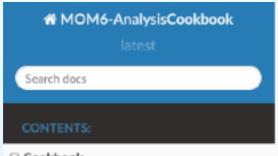


Useful doc for MOM6







□ Cookbook

Setting up a DASK cluster using dask-jobqueue

Setting up a DASK cluster on your local machine

Getting started with MOM6

Time-based operations

Spatial Operations

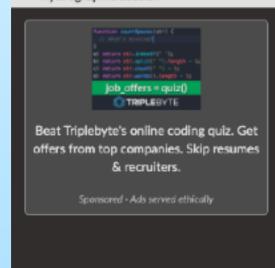
Vorticity-based diagnostics

Computations for Potential density, buoyancy and geostrophic shear

Horizontal Remapping

Creating nice maps with xarray

Comparing MOM6 data to hydrographic section



Docs » Cookbook

Ω Edit on GitHub

Cookbook

Here are recipes for doing some xarray-based analysis with MOM6.

- Setting up a DASK cluster using dask-jobqueue
 - Your DASK cluster at work
- · Setting up a DASK cluster on your local machine
 - Sample computation:
- Getting started with MOM6
 - grid variables
 - building a xgcm grid object
 - A note on geographical coordinates
 - o Plotting
- Time-based operations
 - 1. Computing climatologies for SST
 - o 2. Selecting based on dates
- Spatial Operations
 - 2D horizontal averaging
 - Zonal average
 - o 3D average
 - Using xgcm
- Vorticity-based diagnostics
 - · Relative vorticity
 - Potential vorticity (ζ + f)/h
- Computations for Potential density, buoyancy and geostrophic shear
 - Potential density
 - Buoyancy
 - Geostrophic shear
- Horizontal Remapping
 - Remapping model output to a 1x1 degree grid
 - · Remapping onto the model grid
- · Creating nice maps with xarray
 - Polar projections
- Comparing MOM6 data to hydrographic section



Useful doc for MOM6



https://xgcm.rtfd.io

☑ XGCM

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MITgcm ECCOv4 Example

Generate miss... »

Getting started with xgcm for MOM6

xgcm grid definition

A note on geographical coordinates

Vorticity computation

Plotting

Edit on GitHub

GETTING STARTED WITH XGCM FOR MOM6

- . MOM6 variables are staggered according to the Arakawa C-grid
- · It uses a north-east index convention
- · center points are labelled (xh, yh) and corner points are labelled (xq, yq)
- important: variables xh/yh, xq/yq that are named "nominal" longitude/latitude are not the true geographical coordinates and are not suitable for plotting (more later)

See indexing for details.

```
[1]: import xarray as xr
from xgcm import Grid
import warnings
import matplotlib.pylab as plt
from cartopy import crs as ccrs
import numpy as np
[2]: %matplotlib inline
warnings.filterwarnings("ignore")
```

For this tutorial, we are going to use sample data for the $\frac{1}{2}$ ° global model OM4p05 hosted on a GFDL thredds server: