MOM-SIS / ACCESS-OM2
MOM5 namelist comparisons

typeset 2017-10-18 16:04:17 +11:00

- GFDL_ESM2M_input.nml is from Steve's email 2017-10-18, from an ESM2M config that Jie is currently running. Steve commented "note that it is coupled, so there are heaps of non-ocean items. Also note that "ocean_albedo" is set for a coupled model, and it is different for ocean/ice simulations. That is a major "gotcha" that Spence can share with you if interested." Fixed typo: replaced &diag_inESM2_Control_216.xmltegral_nml with &diag_integral_nml
- MOM_SIS_TOPAZ_input.nml is from MOM_SIS_TOPAZ/INPUT/ in /g/data/ua8/mom/test_data/MOM_SIS_TOPAZ.input.tar.gz, dated 2009-12-16 10:44
- fabio_momsis1_input.nml is from Fabio's email 2017-09-20, derived from Paul's 1/4 degree (I think)
- paul_momsis025_input.nml is from Paul's email 2017-09-20
- fanghua_momsis01v5KDS75_WOA13_input.nml is /g/data3/hh5/tmp/cosima/mom01v5/KDS75_WOA13/output000/input.nml
- hogg_accessom2_1deg_jra55_ryf_input.nml is /short/v45/amh157/access-om2/control/1deg_jra55_ryf/ocean/input.nml
- kiss_accessom2_025deg_jra55_ryf_input.m.nml is /short/v45/aek156/access-om2/control/025deg_jra55_ryf/ocean/input.nml
- hogg_accessom2_01deg_jra55_ryf_input.nml is /short/v45/amh157/access-om2/control/01deg_jra55_ryf/ocean/input.nml

Other useful info:

- Griffies et al. (2015) p973

Tables auto-generated by nmltab (https://github.com/aekiss/nmltab). Missing variables are shown as blank. Variables are weblinks to source code searches.

References

Griffies, S. M., and Coauthors, 2015: Impacts on ocean heat from transient mesoscale eddies in a hierarchy of climate models. *Journal of Climate*, **28 (3)**, 952–977, doi:10.1175/jcli-d-14-00353.1, URL http://dx.doi.org/10.1175/JCLI-D-14-00353.1.

Contents

1 All variables in all originals (differences highlighted)

Group	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
&aerosol_nml	aerosol_dataset_entry	1860, 1, 1, 0, 0, 0, 1860, 1, 1, 0, 0, 0, 1860, 1, 1, 0, 0, 0, 1860, 1, 1, 0, 0, 0, 1860, 1, 1, 0, 0, 0, 1860, 1, 1, 0, 0, 0, 1860, 1, 1, 0, 0, 0, 1860, 1, 1, 0, 0, 0, 1860, 1, 1, 0, 0, 0							
	data_names	'so4', 'black_-carbon', 'organic_-carbon', 'dust_0.1', 'dust_0.2', 'dust_0.4', 'dust_0.8', 'sea_salt', 'dust_1.0', 'dust_2.0', 'dust_4.0', 'dust_8.0'							
	family_names	'small_dust', 'large_dust', 'sulfate', 'aerosol', 'dust', 'pm2.5'							
	filename	'aerosol.climatology.nc'							
	in_family1	False, False, False, True, True, True, False, True, False, False, False							
	in_family2	False, False, False, False, False, False, False, False, False, True, True							
	in_family3	True, False, False, False, False, False, False, False, False, False, False							
	in_family4	True, True, True, True, True, True, True, True, True, True, True							
	in_family5	False, False, False, True, True, True, True, False, True, True, True							

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_input.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_input.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	in_family6	True, True, True, True, True, True, True, True, False, False, False, False							
	time_varying_species	False, False, False, False, False, False, False, False, False, False, False, False							
	use_aerosol_timeseries	False							
&aerosolrad_package_nml	aerosol_data_set	'shettle_-fenn'							

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	aerosol_optical_names	'sulfate_-30%', 'sulfate_-35%', 'sulfate_-40%', 'sulfate_-45%', 'sulfate_-50%', 'sulfate_-55%', 'sulfate_-60%', 'sulfate_-65%', 'sulfate_-70%', 'sulfate_-75%', 'sulfate_-80%', 'sulfate_-82%', 'sulfate_-84%', 'sulfate_-86%', 'sulfate_-88%', 'sulfate_-90%', 'sulfate_-91%', 'sulfate_-92%', 'sulfate_-93%', 'sulfate_-94%', 'sulfate_-95%', 'sulfate_-96%', 'sulfate_-97%', 'sulfate_-98%', 'sulfate_-99%', 'sulfate_-100%', 'organic_-carbon', 'soot', 'sea_salt', 'dust_0.1', 'dust_0.2', 'dust_0.4', 'dust_0.8', 'dust_1.0', 'dust_2.0', 'dust_4.0', 'dust_8.0'						
	do_lwaerosol	True							
	do_swaerosol	True							
	lw_asy_filename	''							
	lw_asy_root	''							
	lw_ext_filename	''							
	lw_ext_root	''							
	lw_ssa_filename	''							
	lw_ssa_root	''							
	optical_filename	'aerosol.optical.dat'							
	sw_asy_filename	''							

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	sw_asy_root	''							
	sw_ext_filename	''							
	sw_ext_root	''							
	sw_ssa_filename	''							
	sw_ssa_root	''							
	using_volcanic_lw_files	False							
	using_volcanic_sw_files	False							
	volcanic_dataset_entry	1, 1, 1, 0, 0, 0							
&amip_interp_nml	data_set	'reynolds_oi'							
	date_out_of_range	'fail'							
&atmos_co2_nml	co2_radiation_override	True							
	do_co2_emissions	False							
	do_co2_restore	True							
	restore_klimit	24							
	restore_tscale	31 536 000.0							
&atmos_model_nml	nxblocks	2							
	nyblocks	2							
&auscom_ice_nml	aice_cutoff						0.15	0.15	0.15
	chk_i2o_fields						False	False	False
	chk_o2i_fields						False	False	False
	do_ice_once						False	False	False
	dt_cpl						3600	1200	150
	fixmeltt						False	False	False
	frazil_factor						1.0	1.0	1.0
	iceform_adj_salt						False	False	False
	icemlt_factor						1.0	1.0	1.0
	kmxice						5	5	5
	pop_icediag						True	True	True
	redsea_gulfbay_sfix						True		
	sign_stflx						1.0	1.0	1.0
	tmelt						−0.216	−0.216	−0.216
	use_ioaice						True	True	True
&bg_diff_lat_dependence_nml	bg_diff_eq						1×10^{-6}		
	lat_low_bgdiff						20.0		
&cana_nml	canopy_air_mass_for_tracers	10.0							
	init_co2	0.000 286							
	turbulence_to_use	'lm3v'							
&cg_drag_nml	bt_0	0.0015							
	calculate_ked	False							
	cg_drag_freq	1800							
	cg_drag_offset	0							
	debug	False							
	itest	12							
	jtest	42							
	ktest	9							
	lat_limit	25.0							
&cloud_rad_nml	do_brenguier	False							
	overlap	2							
&cloud_spec_nml	cloud_type_form	'strat'							
	use_cloud_tracers_in_radiation	True							
&cloudrad_package_nml	microphys_form	'predicted'							
&clouds_nml	do_obs_clouds	False							
	do_zonal_clouds	False							
&coupler_nml	atmos_npes	0	0	0	0	0			
	atmos_nthreads	4							
	calendar	'NOLEAP'	'NOLEAP'	'noleap'	'noleap'	'noleap'			
	check_stocks	0	0	0	0	0			
	concurrent	True	False	False	False	False			
	current_date	1, 1, 1, 0, 0, 0	1, 1, 1, 0, 0, 0	1, 1, 1, 0, 0, 0	1, 1, 1, 0, 0, 0	1, 1, 1, 0, 0, 0			
	days	0	2	0	365	1			
	do_atmos	True	False	False	False	False			
	do_flux	True							
	do_ice	True	True	True	True	True			
	do_land	True	False	False	False	False			
	do_ocean	True	True	True	True	True			
	dt_atmos	1800	7200	3600	1800	1800			
	dt_cpld	7200	7200	3600	1800	1800			
	months	12	0	12	0	0			
	ocean_npes	96	0	0	0	0			
	use_lag_fluxes	True	True	True	True	True			
&cu_mo_trans_nml	diff_norm	2.0							
&damping_driver_nml	do_cg_drag	False							
	do_conserve_energy	True							

Group (continued)	Variable	original/GFDL_-ESM2M_-input.nml	original/MOM_SIS_-TOPAZ_-input.nml	original/fabio_-momsis1_-input.nml	original/paul_mom-sis025_input.nml	original/fanghua_-mom-sis01v5KDS75_-WOA13_input.nml	original/hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	do_mg_drag	True							
	do_topo_drag	False							
	nlev_rayfric	1							
	trayfric	−40.0							
&diag_cloud_nml	l_theqv	True							
	lcnvcld	False							
	linvers	False							
	lomega	True							
	low_lev_cloud_index	16							
	nofog	False							
&diag_cloud_rad_nml	l_anom_abs_v	True							
	l_har_anvil	True							
	l_har_coldcld	True							
&diag_integral_nml	file_name	'diag_-integral.out'	'diag_-integral.out'	'diag_-integral.out'	'diag_-integral.out'	'diag_-integral.out'			
	output_interval	1.0	1.0	−1.0	−1.0	−1.0			
	time_units	'days'	'days'	'days'	'days'	'days'			
&diag_manager_nml	debug_diag_manager							True	
	issue_oor_warnings	False	False	False	False	False	False	True	False
	max_axes	200	100	300	300	300			300
	max_files	50		1000	1000	1000			1000
	max_input_fields	800	699	700	700	700			700
	max_num_axis_sets	200	100	40	40	40			40
	max_output_fields	1300	699	700	700	700			700
	mix_snapshot_average_fields	False	False						
&donner_deep_clouds_w_nml	using_dge_lw	True							
	using_dge_sw	True							
&donner_deep_nml	cell_ice_size_type	'default'							
	cell_liquid_size_type	'bower'							
	debug	False							
	donner_deep_freq	1800							
	donner_deep_offset	0							
	itest	53							
	jtest	32							
	ktest_model	17							
	kttest	5							
	save_donner_deep_diagnostics	True							
&edt_nml	do_gaussian_cloud	False							
	min_adj_time	1.0							
	n_print_levels	14							
	num_pts_ij	0							
	use_extrapolated_ql	False							
	use_qcmin	True							
&entrain_nml	apply_entrain	True							
	ashear	25.0							
	beta_rad	0.5							
	convect_shutoff	True							
	critjump	0.1							
	i_entprt_gl	112, 96, 89, 105, 81, 97							
	j_entprt_gl	71, 61, 56, 64, 53, 46							
	num_pts_ij	0							
	parcel_buoy	0.25							
	parcel_option	2							
	radperturb	0.1							
&esfsw_parameters_nml	sw_diff_streams	1							
	sw_resolution	'low'							
&flux_exchange_nml	debug_stocks	False	False						
	divert_stocks_report	True	True						
	do_area_weighted_flux	False	False	True	True	True			
	nblocks	4							
&fms_io_nml	checksum_required					False			False
	fileset_write		'single'	'multi'	'multi'	'multi'	'single'	'single'	'multi'
	max_files_r	300	200	700	700	700			700
	max_files_w	300	200	700	700	700			700
	threading_read	'multi'	'multi'	'multi'	'multi'	'multi'	'multi'	'multi'	'multi'
	threading_write		'single'	'multi'	'multi'	'multi'	'single'	'single'	'multi'
&fms_nml	clock_grain	'COMPONENT'	'LOOP'	'LOOP'	'LOOP'	'LOOP'	'LOOP'	'LOOP'	'LOOP'
	domains_stack_size	5000000	8000000	115200	115200	115200			115200
	print_memory_usage			False	False	False			False
	stack_size	0	0						
&fv_core_nml	change_time	True							

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	consv_te	0.7							
	layout	1, 30							
	mlat	90							
	n_split	5							
	ncnst	4							
	nlev	24							
	nlon	144							
	pnats	0							
	restart_format	'NETCDF'							
&gas_tf_nml	do_calcstdch4tfs	True							
	do_calcstdco2tfs	True							
	do_calcstdn2otfs	True							
	do_readstdch4tfs	False							
	do_readstdco2tfs	False							
	do_readstdn2otfs	False							
	do_writestdch4tfs	False							
	do_writestdco2tfs	False							
	do_writestdn2otfs	False							
	interp_form	'log'							
&generic_tracer_nml	do_generic_cfc	False	False	False	False	False			False
	do_generic_topaz	True	True	False	False	False			False
	do_generic_tracer	True	True	False	False	False			False
&glac_data_nml	dat_emis_dry	1.0							
	dat_emis_sat	1.0							
	rsa_exp_global	10.0							
	use_lm2_awc	True							
&glac_nml	conserve_glacier_mass	True							
	lm2	True							
&harvesting_nml	crop_seed_density	0.1							
	do_harvesting	False							
	frac_wood_wasted_clear	0.25							
	frac_wood_wasted_harv	0.25							
	grazing_intensity	0.25							
	grazing_residue	0.1							
	waste_below_ground_wood	False							
&ice_albedo_nml	t_range	10.0	10.0						
&ice_model_nml	add_diurnal_sw	False	True						
	alb_ice	0.65	0.615	0.68	0.68	0.68			
	alb_sno	0.85	0.825	0.85	0.85	0.85			
	channel_viscosity	500 000.0							
	cm2_bugs	False	False						
	do_icebergs	True	False	False	False	False			
	h_lo_lim	1×10^{-10}	1×10^{-10}						
	heat_rough_ice		0.0005	0.0005	0.0005	0.0005			
	ice_bulk_salin	0.005	0.005	0.005	0.005	0.005			
	io_layout	1, 2			64, 30	8, 9			
	layout	15, 2		10, 12	64, 30	40, 45			
	mom_rough_ice			0.0005	0.0005	0.0005			
	nsteps_adv	1	1	1	1	6			
	nsteps_dyn	72	108	72	72	144			
	num_part	6	6	6	6	6			
	spec_ice	False	False	False	False	False			
	t_range_melt	1.0	10.0	1.0	1.0	1.0			
	wd_turn	0.0	0.0	0.0	0.0	0.0			
&icebergs_nml	add_weight_to_ocean			False	False	False			
	bergy_bit_erosion_fraction		0.0	0.0	0.0	0.0			
	debug		False	False	False	False			
	make_calving_reproduce	True							
	parallel_reprod		True	True	True	True			
	really_debug		False	False	False	False			
	sicn_shift		0.1	0.1	0.1	0.1			
	speed_limit	0.5							
	time_average_weight	False							
	traj_sample_hrs	0	0	0	0	0			
	use_operator_splitting		True	True	True	True			
	use_roundoff_fix	True							
	verbose	True	False	False	False	False			
	verbose_hrs	120	2400	2400	2400	2400			
&lake_data_nml	dat_emis_dry	1.0							
	dat_emis_sat	1.0							
	dat_heat_capacity_ref	0.0							
	f_geo_ice	0.0, 0.0							
	f_geo_liq	0.0, 0.0							

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	f_iso_ice	0.02, 0.01							
	f_iso_liq	0.02, 0.01							
	f_vol_ice	0.003, 0.0							
	f_vol_liq	0.003, 0.0							
	lake_to_use	'from-rivers'							
	num_l	20							
&lake_nml	albedo_to_use	'brdf-params'							
	float_ice_to_top	True							
&land_debug_nml	watch_point	0, 0, 0, 1							
&land_model_nml	io_layout	1, 3							
	layout	1, 30							
	prohibit_negative_canopy_water	False							
	tau_snow_t_adj	604 800.0							
&landuse_nml	do_landuse_change	False							
	input_file	'INPUT/ landuse.nc'							
&lscale_cond_nml	do_evap	True							
&lw_gases_stdtf_nml	nstdco2lvls	496							
&mg_drag_nml	acoef	1.0							
	do_conserve_energy	True							
	gmax	1.0							
	source_of_sgsmtn	'computed'							
&microphys_rad_nml	lwem_form	'fuliou'							
&moist_conv_nml	beta	0.0							
&moist_processes_nml	do_cmt	True							
	do_diag_clouds	False							
	do_donner_deep	False							
	do_gust_cv	False							
	do_legacy_strat_cloud	True							
	do_lsc	False							
	do_mca	False							
	do_ras	True							
	do_rh_clouds	False							
	do_strat	True							
	include_donmca_in_cosp	False							
&mom_oasis3_interface_nml	fields_in						'u_flux', 'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'lw_flux', 'runof', 'p', 'aice', 'wfimelt', 'wfiform'	'u_flux', 'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'lw_flux', 'runof', 'p', 'aice', 'wfimelt', 'wfiform'	'u_flux', 'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'lw_flux', 'runof', 'p', 'aice', 'wfimelt', 'wfiform'
	fields_out						't_surf', 's_surf', 'u_surf', 'v_surf', 'dssldx', 'dssldy', 'frazil'	't_surf', 's_surf', 'u_surf', 'v_surf', 'dssldx', 'dssldy', 'frazil'	't_surf', 's_surf', 'u_surf', 'v_surf', 'dssldx', 'dssldy', 'frazil'
	num_fields_in						15	15	15
	num_fields_out						7	7	7
	send_after_ocean_update						True	True	True
	send_before_ocean_update						False	False	False
&monin_obukhov_nml	neutral		True	True	True	True		True	True
	rich_crit	10.0							
	stable_option	2							
	zeta_trans	0.5							
&mpp_io_nml	deflate_level					5			5
	shuffle					1			1
&my25_turb_nml	akmin_land	5.0							
	akmin_sea	0.0							
	do_thv_stab	True							
	tkemin	1×10^{-8}							
&ocean_adv_vel_diag_nml	diag_step	1200	12	4320	4320	43200	4320	4320	576
	large_cfl_value	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	max_cfl_value	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Group (continued)	Variable	original/GFDL_ESM2M_input.nml	original/MOM_SIS_TOPAZ_input.nml	original/fabio_momsis1_input.nml	original/paul_momsis025_input.nml	original/fanghua_momsis01v5KDS75_WOA13_input.nml	original/hogg_accesom2_1deg_jra55_ryf_input.nml	original/kiss_accesom2_025deg_jra55_ryf_input.nml	original/hogg_accesom2_01deg_jra55_ryf_input.nml
	verbose_cfl	False	False	True	True	True	True	True	True
&ocean_advection_velocity_nml	max_advection_velocity	0.5	0.5	0.5	0.5	0.2	0.5	0.5	0.2
&ocean_albedo_nml	ocean_albedo_option	5	2	2	2	2		2	2
&ocean_barotropic_nml	barotropic_halo			10	10	10	10	10	10
	barotropic_leap_frog		False						
	barotropic_pred_corr		True						
	barotropic_time_stepping_a	True		True	True	True	True	True	True
	barotropic_time_stepping_b	False		False	False	False	False	False	False
	barotropic_time_stepping_mom4p0		True						
	barotropic_time_stepping_mom4p1		False						
	debug_this_module	False	False	False	False	False	False	False	False
	diag_step	1200	12	4320	4320	43200	4320	4320	576
	do_bitwise_exact_sum	True							
	eta_max	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
	frac_crit_cell_height	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	pred_corr_gamma	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	smooth_eta_diag_laplacian	True	True	True	True	True	True	True	True
	smooth_eta_t_biharmonic	True	True	True	True	False	False	False	False
	smooth_eta_t_laplacian	False	False	False	False	True	True	True	True
	smooth_pbot_t_biharmonic	True	True	True	True	False	False	False	False
	smooth_pbot_t_laplacian	False	False	False	False	True	True	True	True
	truncate_eta	False	False	False	False	False	False	False	False
	use_legacy_barotropic_halos			False	False	False	False	False	False
	vel_micom_bih	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	vel_micom_lap	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
	vel_micom_lap_diag	1.0	1.0	0.5	0.5	0.5	0.2	0.2	0.5
	verbose_truncate	True	True	True	True	True	True	True	True
	zero_tendency	False	False	False	False	False		False	False
&ocean_bbc_nml	bmf_implicit			True	True	True		True	True
	cdbot	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001
	cdbot_hi			0.007	0.007	0.007		0.007	0.007
	cdbot_law_of_wall						False		
	cdbot_roughness_length			False	False	False		False	False
	cdbot_roughness_uamp			True	True	True		True	True
	uresidual	0.05	0.05	0.05	0.05	0.05		0.05	0.05
	use_geothermal_heating	True	True	False	False	False	False	False	False
&ocean_bbc_ofam_nml	read_tide_speed						False		
	uresidual2_max						1.0		
&ocean_bih_friction_nml	bih_friction_scheme	'general'	'general'	'general'	'general'	'general'	'general'	'general'	'general'
&ocean_bih_tracer_nml	tracer_mix_micom			True	True	True		True	True
	use_this_module	False	False	False	False	False	False	False	False
	vel_micom			0.001	0.001	0.001		0.001	0.001
&ocean_bihcst_friction_nml	use_this_module	False	False	False	False	False	False	False	False
&ocean_bihgen_friction_nml	bottom_5point	True	True	False	False	False	True	False	False
	eq_lat_micom	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	eq_vel_micom_aniso	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	eq_vel_micom_iso	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	equatorial_zonal	False	False	False	False	False	False	False	False
	k_smag_aniso	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	k_smag_iso	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	ncar_boundary_scaling	True	True	True	True	True	True	True	True
	ncar_boundary_scaling_read			False	True	True		True	True
	ncar_rescale_power	2	2	2	2	2	2	2	2
	ncar_vconst_4	2×10^{-8}	2×10^{-8}	2×10^{-8}	2×10^{-8}	2×10^{-8}	2×10^{-8}	2×10^{-8}	2×10^{-8}
	ncar_vconst_5	5	5	5	5	5	5	5	5
	use_this_module	True	True	True	True	True	True	True	True
	vel_micom_aniso	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	vel_micom_bottom	0.01	0.01	0.0	0.0	0.0	0.01	0.0	0.0
	vel_micom_iso	0.04	0.04	0.0	0.0	0.0	0.04	0.0	0.0
	visc_crit_scale	0.25	0.25	1.0	1.0	1.0	0.25	1.0	1.0
&ocean_convect_nml	convect_full_scalar			True	True	True	False	True	True
	convect_full_vector			False	False	False	True	False	False
	use_this_module	False	False	False	False	False	False	False	False
&ocean_coriolis_nml	acor	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	use_this_module	True	True	True	True	True	True	True	True
&ocean_density_nml	eos_linear	False		False	False	False	False	False	False
	eos_preteos10	True		True	True	True	True	True	True
	layer_nk	80	80	80	80	80	80	80	80
	linear_eos		False						
	neutralrho_max	1030.0	1030.0	1038.0	1038.0	1038.0	1030.0	1038.0	1038.0
	neutralrho_min	1020.0	1020.0	1028.0	1028.0	1028.0	1020.0	1028.0	1028.0
	potrho_max	1038.0	1038.0	1038.0	1038.0	1038.0	1038.0	1038.0	1038.0
	potrho_min	1028.0	1028.0	1028.0	1028.0	1028.0	1028.0	1028.0	1028.0

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
&ocean_domains_nml	max_tracers						10	5	5
&ocean_drifters_nml	use_this_module	False	False						
&ocean_form_drag_nml	cprime_aiki						0.6		
	use_this_module	False	False	False	False	False	False	False	False
&ocean_frazil_nml	debug_this_module	False	False	False	False	False		False	False
	frazil_only_in_surface	True	True	True	True	True		False	False
	freezing_temp_accurate		False						
	freezing_temp_preteos10							True	True
	freezing_temp_simple	True	True	True	True	True	True	False	False
	use_this_module	True	True	True	True	True	True	True	True
&ocean_grids_nml	debug_this_module	True	True	False	False	False	True	False	False
	do_bitwise_exact_sum	True							
	read_rho0_profile	False	False				False		
&ocean_increment_eta_nml	days_to_increment						0		
	fraction_increment						1.0		
	secs_to_increment						1800		
	use_this_module	False	False	False	False	False	False	False	False
&ocean_increment_tracer_nml	days_to_increment						0		
	fraction_increment						1.0		
	secs_to_increment						1800		
	use_this_module	False	False	False	False	False	False	False	False
&ocean_increment_velocity_nml	days_to_increment						0		
	fraction_increment						1.0		
	secs_to_increment						1800		
	use_this_module	False	False	False	False	False	False	False	False
&ocean_lap_friction_nml	lap_friction_scheme	'general'	'general'	'general'	'general'	'general'	'general'	'general'	'general'
&ocean_lap_tracer_nml	use_this_module	False	False	False	False	False	False	False	False
&ocean_lapcst_friction_nml	use_this_module	False	False	False	False	False	False	False	False
&ocean_lapgen_friction_nml	bottom_5point	True	True				True		
	k_smag_aniso	0.0	0.0				0.0		
	k_smag_iso	0.0	0.0	2.0	2.0	2.0	0.0	2.0	2.0
	ncar_only_equatorial						True		
	restrict_polar_visc	True	True				True		
	restrict_polar_visc_lat	60.0	60.0				60.0		
	restrict_polar_visc_ratio	0.35	0.35				0.35		
	use_this_module	True	True	False	False	False	True	False	False
	vconst_1						8 000 000.0		
	vconst_2						0.0		
	vconst_3						0.8		
	vconst_4						5×10^{-9}		
	vconst_5						3		
	vconst_6						300 000 000.0		
	vconst_7						100.0		
	vel_micom_iso	0.1	0.1				0.1		
	viscosity_ncar	False	False				True		
	viscosity_ncar_2000						False		
	viscosity_ncar_2007						True		
	viscosity_scale_by_rossby	True	True				True		
	viscosity_scale_by_rossby_power	4.0	4.0				4.0		
&ocean_mixdownslope_nml	debug_this_module	False	False	False	False	False	False	False	False
	mixdownslope_mask_gfdl	True	True				False		
	mixdownslope_npts	4	4				4		
	read_mixdownslope_mask	True	True				False		
	use_this_module	True	True	False	False	False	True	False	False
&ocean_model_nml	baroclinic_split	1	1	1	1	1	1	1	1
	barotropic_split	80	80	80	80	60	80	80	80
	cmip_units	False					True	True	
	debug	False	False	False	False	False	False	False	False
	dt_ocean	7200	7200	3600	1800	150	3600	1200	150
	impose_init_from_restart	True	False						
	io_layout	1, 4			64, 30	8, 9	4, 3	6, 5	10, 15
	layout	12, 8	6, 4	10, 12	64, 30	40, 45	16, 15	48, 40	80, 75
	surface_height_split	1	1	1	1	1	1	1	1
	time_tendency	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'
	vertical_coordinate	'zstar'	'zstar'	'zstar'	'zstar'	'zstar'	'zstar'	'zstar'	'zstar'
&ocean_momentum_source_nml				False	False	False		False	False
rayleigh_damp_exp_from_bottom									
	use_rayleigh_damp_table			True	True	True	True	True	True
	use_this_module	False	False	True	True	True	True	True	True
&ocean_nphysics_nml	debug_this_module	False	False	False	False	False	False	False	False
	use_nphysicsa	False	False	False	False	False	False	False	False
	use_nphysicsb	False	True	False	False	False	False	False	False
	use_nphysicsc	True	False	False	False	False	True	False	False

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	use_this_module	True	True	False	False	False	True	False	False
&ocean_nphysics_util_nml	agm	800.0	800.0	100.0	100.0	100.0	600.0	100.0	100.0
	agm_closure	True	True	True	True	True	True	True	True
	agm_closure_baroclinic	True	True	True	True	True	True	True	True
	agm_closure_buoy_freq	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
	agm_closure_eady_ave_mixed	True	True				True		
	agm_closure_eady_cap	True	True				True		
	agm_closure_eady_smooth_horz	True	True				True		
	agm_closure_eady_smooth_vert	True	True				True		
	agm_closure_eden_gamma	0.0	0.0				0.0		
	agm_closure_eden_greatbatch	False	False				False		
	agm_closure_grid_scaling	True	True				True		
	agm_closure_length	50 000.0	50 000.0	50 000.0	50 000.0	50 000.0	50 000.0	50 000.0	50 000.0
	agm_closure_length_bczone	False	False	False	False	False	False	False	False
	agm_closure_length_fixed	False	False	False	False	False	False	False	False
	agm_closure_length_rossby	False	False	False	False	False	False	False	False
	agm_closure_lower_depth	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0	2000.0
	agm_closure_max	800.0	800.0	600.0	600.0	600.0	600.0	600.0	600.0
	agm_closure_min	100.0	100.0	100.0	100.0	100.0	50.0	100.0	100.0
	agm_closure_scaling	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
	agm_closure_upper_depth	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	agm_damping_time	45.0	45.0				45.0		
	agm_smooth_space	False	False				False		
	agm_smooth_time	False	False				False		
	aredi	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0
	aredi_equal_agm	False	False	False	False	False	False	False	False
	drhodz_mom4p1	True	True	False	False	False	True	False	False
	drhodz_smooth_horz	False	False	False	False	False	False	False	False
	drhodz_smooth_vert	False	False	False	False	False	False	False	False
	nphysics_util_zero_init	True	True				True		
	rossby_radius_max	100 000.0	100 000.0	100 000.0	100 000.0	100 000.0	100 000.0	100 000.0	100 000.0
	rossby_radius_min	15 000.0	15 000.0	15 000.0	15 000.0	15 000.0	15 000.0	15 000.0	15 000.0
	smax	0.005	0.005	0.002	0.002	0.002		0.002	0.002
	swidth	0.002	0.002	0.002	0.002	0.002		0.002	0.002
	tracer_mix_micom	False	False	False	False	False	False	False	False
	vel_micom	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
&ocean_nphysicsa_nml	debug_this_module	False	False						
	neutral_linear_gm_taper	True	True						
	neutral_physics_limit	True	True						
	neutral_physics_simple	False	False						
	neutral_sine_taper	True	True						
	tmask_neutral_on	True	True						
	use_this_module	False	False	False	False	False	False	False	False
&ocean_nphysicsb_nml	debug_this_module	False	False						
	nblayer_smooth	True	True						
	neutral_physics_limit	True	True						
	surf_turb_thick_min	50.0	50.0						
	surf_turb_thick_min_k	5	5						
	use_this_module	False	True	False	False	False	False	False	False
&ocean_nphysicsc_nml	bv_freq_smooth_vert	True					True		
	bvp_bc_mode	2					2		
	bvp_min_speed	0.1					0.1		
	bvp_speed	0.0					0.0		
	debug_this_module	False					False		
	do_gm_skewsion	True					True		
	do_neutral_diffusion	True					True		
	epsln_bv_freq	1×10^{-12}					1×10^{-12}		
	gm_skewsion_bvproblem	True					True		
	gm_skewsion_modes	False					False		
	neutral_eddy_depth	True					True		
	neutral_physics_limit	True					True		
	number_bc_modes	2					2		
	regularize_psi	False					False		
	smax_psi	0.01					0.01		
	smooth_psi	True					True		
	tmask_neutral_on	True					True		
	turb_blayer_min	50.0					50.0		
	use_this_module	True	False	False	False	False	True	False	False
&ocean_operators_nml	use_legacy_div_ud	True		False	False	False		False	False
&ocean_overexchange_nml	debug_this_module	False	False	False	False	False	False	False	False
	overexch_check_extrema	False	False				False		
	overexch_npts	4	4	4	4	4	4	4	4
	overexch_weight_far	False	False	False	False	False	False	False	False

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_input.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_input.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	overflow_umax	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
	use_this_module	False	False	False	False	False	False	False	False
&ocean_overflow_nml	debug_this_module	False	False	False	False	False	False	False	False
	use_this_module	False	False	False	False	False	False	False	False
&ocean_overflow_ofp_nml	debug_this_module			False	False	False		False	False
	diag_step			4320	4320	43200		4320	5760
	do_entrainment_para_ofp			False	False	False		False	False
	do_mass_ofp			True	True	True		True	True
	frac_exchange_src			1.0	1.0	1.0		1.0	1.0
	max_vol_trans_ofp			10 000 000.0	10 000 000.0	10 000 000.0		10 000 000.0	10 000 000.0
	use_this_module			False	False	False		False	False
&ocean_polar_filter_nml	use_this_module	False	False	False	False	False	False	False	False
&ocean_pressure_nml	zero_pressure_force			False	False	False		False	False
&ocean_rivermix_nml	calving_insertion_thickness	40.0	40.0						
	debug_this_module	False	False	False	False	False	False	False	False
	discharge_combine_runoff_calve	False	True						
	do_bitwise_exact_sum	True							
	river_diffuse_salt	False	False	False	False	False	False	False	True
	river_diffuse_temp	False	False	False	False	False	False	False	True
	river_diffusion_thickness	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	river_diffusivity	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	river_insertion_thickness	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
	runoff_insertion_thickness	40.0	40.0						
	use_this_module	True	True	True	True	True	True	True	True
&ocean_riverspread_nml	debug_this_module			'.false'	'.false'	'.false'			False
	use_this_module	False	False	True	True	True	True	False	True
&ocean_rough_nml	rough_scheme	'beljaars'	'beljaars'	'beljaars'	'beljaars'	'beljaars'		'beljaars'	'beljaars'
&ocean_sbc_nml	avg_sfc_temp_salt_eta	True	True	True	True	True	True	True	True
	avg_sfc_velocity	True	True	True	True	True	True	True	True
	calvingspread	False	False	False	False	False		False	False
	do_bitwise_exact_sum			False	False	False		False	False
	do_flux_correction	True		False	False	False		False	False
	eta_restore_tscale	−10.0							
	land_model_heat_fluxes	True	False	False	False	False		False	False
	max_delta_salinity_restore			0.5	0.5	0.5	0.5	0.5	0.5
	max_ice_thickness	8.0	8.0	1.0	1.0	1.0	8.0	0.0	0.0
	read_restore_mask			False	False	False	False	False	False
	restore_mask_gfdl			False	False	False	False	False	False
	runoff_salinity			0.0	0.0	0.0	0.0	0.0	0.0
	runoffspread	False	False						
	salt_correction_scale	0.0		0.0	0.0	0.0		0.0	0.0
	salt_restore_as_salt_flux			True	True	True	True	True	True
	salt_restore_tscale	−10.0	−10.0	60.0	60.0	60.0	15.0	60.0	60.0
	salt_restore_under_ice			True	True	True	True	True	True
	tau_x_correction_scale	0.0							
	tau_y_correction_scale	0.0							
	temp_correction_scale	1.0							
	temp_restore_tscale	−10.0	−10.0	−10.0	−10.0	−10.0	−1.0	−10.0	−10.0
	use_full_patm_for_sea_level	True	True	False	False	False		False	False
	use_waterflux	True	True	True	True	True	True	True	True
	use_waterflux_override_calving	False							
	use_waterflux_override_evap	False							
	use_waterflux_override_fprec	False							
	waterflux_tavg	False	False				False		
	zero_heat_fluxes			False	False	False	False	False	False
	zero_net_pme_eta_restore	False							
	zero_net_salt_correction			False	False	False		False	False
	zero_net_salt_restore			True	True	True	True	True	True
	zero_net_water_correction			False	False	False		False	False
	zero_net_water_couple_restore			True	True	True	True	True	True
	zero_net_water_coupler			True	True	True	True	True	True
	zero_net_water_restore			True	True	True	True	True	True
	zero_pme_fluxes					False			
	zero_river_fluxes					False			
	zero_runoff_fluxes					True			
	zero_surface_stress			False	False	False	False	False	False
	zero_water_fluxes			False	False	False	False	False	False
&ocean_sbc_ofam_nml	restore_mask_ofam						False		
	river_temp_ofam						False		
&ocean_shortwave_csiro_nml	debug_this_module							False	
	read_depth			True			True	True	
	use_this_module	False	False	True	False	False	True	False	False
	zmax_pen			7000			7000	7000	

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
&ocean_shortwave_gfdl_nml	debug_this_module	False	False	False	False	False	False	False	False
	enforce_sw_frac	True	True	True	True	True	True	True	True
	optics_manizza	True	True	True	True	True	True	True	True
	optics_morel_antoine	False	False	False	False	False		False	False
	override_f_vis	False	False						
	read_chl	False	False	False	True	True	False	True	True
	sw_pen_fixed_depths						False		
	use_this_module	True	True	False	True	True	False	True	True
	zmax_pen	200.0	200.0	300.0	300.0	300.0	200.0	300.0	300.0
&ocean_shortwave_jerlov_nml	use_this_module	False	False	False	False	False	False	False	False
&ocean_shortwave_nml	use_shortwave_csiro	False	False	True	False	False	True	False	False
	use_shortwave_gfdl	True	True	False	True	True	False	True	True
	use_shortwave_jerlov	False	False	False	False	False	False	False	False
	use_this_module	True	True	True	True	True	True	True	True
&ocean_sigma_transport_nml	sigma_advection_on	False	False	False	False	False	False	False	False
	sigma_advection_sgs_only	False	False	False	False	False	False	False	False
	sigma_diffusion_on	True	True	True	True	True	True	True	True
	sigma_diffusivity_ratio	1×10^{-6}	1×10^{-6}	1×10^{-6}	1×10^{-6}	1×10^{-6}	1×10^{-6}	1×10^{-6}	1×10^{-6}
	sigma_just_in_bottom_cell	True	True	True	True	True	True	True	True
	sigma_umax	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	smooth_sigma_thickness	True	True	True	True	True	True	True	True
	smooth_sigma_velocity	True	True	True	True	True	True	True	True
	smooth_velmicom	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
	thickness_sigma_layer	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	thickness_sigma_max	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	thickness_sigma_min	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	tmask_sigma_on	False	False	False	False	False	False	False	False
	tracer_mix_micom	True	True	True	True	True	True	True	True
	use_this_module	True	True	False	False	False	True	False	False
	vel_micom	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
&ocean_solo_nml	calendar						'NOLEAP'	'NOLEAP'	'NOLEAP'
	date_init						1, 1, 1, 0, 0, 0	1, 1, 1, 0, 0, 0	1, 1, 1, 0, 0, 0
	days						1460	31	30
	debug_this_module						False		
	dt_cpld						3600	1200	150
	hours						0	0	0
	minutes						0	0	0
	months						0	0	0
	seconds						0	0	0
	years						0	0	0
&ocean_sponges_eta_nml	use_this_module	False	False	False	False	False	False	False	False
&ocean_sponges_tracer_nml	damp_coeff_3d	False	False	False	False	False	False	False	False
	use_this_module	False	False	False	False	False	False	False	False
&ocean_sponges_velocity_nml	use_this_module	False	False	False	False	False	False	False	False
&ocean_submesoscale_nml	coefficient_ce			0.05	0.05	0.05		0.05	0.05
	debug_this_module	False	False	False	False	False	False	False	False
	front_length_const	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0
	front_length_deform_radius	True	True	True	True	True	True	True	True
	limit_psi	True	True	True	True	True	True	True	True
	limit_psi_velocity_scale	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	min_kblt	4	4	4	4	4	4	4	4
	smooth_advect_transport			True	True	True		True	True
	smooth_advect_transport_num			4	4	4		4	4
	smooth_hblt	False	False	False	False	False	False	False	False
	smooth_psi			True	True	True		True	True
	smooth_psi_num			3	3	3		3	3
	submeso_advect_flux			False	False	False		False	False
	submeso_advect_limit			True	True	True		True	True
	submeso_advect_upwind			True	True	True		True	True
	submeso_advect_zero_bdy			True	True	True		True	True
	submeso_diffusion			False	False	False		False	False
	submeso_diffusion_biharmonic			True	True	True		True	True
	submeso_diffusion_scale			10.0	10.0	10.0		10.0	10.0
	submeso_limit_flux	True	True				True		
	submeso_skew_flux			True	True	True		True	True
	use_hblt_equal_mld	True	True	True	True	True	True	True	True
	use_psi_legacy	True		False	False	False		False	False
	use_this_module	True	True	True	True	True	True	True	True
&ocean_tempsalt_nml	debug_this_module	False	False	False	False	False	False	False	True
	pottemp_2nd_iteration	True	True	True	True	True	True	True	True
	pottemp_equal_contemp			True	True	True		True	True
	s_max	55.0	55.0	70.0	70.0	70.0	55.0	70.0	70.0
	s_max_limit	42.0	42.0	42.0	42.0	42.0	42.0	42.0	42.0

Group (continued)	Variable	original/GFDL_-ESM2M_-input.nml	original/MOM_SIS_-TOPAZ_-input.nml	original/fabio_-momsis1_-input.nml	original/paul_mom-sis025_input.nml	original/fanghua_-mom-sis01v5KDS75_-WOA13_input.nml	original/hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	s_min	−1.0	−1.0	0.0	0.0	0.0	−1.0	0.0	0.0
	s_min_limit	5.0	5.0	2.0	2.0	2.0	0.0	2.0	2.0
	t_max	55.0	55.0	55.0	55.0	55.0	55.0	55.0	55.0
	t_max_limit	32.0	32.0	32.0	32.0	32.0	32.0	32.0	32.0
	t_min	−5.0	−5.0	−20.0	−20.0	−20.0	−5.0	−20.0	−20.0
	t_min_limit	−1.9	−1.9	−5.0	−5.0	−5.0	−2.0	−5.0	−5.0
	temperature_variable	'potential_-temp'	'potential_-temp'	'potential_-temp'	'potential_-temp'	'potential_-temp'	'conservative_-temp'	'potential_-temp'	'potential_-temp'
&ocean_thickness_nml	debug_this_module	False	False	False	False	False	False	False	False
	debug_this_module_detail	False	False	False	False	False	False	False	False
	initialize_zero_eta	False	False				False		
	read_rescale_rho0_mask	True	True				False		
	rescale_mass_to_get_ht_mod			False	False	False		False	False
	rescale_rho0_basin_label	7.0	7.0				7.0		
	rescale_rho0_mask_gfdl	True	True				False		
	rescale_rho0_value	0.75	0.75				0.75		
	thickness_dzt_min	2.0	2.0	2.0	2.0	2.0	1.0	2.0	2.0
	thickness_dzt_min_init	2.0	2.0	10.0	10.0	10.0	2.0	10.0	10.0
	thickness_method	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'
&ocean_time_filter_nml	use_this_module	False	False						
&ocean_topog_nml	min_thickness	5.0	5.0				25.0		
&ocean_tracer_advect_nml	advect_sweby_all	False	False	False	False	False	True		
	async_domain_update						True		
	debug_this_module	False	False	False	False	False	False	False	False
	limit_with_upwind	False	False						
	read_basin_mask			False	False	False		False	False
&ocean_tracer_diag_nml	diag_step	1200	12	48	48	43200	4320	4320	576
	do_bitwise_exact_sum	False	False	False	False	False	False	False	False
	smooth_mld	True	True						
	tracer_conserve_days	100.0	100.0	30.0	30.0	30.0	1.0	30.0	30.0
&ocean_tracer_nml	age_tracer_max_init	$1 \times 10^{+40}$	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	debug_this_module	False	False	False	False	False	False	False	False
	frazil_heating_after_vphysics	True	True	True	True	True	True	True	True
	frazil_heating_before_vphysics	False	False	False	False	False	False	False	False
	interpolate_tdiag_to_pbott	False							
	interpolate_tprog_to_pbott	False							
	limit_age_tracer	True	True	True	True	True	True	True	True
	remap_depth_to_s_init	False	False	False	False	False	False	False	False
	tmask_limit_ts_same	True	True						
	use_tempsalt_check_range					True	True	True	True
	zero_tendency	False	False	False	False	False	False	False	False
	zero_tracer_source	False	False	False	False	False	False	False	False
&ocean_velocity_diag_nml	debug_this_module	False	False	False	False	False	False	False	False
	diag_step	1200	12	4320	4320	43200	4320	4320	576
	energy_diag_step	1200	12	4320	4320	43200	4320	4320	5760
	large_cfl_value	10.0	10.0	10.0	10.0	10.0	10.0	10.0	10.0
	max_cfl_value	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
&ocean_velocity_nml	adams_bashforth_third	True	True	True	True	True	True	True	True
	max_cgint			1.5	1.5	1.0	1.0	1.5	1.0
	truncate_velocity	False	False	False	False	False	True	False	False
	truncate_velocity_value	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	truncate_verbose	True	True	True	True	True	True	True	True
	zero_tendency	False	False	False	False	False	False	False	False
	zero_tendency_explicit_a			False	False	False		False	False
	zero_tendency_explicit_b			False	False	False		False	False
	zero_tendency_implicit			False	False	False		False	False
&ocean_vert_kpp_iow_nml	use_this_module	False	False	False	False	False	False	False	False
&ocean_vert_kpp_mom4p0_nml	use_this_module	False	False				False		
&ocean_vert_kpp_mom4p1_nml	diff_cbt_iw	0.0		0.0	0.0	0.0	0.0	0.0	0.0
	diff_con_limit						0.1		
	double_diffusion	True		True	True	True	True	True	True
	kbl_standard_method					False	False	False	False
	ricr	0.3		0.3	0.3	0.3	0.3	0.3	0.3
	smooth_blmc	True		True	True	False	False	False	False
	smooth_ri_kmax_eq_kmu					True	True	True	True
	use_this_module	True		True	True	True	True	True	True
	visc_cbu_iw	0.0		0.0	0.0	0.0	0.0	0.0	0.0
	visc_con_limit						0.1		
	wsfc_combine_runoff_calve	False							
&ocean_vert_kpp_nml	diff_cbt_iw		0.0						
	double_diffusion		True						
	ricr		0.3						
	smooth_blmc		True						

Group (continued)	Variable	original/GFDL_-ESM2M_-input.nml	original/MOM_SIS_-TOPAZ_-input.nml	original/fabio_-momsis1_-input.nml	original/paul_mom-sis025_input.nml	original/fanghua_-mom-sis01v5KDS75_-WOA13_input.nml	original/hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	use_this_module		True						
	visc_cbu_iw		0.0						
&ocean_vert_mix_nml	afkph_00	0.675	0.675				0.65		
	afkph_90	0.725	0.725				0.75		
	aidif	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	bryan_lewis_diffusivity	True	True	False	False	False	False	False	False
	bryan_lewis_lat_depend	True	True	False	False	False	True	False	False
	bryan_lewis_lat_transition	35.0	35.0				35.0		
	dfkph_00	1.15	1.15				1.15		
	dfkph_90	1.15	1.15				0.95		
	hwf_diffusivity			False	False	False		False	False
	hwf_min_diffusivity			2×10^{-6}	2×10^{-6}	2×10^{-6}		2×10^{-6}	2×10^{-6}
	hwf_n0_2omega			20.0	20.0	20.0		20.0	20.0
	linear_taper_diff_cbt_table	False	False				False		
	quebec_2009_10_bug	False							
	sfkph_00	4.5×10^{-5}	4.5×10^{-5}				4.5×10^{-5}		
	sfkph_90	4.5×10^{-5}	4.5×10^{-5}				4.5×10^{-5}		
	use_diff_cbt_table	False	False	False	False	False	False	False	False
	vert_diff_back_via_max	True	True	True	True	True	True	True	True
	vert_mix_scheme	'kpp_-mom4p1'	'kpp'	'kpp_-mom4p1'	'kpp_-mom4p1'	'kpp_-mom4p1'	'kpp_-mom4p1'	'kpp_-mom4p1'	'kpp_-mom4p1'
	zfkph_00	250 000 000.0	250 000 000.0				250 000.0		
	zfkph_90	250 000 000.0	250 000 000.0				250 000.0		
&ocean_vert_tidal_nml	background_diffusivity	0.0	0.0	0.0	0.0	0.0	5×10^{-6}	0.0	0.0
	background_viscosity	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	decay_scale	300.0	300.0	500.0	500.0	500.0	300.0	500.0	500.0
	drag_dissipation_use_cdbot			True	True	True		True	True
	drhodz_min	1×10^{-12}	1×10^{-12}	1×10^{-10}	1×10^{-10}	1×10^{-10}	1×10^{-12}	1×10^{-10}	1×10^{-10}
	fixed_wave_dissipation	False	False	False	False	False	False	False	False
	max_drag_diffusivity						0.01		
	max_wave_diffusivity	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	mixing_efficiency_n2depend	True	True	True	True	True	True	True	True
	read_roughness	True	True	True	True	True	True	True	True
	read_tide_speed	True	True	True	True	True	True	True	True
	read_wave_dissipation	False	False	False	False	False	False	False	False
	reading_roughness_amp	True	True	True	True	True	True	True	True
	reading_roughness_length	False	False	False	False	False	False	False	False
	roughness_scale	30 000.0	30 000.0	12 000.0	12 000.0	12 000.0	20 000.0	12 000.0	12 000.0
	shelf_depth_cutoff	160.0	160.0	−1000.0	−1000.0	−1000.0	160.0	−1000.0	−1000.0
	tide_speed_data_on_t_grid	True	True	True	True	True	True	True	True
	use_drag_dissipation	True	True	True	True	True	True	True	True
	use_legacy_methods	True		False	False	False		False	False
	use_this_module	True	True	True	True	True	True	True	True
	use_wave_dissipation	True	True	True	True	True	True	True	True
	wave_energy_flux_max	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
&ocean_xlandinsert_nml	use_this_module	True	True	False	False	False	False	False	False
	verbose_init	True	True				True		
&ocean_xlandmix_nml	use_this_module	True	True	False	False	False	False	False	False
	verbose_init	True	True				True		
	xlandmix_kmt	True	True				True		
&ozone_nml	basic_ozone_type	'fixed_year'							
	data_name	'ozone'							
	filename	'o3.climatology.nc'							
	ozone_dataset_entry	1860, 1, 1, 0, 0, 0							
&physics_driver_nml	do_modis_yim	False							
&rad_output_file_nml	write_data_file	True							
&radiation_diag_nml	iradprt_gl	20, 6							
	jradprt_gl	12, 20							
	num_pts_ij	0							
&radiation_driver_diag_nml	all_step_diagnostics	True							
&radiation_driver_nml	do_clear_sky_pass	True							
	rad_package	'sea_esf'							
	rad_time_step	10800							
	renormalize_sw_fluxes	True							
	use_co2_tracer_field	True							
	using_restart_file	False							
	zenith_spec	'diurnally_-varying'							
&radiative_gases_nml	ch4_data_source	'input'							
	ch4_dataset_entry	1860, 1, 1, 0, 0, 0							
	ch4_specification_type	'time_series'							

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	ch4_variation_type	'linear'							
	co2_base_time	101, 1, 1, 0, 0, 0							
	co2_ceiling	0.0016							
	co2_data_source	'predicted'							
	co2_dataset_entry	1, 1, 1, 0, 0, 0							
	co2_floor	0.0001							
	co2_specification_type	'base_and_-trend'							
	co2_variation_type	'linear'							
	f113_data_source	'input'							
	f113_dataset_entry	1860, 1, 1, 0, 0, 0							
	f113_specification_type	'time_series'							
	f113_variation_type	'linear'							
	f11_data_source	'input'							
	f11_dataset_entry	1860, 1, 1, 0, 0, 0							
	f11_specification_type	'time_series'							
	f11_variation_type	'linear'							
	f12_data_source	'input'							
	f12_dataset_entry	1860, 1, 1, 0, 0, 0							
	f12_specification_type	'time_series'							
	f12_variation_type	'linear'							
	f22_data_source	'input'							
	f22_dataset_entry	1860, 1, 1, 0, 0, 0							
	f22_specification_type	'time_series'							
	f22_variation_type	'linear'							
	gas_printout_freq	240							
	n2o_data_source	'input'							
	n2o_dataset_entry	1860, 1, 1, 0, 0, 0							
	n2o_specification_type	'time_series'							
	n2o_variation_type	'linear'							
	time_varying_ch4	False							
	time_varying_co2	False							
	time_varying_f11	False							
	time_varying_f113	False							
	time_varying_f12	False							
	time_varying_f22	False							
	time_varying_n2o	False							
	verbose	5							
&random_number_streams_nml		True							
do_legacy_seed_generation									
	force_use_of_temp_for_seed	False							
&ras_nml	a	1.6851, 1.1686, 0.7663, 0.5255, 0.41, 0.3677, 0.3151, 0.2216, 0.1521, 0.075, 0.0, 0.0, 0.0, 0.0, 0.0							
	aratio	1.0							
	modify_pbl	True							
	puplim	2000.0							
	rn_frac_bot	0.5							
	rn_frac_top	0.975							
	rn_pbot	80 000.0							
	rn_ptop	50 000.0							
	tokioka_con	0.025							
	tokioka_on	True							
	tokioka_plim	50 000.0							
&redseafix_nml	redsea_gulfbay_sfix			True					
&rh_based_clouds_nml	cirrus_cld_prop_form	'part'							
	cldht_type_form	'93'							
&river_nml	all_big_outlet_ctn0	True							
	dt_slow	86 400.0							

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	land_area_called_cellarea	True							
&river_physics_nml	lake_sfc_w_min	20.0							
&sat_vapor_pres_nml	construct_table_wrt_liq	True	True						
	construct_table_wrt_liq_and_ice	True	True						
	show_all_bad_values					True			True
&sealw99_nml	continuum_form	'ckd2.1'							
	do_lwcldemiss	True							
	do_nlte	False							
	do_thick	False							
	linecatalog_form	'hitran_-2000'							
	verbose	5							
&shortwave_driver_nml	do_cmip_diagnostics	True							
	solar_dataset_entry	1860, 1, 1, 0, 0, 0							
	swform	'esfsw99'							
	time_varying_solar_constant	False							
&snow_data_nml	depth_crit	0.05							
	dz	0.05, 0.2, 0.5, 0.2, 0.05, 0.0, 0.0, 0.0, 0.0, 0.0							
	emis_snow_max	1.0							
	emis_snow_min	1.0							
	f_geo_cold	0.0, 0.0							
	f_geo_warm	0.0, 0.0							
	f_iso_cold	0.9, 0.6							
	f_iso_warm	0.9, 0.6							
	f_vol_cold	0.09, 0.13							
	f_vol_warm	0.09, 0.13							
	num_l	5							
	z0_momentum	0.01							
&snow_nml	albedo_to_use	'brdf-params'							
	max_snow	1000.0							
	min_snow_mass	1×10^{-10}							
&soil_data_nml	comp	0.0001							
	dat_emis_dry	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0							
	dat_emis_sat	1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0, 1.0							
	dat_tf_depr	2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0, 2.0							
	dz	0.02, 0.04, 0.04, 0.05, 0.05, 0.1, 0.1, 0.2, 0.2, 0.2, 0.4, 0.4, 0.4, 0.4, 0.4, 1.0, 1.0, 1.0, 1.5, 2.5							
	freeze_factor	2.0							
	geohydrology_to_use	'hill_ar5'							
	gw_scale_soil_depth	10.0							
	num_l	20							
&soil_nml	active_layer_drainage_acceleration	100.0							
	albedo_to_use	'brdf-maps'							
	init_w	500.0							
	uptake_oneway	True							
	uptake_to_use	'darcy2d-linearized'							
	write_soil_carbon_restart	False							
&stable_bl_turb_nml	alsh	500.0							
	alsm	500.0							
&static_veg_nml	end_loop	2470, 1, 1, 0, 0, 0							
	fill_land_mask	True							
	start_loop	2420, 1, 1, 0, 0, 0							
	timeline	'loop'							

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	use_static_veg	False							
&strat_cloud_nml	diff_thresh	0.1							
	dmin	1×10^{-7}							
	do_old_snowmelt	True							
	eros_choice	True							
	eros_scale	1×10^{-6}							
	eros_scale_c	8×10^{-6}							
	eros_scale_t	5×10^{-5}							
	mc_thresh	0.001							
	n_land	300 000 000.0							
	retain_cm3_bug	True							
	rthresh	8.0							
	super_choice	True							
	tracer_advec	True							
	u00	0.8							
	u00_profile	True							
&surface_flux_nml	ncar_ocean_flux			True	True	True		True	True
	old_dtaudv	False							
	raoult_sat_vap			True	True	True		True	True
&topo_rough_nml	max_topo_rough	100.0							
	topo_rough_factor	0.01							
	use_topo_rough	True							
&topography_nml	topog_file	'INPUT/ navy_topog-ra-phy.data.nc'	'INPUT/ navy_topog-ra-phy.data.nc'						
&vegn_data_nml	alpha	4							
	alpha_phot	0.05, 0.06, 0.06, 0.06, 0.06							
	c1	0.3							
	c2	0.3							
	cmc_eps	0.01							
	cmc_lai	0.02, 0.02, 0.02, 0.02, 0.02							
	cnst_crit_fire	0.15, 0.4, 0.15, 0.15, 0.15							
	cnst_crit_phen	0.3, 0.4, 0.3, 0.3, 0.3							
	critical_root_density	0.0							
	csc_lai	0.2, 0.2, 0.2, 0.2, 0.2							
	dat_root_zeta	0.352 12, 0.170 39, 0.289 09, 0.258 13, 0.170 39							
	dat_snow_crit	0.0167, 0.0167, 0.0333, 0.2, 0.2							
	fact_crit_fire	0.0, 0.0, 0.0, 0.0, 0.0							
	fact_crit_phen	0.0, 0.0, 0.0, 0.0, 0.0							
	fsc_liv	0.9							
	fsc_wood	0.45							
	gamma_resp	0.03, 0.02, 0.02, 0.02, 0.02							
	k1	10							
	k2	0.1							
	ksi	0, 0, 0, 0, 0							
	leaf_age_tau	150							
	leaf_refl	0.11, 0.11, 0.1, 0.1, 0.1, 0.58, 0.58, 0.5, 0.5, 0.5							
	m_cond	4.0, 9.0, 9.0, 7.0, 7.0							
	phen_ev2	0.925							

Group (continued)	Variable	original/ GFDL_-ESM2M_-input.nml	original/ MOM_SIS_-TOPAZ_-input.nml	original/ fabio_-momsis1_-input.nml	original/ paul_mom-sis025_in-put.nml	original/ fanghua_-mom-sis01v5KDS75_-WOA13_in-put.nml	original/ hogg_acces-som2_-1deg_-jra55_ryf_-input.nml	original/ kiss_acces-som2_-025deg_-jra55_ryf_-input.nml	original/ hogg_acces-som2_-01deg_-jra55_ryf_-input.nml
	root_perm	5×10^{-7}, 5×10^{-7}, 5×10^{-7}, 5×10^{-7}, 5×10^{-7}, 5×10^{-7}, 5×10^{-7}, 5×10^{-7}, 5×10^{-7}, 5×10^{-7}, 5×10^{-7}, 5×10^{-7}, 5×10^{-7}, 5×10^{-7}							
	smoke_fraction	0.9, 0.9, 0.6, 0.6, 0.6							
	srl	112 000.0, 150 000.0							
	t_transp_min	268.0							
	tau_drip_s	259 200.0							
	tg_c3_thresh	1							
	vegn_to_use	'uniform'							
	vmax	2×10^{-5}, 2×10^{-5}, 2×10^{-5}, 2×10^{-5}, 1.5×10^{-5}							
	wet_leaf_dreg	0.3, 0.3, 0.3, 0.3, 0.3							
&vegn_nml	co2_for_photosynthesis	0.000 286							
	co2_to_use_for_photosynthesis	'interactive'							
	do_biogeography	True							
	do_cohort_dynamics	True							
	do_patch_disturbance	True							
	do_phenology	True							
	do_seed_transport	True							
	init_tv	288.0							
	photosynthesis_to_use	'leuning'							
	rad_to_use	'two-stream'							
	snow_rad_to_use	'paint-leaves'							
	tau_smooth_ncm	22.0							
&vert_diff_driver_nml	do_conserve_energy	True							
&vert_turb_driver_nml	do_diffusivity	False							
	do_edt	False							
	do_entrain	True							
	do_mellor_yamada	False							
	do_shallow_conv	False							
	do_stable_bl	True							
	gust_scheme	'beljaars'							
	use_tau	False							
&xgrid_nml	do_alltoall			True	True	True			True
	do_alltoallv			True	True	True			True
	interp_method	'second_-order'	'second_-order'	'second_-order'	'second_-order'	'second_-order'	'second_-order'	'second_-order'	'second_-order'
	make_exchange_reproduce	True	True	False	False	False	False	False	False
	nsubset			16	16	16		16	16
	xgrid_log			False	False	False			False