Values:	Any real number.

Table A.1219: config_mixed_layer_eddy_temperature_stratification_mixed_layer: Vertical temperature gradient in the mixed layer.

A.108.6 config_mixed_layer_eddy_temperature_stratification_interior

Type:	real
Units:	$\deg C\,m^{-1}$
Default Value:	1e-2
Possible Values:	Any real number.

Table A.1220: config_mixed_layer_eddy_temperature_stratification_interior: Vertical temperature gradient in the interior.

A.108.7 config_mixed_layer_eddy_temperature_horizontal_gradient

Type:	real
Units:	deg C m^{-1}
Default Value:	2e-5
Possible Values:	Any real number.

Table A.1221: config_mixed_layer_eddy_temperature_horizontal_gradient: Horizontal temperature gradient in the mixed layer.

A.108.8 config_mixed_layer_eddy_temperature_front_width

Type:	real
Units:	m
Default Value:	10e3
Possible Values:	Any positive real number.

Table A.1222: config_mixed_layer_eddy_temperature_front_width: Width of the temperature front.

A.108.9 config_mixed_layer_eddy_temperature_perturbation_magnitude

Type:	real
Units:	deg C
Default Value:	1e-5
Possible Values:	Any positive real number.

Table A.1223: config_mixed_layer_eddy_temperature_perturbation_magnitude: Magnitude of random perturbation in temperature.

A.108.10 config_mixed_layer_eddy_salinity

Type:	real
Units:	PSU
Default Value:	35.0
Possible Values:	Any real number larger than zero.

Table A.1224: config_mixed_layer_eddy_salinity: Salinity of the water in the entire domain.

A.108.11 config_mixed_layer_eddy_two_fronts

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.1225: config_mixed_layer_eddy_two_fronts: Logical flag that determines if the initial fields has two fronts.

A.108.12 config_mixed_layer_eddy_restoring_width

Type:	real
Units:	m
Default Value:	5e3
Possible Values:	Any real number larger than zero.

Table A.1226: config_mixed_layer_eddy_restoring_width: E-folding width of the restoring region at meridional boundaries, only used for single front.

A.108.13 config_mixed_layer_eddy_restoring_tau

Type:	real
Units:	days
Default Value:	5.0
Possible Values:	Any real number larger than zero.

Table A.1227: config_mixed_layer_eddy_restoring_tau: Time scale for restoring at meridional boundaries, only used for single front.

A.108.14 config_mixed_layer_eddy_heat_flux

Type:	real
Units:	$\mathrm{m}\,^{o}\mathrm{C}\,\mathrm{s}^{-1}$
Default Value:	0.0
Possible Values:	Any real number.

Table A.1228: config_mixed_layer_eddy_heat_flux: Surface heat flux.

A.108.15 config_mixed_layer_eddy_evaporation_flux

Type:	real
Units:	$kg\,m^{-2}\,s^{-1}$
Default Value:	0.0
Possible Values:	Any real number.

Table A.1229: config_mixed_layer_eddy_evaporation_flux: Evaporative flux

A.108.16 config_mixed_layer_eddy_wind_stress_zonal

Type:	real
Units:	Pa
Default Value:	0.0
Possible Values:	Any real number.

Table A.1230: config_mixed_layer_eddy_wind_stress_zonal: Surface zonal wind stress.

A.108.17 config_mixed_layer_eddy_wind_stress_meridional

Type:	real
Units:	Pa
Default Value:	0.0
Possible Values:	Any real number.

Table A.1231: config_mixed_layer_eddy_wind_stress_meridional: Surface meridional wind stress.

A.108.18 config_mixed_layer_eddy_coriolis_parameter

Type:	real
Units:	s^{-1}
Default Value:	1.0e-4
Possible Values:	Any real number.

Table A.1232: config_mixed_layer_eddy_coriolis_parameter: Coriolis parameter for entrie domain.

A.109 test_sht

A.109.1 config_test_sht_function_option

Type:	integer
Units:	unitless
Default Value:	1
Possible Values:	Any integer value

Table A.1233: config_test_sht_function_option: Function to apply forward and inverse transformations to

A.109.2 config_test_sht_cosine_bell_lat_center

Type:	real
Units:	radians
Default Value:	0.0
Possible Values:	Any real number between -pi/2 and pi/2

Table A.1234: config_test_sht_cosine_bell_lat_center: latitude center of cosine bell

A.109.3 config_test_sht_cosine_bell_lon_center

Type:	real
Units:	radians
Default Value:	3.141592
Possible Values:	Any non-negative real number between 0 and 2pi

Table A.1235: config_test_sht_cosine_bell_lon_center: longitude center of cosine bell

A.109.4 config_test_sht_cosine_bell_psi0

Type:	real
Units:	unitless
Default Value:	1.0
Possible Values:	Any real number

Table A.1236: config_test_sht_cosine_bell_psi0: hill max of tracer

A.109.5 config_test_sht_cosine_bell_radius

Type:	real
Units:	m
Default Value:	2123666.667
Possible Values:	Any non-negative real number between 0 and 2pi

Table A.1237: config_test_sht_cosine_bell_radius: radius of cosine bell

A.109.6 config_test_sht_function3_cell_width_equator

Type:	real
Units:	km
Default Value:	30.0
Possible Values:	Any non-negative real number

Table A.1238: config_test_sht_function3_cell_width_equator: cell width at equator for config_test_sht_function_option = 3

A.109.7 config_test_sht_function3_cell_width_pole

Type:	real
Units:	km
Default Value:	120.0
Possible Values:	Any non-negative real number

Table A.1239: config_test_sht_function3_cell_width_pole: cell width at pole for config_test_sht_function_option = 3

A.109.8 config_test_sht_function3_lat_transition_start

Type:	real
Units:	deg
Default Value:	1.0
Possible Values:	Any non-negative real number

Table A.1240: config_test_sht_function3_lat_transition_start: transition start for config_test_sht_function_option = 3

A.109.9 config_test_sht_function3_lat_transition_width

Type:	real
Units:	deg
Default Value:	10.0
Possible Values:	Any non-negative real number

Table A.1241: config_test_sht_function3_lat_transition_width: transition width for config_test_sht_function_option = 3

A.109.10 config_test_sht_n_iterations

Type:	integer
Units:	m
Default Value:	10
Possible Values:	Any positive integer

Table A.1242: config_test_sht_n_iterations: number of times to run forward/inverse transformation for timings

A.110 parabolic_bowl

A.110.1 config_parabolic_bowl_vert_levels

Type:	integer
Units:	unitless
Default Value:	3
Possible Values:	Any positive integer

Table A.1243: config_parabolic_bowl_vert_levels: Number of vertical levels in parabolic bowl.

A.110.2 config_parabolic_bowl_Coriolis_parameter

Type:	real
Units:	1/s
Default Value:	1.031e-4
Possible Values:	Any real number

Table A.1244: config_parabolic_bowl_Coriolis_parameter: Coriolis paramter

A.110.3 config_parabolic_bowl_eta0

Type:	real
Units:	m
Default Value:	2.0
Possible Values:	Any real number

Table A.1245: config_parabolic_bowl_eta0: surface elevation magnitude

A.110.4 config_parabolic_bowl_b0

Type:	real
Units:	m
Default Value:	50.0
Possible Values:	Any real number

Table A.1246: config_parabolic_bowl_b0: maximum water depth

A.110.5 config_parabolic_bowl_omega

Type:	real
Units:	1/s
Default Value:	1.4544e-4
Possible Values:	Any real number

Table A.1247: config_parabolic_bowl_omega: Angular frequency of oscillation

A.110.6 config_parabolic_bowl_gravity

Type:	real
Units:	m/s^2
Default Value:	9.81
Possible Values:	Any real number

Table A.1248: config_parabolic_bowl_gravity: Gravitational accerlation

A.110.7 config_parabolic_bowl_adjust_domain_center

Type:	logical
Units:	unitless
Default Value:	true
Possible Values:	.true. or .false.

Table A.1249: config_parabolic_bowl_adjust_domain_center: Flag to adjust mesh coordinates

A.111 partial_cells

A.111.1 config_alter_ICs_for_pcs

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.1250: config_alter_ICs_for_pcs: If true, initial conditions are altered according to the config_pc_alteration_type flag.

A.111.2 config_pc_alteration_type

Type:	character
Units:	unitless
Default Value:	full_cell
Possible Values:	'full_cell' or 'partial_cell'

Table A.1251: config_pc_alteration_type: Determines the method of initial condition alteration for partial bottom (and possibly top) cells. 'partial_cell' alters layerThickness, interpolates all tracers in the bottom (and top) cell based on the bottomDepth (or ssh) variable, and alters bottomDepth (or ssh) to enforce the minimum pc fraction. 'full_cell' alters bottomDepth (or ssh) to have full cells everywhere, based on the refBottomDepth variable.

A.111.3 config_min_pc_fraction

Type:	real
Units:	unitless
Default Value:	0.10
Possible Values:	Any real between 0 and 1.

Table A.1252: config_min_pc_fraction: Determines the minimum fraction of a cell altering the initial conditions can create.

A.112 init_setup

A.112.1 config_init_configuration

Type:	character
Units:	unitless
Default Value:	none
Possible Values:	Any configuration name

Table A.1253: config_init_configuration: Name of configuration to create.

A.112.2 config_expand_sphere

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.1254: config_expand_sphere: Logical flag that controls if a spherical mesh is expanded to an earth sized sphere or not.

A.112.3 config_realistic_coriolis_parameter

Type:	logical
Units:	unitless
Default Value:	.false.
Possible Values:	.true. or .false.

Table A.1255: config_realistic_coriolis_parameter: Logical flag that controls if a spherical mesh will get realistic coriolis parameters or not.

A.112.4 config_write_cull_cell_mask

Type:	logical
Units:	unitless
Default Value:	.true.
Possible Values:	.true. or .false.

Table A.1256: config_write_cull_cell_mask: Logicial flag that controls if the cullCell field is written to output.

A.112.5 config_vertical_grid

Type:	character
Units:	unitless
Default Value:	uniform
Possible Values:	'uniform', '60layerPHC', '42layerWOCE', '100layerE3SMv1', '1dCVTgenerator', ...

Table A.1257: config_vertical_grid: Name of vertical grid to use in configuration generation

A.113 CVTgenerator

A.113.1 config_1dCVTgenerator_stretch1

Type:	real
Units:	unitless
Default Value:	1.0770
Possible Values:	Any positive non-zero integer.

Table A.1258: config_1dCVTgenerator_stretch1: Parameter for the 1D CVT vertical grid generator.

A.113.2 config_1dCVTgenerator_stretch2

Type:	real
Units:	unitless
Default Value:	1.0275
Possible Values:	Any positive non-zero integer.

Table A.1259: config_1dCVTgenerator_stretch2: Parameter for the 1D CVT vertical grid generator.

A.113.3 config_1dCVTgenerator_dzSeed

Type:	real
Units:	unitless
Default Value:	1.2
Possible Values:	Any positive non-zero integer.

Table A.1260: config_1dCVTgenerator_dzSeed: Seed thickness of the first layer for the 1D CVT vertical grid generator.

A.114 init_vertical_grid

A.114.1 config_init_vertical_grid_type

Type:	character
Units:	unitless
Default Value:	z-star
Possible Values:	'z-star', 'z-level', or 'haney-number'

Table A.1261: config_init_vertical_grid_type: Which vertical grid to initialize with. Without ice-shelf cavities (i.e. ssh=0 everywhere), 'z-star' and 'z-level' are the same.

A.115 constrain_Haney_number

A.115.1 config_rx1_outer_iter_count

Type:	integer
Units:	unitless
Default Value:	20
Possible Values:	any positive integer

Table A.1262: config_rx1_outer_iter_count: The number of outer iterations (first smoothing then rx1 constraint) during initialization of the vertical grid.

A.115.2 config_rx1_inner_iter_count

Type:	integer
Units:	unitless
Default Value:	10

Possible Values:	any positive integer

Table A.1263: config_rx1_inner_iter_count: The number of iterations used to constrain rx1 in each layer.

A.115.3 config_rx1_init_inner_weight

Type:	real
Units:	unitless
Default Value:	0.1
Possible Values:	a positive value less than or equal to 1

Table A.1264: config_rx1_init_inner_weight: The weight by which layer thicknesses are altered at the beginning of inner iteration. This weight linearly increases to 1.0 by the final iteration.

A.115.4 config_rx1_max

Type:	real
Units:	unitless
Default Value:	5.0
Possible Values:	any positive value, typically greater than or equal to 1

Table A.1265: config_rx1_max: The maximum value rx1Max of the Haney number (rx1) after modification of the vertical grid

A.115.5 config_rx1_horiz_smooth_weight

Type:	real
Units:	unitless
Default Value:	1.0
Possible Values:	A non-negative number

Table A.1266: config_rx1_horiz_smooth_weight: Relative weight of horizontal neighbors compared to this cell when smoothing vertical stretching

A.115.6 config_rx1_vert_smooth_weight

Type:	real
Units:	unitless
Default Value:	1.0
Possible Values:	A non-negative number

Table A.1267: config_rx1_vert_smooth_weight: Relative weight of vertical neighbors compared to this cell when smoothing vertical stretching

A.115.7 config_rx1_slope_weight

Type:	real
Units:	unitless
Default Value:	1e-1
Possible Values:	A non-negative number

Table A.1268: config_rx1_slope_weight: Weight used to nudge level interfaces toward being flat (thus decreasing the Haney number)

A.115.8 config_rx1_zstar_weight

Type:	real
Units:	unitless
Default Value:	1.0
Possible Values:	A non-negative number

Table A.1269: config_rx1_zstar_weight: Weight used to nudge vertical stretching toward z-star during each outer iteration

A.115.9 config_rx1_horiz_smooth_open_ocean_cells

Type:	integer
Units:	unitless
Default Value:	20
Possible Values:	any non-negative integer, 0 indiates no buffer region.

Table A.1270: config_rx1_horiz_smooth_open_ocean_cells: The size (in cells) of a buffer region around land ice for smoothing. Smoothing is performed under land ice and in the buffer region of open ocean.

A.115.10 config_rx1_min_levels

Type:	integer
Units:	unitless
Default Value:	3
Possible Values:	a positive integer

Table A.1271: config_rx1_min_levels: The minimum number of layers in the ocean column in the smoothed region.

A.115.11 config_rx1_min_layer_thickness

Type:	real
Units:	m
Default Value:	1.0
Possible Values:	a positive value

Table A.1272: config_rx1_min_layer_thickness: The minimum layer thickness in the smoothed region.

Appendix B

Variable definitions

Embedded links point to information in chapter 11

B.1 state

B.1.1 normalVelocity

Type:	real
Units:	m s$^-1$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % normalVelocity

Table B.1: normalVelocity: horizontal velocity, normal component to an edge

B.1.2 layerThickness

Type:	real
Units:	m
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % layerThickness

Table B.2: layerThickness: layer thickness

B.1.3 ssh

Type:	real

Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % ssh

Table B.3: ssh: sea surface height

B.1.4 highFreqThickness

Type:	real
Units:	m
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % highFreqThickness

Table B.4: highFreqThickness: high frequency-filtered layer thickness

B.1.5 lowFreqDivergence

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % lowFreqDivergence

Table B.5: lowFreqDivergence: low frequency-filtered divergence

B.1.6 accumulatedFrazilIceMass

Type:	real
Units:	$kg\,m^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % accumulatedFrazilIceMass

Table B.6: accumulatedFrazilIceMass: Mass per unit area of frazil ice produced. Reset to zero at each coupling interval

B.1.7 accumulatedFrazilIceSalinity

Type:	real
Units:	kg m$^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % accumulatedFrazilIceSalinity

Table B.7: accumulatedFrazilIceSalinity: Salinity associated with accumulatedFrazilIceMass. Reset to zero at each coupling interval

B.1.8 accumulatedLandIceFrazilSalinity

Type:	real
Units:	kg m$^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % accumulatedLandIceFrazilSalinity

Table B.8: accumulatedLandIceFrazilSalinity: Salinity associated with accumulatedFrazilIceMass. Reset to zero at each coupling interval

B.1.9 accumulatedLandIceMass

Type:	real
Units:	kg m$^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % accumulatedLandIceMass

Table B.9: accumulatedLandIceMass: Mass per unit area of land ice produced at land ice-ocean interface. Only computed in 'standalone' mode where land-ice fluxes are computed in MPAS-O.

B.1.10 accumulatedLandIceHeat

Type:	real

Units:	$J\,m^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % accumulatedLandIceHeat

Table B.10: accumulatedLandIceHeat: Heat per unit area stored in land ice produced at land ice-ocean interface. Only computed in 'standalone' mode where land-ice fluxes are computed in MPAS-O.

B.1.11 accumulatedLandIceFrazilMass

Type:	real
Units:	$kg\,m^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % accumulatedLandIceFrazilMass

Table B.11: accumulatedLandIceFrazilMass: Mass per unit area of frazil ice produced under land ice. Only computed when not coupled to a dynamic land-ice model.

B.1.12 normalBarotropicVelocity

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % normalBarotropicVelocity

Table B.12: normalBarotropicVelocity: barotropic velocity, used in split-explicit time-stepping

B.1.13 normalBarotropicVelocitySubcycle

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent

Location in code:	domain % blocklist % state % time_levs(:) % state % normalBarotropicVelocitySubcycle

Table B.13: normalBarotropicVelocitySubcycle: barotropic velocity, used in subcycling in stage 2 of split-explicit time-stepping

B.1.14 sshSubcycle

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % sshSubcycle

Table B.14: sshSubcycle: sea surface height, used in subcycling in stage 2 of split-explicit time-stepping

B.1.15 normalBaroclinicVelocity

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % normalBaroclinicVelocity

Table B.15: normalBaroclinicVelocity: baroclinic velocity, used in split-explicit time-stepping

B.1.16 effectiveDensityInLandIce

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % effectiveDensityInLandIce

Table B.16: effectiveDensityInLandIce: The effective ocean density within ice shelves based on Archimedes' principle.

B.1.17 gotmVertViscTopOfCell

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % gotmVertViscTopOfCell

Table B.17: gotmVertViscTopOfCell: GOTM: vertical viscosity defined at the cell center (horizontally) and top (vertically)

B.1.18 gotmVertDiffTopOfCell

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % gotmVertDiffTopOfCell

Table B.18: gotmVertDiffTopOfCell: GOTM: vertical diffusion defined at the cell center (horizontally) and top (vertically)

B.1.19 gotmTKETopOfCell

Type:	real
Units:	$m^2 s^-2$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % gotmTKETopOfCell

Table B.19: gotmTKETopOfCell: GOTM: turbulent kenetic energy defined at the cell center (horizontally) and top (vertically)

B.1.20 gotmKbTopOfCell

Type:	real
Units:	$m^2 s^-4$

Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % gotmKbTopOfCell

Table B.20: gotmKbTopOfCell: GOTM: (half) buoyancy variance defined at the cell center (horizontally) and top (vertically)

B.1.21 gotmEpsbTopOfCell

Type:	real
Units:	$m^2 s^-5$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % gotmEpsbTopOfCell

Table B.21: gotmEpsbTopOfCell: GOTM: destruction of buoyancy variance defined at the cell center (horizontally) and top (vertically)

B.1.22 gotmDissTopOfCell

Type:	real
Units:	$m^2 s^-3$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % gotmDissTopOfCell

Table B.22: gotmDissTopOfCell: GOTM: rate of dissipation defined at the cell center (horizontally) and top (vertically)

B.1.23 gotmLengthTopOfCell

Type:	real
Units:	m
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % state % time_levs(:) % state % gotmLengthTopOfCell

Table B.23: gotmLengthTopOfCell: GOTM: turbulent length scale defined at the cell center (horizontally) and top (vertically)

B.1.24 layerThicknessLag

Type:	real
Units:	m
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % state % time_levs(:) % state % layerThicknessLag

Table B.24: layerThicknessLag: The layerThickness after the Lagrangian step, prior to remapping.

B.1.25 temperature

Type:	real
Units:	C
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracers Array:	domain % blocklist % state % index_temperature
Location in code:	domain % blocklist % state % time_levs(:) % state % temperature
Array Group:	activeGRP

Table B.25: temperature: potential temperature

B.1.26 salinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracers Array:	domain % blocklist % state % index_salinity
Location in code:	domain % blocklist % state % time_levs(:) % state % salinity
Array Group:	activeGRP

Table B.26: salinity: salinity in grams salt per kilogram seawater

B.1.27 tracer1

Type:	real
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in debugTracers Array:	domain % blocklist % state % index_tracer1
Location in code:	domain % blocklist % state % time_levs(:) % state % tracer1
Array Group:	debugGRP

Table B.27: tracer1: tracer for debugging purposes

B.1.28 tracer2

Type:	real
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in debugTracers Array:	domain % blocklist % state % index_tracer2
Location in code:	domain % blocklist % state % time_levs(:) % state % tracer2
Array Group:	debugGRP

Table B.28: tracer2: tracer for debugging purposes

B.1.29 tracer3

Type:	real
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in debugTracers Array:	domain % blocklist % state % index_tracer3
Location in code:	domain % blocklist % state % time_levs(:) % state % tracer3
Array Group:	debugGRP

Table B.29: tracer3: tracer for debugging purposes

B.1.30 PO4

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_PO4
Location in code:	domain % blocklist % state % time_levs(:) % state % PO4
Array Group:	ecosysGRP

Table B.30: PO4: Dissolved Inorganic Phosphate

B.1.31 NO3

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_NO3
Location in code:	domain % blocklist % state % time_levs(:) % state % NO3
Array Group:	ecosysGRP

Table B.31: NO3: Dissolved Inorganic Nitrate

B.1.32 SiO3

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_SiO3
Location in code:	domain % blocklist % state % time_levs(:) % state % SiO3
Array Group:	ecosysGRP

Table B.32: SiO3: Dissolved Inorganic Silicate

B.1.33 NH4

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}}$

Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_NH4
Location in code:	domain % blocklist % state % time_levs(:) % state % NH4
Array Group:	ecosysGRP

Table B.33: NH4: Dissolved Ammonia

B.1.34 Fe

Type:	real
Units:	mmol Fe m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_Fe
Location in code:	domain % blocklist % state % time_levs(:) % state % Fe
Array Group:	ecosysGRP

Table B.34: Fe: Dissolved Inorganic Iron

B.1.35 Lig

Type:	real
Units:	mmol m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_Lig
Location in code:	domain % blocklist % state % time_levs(:) % state % Lig
Array Group:	ecosysGRP

Table B.35: Lig: Iron Binding Ligand

B.1.36 O2

Type:	real
Units:	mmol O2 m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_O2

Location in code:	domain % blocklist % state % time_levs(:) % state % O2
Array Group:	ecosysGRP

Table B.36: O2: Dissolved Oxygen

B.1.37 DIC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_DIC
Location in code:	domain % blocklist % state % time_levs(:) % state % DIC
Array Group:	ecosysGRP

Table B.37: DIC: Dissolved Inorganic Carbon

B.1.38 DIC_ALT_CO2

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_DIC_ALT_CO2
Location in code:	domain % blocklist % state % time_levs(:) % state % DIC_ALT_CO2
Array Group:	ecosysGRP

Table B.38: DIC_ALT_CO2: Dissolved Inorganic Carbon, Alternative CO2

B.1.39 ALK

Type:	real
Units:	$\mathrm{meq\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_ALK
Location in code:	domain % blocklist % state % time_levs(:) % state % ALK
Array Group:	ecosysGRP

Table B.39: ALK: Alkalinity

B.1.40 ALK_ALT_CO2

Type:	real
Units:	$\mathrm{meq\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_ALK_ALT_CO2
Location in code:	domain % blocklist % state % time_levs(:) % state % ALK_ALT_CO2
Array Group:	ecosysGRP

Table B.40: ALK_ALT_CO2: Alkalinity Alternative CO2

B.1.41 DOC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_DOC
Location in code:	domain % blocklist % state % time_levs(:) % state % DOC
Array Group:	ecosysGRP

Table B.41: DOC: Dissolved Organic Carbon

B.1.42 DON

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_DON
Location in code:	domain % blocklist % state % time_levs(:) % state % DON
Array Group:	ecosysGRP

Table B.42: DON: Dissolved Organic Nitrogen

B.1.43 DOP

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_DOP
Location in code:	domain % blocklist % state % time_levs(:) % state % DOP
Array Group:	ecosysGRP

Table B.43: DOP: Dissolved Organic Phosphorus

B.1.44 DOPr

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_DOPr
Location in code:	domain % blocklist % state % time_levs(:) % state % DOPr
Array Group:	ecosysGRP

Table B.44: DOPr: Refractory DOP

B.1.45 DONr

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_DONr
Location in code:	domain % blocklist % state % time_levs(:) % state % DONr
Array Group:	ecosysGRP

Table B.45: DONr: Refractory DON

B.1.46 DOCr

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$

Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_DOCr
Location in code:	domain % blocklist % state % time_levs(:) % state % DOCr
Array Group:	ecosysGRP

Table B.46: DOCr: Refractory DOC

B.1.47 zooC

Type:	real
Units:	mmol C m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_zooC
Location in code:	domain % blocklist % state % time_levs(:) % state % zooC
Array Group:	ecosysGRP

Table B.47: zooC: Zooplankton Carbon

B.1.48 spChl

Type:	real
Units:	mg m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_spChl
Location in code:	domain % blocklist % state % time_levs(:) % state % spChl
Array Group:	ecosysGRP

Table B.48: spChl: Small Phytoplankton Chlorophyll

B.1.49 spC

Type:	real
Units:	mmol C m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_spC

Location in code:	domain % blocklist % state % time_levs(:) % state % spC
Array Group:	ecosysGRP

Table B.49: spC: Small Phytoplankton Carbon

B.1.50 spFe

Type:	real
Units:	mmol Fe m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_spFe
Location in code:	domain % blocklist % state % time_levs(:) % state % spFe
Array Group:	ecosysGRP

Table B.50: spFe: Small Phytoplankton Iron

B.1.51 spP

Type:	real
Units:	mmol P m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_spP
Location in code:	domain % blocklist % state % time_levs(:) % state % spP
Array Group:	ecosysGRP

Table B.51: spP: Small Phytoplankton Phosphorus

B.1.52 spCaCO3

Type:	real
Units:	mmol C m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_spCaCO3
Location in code:	domain % blocklist % state % time_levs(:) % state % sp-CaCO3
Array Group:	ecosysGRP

Table B.52: spCaCO3: Small Phytoplankton Calcium Carbonate

B.1.53 diatChl

Type:	real
Units:	$mg\,m^{-3}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_diatChl
Location in code:	domain % blocklist % state % time_levs(:) % state % diatChl
Array Group:	ecosysGRP

Table B.53: diatChl: Diatom Chlorophyll

B.1.54 diatC

Type:	real
Units:	$mmol\,C\,m^{-3}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_diatC
Location in code:	domain % blocklist % state % time_levs(:) % state % diatC
Array Group:	ecosysGRP

Table B.54: diatC: Diatom Carbon

B.1.55 diatFe

Type:	real
Units:	$mmol\,Fe\,m^{-3}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_diatFe
Location in code:	domain % blocklist % state % time_levs(:) % state % diatFe
Array Group:	ecosysGRP

Table B.55: diatFe: Diatom Iron

B.1.56 diatP

Type:	real
Units:	mmol P m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_diatP
Location in code:	domain % blocklist % state % time_levs(:) % state % diatP
Array Group:	ecosysGRP

Table B.56: diatP: Diatom Phosphorus

B.1.57 diatSi

Type:	real
Units:	mmol Si m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_diatSi
Location in code:	domain % blocklist % state % time_levs(:) % state % diatSi
Array Group:	ecosysGRP

Table B.57: diatSi: Diatom Silicate

B.1.58 diazChl

Type:	real
Units:	mg m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_diazChl
Location in code:	domain % blocklist % state % time_levs(:) % state % diazChl
Array Group:	ecosysGRP

Table B.58: diazChl: Diazotroph Chlorophyll

B.1.59 diazC

Type:	real
Units:	mmol C m^{-3}

Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_diazC
Location in code:	domain % blocklist % state % time_levs(:) % state % diazC
Array Group:	ecosysGRP

Table B.59: diazC: Diazotroph Carbon

B.1.60 diazFe

Type:	real
Units:	mmol Fe m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_diazFe
Location in code:	domain % blocklist % state % time_levs(:) % state % diazFe
Array Group:	ecosysGRP

Table B.60: diazFe: Diazotroph Iron

B.1.61 diazP

Type:	real
Units:	mmol P m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracers Array:	domain % blocklist % state % index_diazP
Location in code:	domain % blocklist % state % time_levs(:) % state % diazP
Array Group:	ecosysGRP

Table B.61: diazP: Diazotroph Phosphorus

B.1.62 DMS

Type:	real
Units:	mmol m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in DMSTracers Array:	domain % blocklist % state % index_DMS

Location in code:	domain % blocklist % state % time_levs(:) % state % DMS
Array Group:	DMSGRP

Table B.62: DMS: Dimethyl Sulfide

B.1.63 DMSP

Type:	real
Units:	mmol m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in DMSTracers Array:	domain % blocklist % state % index_DMSP
Location in code:	domain % blocklist % state % time_levs(:) % state % DMSP
Array Group:	DMSGRP

Table B.63: DMSP: Dimethyl Sulfoniopropionate

B.1.64 PROT

Type:	real
Units:	mmol m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracers Array:	domain % blocklist % state % index_PROT
Location in code:	domain % blocklist % state % time_levs(:) % state % PROT
Array Group:	MacroMoleculesGRP

Table B.64: PROT: Proteins

B.1.65 POLY

Type:	real
Units:	mmol m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracers Array:	domain % blocklist % state % index_POLY
Location in code:	domain % blocklist % state % time_levs(:) % state % POLY

Array Group:	MacroMoleculesGRP

Table B.65: POLY: Polysaccharides

B.1.66 LIP

Type:	real
Units:	mmol m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracers Array:	domain % blocklist % state % index_LIP
Location in code:	domain % blocklist % state % time_levs(:) % state % LIP
Array Group:	MacroMoleculesGRP

Table B.66: LIP: Lipids

B.1.67 iAge

Type:	real
Units:	seconds
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in idealAgeTracers Array:	domain % blocklist % state % index_iAge
Location in code:	domain % blocklist % state % time_levs(:) % state % iAge
Array Group:	iAgeGRP

Table B.67: iAge: tracer for ideal age

B.1.68 CFC11

Type:	real
Units:	mol m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in CFCTracers Array:	domain % blocklist % state % index_CFC11
Location in code:	domain % blocklist % state % time_levs(:) % state % CFC11
Array Group:	CFCGRP

Table B.68: CFC11: CFC11

B.1.69 CFC12

Type:	real
Units:	$mol\,m^{-3}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in CFCTracers Array:	domain % blocklist % state % index_CFC12
Location in code:	domain % blocklist % state % time_levs(:) % state % CFC12
Array Group:	CFCGRP

Table B.69: CFC12: CFC12

B.2 mesh

B.2.1 latCell

Type:	real
Units:	radians
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % latCell

Table B.70: latCell: Latitude location of cell centers in radians.

B.2.2 lonCell

Type:	real
Units:	radians
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % lonCell

Table B.71: lonCell: Longitude location of cell centers in radians.

B.2.3 xCell

Type:	real
Units:	m
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % xCell

Table B.72: xCell: X Coordinate in cartesian space of cell centers.

B.2.4 yCell

Type:	real
Units:	m
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % yCell

Table B.73: yCell: Y Coordinate in cartesian space of cell centers.

B.2.5 zCell

Type:	real
Units:	m
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % zCell

Table B.74: zCell: Z Coordinate in cartesian space of cell centers.

B.2.6 indexToCellID

Type:	integer
Units:	–
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % indexToCellID

Table B.75: indexToCellID: List of global cell IDs.

B.2.7 latEdge

Type:	real
Units:	radians
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % latEdge

Table B.76: latEdge: Latitude location of edge midpoints in radians.

B.2.8 lonEdge

Type:	real
Units:	radians
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % lonEdge

Table B.77: lonEdge: Longitude location of edge midpoints in radians.

B.2.9 xEdge

Type:	real
Units:	m
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % xEdge

Table B.78: xEdge: X Coordinate in cartesian space of edge midpoints.

B.2.10 yEdge

Type:	real
Units:	m
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % yEdge

Table B.79: yEdge: Y Coordinate in cartesian space of edge midpoints.

B.2.11 zEdge

Type:	real
Units:	m
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % zEdge

Table B.80: zEdge: Z Coordinate in cartesian space of edge midpoints.

B.2.12 indexToEdgeID

Type:	integer
Units:	–
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % indexToEdgeID

Table B.81: indexToEdgeID: List of global edge IDs.

B.2.13 latVertex

Type:	real
Units:	radians
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % latVertex

Table B.82: latVertex: Latitude location of vertices in radians.

B.2.14 lonVertex

Type:	real
Units:	radians
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % lonVertex

Table B.83: lonVertex: Longitude location of vertices in radians.

B.2.15 xVertex

Type:	real
Units:	m
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % xVertex

Table B.84: xVertex: X Coordinate in cartesian space of vertices.

B.2.16 yVertex

Type:	real
Units:	m
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % yVertex

Table B.85: yVertex: Y Coordinate in cartesian space of vertices.

B.2.17 zVertex

Type:	real
Units:	m
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % zVertex

Table B.86: zVertex: Z Coordinate in cartesian space of vertices.

B.2.18 indexToVertexID

Type:	integer
Units:	–
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % indexToVertexID

Table B.87: indexToVertexID: List of global vertex IDs.

B.2.19 meshDensity

Type:	real
Units:	1
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % meshDensity

Table B.88: meshDensity: Value of density function used to generate a particular mesh at cell centers.

B.2.20 meshScalingDel2

Type:	real
Units:	1
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % meshScalingDel2

Table B.89: meshScalingDel2: Coefficient to Laplacian mixing terms in momentum and tracer equations, so that viscosity and diffusion scale with mesh.

B.2.21 meshScalingDel4

Type:	real
Units:	1
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % meshScalingDel4

Table B.90: meshScalingDel4: Coefficient to biharmonic mixing terms in momentum and tracer equations, so that biharmonic viscosity and diffusion coefficients scale with mesh.

B.2.22 cellsOnEdge

Type:	integer
Units:	–
Dimension:	TWO nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % cellsOnEdge

Table B.91: cellsOnEdge: List of cells that straddle each edge.

B.2.23 nEdgesOnCell

Type:	integer
Units:	–
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % nEdgesOnCell

Table B.92: nEdgesOnCell: Number of edges that border each cell.

B.2.24 nEdgesOnEdge

Type:	integer
Units:	–
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % nEdgesOnEdge

Table B.93: nEdgesOnEdge: Number of edges that surround each of the cells that straddle each edge. These edges are used to reconstruct the tangential velocities.

B.2.25 edgesOnCell

Type:	integer
Units:	–
Dimension:	maxEdges nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % edgesOnCell

Table B.94: edgesOnCell: List of edges that border each cell.

B.2.26 edgesOnEdge

Type:	integer

Units:	–
Dimension:	maxEdges2 nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % edgesOnEdge

Table B.95: edgesOnEdge: List of edges that border each of the cells that straddle each edge.

B.2.27 weightsOnEdge

Type:	real
Units:	1
Dimension:	maxEdges2 nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % weightsOnEdge

Table B.96: weightsOnEdge: Reconstruction weights associated with each of the edgesOnEdge, used to reconstruct the tangentialVelocity from normalVelocities on neighboring edges.

B.2.28 dvEdge

Type:	real
Units:	m
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % dvEdge

Table B.97: dvEdge: Length of each edge, computed as the distance between verticesOnEdge.

B.2.29 dcEdge

Type:	real
Units:	m
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % dcEdge

Table B.98: dcEdge: Length of each edge, computed as the distance between cellsOnEdge.

B.2.30 angleEdge

Type:	real
Units:	radians
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % angleEdge

Table B.99: angleEdge: Angle the edge normal makes with local eastward direction.

B.2.31 areaCell

Type:	real
Units:	m^2
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % areaCell

Table B.100: areaCell: Area of each cell in the primary grid.

B.2.32 areaTriangle

Type:	real
Units:	m^2
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % areaTriangle

Table B.101: areaTriangle: Area of each cell (triangle) in the dual grid.

B.2.33 edgeNormalVectors

Type:	real
Units:	1
Dimension:	R3 nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % edgeNormalVectors

Table B.102: edgeNormalVectors: Normal unit vector defined at an edge.

B.2.34 edgeTangentVectors

Type:	real
Units:	1
Dimension:	R3 nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % edgeTangentVectors

Table B.103: edgeTangentVectors: Tangent unit vector defined at an edge.

B.2.35 localVerticalUnitVectors

Type:	real
Units:	1
Dimension:	R3 nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % localVerticalUnitVectors

Table B.104: localVerticalUnitVectors: Unit surface normal vectors defined at cell centers.

B.2.36 cellTangentPlane

Type:	real
Units:	1
Dimension:	R3 TWO nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % cellTangentPlane

Table B.105: cellTangentPlane: The two vectors that define a tangent plane at a cell center.

B.2.37 cellsOnCell

Type:	integer
Units:	–
Dimension:	maxEdges nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % cellsOnCell

Table B.106: cellsOnCell: List of cells that neighbor each cell.

B.2.38 verticesOnCell

Type:	integer
Units:	–
Dimension:	maxEdges nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % verticesOnCell

Table B.107: verticesOnCell: List of vertices that border each cell.

B.2.39 verticesOnEdge

Type:	integer
Units:	–
Dimension:	TWO nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % verticesOnEdge

Table B.108: verticesOnEdge: List of vertices that straddle each edge.

B.2.40 edgesOnVertex

Type:	integer
Units:	–
Dimension:	vertexDegree nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % edgesOnVertex

Table B.109: edgesOnVertex: List of edges that share a vertex as an endpoint.

B.2.41 cellsOnVertex

Type:	integer
Units:	–
Dimension:	vertexDegree nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % cellsOnVertex

Table B.110: cellsOnVertex: List of cells that share a vertex.

B.2.42 kiteAreasOnVertex

Type:	real
Units:	m^2
Dimension:	vertexDegree nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % kiteAreasOnVertex

Table B.111: kiteAreasOnVertex: Area of the portions of each dual cell that are part of each cellsOnVertex.

B.2.43 fEdge

Type:	real
Units:	radians s^-1
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % fEdge

Table B.112: fEdge: Coriolis parameter at edges.

B.2.44 fVertex

Type:	real
Units:	radians s^-1
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % fVertex

Table B.113: fVertex: Coriolis parameter at vertices.

B.2.45 fCell

Type:	real
Units:	radians s^-1
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % fCell

Table B.114: fCell: Coriolis parameter at cell centers.

B.2.46 bed_elevation

Type:	real
Units:	m
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % bed_elevation

Table B.115: bed_elevation: Depth of the bottom of the ocean. Given as negative distance from sea level. Used as input to replace topography input file.

B.2.47 bottomDepth

Type:	real
Units:	m
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % bottomDepth

Table B.116: bottomDepth: Depth of the bottom of the ocean. Given as a positive distance from sea level.

B.2.48 bottomDepthObserved

Type:	real
Units:	m
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % bottomDepthObserved

Table B.117: bottomDepthObserved: Depth of the bottom of the ocean, before any alterations for modeling purposes. Given as a positive distance from sea level.

B.2.49 oceanFracObserved

Type:	real
Units:	1
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % oceanFracObserved

Table B.118: oceanFracObserved: fraction of each cell containing ocean, used to determine which cells are culled as land.

B.2.50 coeffs_reconstruct

Type:	real
Units:	1
Dimension:	R3 maxEdges nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % coeffs_reconstruct

Table B.119: coeffs_reconstruct: Coefficients to reconstruct velocity vectors at cells centers.

B.2.51 minLevelCell

Type:	integer
Units:	–
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % minLevelCell

Table B.120: minLevelCell: Index to the first active ocean cell in each column.

B.2.52 maxLevelCell

Type:	integer
Units:	–
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % maxLevelCell

Table B.121: maxLevelCell: Index to the last active ocean cell in each column.

B.2.53 minLevelEdgeTop

Type:	integer

Units:	–
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % minLevelEdgeTop

Table B.122: minLevelEdgeTop: Index to the first edge in a column with at least one active ocean cell on either side of it.

B.2.54 maxLevelEdgeTop

Type:	integer
Units:	–
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % maxLevelEdgeTop

Table B.123: maxLevelEdgeTop: Index to the last edge in a column with active ocean cells on both sides of it.

B.2.55 minLevelEdgeBot

Type:	integer
Units:	–
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % minLevelEdgeBot

Table B.124: minLevelEdgeBot: Index to the first edge in a column with active ocean cells on both sides of it.

B.2.56 maxLevelEdgeBot

Type:	integer
Units:	–
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % maxLevelEdgeBot

Table B.125: maxLevelEdgeBot: Index to the last edge in a column with at least one active ocean cell on either side of it.

B.2.57 minLevelVertexTop

Type:	integer
Units:	–
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % minLevelVertexTop

Table B.126: minLevelVertexTop: Index to the first vertex in a column with at least one active ocean cell around it.

B.2.58 maxLevelVertexTop

Type:	integer
Units:	–
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % maxLevelVertexTop

Table B.127: maxLevelVertexTop: Index to the last vertex in a column with all active cells around it.

B.2.59 minLevelVertexBot

Type:	integer
Units:	–
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % minLevelVertexBot

Table B.128: minLevelVertexBot: Index to the first vertex in a column with all active cells around it.

B.2.60 maxLevelVertexBot

Type:	integer
Units:	–
Dimension:	nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % maxLevelVertexBot

Table B.129: maxLevelVertexBot: Index to the last vertex in a column with at least one active ocean cell around it.

B.2.61 refBottomDepth

Type:	real
Units:	m
Dimension:	nVertLevels
Persistence:	persistent
Location in code:	domain % blocklist % mesh % refBottomDepth

Table B.130: refBottomDepth: Reference depth of ocean for each vertical level. Used in 'z-level' type runs.

B.2.62 refBottomDepthTopOfCell

Type:	real
Units:	m
Dimension:	nVertLevelsP1
Persistence:	persistent
Location in code:	domain % blocklist % mesh % refBottomDepthTopOfCell

Table B.131: refBottomDepthTopOfCell: Reference depth of ocean for each vertical interface. Used in 'z-level' type runs.

B.2.63 vertCoordMovementWeights

Type:	real
Units:	1
Dimension:	nVertLevels
Persistence:	persistent
Location in code:	domain % blocklist % mesh % vertCoordMovementWeights

Table B.132: vertCoordMovementWeights: Weights used for distribution of sea surface height perturbations through multiple vertical levels.

B.2.64 boundaryEdge

Type:	integer
Units:	–
Dimension:	nVertLevels nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % boundaryEdge

Table B.133: boundaryEdge: Mask for determining boundary edges. A boundary edge has only one active ocean cell neighboring it.

B.2.65 boundaryVertex

Type:	integer
Units:	–
Dimension:	nVertLevels nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % boundaryVertex

Table B.134: boundaryVertex: Mask for determining boundary vertices. A boundary vertex has at least one inactive cell neighboring it.

B.2.66 boundaryCell

Type:	integer
Units:	–
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % boundaryCell

Table B.135: boundaryCell: Mask for determining boundary cells. A boundary cell has at least one inactive cell neighboring it.

B.2.67 edgeMask

Type:	integer
Units:	–
Dimension:	nVertLevels nEdges
Persistence:	persistent
Location in code:	domain % blocklist % mesh % edgeMask

Table B.136: edgeMask: Mask on edges that determines if computations should be done on edges.

B.2.68 vertexMask

Type:	integer
Units:	–
Dimension:	nVertLevels nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % vertexMask

Table B.137: vertexMask: Mask on vertices that determines if computations should be done on vertices.

B.2.69 cellMask

Type:	integer
Units:	–
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % cellMask

Table B.138: cellMask: Mask on cells that determines if computations should be done on cells.

B.2.70 edgeSignOnCell

Type:	integer
Units:	–
Dimension:	maxEdges nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % edgeSignOnCell

Table B.139: edgeSignOnCell: Sign of edge contributions to a cell for each edge on cell. Used for bit-reproducible loops. Represents directionality of vector connecting cells.

B.2.71 edgeSignOnVertex

Type:	integer
Units:	–
Dimension:	maxEdges nVertices
Persistence:	persistent
Location in code:	domain % blocklist % mesh % edgeSignOnVertex

Table B.140: edgeSignOnVertex: Sign of edge contributions to a vertex for each edge on vertex. Used for bit-reproducible loops. Represents directionality of vector connecting vertices.

B.2.72 kiteIndexOnCell

Type:	integer
Units:	–
Dimension:	maxEdges nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % kiteIndexOnCell

Table B.141: kiteIndexOnCell: Index of kite in dual grid, based on verticesOnCell.

B.2.73 cullCell

Type:	integer
Units:	–
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % cullCell

Table B.142: cullCell: Array to hold integers that represent logicals determining if a cell should be culled or not by the MpasCellCuller tool.

B.2.74 distanceToCoast

Type:	real
Units:	m
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % mesh % distanceToCoast

Table B.143: distanceToCoast: Distance of each cell to nearest coastline cell.

B.3 verticalMesh

B.3.1 restingThickness

Type:	real
Units:	m
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % verticalMesh % restingThickness

Table B.144: restingThickness: Layer thickness when the ocean is at rest, i.e. without SSH or internal perturbations.

B.3.2 refZMid

Type:	real
Units:	m
Dimension:	nVertLevels
Persistence:	persistent
Location in code:	domain % blocklist % verticalMesh % refZMid

Table B.145: refZMid: Reference mid z-coordinate of ocean for each vertical level. This has a negative value.

B.3.3 refLayerThickness

Type:	real
Units:	m
Dimension:	nVertLevels
Persistence:	persistent
Location in code:	domain % blocklist % verticalMesh % refLayerThickness

Table B.146: refLayerThickness: Reference layerThickness of ocean for each vertical level.

B.4 tend

B.4.1 tendNormalVelocity

Type:	real
Units:	$m\,s^-2$

Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % tend % tendNormalVelocity

Table B.147: tendNormalVelocity: time tendency of normal component of velocity

B.4.2 tendLayerThickness

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % tend % tendLayerThickness

Table B.148: tendLayerThickness: time tendency of layer thickness

B.4.3 tendSSH

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % tend % tendSSH

Table B.149: tendSSH: time tendency of sea-surface height

B.4.4 tendHighFreqThickness

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % tend % tendHighFreqThickness

Table B.150: tendHighFreqThickness: time tendency of high frequency-filtered layer thickness

B.4.5 tendLowFreqDivergence

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % tend % tendLowFreqDivergence

Table B.151: tendLowFreqDivergence: time tendency of low frequency-filtered divergence

B.4.6 temperatureTend

Type:	real
Units:	$C\,m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracersTend Array:	domain % blocklist % tend % index_temperatureTend
Location in code:	domain % blocklist % tend % temperatureTend
Array Group:	activeGRP

Table B.152: temperatureTend: time tendency of potential temperature measured as change in degrees times layerThickness per second

B.4.7 salinityTend

Type:	real
Units:	$m\,1\,e-3\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracersTend Array:	domain % blocklist % tend % index_salinityTend
Location in code:	domain % blocklist % tend % salinityTend
Array Group:	activeGRP

Table B.153: salinityTend: time tendency of salinity measured as change in practical salinity units times layerThickness per second

B.4.8 tracer1Tend

Type:	real
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in debugTracersTend Array:	domain % blocklist % tend % index_tracer1Tend
Location in code:	domain % blocklist % tend % tracer1Tend
Array Group:	debugGRP

Table B.154: tracer1Tend: Tendency for tracer1

B.4.9 tracer2Tend

Type:	real
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in debugTracersTend Array:	domain % blocklist % tend % index_tracer2Tend
Location in code:	domain % blocklist % tend % tracer2Tend
Array Group:	debugGRP

Table B.155: tracer2Tend: Tendency for tracer2

B.4.10 tracer3Tend

Type:	real
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in debugTracersTend Array:	domain % blocklist % tend % index_tracer3Tend
Location in code:	domain % blocklist % tend % tracer3Tend
Array Group:	debugGRP

Table B.156: tracer3Tend: Tendency for tracer3

B.4.11 PO4Tend

Type:	real
Units:	mmol P m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_PO4Tend
Location in code:	domain % blocklist % tend % PO4Tend
Array Group:	ecosysGRP

Table B.157: PO4Tend: Dissolved Inorganic Phosphate Tendency

B.4.12 NO3Tend

Type:	real
Units:	mmol N m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_NO3Tend
Location in code:	domain % blocklist % tend % NO3Tend
Array Group:	ecosysGRP

Table B.158: NO3Tend: Dissolved Inorganic Nitrate Tendency

B.4.13 SiO3Tend

Type:	real
Units:	mmol Si m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_SiO3Tend
Location in code:	domain % blocklist % tend % SiO3Tend
Array Group:	ecosysGRP

Table B.159: SiO3Tend: Dissolved Inorganic Silicate Tendency

B.4.14 NH4Tend

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_NH4Tend
Location in code:	domain % blocklist % tend % NH4Tend
Array Group:	ecosysGRP

Table B.160: NH4Tend: Dissolved Ammonia Tendency

B.4.15 FeTend

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_FeTend
Location in code:	domain % blocklist % tend % FeTend
Array Group:	ecosysGRP

Table B.161: FeTend: Dissolved Inorganic Iron Tendency

B.4.16 LigTend

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_LigTend
Location in code:	domain % blocklist % tend % LigTend
Array Group:	ecosysGRP

Table B.162: LigTend: Ligand Tendency

B.4.17 O2Tend

Type:	real
Units:	mmol O2 $m^{-3} s^{-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_O2Tend
Location in code:	domain % blocklist % tend % O2Tend
Array Group:	ecosysGRP

Table B.163: O2Tend: Dissolved Oxygen Tendency

B.4.18 DICTend

Type:	real
Units:	mmol C $m^{-3} s^{-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_DICTend
Location in code:	domain % blocklist % tend % DICTend
Array Group:	ecosysGRP

Table B.164: DICTend: Dissolved Inorganic Carbon Tendency

B.4.19 DIC_ALT_CO2Tend

Type:	real
Units:	mmol C $m^{-3} s^{-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_DIC_ALT_CO2Tend
Location in code:	domain % blocklist % tend % DIC_ALT_CO2Tend
Array Group:	ecosysGRP

Table B.165: DIC_ALT_CO2Tend: Dissolved Inorganic Carbon, Alternative CO2 Tendency

B.4.20 ALKTend

Type:	real
Units:	$\mathrm{meq\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_ALKTend
Location in code:	domain % blocklist % tend % ALKTend
Array Group:	ecosysGRP

Table B.166: ALKTend: Alkalinity Tendency

B.4.21 ALK_ALT_CO2Tend

Type:	real
Units:	$\mathrm{meq\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_ALK_ALT_CO2Tend
Location in code:	domain % blocklist % tend % ALK_ALT_CO2Tend
Array Group:	ecosysGRP

Table B.167: ALK_ALT_CO2Tend: Alkalinity Tendency, Alternative CO2 Tendency

B.4.22 DOCTend

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_DOCTend
Location in code:	domain % blocklist % tend % DOCTend
Array Group:	ecosysGRP

Table B.168: DOCTend: Dissolved Organic Carbon Tendency

B.4.23 DONTend

Type:	real
Units:	mmol N m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_DONTend
Location in code:	domain % blocklist % tend % DONTend
Array Group:	ecosysGRP

Table B.169: DONTend: Dissolved Organic Nitrogen Tendency

B.4.24 DOPTend

Type:	real
Units:	mmol P m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_DOPTend
Location in code:	domain % blocklist % tend % DOPTend
Array Group:	ecosysGRP

Table B.170: DOPTend: Dissolved Organic Phosphorus Tendency

B.4.25 DOPrTend

Type:	real
Units:	mmol P m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_DOPrTend
Location in code:	domain % blocklist % tend % DOPrTend
Array Group:	ecosysGRP

Table B.171: DOPrTend: Refractory DOP Tendency

B.4.26 DONrTend

Type:	real
Units:	mmol N m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_DONrTend
Location in code:	domain % blocklist % tend % DONrTend
Array Group:	ecosysGRP

Table B.172: DONrTend: Refractory DON Tendency

B.4.27 DOCrTend

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_DOCrTend
Location in code:	domain % blocklist % tend % DOCrTend
Array Group:	ecosysGRP

Table B.173: DOCrTend: Refractory DOC Tendency

B.4.28 zooCTend

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_zooCTend
Location in code:	domain % blocklist % tend % zooCTend
Array Group:	ecosysGRP

Table B.174: zooCTend: Zooplankton Carbon Tendency

B.4.29 spChlTend

Type:	real
Units:	$mg\,m^{-3}\,s^{-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_spChlTend
Location in code:	domain % blocklist % tend % spChlTend
Array Group:	ecosysGRP

Table B.175: spChlTend: Small Phytoplankton Chlorophyll Tendency

B.4.30 spCTend

Type:	real
Units:	$mmol\,C\,m^{-3}\,s^{-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_spCTend
Location in code:	domain % blocklist % tend % spCTend
Array Group:	ecosysGRP

Table B.176: spCTend: Small Phytoplankton Carbon Tendency

B.4.31 spFeTend

Type:	real
Units:	$mmol\,Fe\,m^{-3}\,s^{-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_spFeTend
Location in code:	domain % blocklist % tend % spFeTend
Array Group:	ecosysGRP

Table B.177: spFeTend: Small Phytoplankton Iron Tendency

B.4.32 spPTend

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_spPTend
Location in code:	domain % blocklist % tend % spPTend
Array Group:	ecosysGRP

Table B.178: spPTend: Small Phytoplankton Phosphorus Tendency

B.4.33 spCaCO3Tend

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_spCaCO3Tend
Location in code:	domain % blocklist % tend % spCaCO3Tend
Array Group:	ecosysGRP

Table B.179: spCaCO3Tend: Small Phytoplankton Calcium Carbonate Tendency

B.4.34 diatChlTend

Type:	real
Units:	$\mathrm{mg\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_diatChlTend
Location in code:	domain % blocklist % tend % diatChlTend
Array Group:	ecosysGRP

Table B.180: diatChlTend: Diatom Chlorophyll Tendency

B.4.35 diatCTend

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_diatCTend
Location in code:	domain % blocklist % tend % diatCTend
Array Group:	ecosysGRP

Table B.181: diatCTend: Diatom Carbon Tendency

B.4.36 diatFeTend

Type:	real
Units:	mmol Fe m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_diatFeTend
Location in code:	domain % blocklist % tend % diatFeTend
Array Group:	ecosysGRP

Table B.182: diatFeTend: Diatom Iron Tendency

B.4.37 diatPTend

Type:	real
Units:	mmol P m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_diatPTend
Location in code:	domain % blocklist % tend % diatPTend
Array Group:	ecosysGRP

Table B.183: diatPTend: Diatom Phosphorus Tendency

B.4.38 diatSiTend

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_diatSiTend
Location in code:	domain % blocklist % tend % diatSiTend
Array Group:	ecosysGRP

Table B.184: diatSiTend: Diatom Silicate Tendency

B.4.39 diazChlTend

Type:	real
Units:	$\mathrm{mg\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_diazChlTend
Location in code:	domain % blocklist % tend % diazChlTend
Array Group:	ecosysGRP

Table B.185: diazChlTend: Diazotroph Chlorophyll Tendency

B.4.40 diazCTend

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_diazCTend
Location in code:	domain % blocklist % tend % diazCTend
Array Group:	ecosysGRP

Table B.186: diazCTend: Diazotroph Carbon Tendency

B.4.41 diazFeTend

Type:	real
Units:	mmol Fe m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_diazFeTend
Location in code:	domain % blocklist % tend % diazFeTend
Array Group:	ecosysGRP

Table B.187: diazFeTend: Diazotroph Iron Tendency

B.4.42 diazPTend

Type:	real
Units:	mmol P m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersTend Array:	domain % blocklist % tend % index_diazPTend
Location in code:	domain % blocklist % tend % diazPTend
Array Group:	ecosysGRP

Table B.188: diazPTend: Diazotroph Phosphorus Tendency

B.4.43 DMSTend

Type:	real
Units:	mmol m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in DMSTracersTend Array:	domain % blocklist % tend % index_DMSTend
Location in code:	domain % blocklist % tend % DMSTend
Array Group:	DMSGRP

Table B.189: DMSTend: Dimethyl Sulfide Tendency

B.4.44 DMSPTend

Type:	real
Units:	mmol m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in DMSTracersTend Array:	domain % blocklist % tend % index_DMSPTend
Location in code:	domain % blocklist % tend % DMSPTend
Array Group:	DMSGRP

Table B.190: DMSPTend: Dimethyl Sulfoniopropionate Tendency

B.4.45 PROTTend

Type:	real
Units:	mmol m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersTend Array:	domain % blocklist % tend % index_PROTTend
Location in code:	domain % blocklist % tend % PROTTend
Array Group:	MacroMoleculesGRP

Table B.191: PROTTend: Proteins Tendency

B.4.46 POLYTend

Type:	real
Units:	mmol m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersTend Array:	domain % blocklist % tend % index_POLYTend
Location in code:	domain % blocklist % tend % POLYTend
Array Group:	MacroMoleculesGRP

Table B.192: POLYTend: Polysaccharides Tendency

B.4.47 LIPTend

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersTend Array:	domain % blocklist % tend % index_LIPTend
Location in code:	domain % blocklist % tend % LIPTend
Array Group:	MacroMoleculesGRP

Table B.193: LIPTend: Lipids Tendency

B.4.48 iAgeTend

Type:	real
Units:	seconds/second
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in idealAgeTracersTend Array:	domain % blocklist % tend % index_iAgeTend
Location in code:	domain % blocklist % tend % iAgeTend
Array Group:	iAgeGRP

Table B.194: iAgeTend: Tendency for iAge

B.4.49 CFC11Tend

Type:	real
Units:	$\mathrm{mol\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in CFCTracersTend Array:	domain % blocklist % tend % index_CFC11Tend
Location in code:	domain % blocklist % tend % CFC11Tend
Array Group:	CFCGRP

Table B.195: CFC11Tend: CFC11 Tendency

B.4.50 CFC12Tend

Type:	real
Units:	$\mathrm{mol\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in CFCTracersTend Array:	domain % blocklist % tend % index_CFC12Tend
Location in code:	domain % blocklist % tend % CFC12Tend
Array Group:	CFCGRP

Table B.196: CFC12Tend: CFC12 Tendency

B.5 diagnostics

B.5.1 xtime

Type:	text
Units:	–
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % xtime

Table B.197: xtime: model time, with format 'YYYY-MM-DD_HH:MM:SS'

B.5.2 Time

Type:	real
Units:	–
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % Time

Table B.198: Time: time

B.5.3 Time_bnds

Type:	real
Units:	–
Dimension:	Time bnds
Persistence:	persistent

Location in code:	domain % blocklist % diagnostics % Time_bnds

Table B.199: Time_bnds: time bounds

B.5.4 simulationStartTime

Type:	text
Units:	–
Dimension:	
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % simulationStartTime

Table B.200: simulationStartTime: start time of first simulation, with format 'YYYY-MM-DD_HH:MM:SS'

B.5.5 daysSinceStartOfSim

Type:	real
Units:	days
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % daysSinceStartOfSim

Table B.201: daysSinceStartOfSim: Time since simulationStartTime, for plotting

B.5.6 salinitySurfaceRestoringTendency

Type:	real
Units:	$\mathrm{m\,1\,e-3\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % salinitySurfaceRestoringTendency

Table B.202: salinitySurfaceRestoringTendency: salinity tendency due to surface restoring

B.5.7 temperatureSurfaceFluxTendency

Type:	real
Units:	$C s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerSurfaceFluxTendency Array:	domain % blocklist % diagnostics % index_temperatureSurfaceFluxTendency
Location in code:	domain % blocklist % diagnostics % temperatureSurfaceFluxTendency
Array Group:	activeTracerSfcFluxTendGroup

Table B.203: temperatureSurfaceFluxTendency: potential temperature tendency due to surface fluxes

B.5.8 salinitySurfaceFluxTendency

Type:	real
Units:	$1 e - 3 s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerSurfaceFluxTendency Array:	domain % blocklist % diagnostics % index_salinitySurfaceFluxTendency
Location in code:	domain % blocklist % diagnostics % salinitySurfaceFluxTendency
Array Group:	activeTracerSfcFluxTendGroup

Table B.204: salinitySurfaceFluxTendency: salinity tendency due to surface fluxes

B.5.9 temperatureShortWaveTendency

Type:	real
Units:	$C s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % temperatureShortWaveTendency

Table B.205: temperatureShortWaveTendency: potential temperature tendency due to penetrating shortwave

B.5.10 temperatureHorMixTendency

Type:	real
Units:	$\mathrm{C\,s^-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerHorMixTendency Array:	domain % blocklist % diagnostics % index_temperatureHorMixTendency
Location in code:	domain % blocklist % diagnostics % temperatureHorMixTendency
Array Group:	activeTracerHmixTendGroup

Table B.206: temperatureHorMixTendency: potential temperature tendency due to horizontal mixing (including Redi)

B.5.11 salinityHorMixTendency

Type:	real
Units:	$\mathrm{1\,e-3\,s^-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerHorMixTendency Array:	domain % blocklist % diagnostics % index_salinityHorMixTendency
Location in code:	domain % blocklist % diagnostics % salinityHorMixTendency
Array Group:	activeTracerHmixTendGroup

Table B.207: salinityHorMixTendency: salinity tendency due to horizontal mixing (including Redi)

B.5.12 temperatureNonLocalTendency

Type:	real
Units:	$\mathrm{C\,s^-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerNonLocalTendency Array:	domain % blocklist % diagnostics % index_temperatureNonLocalTendency
Location in code:	domain % blocklist % diagnostics % temperatureNonLocalTendency
Array Group:	activeTracerNLTendGroup

Table B.208: temperatureNonLocalTendency: potential temperature tendency due to kpp nonlocal flux

B.5.13 salinityNonLocalTendency

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerNonLocalTendency Array:	domain % blocklist % diagnostics % index_salinityNonLocalTendency
Location in code:	domain % blocklist % diagnostics % salinityNonLocalTendency
Array Group:	activeTracerNLTendGroup

Table B.209: salinityNonLocalTendency: salinity tendency due to kpp non-local flux

B.5.14 temperatureVerticalAdvectionTopFlux

Type:	real
Units:	$\mathrm{C}\,\mathrm{m}\,\mathrm{s}^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerVerticalAdvectionTopFlux Array:	domain % blocklist % diagnostics % index_temperatureVerticalAdvectionTopFlux
Location in code:	domain % blocklist % diagnostics % temperatureVerticalAdvectionTopFlux
Array Group:	activeTracerVertTopFluxGroup

Table B.210: temperatureVerticalAdvectionTopFlux: potential temperature vertical advective flux through top of cell

B.5.15 salinityVerticalAdvectionTopFlux

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{m}\,\mathrm{s}^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerVerticalAdvectionTopFlux Array:	domain % blocklist % diagnostics % index_salinityVerticalAdvectionTopFlux
Location in code:	domain % blocklist % diagnostics % salinityVerticalAdvectionTopFlux
Array Group:	activeTracerVertTopFluxGroup

Table B.211: salinityVerticalAdvectionTopFlux: salinity advective vertical advective flux through top of cell

B.5.16 temperatureHorizontalAdvectionEdgeFlux

Type:	real
Units:	$\mathrm{C\,m\,s^-1}$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Index in activeTracerHorizontalAdvectionEdgeFlux Array:	domain % blocklist % diagnostics % index_temperatureHorizontalAdvectionEdgeFlux
Location in code:	domain % blocklist % diagnostics % temperatureHorizontalAdvectionEdgeFlux
Array Group:	activeTracerHorAdvEdgeFluxGroup

Table B.212: temperatureHorizontalAdvectionEdgeFlux: potential temperature advective flux due to horizontal advection through edges

B.5.17 salinityHorizontalAdvectionEdgeFlux

Type:	real
Units:	$\mathrm{1\,e-3\,m\,s^-1}$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Index in activeTracerHorizontalAdvectionEdgeFlux Array:	domain % blocklist % diagnostics % index_salinityHorizontalAdvectionEdgeFlux
Location in code:	domain % blocklist % diagnostics % salinityHorizontalAdvectionEdgeFlux
Array Group:	activeTracerHorAdvEdgeFluxGroup

Table B.213: salinityHorizontalAdvectionEdgeFlux: salinity advective flux due to horizontal advection through edges

B.5.18 temperatureHorizontalAdvectionTendency

Type:	real
Units:	$\mathrm{C\,s^-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerHorizontalAdvectionTendency Array:	domain % blocklist % diagnostics % index_temperatureHorizontaldvectionTendency
Location in code:	domain % blocklist % diagnostics % temperatureHorizontalAdvectionTendency

Array Group:	activeTracerHorAdvTendGroup

Table B.214: temperatureHorizontalAdvectionTendency: potential temperature tendency due to horizontal advection

B.5.19 salinityHorizontalAdvectionTendency

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^{-}1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerHorizontalAdvectionTendency Array:	domain % blocklist % diagnostics % index_salinityHorizontalAdvectionTendency
Location in code:	domain % blocklist % diagnostics % salinityHorizontalAdvectionTendency
Array Group:	activeTracerHorAdvTendGroup

Table B.215: salinityHorizontalAdvectionTendency: salinity tendency due to horizontal advection

B.5.20 temperatureVerticalAdvectionTendency

Type:	real
Units:	$\mathrm{C}\,\mathrm{s}^{-}1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerVerticalAdvectionTendency Array:	domain % blocklist % diagnostics % index_temperatureVerticalAdvectionTendency
Location in code:	domain % blocklist % diagnostics % temperatureVerticalAdvectionTendency
Array Group:	activeTracerVertAdvTendGroup

Table B.216: temperatureVerticalAdvectionTendency: potential temperature tendency due to vertical advection

B.5.21 salinityVerticalAdvectionTendency

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^{-}1$
Dimension:	nVertLevels nCells Time

Persistence:	persistent
Index in activeTracerVertical-AdvectionTendency Array:	domain % blocklist % diagnostics % index_salinityVerticalAdvectionTendency
Location in code:	domain % blocklist % diagnostics % salinityVerticalAdvectionTendency
Array Group:	activeTracerVertAdvTendGroup

Table B.217: salinityVerticalAdvectionTendency: salinity tendency due to vertical advection

B.5.22 temperatureVertMixTendency

Type:	real
Units:	$\mathrm{C\,s^{-}1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerVertMix-Tendency Array:	domain % blocklist % diagnostics % index_temperatureVertMixTendency
Location in code:	domain % blocklist % diagnostics % temperatureVertMixTendency
Array Group:	activeTracerVertMixTendGroup

Table B.218: temperatureVertMixTendency: potential temperature tendency due to vertical mixing

B.5.23 salinityVertMixTendency

Type:	real
Units:	$\mathrm{1\,e-3\,s^{-}1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracerVertMix-Tendency Array:	domain % blocklist % diagnostics % index_salinityVertMixTendency
Location in code:	domain % blocklist % diagnostics % salinityVertMixTendency
Array Group:	activeTracerVertMixTendGroup

Table B.219: salinityVertMixTendency: salinity tendency due to vertical mixing

B.5.24 temperatureSurfaceValue

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in tracersSurfaceValue Array:	domain % blocklist % diagnostics % index_temperatureSurfaceValue
Location in code:	domain % blocklist % diagnostics % temperatureSurfaceValue
Array Group:	surfaceValues

Table B.220: temperatureSurfaceValue: potential temperature extrapolated to ocean surface

B.5.25 salinitySurfaceValue

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nCells Time
Persistence:	persistent
Index in tracersSurfaceValue Array:	domain % blocklist % diagnostics % index_salinitySurfaceValue
Location in code:	domain % blocklist % diagnostics % salinitySurfaceValue
Array Group:	surfaceValues

Table B.221: salinitySurfaceValue: salinity extrapolated to ocean surface

B.5.26 temperatureSurfaceLayerValue

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in tracersSurfaceLayerValue Array:	domain % blocklist % diagnostics % index_temperatureSurfaceLayerValue
Location in code:	domain % blocklist % diagnostics % temperatureSurfaceLayerValue
Array Group:	surfaceLayerValues

Table B.222: temperatureSurfaceLayerValue: potential temperature averaged over ocean surface layer (generally 0.1 of the ocean boundary layer)

B.5.27 salinitySurfaceLayerValue

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nCells Time
Persistence:	persistent
Index in tracersSurfaceLayerValue Array:	domain % blocklist % diagnostics % index_salinitySurfaceLayerValue
Location in code:	domain % blocklist % diagnostics % salinitySurfaceLayerValue
Array Group:	surfaceLayerValues

Table B.223: salinitySurfaceLayerValue: salinity averaged over ocean surface layer (generally 0.1 of the ocean boundary layer)

B.5.28 normalVelocitySurfaceLayer

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % normalVelocitySurfaceLayer

Table B.224: normalVelocitySurfaceLayer: normal velocity averaged over ocean surface layer (generally 0.1 of the ocean boundary layer)

B.5.29 surfaceVelocityZonal

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in surfaceVelocity Array:	domain % blocklist % diagnostics % index_surfaceVelocityZonal
Location in code:	domain % blocklist % diagnostics % surfaceVelocityZonal
Array Group:	vel_zonal

Table B.225: surfaceVelocityZonal: Zonal surface velocity reconstructed at cell centers

B.5.30 surfaceVelocityMeridional

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in surfaceVelocity Array:	domain % blocklist % diagnostics % index_surfaceVelocityMeridional
Location in code:	domain % blocklist % diagnostics % surfaceVelocityMeridional
Array Group:	vel_meridional

Table B.226: surfaceVelocityMeridional: Meridional surface velocity reconstructed at cell centers

B.5.31 surfacePressure

Type:	real
Units:	Pa
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % surfacePressure

Table B.227: surfacePressure: Pressure at the sea surface due to atmosphere, sea ice, frazil and land ice

B.5.32 SSHGradientZonal

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Index in SSHGradient Array:	domain % blocklist % diagnostics % index_SSHGradientZonal
Location in code:	domain % blocklist % diagnostics % SSHGradientZonal
Array Group:	ssh_zonal

Table B.228: SSHGradientZonal: Zonal gradient of SSH reconstructed at cell centers

B.5.33 SSHGradientMeridional

Type:	real

Units:	1
Dimension:	nCells Time
Persistence:	persistent
Index in SSHGradient Array:	domain % blocklist % diagnostics % index_SSHGradientMeridional
Location in code:	domain % blocklist % diagnostics % SSHGradientMeridional
Array Group:	ssh_meridional

Table B.229: SSHGradientMeridional: Meridional gradient of SSH reconstructed at cell centers

B.5.34 zMid

Type:	real
Units:	m
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % zMid

Table B.230: zMid: z-coordinate of the mid-depth of the layer

B.5.35 zTop

Type:	real
Units:	m
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % zTop

Table B.231: zTop: z-coordinate of the top of the layer

B.5.36 density

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % density

Table B.232: density: density

B.5.37 displacedDensity

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % displacedDensity

Table B.233: displacedDensity: Density displaced adiabatically to the mid-depth one layer deeper. That is, layer k has been displaced to the depth of layer k+1.

B.5.38 potentialDensity

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % potentialDensity

Table B.234: potentialDensity: potential density: density displaced adiabatically to the mid-depth of top layer

B.5.39 inSituThermalExpansionCoeff

Type:	real
Units:	$\mathrm{C^{-}1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % inSituThermalExpansionCoeff

Table B.235: inSituThermalExpansionCoeff: Thermal expansion coefficient (alpha), defined as $-1/\rho d\rho/dT$ (note negative sign). This is in situ, i.e. not displaced to another depth.

B.5.40 inSituSalineContractionCoeff

Type:	real
Units:	1 e3
Dimension:	nVertLevels nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % diagnostics % inSituSalineContraction-Coeff

Table B.236: inSituSalineContractionCoeff: Saline contraction coefficient (beta), defined as $1/\rho d\rho/dS$. This is also called the haline contraction coefficient. This is in situ, i.e. not displaced to another depth.

B.5.41 BruntVaisalaFreqTop

Type:	real
Units:	s^-2
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % BruntVaisalaFreqTop

Table B.237: BruntVaisalaFreqTop: Brunt Vaisala frequency defined at the center (horizontally) and top (vertically) of cell

B.5.42 montgomeryPotential

Type:	real
Units:	$m^2 s^-2$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % montgomeryPotential

Table B.238: montgomeryPotential: Montgomery potential, may be used as the pressure for isopycnal coordinates.

B.5.43 pressure

Type:	real
Units:	$N m^-2$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % pressure

Table B.239: pressure: pressure used in the momentum equation

B.5.44 modifyLandIcePressureMask

Type:	integer
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % modifyLandIcePressure-Mask

Table B.240: modifyLandIcePressureMask: A mask indicating where landIcePressure can be modified during iterative init. The mask is 1 under (and perhaps near) ice shelves and 0 elsewhere.

B.5.45 normalTransportVelocity

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % normalTransportVelocity

Table B.241: normalTransportVelocity: horizontal velocity used to transport mass and tracers

B.5.46 wettingVelocityFactor

Type:	real
Units:	–
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % wettingVelocityFactor

Table B.242: wettingVelocityFactor: Scaling factor for normalVelocity and its tendency to prevent drying of cell between 0 (no scaling) and 1 (normalVelocity and tendency set to 0).

B.5.47 vertAleTransportTop

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevelsP1 nCells Time

Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % vertAleTransportTop

Table B.243: vertAleTransportTop: vertical transport through the layer interface at the top of the cell

B.5.48 vertVelocityTop

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % vertVelocityTop

Table B.244: vertVelocityTop: vertical velocity defined at center (horizontally) and top (vertically) of cell

B.5.49 vertTransportVelocityTop

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % vertTransportVelocity-Top

Table B.245: vertTransportVelocityTop: vertical tracer-transport velocity defined at center (horizontally) and top (vertically) of cell. This is not the vertical ALE transport, but is Eulerian (fixed-frame) in the vertical, and computed from the continuity equation from the horizontal total tracer-transport velocity.

B.5.50 vertGMBolusVelocityTop

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % vertGMBolusVelocity-Top

Table B.246: vertGMBolusVelocityTop: vertical tracer-transport velocity defined at center (horizontally) and top (vertically) of cell. This is not the vertical ALE transport, but is Eulerian (fixed-frame) in the vertical, and computed from the continuity equation from the horizontal GM Bolus velocity.

B.5.51 vertMLEBolusVelocityTop

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % vertMLEBolusVelocity-Top

Table B.247: vertMLEBolusVelocityTop: vertical tracer-transport velocity defined at center (horizontally) and top (vertically) of cell. This is not the vertical ALE transport, but is Eulerian (fixed-frame) in the vertical, and computed from the continuity equation from the horizontal MLE (submesoscale) Bolus velocity.

B.5.52 tangentialVelocity

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % tangentialVelocity

Table B.248: tangentialVelocity: horizontal velocity, tangential to an edge

B.5.53 layerThicknessEdgeDrag

Type:	real
Units:	m
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % layerThicknessEdgeDrag

Table B.249: layerThicknessEdgeDrag: layer thickness to be used for drag terms

B.5.54 layerThicknessEdgeMean

Type:	real
Units:	m
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % layerThicknessEdge-Mean

Table B.250: layerThicknessEdgeMean: layer thickness averaged from cell center to edges

B.5.55 layerThicknessEdgeFlux

Type:	real
Units:	m
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % layerThicknessEdgeFlux

Table B.251: layerThicknessEdgeFlux: layer thickness used for fluxes through edges. May be centered, upwinded, or a combination of the two.

B.5.56 layerThicknessVertex

Type:	real
Units:	m
Dimension:	nVertLevels nVertices Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % layerThicknessVertex

Table B.252: layerThicknessVertex: layer thickness averaged from cell center to vertices

B.5.57 kineticEnergyCell

Type:	real
Units:	$m^2 s^-2$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % kineticEnergyCell

Table B.253: kineticEnergyCell: kinetic energy of horizontal velocity on cells

B.5.58 viscosity

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % viscosity

Table B.254: viscosity: horizontal viscosity

B.5.59 divergence

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % divergence

Table B.255: divergence: divergence of horizontal velocity

B.5.60 circulation

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevels nVertices Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % circulation

Table B.256: circulation: area-integrated vorticity

B.5.61 relativeVorticity

Type:	real
Units:	s^-1

Dimension:	nVertLevels nVertices Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % relativeVorticity

Table B.257: relativeVorticity: curl of horizontal velocity, defined at vertices

B.5.62 relativeVorticityCell

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % relativeVorticityCell

Table B.258: relativeVorticityCell: curl of horizontal velocity, averaged from vertices to cell centers

B.5.63 normalizedRelativeVorticityEdge

Type:	real
Units:	s^-1
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % normalizedRelativeVorticityEdge

Table B.259: normalizedRelativeVorticityEdge: curl of horizontal velocity divided by layer thickness, averaged from vertices to edges

B.5.64 normalizedPlanetaryVorticityEdge

Type:	real
Units:	s^-1
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % normalizedPlanetaryVorticityEdge

Table B.260: normalizedPlanetaryVorticityEdge: earth's rotational rate (Coriolis parameter, f) divided by layer thickness, averaged from vertices to edges

B.5.65 normalizedRelativeVorticityCell

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % normalizedRelativeVorticityCell

Table B.261: normalizedRelativeVorticityCell: curl of horizontal velocity divided by layer thickness, averaged from vertices to cell centers

B.5.66 barotropicForcing

Type:	real
Units:	$m\,s^-2$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % barotropicForcing

Table B.262: barotropicForcing: Barotropic tendency computed from the baroclinic equations in stage 1 of the split-explicit algorithm.

B.5.67 barotropicThicknessFlux

Type:	real
Units:	$m^2\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % barotropicThicknessFlux

Table B.263: barotropicThicknessFlux: Barotropic thickness flux at each edge, used to advance sea surface height in each subcycle of stage 2 of the split-explicit algorithm.

B.5.68 velocityX

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % diagnostics % velocityX

Table B.264: velocityX: component of horizontal velocity in the x-direction (cartesian)

B.5.69 velocityY

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % velocityY

Table B.265: velocityY: component of horizontal velocity in the y-direction (cartesian)

B.5.70 velocityZ

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % velocityZ

Table B.266: velocityZ: component of horizontal velocity in the z-direction (cartesian)

B.5.71 velocityZonal

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % velocityZonal

Table B.267: velocityZonal: component of horizontal velocity in the eastward direction

B.5.72 velocityMeridional

Type:	real

Units:	$m s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % velocityMeridional

Table B.268: velocityMeridional: component of horizontal velocity in the northward direction

B.5.73 transportVelocityX

Type:	real
Units:	$m s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % transportVelocityX

Table B.269: transportVelocityX: component of horizontal velocity used to transport mass and tracers in the x-direction (cartesian)

B.5.74 transportVelocityY

Type:	real
Units:	$m s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % transportVelocityY

Table B.270: transportVelocityY: component of horizontal velocity used to transport mass and tracers in the y-direction (cartesian)

B.5.75 transportVelocityZ

Type:	real
Units:	$m s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % transportVelocityZ

Table B.271: transportVelocityZ: component of horizontal velocity used to transport mass and tracers in the z-direction (cartesian)

B.5.76 transportVelocityZonal

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % transportVelocityZonal

Table B.272: transportVelocityZonal: component of horizontal velocity used to transport mass and tracers in the eastward direction

B.5.77 transportVelocityMeridional

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % transportVelocityMeridional

Table B.273: transportVelocityMeridional: component of horizontal velocity used to transport mass and tracers in the northward direction

B.5.78 gradSSH

Type:	real
Units:	1
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % gradSSH

Table B.274: gradSSH: Gradient of sea surface height at edges.

B.5.79 gradSSHX

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % gradSSHX

Table B.275: gradSSHX: X Component of the gradient of sea surface height at cell centers.

B.5.80 gradSSHY

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % gradSSHY

Table B.276: gradSSHY: Y Component of the gradient of sea surface height at cell centers.

B.5.81 gradSSHZ

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % gradSSHZ

Table B.277: gradSSHZ: Z Component of the gradient of sea surface height at cell centers.

B.5.82 gradSSHZonal

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % gradSSHZonal

Table B.278: gradSSHZonal: Zonal Component of the gradient of sea surface height at cell centers.

B.5.83 gradSSHMeridional

Type:	real
Units:	1

Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % gradSSHMeridional

Table B.279: gradSSHMeridional: Meridional Component of the gradient of sea surface height at cell centers.

B.5.84 normalGMBolusVelocity

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % normalGMBolusVelocity

Table B.280: normalGMBolusVelocity: Bolus velocity in Gent-McWilliams eddy parameterization

B.5.85 normalMLEvelocity

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % normalMLEvelocity

Table B.281: normalMLEvelocity: Velocity from mixed layer eddies (fox kemper 2011 submesoscale parameterization)

B.5.86 cGMphaseSpeed

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % cGMphaseSpeed

Table B.282: cGMphaseSpeed: phase speed for the bolus velocity calculation

B.5.87 betaEdge

Type:	real
Units:	$m^{-}1\,s^{-}1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % betaEdge

Table B.283: betaEdge: meridional gradient of the coriolis parameter, used in the mesoscale eddy parameterization schemes

B.5.88 gmKappaScaling

Type:	real
Units:	1
Dimension:	nVertLevelsP1 nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % gmKappaScaling

Table B.284: gmKappaScaling: spatially and depth varying GM kappa. The scaling is based on the Brunt Vaisala Frequency relative to a maximum value below the mixed layer, follows from Danabasoglu and Marshall 2007. If config_GM_closure is not set to N2_dependent the scaling value is set to 1 everywhere.

B.5.89 RediKappaSfcTaper

Type:	real
Units:	1
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % RediKappaSfcTaper

Table B.285: RediKappaSfcTaper: Scaling coefficient for Redi kappa. Varies from 0 to 1.

B.5.90 rediLimiterCount

Type:	integer
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % diagnostics % rediLimiterCount

Table B.286: rediLimiterCount: count of times redi limiter is invoked on a timestep

B.5.91 gradDensityEddy

Type:	real
Units:	$\mathrm{kg\,m^{-}4}$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % gradDensityEddy

Table B.287: gradDensityEddy: horizontal gradient of density at cell edge and interfaces in vertical. this is used for the GM parameterization and the submesoscale eddy parameterization

B.5.92 mleVelocityZonal

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % mleVelocityZonal

Table B.288: mleVelocityZonal: Bolus velocity in fox-kemper mle parameterization, zonal-direction

B.5.93 mleVelocityMeridional

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % mleVelocityMeridional

Table B.289: mleVelocityMeridional: Bolus velocity in fox-kemper mle parameterization, meridional-direction

B.5.94 eddyVelocityX

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % eddyVelocityX

Table B.290: eddyVelocityX: Bolus velocity in Gent-McWilliams eddy or submesoscale parameterization, x-direction

B.5.95 eddyVelocityY

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % eddyVelocityY

Table B.291: eddyVelocityY: Bolus velocity in Gent-McWilliams or submesoscale eddy parameterization, y-direction

B.5.96 eddyVelocityZ

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % eddyVelocityZ

Table B.292: eddyVelocityZ: eddy Bolus velocity in Gent-McWilliams or submesoscale eddy parameterization, z-direction

B.5.97 GMBolusVelocityZonal

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % GMBolusVelocityZonal

Table B.293: GMBolusVelocityZonal: Bolus velocity in Gent-McWilliams eddy parameterization, zonal-direction

B.5.98 GMBolusVelocityMeridional

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % GMBolusVelocityMeridional

Table B.294: GMBolusVelocityMeridional: Bolus velocity in Gent-McWilliams eddy parameterization, meridional-direction

B.5.99 RiTopOfCell

Type:	real
Units:	1
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % RiTopOfCell

Table B.295: RiTopOfCell: gradient Richardson number defined at the center (horizontally) and top (vertically)

B.5.100 RiTopOfEdge

Type:	real
Units:	1
Dimension:	nVertLevelsP1 nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % RiTopOfEdge

Table B.296: RiTopOfEdge: gradient Richardson number defined at the edge (horizontally) and top (vertically)

B.5.101 vertViscTopOfEdge

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % vertViscTopOfEdge

Table B.297: vertViscTopOfEdge: vertical viscosity defined at the edge (horizontally) and top (vertically)

B.5.102 vertViscTopOfCell

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % vertViscTopOfCell

Table B.298: vertViscTopOfCell: vertical viscosity defined at the cell center (horizontally) and top (vertically)

B.5.103 vertDiffTopOfCell

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % vertDiffTopOfCell

Table B.299: vertDiffTopOfCell: vertical diffusion defined at the cell center (horizontally) and top (vertically)

B.5.104 bulkRichardsonNumber

Type:	real
Units:	1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % bulkRichardsonNumber

Table B.300: bulkRichardsonNumber: CVMix/KPP: bulk Richardson number

B.5.105 bulkRichardsonNumberBuoy

Type:	real
Units:	1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % bulkRichardsonNumber-Buoy

Table B.301: bulkRichardsonNumberBuoy: CVMix/KPP: contribution of buoyancy to bulk Richardson number

B.5.106 bulkRichardsonNumberShear

Type:	real
Units:	1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % bulkRichardsonNumber-Shear

Table B.302: bulkRichardsonNumberShear: CVMix/KPP: contribution of shear to bulk Richardson number

B.5.107 unresolvedShear

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % unresolvedShear

Table B.303: unresolvedShear: CVMix/KPP: contribution of unresolved velocity to vertical shear

B.5.108 boundaryLayerDepth

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % boundaryLayerDepth

Table B.304: boundaryLayerDepth: CVMix/KPP: diagnosed depth of the ocean surface boundary layer

B.5.109 boundaryLayerDepthSmooth

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % boundaryLayerDepthSmooth

Table B.305: boundaryLayerDepthSmooth: CVMix/KPP: smoothed boundary layer depth

B.5.110 boundaryLayerDepthEdge

Type:	real
Units:	m
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % boundaryLayerDepthEdge

Table B.306: boundaryLayerDepthEdge: CVMix/KPP: diagnosed depth of the ocean surface boundary layer averaged to cell edges

B.5.111 vertNonLocalFluxTemp

Type:	real
Units:	1
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent

Index in vertNonLocalFlux Array:	domain % blocklist % diagnostics % index_vertNonLocalFluxTemp
Location in code:	domain % blocklist % diagnostics % vertNonLocalFluxTemp
Array Group:	vertNonLocalFlux

Table B.307: vertNonLocalFluxTemp: CVMix/KPP: nonlocal boundary layer mixing term for temperature

B.5.112 indexBoundaryLayerDepth

Type:	real
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % indexBoundaryLayerDepth

Table B.308: indexBoundaryLayerDepth: CVMix/KPP: int(indexBoundaryLayerDepth) is vertical layer within which boundaryLayerDepth resides. mod(indexBoundaryLayerDepth) indicates whether boundaryLayerDepth resides above layer center (value = 0.25) or below layer center (value=0.75)

B.5.113 indexSurfaceLayerDepth

Type:	real
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % indexSurfaceLayerDepth

Table B.309: indexSurfaceLayerDepth: CVMix/KPP: surface layer entirely encompasses int(indexSurfaceLayerDepth) vertical layers and fraction(indexSurfaceLayerDepth) of the int(indexSurfaceLayerDepth)+1 layer.

B.5.114 surfaceFrictionVelocity

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nCells Time

Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % surfaceFrictionVelocity

Table B.310: surfaceFrictionVelocity: CVMix/KPP: diagnosed surface friction velocity defined as square root of (mag(wind stress) / reference density)

B.5.115 penetrativeTemperatureFluxOBL

Type:	real
Units:	$\mathrm{C\,m\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % penetrativeTemperature-FluxOBL

Table B.311: penetrativeTemperatureFluxOBL: CVMix/KPP: Penetrative temperature flux at the bottom of boundary layer due to solar radiation. Positive is into the ocean.

B.5.116 bottomLayerShortwaveTemperatureFlux

Type:	real
Units:	$\mathrm{W\,m^{-}2}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % bottomLayerShort-waveTemperatureFlux

Table B.312: bottomLayerShortwaveTemperatureFlux: Solar flux that reaches bottom of the ocean and does not impact temperature

B.5.117 surfaceBuoyancyForcing

Type:	real
Units:	$\mathrm{m^2\,s^{-}3}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % surfaceBuoyancyForcing

Table B.313: surfaceBuoyancyForcing: CVMix/KPP: diagnosed surface buoyancy flux due to heat, salt and freshwater fluxes. Positive flux increases buoyancy.

B.5.118 indMLD

Type:	integer
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % indMLD

Table B.314: indMLD: index of model where mixed layer depth occurs (always one past)

B.5.119 dThreshMLD

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % dThreshMLD

Table B.315: dThreshMLD: mixed layer depth based on density threshold

B.5.120 slopeTriadUp

Type:	real
Units:	non – dimensional
Dimension:	nVertLevels TWO nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % slopeTriadUp

Table B.316: slopeTriadUp: Magnitude of slope of isopycnal surface, using triad through this cell and edge, angled up. Uses expansion of equation of state.

B.5.121 slopeTriadDown

Type:	real
Units:	non – dimensional
Dimension:	nVertLevels TWO nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % slopeTriadDown

Table B.317: slopeTriadDown: Magnitude of slope of isopycnal surface, using triad through this cell and edge, angled up. Uses expansion of equation of state.

B.5.122 limiterUp

Type:	real
Units:	non − dimensional
Dimension:	nVertLevels TWO nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % limiterUp

Table B.318: limiterUp: Magnitude of slope of isopycnal surface, using triad through this cell and edge, angled up. Uses expansion of equation of state.

B.5.123 limiterDown

Type:	real
Units:	non − dimensional
Dimension:	nVertLevels TWO nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % limiterDown

Table B.319: limiterDown: Magnitude of slope of isopycnal surface, using triad through this cell and edge, angled up. Uses expansion of equation of state.

B.5.124 k33

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % k33

Table B.320: k33: The (3,3) entry of the Redi diffusion tensor. Added to the model vertical diffusion. Defined at the top of cell k

B.5.125 gmStreamFuncTopOfEdge

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % gmStreamFunc-TopOfEdge

Table B.321: gmStreamFuncTopOfEdge: GM stream function

B.5.126 GMStreamFuncX

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % GMStreamFuncX

Table B.322: GMStreamFuncX: GM stream function

B.5.127 GMStreamFuncY

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % GMStreamFuncY

Table B.323: GMStreamFuncY: GM stream function

B.5.128 GMStreamFuncZ

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % GMStreamFuncZ

Table B.324: GMStreamFuncZ: GM stream function

B.5.129 GMStreamFuncZonal

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % GMStreamFuncZonal

Table B.325: GMStreamFuncZonal: GM stream function

B.5.130 GMStreamFuncMeridional

Type:	real
Units:	$m^2 s^-1$
Dimension:	nVertLevelsP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % GMStreamFuncMeridional

Table B.326: GMStreamFuncMeridional: GM stream function

B.5.131 gmBolusKappa

Type:	real
Units:	$m^2 s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % gmBolusKappa

Table B.327: gmBolusKappa: GM Bolus Kappa value. On output, it has NOT been multiplied by the horizontal taper array gmHorizontalTaper, because that is applied at the end to the normalGMBolusVelocity variable, not to the gmBolusKappa.

B.5.132 RediKappa

Type:	real
Units:	$m^2 s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % RediKappa

Table B.328: RediKappa: Redi Kappa value. On output, it has already been multiplied by the horizontal taper array RediHorizontalTaper (as opposed to gmBolusKappa, which has not been multiplied by the horizontal taper).

B.5.133 RediHorizontalTaper

Type:	real
Units:	–
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % RediHorizontalTaper

Table B.329: RediHorizontalTaper: Horizontal tapering for Redi. Varies between 0 and 1.

B.5.134 gmHorizontalTaper

Type:	real
Units:	–
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % gmHorizontalTaper

Table B.330: gmHorizontalTaper: Horizontal tapering for GM. Varies between 0 and 1.

B.5.135 RossbyRadius

Type:	real
Units:	m
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % RossbyRadius

Table B.331: RossbyRadius: Rossby Radius, computed in GM routine for some settings

B.5.136 surfaceFluxAttenuationCoefficient

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % surfaceFluxAttenuationCoefficient

Table B.332: surfaceFluxAttenuationCoefficient: The spatially-dependent length scale of exponential decay of surface fluxes. Fluxes are multiplied by $e^{z/\gamma}$, where this coefficient is γ.

B.5.137 surfaceFluxAttenuationCoefficientRunoff

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % surfaceFluxAttenuationCoefficientRunoff

Table B.333: surfaceFluxAttenuationCoefficientRunoff: The spatially-dependent length scale of exponential decay of river runoff. Fluxes are multiplied by $e^{z/\gamma}$, where this coefficient is γ.

B.5.138 topographic_wave_drag

Type:	real
Units:	1
Dimension:	nEdges
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % topographic_wave_drag

Table B.334: topographic_wave_drag: wave drag coefficient or 1/(rinv) where rinv is the e-folding time used in HyCOM

B.5.139 landIceFrictionVelocity

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nCells Time

Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % landIceFrictionVelocity

Table B.335: landIceFrictionVelocity: The friction velocity u_* under land ice

B.5.140 topDrag

Type:	real
Units:	N m^−2
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % topDrag

Table B.336: topDrag: Top drag at the surface of the ocean defined at edge midpoints. Magnitude in direction of edge normal.

B.5.141 topDragMagnitude

Type:	real
Units:	N m^−2
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % topDragMagnitude

Table B.337: topDragMagnitude: Magnitude of top drag at the surface of the ocean, at cell centers.

B.5.142 landIceBoundaryLayerTemperature

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in landIceBoundaryLayerTracers Array:	domain % blocklist % diagnostics % index_landIceBoundaryLayerTemperature
Location in code:	domain % blocklist % diagnostics % landIceBoundaryLayerTemperature
Array Group:	landIceBoundaryLayerValues

Table B.338: landIceBoundaryLayerTemperature: The temperature averaged over the sub-ice-shelf boundary layer

B.5.143 landIceBoundaryLayerSalinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nCells Time
Persistence:	persistent
Index in landIceBoundaryLayerTracers Array:	domain % blocklist % diagnostics % index_landIceBoundaryLayerSalinity
Location in code:	domain % blocklist % diagnostics % landIceBoundaryLayerSalinity
Array Group:	landIceBoundaryLayerValues

Table B.339: landIceBoundaryLayerSalinity: The salinity averaged over the sub-ice-shelf boundary layer

B.5.144 landIceHeatTransferVelocity

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in landIceTracerTransferVelocities Array:	domain % blocklist % diagnostics % index_landIceHeatTransferVelocity
Location in code:	domain % blocklist % diagnostics % landIceHeatTransferVelocity
Array Group:	landIceTransferVelocityValues

Table B.340: landIceHeatTransferVelocity: friction velocity times nondimensional heat transfer coefficient

B.5.145 landIceSaltTransferVelocity

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in landIceTracerTransferVelocities Array:	domain % blocklist % diagnostics % index_landIceSaltTransferVelocity
Location in code:	domain % blocklist % diagnostics % landIceSaltTransferVelocity
Array Group:	landIceTransferVelocityValues

Table B.341: landIceSaltTransferVelocity: friction velocity times nondimensional salt transfer coefficient

B.5.146 rx1Cell

Type:	real
Units:	1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % rx1Cell

Table B.342: rx1Cell: The Haney number (rx1), a measure of hydrostatic consistency, at cell centers.

B.5.147 rx1Edge

Type:	real
Units:	1
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % rx1Edge

Table B.343: rx1Edge: The Haney number (rx1), a measure of hydrostatic consistency, at edges.

B.5.148 rx1MaxCell

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % rx1MaxCell

Table B.344: rx1MaxCell: The Haney number (rx1) is ratio of vertical displacement to cell thickness between two neighboring horizontal cells. It is computed at each edge. This cell-based value is the maximum over all edges and vertical levels of each cell.

B.5.149 rx1MaxEdge

Type:	real
Units:	1
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % rx1MaxEdge

Table B.345: rx1MaxEdge: The maximum Haney number (rx1) in a vertical column, measured at edges.

B.5.150 globalRx1Max

Type:	real
Units:	1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % globalRx1Max

Table B.346: globalRx1Max: The global maximum Haney number (rx1).

B.5.151 globalVerticalStretchMax

Type:	real
Units:	1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % globalVerticalStretch-Max

Table B.347: globalVerticalStretchMax: The global maximum stretching of the vertical grid compared with z-level.

B.5.152 globalVerticalStretchMin

Type:	real
Units:	1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % globalVerticalStretchMin

Table B.348: globalVerticalStretchMin: The global minimum stretching of the vertical grid compared with z-level.

B.5.153 rx1InitSmoothingMask

Type:	integer
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % rx1InitSmoothingMask

Table B.349: rx1InitSmoothingMask: A mask indicating where layer interface and thickness smoothing is to be performed during Haney number constrained initializaiton.

B.5.154 verticalStretch

Type:	real
Units:	1
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % verticalStretch

Table B.350: verticalStretch: the stretch factor of each layer compared with the default z-level coordinate

B.5.155 pressureAdjustedSSH

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % pressureAdjustedSSH

Table B.351: pressureAdjustedSSH: sea surface height adjusted by sea surface pressure

B.5.156 barotropicCoriolisTerm

Type:	real
Units:	$m\,s^-2$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % barotropicCoriolisTerm

Table B.352: barotropicCoriolisTerm: f * uPerp for the split-implicit time stepping

B.5.157 SIvec_r0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_r0

Table B.353: SIvec_r0: A vector used in the split-implicit barotropic mode solver

B.5.158 SIvec_r1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_r1

Table B.354: SIvec_r1: A vector used in the split-implicit barotropic mode solver

B.5.159 SIvec_rh0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_rh0

Table B.355: SIvec_rh0: A vector used in the split-implicit barotropic mode solver

B.5.160 SIvec_rh1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_rh1

Table B.356: SIvec_rh1: A vector used in the split-implicit barotropic mode solver

B.5.161 SIvec_r00

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_r00

Table B.357: SIvec_r00: A vector used in the split-implicit barotropic mode solver

B.5.162 SIvec_ph0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_ph0

Table B.358: SIvec_ph0: A vector used in the split-implicit barotropic mode solver

B.5.163 SIvec_ph1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_ph1

Table B.359: SIvec_ph1: A vector used in the split-implicit barotropic mode solver

B.5.164 SIvec_v0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_v0

Table B.360: SIvec_v0: A vector used in the split-implicit barotropic mode solver

B.5.165 SIvec_s0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_s0

Table B.361: SIvec_s0: A vector used in the split-implicit barotropic mode solver

B.5.166 SIvec_s1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_s1

Table B.362: SIvec_s1: A vector used in the split-implicit barotropic mode solver

B.5.167 SIvec_sh0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_sh0

Table B.363: SIvec_sh0: A vector used in the split-implicit barotropic mode solver

B.5.168 SIvec_sh1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_sh1

Table B.364: SIvec_sh1: A vector used in the split-implicit barotropic mode solver

B.5.169 SIvec_w0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_w0

Table B.365: SIvec_w0: A vector used in the split-implicit barotropic mode solver

B.5.170 SIvec_w1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_w1

Table B.366: SIvec_w1: A vector used in the split-implicit barotropic mode solver

B.5.171 SIvec_wh0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_wh0

Table B.367: SIvec_wh0: A vector used in the split-implicit barotropic mode solver

B.5.172 SIvec_wh1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_wh1

Table B.368: SIvec_wh1: A vector used in the split-implicit barotropic mode solver

B.5.173 SIvec_q0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_q0

Table B.369: SIvec_q0: A vector used in the split-implicit barotropic mode solver

B.5.174 SIvec_q1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_q1

Table B.370: SIvec_q1: A vector used in the split-implicit barotropic mode solver

B.5.175 SIvec_qh0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_qh0

Table B.371: SIvec_qh0: A vector used in the split-implicit barotropic mode solver

B.5.176 SIvec_qh1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_qh1

Table B.372: SIvec_qh1: A vector used in the split-implicit barotropic mode solver

B.5.177 SIvec_z0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_z0

Table B.373: SIvec_z0: A vector used in the split-implicit barotropic mode solver

B.5.178 SIvec_z1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_z1

Table B.374: SIvec_z1: A vector used in the split-implicit barotropic mode solver

B.5.179 SIvec_zh0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_zh0

Table B.375: SIvec_zh0: A vector used in the split-implicit barotropic mode solver

B.5.180 SIvec_zh1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_zh1

Table B.376: SIvec_zh1: A vector used in the split-implicit barotropic mode solver

B.5.181 SIvec_t0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_t0

Table B.377: SIvec_t0: A vector used in the split-implicit barotropic mode solver

B.5.182 SIvec_t1

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_t1

Table B.378: SIvec_t1: A vector used in the split-implicit barotropic mode solver

B.5.183 SIvec_y0

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % SIvec_y0

Table B.379: SIvec_y0: A vector used in the split-implicit barotropic mode solver

B.5.184 ssh_sal

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % ssh_sal

Table B.380: ssh_sal: sea surface height perturbation from self-attraction and loading

B.5.185 ssh_sal_grad

Type:	real
Units:	–
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % ssh_sal_grad

Table B.381: ssh_sal_grad: gradient of sea surface height perturbation from self-attraction and loading

B.5.186 normalVelocityTendOld

Type:	real
Units:	$m\,s^-2$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % normalVelocityTendOld

Table B.382: normalVelocityTendOld: time tendency of normal component of velocity at the previous time step used in the split-explicit AB2 time stepping

B.5.187 CoriolisTermOld

Type:	real
Units:	$m\,s^-2$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % diagnostics % CoriolisTermOld

Table B.383: CoriolisTermOld: Coriolis term at the previous time step used in the split-explicit AB2 time stepping

B.6 shortwave

B.6.1 chlorophyllData

Type:	real
Units:	mg $m^{-}3$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % shortwave % chlorophyllData

Table B.384: chlorophyllData: concentration of chlorophyll data

B.6.2 zenithAngle

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % shortwave % zenithAngle

Table B.385: zenithAngle: the cos of the solar zenith angle

B.6.3 clearSkyRadiation

Type:	real
Units:	percent
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % shortwave % clearSkyRadiation

Table B.386: clearSkyRadiation: the fractional cloudiness (between 0 and 1)

B.7 forcing

B.7.1 surfaceStress

Type:	real
Units:	$N\,m^{-}2$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % surfaceStress

Table B.387: surfaceStress: The component of the total surface stress on the ocean defined at edge midpoints and pointing in the direction of the edge normal. This field the sum of constituent stresses (e.g. wind stress and top drag) and is used to compute a tendency in the normal velocity.

B.7.2 surfaceStressMagnitude

Type:	real
Units:	$N\,m^{-}2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % surfaceStressMagnitude

Table B.388: surfaceStressMagnitude: Magnitude of surface stress, at cell centers.

B.7.3 surfaceThicknessFlux

Type:	real
Units:	$m\,s^{-}1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % surfaceThicknessFlux

Table B.389: surfaceThicknessFlux: Flux of mass through the ocean surface. Positive into ocean.

B.7.4 surfaceThicknessFluxRunoff

Type:	real
Units:	$m\,s^{-}1$
Dimension:	nCells Time

Persistence:	persistent
Location in code:	domain % blocklist % forcing % surfaceThicknessFluxRunoff

Table B.390: surfaceThicknessFluxRunoff: Flux of mass through the ocean surface due to river runoff. Positive into ocean.

B.7.5 windStressZonal

Type:	real
Units:	$\mathrm{N\,m^{-}2}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % windStressZonal

Table B.391: windStressZonal: Zonal (eastward) component of wind stress at cell centers from coupler. Positive eastward.

B.7.6 windStressMeridional

Type:	real
Units:	$\mathrm{N\,m^{-}2}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % windStressMeridional

Table B.392: windStressMeridional: Meridional (northward) component of wind stress at cell centers from coupler. Positive northward.

B.7.7 bottomDrag

Type:	real
Units:	1
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % forcing % bottomDrag

Table B.393: bottomDrag: Bottom drag Cd coefficient in cells.

B.7.8 nForcingGroupCounter

Type:	integer
Units:	–
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % nForcingGroupCounter

Table B.394: nForcingGroupCounter: **MISSING**

B.7.9 forcingGroupNames

Type:	text
Units:	–
Dimension:	nForcingGroupsMax Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % forcingGroupNames

Table B.395: forcingGroupNames: **MISSING**

B.7.10 forcingGroupRestartTimes

Type:	text
Units:	–
Dimension:	nForcingGroupsMax Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % forcingGroupRestartTimes

Table B.396: forcingGroupRestartTimes: **MISSING**

B.7.11 seaIcePressure

Type:	real
Units:	Pa
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % seaIcePressure

Table B.397: seaIcePressure: Pressure at the sea surface due to sea ice.

B.7.12 atmosphericPressure

Type:	real
Units:	Pa
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % atmosphericPressure

Table B.398: atmosphericPressure: Pressure at the sea surface due to the atmosphere.

B.7.13 seaIceEnergy

Type:	real
Units:	J m^−2
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % seaIceEnergy

Table B.399: seaIceEnergy: Energy per unit area trapped in frazil ice formation. Always ≥ 0.0.

B.7.14 penetrativeTemperatureFlux

Type:	real
Units:	C m s^−1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % penetrativeTemperatureFlux

Table B.400: penetrativeTemperatureFlux: Penetrative temperature flux at the surface due to solar radiation. Positive is into the ocean.

B.7.15 fractionAbsorbed

Type:	real
Units:	fractional
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % fractionAbsorbed

Table B.401: fractionAbsorbed: Divergence of transmission through interfaces of surface fluxes below the surface layer at cell centers. These are not applied to short wave.

B.7.16 fractionAbsorbedRunoff

Type:	real
Units:	fractional
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % fractionAbsorbedRunoff

Table B.402: fractionAbsorbedRunoff: Divergence of transmission through interfaces of surface fluxes below the surface layer at cell centers. These are applied only to river runoff.

B.7.17 latentHeatFlux

Type:	real
Units:	$\mathrm{W\,m^{-}2}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % latentHeatFlux

Table B.403: latentHeatFlux: Latent heat flux at cell centers from coupler. Positive into the ocean.

B.7.18 sensibleHeatFlux

Type:	real
Units:	$\mathrm{W\,m^{-}2}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % sensibleHeatFlux

Table B.404: sensibleHeatFlux: Sensible heat flux at cell centers from coupler. Positive into the ocean.

B.7.19 longWaveHeatFluxUp

Type:	real
Units:	$\mathrm{W\,m^{-}2}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % longWaveHeatFluxUp

Table B.405: longWaveHeatFluxUp: Upward long wave heat flux at cell centers from coupler. Positive into the ocean.

B.7.20 longWaveHeatFluxDown

Type:	real
Units:	W m^-2
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % longWaveHeatFluxDown

Table B.406: longWaveHeatFluxDown: Downward long wave heat flux at cell centers from coupler. Positive into the ocean.

B.7.21 seaIceHeatFlux

Type:	real
Units:	W m^-2
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % seaIceHeatFlux

Table B.407: seaIceHeatFlux: Sea ice heat flux at cell centers from coupler. Positive into the ocean.

B.7.22 icebergHeatFlux

Type:	real
Units:	W m^-2
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % icebergHeatFlux

Table B.408: icebergHeatFlux: Iceberg heat flux at cell centers from coupler. Positive into the ocean.

B.7.23 shortWaveHeatFlux

Type:	real
Units:	$\mathrm{W\,m^{-}2}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % shortWaveHeatFlux

Table B.409: shortWaveHeatFlux: Short wave flux at cell centers from coupler. Positive into the ocean.

B.7.24 rainTemperatureFlux

Type:	real
Units:	$\mathrm{C\,m\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % rainTemperatureFlux

Table B.410: rainTemperatureFlux: Heat flux associated with rain at cell centers sent to coupler. Positive into the ocean.

B.7.25 evapTemperatureFlux

Type:	real
Units:	$\mathrm{C\,m\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % evapTemperatureFlux

Table B.411: evapTemperatureFlux: Heat flux associated with Evaporation at cell centers sent to coupler. Positive into the ocean.

B.7.26 seaIceTemperatureFlux

Type:	real
Units:	$\mathrm{C\,m\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % seaIceTemperatureFlux

Table B.412: seaIceTemperatureFlux: Heat flux associated with sea ice melt water at cell centers sent to coupler. Positive into the ocean.

B.7.27 icebergTemperatureFlux

Type:	real
Units:	$\mathrm{C\,m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % icebergTemperatureFlux

Table B.413: icebergTemperatureFlux: Heat flux associated with iceberg melt at cell centers sent to coupler. Positive into the ocean.

B.7.28 totalFreshWaterTemperatureFlux

Type:	real
Units:	$\mathrm{C\,m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % totalFreshWaterTemperatureFlux

Table B.414: totalFreshWaterTemperatureFlux: Sum of heat fluxes associated with water fluxes cell centers sent to coupler. Positive into the ocean.

B.7.29 evaporationFlux

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % evaporationFlux

Table B.415: evaporationFlux: Evaporation flux at cell centers from coupler. Positive into the ocean.

B.7.30 seaIceSalinityFlux

Type:	real
Units:	kg m−2 s−1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % seaIceSalinityFlux

Table B.416: seaIceSalinityFlux: Sea ice salinity flux at cell centers from coupler. Positive into the ocean.

B.7.31 seaIceFreshWaterFlux

Type:	real
Units:	kg m−2 s−1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % seaIceFreshWaterFlux

Table B.417: seaIceFreshWaterFlux: Fresh water flux from sea ice at cell centers from coupler. Positive into the ocean.

B.7.32 icebergFreshWaterFlux

Type:	real
Units:	kg m−2 s−1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % icebergFreshWaterFlux

Table B.418: icebergFreshWaterFlux: Fresh water flux from iceberg melt at cell centers from coupler. Positive into the ocean.

B.7.33 riverRunoffFlux

Type:	real
Units:	kg m−2 s−1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % riverRunoffFlux

Table B.419: riverRunoffFlux: Fresh water flux from river runoff at cell centers from coupler. Positive into the ocean.

B.7.34 removedRiverRunoffFlux

Type:	real
Units:	kg m^{-}2 s^{-}1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % removedRiverRunoffFlux

Table B.420: removedRiverRunoffFlux: Fresh water flux from river runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.

B.7.35 totalRemovedRiverRunoffFlux

Type:	real
Units:	kg s^{-}1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % totalRemovedRiverRunoff-Flux

Table B.421: totalRemovedRiverRunoffFlux: Global sum of fresh water flux from river runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.

B.7.36 iceRunoffFlux

Type:	real
Units:	kg m^{-}2 s^{-}1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceRunoffFlux

Table B.422: iceRunoffFlux: Fresh water flux from ice runoff at cell centers from coupler. Positive into the ocean.

B.7.37 removedIceRunoffFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % removedIceRunoffFlux

Table B.423: removedIceRunoffFlux: Fresh water flux from ice runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.

B.7.38 totalRemovedIceRunoffFlux

Type:	real
Units:	$\mathrm{kg\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % totalRemovedIceRunoffFlux

Table B.424: totalRemovedIceRunoffFlux: Global sum of fresh water flux from ice runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.

B.7.39 rainFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % rainFlux

Table B.425: rainFlux: Fresh water flux from rain at cell centers from coupler. Positive into the ocean.

B.7.40 snowFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % forcing % snowFlux

Table B.426: snowFlux: Fresh water flux from snow at cell centers from coupler. Positive into the ocean.

B.7.41 iceFraction

Type:	real
Units:	fractional
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFraction

Table B.427: iceFraction: Fraction of sea ice coverage at cell centers from coupler. Positive into the ocean.

B.7.42 windSpeed10m

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % windSpeed10m

Table B.428: windSpeed10m: Wind speed at 10 meter.

B.7.43 stokesDriftZonal

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % stokesDriftZonal

Table B.429: stokesDriftZonal: Zonal component of the wave-induced Stokes drift current.

B.7.44 stokesDriftMeridional

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % stokesDriftMeridional

Table B.430: stokesDriftMeridional: Meridional component of the wave-induced Stokes drift current.

B.7.45 stokesDriftSurfaceZonal

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % stokesDriftSurfaceZonal

Table B.431: stokesDriftSurfaceZonal: Zonal component of the wave-induced Stokes surface drift current.

B.7.46 stokesDriftSurfaceMeridional

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % stokesDriftSurfaceMeridional

Table B.432: stokesDriftSurfaceMeridional: Meridional component of the wave-induced Stokes surface drift current.

B.7.47 significantWaveHeight

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % significantWaveHeight

Table B.433: significantWaveHeight: Significant wave height is the average of the highest 1/3 of the waves

B.7.48 peakWaveFrequency

Type:	real
Units:	s¯1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % peakWaveFrequency

Table B.434: peakWaveFrequency: Frequency of peak of wave spectrum

B.7.49 peakWaveDirection

Type:	real
Units:	degree
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % peakWaveDirection

Table B.435: peakWaveDirection: Direction of peak of wave spectrum

B.7.50 langmuirNumber

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % langmuirNumber

Table B.436: langmuirNumber: Projected surface layer averaged Langmuir number from Van Roekel et al. 2012.

B.7.51 stokesDriftZonalWavenumber

Type:	real
Units:	$m\,s^-1$
Dimension:	nStokesDriftWavenumbers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % stokesDriftZonalWavenumber

Table B.437: stokesDriftZonalWavenumber: Zonal component of the partitioned wave-induced Stokes drift current. Wavenumbers 1-6 are used to recontruct the full depth-dependent Stokes drift profile

B.7.52 stokesDriftMeridionalWavenumber

Type:	real
Units:	$m\,s^-1$
Dimension:	nStokesDriftWavenumbers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % stokesDriftMeridionalWavenumber

Table B.438: stokesDriftMeridionalWavenumber: Meridional component of the partitioned wave-induced Stokes drift current. Wavenumbers 1-6 are used to recontruct the full depth-dependent Stokes drift profile

B.7.53 nAccumulatedCoupled

Type:	integer
Units:	–
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % nAccumulatedCoupled

Table B.439: nAccumulatedCoupled: Number of accumulations in time averaging of coupler fields

B.7.54 avgTemperatureSurfaceValue

Type:	real
Units:	C
Dimension:	nCells Time

Persistence:	persistent
Index in avgTracersSurfaceValue Array:	domain % blocklist % forcing % index_avgTemperatureSurfaceValue
Location in code:	domain % blocklist % forcing % avgTemperatureSurfaceValue
Array Group:	surfaceValues

Table B.440: avgTemperatureSurfaceValue: Time averaged potential temperature extrapolated to ocean surface

B.7.55 avgSalinitySurfaceValue

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nCells Time
Persistence:	persistent
Index in avgTracersSurfaceValue Array:	domain % blocklist % forcing % index_avgSalinitySurfaceValue
Location in code:	domain % blocklist % forcing % avgSalinitySurfaceValue
Array Group:	surfaceValues

Table B.441: avgSalinitySurfaceValue: Time averaged salinity extrapolated to ocean surface

B.7.56 avgSurfaceVelocityZonal

Type:	real
Units:	$\mathrm{m\,s}^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in avgSurfaceVelocity Array:	domain % blocklist % forcing % index_avgSurfaceVelocityZonal
Location in code:	domain % blocklist % forcing % avgSurfaceVelocityZonal
Array Group:	vel_zonal

Table B.442: avgSurfaceVelocityZonal: Time averaged zonal surface velocity

B.7.57 avgSurfaceVelocityMeridional

Type:	real

Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Index in avgSurfaceVelocity Array:	domain % blocklist % forcing % index_avgSurfaceVelocityMeridional
Location in code:	domain % blocklist % forcing % avgSurfaceVelocityMeridional
Array Group:	vel_meridional

Table B.443: avgSurfaceVelocityMeridional: Time averaged meridional surface velocity

B.7.58 avgSSHGradientZonal

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Index in avgSSHGradient Array:	domain % blocklist % forcing % index_avgSSHGradientZonal
Location in code:	domain % blocklist % forcing % avgSSHGradientZonal
Array Group:	ssh_zonal

Table B.444: avgSSHGradientZonal: Time averaged zonal gradient of SSH

B.7.59 avgSSHGradientMeridional

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Index in avgSSHGradient Array:	domain % blocklist % forcing % index_avgSSHGradientMeridional
Location in code:	domain % blocklist % forcing % avgSSHGradientMeridional
Array Group:	ssh_meridional

Table B.445: avgSSHGradientMeridional: Time averaged meridional gradient of SSH

B.7.60 filteredSSHGradientZonal

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % filteredSSHGradientZonal

Table B.446: filteredSSHGradientZonal: Time filtered zonal gradient of SSH

B.7.61 filteredSSHGradientMeridional

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % filteredSSHGradientMeridional

Table B.447: filteredSSHGradientMeridional: Time filtered meridional gradient of SSH

B.7.62 avgTotalFreshWaterTemperatureFlux

Type:	real
Units:	$\mathrm{C\,m\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgTotalFreshWaterTemperatureFlux

Table B.448: avgTotalFreshWaterTemperatureFlux: Sum of heat fluxes associated with water fluxes cell centers sent to coupler. Positive into the ocean.

B.7.63 landIceFraction

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % landIceFraction

Table B.449: landIceFraction: The fraction of each cell covered by land ice

B.7.64 landIceMask

Type:	integer
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % landIceMask

Table B.450: landIceMask: Mask indicating where land-ice is present (1) or absent (0)

B.7.65 landIceFloatingFraction

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % landIceFloatingFraction

Table B.451: landIceFloatingFraction: The fraction of each cell covered by an ice shelf

B.7.66 landIceFloatingMask

Type:	integer
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % landIceFloatingMask

Table B.452: landIceFloatingMask: Mask indicating where an ice shelf is present (1) or absent (0)

B.7.67 landIcePressure

Type:	real
Units:	Pa
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % landIcePressure

Table B.453: landIcePressure: Pressure defined at the sea surface due to land ice.

B.7.68 landIceDraft

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % landIceDraft

Table B.454: landIceDraft: The elevation of the interface between land ice and the ocean.

B.7.69 landIceSurfaceTemperature

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % landIceSurfaceTemperature

Table B.455: landIceSurfaceTemperature: temperature at the surface of land ice

B.7.70 landIceInterfaceTemperature

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in landIceInterfaceTracers Array:	domain % blocklist % forcing % index_landIceInterfaceTemperature
Location in code:	domain % blocklist % forcing % landIceInterfaceTemperature
Array Group:	landIceInterfaceValues

Table B.456: landIceInterfaceTemperature: The temperature at the land ice-ocean interface (the local freezing temperature)

B.7.71 landIceInterfaceSalinity

Type:	real
Units:	$1\,e-3$
Dimension:	nCells Time
Persistence:	persistent

Index in landIceInterfaceTracers Array:	domain % blocklist % forcing % index_landIceInterfaceSalinity
Location in code:	domain % blocklist % forcing % landIceInterfaceSalinity
Array Group:	landIceInterfaceValues

Table B.457: landIceInterfaceSalinity: The salinity at the land ice-ocean interface

B.7.72 landIceFreshwaterFlux

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % landIceFreshwaterFlux

Table B.458: landIceFreshwaterFlux: Flux of mass through the ocean surface. Positive into ocean.

B.7.73 landIceHeatFlux

Type:	real
Units:	W m$^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % landIceHeatFlux

Table B.459: landIceHeatFlux: Flux of heat into the ocean at land ice-ocean interface. Positive into ocean.

B.7.74 heatFluxToLandIce

Type:	real
Units:	W m$^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % heatFluxToLandIce

Table B.460: heatFluxToLandIce: Flux of heat out of ice at land ice-ocean interface. Positive into ocean.

B.7.75 avgLandIceBoundaryLayerTemperature

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in avgLandIceBoundaryLayerTracers Array:	domain % blocklist % forcing % index_avgLandIceBoundaryLayerTemperature
Location in code:	domain % blocklist % forcing % avgLandIceBoundaryLayerTemperature
Array Group:	landIceBoundaryLayerValues

Table B.461: avgLandIceBoundaryLayerTemperature: The time-averaged temperature averaged over the sub-ice-shelf boundary layer

B.7.76 avgLandIceBoundaryLayerSalinity

Type:	real
Units:	$1\,e-3$
Dimension:	nCells Time
Persistence:	persistent
Index in avgLandIceBoundaryLayerTracers Array:	domain % blocklist % forcing % index_avgLandIceBoundaryLayerSalinity
Location in code:	domain % blocklist % forcing % avgLandIceBoundaryLayerSalinity
Array Group:	landIceBoundaryLayerValues

Table B.462: avgLandIceBoundaryLayerSalinity: The time-averaged salinity averaged over the sub-ice-shelf boundary layer

B.7.77 avgLandIceHeatTransferVelocity

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Index in avgLandIceTracerTransferVelocities Array:	domain % blocklist % forcing % index_avgLandIceHeatTransferVelocity
Location in code:	domain % blocklist % forcing % avgLandIceHeatTransferVelocity
Array Group:	landIceTransferVelocityValues

Table B.463: avgLandIceHeatTransferVelocity: time-averaged friction velocity times nondimensional heat transfer coefficient

B.7.78 avgLandIceSaltTransferVelocity

Type:	real
Units:	m s⁻1
Dimension:	nCells Time
Persistence:	persistent
Index in avgLandIceTracerTransferVelocities Array:	domain % blocklist % forcing % index_avgLandIceSaltTransferVelocity
Location in code:	domain % blocklist % forcing % avgLandIceSaltTransferVelocity
Array Group:	landIceTransferVelocityValues

Table B.464: avgLandIceSaltTransferVelocity: time-averaged friction velocity times nondimensional salt transfer coefficient

B.7.79 avgEffectiveDensityInLandIce

Type:	real
Units:	kg m⁻3
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgEffectiveDensityInLandIce

Table B.465: avgEffectiveDensityInLandIce: The time-averaged effective ocean density within ice shelves based on Archimedes' principle.

B.7.80 dataLandIceFreshwaterFlux

Type:	real
Units:	kg m⁻2 s⁻1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % dataLandIceFreshwaterFlux

Table B.466: dataLandIceFreshwaterFlux: Flux of mass through the ocean surface, as read in from a forcing file. Positive into ocean.

B.7.81 dataLandIceHeatFlux

Type:	real
Units:	$\mathrm{W\,m^{-}2}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % dataLandIceHeatFlux

Table B.467: dataLandIceHeatFlux: Flux of heat into the ocean at land ice-ocean interface, as read in from a forcing file. Positive into ocean.

B.7.82 tidalInputMask

Type:	real
Units:	–
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalInputMask

Table B.468: tidalInputMask: Input mask for application of tidal forcing where 1 is applied tidal forcing

B.7.83 tidalBCValue

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalBCValue

Table B.469: tidalBCValue: Value of ssh height in cell for tidal boundary condition

B.7.84 vegetationHeight

Type:	real
Units:	m
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % forcing % vegetationHeight

Table B.470: vegetationHeight: Stem height of the vegetation

B.7.85 vegetationDiameter

Type:	real
Units:	m
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % forcing % vegetationDiameter

Table B.471: vegetationDiameter: Stem diameter of the vegetation

B.7.86 vegetationDensity

Type:	real
Units:	m^-2
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % forcing % vegetationDensity

Table B.472: vegetationDensity: Stem density of the vegetation per unit area

B.7.87 vegetationMask

Type:	integer
Units:	–
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % forcing % vegetationMask

Table B.473: vegetationMask: Mask value 1 as vegetated cell, and 0 as non-vegetated cell

B.7.88 vegetationManning

Type:	real
Units:	1
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % forcing % vegetationManning

Table B.474: vegetationManning: Manning roughness coefficient induced by vegetation

B.7.89 tidalLayerThicknessTendency

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalLayerThicknessTendency

Table B.475: tidalLayerThicknessTendency: layer thickness tendency due to tidal forcing

B.7.90 frazilLayerThicknessTendency

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % frazilLayerThicknessTendency

Table B.476: frazilLayerThicknessTendency: layer thickness tendency due to frazil processes

B.7.91 frazilTemperatureTendency

Type:	real
Units:	$\mathrm{m\,C\,s^{-}1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % frazilTemperatureTendency

Table B.477: frazilTemperatureTendency: temperature tendency due to frazil processes

B.7.92 frazilSalinityTendency

Type:	real
Units:	$\mathrm{m\,1\,e-3\,s^-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % frazilSalinityTendency

Table B.478: frazilSalinityTendency: salinity tendency due to frazil processes

B.7.93 frazilSurfacePressure

Type:	real
Units:	Pa
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % frazilSurfacePressure

Table B.479: frazilSurfacePressure: surface pressure forcing due to weight of frazil ice

B.7.94 tidalPotentialEta

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalPotentialEta

Table B.480: tidalPotentialEta: Equilibrium tidal potential

B.7.95 tidalPotentialConstituentFrequency

Type:	real
Units:	$\mathrm{s^-1}$

Dimension:	maxTidalConstituents Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalPotentialConstituent-Frequency

Table B.481: tidalPotentialConstituentFrequency: Frequency of tidal constituents

B.7.96 tidalPotentialConstituentAmplitude

Type:	real
Units:	m
Dimension:	maxTidalConstituents Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalPotentialConstituen-tAmplitude

Table B.482: tidalPotentialConstituentAmplitude: Amplitude of tidal constituents

B.7.97 tidalPotentialConstituentLoveNumbers

Type:	real
Units:	1
Dimension:	maxTidalConstituents Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalPotentialConstituent-LoveNumbers

Table B.483: tidalPotentialConstituentLoveNumbers: Love number combinations for tidal constituents

B.7.98 tidalPotentialConstituentNodalAmplitude

Type:	real
Units:	m
Dimension:	maxTidalConstituents Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalPotentialConstituentN-odalAmplitude

Table B.484: tidalPotentialConstituentNodalAmplitude: Amplitude nodal factor for tidal constituents

B.7.99 tidalPotentialConstituentNodalPhase

Type:	real
Units:	s⁻1
Dimension:	maxTidalConstituents Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalPotentialConstituentNodalPhase

Table B.485: tidalPotentialConstituentNodalPhase: Phase nodal factor for tidal constituents

B.7.100 tidalPotentialConstituentAstronomical

Type:	real
Units:	s⁻1
Dimension:	maxTidalConstituents Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalPotentialConstituentAstronomical

Table B.486: tidalPotentialConstituentAstronomical: Astronomical argument for tidal constituents

B.7.101 tidalPotentialConstituentType

Type:	integer
Units:	–
Dimension:	maxTidalConstituents Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalPotentialConstituentType

Table B.487: tidalPotentialConstituentType: Spieces code for tidal constituents: long-period = 0, diurnal = 1, semi-diurnal = 2

B.7.102 tidalPotentialLatitudeFunction

Type:	real
Units:	1
Dimension:	nCells R3 Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % tidalPotentialLatitudeFunction

Table B.488: tidalPotentialLatitudeFunction: Latitude function for tidal constituents: long-period $= 3\sin^2(\phi) - 1$, diurnal $= \sin(2\phi)$, semi-diurnal $= \cos^2(\phi)$

B.7.103 sshSubcycleCurWithTides

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % sshSubcycleCurWithTides

Table B.489: sshSubcycleCurWithTides: SSH - tidal potential in split explicit

B.7.104 sshSubcycleNewWithTides

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % sshSubcycleNewWithTides

Table B.490: sshSubcycleNewWithTides: SSH - tidal potential in split explicit

B.7.105 coastalSmoothingFactor

Type:	real
Units:	1
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % forcing % coastalSmoothingFactor

Table B.491: coastalSmoothingFactor: Multiplication factors to smooth ssh at coastlines for SAL caculation

B.7.106 temperatureSurfaceFlux

Type:	real
Units:	$\mathrm{C\,m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersSurfaceFlux Array:	domain % blocklist % forcing % index_temperatureSurfaceFlux
Location in code:	domain % blocklist % forcing % temperatureSurfaceFlux
Array Group:	activeTracerFluxGRP

Table B.492: temperatureSurfaceFlux: Flux of temperature through the ocean surface. Positive into ocean.

B.7.107 salinitySurfaceFlux

Type:	real
Units:	$\mathrm{1\,e-3\,m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersSurfaceFlux Array:	domain % blocklist % forcing % index_salinitySurfaceFlux
Location in code:	domain % blocklist % forcing % salinitySurfaceFlux
Array Group:	activeTracerFluxGRP

Table B.493: salinitySurfaceFlux: Flux of salinity through the ocean surface. Positive into ocean.

B.7.108 temperatureSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{C\,m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_temperatureSurfaceFluxRunoff

Location in code:	domain % blocklist % forcing % temperatureSurface-FluxRunoff
Array Group:	activeRunoffFluxGRP

Table B.494: temperatureSurfaceFluxRunoff: Flux of temperature through the ocean surface due to river runoff. Positive into ocean.

B.7.109 salinitySurfaceFluxRunoff

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{m}\,\mathrm{s}^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersSurface-FluxRunoff Array:	domain % blocklist % forcing % index_salinitySurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % salinitySurfaceFluxRunoff
Array Group:	activeRunoffFluxGRP

Table B.495: salinitySurfaceFluxRunoff: Flux of salinity through the ocean surface due to river runoff. Positive into ocean.

B.7.110 temperatureSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{C}\,\mathrm{m}\,\mathrm{s}^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersSurface-FluxRemoved Array:	domain % blocklist % forcing % index_temperatureSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % temperatureSurfaceFluxRemoved
Array Group:	activeRemovedFluxGRP

Table B.496: temperatureSurfaceFluxRemoved: Flux of temperature that is ignored coming into the ocean. Positive into ocean.

B.7.111 salinitySurfaceFluxRemoved

Type:	real

Units:	$1\,\mathrm{e}-3\,\mathrm{m}\,\mathrm{s}^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_salinitySurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % salinitySurfaceFluxRemoved
Array Group:	activeRemovedFluxGRP

Table B.497: salinitySurfaceFluxRemoved: Flux of salinity that is ignored coming into the ocean. Positive into ocean.

B.7.112 nonLocalTemperatureSurfaceFlux

Type:	real
Units:	$\mathrm{C}\,\mathrm{m}\,\mathrm{s}^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in nonLocalSurfaceTracerFlux Array:	domain % blocklist % forcing % index_nonLocalTemperatureSurfaceFlux
Location in code:	domain % blocklist % forcing % nonLocalTemperatureSurfaceFlux
Array Group:	activeNonLocalGRP

Table B.498: nonLocalTemperatureSurfaceFlux: total flux of temperature (including thickness contributions) through ocean surface

B.7.113 nonLocalSalinitySurfaceFlux

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{m}\,\mathrm{s}^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in nonLocalSurfaceTracerFlux Array:	domain % blocklist % forcing % index_nonLocalSalinitySurfaceFlux
Location in code:	domain % blocklist % forcing % nonLocalSalinitySurfaceFlux
Array Group:	activeNonLocalGRP

Table B.499: nonLocalSalinitySurfaceFlux: total flux of salinity (including thickness contributions) through ocean surface

B.7.114 temperaturePistonVelocity

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersPistonVelocity Array:	domain % blocklist % forcing % index_temperaturePistonVelocity
Location in code:	domain % blocklist % forcing % temperaturePistonVelocity
Array Group:	activeGRP

Table B.500: temperaturePistonVelocity: A non-negative field controlling the rate at which temperature is restored to temperatureSurfaceRestoringValue

B.7.115 salinityPistonVelocity

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersPistonVelocity Array:	domain % blocklist % forcing % index_salinityPistonVelocity
Location in code:	domain % blocklist % forcing % salinityPistonVelocity
Array Group:	activeGRP

Table B.501: salinityPistonVelocity: A non-negative field controlling the rate at which salinity is restored to salinitySurfaceRestoringValue

B.7.116 temperatureSurfaceRestoringValue

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_temperatureSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % temperatureSurfaceRestoringValue
Array Group:	activeGRP

Table B.502: temperatureSurfaceRestoringValue: Temperature is restored toward this field at a rate controlled by temperaturePistonVelocity.

B.7.117 salinitySurfaceRestoringValue

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_salinitySurfaceRestoringValue
Location in code:	domain % blocklist % forcing % salinitySurfaceRestoringValue
Array Group:	activeGRP

Table B.503: salinitySurfaceRestoringValue: Salinity is restored toward this field at a rate controlled by salinityPistonVelocity.

B.7.118 temperatureInteriorRestoringRate

Type:	real
Units:	$\mathrm{s}^{-}1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_temperatureInteriorRestoringRate
Location in code:	domain % blocklist % forcing % temperatureInteriorRestoringRate
Array Group:	activeGRP

Table B.504: temperatureInteriorRestoringRate: A non-negative field controlling the rate at which temperature is restored to temperatureInteriorRestoringValue

B.7.119 salinityInteriorRestoringRate

Type:	real
Units:	$\mathrm{s}^{-}1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_salinityInteriorRestoringRate
Location in code:	domain % blocklist % forcing % salinityInteriorRestoringRate
Array Group:	activeGRP

Table B.505: salinityInteriorRestoringRate: A non-negative field controlling the rate at which salinity is restored to salinityInteriorRestoringValue

B.7.120 temperatureInteriorRestoringValue

Type:	real
Units:	C
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_temperatureInteriorRestoringValue
Location in code:	domain % blocklist % forcing % temperatureInteriorRestoringValue
Array Group:	activeGRP

Table B.506: temperatureInteriorRestoringValue: Temperature is restored toward this field at a rate controlled by temperatureInteriorRestoringRate.

B.7.121 salinityInteriorRestoringValue

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in activeTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_salinityInteriorRestoringValue
Location in code:	domain % blocklist % forcing % salinityInteriorRestoringValue
Array Group:	activeGRP

Table B.507: salinityInteriorRestoringValue: Salinity is restored toward this field at a rate controlled by salinityInteriorRestoringRate.

B.7.122 temperatureExponentialDecayRate

Type:	real
Units:	s^-1
Dimension:	Time
Persistence:	persistent
Index in activeTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_temperatureExponentialDecayRate
Location in code:	domain % blocklist % forcing % temperatureExponentialDecayRate

Array Group:	activeGRP

Table B.508: temperatureExponentialDecayRate: A non-negative field controlling the exponential decay of temperature

B.7.123 salinityExponentialDecayRate

Type:	real
Units:	s
Dimension:	Time
Persistence:	persistent
Index in activeTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_salinityExponentialDecayRate
Location in code:	domain % blocklist % forcing % salinityExponentialDecayRate
Array Group:	activeGRP

Table B.509: salinityExponentialDecayRate: A non-negative field controlling the exponential decay of salinity

B.7.124 temperatureIdealAgeMask

Type:	real
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersIdealAgeMask Array:	domain % blocklist % forcing % index_temperatureIdealAgeMask
Location in code:	domain % blocklist % forcing % temperatureIdealAgeMask
Array Group:	activeGRP

Table B.510: temperatureIdealAgeMask: In top layer, temperature is reset to temperature * temperatureIdealAgeMask, valid values of temperatureIdealAgeMask or 0 and 1

B.7.125 salinityIdealAgeMask

Type:	real
Units:	–
Dimension:	nCells Time

Persistence:	persistent
Index in activeTracersIdealAgeMask Array:	domain % blocklist % forcing % index_salinityIdealAgeMask
Location in code:	domain % blocklist % forcing % salinityIdealAgeMask
Array Group:	activeGRP

Table B.511: salinityIdealAgeMask: In top layer, salinity is reset to salinity * salinityIdealAgeMask, valid values of salinityIdealAgeMask or 0 and 1

B.7.126 temperatureTTDMask

Type:	real
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersTTDMask Array:	domain % blocklist % forcing % index_temperatureTTDMask
Location in code:	domain % blocklist % forcing % temperatureTTDMask
Array Group:	activeGRP

Table B.512: temperatureTTDMask: In top layer, temperature is reset to TTDMask, valid values of temperatureTTDMask or 0 and 1

B.7.127 salinityTTDMask

Type:	real
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersTTDMask Array:	domain % blocklist % forcing % index_salinityTTDMask
Location in code:	domain % blocklist % forcing % salinityTTDMask
Array Group:	activeGRP

Table B.513: salinityTTDMask: In top layer, salinity is reset to salinityTTDMask, valid values of salinityTTDMask or 0 and 1

B.7.128 tracer1SurfaceFlux

Type:	real

Units:	$m s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceFlux Array:	domain % blocklist % forcing % index_tracer1SurfaceFlux
Location in code:	domain % blocklist % forcing % tracer1SurfaceFlux
Array Group:	debugTracerFluxGRP

Table B.514: tracer1SurfaceFlux: Flux of tracer1 through the ocean surface. Positive into ocean.

B.7.129 tracer2SurfaceFlux

Type:	real
Units:	$m s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceFlux Array:	domain % blocklist % forcing % index_tracer2SurfaceFlux
Location in code:	domain % blocklist % forcing % tracer2SurfaceFlux
Array Group:	debugTracerFluxGRP

Table B.515: tracer2SurfaceFlux: Flux of tracer2 through the ocean surface. Positive into ocean.

B.7.130 tracer3SurfaceFlux

Type:	real
Units:	$m s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceFlux Array:	domain % blocklist % forcing % index_tracer3SurfaceFlux
Location in code:	domain % blocklist % forcing % tracer3SurfaceFlux
Array Group:	debugTracerFluxGRP

Table B.516: tracer3SurfaceFlux: Flux of tracer3 through the ocean surface. Positive into ocean.

B.7.131 tracer1SurfaceFluxRunoff

Type:	real

Units:	$m\,s^{-}1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_tracer1SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % tracer1SurfaceFluxRunoff
Array Group:	debugRunoffFluxGRP

Table B.517: tracer1SurfaceFluxRunoff: Flux of tracer1 through the ocean surface due to river runoff. Positive into ocean.

B.7.132 tracer2SurfaceFluxRunoff

Type:	real
Units:	$m\,s^{-}1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_tracer2SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % tracer2SurfaceFluxRunoff
Array Group:	debugRunoffFluxGRP

Table B.518: tracer2SurfaceFluxRunoff: Flux of tracer2 through the ocean surface due to river runoff. Positive into ocean.

B.7.133 tracer3SurfaceFluxRunoff

Type:	real
Units:	$m\,s^{-}1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_tracer3SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % tracer3SurfaceFluxRunoff
Array Group:	debugRunoffFluxGRP

Table B.519: tracer3SurfaceFluxRunoff: Flux of tracer3 through the ocean surface due to river runoff. Positive into ocean.

B.7.134 tracer1SurfaceFluxRemoved

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_tracer1SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % tracer1SurfaceFluxRemoved
Array Group:	debugRemovedFluxGRP

Table B.520: tracer1SurfaceFluxRemoved: Flux of tracer1 that is ignored coming into the ocean. Positive into ocean.

B.7.135 tracer2SurfaceFluxRemoved

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_tracer2SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % tracer2SurfaceFluxRemoved
Array Group:	debugRemovedFluxGRP

Table B.521: tracer2SurfaceFluxRemoved: Flux of tracer2 that is ignored coming into the ocean. Positive into ocean.

B.7.136 tracer3SurfaceFluxRemoved

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_tracer3SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % tracer3SurfaceFluxRemoved
Array Group:	debugRemovedFluxGRP

Table B.522: tracer3SurfaceFluxRemoved: Flux of tracer3 that is ignored coming into the ocean. Positive into ocean.

B.7.137 tracer1PistonVelocity

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersPiston-Velocity Array:	domain % blocklist % forcing % index_tracer1PistonVelocity
Location in code:	domain % blocklist % forcing % tracer1PistonVelocity
Array Group:	debugGRP

Table B.523: tracer1PistonVelocity: A non-negative field controlling the rate at which tracer1 is restored to tracer1SurfaceRestoringValue

B.7.138 tracer2PistonVelocity

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersPiston-Velocity Array:	domain % blocklist % forcing % index_tracer2PistonVelocity
Location in code:	domain % blocklist % forcing % tracer2PistonVelocity
Array Group:	debugGRP

Table B.524: tracer2PistonVelocity: A non-negative field controlling the rate at which tracer2 is restored to tracer2SurfaceRestoringValue

B.7.139 tracer3PistonVelocity

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersPiston-Velocity Array:	domain % blocklist % forcing % index_tracer3PistonVelocity
Location in code:	domain % blocklist % forcing % tracer3PistonVelocity
Array Group:	debugGRP

Table B.525: tracer3PistonVelocity: A non-negative field controlling the rate at which tracer3 is restored to tracer3SurfaceRestoringValue

B.7.140 tracer1SurfaceRestoringValue

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_tracer1SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % tracer1SurfaceRestoringValue
Array Group:	debugGRP

Table B.526: tracer1SurfaceRestoringValue: tracer1 is restored toward this field at a rate controlled by tracer1PistonVelocity.

B.7.141 tracer2SurfaceRestoringValue

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_tracer2SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % tracer2SurfaceRestoringValue
Array Group:	debugGRP

Table B.527: tracer2SurfaceRestoringValue: tracer2 is restored toward this field at a rate controlled by tracer2PistonVelocity.

B.7.142 tracer3SurfaceRestoringValue

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_tracer3SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % tracer3SurfaceRestoringValue
Array Group:	debugGRP

Table B.528: tracer3SurfaceRestoringValue: tracer3 is restored toward this field at a rate controlled by tracer3PistonVelocity.

B.7.143 tracer1InteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in debugTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_tracer1InteriorRestoringRate
Location in code:	domain % blocklist % forcing % tracer1InteriorRestoringRate
Array Group:	debugGRP

Table B.529: tracer1InteriorRestoringRate: A non-negative field controlling the rate at which tracer1 is restored to tracer1InteriorRestoringValue

B.7.144 tracer2InteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in debugTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_tracer2InteriorRestoringRate
Location in code:	domain % blocklist % forcing % tracer2InteriorRestoringRate
Array Group:	debugGRP

Table B.530: tracer2InteriorRestoringRate: A non-negative field controlling the rate at which tracer2 is restored to tracer2InteriorRestoringValue

B.7.145 tracer3InteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent

Index in debugTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_tracer3InteriorRestoringRate
Location in code:	domain % blocklist % forcing % tracer3InteriorRestoringRate
Array Group:	debugGRP

Table B.531: tracer3InteriorRestoringRate: A non-negative field controlling the rate at which tracer3 is restored to tracer3InteriorRestoringValue

B.7.146 tracer1InteriorRestoringValue

Type:	real
Units:	C
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in debugTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_tracer1InteriorRestoringValue
Location in code:	domain % blocklist % forcing % tracer1InteriorRestoringValue
Array Group:	debugGRP

Table B.532: tracer1InteriorRestoringValue: tracer1 is restored toward this field at a rate controlled by tracer1InteriorRestoringRate.

B.7.147 tracer2InteriorRestoringValue

Type:	real
Units:	C
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in debugTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_tracer2InteriorRestoringValue
Location in code:	domain % blocklist % forcing % tracer2InteriorRestoringValue
Array Group:	debugGRP

Table B.533: tracer2InteriorRestoringValue: tracer2 is restored toward this field at a rate controlled by tracer2InteriorRestoringRate.

B.7.148 tracer3InteriorRestoringValue

Type:	real
Units:	C
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in debugTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_tracer3InteriorRestoringValue
Location in code:	domain % blocklist % forcing % tracer3InteriorRestoringValue
Array Group:	debugGRP

Table B.534: tracer3InteriorRestoringValue: tracer3 is restored toward this field at a rate controlled by tracer3InteriorRestoringRate.

B.7.149 tracer1ExponentialDecayRate

Type:	real
Units:	s⁻1
Dimension:	Time
Persistence:	persistent
Index in debugTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_tracer1ExponentialDecayRate
Location in code:	domain % blocklist % forcing % tracer1ExponentialDecayRate
Array Group:	debugGRP

Table B.535: tracer1ExponentialDecayRate: A non-negative field controlling the exponential decay of tracer1

B.7.150 tracer2ExponentialDecayRate

Type:	real
Units:	s⁻1
Dimension:	Time
Persistence:	persistent
Index in debugTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_tracer2ExponentialDecayRate
Location in code:	domain % blocklist % forcing % tracer2ExponentialDecayRate
Array Group:	debugGRP

Table B.536: tracer2ExponentialDecayRate: A non-negative field controlling the exponential decay of tracer2

B.7.151 tracer3ExponentialDecayRate

Type:	real
Units:	s^-1
Dimension:	Time
Persistence:	persistent
Index in debugTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_tracer3ExponentialDecayRate
Location in code:	domain % blocklist % forcing % tracer3ExponentialDecayRate
Array Group:	debugGRP

Table B.537: tracer3ExponentialDecayRate: A non-negative field controlling the exponential decay of tracer3

B.7.152 tracer1IdealAgeMask

Type:	real
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersIdealAgeMask Array:	domain % blocklist % forcing % index_tracer1IdealAgeMask
Location in code:	domain % blocklist % forcing % tracer1IdealAgeMask
Array Group:	debugGRP

Table B.538: tracer1IdealAgeMask: In top layer, tracer1 is reset to tracer1 * tracer1IdealAgeMask, valid values of tracer1IdealAgeMask or 0 and 1

B.7.153 tracer2IdealAgeMask

Type:	real
Units:	–
Dimension:	nCells Time
Persistence:	persistent

Index in debugTracersIdealAgeMask Array:	domain % blocklist % forcing % index_tracer2IdealAgeMask
Location in code:	domain % blocklist % forcing % tracer2IdealAgeMask
Array Group:	debugGRP

Table B.539: tracer2IdealAgeMask: In top layer, tracer2 is reset to tracer2 * tracer2IdealAgeMask, valid values of tracer2IdealAgeMask or 0 and 1

B.7.154 tracer3IdealAgeMask

Type:	real
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersIdealAgeMask Array:	domain % blocklist % forcing % index_tracer3IdealAgeMask
Location in code:	domain % blocklist % forcing % tracer3IdealAgeMask
Array Group:	debugGRP

Table B.540: tracer3IdealAgeMask: In top layer, tracer3 is reset to tracer3 * tracer3IdealAgeMask, valid values of tracer3IdealAgeMask or 0 and 1

B.7.155 tracer1TTDMask

Type:	real
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersTTDMask Array:	domain % blocklist % forcing % index_tracer1TTDMask
Location in code:	domain % blocklist % forcing % tracer1TTDMask
Array Group:	debugGRP

Table B.541: tracer1TTDMask: In top layer, tracer1 is reset to TTDMask, valid values of tracer1TTDMask or 0 and 1

B.7.156 tracer2TTDMask

Type:	real
Units:	–

Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersTTD-Mask Array:	domain % blocklist % forcing % index_tracer2TTDMask
Location in code:	domain % blocklist % forcing % tracer2TTDMask
Array Group:	debugGRP

Table B.542: tracer2TTDMask: In top layer, tracer2 is reset to TTDMask, valid values of tracer2TTDMask or 0 and 1

B.7.157 tracer3TTDMask

Type:	real
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Index in debugTracersTTD-Mask Array:	domain % blocklist % forcing % index_tracer3TTDMask
Location in code:	domain % blocklist % forcing % tracer3TTDMask
Array Group:	debugGRP

Table B.543: tracer3TTDMask: In top layer, tracer3 is reset to TTDMask, valid values of tracer3TTDMask or 0 and 1

B.7.158 PO4SurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_PO4SurfaceFlux
Location in code:	domain % blocklist % forcing % PO4SurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.544: PO4SurfaceFlux: Dissolved Inorganic Phosphate Surface Flux

B.7.159 NO3SurfaceFlux

Type:	real
Units:	$\text{mmol N m}^{-3}\text{ m s}^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_NO3SurfaceFlux
Location in code:	domain % blocklist % forcing % NO3SurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.545: NO3SurfaceFlux: Dissolved Inorganic Nitrate Surface Flux

B.7.160 SiO3SurfaceFlux

Type:	real
Units:	$\text{mmol Si m}^{-3}\text{ m s}^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_SiO3SurfaceFlux
Location in code:	domain % blocklist % forcing % SiO3SurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.546: SiO3SurfaceFlux: Dissolved Inorganic Silicate Surface Flux

B.7.161 NH4SurfaceFlux

Type:	real
Units:	$\text{mmol N m}^{-3}\text{ m s}^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_NH4SurfaceFlux
Location in code:	domain % blocklist % forcing % NH4SurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.547: NH4SurfaceFlux: Dissolved Ammonia Surface Flux

B.7.162 FeSurfaceFlux

Type:	real
Units:	mmol Fe m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_FeSurfaceFlux
Location in code:	domain % blocklist % forcing % FeSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.548: FeSurfaceFlux: Dissolved Inorganic Iron Surface Flux

B.7.163 LigSurfaceFlux

Type:	real
Units:	mmol m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_LigSurfaceFlux
Location in code:	domain % blocklist % forcing % LigSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.549: LigSurfaceFlux: Ligand Surface Flux

B.7.164 O2SurfaceFlux

Type:	real
Units:	mmol O2 m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_O2SurfaceFlux
Location in code:	domain % blocklist % forcing % O2SurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.550: O2SurfaceFlux: Dissolved Oxygen Surface Flux

B.7.165 DICSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_DICSurfaceFlux
Location in code:	domain % blocklist % forcing % DICSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.551: DICSurfaceFlux: Dissolved Inorganic Carbon Surface Flux

B.7.166 DIC_ALT_CO2SurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_DIC_ALT_CO2SurfaceFlux
Location in code:	domain % blocklist % forcing % DIC_ALT_CO2SurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.552: DIC_ALT_CO2SurfaceFlux: Dissolved Inorganic Carbon, Alternative CO2 Surface Flux

B.7.167 ALKSurfaceFlux

Type:	real
Units:	$\mathrm{meq\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_ALKSurfaceFlux
Location in code:	domain % blocklist % forcing % ALKSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.553: ALKSurfaceFlux: Alkalinity Surface Flux

B.7.168 ALK_ALT_CO2SurfaceFlux

Type:	real
Units:	$\mathrm{meq\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_ALK_ALT_CO2SurfaceFlux
Location in code:	domain % blocklist % forcing % ALK_ALT_CO2SurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.554: ALK_ALT_CO2SurfaceFlux: Alkalinity Surface Flux, Alternative CO2

B.7.169 DOCSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_DOCSurfaceFlux
Location in code:	domain % blocklist % forcing % DOCSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.555: DOCSurfaceFlux: Dissolved Organic Carbon Surface Flux

B.7.170 DONSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_DONSurfaceFlux
Location in code:	domain % blocklist % forcing % DONSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.556: DONSurfaceFlux: Dissolved Organic Nitrogen Surface Flux

B.7.171 DOPSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_DOPSurfaceFlux
Location in code:	domain % blocklist % forcing % DOPSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.557: DOPSurfaceFlux: Dissolved Organic Phosphorus Surface Flux

B.7.172 DOPrSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_DOPrSurfaceFlux
Location in code:	domain % blocklist % forcing % DOPrSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.558: DOPrSurfaceFlux: Refractory DOP Surface Flux

B.7.173 DONrSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_DONrSurfaceFlux
Location in code:	domain % blocklist % forcing % DONrSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.559: DONrSurfaceFlux: Refractory DON Surface Flux

B.7.174 DOCrSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_DOCrSurfaceFlux
Location in code:	domain % blocklist % forcing % DOCrSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.560: DOCrSurfaceFlux: Zooplankton Carbon Surface Flux

B.7.175 zooCSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_zooCSurfaceFlux
Location in code:	domain % blocklist % forcing % zooCSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.561: zooCSurfaceFlux: Zooplankton Carbon Surface Flux

B.7.176 spChlSurfaceFlux

Type:	real
Units:	$\mathrm{mg\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_spChlSurfaceFlux
Location in code:	domain % blocklist % forcing % spChlSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.562: spChlSurfaceFlux: Small Phytoplankton Chlorophyll Surface Flux

B.7.177 spCSurfaceFlux

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_spCSurfaceFlux
Location in code:	domain % blocklist % forcing % spCSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.563: spCSurfaceFlux: Small Phytoplankton Carbon Surface Flux

B.7.178 spFeSurfaceFlux

Type:	real
Units:	mmol Fe m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_spFeSurfaceFlux
Location in code:	domain % blocklist % forcing % spFeSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.564: spFeSurfaceFlux: Small Phytoplankton Iron Surface Flux

B.7.179 spPSurfaceFlux

Type:	real
Units:	mmol P m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_spPSurfaceFlux
Location in code:	domain % blocklist % forcing % spPSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.565: spPSurfaceFlux: Small Phytoplankton Phosphorus Surface Flux

B.7.180 spCaCO3SurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_spCaCO3SurfaceFlux
Location in code:	domain % blocklist % forcing % spCaCO3SurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.566: spCaCO3SurfaceFlux: Small Phytoplankton Calcium Carbonate Surface Flux

B.7.181 diatChlSurfaceFlux

Type:	real
Units:	$\mathrm{mg\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_diatChlSurfaceFlux
Location in code:	domain % blocklist % forcing % diatChlSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.567: diatChlSurfaceFlux: Diatom Chlorophyll Surface Flux

B.7.182 diatCSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_diatCSurfaceFlux
Location in code:	domain % blocklist % forcing % diatCSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.568: diatCSurfaceFlux: Diatom Carbon Surface Flux

B.7.183 diatFeSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_diatFeSurfaceFlux
Location in code:	domain % blocklist % forcing % diatFeSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.569: diatFeSurfaceFlux: Diatom Iron Surface Flux

B.7.184 diatPSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_diatPSurfaceFlux
Location in code:	domain % blocklist % forcing % diatPSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.570: diatPSurfaceFlux: Diatom Phosphorus Surface Flux

B.7.185 diatSiSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurface-Flux Array:	domain % blocklist % forcing % index_diatSiSurfaceFlux
Location in code:	domain % blocklist % forcing % diatSiSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.571: diatSiSurfaceFlux: Diatom Silicate Surface Flux

B.7.186 diazChlSurfaceFlux

Type:	real
Units:	$mg\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_diazChlSurfaceFlux
Location in code:	domain % blocklist % forcing % diazChlSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.572: diazChlSurfaceFlux: Diazotroph Chlorophyll Surface Flux

B.7.187 diazCSurfaceFlux

Type:	real
Units:	$mmol\,C\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_diazCSurfaceFlux
Location in code:	domain % blocklist % forcing % diazCSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.573: diazCSurfaceFlux: Diazotroph Carbon Surface Flux

B.7.188 diazFeSurfaceFlux

Type:	real
Units:	$mmol\,Fe\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_diazFeSurfaceFlux
Location in code:	domain % blocklist % forcing % diazFeSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.574: diazFeSurfaceFlux: Diazotroph Iron Surface Flux

B.7.189 diazPSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFlux Array:	domain % blocklist % forcing % index_diazPSurfaceFlux
Location in code:	domain % blocklist % forcing % diazPSurfaceFlux
Array Group:	ecosysSurfaceFluxGRP

Table B.575: diazPSurfaceFlux: Diazotroph Phosphorus Surface Flux

B.7.190 PO4SurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_PO4SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % PO4SurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.576: PO4SurfaceFluxRunoff: Dissolved Inorganic Phosphate Surface Flux Due to Runoff

B.7.191 NO3SurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_NO3SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % NO3SurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.577: NO3SurfaceFluxRunoff: Dissolved Inorganic Nitrate Surface Flux Due to Runoff

B.7.192 SiO3SurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_SiO3SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % SiO3SurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.578: SiO3SurfaceFluxRunoff: Dissolved Inorganic Silicate Surface Flux Due to Runoff

B.7.193 NH4SurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_NH4SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % NH4SurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.579: NH4SurfaceFluxRunoff: Dissolved Ammonia Surface Flux Due to Runoff

B.7.194 FeSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_FeSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % FeSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffSurfaceFluxRunoffGRP

Table B.580: FeSurfaceFluxRunoff: Dissolved Inorganic Iron Surface Flux Due to Runoff

B.7.195 LigSurfaceFluxRunoff

Type:	real
Units:	mmol m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_LigSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % LigSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.581: LigSurfaceFluxRunoff: Ligand Surface Flux Due to Runoff

B.7.196 O2SurfaceFluxRunoff

Type:	real
Units:	mmol O2 m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_O2SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % O2SurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.582: O2SurfaceFluxRunoff: Dissolved Oxygen Surface Flux Due to Runoff

B.7.197 DICSurfaceFluxRunoff

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_DICSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % DICSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.583: DICSurfaceFluxRunoff: Dissolved Inorganic Carbon Surface Flux Due to Runoff

B.7.198 DIC_ALT_CO2SurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_DIC_ALT_CO2SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % DIC_ALT_CO2SurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.584: DIC_ALT_CO2SurfaceFluxRunoff: Dissolved Inorganic Carbon, Alternative CO2 Surface Flux Due to Runoff

B.7.199 ALKSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{meq\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_ALKSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % ALKSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.585: ALKSurfaceFluxRunoff: Alkalinity Surface Flux Due to Runoff

B.7.200 ALK_ALT_CO2SurfaceFluxRunoff

Type:	real
Units:	$\mathrm{meq\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_ALK_ALT_CO2SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % ALK_ALT_CO2SurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.586: ALK_ALT_CO2SurfaceFluxRunoff: Alkalinity Surface Flux Due to Runoff, Alternative CO2

B.7.201 DOCSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_DOCSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % DOCSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.587: DOCSurfaceFluxRunoff: Dissolved Organic Carbon Surface Flux Due to Runoff

B.7.202 DONSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_DONSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % DONSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.588: DONSurfaceFluxRunoff: Dissolved Organic Nitrogen Surface Flux Due to Runoff

B.7.203 DOPSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_DOPSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % DOPSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.589: DOPSurfaceFluxRunoff: Dissolved Organic Phosphorus Surface Flux Due to Runoff

B.7.204 DOPrSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_DOPrSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % DOPrSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.590: DOPrSurfaceFluxRunoff: Refractory DOP Surface Flux Due to Runoff

B.7.205 DONrSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_DONrSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % DONrSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.591: DONrSurfaceFluxRunoff: Refractory DON Surface Flux Due to Runoff

B.7.206 DOCrSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_DOCrSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % DOCrSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.592: DOCrSurfaceFluxRunoff: Zooplankton Carbon Surface Flux Due to Runoff

B.7.207 zooCSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_zooCSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % zooCSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.593: zooCSurfaceFluxRunoff: Zooplankton Carbon Surface Flux Due to Runoff

B.7.208 spChlSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mg\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_spChlSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % spChlSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.594: spChlSurfaceFluxRunoff: Small Phytoplankton Chlorophyll Surface Flux Due to Runoff

B.7.209 spCSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_spCSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % spCSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.595: spCSurfaceFluxRunoff: Small Phytoplankton Carbon Surface Flux Due to Runoff

B.7.210 spFeSurfaceFluxRunoff

Type:	real
Units:	mmol Fe m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_spFeSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % spFeSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.596: spFeSurfaceFluxRunoff: Small Phytoplankton Iron Surface Flux Due to Runoff

B.7.211 spPSurfaceFluxRunoff

Type:	real
Units:	mmol P m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_spPSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % spPSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.597: spPSurfaceFluxRunoff: Small Phytoplankton Phosphorus Surface Flux Due to Runoff

B.7.212 spCaCO3SurfaceFluxRunoff

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_spCaCO3SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % spCaCO3SurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.598: spCaCO3SurfaceFluxRunoff: Small Phytoplankton Calcium Carbonate Surface Flux Due to Runoff

B.7.213 diatChlSurfaceFluxRunoff

Type:	real
Units:	$mg\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_diatChlSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % diatChlSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.599: diatChlSurfaceFluxRunoff: Diatom Chlorophyll Surface Flux Due to Runoff

B.7.214 diatCSurfaceFluxRunoff

Type:	real
Units:	$mmol\,C\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_diatCSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % diatCSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.600: diatCSurfaceFluxRunoff: Diatom Carbon Surface Flux Due to Runoff

B.7.215 diatFeSurfaceFluxRunoff

Type:	real
Units:	$mmol\,Fe\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_diatFeSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % diatFeSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.601: diatFeSurfaceFluxRunoff: Diatom Iron Surface Flux Due to Runoff

B.7.216 diatPSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_diatPSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % diatPSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.602: diatPSurfaceFluxRunoff: Diatom Phosphorus Surface Flux Due to Runoff

B.7.217 diatSiSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_diatSiSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % diatSiSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.603: diatSiSurfaceFluxRunoff: Diatom Silicate Surface Flux Due to Runoff

B.7.218 diazChlSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mg\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_diazChlSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % diazChlSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.604: diazChlSurfaceFluxRunoff: Diazotroph Chlorophyll Surface Flux Due to Runoff

B.7.219 diazCSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_diazCSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % diazCSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.605: diazCSurfaceFluxRunoff: Diazotroph Carbon Surface Flux Due to Runoff

B.7.220 diazFeSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_diazFeSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % diazFeSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.606: diazFeSurfaceFluxRunoff: Diazotroph Iron Surface Flux Due to Runoff

B.7.221 diazPSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_diazPSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % diazPSurfaceFluxRunoff
Array Group:	ecosysSurfaceFluxRunoffGRP

Table B.607: diazPSurfaceFluxRunoff: Diazotroph Phosphorus Surface Flux Due to Runoff

B.7.222 PO4SurfaceFluxRemoved

Type:	real
Units:	mmol P m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_PO4SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % PO4SurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.608: PO4SurfaceFluxRemoved: Dissolved Inorganic Phosphate Surface Flux that is ignored

B.7.223 NO3SurfaceFluxRemoved

Type:	real
Units:	mmol N m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_NO3SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % NO3SurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.609: NO3SurfaceFluxRemoved: Dissolved Inorganic Nitrate Surface Flux that is ignored

B.7.224 SiO3SurfaceFluxRemoved

Type:	real
Units:	mmol Si m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_SiO3SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % SiO3SurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.610: SiO3SurfaceFluxRemoved: Dissolved Inorganic Silicate Surface Flux that is ignored

B.7.225 NH4SurfaceFluxRemoved

Type:	real
Units:	mmol N m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_NH4SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % NH4SurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.611: NH4SurfaceFluxRemoved: Dissolved Ammonia Surface Flux that is ignored

B.7.226 FeSurfaceFluxRemoved

Type:	real
Units:	mmol Fe m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_FeSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % FeSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.612: FeSurfaceFluxRemoved: Dissolved Inorganic Iron Surface Flux that is ignored

B.7.227 LigSurfaceFluxRemoved

Type:	real
Units:	mmol m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_LigSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % LigSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.613: LigSurfaceFluxRemoved: Dissolved Oxygen Surface Flux that is ignored

B.7.228 O2SurfaceFluxRemoved

Type:	real
Units:	mmol O2 m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_O2SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % O2SurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.614: O2SurfaceFluxRemoved: Dissolved Oxygen Surface Flux that is ignored

B.7.229 DICSurfaceFluxRemoved

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_DICSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % DICSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.615: DICSurfaceFluxRemoved: Dissolved Inorganic Carbon Surface Flux that is ignored

B.7.230 DIC_ALT_CO2SurfaceFluxRemoved

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_DIC_ALT_CO2SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % DIC_ALT_CO2SurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.616: DIC_ALT_CO2SurfaceFluxRemoved: Dissolved Inorganic Carbon, Alternative CO2 Surface Flux that is ignored

B.7.231 ALKSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{meq\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_ALKSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % ALKSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.617: ALKSurfaceFluxRemoved: Alkalinity Surface Flux that is ignored

B.7.232 ALK_ALT_CO2SurfaceFluxRemoved

Type:	real
Units:	$\mathrm{meq\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_ALK_ALT_CO2SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % ALK_ALT_CO2SurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.618: ALK_ALT_CO2SurfaceFluxRemoved: Alkalinity Surface Flux that is ignored, Alternative CO2

B.7.233 DOCSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_DOCSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % DOCSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.619: DOCSurfaceFluxRemoved: Dissolved Organic Carbon Surface Flux that is ignored

B.7.234 DONSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_DONSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % DONSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.620: DONSurfaceFluxRemoved: Dissolved Organic Nitrogen Surface Flux that is ignored

B.7.235 DOPSurfaceFluxFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_DOPSurfaceFluxFluxRemoved
Location in code:	domain % blocklist % forcing % DOPSurfaceFluxFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.621: DOPSurfaceFluxFluxRemoved: Dissolved Organic Phosphorus Surface Flux that is ignored

B.7.236 DOPrSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_DOPrSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % DOPrSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.622: DOPrSurfaceFluxRemoved: Refractory DOP Surface Flux that is ignored

B.7.237 DONrSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_DONrSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % DONrSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.623: DONrSurfaceFluxRemoved: Refractory DON Surface Flux that is ignored

B.7.238 DOCrSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_DOCrSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % DOCrSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.624: DOCrSurfaceFluxRemoved: Refractory DOC Surface Flux that is ignored

B.7.239 zooCSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_zooCSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % zooCSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.625: zooCSurfaceFluxRemoved: Zooplankton Carbon Surface Flux that is ignored

B.7.240 spChlSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mg\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_spChlSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % spChlSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.626: spChlSurfaceFluxRemoved: Small Phytoplankton Chlorophyll Surface Flux that is ignored

B.7.241 spCSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_spCSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % spCSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.627: spCSurfaceFluxRemoved: Small Phytoplankton Carbon Surface Flux that is ignored

B.7.242 spFeSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_spFeSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % spFeSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.628: spFeSurfaceFluxRemoved: Small Phytoplankton Iron Surface Flux that is ignored

B.7.243 spPSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_spPSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % spPSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.629: spPSurfaceFluxRemoved: Small Phytoplankton Phosphorus Surface Flux that is ignored

B.7.244 spCaCO3SurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_spCaCO3SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % spCaCO3SurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.630: spCaCO3SurfaceFluxRemoved: Small Phytoplankton Calcium Carbonate Surface Flux that is ignored

B.7.245 diatChlSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mg\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_diatChlSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % diatChlSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.631: diatChlSurfaceFluxRemoved: Diatom Chlorophyll Surface Flux that is ignored

B.7.246 diatCSurfaceFluxRemoved

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_diatCSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % diatCSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.632: diatCSurfaceFluxRemoved: Diatom Carbon Surface Flux that is ignored

B.7.247 diatFeSurfaceFluxRemoved

Type:	real
Units:	mmol Fe m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_diatFeSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % diatFeSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.633: diatFeSurfaceFluxRemoved: Diatom Iron Surface Flux that is ignored

B.7.248 diatPSurfaceFluxRemoved

Type:	real
Units:	mmol P m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_diatPSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % diatPSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.634: diatPSurfaceFluxRemoved: Diatom Phosphorus Surface Flux that is ignored

B.7.249 diatSiSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_diatSiSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % diatSiSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.635: diatSiSurfaceFluxRemoved: Diatom Silicate Surface Flux that is ignored

B.7.250 diazChlSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mg\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_diazChlSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % diazChlSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.636: diazChlSurfaceFluxRemoved: Diazotroph Chlorophyll Surface Flux that is ignored

B.7.251 diazCSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_diazCSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % diazCSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.637: diazCSurfaceFluxRemoved: Diazotroph Carbon Surface Flux that is ignored

B.7.252 diazFeSurfaceFluxRemoved

Type:	real
Units:	mmol Fe m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_diazFeSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % diazFeSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.638: diazFeSurfaceFluxRemoved: Diazotroph Iron Surface Flux that is ignored

B.7.253 diazPSurfaceFluxRemoved

Type:	real
Units:	mmol P m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_diazPSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % diazPSurfaceFluxRemoved
Array Group:	ecosysSurfaceFluxRemovedGRP

Table B.639: diazPSurfaceFluxRemoved: Diazotroph Phosphorus Surface Flux that is ignored

B.7.254 PH_PREV_3D

Type:	real
Units:	pH
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % PH_PREV_3D

Table B.640: PH_PREV_3D: pH (3D) from previous timestep

B.7.255 PH_PREV_ALT_CO2_3D

Type:	real
Units:	pH

Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % PH_PREV_ALT_CO2_3D

Table B.641: PH_PREV_ALT_CO2_3D: pH (3D) of alternate CO2 from previous timestep

B.7.256 FESEDFLUX

Type:	real
Units:	mmol Fe m^{-3} m s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % FESEDFLUX

Table B.642: FESEDFLUX: Sedimentary Fe Flux

B.7.257 dust_FLUX_IN

Type:	real
Units:	kg m^{-2} s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % dust_FLUX_IN

Table B.643: dust_FLUX_IN: Surface Dust Flux

B.7.258 IRON_FLUX_IN

Type:	real
Units:	mmol Fe m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % IRON_FLUX_IN

Table B.644: IRON_FLUX_IN: Surface Fe Flux

B.7.259 PAR_surface

Type:	real
Units:	TEMP or Watts m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % PAR_surface

Table B.645: PAR_surface: Photosynthetically Available Radiation at Ocean Surface

B.7.260 windSpeedSquared10m

Type:	real
Units:	$m^2 s^{-2}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % windSpeedSquared10m

Table B.646: windSpeedSquared10m: Wind Speed at 10m Squared

B.7.261 atmosphericCO2

Type:	real
Units:	ppm
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % atmosphericCO2

Table B.647: atmosphericCO2: Atmospheric CO2 Concentration

B.7.262 atmosphericCO2_ALT_CO2

Type:	real
Units:	ppm
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % atmosphericCO2_ALT_CO2

Table B.648: atmosphericCO2_ALT_CO2: Atmospheric CO2 Concentration for Alternate CO2

B.7.263 PH_PREV

Type:	real
Units:	pH
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % PH_PREV

Table B.649: PH_PREV: pH (2D) from previous timestep

B.7.264 PH_PREV_ALT_CO2

Type:	real
Units:	pH
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % PH_PREV_ALT_CO2

Table B.650: PH_PREV_ALT_CO2: pH (2D) of alternate CO2 from previous timestep

B.7.265 depositionFluxNO3

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % depositionFluxNO3

Table B.651: depositionFluxNO3: Atmospheric Deposition of NO3

B.7.266 depositionFluxNH4

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % depositionFluxNH4

Table B.652: depositionFluxNH4: Atmospheric Deposition of NH4

B.7.267 pocToSed

Type:	real
Units:	$\mathrm{nmol\,cm^{-2}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % pocToSed

Table B.653: pocToSed: Flux of POC into bottom sediments

B.7.268 riverFluxNO3

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % riverFluxNO3

Table B.654: riverFluxNO3: River Runoff Flux of NO3

B.7.269 riverFluxPO4

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % riverFluxPO4

Table B.655: riverFluxPO4: River Runoff Flux of PO4

B.7.270 riverFluxSiO3

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % riverFluxSiO3

Table B.656: riverFluxSiO3: River Runoff Flux of SiO3

B.7.271 riverFluxFe

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % riverFluxFe

Table B.657: riverFluxFe: River Runoff Flux of Fe

B.7.272 riverFluxDOC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % riverFluxDOC

Table B.658: riverFluxDOC: River Runoff Flux of DOC

B.7.273 riverFluxDON

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % riverFluxDON

Table B.659: riverFluxDON: River Runoff Flux of DON

B.7.274 riverFluxDOP

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % riverFluxDOP

Table B.660: riverFluxDOP: River Runoff Flux of DOP

B.7.275 riverFluxDIC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % riverFluxDIC

Table B.661: riverFluxDIC: River Runoff Flux of DIC

B.7.276 riverFluxALK

Type:	real
Units:	$\mathrm{meq\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % riverFluxALK

Table B.662: riverFluxALK: River Runoff Flux of ALK

B.7.277 CO2_gas_flux

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CO2_gas_flux

Table B.663: CO2_gas_flux: CO2 Gas Flux

B.7.278 CO2_alt_gas_flux

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CO2_alt_gas_flux

Table B.664: CO2_alt_gas_flux: CO2 Gas Flux for Alternate CO2

B.7.279 avgCO2_gas_flux

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgCO2_gas_flux

Table B.665: avgCO2_gas_flux: CO2 Gas Flux averaged over a coupling interval

B.7.280 total_Chl

Type:	real
Units:	$\mathrm{mg\,m^{-2}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % total_Chl

Table B.666: total_Chl: Total depth-integrated chlorophyll

B.7.281 avgOceanSurfacePhytoC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	R3 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfacePhytoC

Table B.667: avgOceanSurfacePhytoC: Ocean Surface phytoplankton carbon concentration: (1,2,3) corresponds to (diat,sp,phaeo)

B.7.282 avgOceanSurfaceDIC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceDIC

Table B.668: avgOceanSurfaceDIC: Ocean Surface DIC concentration

B.7.283 avgOceanSurfaceDOCSemiLabile

Type:	real
Units:	mmol C m^{-3}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceDOCSemi-Labile

Table B.669: avgOceanSurfaceDOCSemiLabile: Total Ocean Surface DOC semi-labile concentration

B.7.284 avgOceanSurfaceNO3

Type:	real
Units:	mmol N m^{-3}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceNO3

Table B.670: avgOceanSurfaceNO3: Ocean Surface NO3 concentration

B.7.285 avgOceanSurfaceSiO3

Type:	real
Units:	mmol Si m^{-3}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceSiO3

Table B.671: avgOceanSurfaceSiO3: Ocean Surface SiO3 concentration

B.7.286 avgOceanSurfaceNH4

Type:	real
Units:	mmol N m^{-3}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceNH4

Table B.672: avgOceanSurfaceNH4: Ocean Surface NH4 concentration

B.7.287 avgOceanSurfaceDOCr

Type:	real
Units:	mmol C m^{-3}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceDOCr

Table B.673: avgOceanSurfaceDOCr: Ocean Surface DOCr (Humics) concentration

B.7.288 avgOceanSurfaceFeParticulate

Type:	real
Units:	mmol Fe m^{-3}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceFeParticulate

Table B.674: avgOceanSurfaceFeParticulate: Ocean Surface particulate Fe concentration (set to zero)

B.7.289 avgOceanSurfaceFeDissolved

Type:	real
Units:	mmol Fe m^{-3}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceFeDissolved

Table B.675: avgOceanSurfaceFeDissolved: Ocean Surface dissolved bioavailable Fe concentration

B.7.290 iceFluxPhytoC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-2}\,s}$
Dimension:	R3 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxPhytoC

Table B.676: iceFluxPhytoC: Surface phytoplankton carbon flux from sea ice: (1,2,3) corresponds to (diat,sp,phaeo)

B.7.291 iceFluxDIC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-2}\,s}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxDIC

Table B.677: iceFluxDIC: Surface DIC flux from sea ice

B.7.292 iceFluxNO3

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-2}\,s}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxNO3

Table B.678: iceFluxNO3: Surface NO3 flux from sea ice

B.7.293 iceFluxSiO3

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-2}\,s}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxSiO3

Table B.679: iceFluxSiO3: Surface SiO3 flux from sea ice

B.7.294 iceFluxNH4

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-2}\,s}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxNH4

Table B.680: iceFluxNH4: Surface NH4 flux from sea ice

B.7.295 iceFluxDOCr

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-2}\,s}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxDOCr

Table B.681: iceFluxDOCr: Surface DOCr (Humics) flux from sea ice

B.7.296 iceFluxFeParticulate

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-2}\,s}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxFeParticulate

Table B.682: iceFluxFeParticulate: Surface particulate Fe flux from sea ice (set to zero)

B.7.297 iceFluxFeDissolved

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-2}\,s}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxFeDissolved

Table B.683: iceFluxFeDissolved: Surface dissolved bioavailable Fe flux from sea ice

B.7.298 iceFluxDust

Type:	real
Units:	$kg\,m^{-2}\,s$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxDust

Table B.684: iceFluxDust: Surface dust flux from sea ice

B.7.299 iceFluxDOC

Type:	real
Units:	$mmol\,C\,m^{-2}\,s$
Dimension:	R3 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxDOC

Table B.685: iceFluxDOC: Surface Organics flux from sea ice: (1,2,3)=¿(polysaccharides,lipids,proteins)

B.7.300 iceFluxDON

Type:	real
Units:	$mmol\,N\,m^{-2}\,s$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxDON

Table B.686: iceFluxDON: Surface Organic Proteins flux from sea ice

B.7.301 ecosys_diag_photoC_TOT_zint

Type:	real
Units:	$mmol\,C\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_photoC_TOT_zint

Table B.687: ecosys_diag_photoC_TOT_zint: Total C Fixation Vertical Integral

B.7.302 ecosys_diag_photoC_NO3_TOT_zint

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_photoC_NO3_TOT_zint

Table B.688: ecosys_diag_photoC_NO3_TOT_zint: Total C Fixation from NO3 Vertical Integral

B.7.303 ecosys_diag_O2_ZMIN

Type:	real
Units:	$\mathrm{mmol\,O2\,m^{-3}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_O2_ZMIN

Table B.689: ecosys_diag_O2_ZMIN: Vertical Minimum of O2

B.7.304 ecosys_diag_O2_ZMIN_DEPTH

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_O2_ZMIN_DEPTH

Table B.690: ecosys_diag_O2_ZMIN_DEPTH: Depth of Vertical Minimum of O2

B.7.305 ecosys_diag_Chl_TOT_zint_100m

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Chl_TOT_zint_100m

Table B.691: ecosys_diag_Chl_TOT_zint_100m: Vertical Integral of Total Chlorophyll in Top 100m

B.7.306 ecosys_diag_Jint_Ctot

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Jint_Ctot

Table B.692: ecosys_diag_Jint_Ctot: Vertical Integral of Conservative Subterms of Source Sink Term for Ctot

B.7.307 ecosys_diag_Jint_Ntot

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Jint_Ntot

Table B.693: ecosys_diag_Jint_Ntot: Vertical Integral of Conservative Subterms of Source Sink Term for Ntot

B.7.308 ecosys_diag_Jint_Ptot

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Jint_Ptot

Table B.694: ecosys_diag_Jint_Ptot: Vertical Integral of Conservative Subterms of Source Sink Term for Ptot

B.7.309 ecosys_diag_Jint_Sitot

Type:	real
Units:	mmol Si m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Jint_Sitot

Table B.695: ecosys_diag_Jint_Sitot: Vertical Integral of Conservative Subterms of Source Sink Term for Sitot

B.7.310 ecosys_diag_Jint_Fetot

Type:	real
Units:	mmol Fe m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Jint_Fetot

Table B.696: ecosys_diag_Jint_Fetot: Vertical Integral of Conservative Subterms of Source Sink Term for Fetot

B.7.311 ecosys_diag_photoC_zint

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	FOUR nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_photoC_zint

Table B.697: ecosys_diag_photoC_zint: C Fixation Vertical Integral for sp, diat, diaz, phaeo

B.7.312 ecosys_diag_photoC_NO3_zint

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	FOUR nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_photoC_NO3_zint

Table B.698: ecosys_diag_photoC_NO3_zint: C Fixation from NO3 Vertical Integral for sp, diat, diaz, phaeo

B.7.313 ecosys_diag_PAR_avg

Type:	real
Units:	$\mathrm{W\,m^{-2}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_PAR_avg

Table B.699: ecosys_diag_PAR_avg: PAR Average over Model Cell

B.7.314 ecosys_diag_POC_FLUX_IN

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_POC_FLUX_IN

Table B.700: ecosys_diag_POC_FLUX_IN: POC Flux into Cell

B.7.315 ecosys_diag_POP_FLUX_IN

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_POP_FLUX_IN

Table B.701: ecosys_diag_POP_FLUX_IN: POP Flux into Cell

B.7.316 ecosys_diag_CaCO3_FLUX_IN

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CaCO3_FLUX_IN

Table B.702: ecosys_diag_CaCO3_FLUX_IN: CaCO3 Flux into Cell

B.7.317 ecosys_diag_CaCO3_ALT_CO2_FLUX_IN

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CaCO3_ALT_CO2_FLUX_IN

Table B.703: ecosys_diag_CaCO3_ALT_CO2_FLUX_IN: Alt CO2 CaCO3 Flux into Cell

B.7.318 ecosys_diag_graze_auto_TOT

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_graze_auto_TOT

Table B.704: ecosys_diag_graze_auto_TOT: Total Autotroph Grazing

B.7.319 ecosys_diag_zoo_loss

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_zoo_loss

Table B.705: ecosys_diag_zoo_loss: Zooplankton Loss

B.7.320 ecosys_diag_zoo_loss_poc

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_zoo_loss_poc

Table B.706: ecosys_diag_zoo_loss_poc: Zooplankton Loss to particles

B.7.321 ecosys_diag_zoo_loss_doc

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_zoo_loss_doc

Table B.707: ecosys_diag_zoo_loss_doc: Zooplankton Loss to DOC

B.7.322 ecosys_diag_graze_zoo

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_graze_zoo

Table B.708: ecosys_diag_graze_zoo: Zooplankton Grazing

B.7.323 ecosys_diag_graze_zoo_poc

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_graze_zoo_poc

Table B.709: ecosys_diag_graze_zoo_poc: Zooplankton Grazing of particles

B.7.324 ecosys_diag_graze_zoo_doc

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_graze_zoo_doc

Table B.710: ecosys_diag_graze_zoo_doc: Zooplankton Grazing of DOC

B.7.325 ecosys_diag_graze_zoo_zoo

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_graze_zoo_zoo

Table B.711: ecosys_diag_graze_zoo_zoo: Zooplankton Grazing of ZooC

B.7.326 ecosys_diag_x_graze_zoo

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_x_graze_zoo

Table B.712: ecosys_diag_x_graze_zoo: Zooplankton Grazing Gain of ZooC

B.7.327 ecosys_diag_photoC_TOT

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_photoC_TOT

Table B.713: ecosys_diag_photoC_TOT: Total C Fixation Vertical Integral

B.7.328 ecosys_diag_photoC_NO3_TOT

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_photoC_NO3_TOT

Table B.714: ecosys_diag_photoC_NO3_TOT: Total C Fixation from NO3 Vertical Integral

B.7.329 ecosys_diag_NITRIF

Type:	real
Units:	mmol N m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_NITRIF

Table B.715: ecosys_diag_NITRIF: Nitrification

B.7.330 ecosys_diag_DENITRIF

Type:	real
Units:	mmol N m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_DENITRIF

Table B.716: ecosys_diag_DENITRIF: Denitrification

B.7.331 ecosys_diag_calcToSed

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_calcToSed

Table B.717: ecosys_diag_calcToSed: CaCO3 Flux to Sediments

B.7.332 ecosys_diag_calcToSed_ALT_CO2

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_calcToSed_ALT_CO2

Table B.718: ecosys_diag_calcToSed_ALT_CO2: CaCO3 Flux to Sediments for Alternate CO2

B.7.333 ecosys_diag_pocToSed

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_pocToSed

Table B.719: ecosys_diag_pocToSed: POC Flux to Sediments

B.7.334 ecosys_diag_pfeToSed

Type:	real
Units:	mmol Fe m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_pfeToSed

Table B.720: ecosys_diag_pfeToSed: Fe Flux to Sediments

B.7.335 ecosys_diag_SedDenitrif

Type:	real
Units:	mmol N m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_SedDenitrif

Table B.721: ecosys_diag_SedDenitrif: Nitrogen Loss in Sediments

B.7.336 ecosys_diag_tot_Nfix

Type:	real
Units:	mmol N m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_tot_Nfix

Table B.722: ecosys_diag_tot_Nfix: Total N Fixation

B.7.337 ecosys_diag_O2_PRODUCTION

Type:	real
Units:	mmol O2 m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_O2_PRODUCTION

Table B.723: ecosys_diag_O2_PRODUCTION: O2 Production

B.7.338 ecosys_diag_O2_CONSUMPTION

Type:	real
Units:	mmol O2 m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_O2_CONSUMPTION

Table B.724: ecosys_diag_O2_CONSUMPTION: O2 Consumption

B.7.339 ecosys_diag_AOU

Type:	real
Units:	mmol O2 m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_AOU

Table B.725: ecosys_diag_AOU: Apparent O2 Utilization

B.7.340 ecosys_diag_pH_3D

Type:	real
Units:	unitless
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_pH_3D

Table B.726: ecosys_diag_pH_3D: pH

B.7.341 ecosys_diag_POC_PROD

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_POC_PROD

Table B.727: ecosys_diag_POC_PROD: POC Production

B.7.342 ecosys_diag_POC_REMIN_DOCr

Type:	real
Units:	mmol C m^{-3} s^{-1}

Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_POC_REMIN_DOCr

Table B.728: ecosys_diag_POC_REMIN_DOCr: POC Remineralization to DOCr

B.7.343 ecosys_diag_POC_REMIN_DIC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_POC_REMIN_DIC

Table B.729: ecosys_diag_POC_REMIN_DIC: POC Remineralization to DIC

B.7.344 ecosys_diag_POC_ACCUM

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_POC_ACCUM

Table B.730: ecosys_diag_POC_ACCUM: POC Accumulation

B.7.345 ecosys_diag_POP_FLUX_IN

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_POP_FLUX_IN

Table B.731: ecosys_diag_POP_FLUX_IN: POP Flux into cell

B.7.346 ecosys_diag_POP_PROD

Type:	real
Units:	mmol P m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_POP_PROD

Table B.732: ecosys_diag_POP_PROD: POP Production

B.7.347 ecosys_diag_POP_REMIN_DOPr

Type:	real
Units:	mmol P m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_POP_REMIN_DOPr

Table B.733: ecosys_diag_POP_REMIN_DOPr: POP Remineralization to DOPr

B.7.348 ecosys_diag_POP_REMIN_PO4

Type:	real
Units:	mmol P m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_POP_REMIN_PO4

Table B.734: ecosys_diag_POP_REMIN_PO4: POP Remineralization to PO4

B.7.349 ecosys_diag_PON_REMIN_DONr

Type:	real
Units:	mmol N m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_PON_REMIN_DONr

Table B.735: ecosys_diag_PON_REMIN_DONr: PON Remineralization to DONr

B.7.350 ecosys_diag_PON_REMIN_NH4

Type:	real
Units:	mmol N m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_PON_REMIN_NH4

Table B.736: ecosys_diag_PON_REMIN_NH4: PON Remineralization to NH4

B.7.351 ecosys_diag_Qp

Type:	real
Units:	none
Dimension:	R3 nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Qp

Table B.737: ecosys_diag_Qp: P/C Ratio

B.7.352 ecosys_diag_N_lim_surf

Type:	real
Units:	unitless
Dimension:	FOUR nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_N_lim_surf

Table B.738: ecosys_diag_N_lim_surf: N Surface Limitation for sp, diat, diaz, phaeo

B.7.353 ecosys_diag_P_lim_surf

Type:	real

Units:	unitless
Dimension:	FOUR nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_P_lim_surf

Table B.739: ecosys_diag_P_lim_surf: P Surface Limitation for sp, diat, diaz, phaeo

B.7.354 ecosys_diag_Fe_lim_surf

Type:	real
Units:	unitless
Dimension:	FOUR nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Fe_lim_surf

Table B.740: ecosys_diag_Fe_lim_surf: Fe Surface Limitation for sp, diat, diaz, phaeo

B.7.355 ecosys_diag_SiO3_lim_surf

Type:	real
Units:	unitless
Dimension:	FOUR nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_SiO3_lim_surf

Table B.741: ecosys_diag_SiO3_lim_surf: SiO3 Surface Limitation for sp, diat, diaz, phaeo

B.7.356 ecosys_diag_light_lim_surf

Type:	real
Units:	unitless
Dimension:	FOUR nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_light_lim_surf

Table B.742: ecosys_diag_light_lim_surf: Light Surface Limitation for sp, diat, diaz, phaeo

B.7.357 ecosys_diag_photoC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_photoC

Table B.743: ecosys_diag_photoC: C Fixation for sp, diat, diaz, phaeo

B.7.358 ecosys_diag_photoC_NO3

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_photoC_NO3

Table B.744: ecosys_diag_photoC_NO3: C Fixation from NO3 for sp, diat, diaz, phaeo

B.7.359 ecosys_diag_photoFe

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_photoFe

Table B.745: ecosys_diag_photoFe: Fe Uptake

B.7.360 ecosys_diag_photoNO3

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_photoNO3

Table B.746: ecosys_diag_photoNO3: NO3 Uptake

B.7.361 ecosys_diag_photoNH4

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_photoNH4

Table B.747: ecosys_diag_photoNH4: NH4 Uptake

B.7.362 ecosys_diag_DOP_uptake

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_DOP_uptake

Table B.748: ecosys_diag_DOP_uptake: DOP Uptake

B.7.363 ecosys_diag_PO4_uptake

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_PO4_uptake

Table B.749: ecosys_diag_PO4_uptake: PO4 Uptake

B.7.364 ecosys_diag_auto_graze

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_auto_graze

Table B.750: ecosys_diag_auto_graze: Grazing for sp, diat, diaz, phaeo

B.7.365 ecosys_diag_auto_graze_poc

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_auto_graze_poc

Table B.751: ecosys_diag_auto_graze_poc: Grazing loss to poc for sp, diat, diaz, phaeo

B.7.366 ecosys_diag_auto_graze_doc

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_auto_graze_doc

Table B.752: ecosys_diag_auto_graze_doc: Grazing loss to doc for sp, diat, diaz, phaeo

B.7.367 ecosys_diag_auto_graze_zoo

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_auto_graze_zoo

Table B.753: ecosys_diag_auto_graze_zoo: Grazing by zoo plankton for sp, diat, diaz, phaeo

B.7.368 ecosys_diag_auto_loss

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_auto_loss

Table B.754: ecosys_diag_auto_loss: Loss for sp, diat, diaz, phaeo

B.7.369 ecosys_diag_auto_loss_poc

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_auto_loss_poc

Table B.755: ecosys_diag_auto_loss_poc: Loss to POC for sp, diat, diaz, phaeo

B.7.370 ecosys_diag_auto_loss_doc

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_auto_loss_doc

Table B.756: ecosys_diag_auto_loss_doc: Loss to DOC for sp, diat, diaz, phaeo

B.7.371 ecosys_diag_auto_agg

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_auto_agg

Table B.757: ecosys_diag_auto_agg: Aggregate for sp, diat, diaz, phaeo

B.7.372 ecosys_diag_Nfix

Type:	real
Units:	mmol N m^{-3} s^{-1}
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Nfix

Table B.758: ecosys_diag_Nfix: N Fixation for sp, diat, diaz, phaeo

B.7.373 ecosys_diag_pistonVel_O2

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_pistonVel_O2

Table B.759: ecosys_diag_pistonVel_O2: Piston Velocity for O2 Surface Flux

B.7.374 ecosys_diag_pistonVel_CO2

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_pistonVel_CO2

Table B.760: ecosys_diag_pistonVel_CO2: Piston Velocity for CO2 Surface Flux

B.7.375 ecosys_diag_Schmidt_O2

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Schmidt_O2

Table B.761: ecosys_diag_Schmidt_O2: O2 Schmidt Number

B.7.376 ecosys_diag_Schmidt_CO2

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Schmidt_CO2

Table B.762: ecosys_diag_Schmidt_CO2: CO2 Schmidt Number

B.7.377 ecosys_diag_O2_saturation

Type:	real
Units:	$\mathrm{mmol\,O2\,m^{-3}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_O2_saturation

Table B.763: ecosys_diag_O2_saturation: Surface O2 Saturation

B.7.378 ecosys_diag_xkw

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_xkw

Table B.764: ecosys_diag_xkw: Schmidt Number Independent Piston Velocity Factor

B.7.379 ecosys_diag_u10sqr

Type:	real
Units:	$\mathrm{m^2\,s^{-2}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_u10sqr

Table B.765: ecosys_diag_u10sqr: 10 meter wind squared seen by ecosys

B.7.380 ecosys_diag_ifrac

Type:	real
Units:	fraction
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_ifrac

Table B.766: ecosys_diag_ifrac: Ice Fraction seen by ecosys

B.7.381 ecosys_diag_atmPressure

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_atmPressure

Table B.767: ecosys_diag_atmPressure: Atmospheric Pressure Seen by ecosys

B.7.382 ecosys_diag_CO2star

Type:	real
Units:	$mmol\,C\,m^{-3}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CO2star

Table B.768: ecosys_diag_CO2star: CO2 Star

B.7.383 ecosys_diag_dCO2star

Type:	real
Units:	$mmol\,C\,m^{-3}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_dCO2star

Table B.769: ecosys_diag_dCO2star: d CO2 Star

B.7.384 ecosys_diag_pCO2surface

Type:	real
Units:	ppmv
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_pCO2surface

Table B.770: ecosys_diag_pCO2surface: Surface pCO2

B.7.385 ecosys_diag_dpCO2

Type:	real
Units:	ppmv
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_dpCO2

Table B.771: ecosys_diag_dpCO2: d Surface pCO2

B.7.386 ecosys_diag_CO2star_ALT_CO2

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CO2star_ALT_CO2

Table B.772: ecosys_diag_CO2star_ALT_CO2: CO2 Star for Alternate CO2

B.7.387 ecosys_diag_dCO2star_ALT_CO2

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_dCO2star_ALT_CO2

Table B.773: ecosys_diag_dCO2star_ALT_CO2: d CO2 Star for Alternate CO2

B.7.388 ecosys_diag_pCO2surface_ALT_CO2

Type:	real
Units:	ppmv
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_pCO2surface_ALT_CO2

Table B.774: ecosys_diag_pCO2surface_ALT_CO2: Surface pCO2 for Alternate CO2

B.7.389 ecosys_diag_dpCO2_ALT_CO2

Type:	real
Units:	ppmv
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_dpCO2_ALT_CO2

Table B.775: ecosys_diag_dpCO2_ALT_CO2: d Surface pCO2 for Alternate CO2

B.7.390 ecosys_diag_tot_bSi_form

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_tot_bSi_form

Table B.776: ecosys_diag_tot_bSi_form: Si Uptake

B.7.391 ecosys_diag_SiO2_FLUX_IN

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-3}\,m\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_SiO2_FLUX_IN

Table B.777: ecosys_diag_SiO2_FLUX_IN: SiO2 Flux into Cell

B.7.392 ecosys_diag_SiO2_PROD

Type:	real

Units:	mmol Si m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_SiO2_PROD

Table B.778: ecosys_diag_SiO2_PROD: SiO2 Production

B.7.393 ecosys_diag_SiO2_REMIN

Type:	real
Units:	mmol Si m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_SiO2_REMIN

Table B.779: ecosys_diag_SiO2_REMIN: SiO2 Remineralization

B.7.394 ecosys_diag_dust_FLUX_IN

Type:	real
Units:	ng m^{-2} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_dust_FLUX_IN

Table B.780: ecosys_diag_dust_FLUX_IN: Dust Flux into Cell

B.7.395 ecosys_diag_dust_REMIN

Type:	real
Units:	mmol m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_dust_REMIN

Table B.781: ecosys_diag_dust_REMIN: Dust Remineralization

B.7.396 ecosys_diag_P_iron_FLUX_IN

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-3}\,m\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_P_iron_FLUX_IN

Table B.782: ecosys_diag_P_iron_FLUX_IN: P_iron Flux into Cell

B.7.397 ecosys_diag_P_iron_PROD

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_P_iron_PROD

Table B.783: ecosys_diag_P_iron_PROD: P_iron Production

B.7.398 ecosys_diag_P_iron_REMIN

Type:	real
Units:	$\mathrm{mmol\,Fe\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_P_iron_REMIN

Table B.784: ecosys_diag_P_iron_REMIN: P_iron Remineralization

B.7.399 ecosys_diag_DOC_prod

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_DOC_prod

Table B.785: ecosys_diag_DOC_prod: DOC Production

B.7.400 ecosys_diag_DOC_remin

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_DOC_remin

Table B.786: ecosys_diag_DOC_remin: DOC Remineralization

B.7.401 ecosys_diag_DOCr_remin

Type:	real
Units:	something
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_DOCr_remin

Table B.787: ecosys_diag_DOCr_remin: DOCr Remineralization

B.7.402 ecosys_diag_DON_prod

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_DON_prod

Table B.788: ecosys_diag_DON_prod: DON Production

B.7.403 ecosys_diag_DON_remin

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_DON_remin

Table B.789: ecosys_diag_DON_remin: DON Remineralization

B.7.404 ecosys_diag_DOP_prod

Type:	real
Units:	mmol P m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_DOP_prod

Table B.790: ecosys_diag_DOP_prod: DOP Production

B.7.405 ecosys_diag_DOP_remin

Type:	real
Units:	mmol P m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_DOP_remin

Table B.791: ecosys_diag_DOP_remin: DOP Remineralization

B.7.406 ecosys_diag_Fe_scavenge

Type:	real
Units:	mmol Fe m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Fe_scavenge

Table B.792: ecosys_diag_Fe_scavenge: Iron Scavenging

B.7.407 ecosys_diag_Fe_scavenge_rate

Type:	real
Units:	$year^{-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Fe_scavenge_rate

Table B.793: ecosys_diag_Fe_scavenge_rate: Iron Scavenging Rate

B.7.408 ecosys_diag_Lig_prod

Type:	real
Units:	something
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Lig_prod

Table B.794: ecosys_diag_Lig_prod: Ligand Production

B.7.409 ecosys_diag_Lig_loss

Type:	real
Units:	something
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Lig_loss

Table B.795: ecosys_diag_Lig_loss: Ligand Loss

B.7.410 ecosys_diag_Lig_scavenge

Type:	real
Units:	something
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Lig_scavenge

Table B.796: ecosys_diag_Lig_scavenge: Ligand Scavenging

B.7.411 ecosys_diag_Fefree

Type:	real
Units:	something
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Fefree

Table B.797: ecosys_diag_Fefree: Free Iron

B.7.412 ecosys_diag_Lig_photochem

Type:	real
Units:	something
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Lig_photochem

Table B.798: ecosys_diag_Lig_photochem: Ligand Photochemistry

B.7.413 ecosys_diag_Lig_deg

Type:	real
Units:	something
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_Lig_deg

Table B.799: ecosys_diag_Lig_deg: Ligand Degradation

B.7.414 ecosys_diag_DONr_remin

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_DONr_remin

Table B.800: ecosys_diag_DONr_remin: DONr Remineralization

B.7.415 ecosys_diag_DOPr_remin

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_DOPr_remin

Table B.801: ecosys_diag_DOPr_remin: DOPr Remineralization

B.7.416 ecosys_diag_ponToSed

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_ponToSed

Table B.802: ecosys_diag_ponToSed: N Burial Flux to Sediments

B.7.417 ecosys_diag_popToSed

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_popToSed

Table B.803: ecosys_diag_popToSed: P Flux to Sediments

B.7.418 ecosys_diag_bsiToSed

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_bsiToSed

Table B.804: ecosys_diag_bsiToSed: Biogenic Si Flux to Sediments

B.7.419 ecosys_diag_dustToSed

Type:	real
Units:	$\mathrm{kg\,m^{-2}\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_dustToSed

Table B.805: ecosys_diag_dustToSed: Dust Flux to Sediments

B.7.420 ecosys_diag_OtherRemin

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_OtherRemin

Table B.806: ecosys_diag_OtherRemin: Non-Oxic, Non-Dentr Remineralization in Sediments

B.7.421 ecosys_diag_bSi_form

Type:	real
Units:	mmol Si m^{-3} s^{-1}
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_bSi_form

Table B.807: ecosys_diag_bSi_form: Si Uptake for sp, diat, diaz, phaeo

B.7.422 ecosys_diag_tot_CaCO3_form_zint

Type:	real
Units:	mmol C m^{-3} m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_tot_CaCO3_form_zint

Table B.808: ecosys_diag_tot_CaCO3_form_zint: Total CaCO3 Formation Vertical Integral

B.7.423 ecosys_diag_zsatcalc

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_zsatcalc

Table B.809: ecosys_diag_zsatcalc: Calcite Saturation Depth

B.7.424 ecosys_diag_zsatarag

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_zsatarag

Table B.810: ecosys_diag_zsatarag: Aragonite Saturation Depth

B.7.425 ecosys_diag_CaCO3_form_zint

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	FOUR nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CaCO3_form_zint

Table B.811: ecosys_diag_CaCO3_form_zint: CaCO3 Formation Vertical Integral for sp, diat, diaz, phaeo

B.7.426 ecosys_diag_CaCO3_PROD

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CaCO3_PROD

Table B.812: ecosys_diag_CaCO3_PROD: CaCO3 Production

B.7.427 ecosys_diag_CaCO3_REMIN

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CaCO3_REMIN

Table B.813: ecosys_diag_CaCO3_REMIN: CaCO3 Remineralization

B.7.428 ecosys_diag_CaCO3_ALT_CO2_PROD

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CaCO3_ALT_CO2_PROD

Table B.814: ecosys_diag_CaCO3_ALT_CO2_PROD: CaCO3 Production for Alternate CO2

B.7.429 ecosys_diag_CaCO3_ALT_CO2_REMIN

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CaCO3_ALT_CO2_REMIN

Table B.815: ecosys_diag_CaCO3_ALT_CO2_REMIN: CaCO3 Remineralization for Alternate CO2

B.7.430 ecosys_diag_tot_CaCO3_form

Type:	real
Units:	mmol C m^{-3} s^{-1}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_tot_CaCO3_form

Table B.816: ecosys_diag_tot_CaCO3_form: Total CaCO3 Formation

B.7.431 ecosys_diag_CO3

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CO3

Table B.817: ecosys_diag_CO3: Carbonate Ion Concentration

B.7.432 ecosys_diag_HCO3

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_HCO3

Table B.818: ecosys_diag_HCO3: Bicarbonate Ion Concentration

B.7.433 ecosys_diag_H2CO3

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_H2CO3

Table B.819: ecosys_diag_H2CO3: Carbonic Acid Concentration

B.7.434 ecosys_diag_CO3_ALT_CO2

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CO3_ALT_CO2

Table B.820: ecosys_diag_CO3_ALT_CO2: Carbonate Ion Concentration, Alternative CO2

B.7.435 ecosys_diag_HCO3_ALT_CO2

Type:	real
Units:	mmol C m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_HCO3_ALT_CO2

Table B.821: ecosys_diag_HCO3_ALT_CO2: Bicarbonate Ion Concentration, Alternative CO2

B.7.436 ecosys_diag_H2CO3_ALT_CO2

Type:	real
Units:	mmol C m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_H2CO3_ALT_CO2

Table B.822: ecosys_diag_H2CO3_ALT_CO2: Carbonic Acid Concentration, Alternative CO2

B.7.437 ecosys_diag_pH_3D_ALT_CO2

Type:	real
Units:	unitless
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_pH_3D_ALT_CO2

Table B.823: ecosys_diag_pH_3D_ALT_CO2: pH, Alternative CO2

B.7.438 ecosys_diag_co3_sat_calc

Type:	real
Units:	mmol C m^{-3}
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_co3_sat_calc

Table B.824: ecosys_diag_co3_sat_calc: CO3 concentration at calcite saturation

B.7.439 ecosys_diag_co3_sat_arag

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_co3_sat_arag

Table B.825: ecosys_diag_co3_sat_arag: CO3 concentration at aragonite saturation

B.7.440 ecosys_diag_CaCO3_form

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,s^{-1}}$
Dimension:	FOUR nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_CaCO3_form

Table B.826: ecosys_diag_CaCO3_form: CaCO3 Formation for sp, diat, diaz, phaeo

B.7.441 ecosys_diag_PO4_RESTORE

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_PO4_RESTORE

Table B.827: ecosys_diag_PO4_RESTORE: PO4 Restoring

B.7.442 ecosys_diag_NO3_RESTORE

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,s^{-1}}$

Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_NO3_RESTORE

Table B.828: ecosys_diag_NO3_RESTORE: NO3 Restoring

B.7.443 ecosys_diag_SiO3_RESTORE

Type:	real
Units:	$\mathrm{mmol\,Si\,m^{-3}\,s^{-1}}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % ecosys_diag_SiO3_RESTORE

Table B.829: ecosys_diag_SiO3_RESTORE: SiO3 Restoring

B.7.444 PO4PistonVelocity

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_PO4PistonVelocity
Location in code:	domain % blocklist % forcing % PO4PistonVelocity
Array Group:	ecosysPVGRP

Table B.830: PO4PistonVelocity: A non-negative field controlling the rate at which PO4 is restored to PO4SurfaceRestoringValue

B.7.445 NO3PistonVelocity

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_NO3PistonVelocity
Location in code:	domain % blocklist % forcing % NO3PistonVelocity

Array Group:	ecosysPVGRP

Table B.831: NO3PistonVelocity: A non-negative field controlling the rate at which NO3 is restored to NO3SurfaceRestoringValue

B.7.446 SiO3PistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPistonVelocity Array:	domain % blocklist % forcing % index_SiO3PistonVelocity
Location in code:	domain % blocklist % forcing % SiO3PistonVelocity
Array Group:	ecosysPVGRP

Table B.832: SiO3PistonVelocity: A non-negative field controlling the rate at which SiO3 is restored to SiO3SurfaceRestoringValue

B.7.447 NH4PistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPistonVelocity Array:	domain % blocklist % forcing % index_NH4PistonVelocity
Location in code:	domain % blocklist % forcing % NH4PistonVelocity
Array Group:	ecosysPVGRP

Table B.833: NH4PistonVelocity: A non-negative field controlling the rate at which NH4 is restored to NH4SurfaceRestoringValue

B.7.448 FePistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent

Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_FePistonVelocity
Location in code:	domain % blocklist % forcing % FePistonVelocity
Array Group:	ecosysPVGRP

Table B.834: FePistonVelocity: A non-negative field controlling the rate at which Fe is restored to FeSurfaceRestoringValue

B.7.449 LigPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_LigPistonVelocity
Location in code:	domain % blocklist % forcing % LigPistonVelocity
Array Group:	ecosysPVGRP

Table B.835: LigPistonVelocity: A non-negative field controlling the rate at which Lig is restored to LigSurfaceRestoringValue

B.7.450 O2PistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_O2PistonVelocity
Location in code:	domain % blocklist % forcing % O2PistonVelocity
Array Group:	ecosysPVGRP

Table B.836: O2PistonVelocity: A non-negative field controlling the rate at which O2 is restored to O2SurfaceRestoringValue

B.7.451 DICPistonVelocity

Type:	real

Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPistonVelocity Array:	domain % blocklist % forcing % index_DICPistonVelocity
Location in code:	domain % blocklist % forcing % DICPistonVelocity
Array Group:	ecosysPVGRP

Table B.837: DICPistonVelocity: A non-negative field controlling the rate at which DIC is restored to DICSurfaceRestoringValue

B.7.452 DIC_ALT_CO2PistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPistonVelocity Array:	domain % blocklist % forcing % index_DIC_ALT_CO2PistonVelocity
Location in code:	domain % blocklist % forcing % DIC_ALT_CO2PistonVelocity
Array Group:	ecosysPVGRP

Table B.838: DIC_ALT_CO2PistonVelocity: A non-negative field controlling the rate at which DIC_ALT_CO2 is restored to DIC_ALT_CO2SurfaceRestoringValue

B.7.453 ALKPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPistonVelocity Array:	domain % blocklist % forcing % index_ALKPistonVelocity
Location in code:	domain % blocklist % forcing % ALKPistonVelocity
Array Group:	ecosysPVGRP

Table B.839: ALKPistonVelocity: A non-negative field controlling the rate at which ALK is restored to ALKSurfaceRestoringValue

B.7.454 ALK_ALT_CO2PistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_ALK_ALT_CO2PistonVelocity
Location in code:	domain % blocklist % forcing % ALK_ALT_CO2PistonVelocity
Array Group:	ecosysPVGRP

Table B.840: ALK_ALT_CO2PistonVelocity: A non-negative field controlling the rate at which ALK is restored to ALKSurfaceRestoringValue, Alternative CO2

B.7.455 DOCPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_DOCPistonVelocity
Location in code:	domain % blocklist % forcing % DOCPistonVelocity
Array Group:	ecosysPVGRP

Table B.841: DOCPistonVelocity: A non-negative field controlling the rate at which DOC is restored to DOCSurfaceRestoringValue

B.7.456 DONPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_DONPistonVelocity
Location in code:	domain % blocklist % forcing % DONPistonVelocity
Array Group:	ecosysPVGRP

Table B.842: DONPistonVelocity: A non-negative field controlling the rate at which DON is restored to DONSurfaceRestoringValue

B.7.457 DOPPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_DOPPistonVelocity
Location in code:	domain % blocklist % forcing % DOPPistonVelocity
Array Group:	ecosysPVGRP

Table B.843: DOPPistonVelocity: A non-negative field controlling the rate at which DOP is restored to DOPSurfaceRestoringValue

B.7.458 DOPrPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_DOPrPistonVelocity
Location in code:	domain % blocklist % forcing % DOPrPistonVelocity
Array Group:	ecosysPVGRP

Table B.844: DOPrPistonVelocity: A non-negative field controlling the rate at which DOPr is restored to DOPrSurfaceRestoringValue

B.7.459 DONrPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_DONrPistonVelocity
Location in code:	domain % blocklist % forcing % DONrPistonVelocity
Array Group:	ecosysPVGRP

Table B.845: DONrPistonVelocity: A non-negative field controlling the rate at which DONr is restored to DONrSurfaceRestoringValue

B.7.460 DOCrPistonVelocity

Type:	real
Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_DOCrPistonVelocity
Location in code:	domain % blocklist % forcing % DOCrPistonVelocity
Array Group:	ecosysPVGRP

Table B.846: DOCrPistonVelocity: A non-negative field controlling the rate at which DOCr is restored to DOCrSurfaceRestoringValue

B.7.461 zooCPistonVelocity

Type:	real
Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_zooCPistonVelocity
Location in code:	domain % blocklist % forcing % zooCPistonVelocity
Array Group:	ecosysPVGRP

Table B.847: zooCPistonVelocity: A non-negative field controlling the rate at which zooC is restored to zooCSurfaceRestoringValue

B.7.462 spChlPistonVelocity

Type:	real
Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_spChlPistonVelocity
Location in code:	domain % blocklist % forcing % spChlPistonVelocity
Array Group:	ecosysPVGRP

Table B.848: spChlPistonVelocity: A non-negative field controlling the rate at which spChl is restored to spChlSurfaceRestoringValue

B.7.463 spCPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_spCPistonVelocity
Location in code:	domain % blocklist % forcing % spCPistonVelocity
Array Group:	ecosysPVGRP

Table B.849: spCPistonVelocity: A non-negative field controlling the rate at which spC is restored to spCSurfaceRestoringValue

B.7.464 spFePistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_spFePistonVelocity
Location in code:	domain % blocklist % forcing % spFePistonVelocity
Array Group:	ecosysPVGRP

Table B.850: spFePistonVelocity: A non-negative field controlling the rate at which spFe is restored to spFeSurfaceRestoringValue

B.7.465 spPPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_spPPistonVelocity
Location in code:	domain % blocklist % forcing % spPPistonVelocity
Array Group:	ecosysPVGRP

Table B.851: spPPistonVelocity: A non-negative field controlling the rate at which spP is restored to spPSurfaceRestoringValue

B.7.466 spCaCO3PistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_spCaCO3PistonVelocity
Location in code:	domain % blocklist % forcing % spCaCO3PistonVelocity
Array Group:	ecosysPVGRP

Table B.852: spCaCO3PistonVelocity: A non-negative field controlling the rate at which spCaCO3 is restored to spCaCO3SurfaceRestoringValue

B.7.467 diatChlPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_diatChlPistonVelocity
Location in code:	domain % blocklist % forcing % diatChlPistonVelocity
Array Group:	ecosysPVGRP

Table B.853: diatChlPistonVelocity: A non-negative field controlling the rate at which diatChl is restored to diatChlSurfaceRestoringValue

B.7.468 diatCPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_diatCPistonVelocity
Location in code:	domain % blocklist % forcing % diatCPistonVelocity
Array Group:	ecosysPVGRP

Table B.854: diatCPistonVelocity: A non-negative field controlling the rate at which diatC is restored to diatCSurfaceRestoringValue

B.7.469 diatFePistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_diatFePistonVelocity
Location in code:	domain % blocklist % forcing % diatFePistonVelocity
Array Group:	ecosysPVGRP

Table B.855: diatFePistonVelocity: A non-negative field controlling the rate at which diatFe is restored to diatFeSurfaceRestoringValue

B.7.470 diatPPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_diatPPistonVelocity
Location in code:	domain % blocklist % forcing % diatPPistonVelocity
Array Group:	ecosysPVGRP

Table B.856: diatPPistonVelocity: A non-negative field controlling the rate at which diatP is restored to diatPSurfaceRestoringValue

B.7.471 diatSiPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPiston-Velocity Array:	domain % blocklist % forcing % index_diatSiPistonVelocity
Location in code:	domain % blocklist % forcing % diatSiPistonVelocity
Array Group:	ecosysPVGRP

Table B.857: diatSiPistonVelocity: A non-negative field controlling the rate at which diatSi is restored to diatSiSurfaceRestoringValue

B.7.472 diazChlPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPistonVelocity Array:	domain % blocklist % forcing % index_diazChlPistonVelocity
Location in code:	domain % blocklist % forcing % diazChlPistonVelocity
Array Group:	ecosysPVGRP

Table B.858: diazChlPistonVelocity: A non-negative field controlling the rate at which diazChl is restored to diazChlSurfaceRestoringValue

B.7.473 diazCPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPistonVelocity Array:	domain % blocklist % forcing % index_diazCPistonVelocity
Location in code:	domain % blocklist % forcing % diazCPistonVelocity
Array Group:	ecosysPVGRP

Table B.859: diazCPistonVelocity: A non-negative field controlling the rate at which diazC is restored to diazCSurfaceRestoringValue

B.7.474 diazFePistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPistonVelocity Array:	domain % blocklist % forcing % index_diazFePistonVelocity
Location in code:	domain % blocklist % forcing % diazFePistonVelocity
Array Group:	ecosysPVGRP

Table B.860: diazFePistonVelocity: A non-negative field controlling the rate at which diazFe is restored to diazFeSurfaceRestoringValue

B.7.475 diazPPistonVelocity

Type:	real
Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersPistonVelocity Array:	domain % blocklist % forcing % index_diazPPistonVelocity
Location in code:	domain % blocklist % forcing % diazPPistonVelocity
Array Group:	ecosysPVGRP

Table B.861: diazPPistonVelocity: A non-negative field controlling the rate at which diazP is restored to diazPSurfaceRestoringValue

B.7.476 PO4SurfaceRestoringValue

Type:	real
Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_PO4SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % PO4SurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.862: PO4SurfaceRestoringValue: A non-negative field controlling the rate at which PO4 is restored to PO4SurfaceRestoringValue

B.7.477 NO3SurfaceRestoringValue

Type:	real
Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_NO3SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % NO3SurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.863: NO3SurfaceRestoringValue: A non-negative field controlling the rate at which NO3 is restored to NO3SurfaceRestoringValue

B.7.478 SiO3SurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_SiO3SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % SiO3SurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.864: SiO3SurfaceRestoringValue: A non-negative field controlling the rate at which SiO3 is restored to SiO3SurfaceRestoringValue

B.7.479 NH4SurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_NH4SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % NH4SurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.865: NH4SurfaceRestoringValue: A non-negative field controlling the rate at which NH4 is restored to NH4SurfaceRestoringValue

B.7.480 FeSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_FeSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % FeSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.866: FeSurfaceRestoringValue: A non-negative field controlling the rate at which Fe is restored to FeSurfaceRestoringValue

B.7.481 LigSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_LigSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % LigSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.867: LigSurfaceRestoringValue: A non-negative field controlling the rate at which Lig is restored to LigSurfaceRestoringValue

B.7.482 O2SurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_O2SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % O2SurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.868: O2SurfaceRestoringValue: A non-negative field controlling the rate at which O2 is restored to O2SurfaceRestoringValue

B.7.483 DICSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_DICSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % DICSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.869: DICSurfaceRestoringValue: A non-negative field controlling the rate at which DIC is restored to DICSurfaceRestoringValue

B.7.484 DIC_ALT_CO2SurfaceRestoringValue

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_DIC_ALT_CO2SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % DIC_ALT_CO2SurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.870: DIC_ALT_CO2SurfaceRestoringValue: A non-negative field controlling the rate at which DIC_ALT_CO2 is restored to DIC_ALT_CO2SurfaceRestoringValue

B.7.485 ALKSurfaceRestoringValue

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_ALKSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % ALKSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.871: ALKSurfaceRestoringValue: A non-negative field controlling the rate at which ALK is restored to ALKSurfaceRestoringValue

B.7.486 ALK_ALT_CO2SurfaceRestoringValue

Type:	real
Units:	$\mathrm{m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_ALK_ALT_CO2SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % ALK_ALT_CO2SurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.872: ALK_ALT_CO2SurfaceRestoringValue: A non-negative field controlling the rate at which ALK is restored to ALKSurfaceRestoringValue, Alternative CO2

B.7.487 DOCSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_DOCSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % DOCSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.873: DOCSurfaceRestoringValue: A non-negative field controlling the rate at which DOC is restored to DOCSurfaceRestoringValue

B.7.488 DONSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_DONSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % DONSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.874: DONSurfaceRestoringValue: A non-negative field controlling the rate at which DON is restored to DONSurfaceRestoringValue

B.7.489 DOPSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_DOPSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % DOPSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.875: DOPSurfaceRestoringValue: A non-negative field controlling the rate at which DOP is restored to DOPSurfaceRestoringValue

B.7.490 DOPrSurfaceRestoringValue

Type:	real
Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_DOPrSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % DOPrSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.876: DOPrSurfaceRestoringValue: A non-negative field controlling the rate at which DOPr is restored to DOPrSurfaceRestoringValue

B.7.491 DONrSurfaceRestoringValue

Type:	real
Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_DONrSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % DONrSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.877: DONrSurfaceRestoringValue: A non-negative field controlling the rate at which DONr is restored to DOPrSurfaceRestoringValue

B.7.492 DOCrSurfaceRestoringValue

Type:	real
Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent

Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_DOCrSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % DOCrSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.878: DOCrSurfaceRestoringValue: A non-negative field controlling the rate at which DOCr is restored to DOCrSurfaceRestoringValue

B.7.493 spChlSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_spChlSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % spChlSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.879: spChlSurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.494 spCSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_spCSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % spCSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.880: spCSurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.495 spFeSurfaceRestoringValue

Type:	real

Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_spFeSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % spFeSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.881: spFeSurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.496 spPSurfaceRestoringValue

Type:	real
Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_spPSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % spPSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.882: spPSurfaceRestoringValue: A non-negative field controlling the rate at which spP is restored to spPSurfaceRestoringValue

B.7.497 spCaCO3SurfaceRestoringValue

Type:	real
Units:	$m s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_spCaCO3SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % spCaCO3SurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.883: spCaCO3SurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.498 diatChlSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_diatChlSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % diatChlSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.884: diatChlSurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.499 diatCSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_diatCSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % diatCSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.885: diatCSurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.500 diatFeSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_diatFeSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % diatFeSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.886: diatFeSurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.501 diatPSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_diatPSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % diatPSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.887: diatPSurfaceRestoringValue: A non-negative field controlling the rate at which diatP is restored to diatPSurfaceRestoringValue

B.7.502 diatSiSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_diatSiSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % diatSiSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.888: diatSiSurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.503 diazChlSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_diazChlSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % diazChlSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.889: diazChlSurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.504 diazCSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_diazCSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % diazCSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.890: diazCSurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.505 diazFeSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_diazFeSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % diazFeSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.891: diazFeSurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.506 diazPSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_diazPSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % diazPSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.892: diazPSurfaceRestoringValue: A non-negative field controlling the rate at which diazP is restored to diazPSurfaceRestoringValue

B.7.507 zooCSurfaceRestoringValue

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_zooCSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % zooCSurfaceRestoringValue
Array Group:	ecosysSRVGRP

Table B.893: zooCSurfaceRestoringValue: A non-negative field controlling the rate at which zooC is restored to DOPrSurfaceRestoringValue

B.7.508 PO4InteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_PO4InteriorRestoringRate
Location in code:	domain % blocklist % forcing % PO4InteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.894: PO4InteriorRestoringRate: A non-negative field controlling the rate at which PO4 is restored to PO4InteriorRestoringValue

B.7.509 NO3InteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_NO3InteriorRestoringRate
Location in code:	domain % blocklist % forcing % NO3InteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.895: NO3InteriorRestoringRate: A non-negative field controlling the rate at which NO3 is restored to NO3InteriorRestoringValue

B.7.510 SiO3InteriorRestoringRate

Type:	real
Units:	s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_SiO3InteriorRestoringRate
Location in code:	domain % blocklist % forcing % SiO3InteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.896: SiO3InteriorRestoringRate: A non-negative field controlling the rate at which SiO3 is restored to SiO3InteriorRestoringValue

B.7.511 NH4InteriorRestoringRate

Type:	real
Units:	s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_NH4InteriorRestoringRate
Location in code:	domain % blocklist % forcing % NH4InteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.897: NH4InteriorRestoringRate: A non-negative field controlling the rate at which NH4 is restored to NH4InteriorRestoringValue

B.7.512 FeInteriorRestoringRate

Type:	real
Units:	s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_FeInteriorRestoringRate
Location in code:	domain % blocklist % forcing % FeInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.898: FeInteriorRestoringRate: A non-negative field controlling the rate at which Fe is restored to FeInteriorRestoringValue

B.7.513 LigInteriorRestoringRate

Type:	real
Units:	s¯1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_LigInteriorRestoringRate
Location in code:	domain % blocklist % forcing % LigInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.899: LigInteriorRestoringRate: A non-negative field controlling the rate at which Lig is restored to LigInteriorRestoringValue

B.7.514 O2InteriorRestoringRate

Type:	real
Units:	s¯1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_O2InteriorRestoringRate
Location in code:	domain % blocklist % forcing % O2InteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.900: O2InteriorRestoringRate: A non-negative field controlling the rate at which O2 is restored to O2InteriorRestoringValue

B.7.515 DICInteriorRestoringRate

Type:	real
Units:	s¯1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_DICInteriorRestoringRate
Location in code:	domain % blocklist % forcing % DICInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.901: DICInteriorRestoringRate: A non-negative field controlling the rate at which DIC is restored to DICInteriorRestoringValue

B.7.516 DIC_ALT_CO2InteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_DIC_ALT_CO2InteriorRestoringRate
Location in code:	domain % blocklist % forcing % DIC_ALT_CO2InteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.902: DIC_ALT_CO2InteriorRestoringRate: A non-negative field controlling the rate at which DIC_ALT_CO2 is restored to DIC_ALT_CO2InteriorRestoringValue

B.7.517 ALKInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_ALKInteriorRestoringRate
Location in code:	domain % blocklist % forcing % ALKInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.903: ALKInteriorRestoringRate: A non-negative field controlling the rate at which ALK is restored to ALKInteriorRestoringValue

B.7.518 ALK_ALT_CO2InteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_ALK_ALT_CO2InteriorRestoringRate
Location in code:	domain % blocklist % forcing % ALK_ALT_CO2InteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.904: ALK_ALT_CO2InteriorRestoringRate: A non-negative field controlling the rate at which ALK is restored to ALKInteriorRestoringValue, Alternative CO2

B.7.519 DOCInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_DOCInteriorRestoringRate
Location in code:	domain % blocklist % forcing % DOCInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.905: DOCInteriorRestoringRate: A non-negative field controlling the rate at which DOC is restored to DOCInteriorRestoringValue

B.7.520 DONInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_DONInteriorRestoringRate
Location in code:	domain % blocklist % forcing % DONInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.906: DONInteriorRestoringRate: A non-negative field controlling the rate at which DON is restored to DONInteriorRestoringValue

B.7.521 DOPInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_DOPInteriorRestoringRate
Location in code:	domain % blocklist % forcing % DOPInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.907: DOPInteriorRestoringRate: A non-negative field controlling the rate at which DOP is restored to DOPInteriorRestoringValue

B.7.522 DOPrInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_DOPrInteriorRestoringRate
Location in code:	domain % blocklist % forcing % DOPrInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.908: DOPrInteriorRestoringRate: A non-negative field controlling the rate at which DOPr is restored to DOPrInteriorRestoringValue

B.7.523 DONrInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_DONrInteriorRestoringRate
Location in code:	domain % blocklist % forcing % DONrInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.909: DONrInteriorRestoringRate: A non-negative field controlling the rate at which DONr is restored to DONrInteriorRestoringValue

B.7.524 DOCrInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent

Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_DOCrInteriorRestoringRate
Location in code:	domain % blocklist % forcing % DOCrInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.910: DOCrInteriorRestoringRate: A non-negative field controlling the rate at which DOCr is restored to DOCrInteriorRestoringValue

B.7.525 zooCInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_zooCInteriorRestoringRate
Location in code:	domain % blocklist % forcing % zooCInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.911: zooCInteriorRestoringRate: A non-negative field controlling the rate at which zooC is restored to zooCInteriorRestoringValue

B.7.526 spChlInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_spChlInteriorRestoringRate
Location in code:	domain % blocklist % forcing % spChlInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.912: spChlInteriorRestoringRate: A non-negative field controlling the rate at which spChl is restored to spChlInteriorRestoringValue

B.7.527 spCInteriorRestoringRate

Type:	real

Units:	s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_spCInteriorRestoringRate
Location in code:	domain % blocklist % forcing % spCInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.913: spCInteriorRestoringRate: A non-negative field controlling the rate at which spC is restored to spCInteriorRestoringValue

B.7.528 spFeInteriorRestoringRate

Type:	real
Units:	s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_spFeInteriorRestoringRate
Location in code:	domain % blocklist % forcing % spFeInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.914: spFeInteriorRestoringRate: A non-negative field controlling the rate at which spFe is restored to spFeInteriorRestoringValue

B.7.529 spPInteriorRestoringRate

Type:	real
Units:	s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_spPInteriorRestoringRate
Location in code:	domain % blocklist % forcing % spPInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.915: spPInteriorRestoringRate: A non-negative field controlling the rate at which spP is restored to spPInteriorRestoringValue

B.7.530 spCaCO3InteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_spCaCO3InteriorRestoringRate
Location in code:	domain % blocklist % forcing % spCaCO3InteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.916: spCaCO3InteriorRestoringRate: A non-negative field controlling the rate at which spCaCO3 is restored to spCaCO3InteriorRestoringValue

B.7.531 diatChlInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_diatChlInteriorRestoringRate
Location in code:	domain % blocklist % forcing % diatChlInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.917: diatChlInteriorRestoringRate: A non-negative field controlling the rate at which diatChl is restored to diatChlInteriorRestoringValue

B.7.532 diatCInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_diatCInteriorRestoringRate
Location in code:	domain % blocklist % forcing % diatCInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.918: diatCInteriorRestoringRate: A non-negative field controlling the rate at which diatC is restored to diatCInteriorRestoringValue

B.7.533 diatFeInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_diatFeInteriorRestoringRate
Location in code:	domain % blocklist % forcing % diatFeInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.919: diatFeInteriorRestoringRate: A non-negative field controlling the rate at which diatFe is restored to diatFeInteriorRestoringValue

B.7.534 diatPInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_diatPInteriorRestoringRate
Location in code:	domain % blocklist % forcing % diatPInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.920: diatPInteriorRestoringRate: A non-negative field controlling the rate at which diatP is restored to diatPInteriorRestoringValue

B.7.535 diatSiInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_diatSiInteriorRestoringRate
Location in code:	domain % blocklist % forcing % diatSiInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.921: diatSiInteriorRestoringRate: A non-negative field controlling the rate at which diatSi is restored to diatSiInteriorRestoringValue

B.7.536 diazChlInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_diazChlInteriorRestoringRate
Location in code:	domain % blocklist % forcing % diazChlInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.922: diazChlInteriorRestoringRate: A non-negative field controlling the rate at which diazChl is restored to diazChlInteriorRestoringValue

B.7.537 diazCInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_diazCInteriorRestoringRate
Location in code:	domain % blocklist % forcing % diazCInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.923: diazCInteriorRestoringRate: A non-negative field controlling the rate at which diazC is restored to diazCInteriorRestoringValue

B.7.538 diazFeInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent

Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_diazFeInteriorRestoringRate
Location in code:	domain % blocklist % forcing % diazFeInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.924: diazFeInteriorRestoringRate: A non-negative field controlling the rate at which diazFe is restored to diazFeInteriorRestoringValue

B.7.539 diazPInteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_diazPInteriorRestoringRate
Location in code:	domain % blocklist % forcing % diazPInteriorRestoringRate
Array Group:	ecosysIRRGRP

Table B.925: diazPInteriorRestoringRate: A non-negative field controlling the rate at which diazP is restored to diazPInteriorRestoringValue

B.7.540 PO4InteriorRestoringValue

Type:	real
Units:	mmol P m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_PO4InteriorRestoringValue
Location in code:	domain % blocklist % forcing % PO4InteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.926: PO4InteriorRestoringValue: Tracer is restored toward this field at a rate controlled by PO4InteriorRestoringRate.

B.7.541 NO3InteriorRestoringValue

Type:	real

Units:	mmol N m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_NO3InteriorRestoringValue
Location in code:	domain % blocklist % forcing % NO3InteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.927: NO3InteriorRestoringValue: Tracer is restored toward this field at a rate controlled by NO3InteriorRestoringRate.

B.7.542 SiO3InteriorRestoringValue

Type:	real
Units:	mmol Si m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_SiO3InteriorRestoringValue
Location in code:	domain % blocklist % forcing % SiO3InteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.928: SiO3InteriorRestoringValue: Tracer is restored toward this field at a rate controlled by SiO3InteriorRestoringRate.

B.7.543 NH4InteriorRestoringValue

Type:	real
Units:	mmol N m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_NH4InteriorRestoringValue
Location in code:	domain % blocklist % forcing % NH4InteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.929: NH4InteriorRestoringValue: Tracer is restored toward this field at a rate controlled by NH4InteriorRestoringRate.

B.7.544 FeInteriorRestoringValue

Type:	real
Units:	mmol Fe m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_FeInteriorRestoringValue
Location in code:	domain % blocklist % forcing % FeInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.930: FeInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by FeInteriorRestoringRate.

B.7.545 LigInteriorRestoringValue

Type:	real
Units:	mmol m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_LigInteriorRestoringValue
Location in code:	domain % blocklist % forcing % LigInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.931: LigInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by LigInteriorRestoringRate.

B.7.546 O2InteriorRestoringValue

Type:	real
Units:	mmol O2 m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_O2InteriorRestoringValue
Location in code:	domain % blocklist % forcing % O2InteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.932: O2InteriorRestoringValue: Tracer is restored toward this field at a rate controlled by O2InteriorRestoringRate.

B.7.547 DICInteriorRestoringValue

Type:	real
Units:	mmol C m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_DICInteriorRestoringValue
Location in code:	domain % blocklist % forcing % DICInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.933: DICInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by DICInteriorRestoringRate.

B.7.548 DIC_ALT_CO2InteriorRestoringValue

Type:	real
Units:	mmol C m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_DIC_ALT_CO2InteriorRestoringValue
Location in code:	domain % blocklist % forcing % DIC_ALT_CO2InteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.934: DIC_ALT_CO2InteriorRestoringValue: Tracer is restored toward this field at a rate controlled by DIC_ALT_CO2InteriorRestoringRate.

B.7.549 ALKInteriorRestoringValue

Type:	real
Units:	meq m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_ALKInteriorRestoringValue
Location in code:	domain % blocklist % forcing % ALKInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.935: ALKInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by ALKInteriorRestoringRate.

B.7.550 ALK_ALT_CO2InteriorRestoringValue

Type:	real
Units:	meq m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_ALK_ALT_CO2InteriorRestoringValue
Location in code:	domain % blocklist % forcing % ALK_ALT_CO2InteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.936: ALK_ALT_CO2InteriorRestoringValue: Tracer is restored toward this field at a rate controlled by ALKInteriorRestoringRate, Alternative CO2

B.7.551 DOCInteriorRestoringValue

Type:	real
Units:	mmol C m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_DOCInteriorRestoringValue
Location in code:	domain % blocklist % forcing % DOCInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.937: DOCInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by DOCInteriorRestoringRate.

B.7.552 DONInteriorRestoringValue

Type:	real
Units:	mmol N m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_DONInteriorRestoringValue
Location in code:	domain % blocklist % forcing % DONInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.938: DONInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by DONInteriorRestoringRate.

B.7.553 DOPInteriorRestoringValue

Type:	real
Units:	mmol P m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_DOPInteriorRestoringValue
Location in code:	domain % blocklist % forcing % DOPInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.939: DOPInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by DOPInteriorRestoringRate.

B.7.554 DOPrInteriorRestoringValue

Type:	real
Units:	mmol P m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_DOPrInteriorRestoringValue
Location in code:	domain % blocklist % forcing % DOPrInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.940: DOPrInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by DOPrInteriorRestoringRate.

B.7.555 DONrInteriorRestoringValue

Type:	real
Units:	mmol N m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_DONrInteriorRestoringValue
Location in code:	domain % blocklist % forcing % DONrInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.941: DONrInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by DONrInteriorRestoringRate.

B.7.556 DOCrInteriorRestoringValue

Type:	real
Units:	mmol C m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_DOCrInteriorRestoringValue
Location in code:	domain % blocklist % forcing % DOCrInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.942: DOCrInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by DOCrInteriorRestoringRate.

B.7.557 zooCInteriorRestoringValue

Type:	real
Units:	mmol C m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_zooCInteriorRestoringValue
Location in code:	domain % blocklist % forcing % zooCInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.943: zooCInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by zooCInteriorRestoringRate.

B.7.558 spChlInteriorRestoringValue

Type:	real
Units:	mg Chl m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_spChlInteriorRestoringValue
Location in code:	domain % blocklist % forcing % spChlInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.944: spChlInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by spChlInteriorRestoringRate.

B.7.559 spCInteriorRestoringValue

Type:	real
Units:	mmol C m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_spCInteriorRestoringValue
Location in code:	domain % blocklist % forcing % spCInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.945: spCInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by spCInteriorRestoringRate.

B.7.560 spFeInteriorRestoringValue

Type:	real
Units:	mmol Fe m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_spFeInteriorRestoringValue
Location in code:	domain % blocklist % forcing % spFeInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.946: spFeInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by spFeInteriorRestoringRate.

B.7.561 spPInteriorRestoringValue

Type:	real
Units:	mmol P m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_spPInteriorRestoringValue
Location in code:	domain % blocklist % forcing % spPInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.947: spPInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by spPInteriorRestoringRate.

B.7.562 spCaCO3InteriorRestoringValue

Type:	real
Units:	mmol C m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_spCaCO3InteriorRestoringValue
Location in code:	domain % blocklist % forcing % spCaCO3InteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.948: spCaCO3InteriorRestoringValue: Tracer is restored toward this field at a rate controlled by spCaCO3InteriorRestoringRate.

B.7.563 diatChlInteriorRestoringValue

Type:	real
Units:	mg Chl m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_diatChlInteriorRestoringValue
Location in code:	domain % blocklist % forcing % diatChlInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.949: diatChlInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by diatChlInteriorRestoringRate.

B.7.564 diatCInteriorRestoringValue

Type:	real
Units:	mmol C m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_diatCInteriorRestoringValue
Location in code:	domain % blocklist % forcing % diatCInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.950: diatCInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by diatCInteriorRestoringRate.

B.7.565 diatFeInteriorRestoringValue

Type:	real
Units:	mmol Fe m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_diatFeInteriorRestoringValue
Location in code:	domain % blocklist % forcing % diatFeInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.951: diatFeInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by diatFeInteriorRestoringRate.

B.7.566 diatPInteriorRestoringValue

Type:	real
Units:	mmol P m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_diatPInteriorRestoringValue
Location in code:	domain % blocklist % forcing % diatPInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.952: diatPInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by diatPInteriorRestoringRate.

B.7.567 diatSiInteriorRestoringValue

Type:	real
Units:	mmol Si m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_diatSiInteriorRestoringValue
Location in code:	domain % blocklist % forcing % diatSiInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.953: diatSiInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by diatSiInteriorRestoringRate.

B.7.568 diazChlInteriorRestoringValue

Type:	real
Units:	mg Chl m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_diazChlInteriorRestoringValue
Location in code:	domain % blocklist % forcing % diazChlInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.954: diazChlInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by diazChlInteriorRestoringRate.

B.7.569 diazCInteriorRestoringValue

Type:	real
Units:	mmol C m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_diazCInteriorRestoringValue
Location in code:	domain % blocklist % forcing % diazCInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.955: diazCInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by diazCInteriorRestoringRate.

B.7.570 diazFeInteriorRestoringValue

Type:	real
Units:	mmol Fe m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent

Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_diazFeInteriorRestoringValue
Location in code:	domain % blocklist % forcing % diazFeInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.956: diazFeInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by diazFeInteriorRestoringRate.

B.7.571 diazPInteriorRestoringValue

Type:	real
Units:	mmol P m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in ecosysTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_diazPInteriorRestoringValue
Location in code:	domain % blocklist % forcing % diazPInteriorRestoringValue
Array Group:	ecosysIRVGRP

Table B.957: diazPInteriorRestoringValue: diazP is restored toward this field at a rate controlled by diazPInteriorRestoringRate.

B.7.572 PO4ExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_PO4ExponentialDecayRate
Location in code:	domain % blocklist % forcing % PO4ExponentialDecayRate
Array Group:	ecosysGRP

Table B.958: PO4ExponentialDecayRate: A non-negative field controlling the exponential decay of PO4

B.7.573 NO3ExponentialDecayRate

Type:	real

Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_NO3ExponentialDecayRate
Location in code:	domain % blocklist % forcing % NO3ExponentialDecayRate
Array Group:	ecosysGRP

Table B.959: NO3ExponentialDecayRate: A non-negative field controlling the exponential decay of NO3

B.7.574 SiO3ExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_SiO3ExponentialDecayRate
Location in code:	domain % blocklist % forcing % SiO3ExponentialDecayRate
Array Group:	ecosysGRP

Table B.960: SiO3ExponentialDecayRate: A non-negative field controlling the exponential decay of SiO3

B.7.575 NH4ExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_NH4ExponentialDecayRate
Location in code:	domain % blocklist % forcing % NH4ExponentialDecayRate
Array Group:	ecosysGRP

Table B.961: NH4ExponentialDecayRate: A non-negative field controlling the exponential decay of NH4

B.7.576 FeExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_FeExponentialDecayRate
Location in code:	domain % blocklist % forcing % FeExponentialDecayRate
Array Group:	ecosysGRP

Table B.962: FeExponentialDecayRate: A non-negative field controlling the exponential decay of Fe

B.7.577 LigExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_LigExponentialDecayRate
Location in code:	domain % blocklist % forcing % LigExponentialDecayRate
Array Group:	ecosysGRP

Table B.963: LigExponentialDecayRate: A non-negative field controlling the exponential decay of Lig

B.7.578 O2ExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_O2ExponentialDecayRate
Location in code:	domain % blocklist % forcing % O2ExponentialDecayRate
Array Group:	ecosysGRP

Table B.964: O2ExponentialDecayRate: A non-negative field controlling the exponential decay of O2

B.7.579 DICExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_DICExponentialDecayRate
Location in code:	domain % blocklist % forcing % DICExponentialDecayRate
Array Group:	ecosysGRP

Table B.965: DICExponentialDecayRate: A non-negative field controlling the exponential decay of DIC

B.7.580 DIC_ALT_CO2ExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_DIC_ALT_CO2ExponentialDecayRate
Location in code:	domain % blocklist % forcing % DIC_ALT_CO2ExponentialDecayRate
Array Group:	ecosysGRP

Table B.966: DIC_ALT_CO2ExponentialDecayRate: A non-negative field controlling the exponential decay of DIC_ALT_CO2

B.7.581 ALKExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_ALKExponentialDecayRate
Location in code:	domain % blocklist % forcing % ALKExponentialDecayRate
Array Group:	ecosysGRP

Table B.967: ALKExponentialDecayRate: A non-negative field controlling the exponential decay of ALK

B.7.582 ALK_ALT_CO2ExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_ALK_ALT_CO2ExponentialDecayRate
Location in code:	domain % blocklist % forcing % ALK_ALT_CO2ExponentialDecayRate
Array Group:	ecosysGRP

Table B.968: ALK_ALT_CO2ExponentialDecayRate: A non-negative field controlling the exponential decay of ALK, Alternative CO2

B.7.583 DOCExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_DOCExponentialDecayRate
Location in code:	domain % blocklist % forcing % DOCExponentialDecayRate
Array Group:	ecosysGRP

Table B.969: DOCExponentialDecayRate: A non-negative field controlling the exponential decay of DOC

B.7.584 DONExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_DONExponentialDecayRate
Location in code:	domain % blocklist % forcing % DONExponentialDecayRate
Array Group:	ecosysGRP

Table B.970: DONExponentialDecayRate: A non-negative field controlling the exponential decay of DON

B.7.585 DOPExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_DOPExponentialDecayRate
Location in code:	domain % blocklist % forcing % DOPExponentialDecayRate
Array Group:	ecosysGRP

Table B.971: DOPExponentialDecayRate: A non-negative field controlling the exponential decay of DOP

B.7.586 DOPrExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_DOPrExponentialDecayRate
Location in code:	domain % blocklist % forcing % DOPrExponentialDecayRate
Array Group:	ecosysGRP

Table B.972: DOPrExponentialDecayRate: A non-negative field controlling the exponential decay of DOPr

B.7.587 DONrExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_DONrExponentialDecayRate
Location in code:	domain % blocklist % forcing % DONrExponentialDecayRate
Array Group:	ecosysGRP

Table B.973: DONrExponentialDecayRate: A non-negative field controlling the exponential decay of DONr

B.7.588 DOCrExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_DOCrExponentialDecayRate
Location in code:	domain % blocklist % forcing % DOCrExponentialDecayRate
Array Group:	ecosysGRP

Table B.974: DOCrExponentialDecayRate: A non-negative field controlling the exponential decay of DOCr

B.7.589 zooCExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_zooCExponentialDecayRate
Location in code:	domain % blocklist % forcing % zooCExponentialDecayRate
Array Group:	ecosysGRP

Table B.975: zooCExponentialDecayRate: A non-negative field controlling the exponential decay of zooC

B.7.590 spChlExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_spChlExponentialDecayRate
Location in code:	domain % blocklist % forcing % spChlExponentialDecayRate
Array Group:	ecosysGRP

Table B.976: spChlExponentialDecayRate: A non-negative field controlling the exponential decay of spChl

B.7.591 spCExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_spCExponentialDecayRate
Location in code:	domain % blocklist % forcing % spCExponentialDecayRate
Array Group:	ecosysGRP

Table B.977: spCExponentialDecayRate: A non-negative field controlling the exponential decay of spC

B.7.592 spFeExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_spFeExponentialDecayRate
Location in code:	domain % blocklist % forcing % spFeExponentialDecayRate
Array Group:	ecosysGRP

Table B.978: spFeExponentialDecayRate: A non-negative field controlling the exponential decay of spFe

B.7.593 spPExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_spPExponentialDecayRate
Location in code:	domain % blocklist % forcing % spPExponentialDecayRate
Array Group:	ecosysGRP

Table B.979: spPExponentialDecayRate: A non-negative field controlling the exponential decay of spP

B.7.594 spCaCO3ExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_spCaCO3ExponentialDecayRate
Location in code:	domain % blocklist % forcing % spCaCO3ExponentialDecayRate
Array Group:	ecosysGRP

Table B.980: spCaCO3ExponentialDecayRate: A non-negative field controlling the exponential decay of spCaCO3

B.7.595 diatChlExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_diatChlExponentialDecayRate
Location in code:	domain % blocklist % forcing % diatChlExponentialDecayRate
Array Group:	ecosysGRP

Table B.981: diatChlExponentialDecayRate: A non-negative field controlling the exponential decay of diatChl

B.7.596 diatCExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_diatCExponentialDecayRate
Location in code:	domain % blocklist % forcing % diatCExponentialDecayRate
Array Group:	ecosysGRP

Table B.982: diatCExponentialDecayRate: A non-negative field controlling the exponential decay of diatC

B.7.597 diatFeExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_diatFeExponentialDecayRate
Location in code:	domain % blocklist % forcing % diatFeExponentialDecayRate
Array Group:	ecosysGRP

Table B.983: diatFeExponentialDecayRate: A non-negative field controlling the exponential decay of diatFe

B.7.598 diatPExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_diatPExponentialDecayRate
Location in code:	domain % blocklist % forcing % diatPExponentialDecayRate
Array Group:	ecosysGRP

Table B.984: diatPExponentialDecayRate: A non-negative field controlling the exponential decay of diatP

B.7.599 diatSiExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_diatSiExponentialDecayRate
Location in code:	domain % blocklist % forcing % diatSiExponentialDecayRate
Array Group:	ecosysGRP

Table B.985: diatSiExponentialDecayRate: A non-negative field controlling the exponential decay of diatSi

B.7.600 diazChlExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_diazChlExponentialDecayRate
Location in code:	domain % blocklist % forcing % diazChlExponentialDecayRate
Array Group:	ecosysGRP

Table B.986: diazChlExponentialDecayRate: A non-negative field controlling the exponential decay of diazChl

B.7.601 diazCExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_diazCExponentialDecayRate
Location in code:	domain % blocklist % forcing % diazCExponentialDecayRate
Array Group:	ecosysGRP

Table B.987: diazCExponentialDecayRate: A non-negative field controlling the exponential decay of diazC

B.7.602 diazFeExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent

Index in ecosysTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_diazFeExponentialDecayRate
Location in code:	domain % blocklist % forcing % diazFeExponentialDecayRate
Array Group:	ecosysGRP

Table B.988: diazFeExponentialDecayRate: A non-negative field controlling the exponential decay of diazFe

B.7.603 PO4IdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_PO4IdealAgeMask
Location in code:	domain % blocklist % forcing % PO4IdealAgeMask
Array Group:	ecosysGRP

Table B.989: PO4IdealAgeMask: In top layer, PO4 is reset to PO4 * PO4IdealAgeMask, valid values of PO4IdealAgeMask or 0 and 1

B.7.604 NO3IdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_NO3IdealAgeMask
Location in code:	domain % blocklist % forcing % NO3IdealAgeMask
Array Group:	ecosysGRP

Table B.990: NO3IdealAgeMask: In top layer, NO3 is reset to NO3 * NO3IdealAgeMask, valid values of NO3IdealAgeMask or 0 and 1

B.7.605 SiO3IdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_SiO3IdealAgeMask
Location in code:	domain % blocklist % forcing % SiO3IdealAgeMask
Array Group:	ecosysGRP

Table B.991: SiO3IdealAgeMask: In top layer, SiO3 is reset to SiO3 * SiO3IdealAgeMask, valid values of SiO3IdealAgeMask or 0 and 1

B.7.606 NH4IdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_NH4IdealAgeMask
Location in code:	domain % blocklist % forcing % NH4IdealAgeMask
Array Group:	ecosysGRP

Table B.992: NH4IdealAgeMask: In top layer, NH4 is reset to NH4 * NH4IdealAgeMask, valid values of NH4IdealAgeMask or 0 and 1

B.7.607 FeIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_FeIdealAgeMask
Location in code:	domain % blocklist % forcing % FeIdealAgeMask
Array Group:	ecosysGRP

Table B.993: FeIdealAgeMask: In top layer, Fe is reset to Fe * FeIdealAgeMask, valid values of FeIdealAgeMask or 0 and 1

B.7.608 LigIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_LigIdealAgeMask
Location in code:	domain % blocklist % forcing % LigIdealAgeMask
Array Group:	ecosysGRP

Table B.994: LigIdealAgeMask: In top layer, Lig is reset to Lig * LigIdealAgeMask, valid values of LigIdealAgeMask or 0 and 1

B.7.609 O2IdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_O2IdealAgeMask
Location in code:	domain % blocklist % forcing % O2IdealAgeMask
Array Group:	ecosysGRP

Table B.995: O2IdealAgeMask: In top layer, O2 is reset to O2 * O2IdealAgeMask, valid values of O2IdealAgeMask or 0 and 1

B.7.610 DICIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_DICIdealAgeMask
Location in code:	domain % blocklist % forcing % DICIdealAgeMask
Array Group:	ecosysGRP

Table B.996: DICIdealAgeMask: In top layer, DIC is reset to DIC * DICIdealAgeMask, valid values of DICIdealAgeMask or 0 and 1

B.7.611 DIC_ALT_CO2IdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_DIC_ALT_CO2IdealAgeMask
Location in code:	domain % blocklist % forcing % DIC_ALT_CO2IdealAgeMask
Array Group:	ecosysGRP

Table B.997: DIC_ALT_CO2IdealAgeMask: In top layer, DIC_ALT_CO2 is reset to DIC_ALT_CO2 * DIC_ALT_CO2IdealAgeMask, valid values of DIC_ALT_CO2IdealAgeMask or 0 and 1

B.7.612 ALKIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_ALKIdealAgeMask
Location in code:	domain % blocklist % forcing % ALKIdealAgeMask
Array Group:	ecosysGRP

Table B.998: ALKIdealAgeMask: In top layer, ALK is reset to ALK * ALKIdealAgeMask, valid values of ALKIdealAgeMask or 0 and 1

B.7.613 ALK_ALT_CO2IdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_ALK_ALT_CO2IdealAgeMask
Location in code:	domain % blocklist % forcing % ALK_ALT_CO2IdealAgeMask
Array Group:	ecosysGRP

Table B.999: ALK_ALT_CO2IdealAgeMask: In top layer, ALK is reset to ALK * ALKIdealAgeMask, valid values of ALKIdealAgeMask or 0 and 1, Alternative CO2

B.7.614 DOCIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_DOCIdealAgeMask
Location in code:	domain % blocklist % forcing % DOCIdealAgeMask
Array Group:	ecosysGRP

Table B.1000: DOCIdealAgeMask: In top layer, DOC is reset to DOC * DOCIdealAgeMask, valid values of DOCIdealAgeMask or 0 and 1

B.7.615 DONIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_DONIdealAgeMask
Location in code:	domain % blocklist % forcing % DONIdealAgeMask
Array Group:	ecosysGRP

Table B.1001: DONIdealAgeMask: In top layer, DON is reset to DON * DONIdealAgeMask, valid values of DONIdealAgeMask or 0 and 1

B.7.616 DOPIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent

Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_DOPIdealAgeMask
Location in code:	domain % blocklist % forcing % DOPIdealAgeMask
Array Group:	ecosysGRP

Table B.1002: DOPIdealAgeMask: In top layer, DOP is reset to DOP * DOPIdealAgeMask, valid values of DOPIdealAgeMask or 0 and 1

B.7.617 DOPrIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_DOPrIdealAgeMask
Location in code:	domain % blocklist % forcing % DOPrIdealAgeMask
Array Group:	ecosysGRP

Table B.1003: DOPrIdealAgeMask: In top layer, DOPr is reset to DOPr * DOPrIdealAgeMask, valid values of DOPrIdealAgeMask or 0 and 1

B.7.618 DONrIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_DONrIdealAgeMask
Location in code:	domain % blocklist % forcing % DONrIdealAgeMask
Array Group:	ecosysGRP

Table B.1004: DONrIdealAgeMask: In top layer, DONr is reset to DONr * DONrIdealAgeMask, valid values of DONrIdealAgeMask or 0 and 1

B.7.619 DOCrIdealAgeMask

Type:	real

Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_DOCrIdealAgeMask
Location in code:	domain % blocklist % forcing % DOCrIdealAgeMask
Array Group:	ecosysGRP

Table B.1005: DOCrIdealAgeMask: In top layer, DOCr is reset to DOCr * DOCrIdealAgeMask, valid values of DOCrIdealAgeMask or 0 and 1

B.7.620 zooCIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_zooCIdealAgeMask
Location in code:	domain % blocklist % forcing % zooCIdealAgeMask
Array Group:	ecosysGRP

Table B.1006: zooCIdealAgeMask: In top layer, zooC is reset to zooC * zooCIdealAgeMask, valid values of zooCIdealAgeMask or 0 and 1

B.7.621 spChlIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_spChlIdealAgeMask
Location in code:	domain % blocklist % forcing % spChlIdealAgeMask
Array Group:	ecosysGRP

Table B.1007: spChlIdealAgeMask: In top layer, spChl is reset to spChl * spChlIdealAgeMask, valid values of spChlIdealAgeMask or 0 and 1

B.7.622 spCIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_spCIdealAgeMask
Location in code:	domain % blocklist % forcing % spCIdealAgeMask
Array Group:	ecosysGRP

Table B.1008: spCIdealAgeMask: In top layer, spC is reset to spC * spCIdealAgeMask, valid values of spCIdealAgeMask or 0 and 1

B.7.623 spFeIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_spFeIdealAgeMask
Location in code:	domain % blocklist % forcing % spFeIdealAgeMask
Array Group:	ecosysGRP

Table B.1009: spFeIdealAgeMask: In top layer, spFe is reset to spFe * spFeIdealAgeMask, valid values of spFeIdealAgeMask or 0 and 1

B.7.624 spPIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_spPIdealAgeMask
Location in code:	domain % blocklist % forcing % spPIdealAgeMask
Array Group:	ecosysGRP

Table B.1010: spPIdealAgeMask: In top layer, spP is reset to spP * spPIdealAgeMask, valid values of spPIdealAgeMask or 0 and 1

B.7.625 spCaCO3IdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_spCaCO3IdealAgeMask
Location in code:	domain % blocklist % forcing % spCaCO3IdealAgeMask
Array Group:	ecosysGRP

Table B.1011: spCaCO3IdealAgeMask: In top layer, spCaCO3 is reset to spCaCO3 * spCaCO3IdealAgeMask, valid values of spCaCO3IdealAgeMask or 0 and 1

B.7.626 diatChlIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_diatChlIdealAgeMask
Location in code:	domain % blocklist % forcing % diatChlIdealAgeMask
Array Group:	ecosysGRP

Table B.1012: diatChlIdealAgeMask: In top layer, diatChl is reset to diatChl * diatChlIdealAgeMask, valid values of diatChlIdealAgeMask or 0 and 1

B.7.627 diatCIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_diatCIdealAgeMask
Location in code:	domain % blocklist % forcing % diatCIdealAgeMask
Array Group:	ecosysGRP

Table B.1013: diatCIdealAgeMask: In top layer, diatC is reset to diatC * diatCIdealAgeMask, valid values of diatCIdealAgeMask or 0 and 1

B.7.628 diatFeIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_diatFeIdealAgeMask
Location in code:	domain % blocklist % forcing % diatFeIdealAgeMask
Array Group:	ecosysGRP

Table B.1014: diatFeIdealAgeMask: In top layer, diatFe is reset to diatFe * diatFeIdealAgeMask, valid values of diatFeIdealAgeMask or 0 and 1

B.7.629 diatPIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_diatPIdealAgeMask
Location in code:	domain % blocklist % forcing % diatPIdealAgeMask
Array Group:	ecosysGRP

Table B.1015: diatPIdealAgeMask: In top layer, diatP is reset to diatP * diatPIdealAgeMask, valid values of diatPIdealAgeMask or 0 and 1

B.7.630 diatSiIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_diatSiIdealAgeMask
Location in code:	domain % blocklist % forcing % diatSiIdealAgeMask
Array Group:	ecosysGRP

Table B.1016: diatSiIdealAgeMask: In top layer, diatSi is reset to diatSi * diatSiIdealAgeMask, valid values of diatSiIdealAgeMask or 0 and 1

B.7.631 diazChlIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_diazChlIdealAgeMask
Location in code:	domain % blocklist % forcing % diazChlIdealAgeMask
Array Group:	ecosysGRP

Table B.1017: diazChlIdealAgeMask: In top layer, diazChl is reset to diazChl * diazChlIdealAgeMask, valid values of diazChlIdealAgeMask or 0 and 1

B.7.632 diazCIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_diazCIdealAgeMask
Location in code:	domain % blocklist % forcing % diazCIdealAgeMask
Array Group:	ecosysGRP

Table B.1018: diazCIdealAgeMask: In top layer, diazC is reset to diazC * diazCIdealAgeMask, valid values of diazCIdealAgeMask or 0 and 1

B.7.633 diazFeIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_diazFeIdealAgeMask
Location in code:	domain % blocklist % forcing % diazFeIdealAgeMask
Array Group:	ecosysGRP

Table B.1019: diazFeIdealAgeMask: In top layer, diazFe is reset to diazFe * diazFeIdealAgeMask, valid values of diazFeIdealAgeMask or 0 and 1

B.7.634 diazPIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersIdealAgeMask Array:	domain % blocklist % forcing % index_diazPIdealAgeMask
Location in code:	domain % blocklist % forcing % diazPIdealAgeMask
Array Group:	ecosysGRP

Table B.1020: diazPIdealAgeMask: In top layer, diazP is reset to diazP * diazPIdealAgeMask, valid values of diazPIdealAgeMask or 0 and 1

B.7.635 PO4TTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTDMask Array:	domain % blocklist % forcing % index_PO4TTDMask
Location in code:	domain % blocklist % forcing % PO4TTDMask
Array Group:	ecosysGRP

Table B.1021: PO4TTDMask: In top layer, PO4 is reset to TTDMask, valid values of PO4TTDMask or 0 and 1

B.7.636 NO3TTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTDMask Array:	domain % blocklist % forcing % index_NO3TTDMask
Location in code:	domain % blocklist % forcing % NO3TTDMask
Array Group:	ecosysGRP

Table B.1022: NO3TTDMask: In top layer, NO3 is reset to TTDMask, valid values of NO3TTDMask or 0 and 1

B.7.637 SiO3TTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_SiO3TTDMask
Location in code:	domain % blocklist % forcing % SiO3TTDMask
Array Group:	ecosysGRP

Table B.1023: SiO3TTDMask: In top layer, SiO3 is reset to TTDMask, valid values of SiO3TTDMask or 0 and 1

B.7.638 NH4TTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_NH4TTDMask
Location in code:	domain % blocklist % forcing % NH4TTDMask
Array Group:	ecosysGRP

Table B.1024: NH4TTDMask: In top layer, NH4 is reset to TTDMask, valid values of NH4TTDMask or 0 and 1

B.7.639 FeTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_FeTTDMask
Location in code:	domain % blocklist % forcing % FeTTDMask
Array Group:	ecosysGRP

Table B.1025: FeTTDMask: In top layer, Fe is reset to TTDMask, valid values of FeTTDMask or 0 and 1

B.7.640 LigTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_LigTTDMask
Location in code:	domain % blocklist % forcing % LigTTDMask
Array Group:	ecosysGRP

Table B.1026: LigTTDMask: In top layer, Lig is reset to TTDMask, valid values of LigTTDMask or 0 and 1

B.7.641 O2TTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_O2TTDMask
Location in code:	domain % blocklist % forcing % O2TTDMask
Array Group:	ecosysGRP

Table B.1027: O2TTDMask: In top layer, O2 is reset to TTDMask, valid values of O2TTDMask or 0 and 1

B.7.642 DICTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_DICTTDMask
Location in code:	domain % blocklist % forcing % DICTTDMask
Array Group:	ecosysGRP

Table B.1028: DICTTDMask: In top layer, DIC is reset to TTDMask, valid values of DICTTD-Mask or 0 and 1

B.7.643 DIC_ALT_CO2TTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_DIC_ALT_CO2TTDMask
Location in code:	domain % blocklist % forcing % DIC_ALT_CO2TTDMask
Array Group:	ecosysGRP

Table B.1029: DIC_ALT_CO2TTDMask: In top layer, DIC_ALT_CO2 is reset to TTDMask, valid values of DIC_ALT_CO2TTDMask or 0 and 1

B.7.644 ALKTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_ALKTTDMask
Location in code:	domain % blocklist % forcing % ALKTTDMask
Array Group:	ecosysGRP

Table B.1030: ALKTTDMask: In top layer, ALK is reset to TTDMask, valid values of ALKTTD-Mask or 0 and 1

B.7.645 ALK_ALT_CO2TTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_ALK_ALT_CO2TTDMask
Location in code:	domain % blocklist % forcing % ALK_ALT_CO2TTDMask
Array Group:	ecosysGRP

Table B.1031: ALK_ALT_CO2TTDMask: In top layer, ALK is reset to TTDMask, valid values of ALKTTDMask or 0 and 1, Alternative CO2

B.7.646 DOCTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_DOCTTDMask
Location in code:	domain % blocklist % forcing % DOCTTDMask
Array Group:	ecosysGRP

Table B.1032: DOCTTDMask: In top layer, DOC is reset to TTDMask, valid values of DOCTTD-Mask or 0 and 1

B.7.647 DONTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_DONTTDMask
Location in code:	domain % blocklist % forcing % DONTTDMask
Array Group:	ecosysGRP

Table B.1033: DONTTDMask: In top layer, DON is reset to TTDMask, valid values of DONTTD-Mask or 0 and 1

B.7.648 DOPTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_DOPTTDMask
Location in code:	domain % blocklist % forcing % DOPTTDMask
Array Group:	ecosysGRP

Table B.1034: DOPTTDMask: In top layer, DOP is reset to TTDMask, valid values of DOPTTD-Mask or 0 and 1

B.7.649 DOPrTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_DOPrTTDMask
Location in code:	domain % blocklist % forcing % DOPrTTDMask
Array Group:	ecosysGRP

Table B.1035: DOPrTTDMask: In top layer, DOPr is reset to TTDMask, valid values of DOPrTTDMask or 0 and 1

B.7.650 DONrTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_DONrTTDMask
Location in code:	domain % blocklist % forcing % DONrTTDMask
Array Group:	ecosysGRP

Table B.1036: DONrTTDMask: In top layer, DONr is reset to TTDMask, valid values of DONrTTDMask or 0 and 1

B.7.651 DOCrTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_DOCrTTDMask
Location in code:	domain % blocklist % forcing % DOCrTTDMask
Array Group:	ecosysGRP

Table B.1037: DOCrTTDMask: In top layer, DOCr is reset to TTDMask, valid values of DOCrTTDMask or 0 and 1

B.7.652 zooCTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_zooCTTDMask
Location in code:	domain % blocklist % forcing % zooCTTDMask
Array Group:	ecosysGRP

Table B.1038: zooCTTDMask: In top layer, zooC is reset to TTDMask, valid values of zooCTTD-Mask or 0 and 1

B.7.653 spChlTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_spChlTTDMask
Location in code:	domain % blocklist % forcing % spChlTTDMask
Array Group:	ecosysGRP

Table B.1039: spChlTTDMask: In top layer, spChl is reset to TTDMask, valid values of spChlTTDMask or 0 and 1

B.7.654 spCTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_spCTTDMask
Location in code:	domain % blocklist % forcing % spCTTDMask
Array Group:	ecosysGRP

Table B.1040: spCTTDMask: In top layer, spC is reset to TTDMask, valid values of spCTTDMask or 0 and 1

B.7.655 spFeTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTDMask Array:	domain % blocklist % forcing % index_spFeTTDMask
Location in code:	domain % blocklist % forcing % spFeTTDMask
Array Group:	ecosysGRP

Table B.1041: spFeTTDMask: In top layer, spFe is reset to TTDMask, valid values of spFeTTDMask or 0 and 1

B.7.656 spPTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTDMask Array:	domain % blocklist % forcing % index_spPTTDMask
Location in code:	domain % blocklist % forcing % spPTTDMask
Array Group:	ecosysGRP

Table B.1042: spPTTDMask: In top layer, spP is reset to TTDMask, valid values of spPTTDMask or 0 and 1

B.7.657 spCaCO3TTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTDMask Array:	domain % blocklist % forcing % index_spCaCO3TTDMask
Location in code:	domain % blocklist % forcing % spCaCO3TTDMask
Array Group:	ecosysGRP

Table B.1043: spCaCO3TTDMask: In top layer, spCaCO3 is reset to TTDMask, valid values of spCaCO3TTDMask or 0 and 1

B.7.658 diatChlTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_diatChlTTDMask
Location in code:	domain % blocklist % forcing % diatChlTTDMask
Array Group:	ecosysGRP

Table B.1044: diatChlTTDMask: In top layer, diatChl is reset to TTDMask, valid values of diatChlTTDMask or 0 and 1

B.7.659 diatCTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_diatCTTDMask
Location in code:	domain % blocklist % forcing % diatCTTDMask
Array Group:	ecosysGRP

Table B.1045: diatCTTDMask: In top layer, diatC is reset to TTDMask, valid values of diatCTTDMask or 0 and 1

B.7.660 diatFeTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_diatFeTTDMask
Location in code:	domain % blocklist % forcing % diatFeTTDMask
Array Group:	ecosysGRP

Table B.1046: diatFeTTDMask: In top layer, diatFe is reset to TTDMask, valid values of diatFeTTDMask or 0 and 1

B.7.661 diatPTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_diatPTTDMask
Location in code:	domain % blocklist % forcing % diatPTTDMask
Array Group:	ecosysGRP

Table B.1047: diatPTTDMask: In top layer, diatP is reset to TTDMask, valid values of diatPTTD-Mask or 0 and 1

B.7.662 diatSiTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_diatSiTTDMask
Location in code:	domain % blocklist % forcing % diatSiTTDMask
Array Group:	ecosysGRP

Table B.1048: diatSiTTDMask: In top layer, diatSi is reset to TTDMask, valid values of diat-SiTTDMask or 0 and 1

B.7.663 diazChlTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_diazChlTTDMask
Location in code:	domain % blocklist % forcing % diazChlTTDMask
Array Group:	ecosysGRP

Table B.1049: diazChlTTDMask: In top layer, diazChl is reset to TTDMask, valid values of di-azChlTTDMask or 0 and 1

B.7.664 diazCTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_diazCTTDMask
Location in code:	domain % blocklist % forcing % diazCTTDMask
Array Group:	ecosysGRP

Table B.1050: diazCTTDMask: In top layer, diazC is reset to TTDMask, valid values of diazCTTDMask or 0 and 1

B.7.665 diazFeTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_diazFeTTDMask
Location in code:	domain % blocklist % forcing % diazFeTTDMask
Array Group:	ecosysGRP

Table B.1051: diazFeTTDMask: In top layer, diazFe is reset to TTDMask, valid values of diazFeTTDMask or 0 and 1

B.7.666 diazPTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in ecosysTracersTTD-Mask Array:	domain % blocklist % forcing % index_diazPTTDMask
Location in code:	domain % blocklist % forcing % diazPTTDMask
Array Group:	ecosysGRP

Table B.1052: diazPTTDMask: In top layer, diazP is reset to TTDMask, valid values of diazPTTDMask or 0 and 1

B.7.667 DMSSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersSurfaceFlux Array:	domain % blocklist % forcing % index_DMSSurfaceFlux
Location in code:	domain % blocklist % forcing % DMSSurfaceFlux
Array Group:	DMSSurfaceFluxGRP

Table B.1053: DMSSurfaceFlux: Dimethyl Sulfide Surface Flux

B.7.668 DMSPSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersSurfaceFlux Array:	domain % blocklist % forcing % index_DMSPSurfaceFlux
Location in code:	domain % blocklist % forcing % DMSPSurfaceFlux
Array Group:	DMSSurfaceFluxGRP

Table B.1054: DMSPSurfaceFlux: Dimethyl Sulfoniopropionate Surface Flux

B.7.669 DMSSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_DMSSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % DMSSurfaceFluxRunoff
Array Group:	DMSSurfaceFluxRunoffGRP

Table B.1055: DMSSurfaceFluxRunoff: Dimethyl Sulfide Surface Flux Due to Runoff

B.7.670 DMSPSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_DMSPSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % DMSPSurfaceFluxRunoff
Array Group:	DMSSurfaceFluxRunoffGRP

Table B.1056: DMSPSurfaceFluxRunoff: Dimethyl Sulfoniopropionate Surface Flux Due to Runoff

B.7.671 DMSSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_DMSSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % DMSSurfaceFluxRemoved
Array Group:	DMSSurfaceFluxRemovedGRP

Table B.1057: DMSSurfaceFluxRemoved: Dimethyl Sulfide Surface Flux that is ignored

B.7.672 DMSPSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_DMSPSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % DMSPSurfaceFluxRemoved
Array Group:	DMSSurfaceFluxRemovedGRP

Table B.1058: DMSPSurfaceFluxRemoved: Dimethyl Sulfoniopropionate Surface Flux that is ignored

B.7.673 avgOceanSurfaceDMS

Type:	real
Units:	mmolS m^{-3}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceDMS

Table B.1059: avgOceanSurfaceDMS: Ocean Surface DMS concentration

B.7.674 avgOceanSurfaceDMSP

Type:	real
Units:	mmolS m^{-3}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceDMSP

Table B.1060: avgOceanSurfaceDMSP: Ocean Surface DMSP concentration

B.7.675 iceFluxDMS

Type:	real
Units:	mmolS m^{-2} s
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxDMS

Table B.1061: iceFluxDMS: Surface DMS flux from sea ice

B.7.676 iceFluxDMSP

Type:	real
Units:	mmolS m^{-2} s
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % iceFluxDMSP

Table B.1062: iceFluxDMSP: Surface DMSP flux from sea ice

B.7.677 dms_flux_diag_ifrac

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % dms_flux_diag_ifrac

Table B.1063: dms_flux_diag_ifrac: Ice Fraction used in DMS flux calculation

B.7.678 dms_flux_diag_xkw

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % dms_flux_diag_xkw

Table B.1064: dms_flux_diag_xkw: XKW used in DMS flux calculation

B.7.679 dms_flux_diag_atm_press

Type:	real
Units:	unknown
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % dms_flux_diag_atm_press

Table B.1065: dms_flux_diag_atm_press: Atm Pressure used in DMS flux calculation

B.7.680 dms_flux_diag_pv

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % dms_flux_diag_pv

Table B.1066: dms_flux_diag_pv: Piston Velocity used in DMS flux calculation

B.7.681 dms_flux_diag_schmidt

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % dms_flux_diag_schmidt

Table B.1067: dms_flux_diag_schmidt: Schmidt Number used in DMS flux calculation

B.7.682 dms_flux_diag_sat

Type:	real
Units:	mmolS m^3
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % dms_flux_diag_sat

Table B.1068: dms_flux_diag_sat: DMS Saturation used in DMS flux calculation

B.7.683 dms_flux_diag_surf

Type:	real
Units:	mmolS m^3
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % dms_flux_diag_surf

Table B.1069: dms_flux_diag_surf: Surface DMS Values used in DMS flux calculation

B.7.684 dms_flux_diag_ws

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % dms_flux_diag_ws

Table B.1070: dms_flux_diag_ws: Wind Speed used in DMS flux calculation

B.7.685 DMSPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersPistonVelocity Array:	domain % blocklist % forcing % index_DMSPistonVelocity
Location in code:	domain % blocklist % forcing % DMSPistonVelocity
Array Group:	DMSPVGRP

Table B.1071: DMSPistonVelocity: A non-negative field controlling the rate at which DMS is restored to DMSSurfaceRestoringValue

B.7.686 DMSPPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersPistonVelocity Array:	domain % blocklist % forcing % index_DMSPPistonVelocity
Location in code:	domain % blocklist % forcing % DMSPPistonVelocity
Array Group:	DMSPVGRP

Table B.1072: DMSPPistonVelocity: A non-negative field controlling the rate at which DMSP is restored to DMSPSurfaceRestoringValue

B.7.687 DMSSurfaceRestoringValue

Type:	real
Units:	$mmol\,m^3$
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_DMSSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % DMSSurfaceRestoringValue
Array Group:	DMSSRVGRP

Table B.1073: DMSSurfaceRestoringValue: Tracer is restored toward this field at a rate controlled by DMSPistonVelocity.

B.7.688 DMSPSurfaceRestoringValue

Type:	real
Units:	mmol m^3
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_DMSPSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % DMSPSurfaceRestoringValue
Array Group:	DMSSRVGRP

Table B.1074: DMSPSurfaceRestoringValue: Tracer is restored toward this field at a rate controlled by DMSPPistonVelocity.

B.7.689 DMSInteriorRestoringRate

Type:	real
Units:	s$^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in DMSTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_DMSInteriorRestoringRate
Location in code:	domain % blocklist % forcing % DMSInteriorRestoringRate
Array Group:	DMSIRRGRP

Table B.1075: DMSInteriorRestoringRate: A non-negative field controlling the rate at which DMS is restored to DMSInteriorRestoringValue

B.7.690 DMSPInteriorRestoringRate

Type:	real
Units:	s$^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in DMSTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_DMSPInteriorRestoringRate
Location in code:	domain % blocklist % forcing % DMSPInteriorRestoringRate
Array Group:	DMSIRRGRP

Table B.1076: DMSPInteriorRestoringRate: A non-negative field controlling the rate at which DMSP is restored to DMSPInteriorRestoringValue

B.7.691 DMSInteriorRestoringValue

Type:	real
Units:	mmol m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in DMSTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_DMSInteriorRestoringValue
Location in code:	domain % blocklist % forcing % DMSInteriorRestoringValue
Array Group:	DMSIRVGRP

Table B.1077: DMSInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by DMSInteriorRestoringRate.

B.7.692 DMSPInteriorRestoringValue

Type:	real
Units:	mmol m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in DMSTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_DMSPInteriorRestoringValue
Location in code:	domain % blocklist % forcing % DMSPInteriorRestoringValue
Array Group:	DMSIRVGRP

Table B.1078: DMSPInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by DMSPInteriorRestoringRate.

B.7.693 DMSExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in DMSTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_DMSExponentialDecayRate
Location in code:	domain % blocklist % forcing % DMSExponentialDecayRate
Array Group:	DMSGRP

Table B.1079: DMSExponentialDecayRate: A non-negative field controlling the exponential decay of DMS

B.7.694 DMSPExponentialDecayRate

Type:	real
Units:	s
Dimension:	Time
Persistence:	persistent
Index in DMSTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_DMSPExponentialDecayRate
Location in code:	domain % blocklist % forcing % DMSPExponentialDecayRate
Array Group:	DMSGRP

Table B.1080: DMSPExponentialDecayRate: A non-negative field controlling the exponential decay of DMSP

B.7.695 DMSIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersIdealAgeMask Array:	domain % blocklist % forcing % index_DMSIdealAgeMask
Location in code:	domain % blocklist % forcing % DMSIdealAgeMask
Array Group:	DMSGRP

Table B.1081: DMSIdealAgeMask: In top layer, DMS is reset to DMS * DMSIdealAgeMask, valid values of DMSIdealAgeMask or 0 and 1

B.7.696 DMSPIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersIdealAgeMask Array:	domain % blocklist % forcing % index_DMSPIdealAgeMask
Location in code:	domain % blocklist % forcing % DMSPIdealAgeMask
Array Group:	DMSGRP

Table B.1082: DMSPIdealAgeMask: In top layer, DMSP is reset to DMSP * DMSPIdealAgeMask, valid values of DMSPIdealAgeMask or 0 and 1

B.7.697 DMSTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersTTD-Mask Array:	domain % blocklist % forcing % index_DMSTTDMask
Location in code:	domain % blocklist % forcing % DMSTTDMask
Array Group:	DMSGRP

Table B.1083: DMSTTDMask: In top layer, DMS is reset to TTDMask, valid values of DMSTTD-Mask or 0 and 1

B.7.698 DMSPTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in DMSTracersTTD-Mask Array:	domain % blocklist % forcing % index_DMSPTTDMask
Location in code:	domain % blocklist % forcing % DMSPTTDMask
Array Group:	DMSGRP

Table B.1084: DMSPTTDMask: In top layer, DMSP is reset to DMSPTTDMask, valid values of DMSPTTDMask or 0 and 1

B.7.699 PROTSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTrac-ersSurfaceFlux Array:	domain % blocklist % forcing % index_PROTSurfaceFlux
Location in code:	domain % blocklist % forcing % PROTSurfaceFlux
Array Group:	MacroMoleculesSurfaceFluxGRP

Table B.1085: PROTSurfaceFlux: Proteins Surface Flux

B.7.700 POLYSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersSurfaceFlux Array:	domain % blocklist % forcing % index_POLYSurfaceFlux
Location in code:	domain % blocklist % forcing % POLYSurfaceFlux
Array Group:	MacroMoleculesSurfaceFluxGRP

Table B.1086: POLYSurfaceFlux: Polysaccharides Surface Flux

B.7.701 LIPSurfaceFlux

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersSurfaceFlux Array:	domain % blocklist % forcing % index_LIPSurfaceFlux
Location in code:	domain % blocklist % forcing % LIPSurfaceFlux
Array Group:	MacroMoleculesSurfaceFluxGRP

Table B.1087: LIPSurfaceFlux: Lipids Surface Flux

B.7.702 PROTSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_PROTSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % PROTSurfaceFluxRunoff
Array Group:	MacroMoleculesSurfaceFluxRunoffGRP

Table B.1088: PROTSurfaceFluxRunoff: Proteins Surface Flux Due to Runoff

B.7.703 POLYSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_POLYSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % POLYSurfaceFluxRunoff
Array Group:	MacroMoleculesSurfaceFluxRunoffGRP

Table B.1089: POLYSurfaceFluxRunoff: Polysaccharides Surface Flux Due to Runoff

B.7.704 LIPSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_LIPSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % LIPSurfaceFluxRunoff
Array Group:	MacroMoleculesSurfaceFluxRunoffGRP

Table B.1090: LIPSurfaceFluxRunoff: Lipids Surface Flux Due to Runoff

B.7.705 PROTSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_PROTSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % PROTSurfaceFluxRemoved
Array Group:	MacroMoleculesSurfaceFluxRemovedGRP

Table B.1091: PROTSurfaceFluxRemoved: Proteins Surface Flux that is ignored

B.7.706 POLYSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_POLYSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % POLYSurfaceFluxRemoved
Array Group:	MacroMoleculesSurfaceFluxRemovedGRP

Table B.1092: POLYSurfaceFluxRemoved: Polysaccharides Surface Flux that is ignored

B.7.707 LIPSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mmol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_LIPSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % LIPSurfaceFluxRemoved
Array Group:	MacroMoleculesSurfaceFluxRemovedGRP

Table B.1093: LIPSurfaceFluxRemoved: Lipids Surface Flux that is ignored

B.7.708 avgOceanSurfaceDOC

Type:	real
Units:	$\mathrm{mmolC\,m^{-3}}$
Dimension:	R3 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceDOC

Table B.1094: avgOceanSurfaceDOC: Ocean Surface Organics concentration: (1,2,3)=¿(polysaccharides,lipids,proteins)

B.7.709 avgOceanSurfaceDON

Type:	real
Units:	mmolN m^{-3}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % avgOceanSurfaceDON

Table B.1095: avgOceanSurfaceDON: Ocean Surface Organic Proteins concentration

B.7.710 PROTPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersPistonVelocity Array:	domain % blocklist % forcing % index_PROTPistonVelocity
Location in code:	domain % blocklist % forcing % PROTPistonVelocity
Array Group:	MacroMoleculesPVGRP

Table B.1096: PROTPistonVelocity: A non-negative field controlling the rate at which PROT is restored to PROTSurfaceRestoringValue

B.7.711 POLYPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersPistonVelocity Array:	domain % blocklist % forcing % index_POLYPistonVelocity
Location in code:	domain % blocklist % forcing % POLYPistonVelocity
Array Group:	MacroMoleculesPVGRP

Table B.1097: POLYPistonVelocity: A non-negative field controlling the rate at which POLY is restored to POLYSurfaceRestoringValue

B.7.712 LIPPistonVelocity

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersPistonVelocity Array:	domain % blocklist % forcing % index_LIPPistonVelocity
Location in code:	domain % blocklist % forcing % LIPPistonVelocity
Array Group:	MacroMoleculesPVGRP

Table B.1098: LIPPistonVelocity: A non-negative field controlling the rate at which LIP is restored to LIPSurfaceRestoringValue

B.7.713 PROTSurfaceRestoringValue

Type:	real
Units:	$mmol\,m^3$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_PROTSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % PROTSurfaceRestoringValue
Array Group:	MacroMoleculesSRVGRP

Table B.1099: PROTSurfaceRestoringValue: Tracer is restored toward this field at a rate controlled by PROTPistonVelocity.

B.7.714 POLYSurfaceRestoringValue

Type:	real
Units:	$mmol\,m^3$
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_POLYSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % POLYSurfaceRestoringValue
Array Group:	MacroMoleculesSRVGRP

Table B.1100: POLYSurfaceRestoringValue: Tracer is restored toward this field at a rate controlled by POLYPistonVelocity.

B.7.715 LIPSurfaceRestoringValue

Type:	real
Units:	mmol m^3
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_LIPSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % LIPSurfaceRestoringValue
Array Group:	MacroMoleculesSRVGRP

Table B.1101: LIPSurfaceRestoringValue: Tracer is restored toward this field at a rate controlled by LIPPistonVelocity.

B.7.716 PROTInteriorRestoringRate

Type:	real
Units:	s$^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_PROTInteriorRestoringRate
Location in code:	domain % blocklist % forcing % PROTInteriorRestoringRate
Array Group:	MacroMoleculesIRRGRP

Table B.1102: PROTInteriorRestoringRate: A non-negative field controlling the rate at which PROT is restored to PROTInteriorRestoringValue

B.7.717 POLYInteriorRestoringRate

Type:	real
Units:	s$^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_POLYInteriorRestoringRate
Location in code:	domain % blocklist % forcing % POLYInteriorRestoringRate
Array Group:	MacroMoleculesIRRGRP

Table B.1103: POLYInteriorRestoringRate: A non-negative field controlling the rate at which POLY is restored to POLYInteriorRestoringValue

B.7.718 LIPInteriorRestoringRate

Type:	real
Units:	s¯1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_LIPInteriorRestoringRate
Location in code:	domain % blocklist % forcing % LIPInteriorRestoringRate
Array Group:	MacroMoleculesIRRGRP

Table B.1104: LIPInteriorRestoringRate: A non-negative field controlling the rate at which LIP is restored to LIPInteriorRestoringValue

B.7.719 PROTInteriorRestoringValue

Type:	real
Units:	mmol m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_PROTInteriorRestoringValue
Location in code:	domain % blocklist % forcing % PROTInteriorRestoringValue
Array Group:	MacroMoleculesIRVGRP

Table B.1105: PROTInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by PROTInteriorRestoringRate.

B.7.720 POLYInteriorRestoringValue

Type:	real
Units:	mmol m^3

Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_POLYInteriorRestoringValue
Location in code:	domain % blocklist % forcing % POLYInteriorRestoringValue
Array Group:	MacroMoleculesIRVGRP

Table B.1106: POLYInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by POLYInteriorRestoringRate.

B.7.721 LIPInteriorRestoringValue

Type:	real
Units:	mmol m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_LIPInteriorRestoringValue
Location in code:	domain % blocklist % forcing % LIPInteriorRestoringValue
Array Group:	MacroMoleculesIRVGRP

Table B.1107: LIPInteriorRestoringValue: Tracer is restored toward this field at a rate controlled by LIPInteriorRestoringRate.

B.7.722 PROTExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in MacroMoleculesTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_PROTExponentialDecayRate
Location in code:	domain % blocklist % forcing % PROTExponentialDecayRate
Array Group:	MacroMoleculesGRP

Table B.1108: PROTExponentialDecayRate: A non-negative field controlling the exponential decay of PROT

B.7.723 POLYExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in MacroMoleculesTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_POLYExponentialDecayRate
Location in code:	domain % blocklist % forcing % POLYExponentialDecayRate
Array Group:	MacroMoleculesGRP

Table B.1109: POLYExponentialDecayRate: A non-negative field controlling the exponential decay of POLY

B.7.724 LIPExponentialDecayRate

Type:	real
Units:	s
Dimension:	Time
Persistence:	persistent
Index in MacroMoleculesTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_LIPExponentialDecayRate
Location in code:	domain % blocklist % forcing % LIPExponentialDecayRate
Array Group:	MacroMoleculesGRP

Table B.1110: LIPExponentialDecayRate: A non-negative field controlling the exponential decay of LIP

B.7.725 PROTIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersIdealAgeMask Array:	domain % blocklist % forcing % index_PROTIdealAgeMask
Location in code:	domain % blocklist % forcing % PROTIdealAgeMask
Array Group:	MacroMoleculesGRP

Table B.1111: PROTIdealAgeMask: In top layer, PROT is reset to PROT * PROTIdealAgeMask, valid values of PROTIdealAgeMask or 0 and 1

B.7.726 POLYIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersIdealAgeMask Array:	domain % blocklist % forcing % index_POLYIdealAgeMask
Location in code:	domain % blocklist % forcing % POLYIdealAgeMask
Array Group:	MacroMoleculesGRP

Table B.1112: POLYIdealAgeMask: In top layer, POLY is reset to POLY * POLYIdealAgeMask, valid values of POLYIdealAgeMask or 0 and 1

B.7.727 LIPIdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersIdealAgeMask Array:	domain % blocklist % forcing % index_LIPIdealAgeMask
Location in code:	domain % blocklist % forcing % LIPIdealAgeMask
Array Group:	MacroMoleculesGRP

Table B.1113: LIPIdealAgeMask: In top layer, LIP is reset to LIP * LIPIdealAgeMask, valid values of LIPIdealAgeMask or 0 and 1

B.7.728 PROTTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersTTDMask Array:	domain % blocklist % forcing % index_PROTTTDMask

Location in code:	domain % blocklist % forcing % PROTTTDMask
Array Group:	MacroMoleculesGRP

Table B.1114: PROTTTDMask: In top layer, PROT is reset to TTDMask, valid values of PROTTTDMask or 0 and 1

B.7.729 POLYTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersTTDMask Array:	domain % blocklist % forcing % index_POLYTTDMask
Location in code:	domain % blocklist % forcing % POLYTTDMask
Array Group:	MacroMoleculesGRP

Table B.1115: POLYTTDMask: In top layer, POLY is reset to TTDMask, valid values of POLYTTDMask or 0 and 1

B.7.730 LIPTTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in MacroMoleculesTracersTTDMask Array:	domain % blocklist % forcing % index_LIPTTDMask
Location in code:	domain % blocklist % forcing % LIPTTDMask
Array Group:	MacroMoleculesGRP

Table B.1116: LIPTTDMask: In top layer, LIP is reset to LIPTTDMask, valid values of LIPTTDMask or 0 and 1

B.7.731 iAgeSurfaceFlux

Type:	real
Units:	none
Dimension:	nCells Time

Persistence:	persistent
Index in idealAgeTracersSurfaceFlux Array:	domain % blocklist % forcing % index_iAgeSurfaceFlux
Location in code:	domain % blocklist % forcing % iAgeSurfaceFlux
Array Group:	idealAgeluxGRP

Table B.1117: iAgeSurfaceFlux: Flux of iAge through the ocean surface. Positive into ocean.

B.7.732 iAgeSurfaceFluxRunoff

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Index in idealAgeTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_iAgeSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % iAgeSurfaceFluxRunoff
Array Group:	iAgeRunoffFluxGRP

Table B.1118: iAgeSurfaceFluxRunoff: Flux of iAge through the ocean surface due to river runoff. Positive into ocean.

B.7.733 iAgeSurfaceFluxRemoved

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Index in idealAgeTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_iAgeSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % iAgeSurfaceFluxRemoved
Array Group:	iAgeRemovedFluxGRP

Table B.1119: iAgeSurfaceFluxRemoved: Flux of iAge that is ignored coming into the ocean. Positive into ocean.

B.7.734 iAgePistonVelocity

Type:	real

Units:	none
Dimension:	nCells Time
Persistence:	persistent
Index in idealAgeTracersPistonVelocity Array:	domain % blocklist % forcing % index_iAgePistonVelocity
Location in code:	domain % blocklist % forcing % iAgePistonVelocity
Array Group:	iAgeRestoringGRP

Table B.1120: iAgePistonVelocity: A non-negative field controlling the rate at which iAge is restored to iAgeSurfaceRestoringValue

B.7.735 iAgeSurfaceRestoringValue

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Index in idealAgeTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_iAgeSurfaceRestoringValue
Location in code:	domain % blocklist % forcing % iAgeSurfaceRestoringValue
Array Group:	iAgeRestoringGRP

Table B.1121: iAgeSurfaceRestoringValue: iAge is restored toward this field at a rate controlled by iAgePistonVelocity.

B.7.736 iAgeInteriorRestoringRate

Type:	real
Units:	none
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in idealAgeTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_iAgeInteriorRestoringRate
Location in code:	domain % blocklist % forcing % iAgeInteriorRestoringRate
Array Group:	iAgeRestoringGRP

Table B.1122: iAgeInteriorRestoringRate: A non-negative field controlling the rate at which iAge is restored to iAgeInteriorRestoringValue

B.7.737 iAgeInteriorRestoringValue

Type:	real
Units:	none
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in idealAgeTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_iAgeInteriorRestoringValue
Location in code:	domain % blocklist % forcing % iAgeInteriorRestoringValue
Array Group:	iAgeRestoringGRP

Table B.1123: iAgeInteriorRestoringValue: iAge is restored toward this field at a rate controlled by iAgeInteriorRestoringRate.

B.7.738 iAgeExponentialDecayRate

Type:	real
Units:	none
Dimension:	Time
Persistence:	persistent
Index in idealAgeTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_iAgeExponentialDecayRate
Location in code:	domain % blocklist % forcing % iAgeExponentialDecayRate
Array Group:	iAgeRestoringGRP

Table B.1124: iAgeExponentialDecayRate: A non-negative field controlling the exponential decay of iAge

B.7.739 iAgeIdealAgeMask

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Index in idealAgeTracersIdealAgeMask Array:	domain % blocklist % forcing % index_iAgeIdealAgeMask
Location in code:	domain % blocklist % forcing % iAgeIdealAgeMask
Array Group:	iAgeRestoringGRP

Table B.1125: iAgeIdealAgeMask: In top layer, iAge is reset to iAge * iAgeIdealAgeMask, valid values of iAgeIdealAgeMask or 0 and 1

B.7.740 iAgeTTDMask

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Index in idealAgeTracersTTDMask Array:	domain % blocklist % forcing % index_iAgeTTDMask
Location in code:	domain % blocklist % forcing % iAgeTTDMask
Array Group:	iAgeRestoringGRP

Table B.1126: iAgeTTDMask: In top layer, iAge is reset to TTDMask, valid values of iAgeTTDMask or 0 and 1

B.7.741 CFC11SurfaceFlux

Type:	real
Units:	$\mathrm{mol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in CFCTracersSurfaceFlux Array:	domain % blocklist % forcing % index_CFC11SurfaceFlux
Location in code:	domain % blocklist % forcing % CFC11SurfaceFlux
Array Group:	CFCSurfaceFluxGRP

Table B.1127: CFC11SurfaceFlux: CFC11 Surface Flux

B.7.742 CFC12SurfaceFlux

Type:	real
Units:	$\mathrm{mol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in CFCTracersSurfaceFlux Array:	domain % blocklist % forcing % index_CFC12SurfaceFlux
Location in code:	domain % blocklist % forcing % CFC12SurfaceFlux
Array Group:	CFCSurfaceFluxGRP

Table B.1128: CFC12SurfaceFlux: CFC12 Surface Flux

B.7.743 CFCSurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in CFCTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_CFCSurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % CFCSurfaceFluxRunoff
Array Group:	CFCSurfaceFluxRunoffGRP

Table B.1129: CFCSurfaceFluxRunoff: CFC11 Surface Flux Due to Runoff

B.7.744 CFC12SurfaceFluxRunoff

Type:	real
Units:	$\mathrm{mol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in CFCTracersSurfaceFluxRunoff Array:	domain % blocklist % forcing % index_CFC12SurfaceFluxRunoff
Location in code:	domain % blocklist % forcing % CFC12SurfaceFluxRunoff
Array Group:	CFCSurfaceFluxRunoffGRP

Table B.1130: CFC12SurfaceFluxRunoff: CFC12 Surface Flux Due to Runoff

B.7.745 CFCSurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in CFCTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_CFCSurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % CFCSurfaceFluxRemoved
Array Group:	CFCSurfaceFluxRemovedGRP

Table B.1131: CFCSurfaceFluxRemoved: CFC11 Surface Flux that is ignored

B.7.746 CFC12SurfaceFluxRemoved

Type:	real
Units:	$\mathrm{mol\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Index in CFCTracersSurfaceFluxRemoved Array:	domain % blocklist % forcing % index_CFC12SurfaceFluxRemoved
Location in code:	domain % blocklist % forcing % CFC12SurfaceFluxRemoved
Array Group:	CFCSurfaceFluxRemovedGRP

Table B.1132: CFC12SurfaceFluxRemoved: CFC12 Surface Flux that is ignored

B.7.747 CFC11_flux_ifrac

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC11_flux_ifrac

Table B.1133: CFC11_flux_ifrac: Ice Fraction used in CFC11 flux calculation

B.7.748 CFC11_flux_xkw

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC11_flux_xkw

Table B.1134: CFC11_flux_xkw: XKW used in CFC11 flux calculation

B.7.749 CFC11_flux_atm_press

Type:	real
Units:	unknown
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC11_flux_atm_press

Table B.1135: CFC11_flux_atm_press: Atm Pressure used in CFC11 flux calculation

B.7.750 CFC11_flux_pv

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC11_flux_pv

Table B.1136: CFC11_flux_pv: Piston Velocity used in CFC11 flux calculation

B.7.751 CFC11_flux_schmidt

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC11_flux_schmidt

Table B.1137: CFC11_flux_schmidt: Schmidt Number used in CFC11 flux calculation

B.7.752 CFC11_flux_sat

Type:	real
Units:	$mol\,m^3$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC11_flux_sat

Table B.1138: CFC11_flux_sat: CFC11 Saturation used in CFC11 flux calculation

B.7.753 CFC11_flux_surf

Type:	real
Units:	$mol\,m^3$

Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC11_flux_surf

Table B.1139: CFC11_flux_surf: Surface CFC11 Values used in CFC11 flux calculation

B.7.754 CFC11_flux_ws

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC11_flux_ws

Table B.1140: CFC11_flux_ws: Wind Speed used in CFC11 flux calculation

B.7.755 CFC12_flux_ifrac

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC12_flux_ifrac

Table B.1141: CFC12_flux_ifrac: Ice Fraction used in CFC12 flux calculation

B.7.756 CFC12_flux_xkw

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC12_flux_xkw

Table B.1142: CFC12_flux_xkw: XKW used in CFC12 flux calculation

B.7.757 CFC12_flux_atm_press

Type:	real
Units:	unknown
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC12_flux_atm_press

Table B.1143: CFC12_flux_atm_press: Atm Pressure used in CFC12 flux calculation

B.7.758 CFC12_flux_pv

Type:	real
Units:	$m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC12_flux_pv

Table B.1144: CFC12_flux_pv: Piston Velocity used in CFC12 flux calculation

B.7.759 CFC12_flux_schmidt

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC12_flux_schmidt

Table B.1145: CFC12_flux_schmidt: Schmidt Number used in CFC12 flux calculation

B.7.760 CFC12_flux_sat

Type:	real
Units:	$mol\,m^3$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC12_flux_sat

Table B.1146: CFC12_flux_sat: CFC12 Saturation used in CFC12 flux calculation

B.7.761 CFC12_flux_surf

Type:	real
Units:	mol m^3
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC12_flux_surf

Table B.1147: CFC12_flux_surf: Surface CFC12 Values used in CFC12 flux calculation

B.7.762 CFC12_flux_ws

Type:	real
Units:	m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % CFC12_flux_ws

Table B.1148: CFC12_flux_ws: Wind Speed used in CFC12 flux calculation

B.7.763 CFC11PistonVelocity

Type:	real
Units:	m s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Index in CFCTracersPiston-Velocity Array:	domain % blocklist % forcing % index_CFC11PistonVelocity
Location in code:	domain % blocklist % forcing % CFC11PistonVelocity
Array Group:	CFCPVGRP

Table B.1149: CFC11PistonVelocity: A non-negative field controlling the rate at which CFC11 is restored to CFC11SurfaceRestoringValue

B.7.764 CFC12PistonVelocity

Type:	real
Units:	m s^{-1}
Dimension:	nCells Time
Persistence:	persistent

Index in CFCTracersPistonVelocity Array:	domain % blocklist % forcing % index_CFC12PistonVelocity
Location in code:	domain % blocklist % forcing % CFC12PistonVelocity
Array Group:	CFCPVGRP

Table B.1150: CFC12PistonVelocity: A non-negative field controlling the rate at which CFC12 is restored to CFC12SurfaceRestoringValue

B.7.765 CFC11SurfaceRestoringValue

Type:	real
Units:	mol m^3
Dimension:	nCells Time
Persistence:	persistent
Index in CFCTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_CFC11SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % CFC11SurfaceRestoringValue
Array Group:	CFCSRVGRP

Table B.1151: CFC11SurfaceRestoringValue: Tracer is restored toward this field at a rate controlled by CFC11PistonVelocity.

B.7.766 CFC12SurfaceRestoringValue

Type:	real
Units:	mol m^3
Dimension:	nCells Time
Persistence:	persistent
Index in CFCTracersSurfaceRestoringValue Array:	domain % blocklist % forcing % index_CFC12SurfaceRestoringValue
Location in code:	domain % blocklist % forcing % CFC12SurfaceRestoringValue
Array Group:	CFCSRVGRP

Table B.1152: CFC12SurfaceRestoringValue: Tracer is restored toward this field at a rate controlled by CFC12PistonVelocity.

B.7.767 CFC11InteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in CFCTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_CFC11InteriorRestoringRate
Location in code:	domain % blocklist % forcing % CFC11InteriorRestoringRate
Array Group:	CFCIRRGRP

Table B.1153: CFC11InteriorRestoringRate: A non-negative field controlling the rate at which CFC11 is restored to CFC11InteriorRestoringValue

B.7.768 CFC12InteriorRestoringRate

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in CFCTracersInteriorRestoringRate Array:	domain % blocklist % forcing % index_CFC12InteriorRestoringRate
Location in code:	domain % blocklist % forcing % CFC12InteriorRestoringRate
Array Group:	CFCIRRGRP

Table B.1154: CFC12InteriorRestoringRate: A non-negative field controlling the rate at which CFC12 is restored to CFC12InteriorRestoringValue

B.7.769 CFC11InteriorRestoringValue

Type:	real
Units:	mol m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in CFCTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_CFC11InteriorRestoringValue
Location in code:	domain % blocklist % forcing % CFC11InteriorRestoringValue
Array Group:	CFCIRVGRP

Table B.1155: CFC11InteriorRestoringValue: Tracer is restored toward this field at a rate controlled by CFC11InteriorRestoringRate.

B.7.770 CFC12InteriorRestoringValue

Type:	real
Units:	mol m^3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Index in CFCTracersInteriorRestoringValue Array:	domain % blocklist % forcing % index_CFC12InteriorRestoringValue
Location in code:	domain % blocklist % forcing % CFC12InteriorRestoringValue
Array Group:	CFCIRVGRP

Table B.1156: CFC12InteriorRestoringValue: Tracer is restored toward this field at a rate controlled by CFC12InteriorRestoringRate.

B.7.771 CFC11ExponentialDecayRate

Type:	real
Units:	s^{-1}
Dimension:	Time
Persistence:	persistent
Index in CFCTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_CFC11ExponentialDecayRate
Location in code:	domain % blocklist % forcing % CFC11ExponentialDecayRate
Array Group:	CFCGRP

Table B.1157: CFC11ExponentialDecayRate: A non-negative field controlling the exponential decay of CFC11

B.7.772 CFC12ExponentialDecayRate

Type:	real
Units:	s
Dimension:	Time
Persistence:	persistent
Index in CFCTracersExponentialDecayRate Array:	domain % blocklist % forcing % index_CFC12ExponentialDecayRate
Location in code:	domain % blocklist % forcing % CFC12ExponentialDecayRate
Array Group:	CFCGRP

Table B.1158: CFC12ExponentialDecayRate: A non-negative field controlling the exponential decay of CFC12

B.7.773 CFC11IdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in CFCTracersIdealAgeMask Array:	domain % blocklist % forcing % index_CFC11IdealAgeMask
Location in code:	domain % blocklist % forcing % CFC11IdealAgeMask
Array Group:	CFCGRP

Table B.1159: CFC11IdealAgeMask: In top layer, CFC11 is reset to CFC11 * CFC11IdealAgeMask, valid values of CFC11IdealAgeMask or 0 and 1

B.7.774 CFC12IdealAgeMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in CFCTracersIdealAgeMask Array:	domain % blocklist % forcing % index_CFC12IdealAgeMask
Location in code:	domain % blocklist % forcing % CFC12IdealAgeMask
Array Group:	CFCGRP

Table B.1160: CFC12IdealAgeMask: In top layer, CFC12 is reset to CFC12 * CFC12IdealAgeMask, valid values of CFC12IdealAgeMask or 0 and 1

B.7.775 CFC11TTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent

Index in CFC11TracersTTDMask Array:	domain % blocklist % forcing % index_CFC11TTDMask
Location in code:	domain % blocklist % forcing % CFC11TTDMask
Array Group:	CFCGRP

Table B.1161: CFC11TTDMask: In top layer, CFC11 is reset to TTDMask, valid values of CFC11TTDMask or 0 and 1

B.7.776 CFC12TTDMask

Type:	real
Units:	unitless
Dimension:	nCells Time
Persistence:	persistent
Index in CFC11TracersTTDMask Array:	domain % blocklist % forcing % index_CFC12TTDMask
Location in code:	domain % blocklist % forcing % CFC12TTDMask
Array Group:	CFCGRP

Table B.1162: CFC12TTDMask: In top layer, CFC12 is reset to CFC12TTDMask, valid values of CFC12TTDMask or 0 and 1

B.7.777 pCFC11

Type:	real
Units:	mole fraction
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % pCFC11

Table B.1163: pCFC11: Mole Fraction of Atmospheric CFC11

B.7.778 pCFC12

Type:	real
Units:	mole fraction
Dimension:	nCells Time

Persistence:	persistent
Location in code:	domain % blocklist % forcing % pCFC12

Table B.1164: pCFC12: Mole Fraction of Atmospheric CFC12

B.7.779 windSpeedSquared10mCFC

Type:	real
Units:	$m^2 s^{-2}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % forcing % windSpeedSquared10mCFC

Table B.1165: windSpeedSquared10mCFC: 10 meter atmospheric wind speed squared

B.8 timeVaryingForcing

B.8.1 windSpeedU

Type:	real
Units:	$m s^{-}1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeVaryingForcing % windSpeedU

Table B.1166: windSpeedU: Zonal (eastward) component of wind speed at cell centers from coupler. Positive easthward.

B.8.2 windSpeedV

Type:	real
Units:	$m s^{-}1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeVaryingForcing % windSpeedV

Table B.1167: windSpeedV: Meridional (northward) component of wind speed at cell centers from coupler. Positive northward.

B.8.3 windSpeedMagnitude

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeVaryingForcing % windSpeedMagnitude

Table B.1168: windSpeedMagnitude: Magnitude of wind speed at cell centers from coupler.

B.8.4 atmosPressure

Type:	real
Units:	Pa
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeVaryingForcing % atmosPressure

Table B.1169: atmosPressure: Pressure at the sea surface due to the atmosphere.

B.8.5 landIceFractionForcing

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeVaryingForcing % landIceFractionForcing

Table B.1170: landIceFractionForcing: The fraction of each cell covered by land ice

B.8.6 landIceFloatingFractionForcing

Type:	real
Units:	1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeVaryingForcing % landIceFloatingFractionForcing

Table B.1171: landIceFloatingFractionForcing: The fraction of each cell covered by land ice

B.8.7 landIcePressureForcing

Type:	real
Units:	Pa
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeVaryingForcing % landIcePressureForcing

Table B.1172: landIcePressureForcing: Pressure defined at the sea surface due to land ice.

B.8.8 landIceDraftForcing

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeVaryingForcing % landIceDraftForcing

Table B.1173: landIceDraftForcing: The elevation of the interface between land ice and the ocean.

B.9 scratch

B.9.1 normalVelocityTest

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nEdges
Persistence:	scratch
Location in code:	domain % blocklist % scratch % normalVelocityTest

Table B.1174: normalVelocityTest: horizontal velocity, normal component to an edge, for testing

B.9.2 tangentialVelocityTest

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nEdges
Persistence:	scratch
Location in code:	domain % blocklist % scratch % tangentialVelocityTest

Table B.1175: tangentialVelocityTest: horizontal velocity, tangential component to an edge, for testing

B.9.3 strainRateR3Cell

Type:	real
Units:	s^-1
Dimension:	SIX nVertLevels nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % strainRateR3Cell

Table B.1176: strainRateR3Cell: strain rate tensor at cell center, R3, in symmetric 6-index form

B.9.4 strainRateR3CellSolution

Type:	real
Units:	s^-1
Dimension:	SIX nVertLevels nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % strainRateR3CellSolution

Table B.1177: strainRateR3CellSolution: strain rate solution tensor at cell center, R3, in symmetric 6-index form

B.9.5 strainRateR3Edge

Type:	real
Units:	s^-1
Dimension:	SIX nVertLevels nEdges
Persistence:	scratch
Location in code:	domain % blocklist % scratch % strainRateR3Edge

Table B.1178: strainRateR3Edge: strain rate tensor at edge, R3, in symmetric 6-index form

B.9.6 strainRateLonLatRCell

Type:	real
Units:	s^-1
Dimension:	SIX nVertLevels nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % strainRateLonLatRCell

Table B.1179: strainRateLonLatRCell: strain rate tensor at cell center, 3D, lon-lat-r in symmetric 6-index form, Temporary only

B.9.7 strainRateLonLatRCellSolution

Type:	real
Units:	s^-1
Dimension:	SIX nVertLevels nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % strainRateLonLatRCellSolution

Table B.1180: strainRateLonLatRCellSolution: strain rate tensor at cell center, 3D, lon-lat-r in symmetric 6-index form, Temporary only

B.9.8 strainRateLonLatREdge

Type:	real
Units:	s^-1
Dimension:	SIX nVertLevels nEdges
Persistence:	scratch
Location in code:	domain % blocklist % scratch % strainRateLonLatREdge

Table B.1181: strainRateLonLatREdge: strain rate tensor at edge, 3D, lon-lat-r in symmetric 6-index form, Temporary only

B.9.9 divTensorR3Cell

Type:	real
Units:	s⁻2
Dimension:	R3 nVertLevels nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % divTensorR3Cell

Table B.1182: divTensorR3Cell: divergence of the tensor at cell center, as an R3 vector

B.9.10 divTensorR3CellSolution

Type:	real
Units:	s⁻2
Dimension:	R3 nVertLevels nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % divTensorR3CellSolution

Table B.1183: divTensorR3CellSolution: divergence of the tensor solution at cell center, as an R3 vector

B.9.11 divTensorLonLatRCell

Type:	real
Units:	s⁻2
Dimension:	R3 nVertLevels nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % divTensorLonLatRCell

Table B.1184: divTensorLonLatRCell: divergence of the tensor at cell center, as a lon-lat-r vector

B.9.12 divTensorLonLatRCellSolution

Type:	real
Units:	s⁻2
Dimension:	R3 nVertLevels nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % divTensorLonLatRCellSolution

Table B.1185: divTensorLonLatRCellSolution: divergence of the tensor at cell center, as a lon-lat-r vector, solution

B.9.13 outerProductEdge

Type:	real
Units:	$m^2 s^-1$
Dimension:	SIX nVertLevels nEdges
Persistence:	scratch
Location in code:	domain % blocklist % scratch % outerProductEdge

Table B.1186: outerProductEdge: Outer product, $u_e \otimes n_e$, at each edge.

B.9.14 smoothedField

Type:	real
Units:	various
Dimension:	nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % smoothedField

Table B.1187: smoothedField: the smoothed version of a field on cells during iterative smoothing

B.9.15 zInterfaceScratch

Type:	real
Units:	m
Dimension:	nVertLevelsP1 nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % zInterfaceScratch

Table B.1188: zInterfaceScratch: location of layer interfaces at cell centers, used for thickening layers constrained by the Haney number (rx1)

B.9.16 goalStretchScratch

Type:	real
Units:	1
Dimension:	nVertLevels nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % goalStretchScratch

Table B.1189: goalStretchScratch: the goal stretch field for the vertical coordinate

B.9.17 goalWeightScratch

Type:	real
Units:	1
Dimension:	nVertLevels nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % goalWeightScratch

Table B.1190: goalWeightScratch: the sum of weights used to determine the goal stretch field

B.9.18 zTopScratch

Type:	real
Units:	m
Dimension:	nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % zTopScratch

Table B.1191: zTopScratch: location of the upper layer used to compute the Haney number (rx1), equal to ssh for top layer and zMid of the layer for subsequent layers

B.9.19 zBotScratch

Type:	real
Units:	m
Dimension:	nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % zBotScratch

Table B.1192: zBotScratch: location of the lower layer used to compute the Haney number (rx1), equal zMid of the layer lower layer (but a 1D filed is needed for halo exchanges)

B.9.20 zBotNewScratch

Type:	real
Units:	m
Dimension:	nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % zBotNewScratch

Table B.1193: zBotNewScratch: updated location of the lower layer used to compute the Haney number (rx1), needed so update is agnostic to the order in which cells are accessed

B.9.21 smoothingMaskNewScratch

Type:	integer
Units:	–
Dimension:	nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % smoothingMaskNewScratch

Table B.1194: smoothingMaskNewScratch: a copy of the smoothing mask used to iteratively expand the field into a buffer region of open ocean around land ice.

B.9.22 cullStack

Type:	integer
Units:	unitless
Dimension:	nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % cullStack

Table B.1195: cullStack: Temporary space to hold a stack for culling inland seas.

B.9.23 touchedCell

Type:	integer
Units:	unitless
Dimension:	nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % touchedCell

Table B.1196: touchedCell: Temporary space to a hold mask if the cell has been touched or not, when culling inland seas.

B.9.24 oceanCell

Type:	integer
Units:	unitless
Dimension:	nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % oceanCell

Table B.1197: oceanCell: Temporary space to a hold mask if the cell is an active ocean cell or not.

B.9.25 cullStackSize

Type:	integer
Units:	unitless
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % scratch % cullStackSize

Table B.1198: cullStackSize: Integer to hold the size of the cullStack for each block.

B.9.26 interpActiveTracer

Type:	real
Units:	various
Dimension:	nDepthTracerIC nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % interpActiveTracer

Table B.1199: interpActiveTracer: temporary space for holding one tracer at a time as part of horizontal interpolation

B.9.27 interpEcosysTracer

Type:	real
Units:	various
Dimension:	nDepthEcosysIC nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % interpEcosysTracer

Table B.1200: interpEcosysTracer: temporary space for holding one tracer at a time as part of horizontal interpolation

B.9.28 interpActiveTracerSmooth

Type:	real
Units:	various
Dimension:	nDepthTracerIC nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % interpActiveTracerSmooth

Table B.1201: interpActiveTracerSmooth: temporary space for holding one tracer at a time as part of horizontal interpolation

B.9.29 interpEcosysTracerSmooth

Type:	real
Units:	various
Dimension:	nDepthEcosysIC nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % interpEcosysTracerSmooth

Table B.1202: interpEcosysTracerSmooth: temporary space for holding one tracer at a time as part of horizontal interpolation

B.9.30 isomip_bottomPressure

Type:	real
Units:	Pa
Dimension:	nCells
Persistence:	scratch
Location in code:	domain % blocklist % scratch % isomip_bottomPressure

Table B.1203: isomip_bottomPressure: Temporary space to hold the pressure at the bottom of the ocean, used to compute estimated sea-surface pressure under landice.

B.10 pointLocations

B.10.1 pointCellGlobalID

Type:	integer
Units:	–
Dimension:	nPoints
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % pointCellGlobalID

Table B.1204: pointCellGlobalID: List of global cell IDs in point set.

B.10.2 pointCellLocalID

Type:	integer
Units:	–
Dimension:	nPoints
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % pointCellLocalID

Table B.1205: pointCellLocalID: List of local cell IDs in point set.

B.10.3 indexToPointCellLocalID

Type:	integer
Units:	–
Dimension:	nPoints
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % indexToPointCell-LocalID

Table B.1206: indexToPointCellLocalID: Index to list of local cell IDs in point set.

B.10.4 pointNames

Type:	text
Units:	–
Dimension:	nPoints
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % pointNames

Table B.1207: pointNames: The names of each point.

B.10.5 pointGroupNames

Type:	text
Units:	–
Dimension:	nPointGroups
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % pointGroupNames

Table B.1208: pointGroupNames: The names of each point group.

B.10.6 nPointsInGroup

Type:	integer
Units:	–
Dimension:	nPointGroups
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % nPointsInGroup

Table B.1209: nPointsInGroup: The number of points in each point group.

B.10.7 pointsInGroup

Type:	integer
Units:	–
Dimension:	maxPointsInGroup nPointGroups
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % pointsInGroup

Table B.1210: pointsInGroup: The indices of each point in a each group.

B.10.8 xPoint

Type:	real
Units:	m
Dimension:	nPoints
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % xPoint

Table B.1211: xPoint: X Coordinate in cartesian space of point locations.

B.10.9 yPoint

Type:	real
Units:	m
Dimension:	nPoints
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % yPoint

Table B.1212: yPoint: Y Coordinate in cartesian space of point locations.

B.10.10 zPoint

Type:	real
Units:	m
Dimension:	nPoints
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % zPoint

Table B.1213: zPoint: Z Coordinate in cartesian space of point locations.

B.10.11 latPoint

Type:	real
Units:	radians
Dimension:	nPoints
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % latPoint

Table B.1214: latPoint: Latitude of point locations.

B.10.12 lonPoint

Type:	real
Units:	radians
Dimension:	nPoints
Persistence:	persistent
Location in code:	domain % blocklist % pointLocations % lonPoint

Table B.1215: lonPoint: Longitude of point locations.

B.11 regions

B.11.1 regionCellMasks

Type:	integer
Units:	–
Dimension:	nRegions nCells
Persistence:	persistent
Location in code:	domain % blocklist % regions % regionCellMasks

Table B.1216: regionCellMasks: The region masks for each cell.

B.11.2 regionVertexMasks

Type:	integer
Units:	–
Dimension:	nRegions nVertices
Persistence:	persistent
Location in code:	domain % blocklist % regions % regionVertexMasks

Table B.1217: regionVertexMasks: The region masks for each vertex.

B.11.3 regionsInGroup

Type:	integer
Units:	–
Dimension:	maxRegionsInGroup nRegionGroups
Persistence:	persistent
Location in code:	domain % blocklist % regions % regionsInGroup

Table B.1218: regionsInGroup: The list of region indices in each group.

B.11.4 nRegionsInGroup

Type:	integer
Units:	–
Dimension:	nRegionGroups
Persistence:	persistent
Location in code:	domain % blocklist % regions % nRegionsInGroup

Table B.1219: nRegionsInGroup: The number of regions in each group.

B.11.5 regionNames

Type:	text
Units:	–
Dimension:	nRegions
Persistence:	persistent
Location in code:	domain % blocklist % regions % regionNames

Table B.1220: regionNames: The name for each region.

B.11.6 regionGroupNames

Type:	text
Units:	–
Dimension:	nRegionGroups
Persistence:	persistent
Location in code:	domain % blocklist % regions % regionGroupNames

Table B.1221: regionGroupNames: The name for each region group.

B.12 transects

B.12.1 transectEdgeMasks

Type:	integer
Units:	–
Dimension:	nTransects nEdges
Persistence:	persistent
Location in code:	domain % blocklist % transects % transectEdgeMasks

Table B.1222: transectEdgeMasks: Mask of edges for measuring transport across transects

B.12.2 transectEdgeMaskSigns

Type:	integer
Units:	–
Dimension:	nTransects nEdges
Persistence:	persistent
Location in code:	domain % blocklist % transects % transectEdgeMaskSigns

Table B.1223: transectEdgeMaskSigns: Sign of normalVelocity on edge for this transect

B.12.3 transectsInGroup

Type:	integer
Units:	–
Dimension:	maxTransectsInGroup nTransectGroups
Persistence:	persistent
Location in code:	domain % blocklist % transects % transectsInGroup

Table B.1224: transectsInGroup: The list of transect indices in each group.

B.12.4 nTransectsInGroup

Type:	integer
Units:	–
Dimension:	nTransectGroups
Persistence:	persistent
Location in code:	domain % blocklist % transects % nTransectsInGroup

Table B.1225: nTransectsInGroup: The number of transects in each group.

B.12.5 transectNames

Type:	text
Units:	–
Dimension:	nTransects
Persistence:	persistent
Location in code:	domain % blocklist % transects % transectNames

Table B.1226: transectNames: The name for each transect.

B.12.6 transectGroupNames

Type:	text
Units:	–
Dimension:	nTransectGroups
Persistence:	persistent
Location in code:	domain % blocklist % transects % transectGroupNames

Table B.1227: transectGroupNames: The name for each transect group.

B.13 LTS

B.13.1 LTSRegion

Type:	integer
Units:	–
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % LTS % LTSRegion

Table B.1228: LTSRegion: Definition of LTS regions. This is read from the initial condition file (typically named init.nc), and set up with a pre-processing step. The values are: 1 = fine; 2 = coarse; 3 = interface layer one; 4 = interface layer two; 5 = fine close to interface layer one.

B.13.2 cellsInLTSRegion

Type:	integer
Units:	–
Dimension:	TWO R3 nCells

Persistence:	persistent
Location in code:	domain % blocklist % LTS % cellsInLTSRegion

Table B.1229: cellsInLTSRegion: Cell mask for each region. For the first two dimensions, the regions in the array are defined as follows: (1,1): fine, (1,2) interface layer one, (1,3) fine close to interface layer one, (2,2) interface layer two, (2,1) coarse.

B.13.3 nCellsInLTSRegion

Type:	integer
Units:	–
Dimension:	TWO R3
Persistence:	persistent
Location in code:	domain % blocklist % LTS % nCellsInLTSRegion

Table B.1230: nCellsInLTSRegion: Number of cells in each region of cellsInLTSRegion.

B.13.4 edgesInLTSRegion

Type:	integer
Units:	–
Dimension:	TWO R3 nEdges
Persistence:	persistent
Location in code:	domain % blocklist % LTS % edgesInLTSRegion

Table B.1231: edgesInLTSRegion: Edge mask for each region. For the first two dimensions, the regions in the array are defined as follows: (1,1): fine, (1,2) interface layer one, (1,3) fine close to interface layer one, (2,2) interface layer two, (2,1) coarse.

B.13.5 nEdgesInLTSRegion

Type:	integer
Units:	–
Dimension:	TWO R3
Persistence:	persistent
Location in code:	domain % blocklist % LTS % nEdgesInLTSRegion

Table B.1232: nEdgesInLTSRegion: Number of edges in each region of edgesInLTSRegion.

B.14 surfaceSalinityMonthlyForcing

B.14.1 surfaceSalinityMonthlyClimatologyValue

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % surfaceSalinityMonthlyForcing % surfaceSalinityMonthlyClimatologyValue

Table B.1233: surfaceSalinityMonthlyClimatologyValue: monthly surface salinity climatology interpolated to current timestep

B.15 ecosysMonthlyForcing

B.15.1 depositionFluzNO3

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % depositionFluzNO3

Table B.1234: depositionFluzNO3: Atmospheric Deposition of NO3

B.15.2 depositionFluzNH4

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % depositionFluzNH4

Table B.1235: depositionFluzNH4: Atmospheric Deposition of NH4

B.15.3 riverFluzNO3

Type:	real
Units:	$mmol\,N\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % riverFluzNO3

Table B.1236: riverFluzNO3: River Runoff Fluz of NO3

B.15.4 riverFluzPO4

Type:	real
Units:	$mmol\,P\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % riverFluzPO4

Table B.1237: riverFluzPO4: River Runoff Fluz of PO4

B.15.5 riverFluzSiO3

Type:	real
Units:	$mmol\,Si\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % riverFluzSiO3

Table B.1238: riverFluzSiO3: River Runoff Fluz of SiO3

B.15.6 riverFluzFe

Type:	real
Units:	$mmol\,Fe\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % riverFluzFe

Table B.1239: riverFluzFe: River Runoff Fluz of Fe

B.15.7 riverFluzDOC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % riverFluz-DOC

Table B.1240: riverFluzDOC: River Runoff Fluz of DOC

B.15.8 riverFluzDON

Type:	real
Units:	$\mathrm{mmol\,N\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % riverFluz-DON

Table B.1241: riverFluzDON: River Runoff Fluz of DON

B.15.9 riverFluzDOP

Type:	real
Units:	$\mathrm{mmol\,P\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % riverFluz-DOP

Table B.1242: riverFluzDOP: River Runoff Fluz of DOP

B.15.10 riverFluzDIC

Type:	real
Units:	$\mathrm{mmol\,C\,m^{-3}\,m\,s^{-1}}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % riverFluzDIC

Table B.1243: riverFluzDIC: River Runoff Fluz of DIC

B.15.11 riverFluzALK

Type:	real
Units:	$meq\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % riverFluzALK

Table B.1244: riverFluzALK: River Runoff Fluz of ALK

B.15.12 dust_FLUZ_IN

Type:	real
Units:	$kg\,m^{-2}\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % dust_FLUZ_IN

Table B.1245: dust_FLUZ_IN: Surface Dust Flux

B.15.13 IRON_FLUZ_IN

Type:	real
Units:	$mmol\,Fe\,m^{-3}\,m\,s^{-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % ecosysMonthlyForcing % IRON_FLUZ_IN

Table B.1246: IRON_FLUZ_IN: Surface Fe Flux

B.16 CFCAnnualForcing

B.16.1 atmCFC11

Type:	real
Units:	mole fraction
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % CFCAnnualForcing % atmCFC11

Table B.1247: atmCFC11: Mole Fraction of Atmospheric CFC11

B.16.2 atmCFC12

Type:	real
Units:	mole fraction
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % CFCAnnualForcing % atmCFC12

Table B.1248: atmCFC12: Mole Fraction of Atmospheric CFC12

B.17 globalStatsAM

B.17.1 areaCellGlobal

Type:	real
Units:	m^2
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % globalStatsAM % areaCellGlobal

Table B.1249: areaCellGlobal: sum of the areaCell variable over the full domain, used to normalize global statistics

B.17.2 areaEdgeGlobal

Type:	real
Units:	m^2
Dimension:	Time

Persistence:	persistent
Location in code:	domain % blocklist % globalStatsAM % areaEdgeGlobal

Table B.1250: areaEdgeGlobal: sum of the areaEdge variable over the full domain, used to normalize global statistics

B.17.3 areaTriangleGlobal

Type:	real
Units:	m^2
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % globalStatsAM % areaTriangleGlobal

Table B.1251: areaTriangleGlobal: sum of the areaTriangle variable over the full domain, used to normalize global statistics

B.17.4 volumeCellGlobal

Type:	real
Units:	m^3
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % globalStatsAM % volumeCellGlobal

Table B.1252: volumeCellGlobal: sum of the volumeCell variable over the full domain, used to normalize global statistics

B.17.5 volumeEdgeGlobal

Type:	real
Units:	m^3
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % globalStatsAM % volumeEdgeGlobal

Table B.1253: volumeEdgeGlobal: sum of the volumeEdge variable over the full domain, used to normalize global statistics

B.17.6 CFLNumberGlobal

Type:	real
Units:	1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % globalStatsAM % CFLNumberGlobal

Table B.1254: CFLNumberGlobal: maximum CFL number over the full domain

B.17.7 landIceFloatingAreaSum

Type:	real
Units:	m^2
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % globalStatsAM % landIceFloatingAreaSum

Table B.1255: landIceFloatingAreaSum: sum of areaCell where landIceMask == 1, used to normalize global statistics in land-ice cavities

B.17.8 layerThicknessMin

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessMin
Location in code:	domain % blocklist % globalStatsAM % layerThicknessMin
Array Group:	mins

Table B.1256: layerThicknessMin: Minimum global value of layerThickness in ocean cells.

B.17.9 normalVelocityMin

Type:	real
Units:	$m\,s^-1$
Dimension:	Time

Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalVelocityMin
Location in code:	domain % blocklist % globalStatsAM % normalVelocityMin
Array Group:	mins

Table B.1257: normalVelocityMin: Minimum global value of normalVelocity on ocean edges.

B.17.10 tangentialVelocityMin

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_tangentialVelocityMin
Location in code:	domain % blocklist % globalStatsAM % tangentialVelocityMin
Array Group:	mins

Table B.1258: tangentialVelocityMin: Minimum global value of tangentialVelocity on ocean edges.

B.17.11 layerThicknessEdgeMin

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessEdgeMin
Location in code:	domain % blocklist % globalStatsAM % layerThicknessEdgeMin
Array Group:	mins

Table B.1259: layerThicknessEdgeMin: Minimum global value of layerThicknessEdgeMean on ocean edges.

B.17.12 relativeVorticityMin

Type:	real
Units:	s^-1
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_relativeVorticityMin
Location in code:	domain % blocklist % globalStatsAM % relativeVorticityMin
Array Group:	mins

Table B.1260: relativeVorticityMin: Minimum global value of relativeVorticity on ocean vertices.

B.17.13 enstrophyMin

Type:	real
Units:	s^-2
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_enstrophyMin
Location in code:	domain % blocklist % globalStatsAM % enstrophyMin
Array Group:	mins

Table B.1261: enstrophyMin: Minimum global value of enstrophy in ocean cells.

B.17.14 kineticEnergyCellMin

Type:	real
Units:	$m^2 s^-2$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_kineticEnergyCellMin
Location in code:	domain % blocklist % globalStatsAM % kineticEnergyCellMin
Array Group:	mins

Table B.1262: kineticEnergyCellMin: Minimum global value of kineticEnergy in ocean cells.

B.17.15 normalizedAbsoluteVorticityMin

Type:	real
Units:	s$^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalizedAbsoluteVorticityMin
Location in code:	domain % blocklist % globalStatsAM % normalizedAbsoluteVorticityMin
Array Group:	mins

Table B.1263: normalizedAbsoluteVorticityMin: Minimum global value of normalizedAbsoluteVorticity on ocean vertices.

B.17.16 pressureMin

Type:	real
Units:	N m$^-2$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_pressureMin
Location in code:	domain % blocklist % globalStatsAM % pressureMin
Array Group:	mins

Table B.1264: pressureMin: Minimum global value of pressure in ocean cells.

B.17.17 montgomeryPotentialMin

Type:	real
Units:	m^2 s$^-2$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_montgomeryPotentialMin
Location in code:	domain % blocklist % globalStatsAM % montgomeryPotentialMin
Array Group:	mins

Table B.1265: montgomeryPotentialMin: Minimum global value of the Montgomery Potential in ocean cells.

B.17.18 vertVelocityTopMin

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertVelocityTopMin
Location in code:	domain % blocklist % globalStatsAM % vertVelocityTopMin
Array Group:	mins

Table B.1266: vertVelocityTopMin: Minimum global value of vertVelocityTop in ocean cells.

B.17.19 vertAleTransportTopMin

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertAleTransportTopMin
Location in code:	domain % blocklist % globalStatsAM % vertAleTransportTopMin
Array Group:	mins

Table B.1267: vertAleTransportTopMin: Minimum global value of vertAleTransportTop in ocean cells.

B.17.20 lowFreqDivergenceMin

Type:	real
Units:	s^-1
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_lowFreqDivergenceMin
Location in code:	domain % blocklist % globalStatsAM % lowFreqDivergenceMin
Array Group:	mins

Table B.1268: lowFreqDivergenceMin: Minimum global value of lowFreqDivergence in ocean cells.

B.17.21 highFreqThicknessMin

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_highFreqThicknessMin
Location in code:	domain % blocklist % globalStatsAM % highFreqThicknessMin
Array Group:	mins

Table B.1269: highFreqThicknessMin: Minimum global value of highFreqThickness in ocean cells.

B.17.22 temperatureMin

Type:	real
Units:	C
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureMin
Location in code:	domain % blocklist % globalStatsAM % temperatureMin
Array Group:	mins

Table B.1270: temperatureMin: Minimum global value of temperature in ocean cells.

B.17.23 salinityMin

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityMin
Location in code:	domain % blocklist % globalStatsAM % salinityMin
Array Group:	mins

Table B.1271: salinityMin: Minimum global value of salinity in ocean cells.

B.17.24 layerThicknessPreviousTimestepMin

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessPreviousTimestepMin
Location in code:	domain % blocklist % globalStatsAM % layerThicknessPreviousTimestepMin
Array Group:	mins

Table B.1272: layerThicknessPreviousTimestepMin: Minimum global value of previous step layerThickness in ocean cells.

B.17.25 frazilLayerThicknessTendencyMin

Type:	real
Units:	m s$^-$1
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_frazilLayerThicknessTendencyMin
Location in code:	domain % blocklist % globalStatsAM % frazilLayerThicknessTendencyMin
Array Group:	mins

Table B.1273: frazilLayerThicknessTendencyMin: Minimum global value of layer thickness tendency due to frazil formation in ocean cells.

B.17.26 evaporationFluxMin

Type:	real
Units:	kg m$^-$2 s$^-$1
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_evaporationFluxMin
Location in code:	domain % blocklist % globalStatsAM % evaporationFluxMin
Array Group:	mins

Table B.1274: evaporationFluxMin: Minimum global value of evaporationFlux in ocean cells.

B.17.27 rainFluxMin

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_rainFluxMin
Location in code:	domain % blocklist % globalStatsAM % rainFluxMin
Array Group:	mins

Table B.1275: rainFluxMin: Minimum global value of rainFlux in ocean cells.

B.17.28 snowFluxMin

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_snowFluxMin
Location in code:	domain % blocklist % globalStatsAM % snowFluxMin
Array Group:	mins

Table B.1276: snowFluxMin: Minimum global value of snowFlux in ocean cells.

B.17.29 seaIceFreshWaterFluxMin

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_seaIceFreshWaterFluxMin
Location in code:	domain % blocklist % globalStatsAM % seaIceFreshWaterFluxMin
Array Group:	mins

Table B.1277: seaIceFreshWaterFluxMin: Minimum global value of seaIceFreshWaterFlux in ocean cells.

B.17.30 icebergFreshWaterFluxMin

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_icebergFreshWaterFluxMin
Location in code:	domain % blocklist % globalStatsAM % icebergFreshWaterFluxMin
Array Group:	mins

Table B.1278: icebergFreshWaterFluxMin: Minimum global value of icebergFreshWaterFlux in ocean cells.

B.17.31 riverRunoffFluxMin

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_riverRunoffFluxMin
Location in code:	domain % blocklist % globalStatsAM % riverRunoffFluxMin
Array Group:	mins

Table B.1279: riverRunoffFluxMin: Minimum global value of riverRunoffFlux in ocean cells.

B.17.32 iceRunoffFluxMin

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_iceRunoffFluxMin
Location in code:	domain % blocklist % globalStatsAM % iceRunoffFluxMin
Array Group:	mins

Table B.1280: iceRunoffFluxMin: Minimum global value of iceRunoffFlux in ocean cells.

B.17.33 temperatureFluxMin

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureFluxMin
Location in code:	domain % blocklist % globalStatsAM % temperatureFluxMin
Array Group:	mins

Table B.1281: temperatureFluxMin: Minimum global value of temperatureFlux in ocean cells.

B.17.34 salinityFluxMin

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityFluxMin
Location in code:	domain % blocklist % globalStatsAM % salinityFluxMin
Array Group:	mins

Table B.1282: salinityFluxMin: Minimum global value of salinityFlux in ocean cells.

B.17.35 salinityRestoringFluxMin

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityRestoringFluxMin
Location in code:	domain % blocklist % globalStatsAM % salinityRestoringFluxMin
Array Group:	mins

Table B.1283: salinityRestoringFluxMin: Minimum global value of salinityRestoringFlux in ocean cells.

B.17.36 landIceFreshwaterFluxMin

Type:	real
Units:	kg m^{-}2 s^{-}1
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_landIceFreshwaterFluxMin
Location in code:	domain % blocklist % globalStatsAM % landIceFreshwaterFluxMin
Array Group:	mins

Table B.1284: landIceFreshwaterFluxMin: Minimum global value of landIceFreshwaterFlux in ocean cells.

B.17.37 accumulatedLandIceMassMin

Type:	real
Units:	kg m^{-}2
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceMassMin
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceMassMin
Array Group:	mins

Table B.1285: accumulatedLandIceMassMin: Minimum global value of accumulatedLandIceMass in ocean cells.

B.17.38 accumulatedLandIceHeatMin

Type:	real
Units:	J m^{-}2
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceHeatMin
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceHeatMin
Array Group:	mins

Table B.1286: accumulatedLandIceHeatMin: Minimum global value of accumulatedLandIceHeat in ocean cells.

B.17.39 accumulatedLandIceFrazilMassMin

Type:	real
Units:	kg m$^-2$
Dimension:	Time
Persistence:	persistent
Index in minGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceFrazilMassMin
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceFrazilMassMin
Array Group:	mins

Table B.1287: accumulatedLandIceFrazilMassMin: Minimum global value of accumulatedLandIceFrazilMass in ocean cells.

B.17.40 layerThicknessMax

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessMax
Location in code:	domain % blocklist % globalStatsAM % layerThicknessMax
Array Group:	maxes

Table B.1288: layerThicknessMax: Maximum global value of layerThickness in ocean cells.

B.17.41 normalVelocityMax

Type:	real
Units:	m s$^-1$
Dimension:	Time
Persistence:	persistent

Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalVelocityMax
Location in code:	domain % blocklist % globalStatsAM % normalVelocityMax
Array Group:	maxes

Table B.1289: normalVelocityMax: Maximum global value of normalVelocity on ocean edges.

B.17.42 tangentialVelocityMax

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_tangentialVelocityMax
Location in code:	domain % blocklist % globalStatsAM % tangentialVelocityMax
Array Group:	maxes

Table B.1290: tangentialVelocityMax: Maximum global value of tangentialVelocity on ocean edges.

B.17.43 layerThicknessEdgeMax

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessEdgeMax
Location in code:	domain % blocklist % globalStatsAM % layerThicknessEdgeMax
Array Group:	maxes

Table B.1291: layerThicknessEdgeMax: Maximum global value of layerThicknessEdgeMean on ocean edges.

B.17.44 relativeVorticityMax

Type:	real

Units:	s^-1
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_relativeVorticityMax
Location in code:	domain % blocklist % globalStatsAM % relativeVorticityMax
Array Group:	maxes

Table B.1292: relativeVorticityMax: Maximum global value of relativeVorticity on ocean vertices.

B.17.45 enstrophyMax

Type:	real
Units:	s^-2
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_enstrophyMax
Location in code:	domain % blocklist % globalStatsAM % enstrophyMax
Array Group:	maxes

Table B.1293: enstrophyMax: Maximum global value of enstrophy in ocean cells.

B.17.46 kineticEnergyCellMax

Type:	real
Units:	$m^2 s^-2$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_kineticEnergyCellMax
Location in code:	domain % blocklist % globalStatsAM % kineticEnergyCellMax
Array Group:	maxes

Table B.1294: kineticEnergyCellMax: Maximum global value of kineticEnergy in ocean cells.

B.17.47 normalizedAbsoluteVorticityMax

Type:	real
Units:	s^-1
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalizedAbsoluteVorticityMax
Location in code:	domain % blocklist % globalStatsAM % normalizedAbsoluteVorticityMax
Array Group:	maxes

Table B.1295: normalizedAbsoluteVorticityMax: Maximum global value of normalizedAbsoluteVorticity on ocean vertices.

B.17.48 pressureMax

Type:	real
Units:	$N\,m^-2$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_pressureMax
Location in code:	domain % blocklist % globalStatsAM % pressureMax
Array Group:	maxes

Table B.1296: pressureMax: Maximum global value of pressure in ocean cells.

B.17.49 montgomeryPotentialMax

Type:	real
Units:	$m^2\,s^-2$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_montgomeryPotentialMax
Location in code:	domain % blocklist % globalStatsAM % montgomeryPotentialMax
Array Group:	maxes

Table B.1297: montgomeryPotentialMax: Maximum global value of the Montgomery Potential in ocean cells.

B.17.50 vertVelocityTopMax

Type:	real
Units:	m s⁻1
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertVelocityTopMax
Location in code:	domain % blocklist % globalStatsAM % vertVelocityTopMax
Array Group:	maxes

Table B.1298: vertVelocityTopMax: Maximum global value of vertVelocityTop in ocean cells.

B.17.51 vertAleTransportTopMax

Type:	real
Units:	m s⁻1
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertAleTransportTopMax
Location in code:	domain % blocklist % globalStatsAM % vertAleTransportTopMax
Array Group:	maxes

Table B.1299: vertAleTransportTopMax: Maximum global value of vertAleTransportTop in ocean cells.

B.17.52 lowFreqDivergenceMax

Type:	real
Units:	s⁻1
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_lowFreqDivergenceMax
Location in code:	domain % blocklist % globalStatsAM % lowFreqDivergenceMax
Array Group:	maxes

Table B.1300: lowFreqDivergenceMax: Maximum global value of lowFreqDivergence in ocean cells.

B.17.53 highFreqThicknessMax

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_highFreqThicknessMax
Location in code:	domain % blocklist % globalStatsAM % highFreqThicknessMax
Array Group:	maxes

Table B.1301: highFreqThicknessMax: Maximum global value of highFreqThickness in ocean cells.

B.17.54 temperatureMax

Type:	real
Units:	C
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureMax
Location in code:	domain % blocklist % globalStatsAM % temperatureMax
Array Group:	maxes

Table B.1302: temperatureMax: Maximum global value of temperature in ocean cells.

B.17.55 salinityMax

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityMax
Location in code:	domain % blocklist % globalStatsAM % salinityMax
Array Group:	maxes

Table B.1303: salinityMax: Maximum global value of salinity in ocean cells.

B.17.56 layerThicknessPreviousTimestepMax

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessPreviousTimestepMax
Location in code:	domain % blocklist % globalStatsAM % layerThicknessPreviousTimestepMax
Array Group:	maxes

Table B.1304: layerThicknessPreviousTimestepMax: Maximum global value of previous step layerThickness in ocean cells.

B.17.57 frazilLayerThicknessTendencyMax

Type:	real
Units:	m s$^-1$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_frazilLayerThicknessTendencyMax
Location in code:	domain % blocklist % globalStatsAM % frazilLayerThicknessTendencyMax
Array Group:	maxes

Table B.1305: frazilLayerThicknessTendencyMax: Maximum global value of layer thickness tendency due to frazil formation in ocean cells.

B.17.58 evaporationFluxMax

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_evaporationFluxMax
Location in code:	domain % blocklist % globalStatsAM % evaporationFluxMax
Array Group:	maxes

Table B.1306: evaporationFluxMax: Maximum global value of evaporationFlux in ocean cells.

B.17.59 rainFluxMax

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_rainFluxMax
Location in code:	domain % blocklist % globalStatsAM % rainFluxMax
Array Group:	maxes

Table B.1307: rainFluxMax: Maximum global value of rainFlux in ocean cells.

B.17.60 snowFluxMax

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_snowFluxMax
Location in code:	domain % blocklist % globalStatsAM % snowFluxMax
Array Group:	maxes

Table B.1308: snowFluxMax: Maximum global value of snowFlux in ocean cells.

B.17.61 seaIceFreshWaterFluxMax

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_seaIceFreshWaterFluxMax
Location in code:	domain % blocklist % globalStatsAM % seaIceFreshWaterFluxMax
Array Group:	maxes

Table B.1309: seaIceFreshWaterFluxMax: Maximum global value of seaIceFreshWaterFlux in ocean cells.

B.17.62 icebergFreshWaterFluxMax

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_icebergFreshWaterFluxMax
Location in code:	domain % blocklist % globalStatsAM % icebergFreshWaterFluxMax
Array Group:	maxes

Table B.1310: icebergFreshWaterFluxMax: Maximum global value of icebergFreshWaterFlux in ocean cells.

B.17.63 riverRunoffFluxMax

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_riverRunoffFluxMax
Location in code:	domain % blocklist % globalStatsAM % riverRunoffFluxMax
Array Group:	maxes

Table B.1311: riverRunoffFluxMax: Maximum global value of riverRunoffFlux in ocean cells.

B.17.64 iceRunoffFluxMax

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_iceRunoffFluxMax
Location in code:	domain % blocklist % globalStatsAM % iceRunoffFluxMax
Array Group:	maxes

Table B.1312: iceRunoffFluxMax: Maximum global value of iceRunoffFlux in ocean cells.

B.17.65 temperatureFluxMax

Type:	real
Units:	kg m⁻2 s⁻1
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureFluxMax
Location in code:	domain % blocklist % globalStatsAM % temperatureFluxMax
Array Group:	maxes

Table B.1313: temperatureFluxMax: Maximum global value of temperatureFlux in ocean cells.

B.17.66 salinityFluxMax

Type:	real
Units:	kg m⁻2 s⁻1
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityFluxMax
Location in code:	domain % blocklist % globalStatsAM % salinityFluxMax
Array Group:	maxes

Table B.1314: salinityFluxMax: Maximum global value of salinityFlux in ocean cells.

B.17.67 salinityRestoringFluxMax

Type:	real
Units:	kg m⁻2 s⁻1
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityRestoringFluxMax
Location in code:	domain % blocklist % globalStatsAM % salinityRestoringFluxMax
Array Group:	maxes

Table B.1315: salinityRestoringFluxMax: Maximum global value of salinityRestoringFlux in ocean cells.

B.17.68 landIceFreshwaterFluxMax

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_landIceFreshwaterFluxMax
Location in code:	domain % blocklist % globalStatsAM % landIceFreshwaterFluxMax
Array Group:	maxes

Table B.1316: landIceFreshwaterFluxMax: Maximum global value of landIceFreshwaterFlux in ocean cells.

B.17.69 accumulatedLandIceMassMax

Type:	real
Units:	$\mathrm{kg\,m^-2}$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceMassMax
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceMassMax
Array Group:	maxes

Table B.1317: accumulatedLandIceMassMax: Maximum global value of accumulatedLandIceMass in ocean cells.

B.17.70 accumulatedLandIceHeatMax

Type:	real
Units:	$\mathrm{J\,m^-2}$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceHeatMax
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceHeatMax
Array Group:	maxes

Table B.1318: accumulatedLandIceHeatMax: Maximum global value of accumulatedLandIceHeat in ocean cells.

B.17.71 accumulatedLandIceFrazilMassMax

Type:	real
Units:	kg m$^-2$
Dimension:	Time
Persistence:	persistent
Index in maxGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceFrazilMassMax
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceFrazilMassMax
Array Group:	maxes

Table B.1319: accumulatedLandIceFrazilMassMax: Maximum global value of accumulatedLandIceFrazilMass in ocean cells.

B.17.72 layerThicknessSum

Type:	real
Units:	m^3
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessSum
Location in code:	domain % blocklist % globalStatsAM % layerThicknessSum
Array Group:	sums

Table B.1320: layerThicknessSum: Accumulated global value of layerThickness in ocean cells.

B.17.73 normalVelocitySum

Type:	real
Units:	m^4 s$^-1$
Dimension:	Time
Persistence:	persistent

Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalVelocitySum
Location in code:	domain % blocklist % globalStatsAM % normalVelocitySum
Array Group:	sums

Table B.1321: normalVelocitySum: Accumulated global value of normalVelocity on ocean edges.

B.17.74 tangentialVelocitySum

Type:	real
Units:	$m^4 s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_tangentialVelocitySum
Location in code:	domain % blocklist % globalStatsAM % tangentialVelocitySum
Array Group:	sums

Table B.1322: tangentialVelocitySum: Accumulated global value of tangentialVelocity on ocean edges.

B.17.75 layerThicknessEdgeSum

Type:	real
Units:	m^3
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessEdgeSum
Location in code:	domain % blocklist % globalStatsAM % layerThicknessEdgeSum
Array Group:	sums

Table B.1323: layerThicknessEdgeSum: Accumulated global value of layerThicknessEdgeMean on ocean edges.

B.17.76 relativeVorticitySum

Type:	real
Units:	$m^2 s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_relativeVorticitySum
Location in code:	domain % blocklist % globalStatsAM % relativeVorticitySum
Array Group:	sums

Table B.1324: relativeVorticitySum: Accumulated global value of relativeVorticity on ocean vertices.

B.17.77 enstrophySum

Type:	real
Units:	$m^2 s^-2$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_enstrophySum
Location in code:	domain % blocklist % globalStatsAM % enstrophySum
Array Group:	sums

Table B.1325: enstrophySum: Accumulated global value of enstrophy in ocean cells.

B.17.78 kineticEnergyCellSum

Type:	real
Units:	$m^5 s^-2$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_kineticEnergyCellSum
Location in code:	domain % blocklist % globalStatsAM % kineticEnergyCellSum
Array Group:	sums

Table B.1326: kineticEnergyCellSum: Accumulated global value of kineticEnergy in ocean cells.

B.17.79 normalizedAbsoluteVorticitySum

Type:	real
Units:	$m^3 s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalizedAbsoluteVorticitySum
Location in code:	domain % blocklist % globalStatsAM % normalizedAbsoluteVorticitySum
Array Group:	sums

Table B.1327: normalizedAbsoluteVorticitySum: Accumulated global value of normalizedAbsoluteVorticity on ocean vertices.

B.17.80 pressureSum

Type:	real
Units:	N m
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_pressureSum
Location in code:	domain % blocklist % globalStatsAM % pressureSum
Array Group:	sums

Table B.1328: pressureSum: Accumulated global value of pressure in ocean cells.

B.17.81 montgomeryPotentialSum

Type:	real
Units:	$m^5 s^-2$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_montgomeryPotentialSum
Location in code:	domain % blocklist % globalStatsAM % montgomeryPotentialSum
Array Group:	sums

Table B.1329: montgomeryPotentialSum: Accumulated global value of the Montgomery Potential in ocean cells.

B.17.82 vertVelocityTopSum

Type:	real
Units:	$m^4 s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertVelocityTopSum
Location in code:	domain % blocklist % globalStatsAM % vertVelocityTopSum
Array Group:	sums

Table B.1330: vertVelocityTopSum: Accumulated global value of vertVelocityTop in ocean cells.

B.17.83 vertAleTransportTopSum

Type:	real
Units:	$m^4 s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertAleTransportTopSum
Location in code:	domain % blocklist % globalStatsAM % vertAleTransportTopSum
Array Group:	sums

Table B.1331: vertAleTransportTopSum: Accumulated global value of vertAleTransportTop in ocean cells.

B.17.84 lowFreqDivergenceSum

Type:	real
Units:	$m^3 s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_lowFreqDivergenceSum
Location in code:	domain % blocklist % globalStatsAM % lowFreqDivergenceSum
Array Group:	sums

Table B.1332: lowFreqDivergenceSum: Accumulated global value of lowFreqDivergence in ocean cells.

B.17.85 highFreqThicknessSum

Type:	real
Units:	m^4
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_highFreqThicknessSum
Location in code:	domain % blocklist % globalStatsAM % highFreqThicknessSum
Array Group:	sums

Table B.1333: highFreqThicknessSum: Accumulated global value of highFreqThickness in ocean cells.

B.17.86 temperatureSum

Type:	real
Units:	m^3 C
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureSum
Location in code:	domain % blocklist % globalStatsAM % temperatureSum
Array Group:	sums

Table B.1334: temperatureSum: Accumulated global value of temperature in ocean cells.

B.17.87 salinitySum

Type:	real
Units:	m^3 1 e − 3
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinitySum
Location in code:	domain % blocklist % globalStatsAM % salinitySum
Array Group:	sums

Table B.1335: salinitySum: Accumulated global value of salinity in ocean cells.

B.17.88 layerThicknessPreviousTimestepSum

Type:	real
Units:	m^3
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessPreviousTimestepSum
Location in code:	domain % blocklist % globalStatsAM % layerThicknessPreviousTimestepSum
Array Group:	sums

Table B.1336: layerThicknessPreviousTimestepSum: Accumulated global value of previous step layerThickness in ocean cells.

B.17.89 frazilLayerThicknessTendencySum

Type:	real
Units:	$m^3 s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_frazilLayerThicknessTendencySum
Location in code:	domain % blocklist % globalStatsAM % frazilLayerThicknessTendencySum
Array Group:	sums

Table B.1337: frazilLayerThicknessTendencySum: Accumulated global value of layer thickness tendency due to frazil formation in ocean cells.

B.17.90 evaporationFluxSum

Type:	real
Units:	$kg s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_evaporationFluxSum
Location in code:	domain % blocklist % globalStatsAM % evaporationFluxSum
Array Group:	sums

Table B.1338: evaporationFluxSum: Accumulated global value of evaporationFlux in ocean cells.

B.17.91 rainFluxSum

Type:	real
Units:	kg s$^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_rainFluxSum
Location in code:	domain % blocklist % globalStatsAM % rainFluxSum
Array Group:	sums

Table B.1339: rainFluxSum: Accumulated global value of rainFlux in ocean cells.

B.17.92 snowFluxSum

Type:	real
Units:	kg s$^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_snowFluxSum
Location in code:	domain % blocklist % globalStatsAM % snowFluxSum
Array Group:	sums

Table B.1340: snowFluxSum: Accumulated global value of snowFlux in ocean cells.

B.17.93 seaIceFreshWaterFluxSum

Type:	real
Units:	kg s$^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_seaIceFreshWaterFluxSum
Location in code:	domain % blocklist % globalStatsAM % seaIceFreshWaterFluxSum
Array Group:	sums

Table B.1341: seaIceFreshWaterFluxSum: Accumulated global value of seaIceFreshWaterFlux in ocean cells.

B.17.94 icebergFreshWaterFluxSum

Type:	real
Units:	$kg\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_icebergFreshWaterFluxSum
Location in code:	domain % blocklist % globalStatsAM % icebergFreshWaterFluxSum
Array Group:	sums

Table B.1342: icebergFreshWaterFluxSum: Accumulated global value of icebergFreshWaterFlux in ocean cells.

B.17.95 riverRunoffFluxSum

Type:	real
Units:	$kg\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_riverRunoffFluxSum
Location in code:	domain % blocklist % globalStatsAM % riverRunoffFluxSum
Array Group:	sums

Table B.1343: riverRunoffFluxSum: Accumulated global value of riverRunoffFlux in ocean cells.

B.17.96 iceRunoffFluxSum

Type:	real
Units:	$kg\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_iceRunoffFluxSum
Location in code:	domain % blocklist % globalStatsAM % iceRunoffFluxSum
Array Group:	sums

Table B.1344: iceRunoffFluxSum: Accumulated global value of iceRunoffFlux in ocean cells.

B.17.97 temperatureFluxSum

Type:	real
Units:	kg s$^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureFluxSum
Location in code:	domain % blocklist % globalStatsAM % temperatureFluxSum
Array Group:	sums

Table B.1345: temperatureFluxSum: Accumulated global value of temperatureFlux in ocean cells.

B.17.98 salinityFluxSum

Type:	real
Units:	kg s$^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityFluxSum
Location in code:	domain % blocklist % globalStatsAM % salinityFluxSum
Array Group:	sums

Table B.1346: salinityFluxSum: Accumulated global value of salinityFlux in ocean cells.

B.17.99 salinityRestoringFluxSum

Type:	real
Units:	kg s$^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityRestoringFluxSum
Location in code:	domain % blocklist % globalStatsAM % salinityRestoringFluxSum
Array Group:	sums

Table B.1347: salinityRestoringFluxSum: Accumulated global value of salinityRestoringFlux in ocean cells.

B.17.100 landIceFreshwaterFluxSum

Type:	real
Units:	$kg\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_landIceFreshwaterFluxSum
Location in code:	domain % blocklist % globalStatsAM % landIceFreshwaterFluxSum
Array Group:	sums

Table B.1348: landIceFreshwaterFluxSum: Accumulated global value of landIceFreshwaterFlux in ocean cells.

B.17.101 accumulatedLandIceMassSum

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceMassSum
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceMassSum
Array Group:	sums

Table B.1349: accumulatedLandIceMassSum: Accumulated global value of accumulatedLandIceMass in ocean cells.

B.17.102 accumulatedLandIceHeatSum

Type:	real
Units:	J
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceHeatSum
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceHeatSum
Array Group:	sums

Table B.1350: accumulatedLandIceHeatSum: Accumulated global value of accumulatedLandIceHeat in ocean cells.

B.17.103 accumulatedLandIceFrazilMassSum

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Index in sumGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceFrazilMassSum
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceFrazilMassSum
Array Group:	sums

Table B.1351: accumulatedLandIceFrazilMassSum: Accumulated global value of accumulatedLandIceFrazilMass in ocean cells.

B.17.104 layerThicknessRms

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessRms
Location in code:	domain % blocklist % globalStatsAM % layerThicknessRms
Array Group:	rms

Table B.1352: layerThicknessRms: Global root mean square value of layerThickness in ocean cells.

B.17.105 normalVelocityRms

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	Time
Persistence:	persistent

Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalVelocityRms
Location in code:	domain % blocklist % globalStatsAM % normalVelocityRms
Array Group:	rms

Table B.1353: normalVelocityRms: Global root mean square value of normalVelocity on ocean edges.

B.17.106 tangentialVelocityRms

Type:	real
Units:	$m s^-1$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_tangentialVelocityRms
Location in code:	domain % blocklist % globalStatsAM % tangentialVelocityRms
Array Group:	rms

Table B.1354: tangentialVelocityRms: Global root mean square value of tangentialVelocity on ocean edges.

B.17.107 layerThicknessEdgeRms

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessEdgeRms
Location in code:	domain % blocklist % globalStatsAM % layerThicknessEdgeRms
Array Group:	rms

Table B.1355: layerThicknessEdgeRms: Global root mean square value of layerThicknessEdgeMean on ocean edges.

B.17.108 relativeVorticityRms

Type:	real
Units:	s⁻1
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_relativeVorticityRms
Location in code:	domain % blocklist % globalStatsAM % relativeVorticityRms
Array Group:	rms

Table B.1356: relativeVorticityRms: Global root mean square value of relativeVorticity on ocean vertices.

B.17.109 enstrophyRms

Type:	real
Units:	s⁻2
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_enstrophyRms
Location in code:	domain % blocklist % globalStatsAM % enstrophyRms
Array Group:	rms

Table B.1357: enstrophyRms: Global root mean square value of enstrophy in ocean cells.

B.17.110 kineticEnergyCellRms

Type:	real
Units:	$m^2 s^-2$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_kineticEnergyCellRms
Location in code:	domain % blocklist % globalStatsAM % kineticEnergyCellRms
Array Group:	rms

Table B.1358: kineticEnergyCellRms: Global root mean square value of kineticEnergy in ocean cells.

B.17.111 normalizedAbsoluteVorticityRms

Type:	real
Units:	s^-1
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalizedAbsoluteVorticityRms
Location in code:	domain % blocklist % globalStatsAM % normalizedAbsoluteVorticityRms
Array Group:	rms

Table B.1359: normalizedAbsoluteVorticityRms: Global root mean square value of normalizedAbsoluteVorticity on ocean vertices.

B.17.112 pressureRms

Type:	real
Units:	$N\,m^-2$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_pressureRms
Location in code:	domain % blocklist % globalStatsAM % pressureRms
Array Group:	rms

Table B.1360: pressureRms: Global root mean square value of pressure in ocean cells.

B.17.113 montgomeryPotentialRms

Type:	real
Units:	$m^2\,s^-2$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_montgomeryPotentialRms
Location in code:	domain % blocklist % globalStatsAM % montgomeryPotentialRms
Array Group:	rms

Table B.1361: montgomeryPotentialRms: Global root mean square value of the Montgomery Potential in ocean cells.

B.17.114 vertVelocityTopRms

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertVelocityTopRms
Location in code:	domain % blocklist % globalStatsAM % vertVelocityTopRms
Array Group:	rms

Table B.1362: vertVelocityTopRms: Global root mean square value of vertVelocityTop in ocean cells.

B.17.115 vertAleTransportTopRms

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertAleTransportTopRms
Location in code:	domain % blocklist % globalStatsAM % vertAleTransportTopRms
Array Group:	rms

Table B.1363: vertAleTransportTopRms: Global root mean square value of vertAleTransportTop in ocean cells.

B.17.116 lowFreqDivergenceRms

Type:	real
Units:	s^-1
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_lowFreqDivergenceRms
Location in code:	domain % blocklist % globalStatsAM % lowFreqDivergenceRms
Array Group:	rms

Table B.1364: lowFreqDivergenceRms: Global root mean square value of lowFreqDivergence in ocean cells.

B.17.117 highFreqThicknessRms

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_highFreqThicknessRms
Location in code:	domain % blocklist % globalStatsAM % highFreqThicknessRms
Array Group:	rms

Table B.1365: highFreqThicknessRms: Global root mean square value of highFreqThickness in ocean cells.

B.17.118 temperatureRms

Type:	real
Units:	C
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureRms
Location in code:	domain % blocklist % globalStatsAM % temperatureRms
Array Group:	rms

Table B.1366: temperatureRms: Global root mean square value of temperature in ocean cells.

B.17.119 salinityRms

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityRms
Location in code:	domain % blocklist % globalStatsAM % salinityRms
Array Group:	rms

Table B.1367: salinityRms: Global root mean square value of salinity in ocean cells.

B.17.120 layerThicknessPreviousTimestepRms

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessPreviousTimestepRms
Location in code:	domain % blocklist % globalStatsAM % layerThicknessPreviousTimestepRms
Array Group:	rms

Table B.1368: layerThicknessPreviousTimestepRms: Global root mean square value of previous step layerThickness in ocean cells.

B.17.121 frazilLayerThicknessTendencyRms

Type:	real
Units:	m s$^-1$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_frazilLayerThicknessTendencyRms
Location in code:	domain % blocklist % globalStatsAM % frazilLayerThicknessTendencyRms
Array Group:	rms

Table B.1369: frazilLayerThicknessTendencyRms: Global root mean square value of layer thickness tendency due to frazil formation in ocean cells.

B.17.122 evaporationFluxRms

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_evaporationFluxRms
Location in code:	domain % blocklist % globalStatsAM % evaporationFluxRms
Array Group:	rms

Table B.1370: evaporationFluxRms: Global root mean square value of evaporationFlux in ocean cells.

B.17.123 rainFluxRms

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_rainFluxRms
Location in code:	domain % blocklist % globalStatsAM % rainFluxRms
Array Group:	rms

Table B.1371: rainFluxRms: Global root mean square value of rainFlux in ocean cells.

B.17.124 snowFluxRms

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_snowFluxRms
Location in code:	domain % blocklist % globalStatsAM % snowFluxRms
Array Group:	rms

Table B.1372: snowFluxRms: Global root mean square value of snowFlux in ocean cells.

B.17.125 seaIceFreshWaterFluxRms

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_seaIceFreshWaterFluxRms
Location in code:	domain % blocklist % globalStatsAM % seaIceFreshWaterFluxRms
Array Group:	rms

Table B.1373: seaIceFreshWaterFluxRms: Global root mean square value of seaIceFreshWaterFlux in ocean cells.

B.17.126 icebergFreshWaterFluxRms

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_icebergFreshWaterFluxRms
Location in code:	domain % blocklist % globalStatsAM % icebergFreshWaterFluxRms
Array Group:	rms

Table B.1374: icebergFreshWaterFluxRms: Global root mean square value of icebergFreshWaterFlux in ocean cells.

B.17.127 riverRunoffFluxRms

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_riverRunoffFluxRms
Location in code:	domain % blocklist % globalStatsAM % riverRunoffFluxRms
Array Group:	rms

Table B.1375: riverRunoffFluxRms: Global root mean square value of riverRunoffFlux in ocean cells.

B.17.128 iceRunoffFluxRms

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_iceRunoffFluxRms
Location in code:	domain % blocklist % globalStatsAM % iceRunoffFluxRms
Array Group:	rms

Table B.1376: iceRunoffFluxRms: Global root mean square value of iceRunoffFlux in ocean cells.

B.17.129 temperatureFluxRms

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureFluxRms
Location in code:	domain % blocklist % globalStatsAM % temperatureFluxRms
Array Group:	rms

Table B.1377: temperatureFluxRms: Global root mean square value of temperatureFlux in ocean cells.

B.17.130 salinityFluxRms

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityFluxRms
Location in code:	domain % blocklist % globalStatsAM % salinityFluxRms
Array Group:	rms

Table B.1378: salinityFluxRms: Global root mean square value of salinityFlux in ocean cells.

B.17.131 salinityRestoringFluxRms

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityRestoringFluxRms
Location in code:	domain % blocklist % globalStatsAM % salinityRestoringFluxRms
Array Group:	rms

Table B.1379: salinityRestoringFluxRms: Global root mean square value of salinityRestoringFlux in ocean cells.

B.17.132 landIceFreshwaterFluxRms

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_landIceFreshwaterFluxRms
Location in code:	domain % blocklist % globalStatsAM % landIceFreshwaterFluxRms
Array Group:	rms

Table B.1380: landIceFreshwaterFluxRms: Global root mean square value of landIceFreshwaterFlux in ocean cells.

B.17.133 accumulatedLandIceMassRms

Type:	real
Units:	$kg\,m^-2$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceMassRms
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceMassRms
Array Group:	rms

Table B.1381: accumulatedLandIceMassRms: Global root mean square value of accumulatedLandIceMass in ocean cells.

B.17.134 accumulatedLandIceHeatRms

Type:	real
Units:	$J\,m^-2$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceHeatRms
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceHeatRms
Array Group:	rms

Table B.1382: accumulatedLandIceHeatRms: Global root mean square value of accumulatedLandIceHeat in ocean cells.

B.17.135 accumulatedLandIceFrazilMassRms

Type:	real
Units:	$kg\,m^-2$
Dimension:	Time
Persistence:	persistent
Index in rmsGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceFrazilMassRms
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceFrazilMassRms
Array Group:	rms

Table B.1383: accumulatedLandIceFrazilMassRms: Global root mean square value of accumulatedLandIceFrazilMass in ocean cells.

B.17.136 layerThicknessAvg

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessAvg
Location in code:	domain % blocklist % globalStatsAM % layerThicknessAvg
Array Group:	avg

Table B.1384: layerThicknessAvg: Average value of layerThickness in ocean cells.

B.17.137 normalVelocityAvg

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent

Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalVelocityAvg
Location in code:	domain % blocklist % globalStatsAM % normalVelocityAvg
Array Group:	avg

Table B.1385: normalVelocityAvg: Average value of normalVelocity on ocean edges.

B.17.138 tangentialVelocityAvg

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_tangentialVelocityAvg
Location in code:	domain % blocklist % globalStatsAM % tangentialVelocityAvg
Array Group:	avg

Table B.1386: tangentialVelocityAvg: Average value of tangentialVelocity on ocean edges.

B.17.139 layerThicknessEdgeAvg

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessEdgeAvg
Location in code:	domain % blocklist % globalStatsAM % layerThicknessEdgeAvg
Array Group:	avg

Table B.1387: layerThicknessEdgeAvg: Average value of layerThicknessEdgeMean on ocean edges.

B.17.140 relativeVorticityAvg

Type:	real
Units:	s^-1

Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_relativeVorticityAvg
Location in code:	domain % blocklist % globalStatsAM % relativeVorticityAvg
Array Group:	avg

Table B.1388: relativeVorticityAvg: Average value of relativeVorticity on ocean vertices.

B.17.141 enstrophyAvg

Type:	real
Units:	s^-2
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_enstrophyAvg
Location in code:	domain % blocklist % globalStatsAM % enstrophyAvg
Array Group:	avg

Table B.1389: enstrophyAvg: Average value of enstrophy in ocean cells.

B.17.142 kineticEnergyCellAvg

Type:	real
Units:	$m^2 s^-2$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_kineticEnergyCellAvg
Location in code:	domain % blocklist % globalStatsAM % kineticEnergyCellAvg
Array Group:	avg

Table B.1390: kineticEnergyCellAvg: Average value of kineticEnergy in ocean cells.

B.17.143 normalizedAbsoluteVorticityAvg

Type:	real

Units:	s^-1
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalizedAbsoluteVorticityAvg
Location in code:	domain % blocklist % globalStatsAM % normalizedAbsoluteVorticityAvg
Array Group:	avg

Table B.1391: normalizedAbsoluteVorticityAvg: Average value of normalizedAbsoluteVorticity on ocean vertices.

B.17.144 pressureAvg

Type:	real
Units:	$N\,m^-2$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_pressureAvg
Location in code:	domain % blocklist % globalStatsAM % pressureAvg
Array Group:	avg

Table B.1392: pressureAvg: Average value of pressure in ocean cells.

B.17.145 montgomeryPotentialAvg

Type:	real
Units:	$m^2\,s^-2$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_montgomeryPotentialAvg
Location in code:	domain % blocklist % globalStatsAM % montgomeryPotentialAvg
Array Group:	avg

Table B.1393: montgomeryPotentialAvg: Average value of the Montgomery Potential in ocean cells.

B.17.146 vertVelocityTopAvg

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertVelocityTopAvg
Location in code:	domain % blocklist % globalStatsAM % vertVelocityTopAvg
Array Group:	avg

Table B.1394: vertVelocityTopAvg: Average value of vertVelocityTop in ocean cells.

B.17.147 vertAleTransportTopAvg

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertAleTransportTopAvg
Location in code:	domain % blocklist % globalStatsAM % vertAleTransportTopAvg
Array Group:	avg

Table B.1395: vertAleTransportTopAvg: Average value of vertAleTransportTop in ocean cells.

B.17.148 lowFreqDivergenceAvg

Type:	real
Units:	s^-1
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_lowFreqDivergenceAvg
Location in code:	domain % blocklist % globalStatsAM % lowFreqDivergenceAvg
Array Group:	avg

Table B.1396: lowFreqDivergenceAvg: Average value of lowFreqDivergence in ocean cells.

B.17.149 highFreqThicknessAvg

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_highFreqThicknessAvg
Location in code:	domain % blocklist % globalStatsAM % highFreqThicknessAvg
Array Group:	avg

Table B.1397: highFreqThicknessAvg: Average value of highFreqThickness in ocean cells.

B.17.150 temperatureAvg

Type:	real
Units:	C
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureAvg
Location in code:	domain % blocklist % globalStatsAM % temperatureAvg
Array Group:	avg

Table B.1398: temperatureAvg: Average value of temperature in ocean cells.

B.17.151 salinityAvg

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityAvg
Location in code:	domain % blocklist % globalStatsAM % salinityAvg
Array Group:	avg

Table B.1399: salinityAvg: Average value of salinity in ocean cells.

B.17.152 layerThicknessPreviousTimestepAvg

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessPreviousTimestepAvg
Location in code:	domain % blocklist % globalStatsAM % layerThicknessPreviousTimestepAvg
Array Group:	avg

Table B.1400: layerThicknessPreviousTimestepAvg: Average value of previous step layerThickness in ocean cells.

B.17.153 frazilLayerThicknessTendencyAvg

Type:	real
Units:	m s^−1
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_frazilLayerThicknessTendencyAvg
Location in code:	domain % blocklist % globalStatsAM % frazilLayerThicknessTendencyAvg
Array Group:	avg

Table B.1401: frazilLayerThicknessTendencyAvg: Average value of layer thickness tendency due to frazil formation in ocean cells.

B.17.154 evaporationFluxAvg

Type:	real
Units:	kg m^−2 s^−1
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_evaporationFluxAvg
Location in code:	domain % blocklist % globalStatsAM % evaporationFluxAvg
Array Group:	avg

Table B.1402: evaporationFluxAvg: Average value of evaporationFlux in ocean cells.

B.17.155 rainFluxAvg

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_rainFluxAvg
Location in code:	domain % blocklist % globalStatsAM % rainFluxAvg
Array Group:	avg

Table B.1403: rainFluxAvg: Average value of rainFlux in ocean cells.

B.17.156 snowFluxAvg

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_snowFluxAvg
Location in code:	domain % blocklist % globalStatsAM % snowFluxAvg
Array Group:	avg

Table B.1404: snowFluxAvg: Average value of snowFlux in ocean cells.

B.17.157 seaIceFreshWaterFluxAvg

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_seaIceFreshWaterFluxAvg
Location in code:	domain % blocklist % globalStatsAM % seaIceFreshWaterFluxAvg
Array Group:	avg

Table B.1405: seaIceFreshWaterFluxAvg: Average value of seaIceFreshWaterFlux in ocean cells.

B.17.158 icebergFreshWaterFluxAvg

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_icebergFreshWaterFluxAvg
Location in code:	domain % blocklist % globalStatsAM % icebergFreshWaterFluxAvg
Array Group:	avg

Table B.1406: icebergFreshWaterFluxAvg: Average value of icebergFreshWaterFlux in ocean cells.

B.17.159 riverRunoffFluxAvg

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_riverRunoffFluxAvg
Location in code:	domain % blocklist % globalStatsAM % riverRunoffFluxAvg
Array Group:	avg

Table B.1407: riverRunoffFluxAvg: Average value of riverRunoffFlux in ocean cells.

B.17.160 iceRunoffFluxAvg

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_iceRunoffFluxAvg
Location in code:	domain % blocklist % globalStatsAM % iceRunoffFluxAvg
Array Group:	avg

Table B.1408: iceRunoffFluxAvg: Average value of iceRunoffFlux in ocean cells.

B.17.161 temperatureFluxAvg

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureFluxAvg
Location in code:	domain % blocklist % globalStatsAM % temperatureFluxAvg
Array Group:	avg

Table B.1409: temperatureFluxAvg: Average value of temperatureFlux in ocean cells.

B.17.162 salinityFluxAvg

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityFluxAvg
Location in code:	domain % blocklist % globalStatsAM % salinityFluxAvg
Array Group:	avg

Table B.1410: salinityFluxAvg: Average value of salinityFlux in ocean cells.

B.17.163 salinityRestoringFluxAvg

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityRestoringFluxAvg
Location in code:	domain % blocklist % globalStatsAM % salinityRestoringFluxAvg
Array Group:	avg

Table B.1411: salinityRestoringFluxAvg: Average value of salinityRestoringFlux in ocean cells.

B.17.164 landIceFreshwaterFluxAvg

Type:	real
Units:	$kg\,m^{-}2\,s^{-}1$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_landIceFreshwaterFluxAvg
Location in code:	domain % blocklist % globalStatsAM % landIceFreshwaterFluxAvg
Array Group:	avg

Table B.1412: landIceFreshwaterFluxAvg: Average value of landIceFreshwaterFlux in ocean cells.

B.17.165 accumulatedLandIceMassAvg

Type:	real
Units:	$kg\,m^{-}2$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceMassAvg
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceMassAvg
Array Group:	avg

Table B.1413: accumulatedLandIceMassAvg: Average value of accumulatedLandIceMass in ocean cells.

B.17.166 accumulatedLandIceHeatAvg

Type:	real
Units:	$J\,m^{-}2$
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceHeatAvg
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceHeatAvg
Array Group:	avg

Table B.1414: accumulatedLandIceHeatAvg: Average value of accumulatedLandIceHeat in ocean cells.

B.17.167 accumulatedLandIceFrazilMassAvg

Type:	real
Units:	kg m^−2
Dimension:	Time
Persistence:	persistent
Index in avgGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceFrazilMassAvg
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceFrazilMassAvg
Array Group:	avg

Table B.1415: accumulatedLandIceFrazilMassAvg: Average value of accumulatedLandIceFrazilMass in ocean cells.

B.17.168 layerThicknessMinVertSum

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessMinVertSum
Location in code:	domain % blocklist % globalStatsAM % layerThicknessMinVertSum
Array Group:	vertSumMin

Table B.1416: layerThicknessMinVertSum: Minimum vertical sum of layerThickness in ocean cells.

B.17.169 normalVelocityMinVertSum

Type:	real
Units:	$m^2 s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalVelocityMinVertSum
Location in code:	domain % blocklist % globalStatsAM % normalVelocityMinVertSum
Array Group:	vertSumMin

Table B.1417: normalVelocityMinVertSum: Minimum vertical sum of normalVelocity on ocean edges.

B.17.170 tangentialVelocityMinVertSum

Type:	real
Units:	$m^2 s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_tangentialVelocityMinVertSum
Location in code:	domain % blocklist % globalStatsAM % tangentialVelocityMinVertSum
Array Group:	vertSumMin

Table B.1418: tangentialVelocityMinVertSum: Minimum vertical sum of tangentialVelocity on ocean edges.

B.17.171 layerThicknessEdgeMinVertSum

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessEdgeMinVertSum
Location in code:	domain % blocklist % globalStatsAM % layerThicknessEdgeMinVertSum
Array Group:	vertSumMin

Table B.1419: layerThicknessEdgeMinVertSum: Minimum vertical sum of layerThicknessEdgeMean on ocean edges.

B.17.172 relativeVorticityMinVertSum

Type:	real
Units:	s^-1
Dimension:	Time

Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_relativeVorticityMinVertSum
Location in code:	domain % blocklist % globalStatsAM % relativeVorticityMinVertSum
Array Group:	vertSumMin

Table B.1420: relativeVorticityMinVertSum: Minimum vertical sum of relativeVorticity on ocean vertices.

B.17.173 enstrophyMinVertSum

Type:	real
Units:	s⁻2
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_enstrophyMinVertSum
Location in code:	domain % blocklist % globalStatsAM % enstrophyMinVertSum
Array Group:	vertSumMin

Table B.1421: enstrophyMinVertSum: Minimum vertical sum of enstrophy in ocean cells.

B.17.174 kineticEnergyCellMinVertSum

Type:	real
Units:	$m^3 s^-2$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_kineticEnergyCellMinVertSum
Location in code:	domain % blocklist % globalStatsAM % kineticEnergyCellMinVertSum
Array Group:	vertSumMin

Table B.1422: kineticEnergyCellMinVertSum: Minimum vertical sum of kineticEnergy in ocean cells.

B.17.175 normalizedAbsoluteVorticityMinVertSum

Type:	real
Units:	m s^−1
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalizedAbsoluteVorticityMinVertSum
Location in code:	domain % blocklist % globalStatsAM % normalizedAbsoluteVorticityMinVertSum
Array Group:	vertSumMin

Table B.1423: normalizedAbsoluteVorticityMinVertSum: Minimum vertical sum of normalizedAbsoluteVorticity on ocean vertices.

B.17.176 pressureMinVertSum

Type:	real
Units:	N m^−1
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_pressureMinVertSum
Location in code:	domain % blocklist % globalStatsAM % pressureMinVertSum
Array Group:	vertSumMin

Table B.1424: pressureMinVertSum: Minimum vertical sum of pressure in ocean cells.

B.17.177 montgomeryPotentialMinVertSum

Type:	real
Units:	m^3 s^−2
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_montgomeryPotentialMinVertSum
Location in code:	domain % blocklist % globalStatsAM % montgomeryPotentialMinVertSum
Array Group:	vertSumMin

Table B.1425: montgomeryPotentialMinVertSum: Minimum vertical sum of the Montgomery Potential in ocean cells.

B.17.178 vertVelocityTopMinVertSum

Type:	real
Units:	$m^2 s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertVelocityTopMinVertSum
Location in code:	domain % blocklist % globalStatsAM % vertVelocityTopMinVertSum
Array Group:	vertSumMin

Table B.1426: vertVelocityTopMinVertSum: Minimum vertical sum of vertVelocityTop in ocean cells.

B.17.179 vertAleTransportTopMinVertSum

Type:	real
Units:	$m^2 s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertAleTransportTopMinVertSum
Location in code:	domain % blocklist % globalStatsAM % vertAleTransportTopMinVertSum
Array Group:	vertSumMin

Table B.1427: vertAleTransportTopMinVertSum: Minimum vertical sum of vertAleTransportTop in ocean cells.

B.17.180 lowFreqDivergenceMinVertSum

Type:	real
Units:	$m s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_lowFreqDivergenceMinVertSum
Location in code:	domain % blocklist % globalStatsAM % lowFreqDivergenceMinVertSum
Array Group:	vertSumMin

Table B.1428: lowFreqDivergenceMinVertSum: Minimum vertical sum of lowFreqDivergence in ocean cells.

B.17.181 highFreqThicknessMinVertSum

Type:	real
Units:	m^2
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_highFreqThicknessMinVertSum
Location in code:	domain % blocklist % globalStatsAM % highFreqThicknessMinVertSum
Array Group:	vertSumMin

Table B.1429: highFreqThicknessMinVertSum: Minimum vertical sum of highFreqThickness in ocean cells.

B.17.182 temperatureMinVertSum

Type:	real
Units:	m C
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureMinVertSum
Location in code:	domain % blocklist % globalStatsAM % temperatureMinVertSum
Array Group:	vertSumMin

Table B.1430: temperatureMinVertSum: Minimum vertical sum of temperature in ocean cells.

B.17.183 salinityMinVertSum

Type:	real
Units:	$m\,1\,e-3$
Dimension:	Time
Persistence:	persistent

Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityMinVertSum
Location in code:	domain % blocklist % globalStatsAM % salinityMinVertSum
Array Group:	vertSumMin

Table B.1431: salinityMinVertSum: Minimum vertical sum of salinity in ocean cells.

B.17.184 layerThicknessPreviousTimestepMinVertSum

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessPreviousTimestepMinVertSum
Location in code:	domain % blocklist % globalStatsAM % layerThicknessPreviousTimestepMinVertSum
Array Group:	vertSumMin

Table B.1432: layerThicknessPreviousTimestepMinVertSum: Minimum vertical sum of previous step layerThickness in ocean cells.

B.17.185 frazilLayerThicknessTendencyMinVertSum

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_frazilLayerThicknessTendencyMinVertSum
Location in code:	domain % blocklist % globalStatsAM % frazilLayerThicknessTendencyMinVertSum
Array Group:	vertSumMin

Table B.1433: frazilLayerThicknessTendencyMinVertSum: Minimum vertical sum of layer thickness tendency due to frazil formation in ocean cells.

B.17.186 evaporationFluxMinVertSum

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_evaporationFluxMinVertSum
Location in code:	domain % blocklist % globalStatsAM % evaporationFluxMinVertSum
Array Group:	vertSumMin

Table B.1434: evaporationFluxMinVertSum: Minimum vertical sum of evaporationFlux in ocean cells.

B.17.187 rainFluxMinVertSum

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_rainFluxMinVertSum
Location in code:	domain % blocklist % globalStatsAM % rainFluxMinVertSum
Array Group:	vertSumMin

Table B.1435: rainFluxMinVertSum: Minimum vertical sum of rainFlux in ocean cells.

B.17.188 snowFluxMinVertSum

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_snowFluxMinVertSum
Location in code:	domain % blocklist % globalStatsAM % snowFluxMinVertSum
Array Group:	vertSumMin

Table B.1436: snowFluxMinVertSum: Minimum vertical sum of snowFlux in ocean cells.

B.17.189 seaIceFreshWaterFluxMinVertSum

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_seaIceFreshWaterFluxMinVertSum
Location in code:	domain % blocklist % globalStatsAM % seaIceFreshWaterFluxMinVertSum
Array Group:	vertSumMin

Table B.1437: seaIceFreshWaterFluxMinVertSum: Minimum vertical sum of seaIceFreshWaterFlux in ocean cells.

B.17.190 icebergFreshWaterFluxMinVertSum

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_icebergFreshWaterFluxMinVertSum
Location in code:	domain % blocklist % globalStatsAM % icebergFreshWaterFluxMinVertSum
Array Group:	vertSumMin

Table B.1438: icebergFreshWaterFluxMinVertSum: Minimum vertical sum of icebergFreshWaterFlux in ocean cells.

B.17.191 riverRunoffFluxMinVertSum

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_riverRunoffFluxMinVertSum
Location in code:	domain % blocklist % globalStatsAM % riverRunoffFluxMinVertSum
Array Group:	vertSumMin

Table B.1439: riverRunoffFluxMinVertSum: Minimum vertical sum of riverRunoffFlux in ocean cells.

B.17.192 iceRunoffFluxMinVertSum

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_iceRunoffFluxMinVertSum
Location in code:	domain % blocklist % globalStatsAM % iceRunoffFluxMinVertSum
Array Group:	vertSumMin

Table B.1440: iceRunoffFluxMinVertSum: Minimum vertical sum of iceRunoffFlux in ocean cells.

B.17.193 temperatureFluxMinVertSum

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureFluxMinVertSum
Location in code:	domain % blocklist % globalStatsAM % temperatureFluxMinVertSum
Array Group:	vertSumMin

Table B.1441: temperatureFluxMinVertSum: Minimum vertical sum of temperatureFlux in ocean cells.

B.17.194 salinityFluxMinVertSum

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent

Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityFluxMinVertSum
Location in code:	domain % blocklist % globalStatsAM % salinityFluxMinVertSum
Array Group:	vertSumMin

Table B.1442: salinityFluxMinVertSum: Minimum vertical sum of salinityFlux in ocean cells.

B.17.195 salinityRestoringFluxMinVertSum

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityRestoringFluxMinVertSum
Location in code:	domain % blocklist % globalStatsAM % salinityRestoringFluxMinVertSum
Array Group:	vertSumMin

Table B.1443: salinityRestoringFluxMinVertSum: Minimum vertical sum of salinityRestoringFlux in ocean cells.

B.17.196 landIceFreshwaterFluxMinVertSum

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_landIceFreshwaterFluxMinVertSum
Location in code:	domain % blocklist % globalStatsAM % landIceFreshwaterFluxMinVertSum
Array Group:	vertSumMin

Table B.1444: landIceFreshwaterFluxMinVertSum: Minimum vertical sum of landIceFreshwaterFlux in ocean cells.

B.17.197 accumulatedLandIceMassMinVertSum

Type:	real
Units:	$kg\,m^-2$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceMassMinVertSum
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceMassMinVertSum
Array Group:	vertSumMin

Table B.1445: accumulatedLandIceMassMinVertSum: Minimum vertical sum of accumulatedLandIceMass in ocean cells.

B.17.198 accumulatedLandIceHeatMinVertSum

Type:	real
Units:	$J\,m^-2$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceHeatMinVertSum
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceHeatMinVertSum
Array Group:	vertSumMin

Table B.1446: accumulatedLandIceHeatMinVertSum: Minimum vertical sum of accumulatedLandIceHeat in ocean cells.

B.17.199 accumulatedLandIceFrazilMassMinVertSum

Type:	real
Units:	$kg\,m^-2$
Dimension:	Time
Persistence:	persistent
Index in vertSumMinGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceFrazilMassMinVertSum
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceFrazilMassMinVertSum
Array Group:	vertSumMin

Table B.1447: accumulatedLandIceFrazilMassMinVertSum: Minimum vertical sum of accumulatedLandIceFrazilMass in ocean cells.

B.17.200 layerThicknessMaxVertSum

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % layerThicknessMaxVertSum
Array Group:	vertSumMax

Table B.1448: layerThicknessMaxVertSum: Maximum vertical sum of layerThickness in ocean cells.

B.17.201 normalVelocityMaxVertSum

Type:	real
Units:	$m^2 s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalVelocityMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % normalVelocityMaxVertSum
Array Group:	vertSumMax

Table B.1449: normalVelocityMaxVertSum: Maximum vertical sum of normalVelocity on ocean edges.

B.17.202 tangentialVelocityMaxVertSum

Type:	real
Units:	$m^2 s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_tangentialVelocityMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % tangentialVelocityMaxVertSum
Array Group:	vertSumMax

Table B.1450: tangentialVelocityMaxVertSum: Maximum vertical sum of tangentialVelocity on ocean edges.

B.17.203 layerThicknessEdgeMaxVertSum

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessEdgeMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % layerThicknessEdgeMaxVertSum
Array Group:	vertSumMax

Table B.1451: layerThicknessEdgeMaxVertSum: Maximum vertical sum of layerThicknessEdgeMean on ocean edges.

B.17.204 relativeVorticityMaxVertSum

Type:	real
Units:	s^-1
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_relativeVorticityMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % relativeVorticityMaxVertSum
Array Group:	vertSumMax

Table B.1452: relativeVorticityMaxVertSum: Maximum vertical sum of relativeVorticity on ocean vertices.

B.17.205 enstrophyMaxVertSum

Type:	real
Units:	s^-2
Dimension:	Time

Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_enstrophyMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % enstrophyMaxVertSum
Array Group:	vertSumMax

Table B.1453: enstrophyMaxVertSum: Maximum vertical sum of enstrophy in ocean cells.

B.17.206 kineticEnergyCellMaxVertSum

Type:	real
Units:	$m^3 s^-2$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_kineticEnergyCellMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % kineticEnergyCellMaxVertSum
Array Group:	vertSumMax

Table B.1454: kineticEnergyCellMaxVertSum: Maximum vertical sum of kineticEnergy in ocean cells.

B.17.207 normalizedAbsoluteVorticityMaxVertSum

Type:	real
Units:	$m s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_normalizedAbsoluteVorticityMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % normalizedAbsoluteVorticityMaxVertSum
Array Group:	vertSumMax

Table B.1455: normalizedAbsoluteVorticityMaxVertSum: Maximum vertical sum of normalizedAbsoluteVorticity on ocean vertices.

B.17.208 pressureMaxVertSum

Type:	real
Units:	N m$^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_pressureMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % pressureMaxVertSum
Array Group:	vertSumMax

Table B.1456: pressureMaxVertSum: Maximum vertical sum of pressure in ocean cells.

B.17.209 montgomeryPotentialMaxVertSum

Type:	real
Units:	m^3 s$^-2$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_montgomeryPotentialMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % montgomeryPotentialMaxVertSum
Array Group:	vertSumMax

Table B.1457: montgomeryPotentialMaxVertSum: Maximum vertical sum of the Montgomery Potential in ocean cells.

B.17.210 vertVelocityTopMaxVertSum

Type:	real
Units:	m^2 s$^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertVelocityTopMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % vertVelocityTopMaxVertSum
Array Group:	vertSumMax

Table B.1458: vertVelocityTopMaxVertSum: Maximum vertical sum of vertVelocityTop in ocean cells.

B.17.211 vertAleTransportTopMaxVertSum

Type:	real
Units:	$m^2 s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_vertAleTransportTopMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % vertAleTransportTopMaxVertSum
Array Group:	vertSumMax

Table B.1459: vertAleTransportTopMaxVertSum: Maximum vertical sum of vertAleTransportTop in ocean cells.

B.17.212 lowFreqDivergenceMaxVertSum

Type:	real
Units:	$m s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_lowFreqDivergenceMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % lowFreqDivergenceMaxVertSum
Array Group:	vertSumMax

Table B.1460: lowFreqDivergenceMaxVertSum: Maximum vertical sum of lowFreqDivergence in ocean cells.

B.17.213 highFreqThicknessMaxVertSum

Type:	real
Units:	m^2
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_highFreqThicknessMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % highFreqThicknessMaxVertSum

Array Group:	vertSumMax

Table B.1461: highFreqThicknessMaxVertSum: Maximum vertical sum of highFreqThickness in ocean cells.

B.17.214 temperatureMaxVertSum

Type:	real
Units:	m C
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % temperatureMaxVertSum
Array Group:	vertSumMax

Table B.1462: temperatureMaxVertSum: Maximum vertical sum of temperature in ocean cells.

B.17.215 salinityMaxVertSum

Type:	real
Units:	m 1 e − 3
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % salinityMaxVertSum
Array Group:	vertSumMax

Table B.1463: salinityMaxVertSum: Maximum vertical sum of salinity in ocean cells.

B.17.216 layerThicknessPreviousTimestepMaxVertSum

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent

Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_layerThicknessPreviousTimestepMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % layerThicknessPreviousTimestepMaxVertSum
Array Group:	vertSumMax

Table B.1464: layerThicknessPreviousTimestepMaxVertSum: Maximum vertical sum of previous step layerThickness in ocean cells.

B.17.217 frazilLayerThicknessTendencyMaxVertSum

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_frazilLayerThicknessTendencyMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % frazilLayerThicknessTendencyMaxVertSum
Array Group:	vertSumMax

Table B.1465: frazilLayerThicknessTendencyMaxVertSum: Maximum vertical sum of layer thickness tendency due to frazil formation in ocean cells.

B.17.218 evaporationFluxMaxVertSum

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_evaporationFluxMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % evaporationFluxMaxVertSum
Array Group:	vertSumMax

Table B.1466: evaporationFluxMaxVertSum: Maximum vertical sum of evaporationFlux in ocean cells.

B.17.219 rainFluxMaxVertSum

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_rainFluxMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % rainFluxMaxVertSum
Array Group:	vertSumMax

Table B.1467: rainFluxMaxVertSum: Maximum vertical sum of rainFlux in ocean cells.

B.17.220 snowFluxMaxVertSum

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_snowFluxMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % snowFluxMaxVertSum
Array Group:	vertSumMax

Table B.1468: snowFluxMaxVertSum: Maximum vertical sum of snowFlux in ocean cells.

B.17.221 seaIceFreshWaterFluxMaxVertSum

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_seaIceFreshWaterFluxMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % seaIceFreshWaterFluxMaxVertSum
Array Group:	vertSumMax

Table B.1469: seaIceFreshWaterFluxMaxVertSum: Maximum vertical sum of seaIceFreshWaterFlux in ocean cells.

B.17.222 icebergFreshWaterFluxMaxVertSum

Type:	real
Units:	kg m⁻2 s⁻1
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_icebergFreshWaterFluxMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % icebergFreshWaterFluxMaxVertSum
Array Group:	vertSumMax

Table B.1470: icebergFreshWaterFluxMaxVertSum: Maximum vertical sum of icebergFreshWaterFlux in ocean cells.

B.17.223 riverRunoffFluxMaxVertSum

Type:	real
Units:	kg m⁻2 s⁻1
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_riverRunoffFluxMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % riverRunoffFluxMaxVertSum
Array Group:	vertSumMax

Table B.1471: riverRunoffFluxMaxVertSum: Maximum vertical sum of riverRunoffFlux in ocean cells.

B.17.224 iceRunoffFluxMaxVertSum

Type:	real
Units:	kg m⁻2 s⁻1
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_iceRunoffFluxMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % iceRunoffFluxMaxVertSum
Array Group:	vertSumMax

Table B.1472: iceRunoffFluxMaxVertSum: Maximum vertical sum of iceRunoffFlux in ocean cells.

B.17.225 temperatureFluxMaxVertSum

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_temperatureFluxMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % temperatureFluxMaxVertSum
Array Group:	vertSumMax

Table B.1473: temperatureFluxMaxVertSum: Maximum vertical sum of temperatureFlux in ocean cells.

B.17.226 salinityFluxMaxVertSum

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityFluxMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % salinityFluxMaxVertSum
Array Group:	vertSumMax

Table B.1474: salinityFluxMaxVertSum: Maximum vertical sum of salinityFlux in ocean cells.

B.17.227 salinityRestoringFluxMaxVertSum

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	Time
Persistence:	persistent

Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_salinityRestoringFluxMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % salinityRestoringFluxMaxVertSum
Array Group:	vertSumMax

Table B.1475: salinityRestoringFluxMaxVertSum: Maximum vertical sum of salinityRestoringFlux in ocean cells.

B.17.228 landIceFreshwaterFluxMaxVertSum

Type:	real
Units:	kg m$^-2$ s$^-1$m
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_landIceFreshwaterFluxMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % landIceFreshwaterFluxMaxVertSum
Array Group:	vertSumMax

Table B.1476: landIceFreshwaterFluxMaxVertSum: Maximum vertical sum of landIceFreshwaterFlux in ocean cells.

B.17.229 accumulatedLandIceMassMaxVertSum

Type:	real
Units:	kg m$^-2$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceMassMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceMassMaxVertSum
Array Group:	vertSumMax

Table B.1477: accumulatedLandIceMassMaxVertSum: Maximum vertical sum of accumulatedLandIceMass in ocean cells.

B.17.230 accumulatedLandIceHeatMaxVertSum

Type:	real
Units:	$\mathrm{J\,m^{-}2}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceHeatMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceHeatMaxVertSum
Array Group:	vertSumMax

Table B.1478: accumulatedLandIceHeatMaxVertSum: Maximum vertical sum of accumulatedLandIceHeat in ocean cells.

B.17.231 accumulatedLandIceFrazilMassMaxVertSum

Type:	real
Units:	$\mathrm{kg\,m^{-}2}$
Dimension:	Time
Persistence:	persistent
Index in vertSumMaxGlobalStats Array:	domain % blocklist % globalStatsAM % index_accumulatedLandIceFrazilMassMaxVertSum
Location in code:	domain % blocklist % globalStatsAM % accumulatedLandIceFrazilMassMaxVertSum
Array Group:	vertSumMax

Table B.1479: accumulatedLandIceFrazilMassMaxVertSum: Maximum vertical sum of accumulatedLandIceFrazilMass in ocean cells.

B.17.232 totalVolumeChange

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % globalStatsAM % totalVolumeChange

Table B.1480: totalVolumeChange: Total volume change of the ocean relative to previous timestep

B.17.233 netFreshwaterInput

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % globalStatsAM % netFreshwaterInput

Table B.1481: netFreshwaterInput: Net fresh water change (input-output) over the timestep due to surface fluxes and frazil formation

B.17.234 absoluteFreshWaterConservation

Type:	real
Units:	m
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % globalStatsAM % absoluteFreshWater-Conservation

Table B.1482: absoluteFreshWaterConservation: Difference between change in ocean volume and freshwater input

B.17.235 relativeFreshWaterConservation

Type:	real
Units:	1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % globalStatsAM % relativeFreshWater-Conservation

Table B.1483: relativeFreshWaterConservation: Difference between change in ocean volume and freshwater input divided by volume change

B.18 surfaceAreaWeightedAveragesAM

B.18.1 minSurfaceMaskValue

Type:	real

Units:	none
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceMaskValue
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceMaskValue
Array Group:	mins

Table B.1484: minSurfaceMaskValue: Minimum value of region mask (should always be 1 for valid regions)

B.18.2 minSurfaceArea

Type:	real
Units:	m^2
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceArea
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceArea
Array Group:	mins

Table B.1485: minSurfaceArea: Minimum area of a surface cell in each region

B.18.3 minLatentHeatFlux

Type:	real
Units:	$W\,m^-2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minLatentHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minLatentHeatFlux
Array Group:	mins

Table B.1486: minLatentHeatFlux: Minimum latent heat flux in each region

B.18.4 minSensibleHeatFlux

Type:	real
Units:	$\mathrm{W\,m^{-}2}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSensibleHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSensibleHeatFlux
Array Group:	mins

Table B.1487: minSensibleHeatFlux: Minimum sensible heat flux in each region

B.18.5 minLongWaveHeatFluxUp

Type:	real
Units:	$\mathrm{W\,m^{-}2}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minLongWaveHeatFluxUp
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minLongWaveHeatFluxUp
Array Group:	mins

Table B.1488: minLongWaveHeatFluxUp: Minimum upwelling long wave heat flux in each region

B.18.6 minLongWaveHeatFluxDown

Type:	real
Units:	$\mathrm{W\,m^{-}2}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minLongWaveHeatFluxDown
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minLongWaveHeatFluxDown
Array Group:	mins

Table B.1489: minLongWaveHeatFluxDown: Minimum downwelling long wave heat flux in each region

B.18.7 minSeaIceHeatFlux

Type:	real
Units:	W m^{-}2
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSeaIceHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSeaIceHeatFlux
Array Group:	mins

Table B.1490: minSeaIceHeatFlux: Minimum sea ice heat flux in each region

B.18.8 minIcebergHeatFlux

Type:	real
Units:	W m^{-}2
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minIcebergHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minIcebergHeatFlux
Array Group:	mins

Table B.1491: minIcebergHeatFlux: Minimum iceberg heat flux in each region

B.18.9 minShortWaveHeatFlux

Type:	real
Units:	W m^{-}2
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minShortWaveHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minShortWaveHeatFlux
Array Group:	mins

Table B.1492: minShortWaveHeatFlux: Minimum short wave heat flux in each region

B.18.10 minEvaporationFlux

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minEvaporationFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minEvaporationFlux
Array Group:	mins

Table B.1493: minEvaporationFlux: Minimum evaporation in each region

B.18.11 minSeaIceFreshWaterFlux

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSeaIceFreshWaterFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSeaIceFreshWaterFlux
Array Group:	mins

Table B.1494: minSeaIceFreshWaterFlux: Minimum sea ice melt rate in each region

B.18.12 minIcebergFreshWaterFlux

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minIcebergFreshWaterFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minIcebergFreshWaterFlux
Array Group:	mins

Table B.1495: minIcebergFreshWaterFlux: Minimum iceberg melt rate in each region

B.18.13 minRiverRunoffFlux

Type:	real
Units:	kg m⁻2 s⁻1
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minRiverRunoffFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minRiverRunoffFlux
Array Group:	mins

Table B.1496: minRiverRunoffFlux: Minimum river run off in each region

B.18.14 minIceRunoffFlux

Type:	real
Units:	kg m⁻2 s⁻1
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minIceRunoffFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minIceRunoffFlux
Array Group:	mins

Table B.1497: minIceRunoffFlux: Minimum ice run off in each region

B.18.15 minRainFlux

Type:	real
Units:	kg m⁻2 s⁻1
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minRainFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minRainFlux
Array Group:	mins

Table B.1498: minRainFlux: Minimum rain flux in each region

B.18.16 minSnowFlux

Type:	real
Units:	kg m$^-$2 s$^-$1
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSnowFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSnowFlux
Array Group:	mins

Table B.1499: minSnowFlux: Minimum snow flux in each region

B.18.17 minSeaIceEnergy

Type:	real
Units:	J m$^-$2
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSeaIceEnergy
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSeaIceEnergy
Array Group:	mins

Table B.1500: minSeaIceEnergy: Minimum sea ice energy in each region

B.18.18 minSurfaceThicknessFlux

Type:	real
Units:	m s$^-$1
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceThicknessFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceThicknessFlux
Array Group:	mins

Table B.1501: minSurfaceThicknessFlux: Minimum surface thickness flux in each region

B.18.19 minSurfaceTemperatureFlux

Type:	real
Units:	$C\,m\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceTemperatureFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceTemperatureFlux
Array Group:	mins

Table B.1502: minSurfaceTemperatureFlux: Minimum surface temperature flux in each region

B.18.20 minSurfaceSalinityFlux

Type:	real
Units:	$1\,e - 3\,m\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceSalinityFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceSalinityFlux
Array Group:	mins

Table B.1503: minSurfaceSalinityFlux: Minimum surface salinity flux in each region

B.18.21 minSeaIceSalinityFlux

Type:	real
Units:	$kg\,m\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSeaIceSalinityFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSeaIceSalinityFlux
Array Group:	mins

Table B.1504: minSeaIceSalinityFlux: Minimum sea ice salinity flux in each region

B.18.22 minSurfaceWindStressMagnitude

Type:	real
Units:	N m^{-}2
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceWindStressMagnitude
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceWindStressMagnitude
Array Group:	mins

Table B.1505: minSurfaceWindStressMagnitude: Minimum wind stress magnitude in each region

B.18.23 minWindStressZonal

Type:	real
Units:	N m^{-}2
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minWindStressZonal
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minWindStressZonal
Array Group:	mins

Table B.1506: minWindStressZonal: Minimum zonal wind stress in each region

B.18.24 minWindStressMeridional

Type:	real
Units:	N m^{-}2
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minWindStressMeridional
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minWindStressMeridional
Array Group:	mins

Table B.1507: minWindStressMeridional: Minimum meridional wind stress in each region

B.18.25 minSeaSurfacePressure

Type:	real
Units:	Pa
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSeaSurfacePressure
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSeaSurfacePressure
Array Group:	mins

Table B.1508: minSeaSurfacePressure: Minimum sea surface pressure in each region

B.18.26 minSurfaceSSH

Type:	real
Units:	m
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceSSH
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceSSH
Array Group:	mins

Table B.1509: minSurfaceSSH: Minimum sea-surface height in each region

B.18.27 minSurfaceTemperature

Type:	real
Units:	C
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceTemperature
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceTemperature
Array Group:	mins

Table B.1510: minSurfaceTemperature: Minimum surface temperature in each region

B.18.28 minSurfaceSalinity

Type:	real
Units:	$1\,e-3$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceSalinity
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceSalinity
Array Group:	mins

Table B.1511: minSurfaceSalinity: Minimum surface salinity in each region

B.18.29 minBoundaryLayerDepth

Type:	real
Units:	m
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minBoundaryLayerDepth
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minBoundaryLayerDepth
Array Group:	mins

Table B.1512: minBoundaryLayerDepth: Minimum surface boundary layer depth in each region

B.18.30 minSurfaceNetHeatFlux

Type:	real
Units:	$W\,m^{-}2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceNetHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceNetHeatFlux
Array Group:	mins

Table B.1513: minSurfaceNetHeatFlux: Minimum net surface heat flux in each region

B.18.31 minSurfaceNetSalinitFlux

Type:	real
Units:	$kg\,m\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceNetSalinitFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceNetSalinitFlux
Array Group:	mins

Table B.1514: minSurfaceNetSalinitFlux: Minimum net surface salinity flux in each region

B.18.32 minSurfaceNetFreshWaterFlux

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in minValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_minSurfaceNetFreshWaterFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % minSurfaceNetFreshWaterFlux
Array Group:	mins

Table B.1515: minSurfaceNetFreshWaterFlux: Minimum net surface fresh water flux in each region

B.18.33 maxSurfaceMaskValue

Type:	real
Units:	none
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceMaskValue
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceMaskValue
Array Group:	maxs

Table B.1516: maxSurfaceMaskValue: Maximum value of region mask (should always be 1 for valid regions)

B.18.34 maxSurfaceArea

Type:	real
Units:	m^2
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceArea
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceArea
Array Group:	maxs

Table B.1517: maxSurfaceArea: Maximum area of a surface cell in each region

B.18.35 maxLatentHeatFlux

Type:	real
Units:	$W\,m^-2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxLatentHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxLatentHeatFlux
Array Group:	maxs

Table B.1518: maxLatentHeatFlux: Maximum latent heat flux in each region

B.18.36 maxSensibleHeatFlux

Type:	real
Units:	$W\,m^-2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSensibleHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSensibleHeatFlux
Array Group:	maxs

Table B.1519: maxSensibleHeatFlux: Maximum sensible heat flux in each region

B.18.37 maxLongWaveHeatFluxUp

Type:	real
Units:	W m^{-2}
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxLongWaveHeatFluxUp
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxLongWaveHeatFluxUp
Array Group:	maxs

Table B.1520: maxLongWaveHeatFluxUp: Maximum upwelling long wave heat flux in each region

B.18.38 maxLongWaveHeatFluxDown

Type:	real
Units:	W m^{-2}
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxLongWaveHeatFluxDown
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxLongWaveHeatFluxDown
Array Group:	maxs

Table B.1521: maxLongWaveHeatFluxDown: Maximum downwelling long wave heat flux in each region

B.18.39 maxSeaIceHeatFlux

Type:	real
Units:	W m^{-2}
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSeaIceHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSeaIceHeatFlux
Array Group:	maxs

Table B.1522: maxSeaIceHeatFlux: Maximum sea ice heat flux in each region

B.18.40 maxIcebergHeatFlux

Type:	real
Units:	W m$^-2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxIcebergHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxIcebergHeatFlux
Array Group:	maxs

Table B.1523: maxIcebergHeatFlux: Maximum iceberg heat flux in each region

B.18.41 maxShortWaveHeatFlux

Type:	real
Units:	W m$^-2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxShortWaveHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxShortWaveHeatFlux
Array Group:	maxs

Table B.1524: maxShortWaveHeatFlux: Maximum short wave heat flux in each region

B.18.42 maxEvaporationFlux

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxEvaporationFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxEvaporationFlux
Array Group:	maxs

Table B.1525: maxEvaporationFlux: Maximum evaporation in each region

B.18.43 maxSeaIceFreshWaterFlux

Type:	real
Units:	$kg\,m^{-}2\,s^{-}1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSeaIceFreshWaterFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSeaIceFreshWaterFlux
Array Group:	maxs

Table B.1526: maxSeaIceFreshWaterFlux: Maximum sea ice melt rate in each region

B.18.44 maxIcebergFreshWaterFlux

Type:	real
Units:	$kg\,m^{-}2\,s^{-}1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxIcebergFreshWaterFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxIcebergFreshWaterFlux
Array Group:	maxs

Table B.1527: maxIcebergFreshWaterFlux: Maximum iceberg melt rate in each region

B.18.45 maxRiverRunoffFlux

Type:	real
Units:	$kg\,m^{-}2\,s^{-}1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxRiverRunoffFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxRiverRunoffFlux
Array Group:	maxs

Table B.1528: maxRiverRunoffFlux: Maximum river run off in each region

B.18.46 maxIceRunoffFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxIceRunoffFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxIceRunoffFlux
Array Group:	maxs

Table B.1529: maxIceRunoffFlux: Maximum ice run off in each region

B.18.47 maxRainFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxRainFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxRainFlux
Array Group:	maxs

Table B.1530: maxRainFlux: Maximum rain flux in each region

B.18.48 maxSnowFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSnowFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSnowFlux
Array Group:	maxs

Table B.1531: maxSnowFlux: Maximum snow flux in each region

B.18.49 maxSeaIceEnergy

Type:	real
Units:	$\mathrm{J\,m^-2}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSeaIceEnergy
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSeaIceEnergy
Array Group:	maxs

Table B.1532: maxSeaIceEnergy: Maximum sea ice energy in each region

B.18.50 maxSurfaceThicknessFlux

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceThicknessFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceThicknessFlux
Array Group:	maxs

Table B.1533: maxSurfaceThicknessFlux: Maximum surface thickness flux in each region

B.18.51 maxSurfaceTemperatureFlux

Type:	real
Units:	$\mathrm{C\,m\,s^-1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceTemperatureFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceTemperatureFlux
Array Group:	maxs

Table B.1534: maxSurfaceTemperatureFlux: Maximum surface temperature flux in each region

B.18.52 maxSurfaceSalinityFlux

Type:	real
Units:	$1\,e-3\,m\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceSalinityFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceSalinityFlux
Array Group:	maxs

Table B.1535: maxSurfaceSalinityFlux: Maximum surface salinity flux in each region

B.18.53 maxSeaIceSalinityFlux

Type:	real
Units:	$kg\,m\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSeaIceSalinityFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSeaIceSalinityFlux
Array Group:	maxs

Table B.1536: maxSeaIceSalinityFlux: Maximum sea ice salinity flux in each region

B.18.54 maxSurfaceWindStressMagnitude

Type:	real
Units:	$N\,m^-2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceWindStressMagnitude
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceWindStressMagnitude
Array Group:	maxs

Table B.1537: maxSurfaceWindStressMagnitude: Maximum wind stress magnitude in each region

B.18.55 maxWindStressZonal

Type:	real
Units:	N m^{-2}
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxWindStressZonal
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxWindStressZonal
Array Group:	maxs

Table B.1538: maxWindStressZonal: Maximum zonal wind stress in each region

B.18.56 maxWindStressMeridional

Type:	real
Units:	N m^{-2}
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxWindStressMeridional
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxWindStressMeridional
Array Group:	maxs

Table B.1539: maxWindStressMeridional: Maximum meridional wind stress in each region

B.18.57 maxSeaSurfacePressure

Type:	real
Units:	Pa
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSeaSurfacePressure
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSeaSurfacePressure
Array Group:	maxs

Table B.1540: maxSeaSurfacePressure: Maximum sea surface pressure in each region

B.18.58 maxSurfaceSSH

Type:	real
Units:	m
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceSSH
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceSSH
Array Group:	maxs

Table B.1541: maxSurfaceSSH: Maximum sea-surface height

B.18.59 maxSurfaceTemperature

Type:	real
Units:	C
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceTemperature
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceTemperature
Array Group:	maxs

Table B.1542: maxSurfaceTemperature: Maximum surface temperature in each region

B.18.60 maxSurfaceSalinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceSalinity
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceSalinity
Array Group:	maxs

Table B.1543: maxSurfaceSalinity: Maximum surface salinity in each region

B.18.61 maxBoundaryLayerDepth

Type:	real
Units:	m
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxBoundaryLayerDepth
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxBoundaryLayerDepth
Array Group:	maxs

Table B.1544: maxBoundaryLayerDepth: Maximum surface boundary layer depth in each region

B.18.62 maxSurfaceNetHeatFlux

Type:	real
Units:	$\mathrm{W\,m^-2}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceNetHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceNetHeatFlux
Array Group:	maxs

Table B.1545: maxSurfaceNetHeatFlux: Maximum net surface heat flux in each region

B.18.63 maxSurfaceNetSalinitFlux

Type:	real
Units:	$\mathrm{kg\,m\,s^-1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceNetSalinitFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceNetSalinitFlux
Array Group:	maxs

Table B.1546: maxSurfaceNetSalinitFlux: Maximum net surface salinity flux in each region

B.18.64 maxSurfaceNetFreshWaterFlux

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in maxValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_maxSurfaceNetFreshWaterFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % maxSurfaceNetFreshWaterFlux
Array Group:	maxs

Table B.1547: maxSurfaceNetFreshWaterFlux: Maximum net surface fresh water flux in each region

B.18.65 sumSurfaceMaskValue

Type:	real
Units:	none
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_sumSurfaceMaskValue
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % sumSurfaceMaskValue
Array Group:	avg

Table B.1548: sumSurfaceMaskValue: Sum of region mask, represents total number of cells in region

B.18.66 avgSurfaceArea

Type:	real
Units:	$\mathrm{m^2}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSurfaceArea
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSurfaceArea
Array Group:	avg

Table B.1549: avgSurfaceArea: Average area of a surface cell

B.18.67 avgLatentHeatFlux

Type:	real
Units:	$W\,m^{-}2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgLatentHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgLatentHeatFlux
Array Group:	avg

Table B.1550: avgLatentHeatFlux: Surface area-weighted average of latent heat flux in each region

B.18.68 avgSensibleHeatFlux

Type:	real
Units:	$W\,m^{-}2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSensibleHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSensibleHeatFlux
Array Group:	avg

Table B.1551: avgSensibleHeatFlux: Surface area-weighted average of sensible heat flux in each region

B.18.69 avgLongWaveHeatFluxUp

Type:	real
Units:	$W\,m^{-}2$
Dimension:	nOceanRegions Time
Persistence:	persistent

Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgLongWaveHeatFluxUp
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgLongWaveHeatFluxUp
Array Group:	avg

Table B.1552: avgLongWaveHeatFluxUp: Surface area-weighted average of upwelling long wave heat flux in each region

B.18.70 avgLongWaveHeatFluxDown

Type:	real
Units:	W m^{-}2
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgLongWaveHeatFluxDown
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgLongWaveHeatFluxDown
Array Group:	avg

Table B.1553: avgLongWaveHeatFluxDown: Surface area-weighted average of downwelling long wave heat flux in each region

B.18.71 avgSeaIceHeatFlux

Type:	real
Units:	W m^{-}2
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSeaIceHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSeaIceHeatFlux
Array Group:	avg

Table B.1554: avgSeaIceHeatFlux: Surface area-weighted average of sea ice heat flux in each region

B.18.72 avgIcebergHeatFlux

Type:	real
Units:	W m$^-2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgIcebergHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgIcebergHeatFlux
Array Group:	avg

Table B.1555: avgIcebergHeatFlux: Surface area-weighted average of iceberg heat flux in each region

B.18.73 avgShortWaveHeatFlux

Type:	real
Units:	W m$^-2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgShortWaveHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgShortWaveHeatFlux
Array Group:	avg

Table B.1556: avgShortWaveHeatFlux: Surface area-weighted average of short wave heat flux in each region

B.18.74 avgEvaporationFlux

Type:	real
Units:	kg m$^-2$ s$^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgEvaporationFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgEvaporationFlux
Array Group:	avg

Table B.1557: avgEvaporationFlux: Surface area-weighted average of evaporation in each region

B.18.75 avgSeaIceFreshWaterFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSeaIceFreshWaterFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSeaIceFreshWaterFlux
Array Group:	avg

Table B.1558: avgSeaIceFreshWaterFlux: Surface area-weighted average of sea ice melt rate in each region

B.18.76 avgIcebergFreshWaterFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgIcebergFreshWaterFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgIcebergFreshWaterFlux
Array Group:	avg

Table B.1559: avgIcebergFreshWaterFlux: Surface area-weighted average of iceberg melt rate in each region

B.18.77 avgRiverRunoffFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	nOceanRegions Time
Persistence:	persistent

Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgRiverRunoffFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgRiverRunoffFlux
Array Group:	avg

Table B.1560: avgRiverRunoffFlux: Surface area-weighted average of river run off in each region

B.18.78 avgIceRunoffFlux

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgIceRunoffFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgIceRunoffFlux
Array Group:	avg

Table B.1561: avgIceRunoffFlux: Surface area-weighted average of ice run off in each region

B.18.79 avgRainFlux

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgRainFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgRainFlux
Array Group:	avg

Table B.1562: avgRainFlux: Surface area-weighted average of rain flux in each region

B.18.80 avgSnowFlux

Type:	real

Units:	$kg\,m^-2\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSnowFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSnowFlux
Array Group:	avg

Table B.1563: avgSnowFlux: Surface area-weighted average of snow flux in each region

B.18.81 avgSeaIceEnergy

Type:	real
Units:	$J\,m^-2$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSeaIceEnergy
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSeaIceEnergy
Array Group:	avg

Table B.1564: avgSeaIceEnergy: Surface area-weighted average of sea ice energy in each region

B.18.82 avgSurfaceThicknessFlux

Type:	real
Units:	$m\,s^-1$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSurfaceThicknessFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSurfaceThicknessFlux
Array Group:	avg

Table B.1565: avgSurfaceThicknessFlux: Surface area-weighted average of surface thickness flux in each region

B.18.83 avgSurfaceTemperatureFlux

Type:	real
Units:	$\mathrm{C\,m\,s^{-}1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSurfaceTemperatureFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSurfaceTemperatureFlux
Array Group:	avg

Table B.1566: avgSurfaceTemperatureFlux: Surface area-weighted average of surface temperature flux in each region

B.18.84 avgSurfaceSalinityFlux

Type:	real
Units:	$\mathrm{1\,e-3\,m\,s^{-}1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSurfaceSalinityFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSurfaceSalinityFlux
Array Group:	avg

Table B.1567: avgSurfaceSalinityFlux: Surface area-weighted average of surface salinity flux in each region

B.18.85 avgSeaIceSalinityFlux

Type:	real
Units:	$\mathrm{kg\,m\,s^{-}1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSeaIceSalinityFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSeaIceSalinityFlux
Array Group:	avg

Table B.1568: avgSeaIceSalinityFlux: Surface area-weighted average of sea ice salinity flux in each region

B.18.86 avgSurfaceWindStressMagnitude

Type:	real
Units:	$\mathrm{N\,m^{-}2}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSurfaceWindStressMagnitude
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSurfaceWindStressMagnitude
Array Group:	avg

Table B.1569: avgSurfaceWindStressMagnitude: Surface area-weighted average of wind stress magnitude in each region

B.18.87 avgWindStressZonal

Type:	real
Units:	$\mathrm{N\,m^{-}2}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgWindStressZonal
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgWindStressZonal
Array Group:	avg

Table B.1570: avgWindStressZonal: Surface area-weighted average of zonal wind stress in each region

B.18.88 avgWindStressMeridional

Type:	real
Units:	$\mathrm{N\,m^{-}2}$
Dimension:	nOceanRegions Time

Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgWindStressMeridional
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgWindStressMeridional
Array Group:	avg

Table B.1571: avgWindStressMeridional: Surface area-weighted average of meridional wind stress in each region

B.18.89 avgSeaSurfacePressure

Type:	real
Units:	Pa
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSeaSurfacePressure
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSeaSurfacePressure
Array Group:	avg

Table B.1572: avgSeaSurfacePressure: Surface area-weighted average of sea surface pressure in each region

B.18.90 avgSurfaceSSH

Type:	real
Units:	m
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSurfaceSSH
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSurfaceSSH
Array Group:	avg

Table B.1573: avgSurfaceSSH: Surface area-weighted average of sea-surface height

B.18.91 avgSurfaceTemperature

Type:	real
Units:	C
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSurfaceTemperature
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSurfaceTemperature
Array Group:	avg

Table B.1574: avgSurfaceTemperature: Surface area-weighted average of surface temperature in each region

B.18.92 avgSurfaceSalinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSurfaceSalinity
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSurfaceSalinity
Array Group:	avg

Table B.1575: avgSurfaceSalinity: Surface area-weighted average of surface salinity in each region

B.18.93 avgBoundaryLayerDepth

Type:	real
Units:	m
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgBoundaryLayerDepth
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgBoundaryLayerDepth
Array Group:	avg

Table B.1576: avgBoundaryLayerDepth: Surface area-weighted average of surface boundary layer depth in each region

B.18.94 avgSurfaceNetHeatFlux

Type:	real
Units:	$\mathrm{W\,m^-2}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSurfaceNetHeatFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSurfaceNetHeatFlux
Array Group:	avg

Table B.1577: avgSurfaceNetHeatFlux: Surface area-weighted average of net surface heat flux in each region

B.18.95 avgSurfaceNetSalinitFlux

Type:	real
Units:	$\mathrm{kg\,m\,s^-1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSurfaceNetSalinitFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSurfaceNetSalinitFlux
Array Group:	avg

Table B.1578: avgSurfaceNetSalinitFlux: Surface area-weighted average of net surface salinity flux in each region

B.18.96 avgSurfaceNetFreshWaterFlux

Type:	real
Units:	$\mathrm{kg\,m^-2\,s^-1}$
Dimension:	nOceanRegions Time
Persistence:	persistent
Index in avgValueWithinOceanRegion Array:	domain % blocklist % surfaceAreaWeightedAveragesAM % index_avgSurfaceNetFreshWaterFlux
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM % avgSurfaceNetFreshWaterFlux

Array Group:	avg

Table B.1579: avgSurfaceNetFreshWaterFlux: Surface area-weighted average of net surface fresh water flux in each region

B.19 surfaceAreaWeightedAveragesAMScratch

B.19.1 workMask

Type:	real
Units:	none
Dimension:	nCells Time
Persistence:	scratch
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM-Scratch % workMask

Table B.1580: workMask: temporary array of 0 or 1 to mask data via multiplication

B.19.2 workArray

Type:	real
Units:	various
Dimension:	nSfcAreaWeightedAvgFields nCells Time
Persistence:	scratch
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM-Scratch % workArray

Table B.1581: workArray: temporary array to hold data to be analyzed

B.19.3 workMin

Type:	real
Units:	various
Dimension:	nSfcAreaWeightedAvgFields Time
Persistence:	scratch
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM-Scratch % workMin

Table B.1582: workMin: temporary array to hold minimum values

B.19.4 workMax

Type:	real
Units:	various
Dimension:	nSfcAreaWeightedAvgFields Time
Persistence:	scratch
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM-Scratch % workMax

Table B.1583: workMax: temporary array to hold maximum values

B.19.5 workSum

Type:	real
Units:	various
Dimension:	nSfcAreaWeightedAvgFields Time
Persistence:	scratch
Location in code:	domain % blocklist % surfaceAreaWeightedAveragesAM-Scratch % workSum

Table B.1584: workSum: temporary array to hold sum of values

B.20 waterMassCensusAM

B.20.1 waterMassCensusTemperatureValues

Type:	real
Units:	C
Dimension:	nTemperatureBinsP1 nOceanRegionsTmpCensus Time
Persistence:	persistent
Location in code:	domain % blocklist % waterMassCensusAM % waterMass-CensusTemperatureValues

Table B.1585: waterMassCensusTemperatureValues: temperature values defining edges of temperature bins

B.20.2 waterMassCensusSalinityValues

Type:	real
Units:	C

Dimension:	nSalinityBinsP1 nOceanRegionsTmpCensus Time
Persistence:	persistent
Location in code:	domain % blocklist % waterMassCensusAM % waterMassCensusSalinityValues

Table B.1586: waterMassCensusSalinityValues: salinity values defining edges of temperature bins

B.20.3 waterMassFractionalDistribution

Type:	real
Units:	fractional
Dimension:	nTemperatureBins nSalinityBins nOceanRegionsTmpCensus Time
Persistence:	persistent
Location in code:	domain % blocklist % waterMassCensusAM % waterMassFractionalDistribution

Table B.1587: waterMassFractionalDistribution: fraction of water volume contained within each temperature and salinity bin

B.20.4 potentialDensityOfTSDiagram

Type:	real
Units:	kg m−3
Dimension:	nTemperatureBins nSalinityBins nOceanRegionsTmpCensus Time
Persistence:	persistent
Location in code:	domain % blocklist % waterMassCensusAM % potentialDensityOfTSDiagram

Table B.1588: potentialDensityOfTSDiagram: volume-weighted potential density of each (T,S) bin

B.20.5 zPositionOfTSDiagram

Type:	real
Units:	kg m−3
Dimension:	nTemperatureBins nSalinityBins nOceanRegionsTmpCensus Time
Persistence:	persistent

Location in code:	domain % blocklist % waterMassCensusAM % zPositionOfTSDiagram

Table B.1589: zPositionOfTSDiagram: volume-weighted vertical position of each (T,S) bin

B.20.6 waterMassCensusTemperatureValuesRegion

Type:	real
Units:	C
Dimension:	nTemperatureBinsP1 maxRegionsInGroup Time
Persistence:	persistent
Location in code:	domain % blocklist % waterMassCensusAM % waterMassCensusTemperatureValuesRegion

Table B.1590: waterMassCensusTemperatureValuesRegion: temperature values defining edges of temperature bins

B.20.7 waterMassCensusSalinityValuesRegion

Type:	real
Units:	C
Dimension:	nSalinityBinsP1 maxRegionsInGroup Time
Persistence:	persistent
Location in code:	domain % blocklist % waterMassCensusAM % waterMassCensusSalinityValuesRegion

Table B.1591: waterMassCensusSalinityValuesRegion: salinity values defining edges of temperature bins

B.20.8 waterMassFractionalDistributionRegion

Type:	real
Units:	fractional
Dimension:	nTemperatureBins nSalinityBins maxRegionsInGroup Time
Persistence:	persistent
Location in code:	domain % blocklist % waterMassCensusAM % waterMassFractionalDistributionRegion

Table B.1592: waterMassFractionalDistributionRegion: fraction of water volume contained within each temperature and salinity bin

B.20.9 potentialDensityOfTSDiagramRegion

Type:	real
Units:	kg m^{-}3
Dimension:	nTemperatureBins nSalinityBins maxRegionsInGroup Time
Persistence:	persistent
Location in code:	domain % blocklist % waterMassCensusAM % potentialDensityOfTSDiagramRegion

Table B.1593: potentialDensityOfTSDiagramRegion: volume-weighted potential density of each (T,S) bin

B.20.10 zPositionOfTSDiagramRegion

Type:	real
Units:	kg m^{-}3
Dimension:	nTemperatureBins nSalinityBins maxRegionsInGroup Time
Persistence:	persistent
Location in code:	domain % blocklist % waterMassCensusAM % zPositionOfTSDiagramRegion

Table B.1594: zPositionOfTSDiagramRegion: volume-weighted vertical position of each (T,S) bin

B.21 layerVolumeWeightedAverageAM

B.21.1 minLayerMaskValue

Type:	real
Units:	–
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerMaskValue
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerMaskValue
Array Group:	layerMins

Table B.1595: minLayerMaskValue: Minimum value of mask within region layer (should always be 1 for valid layers)

B.21.2 minLayerArea

Type:	real
Units:	m^2
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerArea
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerArea
Array Group:	layerMins

Table B.1596: minLayerArea: Minimum area of cell within region layer

B.21.3 minLayerThickness

Type:	real
Units:	m
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerThickness
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerThickness
Array Group:	layerMins

Table B.1597: minLayerThickness: Minimum thickness within region layer

B.21.4 minLayerDensity

Type:	real
Units:	kg m^-3
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerDensity
Array Group:	layerMins

Table B.1598: minLayerDensity: Minimum in-situ density within region layer

B.21.5 minLayerPotentialDensity

Type:	real
Units:	$kg\,m^-3$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerPotentialDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerPotentialDensity
Array Group:	layerMins

Table B.1599: minLayerPotentialDensity: Minimum potential density within region layer

B.21.6 minLayerBruntVaisalaFreqTop

Type:	real
Units:	s^-2
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerBruntVaisalaFreqTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerBruntVaisalaFreqTop
Array Group:	layerMins

Table B.1600: minLayerBruntVaisalaFreqTop: Minimum Brunt Vaisala frequency within region layer

B.21.7 minLayerVelocityZonal

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerVelocityZonal
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerVelocityZonal
Array Group:	layerMins

Table B.1601: minLayerVelocityZonal: Minimum zonal velocity within region layer

B.21.8 minLayerVelocityMeridional

Type:	real
Units:	m s$^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerVelocityMeridional
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerVelocityMeridional
Array Group:	layerMins

Table B.1602: minLayerVelocityMeridional: Minimum meridional velocity within region layer

B.21.9 minLayerVertVelocityTop

Type:	real
Units:	m s$^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerVertVelocityTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerVertVelocityTop
Array Group:	layerMins

Table B.1603: minLayerVertVelocityTop: Minimum vertical velocity within region layer

B.21.10 minLayerTemperature

Type:	real
Units:	C
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerTemperature
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerTemperature
Array Group:	layerMins

Table B.1604: minLayerTemperature: Minimum surface temperature within region layer

B.21.11 minLayerSalinity

Type:	real
Units:	$1\,e-3$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerSalinity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerSalinity
Array Group:	layerMins

Table B.1605: minLayerSalinity: Minimum surface salinity within region layer

B.21.12 minLayerKineticEnergyCell

Type:	real
Units:	$m^2\,s^-2$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerKineticEnergyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerKineticEnergyCell
Array Group:	layerMins

Table B.1606: minLayerKineticEnergyCell: Minimum kinetic energy within region layer

B.21.13 minLayerRelativeVorticityCell

Type:	real
Units:	s^-1
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerRelativeVorticityCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerRelativeVorticityCell
Array Group:	layerMins

Table B.1607: minLayerRelativeVorticityCell: Minimum relative vorticity within region layer

B.21.14 minLayerDivergence

Type:	real
Units:	s^-1
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerDivergence
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerDivergence
Array Group:	layerMins

Table B.1608: minLayerDivergence: Minimum divergence within region layer

B.21.15 minLayerRelativeEnstrophyCell

Type:	real
Units:	s^-2
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerRelativeEnstrophyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerRelativeEnstrophyCell
Array Group:	layerMins

Table B.1609: minLayerRelativeEnstrophyCell: Minimum relative enstrophy within region layer

B.21.16 minLayerTemperatureHorAdv

Type:	real
Units:	$C\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerTemperatureHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerTemperatureHorAdv
Array Group:	layerMins

Table B.1610: minLayerTemperatureHorAdv: Minimum horizontal temperature advection within region layer

B.21.17 minLayerSalinityHorAdv

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^{-}1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerSalinityHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerSalinityHorAdv
Array Group:	layerMins

Table B.1611: minLayerSalinityHorAdv: Minimum horizontal salinity advection within region layer

B.21.18 minLayerTemperatureVertAdv

Type:	real
Units:	$\mathrm{C}\,\mathrm{s}^{-}1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerTemperatureVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerTemperatureVertAdv
Array Group:	layerMins

Table B.1612: minLayerTemperatureVertAdv: Minimum vertical temperature advection within region layer

B.21.19 minLayerSalinityVertAdv

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^{-}1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerSalinityVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerSalinityVertAdv
Array Group:	layerMins

Table B.1613: minLayerSalinityVertAdv: Minimum vertical salinity advection within region layer

B.21.20 minLayerTemperatureSfcFlux

Type:	real
Units:	$\mathrm{C\,s^{-}1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerTemperatureSfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerTemperatureSfcFlux
Array Group:	layerMins

Table B.1614: minLayerTemperatureSfcFlux: Minimum temperature surface flux tend within region layer

B.21.21 minLayerSalinitySfcFlux

Type:	real
Units:	$\mathrm{1\,e-3\,s^{-}1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerSalinitySfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerSalinitySfcFlux
Array Group:	layerMins

Table B.1615: minLayerSalinitySfcFlux: Minimum salinity surface flux tend within region layer

B.21.22 minLayerTemperatureSW

Type:	real
Units:	$\mathrm{C\,s^{-}1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerTemperatureSW
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerTemperatureSW
Array Group:	layerMins

Table B.1616: minLayerTemperatureSW: Minimum temperature short wave tend within region layer

B.21.23 minLayerTemperatureNL

Type:	real
Units:	$\mathrm{C\,s^-1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerTemperatureNL
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerTemperatureNL
Array Group:	layerMins

Table B.1617: minLayerTemperatureNL: Minimum temperature non local tend within region layer

B.21.24 minLayerSalinityNL

Type:	real
Units:	$\mathrm{1\,e-3\,s^-1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerSalinityNL
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerSalinityNL
Array Group:	layerMins

Table B.1618: minLayerSalinityNL: Minimum salinity kpp non local tend within region layer

B.21.25 minLayerTemperatureVertMix

Type:	real
Units:	$\mathrm{C\,s^-1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerTemperatureVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerTemperatureVertMix
Array Group:	layerMins

Table B.1619: minLayerTemperatureVertMix: Minimum temperature vertical mixing within region layer

B.21.26 minLayerSalinityVertMix

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minLayerSalinityVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minLayerSalinityVertMix
Array Group:	layerMins

Table B.1620: minLayerSalinityVertMix: Minimum salinity vertical mixing within region layer

B.21.27 minVolumeMaskValue

Type:	real
Units:	–
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeMaskValue
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeMaskValue
Array Group:	volumeMins

Table B.1621: minVolumeMaskValue: Minimum value of mask within region volume (should always be 1 for valid volumes)

B.21.28 minVolumeArea

Type:	real
Units:	m^2
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent

Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeArea
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeArea
Array Group:	volumeMins

Table B.1622: minVolumeArea: Minimum area of cell within region volume

B.21.29 minVolumeThickness

Type:	real
Units:	m
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeThickness
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeThickness
Array Group:	volumeMins

Table B.1623: minVolumeThickness: Minimum thickness within region volume

B.21.30 minVolumeDensity

Type:	real
Units:	$\text{kg}\,\text{m}^{-}3$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeDensity
Array Group:	volumeMins

Table B.1624: minVolumeDensity: Minimum in-situ density within region volume

B.21.31 minVolumePotentialDensity

Type:	real

Units:	$kg\,m^-3$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumePotentialDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumePotentialDensity
Array Group:	volumeMins

Table B.1625: minVolumePotentialDensity: Minimum potential density within region volume

B.21.32 minVolumeBruntVaisalaFreqTop

Type:	real
Units:	s^-2
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeBruntVaisalaFreqTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeBruntVaisalaFreqTop
Array Group:	volumeMins

Table B.1626: minVolumeBruntVaisalaFreqTop: Minimum Brunt Vaisala frequency within region volume

B.21.33 minVolumeVelocityZonal

Type:	real
Units:	$m\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeVelocityZonal
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeVelocityZonal
Array Group:	volumeMins

Table B.1627: minVolumeVelocityZonal: Minimum zonal velocity within region volume

B.21.34 minVolumeVelocityMeridional

Type:	real
Units:	$m\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeVelocityMeridional
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeVelocityMeridional
Array Group:	volumeMins

Table B.1628: minVolumeVelocityMeridional: Minimum meridional velocity within region volume

B.21.35 minVolumeVertVelocityTop

Type:	real
Units:	$m\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeVertVelocityTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeVertVelocityTop
Array Group:	volumeMins

Table B.1629: minVolumeVertVelocityTop: Minimum vertical velocity within region volume

B.21.36 minVolumeTemperature

Type:	real
Units:	C
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeTemperature
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeTemperature
Array Group:	volumeMins

Table B.1630: minVolumeTemperature: Minimum surface temperature within region volume

B.21.37 minVolumeSalinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeSalinity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeSalinity
Array Group:	volumeMins

Table B.1631: minVolumeSalinity: Minimum surface salinity within region volume

B.21.38 minVolumeKineticEnergyCell

Type:	real
Units:	$\mathrm{m}^2\,\mathrm{s}^-2$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeKineticEnergyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeKineticEnergyCell
Array Group:	volumeMins

Table B.1632: minVolumeKineticEnergyCell: Minimum kinetic energy within region volume

B.21.39 minVolumeRelativeVorticityCell

Type:	real
Units:	s^-1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeRelativeVorticityCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeRelativeVorticityCell
Array Group:	volumeMins

Table B.1633: minVolumeRelativeVorticityCell: Minimum relative vorticity within region volume

B.21.40 minVolumeDivergence

Type:	real
Units:	s^-1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeDivergence
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeDivergence
Array Group:	volumeMins

Table B.1634: minVolumeDivergence: Minimum divergence within region volume

B.21.41 minVolumeRelativeEnstrophyCell

Type:	real
Units:	s^-2
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeRelativeEnstrophyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeRelativeEnstrophyCell
Array Group:	volumeMins

Table B.1635: minVolumeRelativeEnstrophyCell: Minimum relative enstrophy within region volume

B.21.42 minVolumeTemperatureHorAdv

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeTemperatureHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeTemperatureHorAdv
Array Group:	volumeMins

Table B.1636: minVolumeTemperatureHorAdv: Minimum horizontal temperature advection within region volumeMins

B.21.43 minVolumeSalinityHorAdv

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeSalinityHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeSalinityHorAdv
Array Group:	volumeMins

Table B.1637: minVolumeSalinityHorAdv: Minimum horizontal salinity advection within region volumeMins

B.21.44 minVolumeTemperatureVertAdv

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeTemperatureVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeTemperatureVertAdv
Array Group:	volumeMins

Table B.1638: minVolumeTemperatureVertAdv: Minimum vertical temperature advection within region volumeMins

B.21.45 minVolumeSalinityVertAdv

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeSalinityVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeSalinityVertAdv

Array Group:	volumeMins

Table B.1639: minVolumeSalinityVertAdv: Minimum vertical salinity advection within region volumeMins

B.21.46 minVolumeTemperatureSfcFlux

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeTemperatureSfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeTemperatureSfcFlux
Array Group:	volumeMins

Table B.1640: minVolumeTemperatureSfcFlux: Minimum temperature surface flux tend within region volumeMins

B.21.47 minVolumeSalinitySfcFlux

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeSalinitySfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeSalinitySfcFlux
Array Group:	volumeMins

Table B.1641: minVolumeSalinitySfcFlux: Minimum salinity surface flux tend within region volumeMins

B.21.48 minVolumeTemperatureSW

Type:	real
Units:	$C\,s^-1$

Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeTemperatureSW
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeTemperatureSW
Array Group:	volumeMins

Table B.1642: minVolumeTemperatureSW: **MISSING**

B.21.49 minVolumeTemperatureNL

Type:	real
Units:	$\mathrm{C\,s^{-}1}$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeTemperatureNL
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeTemperatureNL
Array Group:	volumeMins

Table B.1643: minVolumeTemperatureNL: Minimum temperature kpp non local tend within region volumeMins

B.21.50 minVolumeSalinityNL

Type:	real
Units:	$\mathrm{1\,e-3\,s^{-}1}$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeSalinityNL
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeSalinityNL
Array Group:	volumeMins

Table B.1644: minVolumeSalinityNL: Minimum salinity kpp non local tend within region volumeMins

B.21.51 minVolumeTemperatureVertMix

Type:	real
Units:	$C s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeTemperatureVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeTemperatureVertMix
Array Group:	volumeMins

Table B.1645: minVolumeTemperatureVertMix: Minimum temperature vertical mixing within region volumeMins

B.21.52 minVolumeSalinityVertMix

Type:	real
Units:	$1 e - 3 s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in minValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_minVolumeSalinityVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % minVolumeSalinityVertMix
Array Group:	volumeMins

Table B.1646: minVolumeSalinityVertMix: Minimum salinity vertical mixing within region volumeMins

B.21.53 maxLayerMaskValue

Type:	real
Units:	–
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerMaskValue
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerMaskValue
Array Group:	layerMaxs

Table B.1647: maxLayerMaskValue: Maximum value of mask within region layer (should always be 1 for valid layers)

B.21.54 maxLayerArea

Type:	real
Units:	m^2
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerArea
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerArea
Array Group:	layerMaxs

Table B.1648: maxLayerArea: Maximum area of cell within region layer

B.21.55 maxLayerThickness

Type:	real
Units:	m
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerThickness
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerThickness
Array Group:	layerMaxs

Table B.1649: maxLayerThickness: Maximum thickness within region layer

B.21.56 maxLayerDensity

Type:	real
Units:	$kg\,m^-3$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent

Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerDensity
Array Group:	layerMaxs

Table B.1650: maxLayerDensity: Maximum in-situ density within region layer

B.21.57 maxLayerPotentialDensity

Type:	real
Units:	$\mathrm{kg\,m^-3}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerPotentialDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerPotentialDensity
Array Group:	layerMaxs

Table B.1651: maxLayerPotentialDensity: Maximum potential density within region layer

B.21.58 maxLayerBruntVaisalaFreqTop

Type:	real
Units:	$\mathrm{s^-2}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerBruntVaisalaFreqTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerBruntVaisalaFreqTop
Array Group:	layerMaxs

Table B.1652: maxLayerBruntVaisalaFreqTop: Maximum Brunt Vaisala frequency within region layer

B.21.59 maxLayerVelocityZonal

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerVelocityZonal
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerVelocityZonal
Array Group:	layerMaxs

Table B.1653: maxLayerVelocityZonal: Maximum zonal velocity within region layer

B.21.60 maxLayerVelocityMeridional

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerVelocityMeridional
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerVelocityMeridional
Array Group:	layerMaxs

Table B.1654: maxLayerVelocityMeridional: Maximum meridional velocity within region layer

B.21.61 maxLayerVertVelocityTop

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerVertVelocityTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerVertVelocityTop
Array Group:	layerMaxs

Table B.1655: maxLayerVertVelocityTop: Maximum vertical velocity within region layer

B.21.62 maxLayerTemperature

Type:	real
Units:	C
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerTemperature
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerTemperature
Array Group:	layerMaxs

Table B.1656: maxLayerTemperature: Maximum surface temperature within region layer

B.21.63 maxLayerSalinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerSalinity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerSalinity
Array Group:	layerMaxs

Table B.1657: maxLayerSalinity: Maximum surface salinity within region layer

B.21.64 maxLayerKineticEnergyCell

Type:	real
Units:	$\mathrm{m}^2\,\mathrm{s}^-2$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerKineticEnergyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerKineticEnergyCell
Array Group:	layerMaxs

Table B.1658: maxLayerKineticEnergyCell: Maximum kinetic energy within region layer

B.21.65 maxLayerRelativeVorticityCell

Type:	real
Units:	s^-1
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerRelativeVorticityCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerRelativeVorticityCell
Array Group:	layerMaxs

Table B.1659: maxLayerRelativeVorticityCell: Maximum relative vorticity within region layer

B.21.66 maxLayerDivergence

Type:	real
Units:	s^-1
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerDivergence
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerDivergence
Array Group:	layerMaxs

Table B.1660: maxLayerDivergence: Maximum divergence within region layer

B.21.67 maxLayerRelativeEnstrophyCell

Type:	real
Units:	s^-2
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerRelativeEnstrophyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerRelativeEnstrophyCell
Array Group:	layerMaxs

Table B.1661: maxLayerRelativeEnstrophyCell: Maximum relative enstrophy within region layer

B.21.68 maxLayerTemperatureHorAdv

Type:	real
Units:	$\mathrm{C\,s^{-}1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerTemperatureHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerTemperatureHorAdv
Array Group:	layerMaxs

Table B.1662: maxLayerTemperatureHorAdv: Maximum horizontal temperature advection within region layer

B.21.69 maxLayerSalinityHorAdv

Type:	real
Units:	$\mathrm{1\,e-3\,s^{-}1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerSalinityHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerSalinityHorAdv
Array Group:	layerMaxs

Table B.1663: maxLayerSalinityHorAdv: Maximum horizontal salinity advection within region layer

B.21.70 maxLayerTemperatureVertAdv

Type:	real
Units:	$\mathrm{C\,s^{-}1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerTemperatureVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerTemperatureVertAdv
Array Group:	layerMaxs

Table B.1664: maxLayerTemperatureVertAdv: Maximum vertical temperature advection within region layer

B.21.71 maxLayerSalinityVertAdv

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerSalinityVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerSalinityVertAdv
Array Group:	layerMaxs

Table B.1665: maxLayerSalinityVertAdv: Maximum vertical salinity advection within region layer

B.21.72 maxLayerTemperatureSfcFlux

Type:	real
Units:	$C\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerTemperatureSfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerTemperatureSfcFlux
Array Group:	layerMaxs

Table B.1666: maxLayerTemperatureSfcFlux: Maximum temperature surface flux tend within region layer

B.21.73 maxLayerSalinitySfcFlux

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent

Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerSalinitySfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerSalinitySfcFlux
Array Group:	layerMaxs

Table B.1667: maxLayerSalinitySfcFlux: Maximum salinity surface flux tend within region layer

B.21.74 maxLayerTemperatureSW

Type:	real
Units:	$C\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerTemperatureSW
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerTemperatureSW
Array Group:	layerMaxs

Table B.1668: maxLayerTemperatureSW: Maximum temperature short wave tend within region layer

B.21.75 maxLayerTemperatureNL

Type:	real
Units:	$C\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerTemperatureNL
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerTemperatureNL
Array Group:	layerMaxs

Table B.1669: maxLayerTemperatureNL: Maximum temperature non local tend within region layer

B.21.76 maxLayerSalinityNL

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerSalinityNL
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerSalinityNL
Array Group:	layerMaxs

Table B.1670: maxLayerSalinityNL: Maximum salinity non local tend within region layer

B.21.77 maxLayerTemperatureVertMix

Type:	real
Units:	$\mathrm{C}\,\mathrm{s}^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerTemperatureVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerTemperatureVertMix
Array Group:	layerMaxs

Table B.1671: maxLayerTemperatureVertMix: Maximum temperature vertical mixing within region layer

B.21.78 maxLayerSalinityVertMix

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxLayerSalinityVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxLayerSalinityVertMix
Array Group:	layerMaxs

Table B.1672: maxLayerSalinityVertMix: Maximum salinity vertical mixing within region layer

B.21.79 maxVolumeMaskValue

Type:	real
Units:	–
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeMaskValue
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeMaskValue
Array Group:	volumeMaxs

Table B.1673: maxVolumeMaskValue: Maximum value of mask within region volume (should always be 1 for valid volumes)

B.21.80 maxVolumeArea

Type:	real
Units:	m^2
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeArea
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeArea
Array Group:	volumeMaxs

Table B.1674: maxVolumeArea: Maximum area of cell within region volume

B.21.81 maxVolumeThickness

Type:	real
Units:	m
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeThickness
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeThickness
Array Group:	volumeMaxs

Table B.1675: maxVolumeThickness: Maximum thickness within region volume

B.21.82 maxVolumeDensity

Type:	real
Units:	kg m$^-3$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeDensity
Array Group:	volumeMaxs

Table B.1676: maxVolumeDensity: Maximum in-situ density within region volume

B.21.83 maxVolumePotentialDensity

Type:	real
Units:	kg m$^-3$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumePotentialDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumePotentialDensity
Array Group:	volumeMaxs

Table B.1677: maxVolumePotentialDensity: Maximum potential density within region volume

B.21.84 maxVolumeBruntVaisalaFreqTop

Type:	real
Units:	s$^-2$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeBruntVaisalaFreqTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeBruntVaisalaFreqTop
Array Group:	volumeMaxs

Table B.1678: maxVolumeBruntVaisalaFreqTop: Maximum Brunt Vaisala frequency within region volume

B.21.85 maxVolumeVelocityZonal

Type:	real
Units:	m s^−1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeVelocityZonal
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeVelocityZonal
Array Group:	volumeMaxs

Table B.1679: maxVolumeVelocityZonal: Maximum zonal velocity within region volume

B.21.86 maxVolumeVelocityMeridional

Type:	real
Units:	m s^−1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeVelocityMeridional
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeVelocityMeridional
Array Group:	volumeMaxs

Table B.1680: maxVolumeVelocityMeridional: Maximum meridional velocity within region volume

B.21.87 maxVolumeVertVelocityTop

Type:	real
Units:	m s^−1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeVertVelocityTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeVertVelocityTop
Array Group:	volumeMaxs

Table B.1681: maxVolumeVertVelocityTop: Maximum vertical velocity within region volume

B.21.88 maxVolumeTemperature

Type:	real
Units:	C
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeTemperature
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeTemperature
Array Group:	volumeMaxs

Table B.1682: maxVolumeTemperature: Maximum surface temperature within region volume

B.21.89 maxVolumeSalinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeSalinity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeSalinity
Array Group:	volumeMaxs

Table B.1683: maxVolumeSalinity: Maximum surface salinity within region volume

B.21.90 maxVolumeKineticEnergyCell

Type:	real
Units:	$\mathrm{m}^2\,\mathrm{s}^-2$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeKineticEnergyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeKineticEnergyCell
Array Group:	volumeMaxs

Table B.1684: maxVolumeKineticEnergyCell: Maximum kinetic energy within region volume

B.21.91 maxVolumeRelativeVorticityCell

Type:	real
Units:	s^-1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeRelativeVorticityCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeRelativeVorticityCell
Array Group:	volumeMaxs

Table B.1685: maxVolumeRelativeVorticityCell: Maximum relative vorticity within region volume

B.21.92 maxVolumeDivergence

Type:	real
Units:	s^-1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeDivergence
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeDivergence
Array Group:	volumeMaxs

Table B.1686: maxVolumeDivergence: Maximum divergence within region volume

B.21.93 maxVolumeRelativeEnstrophyCell

Type:	real
Units:	s^-2
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeRelativeEnstrophyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeRelativeEnstrophyCell
Array Group:	volumeMaxs

Table B.1687: maxVolumeRelativeEnstrophyCell: Maximum relative enstrophy within region volume

B.21.94 maxVolumeTemperatureHorAdv

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeTemperatureHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeTemperatureHorAdv
Array Group:	volumeMaxs

Table B.1688: maxVolumeTemperatureHorAdv: Maximum horizontal temperature advection within region volume

B.21.95 maxVolumeSalinityHorAdv

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeSalinityHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeSalinityHorAdv
Array Group:	volumeMaxs

Table B.1689: maxVolumeSalinityHorAdv: Maximum horizontal salinity advection within region volume

B.21.96 maxVolumeTemperatureVertAdv

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeTemperatureVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeTemperatureVertAdv
Array Group:	volumeMaxs

Table B.1690: maxVolumeTemperatureVertAdv: Maximum vertical temperature advection within region volume

B.21.97 maxVolumeSalinityVertAdv

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeSalinityVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeSalinityVertAdv
Array Group:	volumeMaxs

Table B.1691: maxVolumeSalinityVertAdv: Maximum vertical salinity advection within region volume

B.21.98 maxVolumeTemperatureSfcFlux

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeTemperatureSfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeTemperatureSfcFlux
Array Group:	volumeMaxs

Table B.1692: maxVolumeTemperatureSfcFlux: Maximum temperature surface flux tend within region volume

B.21.99 maxVolumeSalinitySfcFlux

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nOceanRegionsTmp Time

Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeSalinitySfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeSalinitySfcFlux
Array Group:	volumeMaxs

Table B.1693: maxVolumeSalinitySfcFlux: Maximum salinity surface flux tend within region volume

B.21.100 maxVolumeTemperatureSW

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeTemperatureSW
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeTemperatureSW
Array Group:	volumeMaxs

Table B.1694: maxVolumeTemperatureSW: Maximum temperature short wave tend within region volume

B.21.101 maxVolumeTemperatureNL

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeTemperatureNL
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeTemperatureNL
Array Group:	volumeMaxs

Table B.1695: maxVolumeTemperatureNL: Maximum temperature non local tend within region volume

B.21.102 maxVolumeSalinityNL

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeSalinityNL
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeSalinityNL
Array Group:	volumeMaxs

Table B.1696: maxVolumeSalinityNL: Maximum salinity non local tend within region volume

B.21.103 maxVolumeTemperatureVertMix

Type:	real
Units:	$\mathrm{C}\,\mathrm{s}^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeTemperatureVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeTemperatureVertMix
Array Group:	volumeMaxs

Table B.1697: maxVolumeTemperatureVertMix: Maximum temperature vertical mixing within region volume

B.21.104 maxVolumeSalinityVertMix

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in maxValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_maxVolumeSalinityVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % maxVolumeSalinityVertMix
Array Group:	volumeMaxs

Table B.1698: maxVolumeSalinityVertMix: Maximum salinity vertical mixing within region volume

B.21.105 sumLayerMaskValue

Type:	real
Units:	–
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_sumLayerMaskValue
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % sumLayerMaskValue
Array Group:	layerAvgs

Table B.1699: sumLayerMaskValue: Sum value of mask within region volume (should always be greater than 0 for valid layer)

B.21.106 avgLayerArea

Type:	real
Units:	m^2
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerArea
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerArea
Array Group:	layerAvgs

Table B.1700: avgLayerArea: Average area of cell within region layer

B.21.107 avgLayerThickness

Type:	real
Units:	m
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerThickness
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerThickness
Array Group:	layerAvgs

Table B.1701: avgLayerThickness: Average thickness within region layer

B.21.108 avgLayerDensity

Type:	real
Units:	kg m$^-3$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerDensity
Array Group:	layerAvgs

Table B.1702: avgLayerDensity: Average in-situ density within region layer

B.21.109 avgLayerPotentialDensity

Type:	real
Units:	kg m$^-3$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerPotentialDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerPotentialDensity
Array Group:	layerAvgs

Table B.1703: avgLayerPotentialDensity: Average potential density within region layer

B.21.110 avgLayerBruntVaisalaFreqTop

Type:	real
Units:	s$^-2$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerBruntVaisalaFreqTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerBruntVaisalaFreqTop
Array Group:	layerAvgs

Table B.1704: avgLayerBruntVaisalaFreqTop: Average Brunt Vaisala frequency within region layer

B.21.111 avgLayerVelocityZonal

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerVelocityZonal
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerVelocityZonal
Array Group:	layerAvgs

Table B.1705: avgLayerVelocityZonal: Average zonal velocity within region layer

B.21.112 avgLayerVelocityMeridional

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerVelocityMeridional
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerVelocityMeridional
Array Group:	layerAvgs

Table B.1706: avgLayerVelocityMeridional: Average meridional velocity within region layer

B.21.113 avgLayerVertVelocityTop

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerVertVelocityTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerVertVelocityTop
Array Group:	layerAvgs

Table B.1707: avgLayerVertVelocityTop: Average vertical velocity within region layer

B.21.114 avgLayerTemperature

Type:	real
Units:	C
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerTemperature
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerTemperature
Array Group:	layerAvgs

Table B.1708: avgLayerTemperature: Average surface temperature within region layer

B.21.115 avgLayerSalinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerSalinity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerSalinity
Array Group:	layerAvgs

Table B.1709: avgLayerSalinity: Average surface salinity within region layer

B.21.116 avgLayerKineticEnergyCell

Type:	real
Units:	$\mathrm{m}^2\,\mathrm{s}^-2$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerKineticEnergyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerKineticEnergyCell
Array Group:	layerAvgs

Table B.1710: avgLayerKineticEnergyCell: Average kinetic energy within region layer

B.21.117 avgLayerRelativeVorticityCell

Type:	real
Units:	s^-1
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerRelativeVorticityCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerRelativeVorticityCell
Array Group:	layerAvgs

Table B.1711: avgLayerRelativeVorticityCell: Average relative vorticity within region layer

B.21.118 avgLayerDivergence

Type:	real
Units:	s^-1
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerDivergence
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerDivergence
Array Group:	layerAvgs

Table B.1712: avgLayerDivergence: Average divergence within region layer

B.21.119 avgLayerRelativeEnstrophyCell

Type:	real
Units:	s^-2
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerRelativeEnstrophyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerRelativeEnstrophyCell
Array Group:	layerAvgs

Table B.1713: avgLayerRelativeEnstrophyCell: Average relative enstrophy within region layer

B.21.120 avgLayerTemperatureHorAdv

Type:	real
Units:	$\mathrm{C\,s^{-}1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerTemperatureHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerTemperatureHorAdv
Array Group:	layerAvgs

Table B.1714: avgLayerTemperatureHorAdv: Average horizontal temperature advection within region layer

B.21.121 avgLayerSalinityHorAdv

Type:	real
Units:	$\mathrm{1\,e-3\,s^{-}1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerSalinityHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerSalinityHorAdv
Array Group:	layerAvgs

Table B.1715: avgLayerSalinityHorAdv: Average horizontal salinity advection within region layer

B.21.122 avgLayerTemperatureVertAdv

Type:	real
Units:	$\mathrm{C\,s^{-}1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerTemperatureVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerTemperatureVertAdv
Array Group:	layerAvgs

Table B.1716: avgLayerTemperatureVertAdv: Average vertical temperature advection within region layer

B.21.123 avgLayerSalinityVertAdv

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerSalinityVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerSalinityVertAdv
Array Group:	layerAvgs

Table B.1717: avgLayerSalinityVertAdv: Average vertical salinity advection within region layer

B.21.124 avgLayerTemperatureSfcFlux

Type:	real
Units:	$\mathrm{C}\,\mathrm{s}^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerTemperatureSfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerTemperatureSfcFlux
Array Group:	layerAvgs

Table B.1718: avgLayerTemperatureSfcFlux: Average temperature surface flux tend within region layer

B.21.125 avgLayerSalinitySfcFlux

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerSalinitySfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerSalinitySfcFlux
Array Group:	layerAvgs

Table B.1719: avgLayerSalinitySfcFlux: Average salinity surface flux tend within region layer

B.21.126 avgLayerTemperatureSW

Type:	real
Units:	$C\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerTemperatureSW
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerTemperatureSW
Array Group:	layerAvgs

Table B.1720: avgLayerTemperatureSW: Average temperature shortwave tend within region layer

B.21.127 avgLayerTemperatureNL

Type:	real
Units:	$C\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerTemperatureNL
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerTemperatureNL
Array Group:	layerAvgs

Table B.1721: avgLayerTemperatureNL: Average temperature non local tend within region layer

B.21.128 avgLayerSalinityNL

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerSalinityNL

Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerSalinityNL
Array Group:	layerAvgs

Table B.1722: avgLayerSalinityNL: Average salinity non local tend within region layer

B.21.129 avgLayerTemperatureVertMix

Type:	real
Units:	$\mathrm{C\,s^-1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerTemperatureVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerTemperatureVertMix
Array Group:	layerAvgs

Table B.1723: avgLayerTemperatureVertMix: Average temperature vertical mixing within region layer

B.21.130 avgLayerSalinityVertMix

Type:	real
Units:	$\mathrm{1\,e-3\,s^-1}$
Dimension:	nVertLevels nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanLayerRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgLayerSalinityVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgLayerSalinityVertMix
Array Group:	layerAvgs

Table B.1724: avgLayerSalinityVertMix: Average salinity vertical mixing within region layer

B.21.131 sumVolumeMaskValue

Type:	real
Units:	–
Dimension:	nOceanRegionsTmp Time

Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_sumVolumeMaskValue
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % sumVolumeMaskValue
Array Group:	volumeAvgs

Table B.1725: sumVolumeMaskValue: Sum value of mask within region volume (should always be greater than 0 for valid volumes)

B.21.132 avgVolumeArea

Type:	real
Units:	m^2
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeArea
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeArea
Array Group:	volumeAvgs

Table B.1726: avgVolumeArea: Average area of cell within region volume

B.21.133 avgVolumeThickness

Type:	real
Units:	m
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeThickness
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeThickness
Array Group:	volumeAvgs

Table B.1727: avgVolumeThickness: Average thickness within region volume

B.21.134 avgVolumeDensity

Type:	real
Units:	$kg\,m^-3$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeDensity
Array Group:	volumeAvgs

Table B.1728: avgVolumeDensity: Average in-situ density within region volume

B.21.135 avgVolumePotentialDensity

Type:	real
Units:	$kg\,m^-3$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumePotentialDensity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumePotentialDensity
Array Group:	volumeAvgs

Table B.1729: avgVolumePotentialDensity: Average potential density within region volume

B.21.136 avgVolumeBruntVaisalaFreqTop

Type:	real
Units:	s^-2
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeBruntVaisalaFreqTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeBruntVaisalaFreqTop
Array Group:	volumeAvgs

Table B.1730: avgVolumeBruntVaisalaFreqTop: Average Brunt Vaisala frequency within region volume

B.21.137 avgVolumeVelocityZonal

Type:	real
Units:	m s⁻1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeVelocityZonal
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeVelocityZonal
Array Group:	volumeAvgs

Table B.1731: avgVolumeVelocityZonal: Average zonal velocity within region volume

B.21.138 avgVolumeVelocityMeridional

Type:	real
Units:	m s⁻1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeVelocityMeridional
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeVelocityMeridional
Array Group:	volumeAvgs

Table B.1732: avgVolumeVelocityMeridional: Average meridional velocity within region volume

B.21.139 avgVolumeVertVelocityTop

Type:	real
Units:	m s⁻1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeVertVelocityTop
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeVertVelocityTop
Array Group:	volumeAvgs

Table B.1733: avgVolumeVertVelocityTop: Average vertical velocity within region volume

B.21.140 avgVolumeTemperature

Type:	real
Units:	C
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeTemperature
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeTemperature
Array Group:	volumeAvgs

Table B.1734: avgVolumeTemperature: Average surface temperature within region volume

B.21.141 avgVolumeSalinity

Type:	real
Units:	$1\,e-3$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeSalinity
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeSalinity
Array Group:	volumeAvgs

Table B.1735: avgVolumeSalinity: Average surface salinity within region volume

B.21.142 avgVolumeKineticEnergyCell

Type:	real
Units:	$m^2\,s^-2$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeKineticEnergyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeKineticEnergyCell
Array Group:	volumeAvgs

Table B.1736: avgVolumeKineticEnergyCell: Average kinetic energy within region volume

B.21.143 avgVolumeRelativeVorticityCell

Type:	real
Units:	s^-1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeRelativeVorticityCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeRelativeVorticityCell
Array Group:	volumeAvgs

Table B.1737: avgVolumeRelativeVorticityCell: Average relative vorticity within region volume

B.21.144 avgVolumeDivergence

Type:	real
Units:	s^-1
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeDivergence
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeDivergence
Array Group:	volumeAvgs

Table B.1738: avgVolumeDivergence: Average divergence within region volume

B.21.145 avgVolumeRelativeEnstrophyCell

Type:	real
Units:	s^-2
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeRelativeEnstrophyCell
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeRelativeEnstrophyCell
Array Group:	volumeAvgs

Table B.1739: avgVolumeRelativeEnstrophyCell: Average relative enstrophy within region volume

B.21.146 avgVolumeTemperatureHorAdv

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeTemperatureHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeTemperatureHorAdv
Array Group:	volumeAvgs

Table B.1740: avgVolumeTemperatureHorAdv: Average horizontal temperature advection within region volume

B.21.147 avgVolumeSalinityHorAdv

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeSalinityHorAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeSalinityHorAdv
Array Group:	volumeAvgs

Table B.1741: avgVolumeSalinityHorAdv: Average horizontal salinity advection within region volume

B.21.148 avgVolumeTemperatureVertAdv

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeTemperatureVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeTemperatureVertAdv
Array Group:	volumeAvgs

Table B.1742: avgVolumeTemperatureVertAdv: Average vertical temperature advection within region volume

B.21.149 avgVolumeSalinityVertAdv

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeSalinityVertAdv
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeSalinityVertAdv
Array Group:	volumeAvgs

Table B.1743: avgVolumeSalinityVertAdv: Average vertical salinity advection within region volume

B.21.150 avgVolumeTemperatureSfcFlux

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeTemperatureSfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeTemperatureSfcFlux
Array Group:	volumeAvgs

Table B.1744: avgVolumeTemperatureSfcFlux: Average temperature surface flux tend within region volume

B.21.151 avgVolumeSalinitySfcFlux

Type:	real
Units:	$1\,e-3\,s^-1$
Dimension:	nOceanRegionsTmp Time

Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeSalinitySfcFlux
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeSalinitySfcFlux
Array Group:	volumeAvgs

Table B.1745: avgVolumeSalinitySfcFlux: Average salinity surface flux tend within region volume

B.21.152 avgVolumeTemperatureSW

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeTemperatureSW
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeTemperatureSW
Array Group:	volumeAvgs

Table B.1746: avgVolumeTemperatureSW: Average temperature shortwave tend within region volume

B.21.153 avgVolumeTemperatureNL

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeTemperatureNL
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeTemperatureNL
Array Group:	volumeAvgs

Table B.1747: avgVolumeTemperatureNL: Average temperature non local tend within region volume

B.21.154 avgVolumeSalinitySfcNL

Type:	real
Units:	$1\,e - 3\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeSalinitySfcNL
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeSalinitySfcNL
Array Group:	volumeAvgs

Table B.1748: avgVolumeSalinitySfcNL: Average salinity non local tend within region volume

B.21.155 avgVolumeTemperatureVertMix

Type:	real
Units:	$C\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeTemperatureVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeTemperatureVertMix
Array Group:	volumeAvgs

Table B.1749: avgVolumeTemperatureVertMix: Average temperature vertical mixing within region volume

B.21.156 avgVolumeSalinityVertMix

Type:	real
Units:	$1\,e - 3\,s^-1$
Dimension:	nOceanRegionsTmp Time
Persistence:	persistent
Index in avgValueWithinOceanVolumeRegion Array:	domain % blocklist % layerVolumeWeightedAverageAM % index_avgVolumeSalinityVertMix
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM % avgVolumeSalinityVertMix
Array Group:	volumeAvgs

Table B.1750: avgVolumeSalinityVertMix: Average salinity vertical mixing within region volume

B.22 layerVolumeWeightedAverageAMScratch

B.22.1 workMaskLayerVolume

Type:	real
Units:	–
Dimension:	nCells Time
Persistence:	scratch
Location in code:	domain % blocklist % layerVolumeWeightedAverageAMScratch % workMaskLayerVolume

Table B.1751: workMaskLayerVolume: temporary array of 0 or 1 to mask data via multiplication

B.22.2 workArrayLayerVolume

Type:	real
Units:	various
Dimension:	nLayerVolWeightedAvgFields nCells Time
Persistence:	scratch
Location in code:	domain % blocklist % layerVolumeWeightedAverageAMScratch % workArrayLayerVolume

Table B.1752: workArrayLayerVolume: temporary array to hold data to be analyzed

B.22.3 workMinLayerVolume

Type:	real
Units:	various
Dimension:	nLayerVolWeightedAvgFields Time
Persistence:	scratch
Location in code:	domain % blocklist % layerVolumeWeightedAverageAMScratch % workMinLayerVolume

Table B.1753: workMinLayerVolume: temporary array to hold minimum values

B.22.4 workMaxLayerVolume

Type:	real
Units:	various
Dimension:	nLayerVolWeightedAvgFields Time

Persistence:	scratch
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM-Scratch % workMaxLayerVolume

Table B.1754: workMaxLayerVolume: temporary array to hold maximum values

B.22.5 workSumLayerVolume

Type:	real
Units:	various
Dimension:	nLayerVolWeightedAvgFields Time
Persistence:	scratch
Location in code:	domain % blocklist % layerVolumeWeightedAverageAM-Scratch % workSumLayerVolume

Table B.1755: workSumLayerVolume: temporary array to hold sum of values

B.23 zonalMeanAM

B.23.1 binCenterZonalMean

Type:	real
Units:	varies
Dimension:	nZonalMeanBins
Persistence:	persistent
Location in code:	domain % blocklist % zonalMeanAM % binCenterZonalMean

Table B.1756: binCenterZonalMean: Central coordinate of zonal mean bin, either in latitude or y, for plotting.

B.23.2 binBoundaryZonalMean

Type:	real
Units:	varies
Dimension:	nZonalMeanBinsP1
Persistence:	persistent
Location in code:	domain % blocklist % zonalMeanAM % binBoundary-ZonalMean

Table B.1757: binBoundaryZonalMean: Coordinate of lower edge of zonal mean bin, either in latitude or y, for plotting.

B.23.3 velocityZonalZonalMean

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nZonalMeanBins Time
Persistence:	persistent
Location in code:	domain % blocklist % zonalMeanAM % velocityZonal-ZonalMean

Table B.1758: velocityZonalZonalMean: Zonal mean of component of horizontal velocity in the eastward direction

B.23.4 velocityMeridionalZonalMean

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nZonalMeanBins Time
Persistence:	persistent
Location in code:	domain % blocklist % zonalMeanAM % velocityMeridional-ZonalMean

Table B.1759: velocityMeridionalZonalMean: Zonal mean of component of horizontal velocity in the northward direction

B.23.5 temperatureZonalMean

Type:	real
Units:	C
Dimension:	nVertLevels nZonalMeanBins Time
Persistence:	persistent
Index in tracersZonalMean Array:	domain % blocklist % zonalMeanAM % index_temperatureZonalMean
Location in code:	domain % blocklist % zonalMeanAM % temperature-ZonalMean
Array Group:	dynamics

Table B.1760: temperatureZonalMean: Zonal mean of potential temperature

B.23.6 salinityZonalMean

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nVertLevels nZonalMeanBins Time
Persistence:	persistent
Index in tracersZonalMean Array:	domain % blocklist % zonalMeanAM % index_salinityZonalMean
Location in code:	domain % blocklist % zonalMeanAM % salinityZonalMean
Array Group:	dynamics

Table B.1761: salinityZonalMean: Zonal mean of salinity in grams salt per kilogram seawater

B.23.7 tracer1ZonalMean

Type:	real
Units:	na
Dimension:	nVertLevels nZonalMeanBins Time
Persistence:	persistent
Index in tracersZonalMean Array:	domain % blocklist % zonalMeanAM % index_tracer1ZonalMean
Location in code:	domain % blocklist % zonalMeanAM % tracer1ZonalMean
Array Group:	dynamics

Table B.1762: tracer1ZonalMean: Zonal mean of tracer

B.24 okuboWeissScratch

B.24.1 thresholdedOkuboWeiss

Type:	integer
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	scratch
Location in code:	domain % blocklist % okuboWeissScratch % thresholdedOkuboWeiss

Table B.1763: thresholdedOkuboWeiss: Thresholded Okubo-Weiss value

B.24.2 velocityGradient

Type:	real
Units:	s⁻1
Dimension:	R3 R3 nVertLevels nCells Time
Persistence:	scratch
Location in code:	domain % blocklist % okuboWeissScratch % velocityGradient

Table B.1764: velocityGradient: Gradient of velocity field

B.24.3 shearAndStrain

Type:	real
Units:	s⁻1
Dimension:	nVertLevels nCells Time
Persistence:	scratch
Location in code:	domain % blocklist % okuboWeissScratch % shearAndStrain

Table B.1765: shearAndStrain: Shear and strain

B.24.4 lambda1

Type:	real
Units:	s⁻2
Dimension:	nVertLevels nCells Time
Persistence:	scratch
Location in code:	domain % blocklist % okuboWeissScratch % lambda1

Table B.1766: lambda1: Lambda 1, first eigenvalue of 2d strain rate tensor

B.24.5 lambda2

Type:	real
Units:	s⁻2

Dimension:	nVertLevels nCells Time
Persistence:	scratch
Location in code:	domain % blocklist % okuboWeissScratch % lambda2

Table B.1767: lambda2: Lambda 2, second eigenvalue of 2d strain rate tensor

B.24.6 lambda2R3

Type:	real
Units:	s⁻2
Dimension:	nVertLevels nCells Time
Persistence:	scratch
Location in code:	domain % blocklist % okuboWeissScratch % lambda2R3

Table B.1768: lambda2R3: Lambda 2, second eigenvalue of full 3d strain rate tensor

B.25 okuboWeissAM

B.25.1 okuboWeiss

Type:	real
Units:	s⁻2
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % okuboWeissAM % okuboWeiss

Table B.1769: okuboWeiss: The Okubo-Weiss value

B.25.2 eddyID

Type:	integer
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % okuboWeissAM % eddyID

Table B.1770: eddyID: ID of eddy connected component

B.25.3 vorticity

Type:	real
Units:	s^-1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % okuboWeissAM % vorticity

Table B.1771: vorticity: Vorticity

B.26 meridionalHeatTransportAM

B.26.1 binBoundaryMerHeatTrans

Type:	real
Units:	varies
Dimension:	nMerHeatTransBinsP1
Persistence:	persistent
Location in code:	domain % blocklist % meridionalHeatTransportAM % binBoundaryMerHeatTrans

Table B.1772: binBoundaryMerHeatTrans: Coordinate of southern edge of meridional heat transport bin, either in latitude or y, for plotting.

B.26.2 meridionalHeatTransportLatZ

Type:	real
Units:	petawatts
Dimension:	nVertLevels nMerHeatTransBinsP1 Time
Persistence:	persistent
Location in code:	domain % blocklist % meridionalHeatTransportAM % meridionalHeatTransportLatZ

Table B.1773: meridionalHeatTransportLatZ: Northward heat transport at locations defined at the binBoundaryMerHeatTrans coordinates by vertical level.

B.26.3 merHeatTransLatZRegion

Type:	real
Units:	petawatts

Dimension:	nVertLevels nMerHeatTransBinsP1 maxRegionsInGroup Time
Persistence:	persistent
Location in code:	domain % blocklist % meridionalHeatTransportAM % merHeatTransLatZRegion

Table B.1774: merHeatTransLatZRegion: Northward heat transport by vertical level and region.

B.26.4 meridionalHeatTransportLat

Type:	real
Units:	petawatts
Dimension:	nMerHeatTransBinsP1 Time
Persistence:	persistent
Location in code:	domain % blocklist % meridionalHeatTransportAM % meridionalHeatTransportLat

Table B.1775: meridionalHeatTransportLat: Northward heat transport at locations defined at the binBoundaryMerHeatTrans coordinates.

B.26.5 merHeatTransLatRegion

Type:	real
Units:	petawatts
Dimension:	nMerHeatTransBinsP1 maxRegionsInGroup Time
Persistence:	persistent
Location in code:	domain % blocklist % meridionalHeatTransportAM % merHeatTransLatRegion

Table B.1776: merHeatTransLatRegion: Northward heat transport at locations defined at the binBoundaryMerHeatTrans coordinates, by region.

B.26.6 minMaxLatRegionMHT

Type:	real
Units:	varies
Dimension:	TWO maxRegionsInGroup
Persistence:	persistent

Location in code:	domain % blocklist % meridionalHeatTransportAM % minMaxLatRegionMHT

Table B.1777: minMaxLatRegionMHT: Coordinates of the southern and northern edge of each region (for drawing).

B.27 testComputeIntervalAM

B.27.1 testComputeIntervalCounter

Type:	real
Units:	–
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % testComputeIntervalAM % testComputeIntervalCounter

Table B.1778: testComputeIntervalCounter: number of times test_compute_interval has been called

B.28 highFrequencyOutputAM

B.28.1 kineticEnergyAtSurface

Type:	real
Units:	$m^2 s^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % kineticEnergyAtSurface

Table B.1779: kineticEnergyAtSurface: kinetic energy at surface

B.28.2 vertGMvelocitySFC

Type:	real
Units:	$m s^-1$
Dimension:	nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % highFrequencyOutputAM % vertGMvelocitySFC

Table B.1780: vertGMvelocitySFC: vertical velocity due to GM parameterization

B.28.3 vertTransportVelocitySFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % vertTransportVelocitySFC

Table B.1781: vertTransportVelocitySFC: vertical velocity due to normal transport velocity divergence

B.28.4 vertVelSFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % vertVelSFC

Table B.1782: vertVelSFC: vertical velocity due to normal velocity divergence

B.28.5 vertGMvelocityAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % vertGMvelocityAt250m

Table B.1783: vertGMvelocityAt250m: vertical velocity due to GM parameterization at approximately 250m

B.28.6 vertTransportVelocityAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % vertTransportVelocityAt250m

Table B.1784: vertTransportVelocityAt250m: vertical velocity due to normal transport velocity divergence at approximately 250m

B.28.7 vertVelAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % vertVelAt250m

Table B.1785: vertVelAt250m: vertical velocity due to normal velocity divergence at approximately 250m

B.28.8 normalVelAtSFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % normalVelAtSFC

Table B.1786: normalVelAtSFC: normal velocity at surface

B.28.9 normalVelAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time

Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % normalVelAt250m

Table B.1787: normalVelAt250m: normal velocity at approximately 250m

B.28.10 normalVelAtBottom

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % normalVelAtBottom

Table B.1788: normalVelAtBottom: normal velocity at approximately Bottom

B.28.11 tangentialVelAtSFC

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % tangentialVelAtSFC

Table B.1789: tangentialVelAtSFC: tangential velocity at surface

B.28.12 tangentialVelAt250m

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % tangentialVelAt250m

Table B.1790: tangentialVelAt250m: tangential velocity at approximately 250m

B.28.13 tangentialVelAtBottom

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % tangentialVelAtBottom

Table B.1791: tangentialVelAtBottom: tangential velocity at approximately Bottom

B.28.14 zonalVelAtSFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % zonalVelAtSFC

Table B.1792: zonalVelAtSFC: zonal velocity at surface

B.28.15 zonalVelAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % zonalVelAt250m

Table B.1793: zonalVelAt250m: zonal velocity at approximately 250m

B.28.16 zonalVelAtBottom

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent

Location in code:	domain % blocklist % highFrequencyOutputAM % zonalVelAtBottom

Table B.1794: zonalVelAtBottom: zonal velocity at approximately Bottom

B.28.17 zonalAreaWeightedCellVelAtSFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % zonalAreaWeightedCellVelAtSFC

Table B.1795: zonalAreaWeightedCellVelAtSFC: area-weighted cell zonal velocity at surface

B.28.18 zonalAreaWeightedCellVelAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % zonalAreaWeightedCellVelAt250m

Table B.1796: zonalAreaWeightedCellVelAt250m: area-weighted cell zonal velocity at approximately 250m

B.28.19 zonalAreaWeightedCellVelAtBottom

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % zonalAreaWeightedCellVelAtBottom

Table B.1797: zonalAreaWeightedCellVelAtBottom: area-weighted cell zonal velocity at approximately Bottom

B.28.20 meridionalVelAtSFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalVelAtSFC

Table B.1798: meridionalVelAtSFC: meridional velocity at surface

B.28.21 meridionalVelAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalVelAt250m

Table B.1799: meridionalVelAt250m: meridional velocity at approximately 250m

B.28.22 meridionalVelAtBottom

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalVelAtBottom

Table B.1800: meridionalVelAtBottom: meridional velocity at approximately Bottom

B.28.23 meridionalAreaWeightedCellVelAtSFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalAreaWeightedCellVelAtSFC

Table B.1801: meridionalAreaWeightedCellVelAtSFC: area-weighted cell meridional velocity at surface

B.28.24 meridionalAreaWeightedCellVelAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalAreaWeightedCellVelAt250m

Table B.1802: meridionalAreaWeightedCellVelAt250m: area-weighted cell meridional velocity at approximately 250m

B.28.25 meridionalAreaWeightedCellVelAtBottom

Type:	real
Units:	$m\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalAreaWeightedCellVelAtBottom

Table B.1803: meridionalAreaWeightedCellVelAtBottom: area-weighted cell meridional velocity at approximately Bottom

B.28.26 normalBarotropicVel

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % normalBarotropicVel

Table B.1804: normalBarotropicVel: normal barotropic velocity

B.28.27 tangentialBarotropicVel

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % tangentialBarotropicVel

Table B.1805: tangentialBarotropicVel: tangential barotropic velocity

B.28.28 zonalBarotropicVel

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % zonalBarotropicVel

Table B.1806: zonalBarotropicVel: zonal barotropic velocity

B.28.29 meridionalBarotropicVel

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalBarotropicVel

Table B.1807: meridionalBarotropicVel: meridional barotropic velocity

B.28.30 normalBaroclinicVelAtSFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent

Location in code:	domain % blocklist % highFrequencyOutputAM % normalBaroclinicVelAtSFC

Table B.1808: normalBaroclinicVelAtSFC: normal baroclinic velocity at surface

B.28.31 normalBaroclinicVelAt250m

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % normalBaroclinicVelAt250m

Table B.1809: normalBaroclinicVelAt250m: normal baroclinic velocity at 250m

B.28.32 normalBaroclinicVelAtBottom

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % normalBaroclinicVelAtBottom

Table B.1810: normalBaroclinicVelAtBottom: normal baroclinic velocity at bottom

B.28.33 tangentialBaroclinicVelAtSFC

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % tangentialBaroclinicVelAtSFC

Table B.1811: tangentialBaroclinicVelAtSFC: tangential baroclinic velocity at surface

B.28.34 tangentialBaroclinicVelAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % tangentialBaroclinicVelAt250m

Table B.1812: tangentialBaroclinicVelAt250m: tangential baroclinic velocity at 250m

B.28.35 tangentialBaroclinicVelAtBottom

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % tangentialBaroclinicVelAtBottom

Table B.1813: tangentialBaroclinicVelAtBottom: tangential baroclinic velocity at bottom

B.28.36 zonalBaroclinicVelAtSFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % zonalBaroclinicVelAtSFC

Table B.1814: zonalBaroclinicVelAtSFC: zonal baroclinic velocity at surface

B.28.37 zonalBaroclinicVelAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent

Location in code:	domain % blocklist % highFrequencyOutputAM % zonalBaroclinicVelAt250m

Table B.1815: zonalBaroclinicVelAt250m: zonal baroclinic velocity at 250m

B.28.38 zonalBaroclinicVelAtBottom

Type:	real
Units:	m s⁻1
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % zonalBaroclinicVelAtBottom

Table B.1816: zonalBaroclinicVelAtBottom: zonal baroclinic velocity at bottom

B.28.39 meridionalBaroclinicVelAtSFC

Type:	real
Units:	m s⁻1
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalBaroclinicVelAtSFC

Table B.1817: meridionalBaroclinicVelAtSFC: meridional baroclinic velocity at surface

B.28.40 meridionalBaroclinicVelAt250m

Type:	real
Units:	m s⁻1
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalBaroclinicVelAt250m

Table B.1818: meridionalBaroclinicVelAt250m: meridional baroclinic velocity at 250m

B.28.41 meridionalBaroclinicVelAtBottom

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalBaroclinicVelAtBottom

Table B.1819: meridionalBaroclinicVelAtBottom: meridional baroclinic velocity at bottom

B.28.42 normalGMBolusVelAtSFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % normalGMBolusVelAtSFC

Table B.1820: normalGMBolusVelAtSFC: normal Bolus velocity in Gent-McWilliams eddy parameterization at the surface

B.28.43 normalGMBolusVelAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % normalGMBolusVelAt250m

Table B.1821: normalGMBolusVelAt250m: normal Bolus velocity in Gent-McWilliams eddy parameterization at 250m

B.28.44 normalGMBolusVelAtBottom

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time

Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % normalGMBolusVelAtBottom

Table B.1822: normalGMBolusVelAtBottom: normal Bolus velocity in Gent-McWilliams eddy parameterization at the bottom

B.28.45 tangentialGMBolusVelAtSFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % tangentialGMBolusVelAtSFC

Table B.1823: tangentialGMBolusVelAtSFC: tangential Bolus velocity in Gent-McWilliams eddy parameterization at the surface

B.28.46 tangentialGMBolusVelAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % tangentialGMBolusVelAt250m

Table B.1824: tangentialGMBolusVelAt250m: tangential Bolus velocity in Gent-McWilliams eddy parameterization at 250m

B.28.47 tangentialGMBolusVelAtBottom

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % tangentialGMBolusVelAtBottom

Table B.1825: tangentialGMBolusVelAtBottom: tangential Bolus velocity in Gent-McWilliams eddy parameterization at the bottom

B.28.48 zonalGMBolusVelAtSFC

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % zonalGM-BolusVelAtSFC

Table B.1826: zonalGMBolusVelAtSFC: zonal Bolus velocity in Gent-McWilliams eddy parameterization at the surface

B.28.49 zonalGMBolusVelAt250m

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % zonalGM-BolusVelAt250m

Table B.1827: zonalGMBolusVelAt250m: zonal Bolus velocity in Gent-McWilliams eddy parameterization at 250m

B.28.50 zonalGMBolusVelAtBottom

Type:	real
Units:	$m\,s^-1$
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % zonalGM-BolusVelAtBottom

Table B.1828: zonalGMBolusVelAtBottom: zonal Bolus velocity in Gent-McWilliams eddy parameterization at the bottom

B.28.51 meridionalGMBolusVelAtSFC

Type:	real
Units:	m s⁻1
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalGMBolusVelAtSFC

Table B.1829: meridionalGMBolusVelAtSFC: meridional Bolus velocity in Gent-McWilliams eddy parameterization at the surface

B.28.52 meridionalGMBolusVelAt250m

Type:	real
Units:	m s⁻1
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalGMBolusVelAt250m

Table B.1830: meridionalGMBolusVelAt250m: meridional Bolus velocity in Gent-McWilliams eddy parameterization at 250m

B.28.53 meridionalGMBolusVelAtBottom

Type:	real
Units:	m s⁻1
Dimension:	nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % meridionalGMBolusVelAtBottom

Table B.1831: meridionalGMBolusVelAtBottom: meridional Bolus velocity in Gent-McWilliams eddy parameterization at the bottom

B.28.54 BruntVaisalaFreqTopAtSFC

Type:	real
Units:	m s⁻1

Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % BruntVaisalaFreqTopAtSFC

Table B.1832: BruntVaisalaFreqTopAtSFC: Brunt Vaisala Frequency at surface

B.28.55 BruntVaisalaFreqTopAt250m

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % BruntVaisalaFreqTopAt250m

Table B.1833: BruntVaisalaFreqTopAt250m: Brunt Vaisala Frequency at approximately 250m

B.28.56 BruntVaisalaFreqTopAtBottom

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % BruntVaisalaFreqTopAtBottom

Table B.1834: BruntVaisalaFreqTopAtBottom: Brunt Vaisala Frequency at approximately Bottom

B.28.57 kineticEnergyAt250m

Type:	real
Units:	$\mathrm{m^2\,s^-2}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % kineticEnergyAt250m

Table B.1835: kineticEnergyAt250m: kinetic energy at a depth of approximately 250 m

B.28.58 barotropicSpeed

Type:	real
Units:	m s⁻1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % barotropicSpeed

Table B.1836: barotropicSpeed: speed = sqrt(2*ke), where kinetic energy is computed from barotropic velocity = sum(h*u)/sum(h) over the full depth of an edge

B.28.59 columnIntegratedSpeed

Type:	real
Units:	m^2 s⁻1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % columnIntegratedSpeed

Table B.1837: columnIntegratedSpeed: speed = sum(h*sqrt(2*ke)), where ke is kineticEnergyCell and the sum is over the full column at cell centers.

B.28.60 relativeVorticityAt250m

Type:	real
Units:	s⁻1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % relativeVorticityAt250m

Table B.1838: relativeVorticityAt250m: relative vorticity at cell centers at a depth of approximately 250 m

B.28.61 divergenceAt250m

Type:	real
Units:	s⁻1

Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % divergenceAt250m

Table B.1839: divergenceAt250m: divergence at cell centers at a depth of approximately 250 m

B.28.62 divergenceTransportVelAt250m

Type:	real
Units:	s⁻1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % divergenceTransportVelAt250m

Table B.1840: divergenceTransportVelAt250m: divergence of transport velocity at cell centers at a depth of approximately 250 m

B.28.63 relativeVorticityVertexAt250m

Type:	real
Units:	s⁻1
Dimension:	nVertices Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % relativeVorticityVertexAt250m

Table B.1841: relativeVorticityVertexAt250m: relative vorticity at cell vertices at a depth of approximately 250 m

B.28.64 temperatureAtSurface

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAtSurface Array:	domain % blocklist % highFrequencyOutputAM % index_temperatureAtSurface

Location in code:	domain % blocklist % highFrequencyOutputAM % temperatureAtSurface
Array Group:	activeTracersAtSurface

Table B.1842: temperatureAtSurface: ocean temperature at top layer

B.28.65 salinityAtSurface

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAtSurface Array:	domain % blocklist % highFrequencyOutputAM % index_salinityAtSurface
Location in code:	domain % blocklist % highFrequencyOutputAM % salinityAtSurface
Array Group:	activeTracersAtSurface

Table B.1843: salinityAtSurface: salinity at top layer

B.28.66 temperatureAt250m

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAt250m Array:	domain % blocklist % highFrequencyOutputAM % index_temperatureAt250m
Location in code:	domain % blocklist % highFrequencyOutputAM % temperatureAt250m
Array Group:	activeTracersAt250m

Table B.1844: temperatureAt250m: ocean temperature at 250 m

B.28.67 salinityAt250m

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nCells Time

Persistence:	persistent
Index in activeTracersAt250m Array:	domain % blocklist % highFrequencyOutputAM % index_salinityAt250m
Location in code:	domain % blocklist % highFrequencyOutputAM % salinityAt250m
Array Group:	activeTracersAt250m

Table B.1845: salinityAt250m: salinity at 250 m

B.28.68 temperatureAtBottom

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAtBottom Array:	domain % blocklist % highFrequencyOutputAM % index_temperatureAtBottom
Location in code:	domain % blocklist % highFrequencyOutputAM % temperatureAtBottom
Array Group:	activeTracersAtBottom

Table B.1846: temperatureAtBottom: ocean temperature at bottom

B.28.69 salinityAtBottom

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAtBottom Array:	domain % blocklist % highFrequencyOutputAM % index_salinityAtBottom
Location in code:	domain % blocklist % highFrequencyOutputAM % salinityAtBottom
Array Group:	activeTracersAtBottom

Table B.1847: salinityAtBottom: salinity at bottom

B.28.70 kineticEnergyAtBottom

Type:	real
Units:	$m^2 s^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % kineticEnergyAtBottom

Table B.1848: kineticEnergyAtBottom: kinetic energy at cell centers at bottom

B.28.71 relativeVorticityAtBottom

Type:	real
Units:	s^-1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % relativeVorticityAtBottom

Table B.1849: relativeVorticityAtBottom: relative vorticity at cell centers at bottom

B.28.72 divergenceAtBottom

Type:	real
Units:	s^-1
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % highFrequencyOutputAM % divergenceAtBottom

Table B.1850: divergenceAtBottom: divergence at cell centers at bottom

B.28.73 temperatureAvgTopto0100

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAvgTopto0100 Array:	domain % blocklist % highFrequencyOutputAM % index_temperatureAvgTopto0100

Location in code:	domain % blocklist % highFrequencyOutputAM % temperatureAvgTopto0100
Array Group:	activeTracersAvgTopto0100

Table B.1851: temperatureAvgTopto0100: ocean temperature averaged between surface and 100 m

B.28.74 salinityAvgTopto0100

Type:	real
Units:	$1\,e-3$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAvgTopto0100 Array:	domain % blocklist % highFrequencyOutputAM % index_salinityAvgTopto0100
Location in code:	domain % blocklist % highFrequencyOutputAM % salinityAvgTopto0100
Array Group:	activeTracersAvgTopto0100

Table B.1852: salinityAvgTopto0100: salinity averaged between surface and 100 m

B.28.75 temperatureAvg0100to0250

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAvg0100to0250 Array:	domain % blocklist % highFrequencyOutputAM % index_temperatureAvg0100to0250
Location in code:	domain % blocklist % highFrequencyOutputAM % temperatureAvg0100to0250
Array Group:	activeTracersAvg0100to0250

Table B.1853: temperatureAvg0100to0250: ocean temperature averaged between surface and 100 m

B.28.76 salinityAvg0100to0250

Type:	real

Units:	1 e − 3
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAvg0100to0250 Array:	domain % blocklist % highFrequencyOutputAM % index_salinityAvg0100to0250
Location in code:	domain % blocklist % highFrequencyOutputAM % salinityAvg0100to0250
Array Group:	activeTracersAvg0100to0250

Table B.1854: salinityAvg0100to0250: salinity averaged between surface and 100 m

B.28.77 temperatureAvg0250to0700

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAvg0250to0700 Array:	domain % blocklist % highFrequencyOutputAM % index_temperatureAvg0250to0700
Location in code:	domain % blocklist % highFrequencyOutputAM % temperatureAvg0250to0700
Array Group:	activeTracersAvg0250to0700

Table B.1855: temperatureAvg0250to0700: ocean temperature averaged between surface and 100 m

B.28.78 salinityAvg0250to0700

Type:	real
Units:	1 e − 3
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAvg0250to0700 Array:	domain % blocklist % highFrequencyOutputAM % index_salinityAvg0250to0700
Location in code:	domain % blocklist % highFrequencyOutputAM % salinityAvg0250to0700
Array Group:	activeTracersAvg0250to0700

Table B.1856: salinityAvg0250to0700: salinity averaged between surface and 100 m

B.28.79 temperatureAvg0700to2000

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAvg0700to2000 Array:	domain % blocklist % highFrequencyOutputAM % index_temperatureAvg0700to2000
Location in code:	domain % blocklist % highFrequencyOutputAM % temperatureAvg0700to2000
Array Group:	activeTracersAvg0700to2000

Table B.1857: temperatureAvg0700to2000: ocean temperature averaged between surface and 100 m

B.28.80 salinityAvg0700to2000

Type:	real
Units:	$1\,e-3$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAvg0700to2000 Array:	domain % blocklist % highFrequencyOutputAM % index_salinityAvg0700to2000
Location in code:	domain % blocklist % highFrequencyOutputAM % salinityAvg0700to2000
Array Group:	activeTracersAvg0700to2000

Table B.1858: salinityAvg0700to2000: salinity averaged between surface and 100 m

B.28.81 temperatureAvg2000toBottom

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAvg2000toBottom Array:	domain % blocklist % highFrequencyOutputAM % index_temperatureAvg2000toBottom
Location in code:	domain % blocklist % highFrequencyOutputAM % temperatureAvg2000toBottom
Array Group:	activeTracersAvg2000toBottom

Table B.1859: temperatureAvg2000toBottom: ocean temperature averaged between surface and 100 m

B.28.82 salinityAvg2000toBottom

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersAvg2000toBottom Array:	domain % blocklist % highFrequencyOutputAM % index_salinityAvg2000toBottom
Location in code:	domain % blocklist % highFrequencyOutputAM % salinityAvg2000toBottom
Array Group:	activeTracersAvg2000toBottom

Table B.1860: salinityAvg2000toBottom: salinity averaged between surface and 100 m

B.29 timeFiltersAM

B.29.1 normalVelocityLowPass

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % normalVelocityLowPass

Table B.1861: normalVelocityLowPass: Low-pass filtered normal velocity.

B.29.2 normalVelocityHighPass

Type:	real
Units:	$\mathrm{m\,s^{-}1}$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % normalVelocityHighPass

Table B.1862: normalVelocityHighPass: High-pass filtered normal velocity.

B.29.3 normalVelocityFilterTest

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % normalVelocityFilterTest

Table B.1863: normalVelocityFilterTest: normalVelocityTest (for testing purposes).

B.29.4 velocityZonalLowPass

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % velocityZonalLowPass

Table B.1864: velocityZonalLowPass: Low-pass time filtered component of horizontal velocity in the eastward direction

B.29.5 velocityMeridionalLowPass

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % velocityMeridionalLowPass

Table B.1865: velocityMeridionalLowPass: Low-pass time filtered component of horizontal velocity in the northward direction

B.29.6 velocityZonalHighPass

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time

Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % velocityZonalHigh-Pass

Table B.1866: velocityZonalHighPass: High-pass time filtered component of horizontal velocity in the eastward direction

B.29.7 velocityMeridionalHighPass

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % velocityMeridional-HighPass

Table B.1867: velocityMeridionalHighPass: High-pass time filtered component of horizontal velocity in the northward direction

B.29.8 velocityXLowPass

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % velocityXLowPass

Table B.1868: velocityXLowPass: Low-pass time filtered component of horizontal velocity in the x-direction (cartesian)

B.29.9 velocityYLowPass

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % velocityYLowPass

Table B.1869: velocityYLowPass: Low-pass time filtered component of horizontal velocity in the x-direction (cartesian)

B.29.10 velocityZLowPass

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % velocityZLowPass

Table B.1870: velocityZLowPass: Low-pass time filtered component of horizontal velocity in the x-direction (cartesian)

B.29.11 velocityXHighPass

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % velocityXHighPass

Table B.1871: velocityXHighPass: High-pass time filtered component of horizontal velocity in the x-direction (cartesian)

B.29.12 velocityYHighPass

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % velocityYHighPass

Table B.1872: velocityYHighPass: High-pass time filtered component of horizontal velocity in the x-direction (cartesian)

B.29.13 velocityZHighPass

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % timeFiltersAM % velocityZHighPass

Table B.1873: velocityZHighPass: High-pass time filtered component of horizontal velocity in the x-direction (cartesian)

B.30 lagrPartTrackRegions

B.30.1 resetOutsideRegionMaskValue1

Type:	integer
Units:	–
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackRegions % resetOutsideRegionMaskValue1

Table B.1874: resetOutsideRegionMaskValue1: Mask for particle resets that leave this particular region (specified by 1)

B.30.2 resetInsideRegionMaskValue1

Type:	integer
Units:	–
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackRegions % resetInsideRegionMaskValue1

Table B.1875: resetInsideRegionMaskValue1: Mask for particle resets that enter this particular region (specified by 1)

B.31 lagrPartTrackScalars

B.31.1 globalResetTimeValue

Type:	real
Units:	s
Dimension:	Time
Persistence:	persistent

Location in code:	domain % blocklist % lagrPartTrackScalars % globalResetTimeValue

Table B.1876: globalResetTimeValue: Time in s for a global reset.

B.32 lagrPartTrackFields

B.32.1 uVertexVelocity

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nVertices Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackFields % time_levs(:) % lagrPartTrackFields % uVertexVelocity

Table B.1877: uVertexVelocity: recostructed u horizontal velocity at vertices

B.32.2 vVertexVelocity

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nVertices Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackFields % time_levs(:) % lagrPartTrackFields % vVertexVelocity

Table B.1878: vVertexVelocity: recostructed v horizontal velocity at vertices

B.32.3 wVertexVelocity

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nVertices Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackFields % time_levs(:) % lagrPartTrackFields % wVertexVelocity

Table B.1879: wVertexVelocity: recostructed w horizontal velocity at vertices

B.32.4 buoyancy

Type:	real
Units:	kg m$^-$3
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackFields % time_levs(:) % lagrPartTrackFields % buoyancy

Table B.1880: buoyancy: buoyancy values at cell mid points, currently proxy for density

B.33 lagrPartTrackCells

B.33.1 cellOwnerBlock

Type:	integer
Units:	–
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackCells % cellOwnerBlock

Table B.1881: cellOwnerBlock: designates ownership of cell in terms of computational block

B.33.2 filteredVelocityW

Type:	real
Units:	m s$^-$1
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackCells % filteredVelocityW

Table B.1882: filteredVelocityW: filtered u horizontal velocity at cells

B.33.3 filteredVelocityV

Type:	real
Units:	m s$^-$1
Dimension:	nVertLevels nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % lagrPartTrackCells % filteredVelocityV

Table B.1883: filteredVelocityV: filtered v horizontal velocity at cells

B.33.4 filteredVelocityU

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackCells % filteredVelocityU

Table B.1884: filteredVelocityU: filtered w horizontal velocity at cells

B.33.5 buoyancySurfaceVelocityZonal

Type:	real
Units:	$m\,s^-1$
Dimension:	nBuoyancySurfaces nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackCells % buoyancySurfaceVelocityZonal

Table B.1885: buoyancySurfaceVelocityZonal: horizontal zonal velocity on buoyancy surface

B.33.6 buoyancySurfaceVelocityMeridional

Type:	real
Units:	$m\,s^-1$
Dimension:	nBuoyancySurfaces nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackCells % buoyancySurfaceVelocityMeridional

Table B.1886: buoyancySurfaceVelocityMeridional: horizontal meridional velocity on buoyancy surface

B.33.7 buoyancySurfaceDepth

Type:	real
Units:	$m\,s^{-}1$
Dimension:	nBuoyancySurfaces nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackCells % buoyancySurfaceDepth

Table B.1887: buoyancySurfaceDepth: depth of buoyancy surface

B.33.8 buoyancySurfaceValues

Type:	real
Units:	$kg\,m^{-}3$
Dimension:	nBuoyancySurfaces
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackCells % buoyancySurfaceValues

Table B.1888: buoyancySurfaceValues: definition of buoyancy surfaces in terms of potential density

B.33.9 wachspressAreaB

Type:	real
Units:	m^2
Dimension:	nCells maxEdges
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackCells % wachspressAreaB

Table B.1889: wachspressAreaB: cached polygon subarea B_i used in Wachspess calculation

B.34 lagrPartTrackHalo

B.34.1 ioBlock

Type:	integer
Units:	–
Dimension:	nParticles

Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % ioBlock

Table B.1890: ioBlock: input / output Proc for particle

B.34.2 currentBlock

Type:	integer
Units:	–
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % currentBlock

Table B.1891: currentBlock: current block a particle is on

B.34.3 currentCell

Type:	integer
Units:	–
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % currentCell

Table B.1892: currentCell: current local cell a particle is on

B.34.4 currentCellGlobalID

Type:	integer
Units:	–
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % currentCellGlobalID

Table B.1893: currentCellGlobalID: current global cell a particle is on

B.34.5 indexToParticleID

Type:	integer
Units:	–
Dimension:	nParticles
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % indexToParticleID

Table B.1894: indexToParticleID: designates global ID for a particle

B.34.6 xParticle

Type:	real
Units:	m
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % xParticle

Table B.1895: xParticle: x location of horizontal particle position

B.34.7 yParticle

Type:	real
Units:	m
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % yParticle

Table B.1896: yParticle: y location of horizontal particle position

B.34.8 zParticle

Type:	real
Units:	m
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % zParticle

Table B.1897: zParticle: z location of horizontal particle position

B.34.9 lonParticle

Type:	real
Units:	m
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % lonParticle

Table B.1898: lonParticle: longitude location of horizontal particle position

B.34.10 latParticle

Type:	real
Units:	m
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % latParticle

Table B.1899: latParticle: latitude location of horizontal particle position

B.34.11 zLevelParticle

Type:	real
Units:	m
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % zLevelParticle

Table B.1900: zLevelParticle: z-level for vertical elevation of particle position

B.34.12 xParticleReset

Type:	real
Units:	m
Dimension:	nParticles
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % xParticleReset

Table B.1901: xParticleReset: reset x location of horizontal particle position

B.34.13 yParticleReset

Type:	real
Units:	m
Dimension:	nParticles
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % yParticleReset

Table B.1902: yParticleReset: reset y location of horizontal particle position

B.34.14 zParticleReset

Type:	real
Units:	m
Dimension:	nParticles
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % zParticleReset

Table B.1903: zParticleReset: reset z location of horizontal particle position

B.34.15 zLevelParticleReset

Type:	real
Units:	m
Dimension:	nParticles
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % zLevelParticleReset

Table B.1904: zLevelParticleReset: reset z-level for vertical elevation of particle position

B.34.16 currentBlockReset

Type:	integer
Units:	–
Dimension:	nParticles
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % currentBlockReset

Table B.1905: currentBlockReset: reset block for a particle

B.34.17 currentCellReset

Type:	integer
Units:	–
Dimension:	nParticles
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % currentCellReset

Table B.1906: currentCellReset: reset cell for a particle

B.34.18 timeSinceReset

Type:	real
Units:	m
Dimension:	nParticles
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % timeSinceReset

Table B.1907: timeSinceReset: time (in seconds) since last particle reset

B.34.19 resetTime

Type:	integer
Units:	m
Dimension:	nParticles
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % resetTime

Table B.1908: resetTime: reset timer (in seconds) for particles

B.34.20 numTimesReset

Type:	integer
Units:	–
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % numTimesReset

Table B.1909: numTimesReset: flag to specify how many times the particle was reset

B.34.21 verticalTreatment

Type:	integer
Units:	–
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % verticalTreatment

Table B.1910: verticalTreatment: select type of vertical treatment to be used, with possible_values='indexLevel','fixedZLevel','passiveFloat','buoyancySurface','argoFloat' (ENUM)

B.34.22 indexLevel

Type:	integer
Units:	–
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % indexLevel

Table B.1911: indexLevel: 0 if particle is fixed, or index level if particle is free-floating

B.34.23 dtParticle

Type:	real
Units:	s
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % dtParticle

Table B.1912: dtParticle: Any positive real value, but limited by CFL condition.

B.34.24 buoyancyParticle

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % buoyancyParticle

Table B.1913: buoyancyParticle: buoyancy values for particle, currently proxy for density

B.34.25 transfered

Type:	integer
Units:	–
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % transfered

Table B.1914: transfered: flag to monitor if the particle was transfered

B.34.26 particleTemperature

Type:	real
Units:	C
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % particleTemperature

Table B.1915: particleTemperature: sampled temperature for particle

B.34.27 particleSalinity

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % particleSalinity

Table B.1916: particleSalinity: sampled salinity for particle in grams salt per kilogram seawater

B.34.28 particleDIC

Type:	real

Units:	mmol m^-3
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % particleDIC

Table B.1917: particleDIC: sampled dissolved inorganic carbon for particle

B.34.29 particleALK

Type:	real
Units:	meq m^-3
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % particleALK

Table B.1918: particleALK: sampled alkalinity for particle

B.34.30 particlePO4

Type:	real
Units:	mmol m^-3
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % particlePO4

Table B.1919: particlePO4: sampled dissolved inorganic phosphate for particle

B.34.31 particleNO3

Type:	real
Units:	meq m^-3
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % particleNO3

Table B.1920: particleNO3: sampled dissolved inorganic nitrate for particle

B.34.32 particleSiO3

Type:	real
Units:	mmol m^{-}3
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % particleSiO3

Table B.1921: particleSiO3: sampled dissolved inorganic silicate for particle

B.34.33 particleNH4

Type:	real
Units:	meq m^{-}3
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % particleNH4

Table B.1922: particleNH4: sampled dissolved inorganic ammonia for particle

B.34.34 particleFe

Type:	real
Units:	mmol m^{-}3
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % particleFe

Table B.1923: particleFe: sampled dissolved inorganic iron for particle

B.34.35 particleO2

Type:	real
Units:	meq m^{-}3
Dimension:	nParticles Time
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackHalo % particleO2

Table B.1924: particleO2: sampled dissolved oxygen for particle

B.35 lagrPartTrackScratch

B.35.1 ucReconstructX

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % ucReconstructX

Table B.1925: ucReconstructX: reconstructed cell center velocity- x component

B.35.2 ucReconstructY

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % ucReconstructY

Table B.1926: ucReconstructY: reconstructed cell center velocity- y component

B.35.3 ucReconstructZ

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % ucReconstructZ

Table B.1927: ucReconstructZ: reconstructed cell center velocity- z component

B.35.4 ucTemp

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells

Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % ucTemp

Table B.1928: ucTemp: cell velocity

B.35.5 ucX

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % ucX

Table B.1929: ucX: cell velocity- x component

B.35.6 ucY

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % ucY

Table B.1930: ucY: cell velocity- y component

B.35.7 ucZ

Type:	real
Units:	$\mathrm{m\,s^-1}$
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % ucZ

Table B.1931: ucZ: cell velocity- z component

B.35.8 uvX

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nVertices
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % uvX

Table B.1932: uvX: vertex velocity- x component

B.35.9 uvY

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nVertices
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % uvY

Table B.1933: uvY: vertex velocity- y component

B.35.10 uvZ

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nVertices
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % uvZ

Table B.1934: uvZ: vertex velocity- z component

B.35.11 ucReconstructMeridional

Type:	real
Units:	$m\,s^-1$
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % ucReconstructMeridional

Table B.1935: ucReconstructMeridional: reconstructed cell center velocity- meridional component

B.35.12 ucReconstructZonal

Type:	real
Units:	m s⁻1
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % ucReconstructZonal

Table B.1936: ucReconstructZonal: reconstructed cell center velocity- zonal component

B.35.13 boundaryVertexGlobal

Type:	integer
Units:	–
Dimension:	nVertLevels nVertices
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % boundaryVertexGlobal

Table B.1937: boundaryVertexGlobal: Mask for determining boundary vertices, but global. A boundary vertex has at least one inactive cell neighboring it.

B.35.14 boundaryCellGlobal

Type:	integer
Units:	–
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % lagrPartTrackScratch % boundaryCellGlobal

Table B.1938: boundaryCellGlobal: Mask for determining boundary cells, but global. A boundary cell has at least one inactive cell neighboring it.

B.36 eliassenPalmAM

B.36.1 potentialDensityMidRef

Type:	real

Units:	$\mathrm{kg\,m^{-}3}$
Dimension:	nBuoyancyLayers
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % potentialDensityMidRef

Table B.1939: potentialDensityMidRef: Potential density target values of buoyancy coordinate layers

B.36.2 potentialDensityTopRef

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Dimension:	nBuoyancyLayers
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % potentialDensityTopRef

Table B.1940: potentialDensityTopRef: Potential density at top of buoyancy coordinate layers

B.36.3 buoyancyMidRef

Type:	real
Units:	$\mathrm{m\,s^{-}2}$
Dimension:	nBuoyancyLayers
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % buoyancyMidRef

Table B.1941: buoyancyMidRef: Buoyancy of buoyancy coordinate layers

B.36.4 buoyancyInterfaceRef

Type:	real
Units:	$\mathrm{m\,s^{-}2}$
Dimension:	nBuoyancyLayersP1
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % buoyancyInterfaceRef

Table B.1942: buoyancyInterfaceRef: Buoyancy at interfaces of buoyancy coordinate layers

B.36.5 buoyancyMaskEA

Type:	real
Units:	–
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % buoyancyMaskEA

Table B.1943: buoyancyMaskEA: ensemble average of the buoyancy mask

B.36.6 sigmaEA

Type:	real
Units:	s$^-$2
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % sigmaEA

Table B.1944: sigmaEA: Inverse of the derivative of buoyancy wrt z, or thickness per unit buoyancy, aka thickness, in buoyancy coordinates, ensemble average

B.36.7 nSamplesEA

Type:	integer
Units:	–
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % nSamplesEA

Table B.1945: nSamplesEA: Number of samples used in the ensamble average

B.36.8 heightMidBuoyCoorEA

Type:	real
Units:	m
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % heightMidBuoy-CoorEA

Table B.1946: heightMidBuoyCoorEA: z-coordinate of each buoyancy layer, ensemble average

B.36.9 montgPotGradZonalEA

Type:	real
Units:	m
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % montgPotGradZonalEA

Table B.1947: montgPotGradZonalEA: Zonal gradient of montgomery potential at cell center in buoyancy coordinates, ensemble average

B.36.10 montgPotGradMeridEA

Type:	real
Units:	m
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % montgPotGradMeridEA

Table B.1948: montgPotGradMeridEA: Meridional gradient of montgomery potential at cell center in buoyancy coordinates, ensemble average

B.36.11 heightMidBuoyCoorSqEA

Type:	real
Units:	m^2
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % heightMidBuoyCoorSqEA

Table B.1949: heightMidBuoyCoorSqEA: z-coordinate of each buoyancy layer, squared, ensemble average

B.36.12 montgPotBuoyCoorEA

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % montgPotBuoyCoorEA

Table B.1950: montgPotBuoyCoorEA: Montgomery potential in buoyancy coordinates, ensemble average

B.36.13 heightMGradZonalEA

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % heightMGradZonalEA

Table B.1951: heightMGradZonalEA: Height times zonal gradient of Montgomery potential in buoyancy coordinates, ensemble average

B.36.14 heightMGradMeridEA

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % heightMGradMeridEA

Table B.1952: heightMGradMeridEA: Height times meridional gradient of Montgomery potential in buoyancy coordinates, ensemble average

B.36.15 usigmaEA

Type:	real
Units:	$m^2 s^-2$

Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % usigmaEA

Table B.1953: usigmaEA: Zonal velocity times sigma, ensemble average

B.36.16 vsigmaEA

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % vsigmaEA

Table B.1954: vsigmaEA: Meridional velocity times sigma, ensemble average

B.36.17 varpisigmaEA

Type:	real
Units:	$m\,s{-}1$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % varpisigmaEA

Table B.1955: varpisigmaEA: Vertical velocity in buoyancy coordinates times sigma, ensemble average

B.36.18 uusigmaEA

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % uusigmaEA

Table B.1956: uusigmaEA: Zonal velocity times zonal velocity times sigma, ensemble average

B.36.19 vvsigmaEA

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % vvsigmaEA

Table B.1957: vvsigmaEA: Meridional velocity times meridional velocity times sigma, ensemble average

B.36.20 uvsigmaEA

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % uvsigmaEA

Table B.1958: uvsigmaEA: Zonal velocity times meridional velocity times sigma, ensemble average

B.36.21 uvarpisigmaEA

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % uvarpisigmaEA

Table B.1959: uvarpisigmaEA: Zonal velocity times vertical velocity in buoyancy coordinates times sigma, ensemble average

B.36.22 vvarpisigmaEA

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % vvarpisigmaEA

Table B.1960: vvarpisigmaEA: Meridional velocity times vertical velocity in buoyancy coordinates times sigma, ensemble average

B.36.23 uTWA

Type:	real
Units:	m s⁻1
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % uTWA

Table B.1961: uTWA: Zonal velocity, thickness weighted

B.36.24 vTWA

Type:	real
Units:	m s⁻1
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % vTWA

Table B.1962: vTWA: Meridional velocity, thickness weighted

B.36.25 varpiTWA

Type:	real
Units:	m s⁻3
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % varpiTWA

Table B.1963: varpiTWA: Vertical velocity, thickness weighted

B.36.26 duTWAdz

Type:	real

Units:	s^-1
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % duTWAdz

Table B.1964: duTWAdz: Derivative of thickness weighted zonal velocity with respect to z (vertical coordinate).

B.36.27 dvTWAdz

Type:	real
Units:	s^-1
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % dvTWAdz

Table B.1965: dvTWAdz: Derivative of thickness weighted meridional velocity with respect to z (vertical coordinate).

B.36.28 EPFT

Type:	real
Units:	$m^2 s^-2$
Dimension:	R3 R3 nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % EPFT

Table B.1966: EPFT: Eliassen-Palm flux tensor

B.36.29 uuTWACorr

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % uuTWACorr

Table B.1967: uuTWACorr: Thickness-weighted averaged eddy u-u correlation.

B.36.30 vvTWACorr

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % vvTWACorr

Table B.1968: vvTWACorr: Thickness-weighted averaged eddy v-v correlation.

B.36.31 uvTWACorr

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % uvTWACorr

Table B.1969: uvTWACorr: Thickness-weighted averaged eddy u-v correlation.

B.36.32 epeTWA

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % epeTWA

Table B.1970: epeTWA: Thickness-weighted averaged eddy potential energy.

B.36.33 eddyFormDragZonal

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % eddyFormDrag-Zonal

Table B.1971: eddyFormDragZonal: Thickness-weighted averaged eddy form drag in x

B.36.34 eddyFormDragMerid

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % eddyFormDragMerid

Table B.1972: eddyFormDragMerid: Thickness-weighted averaged eddy form drag in y

B.36.35 divEPFT

Type:	real
Units:	$m s^-2$
Dimension:	R3 nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % divEPFT

Table B.1973: divEPFT: Divergence of the Eliassen-Palm flux tensor, in buoyancy coordinates

B.36.36 divEPFT1

Type:	real
Units:	$m s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % divEPFT1

Table B.1974: divEPFT1: First component of the divergence of the Eliassen-Palm flux tensor, in buoyancy coordinates

B.36.37 divEPFT2

Type:	real
Units:	$m s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % divEPFT2

Table B.1975: divEPFT2: Second component of the divergence of the Eliassen-Palm flux tensor, in buoyancy coordinates

B.36.38 divEPFTshear1

Type:	real
Units:	m s$^-$2
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % divEPFTshear1

Table B.1976: divEPFTshear1: First component of divergence of shear components of the Eliassen-Palm flux tensor, in buoyancy coordinates

B.36.39 divEPFTshear2

Type:	real
Units:	m s$^-$2
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % divEPFTshear2

Table B.1977: divEPFTshear2: Second component of divergence of shear components of the Eliassen-Palm flux tensor, in buoyancy coordinates

B.36.40 divEPFTdrag1

Type:	real
Units:	m s$^-$2
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % divEPFTdrag1

Table B.1978: divEPFTdrag1: First component of divergence of form drag components of the Eliassen-Palm flux tensor, in buoyancy coordinates

B.36.41 divEPFTdrag2

Type:	real
Units:	m s$^-$2
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % divEPFTdrag2

Table B.1979: divEPFTdrag2: Second component of divergence of form drag components of the Eliassen-Palm flux tensor, in buoyancy coordinates

B.36.42 ErtelPVFlux

Type:	real
Units:	m s$^-$4
Dimension:	R3 nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % ErtelPVFlux

Table B.1980: ErtelPVFlux: Ertel potential vorticity flux in buoyancy coordinates

B.36.43 ErtelPVFlux1

Type:	real
Units:	m s$^-$4
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % ErtelPVFlux1

Table B.1981: ErtelPVFlux1: First component of the Ertel potential vorticity flux in buoyancy coordinates

B.36.44 ErtelPVFlux2

Type:	real
Units:	m s$^-$4
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % ErtelPVFlux2

Table B.1982: ErtelPVFlux2: Second component of the Ertel potential vorticity flux in buoyancy coordinates

B.36.45 ErtelPVTendency

Type:	real
Units:	s^-4
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % ErtelPVTendency

Table B.1983: ErtelPVTendency: Tendency of Ertel PV due to divergence of eddy PV fluxes

B.36.46 ErtelPV

Type:	real
Units:	s^-3
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % ErtelPV

Table B.1984: ErtelPV: Ertel PV on buoyancy surfaces

B.36.47 ErtelPVGradZonal

Type:	real
Units:	$m^-1 s^-3$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % ErtelPVGradZonal

Table B.1985: ErtelPVGradZonal: Ertel PV on buoyancy surfaces

B.36.48 ErtelPVGradMerid

Type:	real

Units:	$m^-1 s^-3$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAM % ErtelPVGradMerid

Table B.1986: ErtelPVGradMerid: Ertel PV on buoyancy surfaces

B.37 eliassenPalmAMPKGScratch

B.37.1 firstLayerBuoyCoor

Type:	integer
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % first-LayerBuoyCoor

Table B.1987: firstLayerBuoyCoor: index, in buoyancy coordinates, of the first layer in column for a given cell

B.37.2 lastLayerBuoyCoor

Type:	integer
Units:	–
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % last-LayerBuoyCoor

Table B.1988: lastLayerBuoyCoor: index, in buoyancy coordinates, of the last layer in column for a given cell

B.37.3 heightMidBuoyCoor

Type:	real
Units:	m
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % heightMidBuoyCoor

Table B.1989: heightMidBuoyCoor: Height (z-coordinate) of buoyancy layer

B.37.4 heightTopBuoyCoor

Type:	real
Units:	m
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % heightTopBuoyCoor

Table B.1990: heightTopBuoyCoor: Height (z-coordinate) at top of buoyancy layer

B.37.5 heightInterfaceBuoyCoor

Type:	real
Units:	m
Dimension:	nBuoyancyLayersP1 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % heightInterfaceBuoyCoor

Table B.1991: heightInterfaceBuoyCoor: Height (z-coordinate) of the interfaces of buoyancy layer

B.37.6 sigma

Type:	real
Units:	s^-2
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % sigma

Table B.1992: sigma: Inverse of the derivative of buoyancy wrt z, aka thickness, in buoyancy coordinates

B.37.7 montgPotBuoyCoor

Type:	real
Units:	$m^2 s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % montgPotBuoyCoor

Table B.1993: montgPotBuoyCoor: Montgomery potential in buoyancy coordinates

B.37.8 montgPotNormalGradOnEdge

Type:	real
Units:	$m s^-2$
Dimension:	nBuoyancyLayers nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % montgPotNormalGradOnEdge

Table B.1994: montgPotNormalGradOnEdge: Normal gradient of the montgomery potential in buoyancy coordinates

B.37.9 uMidBuoyCoor

Type:	real
Units:	$m s^-1$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % uMidBuoyCoor

Table B.1995: uMidBuoyCoor: Longitudinal velocity at middle of layers in buoyancy coordinates

B.37.10 vMidBuoyCoor

Type:	real
Units:	$m s^-1$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % vMidBuoyCoor

Table B.1996: vMidBuoyCoor: Meridional velocity at the middle of layers in buoyancy coordinates

B.37.11 densityMidBuoyCoor

Type:	real
Units:	$m\,s^-1$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % densityMidBuoyCoor

Table B.1997: densityMidBuoyCoor: In-situ density at middle of layers in buoyancy coordinates

B.37.12 densityTopBuoyCoor

Type:	real
Units:	$m\,s^-1$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % densityTopBuoyCoor

Table B.1998: densityTopBuoyCoor: In-situ density at top of layers in buoyancy coordinates

B.37.13 buoyancyMask

Type:	real
Units:	–
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % buoyancyMask

Table B.1999: buoyancyMask: mask in buoyancy coordinates, ocean cells are 1

B.37.14 montgPotGradX

Type:	real
Units:	$m\,s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % montgPotGradX

Table B.2000: montgPotGradX: x component of gradient of montgomery potential at cell center in buoyancy coordinates

B.37.15 montgPotGradY

Type:	real
Units:	$m\,s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % montgPotGradY

Table B.2001: montgPotGradY: y component of gradient of montgomery potential at cell center in buoyancy coordinates

B.37.16 montgPotGradZ

Type:	real
Units:	$m\,s^-2$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % montgPotGradZ

Table B.2002: montgPotGradZ: z component of gradient of montgomery potential at cell center in buoyancy coordinates

B.37.17 montgPotGradZonal

Type:	real
Units:	$m\,s^-2$

Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % montgPotGradZonal

Table B.2003: montgPotGradZonal: Zonal component of gradient of montgomery potential at cell center in buoyancy coordinates

B.37.18 montgPotGradMerid

Type:	real
Units:	$\mathrm{m\,s^-2}$
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % montgPotGradMerid

Table B.2004: montgPotGradMerid: Meridional component of gradient of montgomery potential at cell center in buoyancy coordinates

B.37.19 wrk3DnVertLevelsP1

Type:	real
Units:	–
Dimension:	nVertLevelsP1 nCells
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % wrk3DnVertLevelsP1

Table B.2005: wrk3DnVertLevelsP1: work array

B.37.20 wrk3DnVertLevels

Type:	real
Units:	–
Dimension:	nVertLevels nCells
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % wrk3DnVertLevels

Table B.2006: wrk3DnVertLevels: work array

B.37.21 wrk3DBuoyCoor

Type:	real
Units:	–
Dimension:	nBuoyancyLayers nCells
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % wrk3DBuoyCoor

Table B.2007: wrk3DBuoyCoor: work array

B.37.22 ErtelPVNormalGradOnEdge

Type:	real
Units:	s⁻4
Dimension:	nBuoyancyLayers nEdges
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % ErtelPVNormalGradOnEdge

Table B.2008: ErtelPVNormalGradOnEdge: Normal gradient of EPV in buoyancy coordinates

B.37.23 ErtelPVGradX

Type:	real
Units:	s⁻4
Dimension:	nBuoyancyLayers nCells
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % ErtelPVGradX

Table B.2009: ErtelPVGradX: X component of gradient of EPV in buoyancy coordinates

B.37.24 ErtelPVGradY

Type:	real
Units:	s^-4
Dimension:	nBuoyancyLayers nCells
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % ErtelPVGradY

Table B.2010: ErtelPVGradY: Y component of gradient of EPV in buoyancy coordinates

B.37.25 ErtelPVGradZ

Type:	real
Units:	s^-4
Dimension:	nBuoyancyLayers nCells
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % ErtelPVGradZ

Table B.2011: ErtelPVGradZ: Z component of gradient of EPV in buoyancy coordinates

B.37.26 wrkVector

Type:	real
Units:	–
Dimension:	R3 nBuoyancyLayers nCells
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % wrkVector

Table B.2012: wrkVector: Work vector array

B.37.27 wrkTensor

Type:	real
Units:	–
Dimension:	R3 R3 nBuoyancyLayers nCells
Persistence:	persistent

Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % wrkTensor

Table B.2013: wrkTensor: Work tensor array

B.37.28 array1_3D

Type:	real
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % array1_3D

Table B.2014: array1_3D: test array 1, in depth coordinates

B.37.29 array2_3D

Type:	real
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % array2_3D

Table B.2015: array2_3D: test array 2, in depth coordinates

B.37.30 array3_3D

Type:	real
Units:	–
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % array3_3D

Table B.2016: array3_3D: test array 3, in depth coordinates

B.37.31 array1_3Dbuoy

Type:	real
Units:	–
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % array1_3Dbuoy

Table B.2017: array1_3Dbuoy: test array 1, in buoyancy coordinates

B.37.32 array2_3Dbuoy

Type:	real
Units:	–
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % array2_3Dbuoy

Table B.2018: array2_3Dbuoy: test array 2, in buoyancy coordinates

B.37.33 PVMidBuoyCoor

Type:	real
Units:	–
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % PVMidBuoyCoor

Table B.2019: PVMidBuoyCoor: Potential vorticity at cell center, in buoyancy coordinates

B.37.34 PVMidBuoyCoorEA

Type:	real
Units:	–
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % PVMidBuoyCoorEA

Table B.2020: PVMidBuoyCoorEA: Potential vorticity at cell center, in buoyancy coordinates, ensemble average

B.37.35 uMidBuoyCoorEA

Type:	real
Units:	–
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % uMidBuoyCoorEA

Table B.2021: uMidBuoyCoorEA: Zonal velocity at cell center, in buoyancy coordinates, ensemble average

B.37.36 vMidBuoyCoorEA

Type:	real
Units:	–
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % vMidBuoyCoorEA

Table B.2022: vMidBuoyCoorEA: Meridional velocity at cell center, in buoyancy coordinates, ensemble average

B.37.37 uPVMidBuoyCoorEA

Type:	real
Units:	–
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % uPVMidBuoyCoorEA

Table B.2023: uPVMidBuoyCoorEA: Zonal velocity times Potential vorticity at cell center, in buoyancy coordinates, ensemble average

B.37.38 vPVMidBuoyCoorEA

Type:	real
Units:	–
Dimension:	nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % vPVMidBuoyCoorEA

Table B.2024: vPVMidBuoyCoorEA: Meridional velocity times Potential vorticity at cell center, in buoyancy coordinates, ensemble average

B.37.39 PVFluxTest

Type:	real
Units:	–
Dimension:	TWO nBuoyancyLayers nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eliassenPalmAMPKGScratch % PVFluxTest

Table B.2025: PVFluxTest: Potential vorticity flux test vector, in buoyancy coordinates

B.38 mixedLayerDepthsAM

B.38.1 tThreshMLD

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % mixedLayerDepthsAM % tThreshMLD

Table B.2026: tThreshMLD: mixed layer depth based on temperature threshold

B.38.2 tGradMLD

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % mixedLayerDepthsAM % tGradMLD

Table B.2027: tGradMLD: mixed layer depth based on gradient of temperature

B.38.3 dGradMLD

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % mixedLayerDepthsAM % dGradMLD

Table B.2028: dGradMLD: mixed layer depth based on gradient of density

B.39 mixedLayerDepthAMScratch

B.39.1 pressureAdjustedForLandIceScratch

Type:	real
Units:	various
Dimension:	nVertLevels nCells Time
Persistence:	scratch
Location in code:	domain % blocklist % mixedLayerDepthAMScratch % pressureAdjustedForLandIceScratch

Table B.2029: pressureAdjustedForLandIceScratch: temporary array to hold pressure

B.40 regionalStatsAM

B.40.1 regionalStatsOneString

Type:	text
Units:	–

Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % regionalStatsAM % regionalStatsOneString

Table B.2030: regionalStatsOneString: a placeholder string so that regionalStats has a memory to duplicate per instance

B.40.2 regionalStatsOneInteger

Type:	integer
Units:	–
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % regionalStatsAM % regionalStatsOneInteger

Table B.2031: regionalStatsOneInteger: a placeholder integer so that regionalStats has a memory to duplicate per instance

B.40.3 regionalStatsOneReal

Type:	real
Units:	–
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % regionalStatsAM % regionalStatsOneReal

Table B.2032: regionalStatsOneReal: a placeholder real so that regionalStats has a memory to duplicate per instance

B.41 timeSeriesStatsAM

B.41.1 timeSeriesStatsOneString

Type:	text
Units:	–
Dimension:	Time

Persistence:	persistent
Location in code:	domain % blocklist % timeSeriesStatsAM % timeSeriesStatsOneString

Table B.2033: timeSeriesStatsOneString: **MISSING**

B.41.2 timeSeriesStatsOneInteger

Type:	integer
Units:	–
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % timeSeriesStatsAM % timeSeriesStatsOneInteger

Table B.2034: timeSeriesStatsOneInteger: **MISSING**

B.41.3 timeSeriesStatsOneReal

Type:	real
Units:	–
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % timeSeriesStatsAM % timeSeriesStatsOneReal

Table B.2035: timeSeriesStatsOneReal: **MISSING**

B.42 transectTransportAM

B.42.1 transectEdgeMasksMax

Type:	integer
Units:	–
Dimension:	nTransects
Persistence:	persistent
Location in code:	domain % blocklist % transectTransportAM % transectEdgeMasksMax

Table B.2036: transectEdgeMasksMax: max of transectEdgeMasks for this processor.

B.42.2 transectVolumeTransport

Type:	real
Units:	Sverdrup
Dimension:	nTransects Time
Persistence:	persistent
Location in code:	domain % blocklist % transectTransportAM % transectVolumeTransport

Table B.2037: transectVolumeTransport: Transport through transect of edges.

B.42.3 transectVolumeTransportZ

Type:	real
Units:	Sverdrup
Dimension:	nVertLevels nTransects Time
Persistence:	persistent
Location in code:	domain % blocklist % transectTransportAM % transectVolumeTransportZ

Table B.2038: transectVolumeTransportZ: Transport through transect of edges, with depth coordinate.

B.43 eddyProductVariablesAM

B.43.1 SSHSquared

Type:	real
Units:	m^2
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % SSHSquared

Table B.2039: SSHSquared: cell-wise square of sea surface height

B.43.2 velocityZonalSquared

Type:	real
Units:	$m^2 s^-2$

Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityZonalSquared

Table B.2040: velocityZonalSquared: cell-wise square of component of horizontal velocity in the eastward direction

B.43.3 velocityMeridionalSquared

Type:	real
Units:	$m^2 s^-2$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityMeridionalSquared

Table B.2041: velocityMeridionalSquared: cell-wise square of component of horizontal velocity in the northward direction

B.43.4 velocityZonalTimesTemperature

Type:	real
Units:	$m s^-1 C$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityZonalTimesTemperature

Table B.2042: velocityZonalTimesTemperature: cell-wise product of component of horizontal velocity in the eastward direction and temperature

B.43.5 velocityMeridionalTimesTemperature

Type:	real
Units:	$m s^-1 C$
Dimension:	nVertLevels nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % eddyProductVariablesAM % velocityMeridionalTimesTemperature

Table B.2043: velocityMeridionalTimesTemperature: cell-wise product of component of horizontal velocity in the northward direction and temperature

B.43.6 normalVelocitySquared

Type:	real
Units:	$m^2 s^-2$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % normalVelocitySquared

Table B.2044: normalVelocitySquared: edge based square of normal velocity

B.43.7 normalVelocityTimesTemperature

Type:	real
Units:	$m s^-1 C$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % normalVelocityTimesTemperature

Table B.2045: normalVelocityTimesTemperature: edge based product of normal velocity and temperature

B.43.8 velocityZonalTimesTemperature_GM

Type:	real
Units:	$m s^-1 C$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityZonalTimesTemperature_GM

Table B.2046: velocityZonalTimesTemperature_GM: cell-wise product of component of horizontal bolus velocity in the eastward direction and temperature

B.43.9 velocityMeridionalTimesTemperature_GM

Type:	real
Units:	$m\,s^-1\,C$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityMeridionalTimesTemperature_GM

Table B.2047: velocityMeridionalTimesTemperature_GM: cell-wise product of component of horizontal bolus velocity in the northward direction and temperature

B.43.10 normalGMBolusVelocitySquared

Type:	real
Units:	$m^2\,s^-2$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % normalGMBolusVelocitySquared

Table B.2048: normalGMBolusVelocitySquared: edge based square of normal velocity

B.43.11 normalGMBolusVelocityTimesTemperature

Type:	real
Units:	$m\,s^-1\,C$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % normalGMBolusVelocityTimesTemperature

Table B.2049: normalGMBolusVelocityTimesTemperature: edge based product of normal velocity and temperature

B.43.12 velocityZonalTimesSalinity

Type:	real
Units:	$1\,e-3\,m\,s^-1$
Dimension:	nVertLevels nCells Time

Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityZonalTimesSalinity

Table B.2050: velocityZonalTimesSalinity: cell-wise product of component of horizontal velocity in the eastward direction and salinity

B.43.13 velocityMeridionalTimesSalinity

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{m\,s}^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityMeridionalTimesSalinity

Table B.2051: velocityMeridionalTimesSalinity: cell-wise product of component of horizontal velocity in the northward direction and salinity

B.43.14 normalVelocityTimesSalinity

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{m\,s}^-1$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % normalVelocityTimesSalinity

Table B.2052: normalVelocityTimesSalinity: edge based product of normal velocity and salinity

B.43.15 velocityZonalTimesSalinity_GM

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{m\,s}^-1$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityZonalTimesSalinity_GM

Table B.2053: velocityZonalTimesSalinity_GM: cell-wise product of component of horizontal bolus velocity in the eastward direction and salinity

B.43.16 velocityMeridionalTimesSalinity_GM

Type:	real
Units:	$1\,\mathrm{e-3\,m\,s^-1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityMeridionalTimesSalinity_GM

Table B.2054: velocityMeridionalTimesSalinity_GM: cell-wise product of component of horizontal bolus velocity in the northward direction and salinity

B.43.17 normalGMBolusVelocityTimesSalinity

Type:	real
Units:	$1\,\mathrm{e-3\,m\,s^-1}$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % normalGMBolusVelocityTimesSalinity

Table B.2055: normalGMBolusVelocityTimesSalinity: edge based product of normal velocity and salinity

B.43.18 velocityZonalTimesTemperature_MLE

Type:	real
Units:	$\mathrm{m\,s^-1\,C}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityZonalTimesTemperature_MLE

Table B.2056: velocityZonalTimesTemperature_MLE: cell-wise product of component of horizontal submeso velocity in the eastward direction and temperature

B.43.19 velocityMeridionalTimesTemperature_MLE

Type:	real
Units:	$\mathrm{m\,s^{-}1\,C}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityMeridionalTimesTemperature_MLE

Table B.2057: velocityMeridionalTimesTemperature_MLE: cell-wise product of component of horizontal submeso velocity in the northward direction and temperature

B.43.20 normalMLEVelocityTimesTemperature

Type:	real
Units:	$\mathrm{m\,s^{-}1\,C}$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % normalMLEVelocityTimesTemperature

Table B.2058: normalMLEVelocityTimesTemperature: edge based product of normal velocity and temperature

B.43.21 velocityZonalTimesSalinity_MLE

Type:	real
Units:	$\mathrm{1\,e-3\,m\,s^{-}1}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityZonalTimesSalinity_MLE

Table B.2059: velocityZonalTimesSalinity_MLE: cell-wise product of component of horizontal submeso velocity in the eastward direction and salinity

B.43.22 velocityMeridionalTimesSalinity_MLE

Type:	real
Units:	$\mathrm{1\,e-3\,m\,s^{-}1}$

Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % velocityMeridionalTimesSalinity_MLE

Table B.2060: velocityMeridionalTimesSalinity_MLE: cell-wise product of component of horizontal submeso velocity in the northward direction and salinity

B.43.23 normalMLEVelocityTimesSalinity

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{m}\,\mathrm{s}^-1$
Dimension:	nVertLevels nEdges Time
Persistence:	persistent
Location in code:	domain % blocklist % eddyProductVariablesAM % normalMLEVelocityTimesSalinity

Table B.2061: normalMLEVelocityTimesSalinity: edge based product of normal velocity and salinity

B.44 mocStreamfunctionAM

B.44.1 mocStreamvalLatAndDepth

Type:	real
Units:	sverdrups
Dimension:	nMocStreamfunctionBinsP1 nVertLevels Time
Persistence:	persistent
Location in code:	domain % blocklist % mocStreamfunctionAM % mocStreamvalLatAndDepth

Table B.2062: mocStreamvalLatAndDepth: The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension)

B.44.2 mocStreamvalLatAndDepthRegion

Type:	real
Units:	sverdrups
Dimension:	nMocStreamfunctionBinsP1 nVertLevels nRegions Time

Persistence:	persistent
Location in code:	domain % blocklist % mocStreamfunctionAM % mocStreamvalLatAndDepthRegion

Table B.2063: mocStreamvalLatAndDepthRegion: The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension)

B.44.3 mocStreamvalLatAndDepthGM

Type:	real
Units:	sverdrups
Dimension:	nMocStreamfunctionBinsP1 nVertLevels Time
Persistence:	persistent
Location in code:	domain % blocklist % mocStreamfunctionAM % mocStreamvalLatAndDepthGM

Table B.2064: mocStreamvalLatAndDepthGM: The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension) based on the Gent McWilliams Bolus Velocity

B.44.4 mocStreamvalLatAndDepthMLE

Type:	real
Units:	sverdrups
Dimension:	nMocStreamfunctionBinsP1 nVertLevels Time
Persistence:	persistent
Location in code:	domain % blocklist % mocStreamfunctionAM % mocStreamvalLatAndDepthMLE

Table B.2065: mocStreamvalLatAndDepthMLE: The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension) based on the Submesoscale eddy Bolus Velocity

B.44.5 mocStreamvalLatAndDepthRegionGM

Type:	real
Units:	sverdrups
Dimension:	nMocStreamfunctionBinsP1 nVertLevels nRegions Time
Persistence:	persistent

Location in code:	domain % blocklist % mocStreamfunctionAM % mocStreamvalLatAndDepthRegionGM

Table B.2066: mocStreamvalLatAndDepthRegionGM: The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension) based on the Gent McWilliams Bolus Velocity

B.44.6 mocStreamvalLatAndDepthRegionMLE

Type:	real
Units:	sverdrups
Dimension:	nMocStreamfunctionBinsP1 nVertLevels nRegions Time
Persistence:	persistent
Location in code:	domain % blocklist % mocStreamfunctionAM % mocStreamvalLatAndDepthRegionMLE

Table B.2067: mocStreamvalLatAndDepthRegionMLE: The value of the MOC streamfunction for each latitude-bin (first dimension) and depth (second dimension) based on the Submesoscale eddy Bolus Velocity

B.44.7 binBoundaryMocStreamfunction

Type:	real
Units:	varies
Dimension:	nMocStreamfunctionBinsP1
Persistence:	persistent
Location in code:	domain % blocklist % mocStreamfunctionAM % binBoundaryMocStreamfunction

Table B.2068: binBoundaryMocStreamfunction: Coordinate of southern edge of meridional heat transport bin, either in latitude or y, for plotting.

B.44.8 minMaxLatRegion

Type:	real
Units:	varies
Dimension:	TWO nRegions
Persistence:	persistent

Location in code:	domain % blocklist % mocStreamfunctionAM % minMaxLatRegion

Table B.2069: minMaxLatRegion: Coordinates of the southern and northern boundaries of each region (for drawing).

B.45 layeredOceanHeatContent

B.45.1 oceanHeatContentSfcToBot

Type:	real
Units:	J
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % layeredOceanHeatContent % oceanHeatContentSfcToBot

Table B.2070: oceanHeatContentSfcToBot: Integrated heat content from surface to bottom

B.45.2 oceanHeatContentSfcTo700m

Type:	real
Units:	J
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % layeredOceanHeatContent % oceanHeatContentSfcTo700m

Table B.2071: oceanHeatContentSfcTo700m: Integrated heat content from the surface to 700m

B.45.3 oceanHeatContent700mTo2000m

Type:	real
Units:	J
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % layeredOceanHeatContent % oceanHeatContent700mTo2000m

Table B.2072: oceanHeatContent700mTo2000m: Integrated heat content from the 700m to 2000m

B.45.4 oceanHeatContent2000mToBot

Type:	real
Units:	J
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % layeredOceanHeatContent % oceanHeatContent2000mToBot

Table B.2073: oceanHeatContent2000mToBot: Integrated heat content from the 2000m to bottom

B.46 mixedLayerHeatBudgetAM

B.46.1 temperatureHorAdvectionMLTend

Type:	real
Units:	$\mathrm{C\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerHorAdvectionMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_temperatureHorAdvectionMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % temperatureHorAdvectionMLTend
Array Group:	activeTracerHAdvTendGroup

Table B.2074: temperatureHorAdvectionMLTend: ML average horizontal advection tendency for temperature

B.46.2 salinityHorAdvectionMLTend

Type:	real
Units:	$\mathrm{1\,e-3\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerHorAdvectionMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_salinityHorAdvectionMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % salinityHorAdvectionMLTend
Array Group:	activeTracerHAdvTendGroup

Table B.2075: salinityHorAdvectionMLTend: ML average horizontal advection tendency for salinity

B.46.3 temperatureVertAdvectionMLTend

Type:	real
Units:	$\mathrm{C\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerVertAdvectionMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_temperatureVertAdvectionMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % temperatureVertAdvectionMLTend
Array Group:	activeTracerVAdvTendGroup

Table B.2076: temperatureVertAdvectionMLTend: ML average vertical advection tendency for temperature

B.46.4 salinityVertAdvectionMLTend

Type:	real
Units:	$\mathrm{1\,e-3\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerVertAdvectionMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_salinityVertAdvectionMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % salinityVertAdvectionMLTend
Array Group:	activeTracerVAdvTendGroup

Table B.2077: salinityVertAdvectionMLTend: ML average vertical advection tendency for salinity

B.46.5 temperatureVertMixMLTend

Type:	real
Units:	$\mathrm{C\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerVertMixMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_temperatureVertMixMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % temperatureVertMixMLTend
Array Group:	activeTracerVMixTendGroup

Table B.2078: temperatureVertMixMLTend: ML average vertical mixing tendency for temperature

B.46.6 salinityVertMixMLTend

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^{-}1$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerVertMixMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_salinityVertMixMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % salinityVertMixMLTend
Array Group:	activeTracerVMixTendGroup

Table B.2079: salinityVertMixMLTend: ML average vertical mxiing tendency for salinity

B.46.7 temperatureHorMixMLTend

Type:	real
Units:	$\mathrm{C}\,\mathrm{s}^{-}1$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerHorMixMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_temperatureHorMixMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % temperatureHorMixMLTend
Array Group:	activeTracerHMixTendGroup

Table B.2080: temperatureHorMixMLTend: ML average horizontal mixing tendency for temperature

B.46.8 salinityHorMixMLTend

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^{-}1$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerHorMixMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_salinityHorMixMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % salinityHorMixMLTend
Array Group:	activeTracerHMixTendGroup

Table B.2081: salinityHorMixMLTend: ML average horizontal mxiing tendency for salinity

B.46.9 temperatureNonLocalMLTend

Type:	real
Units:	$\mathrm{C\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerNonLocalMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_temperatureNonLocalMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % temperatureNonLocalMLTend
Array Group:	activeTracerNLTendGroup

Table B.2082: temperatureNonLocalMLTend: ML average non local kpp tendency for temperature

B.46.10 salinityNonLocalMLTend

Type:	real
Units:	$\mathrm{1\,e-3\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerNonLocalMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_salinityNonLocalMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % salinityNonLocalMLTend
Array Group:	activeTracerNLTendGroup

Table B.2083: salinityNonLocalMLTend: ML average nonlocal KPP tendency for salinity

B.46.11 temperatureForcingMLTend

Type:	real
Units:	$\mathrm{C\,s^-1}$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerForcingMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_temperatureForcingMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % temperatureForcingMLTend
Array Group:	activeTracerFTendGroup

Table B.2084: temperatureForcingMLTend: ML average forcing tendency (including shortwave) for temperature

B.46.12 salinityForcingMLTend

Type:	real
Units:	$1\,\mathrm{e}-3\,\mathrm{s}^{-}1$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracerForcingMLTend Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_salinityForcingMLTend
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % salinityForcingMLTend
Array Group:	activeTracerFTendGroup

Table B.2085: salinityForcingMLTend: ML average forcing tendency (non thickness flux changes) for salinity

B.46.13 temperatureML

Type:	real
Units:	C
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersML Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_temperatureML
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % temperatureML
Array Group:	activeTracerMLGroup

Table B.2086: temperatureML: ML average temperature

B.46.14 salinityML

Type:	real
Units:	$1\,\mathrm{e}-3$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracersML Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_salinityML
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % salinityML
Array Group:	activeTracerMLGroup

Table B.2087: salinityML: ML average salinity

B.46.15 temperatureTendML

Type:	real
Units:	$C\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracers-TendML Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_temperatureTendML
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % temperatureTendML
Array Group:	activeTracerMLTendGroup

Table B.2088: temperatureTendML: ML average temperature

B.46.16 salinityTendML

Type:	real
Units:	$1\,e - 3\,s^-1$
Dimension:	nCells Time
Persistence:	persistent
Index in activeTracers-TendML Array:	domain % blocklist % mixedLayerHeatBudgetAM % index_salinityTendML
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % salinityTendML
Array Group:	activeTracerMLTendGroup

Table B.2089: salinityTendML: ML average salinity

B.46.17 bruntVaisalaFreqML

Type:	real
Units:	s^-2
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % mixedLayerHeatBudgetAM % bruntVaisalaFreqML

Table B.2090: bruntVaisalaFreqML: ML average BVF

B.47 sedimentFluxIndexAM

B.47.1 sedimentFluxIndexVAX

Type:	real
Units:	$m^3 s^- 3$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentFluxIndexAM % sedimentFluxIndexVAX

Table B.2091: sedimentFluxIndexVAX: Index of Vertically-Averaged sediment flux in X-direction

B.47.2 sedimentFluxIndexVAY

Type:	real
Units:	$m^3 s^- 3$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentFluxIndexAM % sedimentFluxIndexVAY

Table B.2092: sedimentFluxIndexVAY: Index of Vertically-Averaged sediment flux in Y-direction

B.47.3 sedimentFluxIndexBX

Type:	real
Units:	$m^3 s^- 3$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentFluxIndexAM % sedimentFluxIndexBX

Table B.2093: sedimentFluxIndexBX: Index of Bottom sediment flux in X-direction

B.47.4 sedimentFluxIndexBY

Type:	real
Units:	$m^3 s^- 3$
Dimension:	nCells Time

Persistence:	persistent
Location in code:	domain % blocklist % sedimentFluxIndexAM % sedimentFluxIndexBY

Table B.2094: sedimentFluxIndexBY: Index of Bottom sediment flux in Y-direction

B.48 sedimentTransportAM

B.48.1 sedimentFallVelocity

Type:	real
Units:	$m\,s^-1$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentTransportAM % sedimentFallVelocity

Table B.2095: sedimentFallVelocity: Sediment settling velocity in the water column

B.48.2 sedimentErosionFlux

Type:	real
Units:	$kg\,m^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentTransportAM % sedimentErosionFlux

Table B.2096: sedimentErosionFlux: bed sediment erosion flux

B.48.3 sedimentDepositionFlux

Type:	real
Units:	$kg\,m^-2$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentTransportAM % sedimentDepositionFlux

Table B.2097: sedimentDepositionFlux: bed sediment deposition flux

B.48.4 sedimentFluxVAX

Type:	real
Units:	$\mathrm{kg\,m^{-}1\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentTransportAM % sedimentFluxVAX

Table B.2098: sedimentFluxVAX: Vertically-Averaged sediment flux in X-direction

B.48.5 sedimentFluxVAY

Type:	real
Units:	$\mathrm{kg\,m^{-}1\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentTransportAM % sedimentFluxVAY

Table B.2099: sedimentFluxVAY: Vertically-Averaged sediment flux in Y-direction

B.48.6 sedimentFluxBX

Type:	real
Units:	$\mathrm{kg\,m^{-}1\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentTransportAM % sedimentFluxBX

Table B.2100: sedimentFluxBX: Bottom sediment flux in X-direction

B.48.7 sedimentFluxBY

Type:	real
Units:	$\mathrm{kg\,m^{-}1\,s^{-}1}$
Dimension:	nCells Time
Persistence:	persistent

Location in code:	domain % blocklist % sedimentTransportAM % sedimentFluxBY

Table B.2101: sedimentFluxBY: Bottom sediment flux in Y-direction

B.48.8 sedimentBedloadX

Type:	real
Units:	kg m^{-1} s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentTransportAM % sedimentBedloadX

Table B.2102: sedimentBedloadX: Sediment bedload transport rate in X-direction

B.48.9 sedimentBedloadY

Type:	real
Units:	kg m^{-1} s^{-1}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentTransportAM % sedimentBedloadY

Table B.2103: sedimentBedloadY: Sediment bedload transport rate in Y-direction

B.48.10 sedimentBottomReferenceConcentration

Type:	real
Units:	kg m^{-3}
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentTransportAM % sedimentBottomReferenceConcentration

Table B.2104: sedimentBottomReferenceConcentration: near-bottom suspended sediment concentration (reference concentration)

B.48.11 sedimentConcentration

Type:	real
Units:	$\mathrm{kg\,m^{-}3}$
Dimension:	nVertLevels nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % sedimentTransportAM % sedimentConcentration

Table B.2105: sedimentConcentration: suspended sediment concentration in water column

B.49 harmonicAnalysisAM

B.49.1 nAnalysisConstituents

Type:	integer
Units:	–
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % nAnalysisConstituents

Table B.2106: nAnalysisConstituents: Number of tidal constituents used in analysis

B.49.2 analysisConstituentFrequency

Type:	real
Units:	rad/s
Dimension:	maxTidalConstituents Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % analysisConstituentFrequency

Table B.2107: analysisConstituentFrequency: Frequency of each constituent

B.49.3 analysisConstituentNodalAmplitude

Type:	real
Units:	rad/s
Dimension:	maxTidalConstituents Time

Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % analysisConstituentNodalAmplitude

Table B.2108: analysisConstituentNodalAmplitude: Frequency of each constituent

B.49.4 analysisConstituentNodalPhase

Type:	real
Units:	rad/s
Dimension:	maxTidalConstituents Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % analysisConstituentNodalPhase

Table B.2109: analysisConstituentNodalPhase: Frequency of each constituent

B.49.5 leastSquaresLHSMatrix

Type:	real
Units:	rad/s
Dimension:	maxTidalConstituentsX2 maxTidalConstituentsX2 Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % leastSquaresLHSMatrix

Table B.2110: leastSquaresLHSMatrix: Frequency of each constituent

B.49.6 leastSquaresRHSVector

Type:	real
Units:	rad/s
Dimension:	maxTidalConstituentsX2 nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % leastSquaresRHSVector

Table B.2111: leastSquaresRHSVector: Frequency of each constituent

B.49.7 decomposedConstituentAmplitude

Type:	real
Units:	m
Dimension:	maxTidalConstituents nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % decomposed-ConstituentAmplitude

Table B.2112: decomposedConstituentAmplitude: Amplitude of each tidal constituent at each cell center

B.49.8 decomposedConstituentPhase

Type:	real
Units:	deg
Dimension:	maxTidalConstituents nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % decomposed-ConstituentPhase

Table B.2113: decomposedConstituentPhase: Phase of each tidal constituent at each cell center

B.49.9 M2Amplitude

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % M2Amplitude

Table B.2114: M2Amplitude: Amplitude of M2 tidal constituent at each cell center

B.49.10 M2Phase

Type:	real
Units:	deg
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % M2Phase

Table B.2115: M2Phase: Phase of M2 tidal constituent at each cell center

B.49.11 S2Amplitude

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % S2Amplitude

Table B.2116: S2Amplitude: Amplitude of S2 tidal constituent at each cell center

B.49.12 S2Phase

Type:	real
Units:	deg
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % S2Phase

Table B.2117: S2Phase: Phase of S2 tidal constituent at each cell center

B.49.13 N2Amplitude

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % N2Amplitude

Table B.2118: N2Amplitude: Amplitude of N2 tidal constituent at each cell center

B.49.14 N2Phase

Type:	real
Units:	deg

Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % N2Phase

Table B.2119: N2Phase: Phase of N2 tidal constituent at each cell center

B.49.15 K2Amplitude

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % K2Amplitude

Table B.2120: K2Amplitude: Amplitude of K2 tidal constituent at each cell center

B.49.16 K2Phase

Type:	real
Units:	deg
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % K2Phase

Table B.2121: K2Phase: Phase of K2 tidal constituent at each cell center

B.49.17 K1Amplitude

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % K1Amplitude

Table B.2122: K1Amplitude: Amplitude of K1 tidal constituent at each cell center

B.49.18 K1Phase

Type:	real
Units:	deg
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % K1Phase

Table B.2123: K1Phase: Phase of K1 tidal constituent at each cell center

B.49.19 O1Amplitude

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % O1Amplitude

Table B.2124: O1Amplitude: Amplitude of O1 tidal constituent at each cell center

B.49.20 O1Phase

Type:	real
Units:	deg
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % O1Phase

Table B.2125: O1Phase: Phase of O1 tidal constituent at each cell center

B.49.21 Q1Amplitude

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % Q1Amplitude

Table B.2126: Q1Amplitude: Amplitude of Q1 tidal constituent at each cell center

B.49.22 Q1Phase

Type:	real
Units:	deg
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % Q1Phase

Table B.2127: Q1Phase: Phase of Q1 tidal constituent at each cell center

B.49.23 P1Amplitude

Type:	real
Units:	m
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % P1Amplitude

Table B.2128: P1Amplitude: Amplitude of P1 tidal constituent at each cell center

B.49.24 P1Phase

Type:	real
Units:	deg
Dimension:	nCells Time
Persistence:	persistent
Location in code:	domain % blocklist % harmonicAnalysisAM % P1Phase

Table B.2129: P1Phase: Phase of P1 tidal constituent at each cell center

B.50 conservationCheckAM

B.50.1 performConservationPrecompute

Type:	integer
Units:	–
Dimension:	
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckAM % performConservationPrecompute

Table B.2130: performConservationPrecompute: **MISSING**

B.51 conservationCheckEnergyAM

B.51.1 initialEnergy

Type:	real
Units:	J
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % initialEnergy

Table B.2131: initialEnergy: Total initial energy of ice and snow

B.51.2 finalEnergy

Type:	real
Units:	J
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % finalEnergy

Table B.2132: finalEnergy: Total final energy of ice and snow

B.51.3 energyChange

Type:	real
Units:	J
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % energyChange

Table B.2133: energyChange: Total energy change of ice and snow during time step

B.51.4 netEnergyFlux

Type:	real
Units:	W
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % netEnergyFlux

Table B.2134: netEnergyFlux: Net energy flux to ice

B.51.5 absoluteEnergyError

Type:	real
Units:	J
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % absoluteEnergyError

Table B.2135: absoluteEnergyError: Absolute energy conservation error

B.51.6 relativeEnergyError

Type:	real
Units:	1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % relativeEnergyError

Table B.2136: relativeEnergyError: Relative energy conservation error

B.51.7 accumulatedLatentHeatFlux

Type:	real
Units:	$\mathrm{W\,m^{-}2}$
Dimension:	Time
Persistence:	persistent

Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedLatentHeatFlux

Table B.2137: accumulatedLatentHeatFlux: Latent heat flux from coupler, integrated in space and time. Positive into the ocean.

B.51.8 accumulatedSensibleHeatFlux

Type:	real
Units:	W m^{-}2
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedSensibleHeatFlux

Table B.2138: accumulatedSensibleHeatFlux: Sensible heat flux from coupler, integrated in space and time. Positive into the ocean.

B.51.9 accumulatedLongWaveHeatFluxUp

Type:	real
Units:	W m^{-}2
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedLongWaveHeatFluxUp

Table B.2139: accumulatedLongWaveHeatFluxUp: Upward long Wave heat flux from coupler, integrated in space and time. Positive into the ocean.

B.51.10 accumulatedLongWaveHeatFluxDown

Type:	real
Units:	W m^{-}2
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedLongWaveHeatFluxDown

Table B.2140: accumulatedLongWaveHeatFluxDown: Downward long wave heat flux from coupler, integrated in space and time. Positive into the ocean.

B.51.11 accumulatedShortWaveHeatFlux

Type:	real
Units:	$W\,m^-2$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedShortWaveHeatFlux

Table B.2141: accumulatedShortWaveHeatFlux: shortwave heat flux from coupler, integrated in space and time. Positive into the ocean.

B.51.12 accumulatedSeaIceHeatFlux

Type:	real
Units:	$W\,m^-2$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedSeaIceHeatFlux

Table B.2142: accumulatedSeaIceHeatFlux: Sea ice heat flux from coupler, integrated in space and time. Positive into the ocean.

B.51.13 accumulatedMeltingSnowHeatFlux

Type:	real
Units:	$W\,m^-2$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedMeltingSnowHeatFlux

Table B.2143: accumulatedMeltingSnowHeatFlux: This is snowFlux * latent_heat_fusion_mks. Positive into the ocean.

B.51.14 accumulatedMeltingIceRunoffHeatFlux

Type:	real
Units:	W m$^-2$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedMeltingIceRunoffHeatFlux

Table B.2144: accumulatedMeltingIceRunoffHeatFlux: This is iceRunoffFlux * latent_heat_fusion_mks. Positive into the ocean.

B.51.15 accumulatedRemovedIceRunoffHeatFlux

Type:	real
Units:	W m$^-2$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedRemovedIceRunoffHeatFlux

Table B.2145: accumulatedRemovedIceRunoffHeatFlux: This is iceRunoffFlux * latent_heat_fusion_mks. Positive into the ocean.

B.51.16 accumulatedIcebergHeatFlux

Type:	real
Units:	W m$^-2$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedIcebergHeatFlux

Table B.2146: accumulatedIcebergHeatFlux: Iceberg heat flux from coupler, integrated in space and time. Positive into the ocean.

B.51.17 accumulatedFrazilHeatFlux

Type:	real
Units:	W m$^-2$

Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedFrazilHeatFlux

Table B.2147: accumulatedFrazilHeatFlux: Heat flux from frazil, integrated in space and time, given to couipler. Positive into the ocean.

B.51.18 accumulatedLandIceHeatFlux

Type:	real
Units:	$\mathrm{W\,m^-2}$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedLandIceHeatFlux

Table B.2148: accumulatedLandIceHeatFlux: Land ice heat flux, integrated in space and time. Positive into the ocean.

B.51.19 accumulatedLandIceFrazilHeatFlux

Type:	real
Units:	$\mathrm{W\,m^-2}$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedLandIceFrazilHeatFlux

Table B.2149: accumulatedLandIceFrazilHeatFlux: Land ice heat flux from frazil, integrated in space and time, given to couipler. Positive into the ocean.

B.51.20 accumulatedRainTemperatureFlux

Type:	real
Units:	$\mathrm{C\,m\,s^-1}$
Dimension:	Time
Persistence:	persistent

Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedRainTemperatureFlux

Table B.2150: accumulatedRainTemperatureFlux: Heat flux associated with rain. Positive into the ocean.

B.51.21 accumulatedEvapTemperatureFlux

Type:	real
Units:	$C\,m\,s^-1$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedEvapTemperatureFlux

Table B.2151: accumulatedEvapTemperatureFlux: Heat flux associated with Evaporation. Positive into the ocean.

B.51.22 accumulatedSeaIceTemperatureFlux

Type:	real
Units:	$C\,m\,s^-1$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedSeaIceTemperatureFlux

Table B.2152: accumulatedSeaIceTemperatureFlux: Heat flux associated with sea ice melt water. Positive into the ocean.

B.51.23 accumulatedRiverRunoffTemperatureFlux

Type:	real
Units:	$C\,m\,s^-1$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedRiverRunoffTemperatureFlux

Table B.2153: accumulatedRiverRunoffTemperatureFlux: Heat flux associated with river runoff. Positive into the ocean.

B.51.24 accumulatedIcebergTemperatureFlux

Type:	real
Units:	$\mathrm{C\,m\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckEnergyAM % accumulatedIcebergTemperatureFlux

Table B.2154: accumulatedIcebergTemperatureFlux: Heat flux associated with iceberg melt. Positive into the ocean.

B.52 conservationCheckMassAM

B.52.1 initialMass

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % initialMass

Table B.2155: initialMass: Total initial mass of ice and snow

B.52.2 finalMass

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % finalMass

Table B.2156: finalMass: Total final mass of ice and snow

B.52.3 massChange

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % massChange

Table B.2157: massChange: Total mass change of ice and snow during time step

B.52.4 netMassFlux

Type:	real
Units:	kg/s
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % netMassFlux

Table B.2158: netMassFlux: Net mass flux to ice

B.52.5 absoluteMassError

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % absoluteMassError

Table B.2159: absoluteMassError: Absolute mass conservation error

B.52.6 relativeMassError

Type:	real
Units:	1
Dimension:	Time
Persistence:	persistent

Location in code:	domain % blocklist % conservationCheckMassAM % relativeMassError

Table B.2160: relativeMassError: Relative mass conservation error

B.52.7 accumulatedRainFlux

Type:	real
Units:	kg m^{-}2 s^{-}1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedRainFlux

Table B.2161: accumulatedRainFlux: Fresh water flux from rain from coupler. Positive into the ocean.

B.52.8 accumulatedSnowFlux

Type:	real
Units:	kg m^{-}2 s^{-}1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedSnowFlux

Table B.2162: accumulatedSnowFlux: Fresh water flux from snow from coupler. Positive into the ocean.

B.52.9 accumulatedEvaporationFlux

Type:	real
Units:	kg m^{-}2 s^{-}1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedEvaporationFlux

Table B.2163: accumulatedEvaporationFlux: Evaporation flux from coupler. Positive into the ocean.

B.52.10 accumulatedSeaIceFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedSeaIceFlux

Table B.2164: accumulatedSeaIceFlux: Fresh water flux from sea ice from coupler. Positive into the ocean.

B.52.11 accumulatedRiverRunoffFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedRiverRunoffFlux

Table B.2165: accumulatedRiverRunoffFlux: Fresh water flux from river runoff from coupler. Positive into the ocean.

B.52.12 accumulatedIceRunoffFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedIceRunoffFlux

Table B.2166: accumulatedIceRunoffFlux: Fresh water flux from ice runoff from coupler. Positive into the ocean.

B.52.13 accumulatedRemovedRiverRunoffFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$

Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedRemovedRiverRunoffFlux

Table B.2167: accumulatedRemovedRiverRunoffFlux: Fresh water flux from river runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.

B.52.14 accumulatedRemovedIceRunoffFlux

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedRemovedIceRunoffFlux

Table B.2168: accumulatedRemovedIceRunoffFlux: Fresh water flux from ice runoff from the coupler that was removed due to config_remove_AIS_coupler_runoff option. Positive into the ocean.

B.52.15 accumulatedIcebergFlux

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedIcebergFlux

Table B.2169: accumulatedIcebergFlux: Fresh water flux from iceberg melt from coupler. Positive into the ocean.

B.52.16 accumulatedFrazilFlux

Type:	real
Units:	$kg\,m^-2\,s^-1$
Dimension:	Time

Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedFrazilFlux

Table B.2170: accumulatedFrazilFlux: Fresh water flux from frazil freezing under sea ice. Positive into the ocean.

B.52.17 accumulatedLandIceFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedLandIceFlux

Table B.2171: accumulatedLandIceFlux: Fresh water flux from land ice melt from coupler. Positive into the ocean.

B.52.18 accumulatedLandIceFrazilFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckMassAM % accumulatedLandIceFrazilFlux

Table B.2172: accumulatedLandIceFrazilFlux: Fresh water flux from frazil freezing under land ice. Positive into the ocean.

B.53 conservationCheckSaltAM

B.53.1 initialSalt

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent

Location in code:	domain % blocklist % conservationCheckSaltAM % initialSalt

Table B.2173: initialSalt: Total initial salt of ice and snow

B.53.2 finalSalt

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckSaltAM % finalSalt

Table B.2174: finalSalt: Total final salt of ice and snow

B.53.3 saltChange

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckSaltAM % saltChange

Table B.2175: saltChange: Total salt change of ice and snow during time step

B.53.4 netSaltFlux

Type:	real
Units:	kg/s
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckSaltAM % netSaltFlux

Table B.2176: netSaltFlux: Net salt flux to ice

B.53.5 absoluteSaltError

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckSaltAM % absoluteSaltError

Table B.2177: absoluteSaltError: Absolute salt conservation error

B.53.6 relativeSaltError

Type:	real
Units:	1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckSaltAM % relativeSaltError

Table B.2178: relativeSaltError: Relative salt conservation error

B.53.7 accumulatedSeaIceSalinityFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckSaltAM % accumulatedSeaIceSalinityFlux

Table B.2179: accumulatedSeaIceSalinityFlux: Sea ice salinity flux from coupler. Positive into the ocean.

B.53.8 accumulatedFrazilSalinityFlux

Type:	real
Units:	$\mathrm{kg\,m^{-}2\,s^{-}1}$
Dimension:	Time
Persistence:	persistent

Location in code:	domain % blocklist % conservationCheckSaltAM % accumulatedFrazilSalinityFlux

Table B.2180: accumulatedFrazilSalinityFlux: Salinity flux from frazil to sea ice, given to coupler. Positive into the ocean.

B.53.9 accumulatedLandIceFrazilSalinityFlux

Type:	real
Units:	kg m−2 s−1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckSaltAM % accumulatedLandIceFrazilSalinityFlux

Table B.2181: accumulatedLandIceFrazilSalinityFlux: Salinity flux from frazil to Land Ice, given to coupler. Positive into the ocean.

B.54 conservationCheckCarbonAM

B.54.1 initialCarbon

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % initialCarbon

Table B.2182: initialCarbon: Total ocean carbon at start of conservation interval

B.54.2 finalCarbon

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % finalCarbon

Table B.2183: finalCarbon: Total ocean carbon at end of conservation interval

B.54.3 carbonChange

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % carbonChange

Table B.2184: carbonChange: Change in ocean carbon over conservation interval

B.54.4 netCarbonFlux

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % netCarbonFlux

Table B.2185: netCarbonFlux: Net surface flux of ocean carbon over conservation interval

B.54.5 absoluteCarbonError

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % absoluteCarbonError

Table B.2186: absoluteCarbonError: Absolute carbon conservation error over conservation interval

B.54.6 relativeCarbonError

Type:	real
Units:	1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % relativeCarbonError

Table B.2187: relativeCarbonError: Relative carbon conservation error over conservation interval

B.54.7 accumulatedAbsoluteCarbonError

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % accumulatedAbsoluteCarbonError

Table B.2188: accumulatedAbsoluteCarbonError: Accumulated absolute carbon conservation error over entire simulation

B.54.8 accumulatedRelativeCarbonError

Type:	real
Units:	1
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % accumulatedRelativeCarbonError

Table B.2189: accumulatedRelativeCarbonError: Accumulated relative carbon conservation error over entire simulation

B.54.9 accumulatedCarbonSourceSink

Type:	real
Units:	kg
Dimension:	Time

Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % accumulatedCarbonSourceSink

Table B.2190: accumulatedCarbonSourceSink: Volume integral of all carbon source-sink terms from MarBL

B.54.10 accumulatedCarbonSedimentFlux

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % accumulatedCarbonSedimentFlux

Table B.2191: accumulatedCarbonSedimentFlux: Surface integral of all carbon sediment fluxes

B.54.11 accumulatedCarbonSurfaceFlux

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % accumulatedCarbonSurfaceFlux

Table B.2192: accumulatedCarbonSurfaceFlux: Surface integral of all carbon ocean surface fluxes

B.54.12 accumulatedCarbonTend

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % accumulatedCarbonTend

Table B.2193: accumulatedCarbonTend: Volume integral of all carbon-containing prognostic variable tendencies

B.54.13 accumulatedCO2gasFlux

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % accumulatedCO2gasFlux

Table B.2194: accumulatedCO2gasFlux: Surface integral of air-sea CO2 gas flux

B.54.14 accumulatedIceOceanOrganicCarbonFlux

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % accumulatedIceOceanOrganicCarbonFlux

Table B.2195: accumulatedIceOceanOrganicCarbonFlux: Surface integral of all organic ice-ocean carbon fluxes

B.54.15 accumulatedIceOceanInorganicCarbonFlux

Type:	real
Units:	kg
Dimension:	Time
Persistence:	persistent
Location in code:	domain % blocklist % conservationCheckCarbonAM % accumulatedIceOceanInorganicCarbonFlux

Table B.2196: accumulatedIceOceanInorganicCarbonFlux: Surface integral of all inorganic ice-ocean carbon fluxes

B.55 landIceInit

B.55.1 landIceDraftObserved

Type:	real

Units:	m
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % landIceInit % landIceDraftObserved

Table B.2197: landIceDraftObserved: z-coordinate of land ice bottom, read in from data file

B.55.2 landIceThkObserved

Type:	real
Units:	m
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % landIceInit % landIceThkObserved

Table B.2198: landIceThkObserved: Thickness of land ice, read in from data file

B.55.3 landIceFracObserved

Type:	real
Units:	unitless
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % landIceInit % landIceFracObserved

Table B.2199: landIceFracObserved: Fraction of land ice, read in from data file

B.55.4 landIceGroundedFracObserved

Type:	real
Units:	unitless
Dimension:	nCells
Persistence:	persistent
Location in code:	domain % blocklist % landIceInit % landIceGroundedFracObserved

Table B.2200: landIceGroundedFracObserved: Fraction of grounded land ice, read in from data file

B.56 criticalPassages

B.56.1 transectCellMasks

Type:	integer
Units:	unitless
Dimension:	nTransects nCells
Persistence:	persistent
Location in code:	domain % blocklist % criticalPassages % transectCellMasks

Table B.2201: transectCellMasks: Masks for transects describing critical passages

B.56.2 depthTransects

Type:	real
Units:	m
Dimension:	nTransects
Persistence:	persistent
Location in code:	domain % blocklist % criticalPassages % depthTransects

Table B.2202: depthTransects: Minimum depth of critical passages

B.56.3 criticalPassageLevel

Type:	integer
Units:	unitless
Dimension:	nTransects
Persistence:	persistent
Location in code:	domain % blocklist % criticalPassages % criticalPassageLevel

Table B.2203: criticalPassageLevel: the vertical level corresponding to the depth of the critical passage