MOM-SIS / ACCESS-OM2 MOM5 namelist comparisons

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Latest version is here: https://github.com/aekiss/namelist-check

also check /home/581/fbd581/payu/access-om2_JRA-ryf/ocean/input.nml? - fabio email 18 Oct

- 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.

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1 Differences between new ACCESS-OM2 configs

Group	Variable	new_acces- som2 1deg jra55_ryf	new_acces- som2 025deg jra55_ryf	new_acces- som2 01deg jra55_ryf
	B. 1	input.nml	input.nml	input.nml
&auscom_ice_nml	dt_cpl	3600 True	1200	150
&diag_manager_nml	redsea_gulfbay_sfix debug_diag_manager	True	True	
&diag_manager_mint	issue_oor_warnings	True	True	False
	max_axes	iiue	iiue	300
	max_files			1000
	max_input_fields			700
	max_num_axis_sets			40
	max_output_fields			700
&fms_io_nml	checksum_required			False
	fileset_write	'single'	'single'	'multi'
	max_files_r	9.0	9	700
	max_files_w			700
	threading_write	'single'	'single'	'multi'
&fms_nml	domains_stack_size			115200
	print_memory_usage			False
&generic_tracer_nml	do_generic_cfc			False
	do_generic_topaz			False
	do_generic_tracer			False
&mpp_io_nml	deflate_level			5
	shuffle			1
&ocean_adv_vel_diag_nml	diag_step	4320	4320	576
&ocean_advection_velocity_nml	max_advection_velocity	0.5	0.5	0.2
&ocean_barotropic_nml	diag_step	4320	4320	576
	vel_micom_lap_diag	0.2	0.2	0.5
&ocean_model_nml	cmip_units	True	True	
	dt_ocean	3600	1200	150
	io_layout	4, 3	6, 5	10, 15
	layout	16, 15	48, 40	80,75
&ocean_overflow_ofp_nml	diag_step	4320	4320	5760
&ocean_rivermix_nml	river_diffuse_salt	False	False	True
	river_diffuse_temp	False	False	True
&ocean_riverspread_nml	debug_this_module			False
	use_this_module	False	False	True
&ocean_shortwave_csiro_nml	debug_this_module	False	False	
	read_depth	True	True	
	zmax_pen	7000	7000	
&ocean_solo_nml	days	1460	31	30
	dt_cpld	3600	1200	150
&ocean_tempsalt_nml	debug_this_module	False	False	True
&ocean_tracer_diag_nml	diag_step	4320	4320	576
&ocean_velocity_diag_nml	diag_step	4320	4320	576
	energy_diag_step	4320	4320	5760
&sat_vapor_pres_nml	show_all_bad_values			True
&xgrid_nml	do_alltoall			True
	do allegally			Truca
	do_alltoallv xgrid_log			True False

2 Changes in new ACCESS-OM2 configs

2.1 accessom2_1deg_jra55_ryf

Group	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 1deg jra55_ryf input.nml
&bg_diff_lat_dependence_nml	bg_diff_eq	1×10^{-6}	
&diag_manager_nml	lat_low_bgdiff debug_diag_manager	20.0	True
addy_mandger_mm	issue_oor_warnings	False	True
&monin_obukhov_nml	neutral		True
&ocean_albedo_nml &ocean_barotropic_nml	ocean_albedo_option zero_tendency		2 False
&ocean_bbc_nml	bmf_implicit		True
	cdbot_hi		0.007
	cdbot_law_of_wall	False	Falsa
	cdbot_roughness_length cdbot_roughness_uamp		False True
	uresidual		0.05
&ocean_bbc_ofam_nml	read_tide_speed	False	
0	uresidual2_max	1.0	T
&ocean_bih_tracer_nml	tracer_mix_micom vel_micom		True 0.001
&ocean_bihgen_friction_nml	bottom_Spoint	True	False
•	ncar_boundary_scaling_read		True
	vel_micom_bottom	0.01	0.0
	vel_micom_iso visc_crit_scale	0.04 0.25	0.0 1.0
&ocean_convect_nml	convect_full_scalar	False	True
	convect_full_vector	True	False
&ocean_density_nml	neutralrho_max	1030.0	1038.0
&ocean_domains_nml	neutralrho_min max_tracers	1020.0 10	1028.0
&ocean_form_drag_nml	cprime_aiki	0.6	
&ocean_frazil_nml	debug_this_module		False
	frazil_only_in_surface		False
	freezing_temp_preteos10 freezing_temp_simple	True	True False
&ocean_grids_nml	debug_this_module	True	False
accur-grazzanii	read_rho0_profile	False	ruise
&ocean_increment_eta_nml	days_to_increment	0	
	fraction_increment secs_to_increment	1.0 1800	
&ocean_increment_tracer_nml	days_to_increment	0	
	fraction_increment	1.0	
	secs_to_increment	1800	
&ocean_increment_velocity_nml	days_to_increment	0	
	fraction_increment secs_to_increment	1.0 1800	
&ocean_lapgen_friction_nml	bottom_5point	True	
	k_smag_aniso	0.0	
	k_smag_iso ncar_only_equatorial	0.0 True	2.0
	restrict_polar_visc	True	
	restrict_polar_visc_lat	60.0	
	restrict_polar_visc_ratio	0.35	
	use_this_module vconst_1	True 8 000 000.0	False
	vconst_1 vconst_2	0.0	
	vconst_3	0.8	
	vconst_4	5×10^{-9}	
	vconst_5 vconst_6	3 300 000 000.0	
		0.000 0000 000.0	
		100.0	
	vconst_7 vel_micom_iso	100.0 0.1	
	vconst_7 vel_micom_iso viscosity_ncar	0.1 True	
	vconst_7 vel_micom_iso viscosity_ncar viscosity_ncar_2000	0.1 True False	
	vconst_7 vel_micom_iso viscosity_ncar viscosity_ncar_2000 viscosity_ncar_2007	0.1 True False True	
	vconst_7 vel_micom_iso viscosity_ncar viscosity_ncar_2000 viscosity_ncar_2007 viscosity_scale_by_rossby viscosity_scale_by_rossby_power	0.1 True False	
&ocean_mixdownslope_nml	vconst_7 vel_micom_iso viscosity_ncar viscosity_ncar_2000 viscosity_ncar_2007 viscosity_scale_by_rossby	0.1 True False True True	

	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 1deg jra55_ryf input.nml
	use_this_module	True	False
&ocean_momentum_source_nml	rayleigh_damp_exp_from_bottom	-	False
&ocean_nphysics_nml	use_nphysicsc use_this_module	True True	False False
&ocean_nphysics_util_nml	agm	600.0	100.0
Gottan Infrijoto Latterint	agm_closure_eady_ave_mixed	True	20010
	agm_closure_eady_cap	True	
	agm_closure_eady_smooth_horz	True	
	agm_closure_eady_smooth_vert agm_closure_eden_gamma	True 0.0	
	agm_closure_eden_greatbatch	False	
	agm_closure_grid_scaling	True	
	agm_closure_min	50.0	100.0
	agm_damping_time	45.0	
	agm_smooth_space agm_smooth_time	False False	
	drhodz_mom4p1	True	False
	nphysics_util_zero_init	True	
	smax		0.002
Paccan polyciere and	swidth	True	0.002
&ocean_nphysicsc_nml	bv_freq_smooth_vert bvp_bc_mode	irue 2	
	bvp_min_speed	0.1	
	bvp_speed	0.0	
	debug_this_module	False	
	do_gm_skewsion	True	
	do_neutral_diffusion epsln_bv_freq	True $1 imes 10^{-12}$	
	gm_skewsion_bvproblem	True	
	gm_skewsion_modes	False	
	neutral_eddy_depth	True	
	neutral_physics_limit	True	
	number_bc_modes regularize_psi	2 False	
	regutanze_psi smax_psi	0.01	
	smooth_psi	True	
	tmask_neutral_on	True	
	turb_blayer_min	50.0	F-1
&ocean_operators_nml	use_this_module use_legacy_div_ud	True	False False
&ocean_overexchange_nml	overexch_check_extrema	False	1 0130
&ocean_overflow_ofp_nml	debug_this_module		False
	diag_step		4320
	do_entrainment_para_ofp		False
	do_mass_ofp frac_exchange_src		True 1.0
	max_vol_trans_ofp		10 000 000.
			False
	use_this_module		
&ocean_pressure_nml	zero_pressure_force		False
&ocean_riverspread_nml	zero_pressure_force use_this_module	True	False
&ocean_riverspread_nml &ocean_rough_nml	zero_pressure_force use_this_module rough_scheme	True	False 'beljaars
&ocean_riverspread_nml &ocean_rough_nml	zero_pressure_force use_this_module rough_scheme calvingspread	True	False 'beljaars False
&ocean_riverspread_nml &ocean_rough_nml	zero_pressure_force use_this_module rough_scheme	True	False 'beljaars False False
&ocean_pressure_nml &ocean_riverspread_nml &ocean_rough_nml &ocean_sbc_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes		False 'beljaars False False False
&ocean_riverspread_nml &ocean_rough_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness	True	False 'beljaars False False False O.0
kocean_riverspread_nml kocean_rough_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale	8.0	False 'beljaars False False False O.G
&ocean_riverspread_nml &ocean_rough_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness	8.0 15.0	False 'beljaars False False False O.0
&ocean_riverspread_nml &ocean_rough_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale salt_restore_tscale temp_restore_tscale use_full_patm_for_sea_level	8.0	False 'beljaars False False False False O.0. 0.0 60.0
&ocean_riverspread_nml &ocean_rough_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale salt_restore_tscale temp_restore_tscale use_full_patm_for_sea_level waterflux_tavg	8.0 15.0	False 'beljaars False False False False 0.0 0.0 60.0 -10.0 False
&ocean_riverspread_nml &ocean_rough_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale salt_restore_tscale temp_restore_tscale use_full_patm_for_sea_level waterflux_tavg zero_net_salt_correction	8.0 15.0 -1.0	False 'beljaars False False False False 0.0 0.0 60.0 False
&ocean_riverspread_nml &ocean_sbc_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale salt_restore_tscale temp_restore_tscale use_full_patm_for_sea_level waterflux_tavg zero_net_salt_correction zero_net_water_correction	8.0 15.0 —1.0 False	False 'beljaars False False False False 0.0 0.0 60.0 False
&ocean_riverspread_nml &ocean_sbc_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale salt_restore_tscale temp_restore_tscale use_full_patm_for_sea_level waterflux_tavg zero_net_salt_correction zero_net_water_correction restore_mask_ofam	8.0 15.0 -1.0	False 'beljaars False False False False O.0 0.0 600. —100. False
&ocean_riverspread_nml &ocean_sbc_nml &ocean_sbc_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale salt_restore_tscale temp_restore_tscale use_full_patm_for_sea_level waterflux_tavg zero_net_salt_correction zero_net_water_correction restore_mask_ofam river_temp_ofam debug_this_module	8.0 15.0 —1.0 False	False 'beljaars False False False O.0 60.0 -10.0 False False
&ocean_riverspread_nml &ocean_sbc_nml &ocean_sbc_nml &ocean_sbc_ofam_nml &ocean_sbc_ofam_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale salt_restore_tscale temp_restore_tscale use_full_patm_for_sea_level waterflux_tavg zero_net_salt_correction zero_net_water_correction restore_mask_ofam river_temp_ofam debug_this_module use_this_module	8.0 15.0 —1.0 False	False 'beljaars False
&ocean_riverspread_nml &ocean_sbc_nml &ocean_sbc_nml &ocean_sbc_ofam_nml &ocean_sbc_ofam_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale salt_restore_tscale temp_restore_tscale use_full_patm_for_sea_level waterflux_tavg zero_net_salt_correction zero_net_water_correction restore_mask_ofam river_temp_ofam debug_this_module use_this_module optics_morel_antoine	8.0 15.0 —1.0 False False Farse	False Palse Palse False
&ocean_riverspread_nml &ocean_sbc_nml &ocean_sbc_nml &ocean_sbc_ofam_nml &ocean_shortwave_csiro_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale salt_restore_tscale temp_restore_tscale use_full_patm_for_sea_level waterflux_tavg zero_net_salt_correction zero_net_water_correction restore_mask_ofam river_temp_ofam debug_this_module use_this_module optics_morel_antoine read_chl	8.0 15.0 -1.0 False False False True False	False Palse Palse False
&ocean_riverspread_nml &ocean_sbc_nml &ocean_sbc_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale salt_restore_tscale temp_restore_tscale use_full_patm_for_sea_level waterflux_tavg zero_net_salt_correction zero_net_water_correction restore_mask_ofam river_temp_ofam debug_this_module use_this_module optics_morel_antoine	8.0 15.0 —1.0 False False Farse	False
&ocean_riverspread_nml &ocean_sbc_nml &ocean_sbc_nml &ocean_sbc_ofam_nml &ocean_sbc_ofam_nml	zero_pressure_force use_this_module rough_scheme calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness salt_correction_scale salt_restore_tscale temp_restore_tscale use_full_patm_for_sea_level waterflux_tavg zero_net_salt_correction zero_net_water_correction restore_mask_ofam river_temp_ofam debug_this_module use_this_module optics_morel_antoine read_chl sw_pen_fixed_depths	8.0 15.0 —1.0 False False False True False False	False 'beljaars False False False O.0 60.0 -10.0 False False False False False False False

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 1deg jra55_ryf input.nml
	use_shortwave_gfdl	False	True
&ocean_sigma_transport_nml	use_this_module	True	False
&ocean_solo_nml &ocean_submesoscale_nml	debug_this_module	False	0.05
&ocean_submesoscate_nmt	coefficient_ce smooth_advect_transport		True
	smooth_advect_transport_num		4
	smooth_psi		True
	smooth_psi_num		3
	submeso_advect_flux		False
	submeso_advect_limit		True
	submeso_advect_upwind		True
	submeso_advect_zero_bdy submeso_diffusion		True False
	submeso_diffusion_biharmonic		True
	submeso_diffusion_scale		10.0
	submeso_limit_flux	True	
	submeso_skew_flux		True
	use_psi_legacy		False
&ocean_tempsalt_nml	pottemp_equal_contemp		True
	S_max	55.0	70.0
	s_min s_min_limit	-1.0 0.0	0.0 2.0
	s_min_tmin	-5.0	- 20.0
	t_min_limit	- 3.0 - 2.0	-20.0 -5.0
	temperature_variable	'conservative	'potential
	•	temp'	temp'
&ocean_thickness_nml	initialize_zero_eta	False	
	read_rescale_rho0_mask	False	
	rescale_mass_to_get_ht_mod	70	False
	rescale_rho0_basin_label rescale_rho0_mask_gfdl	7.0 False	
	rescale_rho0_value	0.75	
	thickness_dzt_min	1.0	2.0
	thickness_dzt_min_init	2.0	10.0
&ocean_topog_nml	min_thickness	25.0	
&ocean_tracer_advect_nml	advect_sweby_all	True	
	async_domain_update	True	
0 1 1	read_basin_mask	4.0	False
&ocean_tracer_diag_nml &ocean_velocity_nml	tracer_conserve_days max_cqint	1.0 1.0	30.0 1.5
&ocean_vetocity_nint	truncate_velocity	True	False
	zero_tendency_explicit_a		False
	zero_tendency_explicit_b		False
	zero_tendency_implicit		False
&ocean_vert_kpp_mom4p0_nml	use_this_module	False	
&ocean_vert_kpp_mom4p1_nml	diff_con_limit	0.1	
	visc_con_limit	0.1	
&ocean_vert_mix_nml	afkph_00 afkph_90	0.65 0.75	
	акрп_90 bryan_lewis_lat_depend	0.75 True	False
	bryan_lewis_lat_transition	35.0	ו מנגכ
	dfkph_00	1.15	
	dfkph_90	0.95	
	hwf_diffusivity		False
	the first tree to the		2×10^{-6}
	hwf_min_diffusivity		
	hwf_n0_2omega		20.0
	hwf_n0_2omega linear_taper_diff_cbt_table	False	20.0
	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00	4.5×10^{-5}	20.0
	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90	4.5×10^{-5} 4.5×10^{-5}	20.0
	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90 zfkph_00	$\begin{array}{c} 4.5\times 10^{-5} \\ 4.5\times 10^{-5} \\ 250000.0 \end{array}$	20.0
&ocean_vert_tidal_nml	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90 zfkph_00 zfkph_90	4.5×10^{-5} 4.5×10^{-5}	20.0
&ocean_vert_tidal_nml	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90 zfkph_00 zfkph_90 background_diffusivity decay_scale	4.5×10^{-5} 4.5×10^{-5} 250000.0 250000.0	
&ocean_vert_tidal_nml	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90 zfkph_00 zfkph_90 background_diffusivity decay_scale drag_dissipation_use_cdbot	$\begin{array}{c} 4.5 \times 10^{-5} \\ 4.5 \times 10^{-5} \\ 250000.0 \\ 250000.0 \\ \hline 5 \times 10^{-6} \\ 300.0 \end{array}$	0.0 500.0 True
&ocean_vert_tidal_nml	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90 zfkph_00 zfkph_90 background_diffusivity decay_scale drag_dissipation_use_cdbot drhodz_min	4.5×10^{-5} 4.5×10^{-5} 250000.0 250000.0 5×10^{-6} 300.0 1×10^{-12}	0.0 500.0
&ocean_vert_tidal_nml	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90 zfkph_00 zfkph_90 background_diffusivity decay_scale drag_dissipation_use_cdbot drhodz_min max_drag_diffusivity	$\begin{array}{c} 4.5 \times 10^{-5} \\ 4.5 \times 10^{-5} \\ 250000.0 \\ 250000.0 \\ \hline 5 \times 10^{-6} \\ 300.0 \\ \hline 1 \times 10^{-12} \\ 0.01 \end{array}$	$\begin{array}{c} 0.0 \\ 500.0 \\ \text{True} \\ 1 \times 10^{-10} \end{array}$
&ocean_vert_tidal_nml	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90 zfkph_00 zfkph_90 background_diffusivity decay_scale drag_dissipation_use_cdbot drhodz_min max_drag_diffusivity roughness_scale	$\begin{array}{c} 4.5 \times 10^{-5} \\ 4.5 \times 10^{-5} \\ 250000.0 \\ 250000.0 \\ \hline 5 \times 10^{-6} \\ 300.0 \\ \hline 1 \times 10^{-12} \\ 0.01 \\ 20000.0 \end{array}$	0.0 500.0 True 1×10^{-10} 12 000.0
&ocean_vert_tidal_nml	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90 zfkph_00 zfkph_90 background_diffusivity decay_scale drag_dissipation_use_cdbot drhodz_min max_drag_diffusivity roughness_scale shelf_depth_cutoff	$\begin{array}{c} 4.5 \times 10^{-5} \\ 4.5 \times 10^{-5} \\ 250000.0 \\ 250000.0 \\ \hline 5 \times 10^{-6} \\ 300.0 \\ \hline 1 \times 10^{-12} \\ 0.01 \end{array}$	$\begin{array}{c} 0.0\\ 500.0\\ \text{True}\\ 1\times 10^{-10}\\ 12000.0\\ -1000.0\\ \end{array}$
	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90 zfkph_00 zfkph_90 background_diffusivity decay_scale drag_dissipation_use_cdbot drhodz_min max_drag_diffusivity roughness_scale shelf_depth_cutoff use_legacy_methods	$\begin{array}{c} 4.5 \times 10^{-5} \\ 4.5 \times 10^{-5} \\ 250000.0 \\ 250000.0 \\ \hline 5 \times 10^{-6} \\ 300.0 \\ \hline 1 \times 10^{-12} \\ 0.01 \\ 20000.0 \\ 160.0 \end{array}$	0.0 500.0 True 1×10^{-10} 12 000.0
&ocean_xlandinsert_nml	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90 zfkph_00 zfkph_90 zfkph_90 background_diffusivity decay_scale drag_dissipation_use_cdbot drhodz_min max_drag_diffusivity roughness_scale shelf_depth_cutoff use_legacy_methods verbose_init	$\begin{array}{c} 4.5 \times 10^{-5} \\ 4.5 \times 10^{-5} \\ 250000.0 \\ 250000.0 \\ \hline 5 \times 10^{-6} \\ 300.0 \\ \hline 1 \times 10^{-12} \\ 0.01 \\ 20000.0 \\ 160.0 \\ \hline \end{array}$	$\begin{array}{c} 0.0\\ 500.0\\ \text{True}\\ 1\times 10^{-10}\\ 12000.0\\ -1000.0\\ \end{array}$
	hwf_n0_2omega linear_taper_diff_cbt_table sfkph_00 sfkph_90 zfkph_00 zfkph_90 background_diffusivity decay_scale drag_dissipation_use_cdbot drhodz_min max_drag_diffusivity roughness_scale shelf_depth_cutoff use_legacy_methods	$\begin{array}{c} 4.5 \times 10^{-5} \\ 4.5 \times 10^{-5} \\ 250000.0 \\ 250000.0 \\ \hline 5 \times 10^{-6} \\ 300.0 \\ \hline 1 \times 10^{-12} \\ 0.01 \\ 20000.0 \\ 160.0 \end{array}$	$\begin{array}{c} 0.0\\ 500.0\\ \text{True}\\ 1\times 10^{-10}\\ 12000.0\\ -1000.0\\ \end{array}$

Group (continued)	Variable original/ hogg_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 1deg jra55_ryf input.nml
	raoult_sat_vap	True
&xgrid_nml	nsubset	16

2.2 accessom2_025deg_jra55_ryf

$2.3 \quad accessom2_01deg_jra55_ryf$

Group	Variable	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
&ocean_velocity_nml	max_cgint	1.0	1.5

3 Differences between old and new ACCESS-OM2 configs

Group	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 1deg jra55_ryf input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
&auscom_ice_nml	aice_cutoff	0.15	0.15	0.15	0.15	0.15	0.15
	chk_i2o_fields	False	False	False	False	False	False
	chk_o2i_fields do_ice_once	False False	False False	False False	False False	False False	False False
	do_ice_orice dt_cpl	3600	3600	1200	1200	150	150
	fixmeltt	False	False	False	False	False	False
	frazil_factor	1.0	1.0	1.0	1.0	1.0	1.0
	iceform_adj_salt	False	False	False	False	False	False
	icemlt_factor	1.0	1.0	1.0	1.0	1.0	1.0
	kmxice	5	5	5	5	5	5
	pop_icediag <mark>redsea_gulfbay_sfix</mark>	True True	True True	True	True	True	True
	sign_stflx	1.0	1.0	1.0	1.0	1.0	1.0
	tmelt	-0.216	-0.216	-0.216	-0.216	-0.216	-0.216
	use_ioaice	True	True	True	True	True	True
&bg_diff_lat_dependence_nml	bg_diff_eq	$1 imes 10^{-6}$					
	lat_low_bgdiff	20.0					
&diag_manager_nml	debug_diag_manager		True	True	True		
	issue_oor_warnings	False	True	True	True	False	False
	max_axes					300 1000	300
	max_files max_input_fields					700	1000 700
	max_num_axis_sets					40	40
	max_output_fields					700	700
&fms_io_nml	checksum_required					False	False
	fileset_write	'single'	'single'	'single'	'single'	'multi'	'multi'
	max_files_r					700	700
	max_files_w	1 1.0	1 1.0			700	700
	threading_read	'multi' 'ainala'	'multi' 'ainala'	'multi'	'multi'	'multi'	'multi'
&fms_nml	threading_write clock_grain	'single' 'LOOP'	'single' 'LOOP'	'single' 'LOOP'	'single' 'LOOP'	'multi' 'LOOP'	'multi' 'LOOP'
&IIIIS_IIIIIt	domains_stack_size	LOOP	LOOP	LOOP	LOOP	115200	115200
	print_memory_usage					False	False
&generic_tracer_nml	do_generic_cfc					False	False
	do_generic_topaz					False	False
	do_generic_tracer					False	False
&mom_oasis3_interface_nml	fields_in	'u_flux',	'u_flux',	'u_flux',	'u_flux',	'u_flux',	'u_flux',
		'v_flux', 'lprec', 'fprec',	'v_flux', 'lprec', 'fprec',	'v_flux', 'lprec', 'fprec',	'v_flux', 'lprec', 'fprec',	'v_flux', 'lprec', 'fprec',	'v_flux', 'lprec', 'fprec',
		'salt_flx',	'salt_flx',	'salt_flx',	'salt_flx',	'salt_flx',	'salt_flx',
		'mh_flux',	'mh_flux',	'mh_flux',	'mh_flux',	'mh_flux',	'mh_flux',
		'sw_flux',	'sw_flux',	'sw_flux',	'sw_flux',	'sw_flux',	'sw_flux',
		'q_flux',	'q_flux',	'q_flux',	'q_flux',	'q_flux',	'q_flux',
		't_flux',	't_flux',	't_flux',	't_flux',	't_flux',	't_flux',
		'lw_flux',	'lw_flux', 'runof' 'n'	'lw_flux', 'rupof' 'n'	'lw_flux',	'lw_flux', 'rupof' 'n'	'lw_flux',
		'runof', 'p', 'aice',	'runof', 'p', 'aice',	'runof', 'p', 'aice',	'runof', 'p', 'aice',	'runof', 'p', 'aice',	'runof', 'p', 'aice',
		'wfimelt',	'wfimelt',	wfimelt',	'wfimelt',	'wfimelt',	wfimelt',
		'wfiform'	'wfiform'	'wfiform'	'wfiform'	'wfiform'	'wfiform'
	fields_out	't_surf',	't_surf',	't_surf',	't_surf',	't_surf',	't_surf',
		's_surf',	's_surf',	's_surf',	's_surf',	's_surf',	's_surf',
		'u_surf',	'u_surf',	'u_surf',	'u_surf',	'u_surf',	'u_surf',
		'v_surf',	'v_surf',	'v_surf',	'v_surf',	'v_surf',	'v_surf',
		'dssldx', 'dssldy',	'dssldx', 'dssldy',	'dssldx', 'dssldy',	'dssldx', 'dssldy',	'dssldx', 'dssldy',	'dssldx', 'dssldy',
		ussiuv.	ussiuy,	ussiuy,			ʻfrazil
				'frazil'	'frazil'	trazii	
	num fields in	'frazil'	'frazil'	'frazil' 15	'frazil' 15	'frazil' 15	
	num_fields_in num_fields_out			'frazil' 15 7	'frazil' 15 7	15 7	15 7
	num_fields_out send_after_ocean_update	'frazil' 15	'frazil' 15 7 True	15 7 True	15 7 True	15 7 True	15
	num_fields_out send_after_ocean_update send_before_ocean_update	'frazil' 15 7	'frazil' 15 7 True False	15 7 True False	15 7 True False	15 7 True False	15 7 True False
&monin_obukhov_nml	num_fields_out send_after_ocean_update send_before_ocean_update neutral	'frazil' 15 7 True	'frazil' 15 7 True	15 7 True	15 7 True	15 7 True False True	15 7 True False True
&monin_obukhov_nml &mpp_io_nml	num_fields_out send_after_ocean_update send_before_ocean_update neutral deflate_level	'frazil' 15 7 True	'frazil' 15 7 True False	15 7 True False	15 7 True False	15 7 True False True 5	15 7 True False True 5
&mpp_io_nml	num_fields_out send_after_ocean_update send_before_ocean_update neutral deflate_level shuffle	'frazil' 15 7 True False	'frazil' 15 7 True False True	15 7 True False True	15 7 True False True	15 7 True False True 5 1	15 7 True False True 5 1
	num_fields_out send_after_ocean_update send_before_ocean_update neutral deflate_level shuffle diag_step	'frazil' 15 7 True False	'frazil' 15 7 True False True	15 7 True False True	15 7 True False True	15 7 True False True 5 1	15 7 True False True 5 1
&mpp_io_nml	num_fields_out send_after_ocean_update send_before_ocean_update neutral deflate_level shuffle diag_step large_cfl_value	'frazil' 15 7 True False 4320 10.0	'frazil' 15 7 True False True 4320 10.0	15 7 True False True 4320 10.0	15 7 True False True 4320 10.0	15 7 True False True 5 1 576 100	15 7 True False True 5 1 576 10.0
&mpp_io_nml	num_fields_out send_after_ocean_update send_before_ocean_update neutral deflate_level shuffle diag_step large_cfl_value max_cfl_value	'frazil' 15 7 True False	'frazil' 15 7 True False True	15 7 True False True	15 7 True False True 4320 10.0 100.0	15 7 True False True 5 1	15 7 True False True 5 1
&mpp_io_nml	num_fields_out send_after_ocean_update send_before_ocean_update neutral deflate_level shuffle diag_step large_cfl_value	'frazil' 15 7 True False 4320 1000	'frazil' 15 7 True False True 4320 1000	15 7 True False True 4320 10.0 100.0	15 7 True False True 4320 10.0	15 7 True False True 5 1 576 10.0 100.0	15 7 True False True 5 1 576 10.0 100.0

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 1deg jra55_ryf input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
&ocean_barotropic_nml	barotropic_halo	_10	_10	_10	_ 10	_10	_10
	barotropic_time_stepping_a barotropic_time_stepping_b	True False	True False	True False	True False	True False	True False
	debug_this_module	False	False	False	False	False	False
	diag_step	4320	4320	4320	4320	576	576
	eta_max	8.0	8.0	8.0	8.0	8.0	0.8
	frac_crit_cell_height	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
	smooth_eta_diag_laplacian smooth_eta_t_biharmonic	True False	True False	True False	True False	True False	True False
	smooth_eta_t_laplacian	True	True	True	True	True	True
	smooth_pbot_t_biharmonic	False	False	False	False	False	False
	smooth_pbot_t_laplacian	True	True	True	True	True	True
	truncate_eta	False	False	False	False	False	False
	use_legacy_barotropic_halos vel_micom_bih	False 0.01	False 0.01	False 0.01	False 0.01	False 0.01	False 0.01
	vel_micom_lap	0.01	0.01	0.01	0.01	0.01	0.01
	vel_micom_lap_diag	0.2	0.2	0.2	0.2	0.5	0.5
	verbose_truncate	True	True	True	True	True	True
	zero_tendency		False	False	False	False	False
&ocean_bbc_nml	<mark>bmf_implicit</mark> cdbot	0.001	True 0.001	True 0.001	True 0.001	True 0.001	True 0.001
	cdbot_hi	0.001	0.001	0.001	0.001	0.001	0.001
	cdbot_law_of_wall	False	0.007	0.007	0.007	0.007	0.007
	cdbot_roughness_length		False	False	False	False	False
	cdbot_roughness_uamp		True	True	True	True	True
	uresidual	Falsa	0.05	0.05	0.05	0.05	0.05
&ocean_bbc_ofam_nml	use_geothermal_heating read_tide_speed	False False	False	False	False	False	False
Coccan_bbc_brani_nint	uresidual2_max	1.0					
&ocean_bih_friction_nml	bih_friction_scheme	'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
O hihart fristian and	vel_micom	Falsa	0.001	0.001	0.001	0.001	0.001
&ocean_bihcst_friction_nml &ocean_bihgen_friction_nml	use_this_module bottom_5point	False True	False False	False False	False False	False False	False False
&ocean_bingen_mction_nint	eq_lat_micom	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
	eq_vel_micom_iso	0.0	0.0	0.0	0.0	0.0	0.0
	equatorial_zonal	False	False	False	False	False	False
	k_smag_aniso	0.0	0.0	0.0	0.0	0.0	0.0
	k_smag_iso ncar_boundary_scaling	2.0 True	2.0 True	2.0 True	2.0 True	2.0 True	2.0 True
	ncar_boundary_scaling_read	nuc	True	True	True	True	True
	ncar_rescale_power	2	2	2	2	2	2
	ncar_vconst_4	$2 imes 10^{-8}$	$2 imes 10^{-8}$	$2 imes 10^{-8}$	$2 imes 10^{-8}$	$2 imes 10^{-8}$	$2 imes 10^{-8}$
	ncar_vconst_5	5	5	5	5	5	5
	use_this_module vel_micom_aniso	True 0.0	True 0.0	True 0.0	True 0.0	True 0.0	True 0.0
	vel_micom_bottom	0.01	0.0	0.0	0.0	0.0	0.0
	vel_micom_iso	0.04	0.0	0.0	0.0	0.0	0.0
	visc_crit_scale	0.25	1.0	1.0	1.0	1.0	1.0
&ocean_convect_nml	convect_full_scalar	False	True	True	True	True	True
	<pre>convect_full_vector use_this_module</pre>	True	False False	False False	False False	False	False False
&ocean_coriolis_nml	use_triis_modute acor	False 0.5	0.5	0.5	0.5	False 0.5	0.5
Woccum_conons_min	use_this_module	True	True	True	True	True	True
&ocean_density_nml	eos_linear	False	False	False	False	False	False
	eos_preteos10	True	True	True	True	True	True
	layer_nk	1070.0	10780	10780	1078.0	1078.0	1079.0
	neutralrho_max neutralrho_min	1030.0 1020.0	1038.0 1028.0	1038.0 1028.0	1038.0 1028.0	1038.0 1028.0	1038.0 1028.0
	potrho_max	1020.0	1028.0	1028.0	1028.0	1028.0	1028.0
	potrho_min	1028.0	1028.0	1028.0	1028.0	1028.0	1028.0
&ocean_domains_nml	max_tracers	10	5	5	5	5	5
&ocean_form_drag_nml	cprime_aiki	0.6					
9 and family and	use_this_module	False	False	False	False	False	False
&ocean_frazil_nml	debug_this_module frazil_only_in_surface		False False	False False	False False	False False	False False
	irazit_Onty_in_Surface						
	freezing temp preteos10		Truo	Iruo	Iruo	Iruo	ITIID
	freezing_temp_preteos10 freezing_temp_simple	True	True False	True False	True False	True False	True False
	freezing_temp_preteos10 freezing_temp_simple use_this_module	True True	True False True	Irue False True	True False True	Irue False True	False True

&ocean_increment_eta_nml &ocean_increment_tracer_nml	read_rho0_profile days_to_increment fraction_increment secs_to_increment	False 0		input.nml	input.nml	jra55_ryf input.nml	input.nml
	fraction_increment						
&ocean_increment_tracer_nml		1.0					
&ocean_increment_tracer_nml		1800					
&ocean_increment_tracer_nml	use_this_module	False	False	False	False	False	False
	days_to_increment	0					
	fraction_increment secs_to_increment	1.0 1800					
	use_this_module	False	False	False	False	False	False
&ocean_increment_velocity_nml	days_to_increment	0	ruise	1 4130	rusc	- ruisc	1 4150
•	fraction_increment	1.0					
	secs_to_increment	1800	F 1	F 1	F 1	F 1	F 1
&ocean_lap_friction_nml	use_this_module lap_friction_scheme	False 'general'	False 'general'	False 'general'	False 'general'	False 'general'	False 'general'
&ocean_lap_tracer_nml	use_this_module	False	False	False	False	False	False
&ocean_lapcst_friction_nml	use_this_module	False	False	False	False	False	False
&ocean_lapgen_friction_nml	bottom_5point	True					
	k_smag_aniso	0.0					
	k_smag_iso	0.0	2.0	2.0	2.0	2.0	2.0
	ncar_only_equatorial restrict_polar_visc	True True					
	restrict_polar_visc_lat	60.0					
	restrict_polar_visc_ratio	0.35					
	use_this_module	True	False	False	False	False	False
	vconst_1	8 000 000.0					
	vconst_2 vconst_3	0.0 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					
	viscosity_ncar viscosity_ncar_2000	True False					
	viscosity_ncar_2007	True					
	viscosity_scale_by_rossby	True					
	viscosity_scale_by_rossby_power	4.0					
&ocean_mixdownslope_nml	debug_this_module	False	False	False	False	False	False
	mixdownslope_mask_gfdl mixdownslope_npts	False 4					
	read_mixdownslope_mask	False					
	use_this_module	True	False	False	False	False	False
&ocean_model_nml	baroclinic_split	1	1	1	1	1	1
	barotropic_split	_80	_ 80	_80	_80	80	80
	<mark>cmip_units</mark> debug	True False	True False	True False	True False	False	False
	dt_ocean	3600	3600	1200	1200	150	150
	io_layout	4, 3	4, 3	6, 5	6, 5	10, 15	10, 15
	layout	16, 15	16, 15	48, 40	48, 40	80,75	80,75
	surface_height_split	1	1	1	1	1	1
	time_tendency vertical_coordinate	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel' 'zstar'	'twolevel
&ocean_momentum_source_nml	rayleigh_damp_exp_from_bottom	'zstar'	'zstar' False	'zstar' False	'zstar' False	False	'zstar' False
a decan in one man in its analysis of the control o	use_rayleigh_damp_table	True	True	True	True	True	True
	use_this_module	True	True	True	True	True	True
&ocean_nphysics_nml	debug_this_module	False	False	False	False	False	False
	use_nphysicsa	False	False	False	False	False	False
	use_nphysicsb use_nphysicsc	False True	False False	False False	False False	False False	False False
	use_this_module	True	False	False	False	False	False
&ocean_nphysics_util_nml	agm	600.0	100.0	100.0	100.0	100.0	100.0
	agm_closure	True	True	True	True	True	True
	agm_closure_baroclinic	True	True	True	True	True	True
	agm_closure_buoy_freq	0.004 True	0.004	0.004	0.004	0.004	0.004
	agm_closure_eady_ave_mixed agm_closure_eady_cap	True					
	agm_closure_eady_smooth_horz	True					
	agm_closure_eady_smooth_vert	True					
	agm_closure_eden_gamma	0.0					
	agm_closure_eden_greatbatch	False					
	<pre>agm_closure_grid_scaling agm_closure_length</pre>	True 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	50 000.0

Property	Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 1deg jra55_ryf input.nml	original/ kiss_acces- som2 025deg jra55_ryf input_mul	new_acces- som2 025deg jra55_ryf input.nml	original/ hogg_acces- som2 01deg jra55_ryf input_mul	new_acces- som2 01deg jra55_ryf input.nml
		agm_closure_length_fixed	False	False	False	False	False	False
### Speciment Sp								
Section		agm_closure_max	600.0	600.0	600.0			
Part								
		3		100.0	100.0	100.0	100.0	100.0
Part								
Part		3						
Part		drhodz_smooth_vert						
		-, -						
		•						
Part		•	15 000.0					
Part								
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&ocean_sbc_nml avg_sfc_temp_salt_eta True True True True True True True True			True					
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	&∪Cean_SDC_nml	avg_stc_temp_salt_eta avg_sfc_velocity	Irue True	Irue True	Irue True	Irue True	Irue True	Irue True

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 1deg jra55_ryf input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
	calvingspread do_bitwise_exact_sum		False False	False False	False False	False False	False False
	do_flux_correction		False	False	False	False	False
	land_model_heat_fluxes		False	False	False	False	False
	max_delta_salinity_restore	0.5	0.5	0.5	0.5	0.5	0.5
	max_ice_thickness read_restore_mask	8.0 False	0.0 False	0.0 False	0.0 False	0.0 False	0.0 False
	restore_mask_gfdl	False	False	False	False	False	False
	runoff_salinity	0.0	0.0	0.0	0.0	0.0	0.0
	salt_correction_scale	Т	0.0	0.0	0.0	0.0	0.0
	salt_restore_as_salt_flux salt_restore_tscale	True 15.0	True 60.0	True 60.0	True 60.0	True 60.0	True 60.0
	salt_restore_under_ice	True	True	True	True	True	True
	temp_restore_tscale	-1.0	-10.0	-10.0	-10.0	-10.0	-10.0
	use_full_patm_for_sea_level	-	False	False	False	False	False
	use_waterflux waterflux_tavq	True False	True	True	True	True	True
	zero_heat_fluxes	False	False	False	False	False	False
	zero_net_salt_correction		False	False	False	False	False
	zero_net_salt_restore	True	True	True	True	True	True
	<pre>zero_net_water_correction zero_net_water_couple_restore</pre>	True	False True	False True	False True	False True	False True
	zero_net_water_coupler	True	True	True	True	True	True
	zero_net_water_restore	True	True	True	True	True	True
	zero_surface_stress	False	False	False	False	False	False
Passan she oform and	zero_water_fluxes	False	False	False	False	False	False
&ocean_sbc_ofam_nml	restore_mask_ofam river_temp_ofam	False False					
&ocean_shortwave_csiro_nml	debug_this_module	rube	False	False	False		
	read_depth	True	True	True	True		
	use_this_module	True	False	False	False	False	False
Passan shortways afdl aml	zmax_pen	7000 False	7000 False	7000 False	7000 False	False	False
&ocean_shortwave_gfdl_nml	debug_this_module enforce_sw_frac	True	True	True	True	True	True
	optics_manizza	True	True	True	True	True	True
	optics_morel_antoine		False	False	False	False	False
	read_chl	False False	True	True	True	True	True
	sw_pen_fixed_depths use_this_module	False	True	True	True	True	True
	zmax_pen	200.0	300.0	300.0	300.0	300.0	300.0
&ocean_shortwave_jerlov_nml	use_this_module	False	False	False	False	False	False
&ocean_shortwave_nml	use_shortwave_csiro	True	False	False	False	False	False
	<mark>use_shortwave_gfdl</mark> use_shortwave_jerlov	False False	True False	True False	True False	True False	True False
	use_this_module	True	True	True	True	True	True
&ocean_sigma_transport_nml	sigma_advection_on	False	False	False	False	False	False
	sigma_advection_sgs_only	False	False	False	False	False	False
	sigma_diffusion_on sigma_diffusivity_ratio	True $1 imes 10^{-6}$	True $1 imes 10^{-6}$	True $1 imes 10^{-6}$	True $1 imes 10^{-6}$	True $1 imes 10^{-6}$	True $1 imes 10^{-6}$
	sigma_just_in_bottom_cell	True	True	True	True	True	True
	sigma_umax	0.01	0.01	0.01	0.01	0.01	0.01
	smooth_sigma_thickness	True	True	True	True	True	True
	smooth_sigma_velocity smooth_velmicom	True 0.2	True 0.2	True 0.2	True 0.2	True 0.2	True 0.2
	thickness_sigma_layer	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
	thickness_sigma_min	100.0	100.0	100.0	100.0	100.0	100.0
	tmask_sigma_on tracer_mix_micom	False True	False True	False True	False True	False True	False True
	use_this_module	True	False	False	False	False	False
	vel_micom	0.05	0.05	0.05	0.05	0.05	0.05
&ocean_solo_nml	calendar	'NOLEAP'	'NOLEAP'	'NOLEAP'	'NOLEAP'	'NOLEAP'	'NOLEAP'
	date_init	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	1, 1, 1, 0, 0, 0
	days debug_this_module	1460 False	1460	31	31	30	30
	dcbdg_tms_module dt_cpld	3600	3600	1200	1200	150	150
	hours	0	0	0	0	0	0
	minutes	0	0	0	0	0	0
	months seconds	0	0	0	0	0	0
	years	0	0	0	0	0	0
&ocean_sponges_eta_nml	use_this_module	False	False	False	False	False	False
&ocean_sponges_tracer_nml	damp_coeff_3d	False	False	False	False	False	False

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 1deg jra55_ryf input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
	use_this_module	False	False	False	False	False	False
&ocean_sponges_velocity_nml	use_this_module	False	False	False	False	False	False
&ocean_submesoscale_nml	coefficient_ce	False	0.05 False	0.05 False	0.05 False	0.05 False	0.05 False
	debug_this_module front_length_const	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0
	front_length_deform_radius	True	True	True	True	True	True
	limit_psi	True	True	True	True	True	True
	limit_psi_velocity_scale	0.5	0.5	0.5	0.5	0.5	0.5
	min_kblt	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
	smooth_psi		True 3	True 3	True	True	True
	smooth_psi_num submeso_advect_flux		5 False	False	3 False	3 Falso	Falso
	submeso_advect_ltimit		True	True	True	False True	False True
	submeso_advect_unit submeso_advect_upwind		True	True	True	True	True
	submeso_advect_upwind		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					
	submeso_skew_flux		True	True	True	True	True
	use_hblt_equal_mld	True	True	True	True	True	True
	use_psi_legacy		False	False	False	False	False
	use_this_module	True	True	True	True	True	True
&ocean_tempsalt_nml	debug_this_module	False	False	False	False	True	True
	pottemp_2nd_iteration	True	True	True	True	True	True
	pottemp_equal_contemp	FF 0	True	True	True	True	True
	S_max	55.0	70.0	70.0	70.0	70.0	70.0
	s_max_limit <mark>s_min</mark>	42.0 —1.0	42.0 0.0	42.0 0.0	42.0 0.0	42.0 0.0	42.0 0.0
	s_min_limit	0.0	2.0	2.0	2.0	2.0	2.0
	t_max	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
	t_min	- 5.0	-20.0	-20.0	-20.0	-20.0	-20.0
	t_min_limit	-2.0	-5.0	-5.0	-5.0	-5.0	-5.0
	temperature_variable	'conservative	'potential	'potential	'potential	'potential	'potential
		temp'	temp'	temp'	temp'	temp'	temp'
&ocean_thickness_nml	debug_this_module	False	False	False	False	False	False
	debug_this_module_detail	False	False	False	False	False	False
	initialize_zero_eta	False					
	read_rescale_rho0_mask	False					
	rescale_mass_to_get_ht_mod	7.0	False	False	False	False	False
	rescale_rho0_basin_label	7.0 False					
	rescale_rho0_mask_gfdl rescale_rho0_value	False 0.75					
	thickness_dzt_min	1.0	2.0	2.0	2.0	2.0	2.0
	thickness_dzt_min_init	2.0	10.0	10.0	10.0	10.0	10.0
	thickness_method	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'
&ocean_topog_nml	min_thickness	25.0				g	
&ocean_tracer_advect_nml	advect_sweby_all	True					
	async_domain_update	True					
	debug_this_module	False	False	False	False	False	False
	read_basin_mask		False	False	False	False	False
&ocean_tracer_diag_nml	diag_step	4320	4320	4320	4320	576	576
	de bibuiles avects avec	False	False	False	False	False	False
	do_bitwise_exact_sum						30.0
	tracer_conserve_days	1.0	30.0	30.0	30.0	30.0	
&ocean_tracer_nml	tracer_conserve_days age_tracer_max_init	1.0 0.0	30.0 0.0	0.0	0.0	0.0	0.0
&ocean_tracer_nml	tracer_conserve_days age_tracer_max_init debug_this_module	1.0 0.0 False	30.0 0.0 False	0.0 False	0.0 False	0.0 False	0.0 False
&ocean_tracer_nml	tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics	1.0 0.0 False True	30.0 0.0 False True	0.0 False True	0.0 False True	0.0 False True	0.0 False True
&ocean_tracer_nml	tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics frazil_heating_before_vphysics	1.0 0.0 False True False	30.0 0.0 False True False	0.0 False True False	0.0 False True False	0.0 False True False	0.0 False True False
&ocean_tracer_nml	tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics frazil_heating_before_vphysics limit_age_tracer	1.0 0.0 False True False True	30.0 0.0 False True False True	0.0 False True False True	0.0 False True False True	0.0 False True False True	0.0 False True False True
&ocean_tracer_nml	tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics frazil_heating_before_vphysics limit_age_tracer remap_depth_to_s_init	1.0 0.0 False True False True False	30.0 0.0 False True False True False	0.0 False True False True False	0.0 False True False True False	0.0 False True False True False	0.0 False True False True False
&ocean_tracer_nml	tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics frazil_heating_before_vphysics limit_age_tracer remap_depth_to_s_init use_tempsalt_check_range	1.0 0.0 False True False True False True	30.0 0.0 False True False True False True	0.0 False True False True False True	0.0 False True False True False True	0.0 False True False True False True	0.0 False True False True False True
&ocean_tracer_nml	tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics frazil_heating_before_vphysics limit_age_tracer remap_depth_to_s_init use_tempsalt_check_range zero_tendency	1.0 0.0 False True False True False True False True False False	30.0 0.0 False True False True False True False True False	0.0 False True False True False True	0.0 False True False True False True	0.0 False True False True False True False	0.0 False True False True False True
	tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics frazil_heating_before_vphysics limit_age_tracer remap_depth_to_s_init use_tempsalt_check_range zero_tracer_source	1.0 0.0 False True False True False True False True False False False	30.0 0.0 False True False True False True False False False False	0.0 False True False True False True	0.0 False True False True False True	0.0 False True False True False False False	0.0 False True False True False True
&ocean_tracer_nml &ocean_velocity_diag_nml	tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics frazil_heating_before_vphysics limit_age_tracer remap_depth_to_s_init use_tempsalt_check_range zero_tendency	1.0 0.0 False True False True False True False True False False	30.0 0.0 False True False True False True False True False	0.0 False True False True False False False	0.0 False True False True False False False	0.0 False True False True False True False	0.0 False True False True False False False
	tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics frazil_heating_before_vphysics limit_age_tracer remap_depth_to_s_init use_tempsalt_check_range zero_tendency zero_tracer_source debug_this_module	1.0 0.0 False True False True False True False False False False False	30.0 0.0 False True False True False True False False False False False	0.0 False True False True False False False	0.0 False True False True False False False	0.0 False True False True False False False	0.0 False True False True False False False
	tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics frazil_heating_before_vphysics limit_age_tracer remap_depth_to_s_init use_tempsalt_check_range zero_tracer_source debug_this_module diag_step energy_diag_step large_cfl_value	1.0 0.0 False True False True False True False False False False False False	30.0 0.0 False True False True False True False False False False False 4320	0.0 False True False True False True False False False False False 4320	0.0 False True False True False True False False False False 4320	0.0 False True False True False True False False False False False 576	0.0 False True False True False True False False False False False
	tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics frazil_heating_before_vphysics limit_age_tracer remap_depth_to_s_init use_tempsalt_check_range zero_tendency zero_tracer_source debug_this_module diag_step energy_diag_step	1.0 0.0 False True False True False True False False False False False 4320 4320	30.0 0.0 False True False True False True False False False False False False 4320 4320	0.0 False True False True False True False False False False 4320 4320	0.0 False True False True False True False False False False 4320 4320	0.0 False True False True False True False False False False 576	0.0 False True False True False True False False False False 576

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 1deg jra55_ryf input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
	max_cgint	1.0	1.5	1.5	1.5	1.0	1.5
	truncate_velocity truncate_velocity_value	True 2.0	False 2.0	False 2.0	False 2.0	False 2.0	False 2.0
	truncate_verocity_value truncate_verbose	True	True	True	Z.0 True	True	True
	zero_tendency	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 &ocean_vert_kpp_mom4p0_nml	use_this_module use_this_module	False False	False	False	False	False	False
&ocean_vert_kpp_mom4p1_nml	diff_cbt_iw	0.0	0.0	0.0	0.0	0.0	0.0
опосольной разлик	diff_con_limit	0.1	0.0	0.0	0.0	0.0	0.0
	double_diffusion	True	True	True	True	True	True
	kbl_standard_method	False	False	False	False	False	False
	ricr	0.3	0.3	0.3	0.3	0.3	0.3
	smooth_blmc smooth_ri_kmax_eq_kmu	False True	False True	False True	False True	False True	False True
	use_this_module	True	True	True	True	True	True
	visc_cbu_iw	0.0	0.0	0.0	0.0	0.0	0.0
	visc_con_limit	0.1					
&ocean_vert_mix_nml	afkph_00	0.65					
	afkph_90 aidif	0.75 1.0	1.0	1.0	1.0	1.0	1.0
	aidir bryan_lewis_diffusivity	1.0 False	1.0 False	1.0 False	1.0 False	1.0 False	1.0 False
	bryan_lewis_lat_depend	True	False	False	False	False	False
	bryan_lewis_lat_transition	35.0					
	dfkph_00	1.15					
	dfkph_90	0.95					
	hwf_diffusivity		False $2 imes 10^{-6}$	False	False $2 imes 10^{-6}$	False $2 imes 10^{-6}$	False 2×10^{-6}
	hwf_min_diffusivity hwf_n0_2omega		2 × 10 ° 20.0	2×10^{-6} 20.0	2 × 10 ° 20.0	2 × 10 ° 20.0	2 × 10 ° 20.0
	linear_taper_diff_cbt_table	False	20.0	20.0	20.0	20.0	20.0
	sfkph_00	4.5×10^{-5}					
	sfkph_90	4.5×10^{-5}					
	use_diff_cbt_table	False	False	False	False	False	False
	vert_diff_back_via_max	True	True	True	True	True	True
	vert_mix_scheme	'kpp mom4p1'	'kpp mom4p1'	'kpp mom4p1'	'kpp mom4p1'	'kpp mom4p1'	'kpp mom4p1'
	zfkph_00	250 000.0	шоштрі	шоштрі	шоштрі	шоштрі	шоштрі
	zfkph_90	250 000.0					
&ocean_vert_tidal_nml	background_diffusivity	5×10^{-6}	0.0	0.0	0.0	0.0	0.0
	background_viscosity	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	decay_scale	300.0	500.0	500.0	500.0	500.0	500.0
	drag_dissipation_use_cdbot drhodz_min	1×10^{-12}	True $1 imes 10^{-10}$	True $1 imes 10^{-10}$	True $1 imes 10^{-10}$	True $1 imes 10^{-10}$	True $1 imes 10^{-10}$
	fixed_wave_dissipation	False	False	False	False	False	False
	max_drag_diffusivity	0.01	. 4.50	. 4.50	· disc		. 4.50
	max_wave_diffusivity	0.01	0.01	0.01	0.01	0.01	0.01
	mixing_efficiency_n2depend	True	True	True	True	True	True
	read_roughness	True	True	True	True	True	True
	read_tide_speed read_wave_dissipation	True False	True False	True False	True False	True False	True False
	reading_roughness_amp	True	True	True	True	True	True
	reading_roughness_length	False	False	False	False	False	False
	roughness_scale	20 000.0	12 000.0	12 000.0	12 000.0	12 000.0	12 000.0
		160.0	-1000.0	-1000.0	-1000.0	-1000.0	-1000.0
	shelf_depth_cutoff		-		Iruo	True	True
	tide_speed_data_on_t_grid	True	True	True	True		Truc
	tide_speed_data_on_t_grid use_drag_dissipation		True	True	True	True	True False
	tide_speed_data_on_t_grid	True					True False True
	tide_speed_data_on_t_grid use_drag_dissipation use_legacy_methods	True True True True	True False True True	True False True True	True False True True	True False True True	False
	tide_speed_data_on_t_grid use_drag_dissipation use_legacy_methods use_this_module use_wave_dissipation wave_energy_flux_max	True True True True 0.1	True False True True 0.1	True False True True 0.1	True False True True 0.1	True False True True 0.1	False True True 0.1
&ocean_xlandinsert_nml	tide_speed_data_on_t_grid use_drag_dissipation use_legacy_methods use_this_module use_wave_dissipation wave_energy_flux_max use_this_module	True True True True 0.1 False	True False True True	True False True True	True False True True	True False True True	False True True
	tide_speed_data_on_t_grid use_drag_dissipation use_legacy_methods use_this_module use_wave_dissipation wave_energy_flux_max use_this_module verbose_init	True True True True 0.1 False True	True False True True 0.1 False	True False True True 0.1 False	True False True True 0.1 False	True False True True 0.1 False	False True True 0.1 False
&ocean_xlandinsert_nml &ocean_xlandmix_nml	tide_speed_data_on_t_grid use_drag_dissipation use_legacy_methods use_this_module use_wave_dissipation wave_energy_flux_max use_this_module verbose_init use_this_module	True True True True 0.1 False True False	True False True True 0.1	True False True True 0.1	True False True True 0.1	True False True True 0.1	False True True 0.1
	tide_speed_data_on_t_grid use_drag_dissipation use_legacy_methods use_this_module use_wave_dissipation wave_energy_flux_max use_this_module verbose_init	True True True True 0.1 False True	True False True True 0.1 False	True False True True 0.1 False	True False True True 0.1 False	True False True True 0.1 False	False True True 0.1 False
	tide_speed_data_on_t_grid use_drag_dissipation use_legacy_methods use_this_module use_wave_dissipation wave_energy_flux_max use_this_module verbose_init use_this_module verbose_init	True True True True 0.1 False True False True False True	True False True True 0.1 False	True False True True 0.1 False	True False True True 0.1 False	True False True True 0.1 False	False True True 0.1 False
&ocean_xlandmix_nml	tide_speed_data_on_t_grid use_drag_dissipation use_legacy_methods use_this_module use_wave_dissipation wave_energy_flux_max use_this_module verbose_init use_this_module verbose_init xlandmix_kmt	True True True True 0.1 False True False True False True	True False True True 0.1 False	True False True True 0.1 False	True False True True 0.1 False	True False True True 0.1 False	False True True 0.1 False
&ocean_xlandmix_nml &sat_vapor_pres_nml	tide_speed_data_on_t_grid use_drag_dissipation use_legacy_methods use_this_module use_wave_dissipation wave_energy_flux_max use_this_module verbose_init use_this_module verbose_init xtandmix_kmt show_all_bad_values	True True True True 0.1 False True False True False True	True False True True 0.1 False	True False True True 0.1 False	True False True True 0.1 False False	True False True True 0.1 False False	False True True 0.1 False False

Group (continued) Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 1deg jra55_ryf input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
interp_method	'second	'second	'second	'second	'second	'second
	order'	order'	order'	order'	order'	order'
make_exchange_reproduce	False	False	False	False	False	False
nsubset		16	16	16	16	16
xgrid_log					False	False

4 Differences between MOM-SIS and all new configs

Group	Variable	original/ fabio momsis1 input.nml	original/ paul_mom- sis025_in- put.nml	original/ fanghua mom- sis01v5KDS75 WOA13_in- put.nml	new_acces- som2 1deg - jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
&auscom_ice_nml	aice_cutoff			<u> </u>	0.15	0.15	0.15
	chk_i2o_fields				False	False	False
	chk_o2i_fields do_ice_once				False False	False False	False False
	do_ice_once 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 kmxice				1.0 5	1.0 5	1.0 5
	pop_icediag				True	True	True
	redsea_gulfbay_sfix				True		
	sign_stflx				1.0	1.0	1.0
	tmelt				−0.216 True	−0.216 True	−0.216 True
&coupler_nml	use_ioaice atmos_npes	0	0	0	irue	irue	irue
acoupier 2 min	calendar	'noleap'	'noleap'	'noleap'			
	check_stocks	0	0	0			
	concurrent	False	False	False			
	current_date days	1, 1, 1, 0, 0, 0 0	1, 1, 1, 0, 0, 0 365	1, 1, 1, 0, 0, 0 1			
	do_atmos	False	False	False			
	do_ice	True	True	True			
	do_land	False	False	False			
	do_ocean	True	True	True			
	dt_atmos dt_cpld	3600 3600	1800 1800	1800 1800			
	months	12	0	0			
	ocean_npes	0	0	0			
	use_lag_fluxes	True	True	True			
&diag_integral_nml	file_name	'diag intogral out'	'diag	'diag intogral out'			
	output_interval	integral.out' —1.0	integral.out' —1.0	integral.out' —1.0			
	time_units	'days'	'days'	'days'			
&diag_manager_nml	debug_diag_manager				True	True	
	issue_oor_warnings	False	False	False	True	True	False
	max_axes max_files	300 1000	300 1000	300 1000			300 1000
	max_input_fields	700	700	700			700
	max_num_axis_sets	40	40	40			40
	max_output_fields	700	700	700			700
&flux_exchange_nml &fms_io_nml	do_area_weighted_flux checksum_required	True	True	True False			False
&11115_10_11111t	fileset_write	'multi'	'multi'	'multi'	'single'	'single'	'multi'
	max_files_r	700	700	700	Jingto	Single	700
	max_files_w	700	700	700			700
	threading_write	'multi'	'multi'	'multi'	'single'	'single'	'multi'
&fms_nml	domains_stack_size print_memory_usage	115200 False	115200 False	115200 False			115200 False
&generic_tracer_nml	do_generic_cfc	False	False	False			False
ageneric_caece_came	do_generic_topaz	False	False	False			False
	do_generic_tracer	False	False	False			False
&ice_model_nml	alb_ice	0.68	0.68	0.68			
	alb_sno do_icebergs	0.85 False	0.85 False	0.85 False			
	do_icebergs heat_rough_ice	0.0005	0.0005	0.0005			
	ice_bulk_salin	0.005	0.005	0.005			
	io_layout		64, 30	8, 9			
	Layout	10, 12	64, 30	40, 45			
	mom_rough_ice nsteps_adv	0.0005 1	0.0005 1	0.0005 6			
	nsteps_dyn	72	72	144			
	num_part	6	6	6			
	spec_ice	False	False	False			
	t_range_melt	1.0	1.0	1.0			
&icebergs_nml	wd_turn add_weight_to_ocean	0.0 False	0.0 False	0.0 False			
Ciccoetys_tillit	bergy_bit_erosion_fraction	0.0	0.0	0.0			
	debug	False	False	False			
	parallel_reprod	True	True	True			

Group (continued)	Variable	original/ fabio momsis1 input.nml	original/ paul_mom- sis025_in- put.nml	original/ fanghua mom- sis01v5KDS75 WOA13_in- put.nml	new_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
	really_debug sicn_shift	False	False 0.1	False 0.1			
	traj_sample_hrs	0.1 0	0.1	0.1			
	use_operator_splitting	True	True	True			
	verbose verbose_hrs	False 2400	False 2400	False 2400			
&mom_oasis3_interface_nml	fields_in	2100	2100	2100	'u_flux',	'u_flux',	'u_flux',
					'v_flux',	'v_flux',	'v_flux',
					'lprec', 'fprec', 'salt_flx',	'lprec', 'fprec', 'salt_flx',	'lprec', 'fprec', 'salt_flx',
					'mh_flux',	'mh_flux',	'mh_flux',
					'sw_flux', 'q_flux',	'sw_flux', 'q_flux',	'sw_flux', 'q_flux',
					η_παχ, 't_flux',	q_παx, 't_flux',	't_flux',
					'lw_flux',	'lw_flux',	'lw_flux',
					'runof', 'p', 'aice',	'runof', 'p', 'aice',	'runof', 'p', 'aice',
					'wfimelt',	'wfimelt',	'wfimelt',
					'wfiform'	'wfiform'	'wfiform'
	fields_out				't_surf', 's_surf',	't_surf', 's_surf',	't_surf', 's_surf',
					u_surf,	'u_surf',	'u_surf',
					'v_surf',	'v_surf',	'v_surf',
					'dssldx', 'dssldy',	'dssldx', 'dssldy',	'dssldx', 'dssldy',
					'frazil'	'frazil'	'frazil'
	num_fields_in				15	15	15
	num_fields_out send_after_ocean_update				7 True	7 True	7 True
	send_before_ocean_update				False	False	False
&mpp_io_nml	deflate_level shuffle			5 1			5
&ocean_adv_vel_diag_nml	diaq_step	4320	4320	43200	4320	4320	1 576
&ocean_advection_velocity_nml	max_advection_velocity	0.5	0.5	0.2	0.5	0.5	0.2
&ocean_barotropic_nml	diag_step smooth_eta_t_biharmonic	4320	4320 True	43200 False	4320 False	4320 False	576 False
	smooth_eta_t_laplacian	True False	False	True	True	True	True
	smooth_pbot_t_biharmonic	True	True	False	False	False	False
	smooth_pbot_t_laplacian vel_micom_lap_diag	False 0.5	False 0.5	True 0.5	True 0.2	True 0.2	True 0.5
&ocean_bihgen_friction_nml	ncar_boundary_scaling_read	False	True	True	True	True	True
&ocean_domains_nml	max_tracers				5	5	5
&ocean_frazil_nml	frazil_only_in_surface freezing_temp_preteos10	True	True	True	False True	False True	False True
	freezing_temp_preteos10	True	True	True	False	False	False
&ocean_model_nml	barotropic_split	80	80	60	80	80	80
	cmip_units dt_ocean	3600	1800	150	True 3600	True 1200	150
	io_layout	3000	64, 30	8,9	4, 3	6,5	10, 15
	layout	10, 12	64, 30	40, 45	16, 15	48, 40	80,75
&ocean_overflow_ofp_nml &ocean_rivermix_nml	diag_step river_diffuse_salt	4320 False	4320 False	43200 False	4320 False	4320 False	5760 True
QUECATI_TIVETTIIX_TITTLE	river_diffuse_temp	False	False	False	False	False	True
0	debug_this_module	'.false'	'.false'	'.false'			False
&ocean_riverspread_nml			True		Enlco	False	True
· ·	use_this_module	True		True	False		0.0
&ocean_sbc_nml	use_this_module max_ice_thickness zero_pme_fluxes	True 1.0	1.0	1.0 False	0.0	0.0	0.0
· ·	max_ice_thickness zero_pme_fluxes zero_river_fluxes			1.0 False False			0.0
&ocean_sbc_nml	max_ice_thickness zero_pme_fluxes zero_river_fluxes zero_runoff_fluxes			1.0 False	0.0	0.0	0.0
•	max_ice_thickness zero_pme_fluxes zero_river_fluxes			1.0 False False			0.0
&ocean_sbc_nml	max_ice_thickness zero_pme_fluxes zero_river_fluxes zero_runoff_fluxes debug_this_module read_depth use_this_module	1.0 True True		1.0 False False	0.0 False True False	0.0 False True False	0.0 False
&ocean_sbc_nml &ocean_shortwave_csiro_nml	max_ice_thickness zero_pme_fluxes zero_river_fluxes zero_runoff_fluxes debug_this_module read_depth use_this_module zmax_pen	1.0 True True 7000	1.0 False	1.0 False False True False	0.0 False True False 7000	0.0 False True False 7000	False
&ocean_sbc_nml &ocean_shortwave_csiro_nml	max_ice_thickness zero_pme_fluxes zero_river_fluxes zero_runoff_fluxes debug_this_module read_depth use_this_module	1.0 True True	1.0	1.0 False False True	0.0 False True False	0.0 False True False	
&ocean_sbc_nml &ocean_shortwave_csiro_nml &ocean_shortwave_gfdl_nml	max_ice_thickness zero_pme_fluxes zero_river_fluxes zero_runoff_fluxes debug_this_module	True True 7000 False False True	False True True False	1.0 False False True False True False True False	False True False 7000 True True False	False True False 7000 True True False	False True True False
&ocean_sbc_nml &ocean_shortwave_csiro_nml &ocean_shortwave_gfdl_nml &ocean_shortwave_nml	max_ice_thickness zero_pme_fluxes zero_river_fluxes zero_runoff_fluxes debug_this_module	True True 7000 False False	False True True	1.0 False False True False True	False True False 7000 True True False True	False True False 7000 True True False True	False True True False True
&ocean_sbc_nml	max_ice_thickness zero_pme_fluxes zero_river_fluxes zero_runoff_fluxes debug_this_module	True True 7000 False False True	False True True False	1.0 False False True False True False True False	False True False 7000 True True False True False True	False True False 7000 True True False True False True	False True True False True 'NOLEAP'
&ocean_sbortwave_csiro_nml &ocean_shortwave_gfdl_nml &ocean_shortwave_nml	max_ice_thickness zero_pme_fluxes zero_river_fluxes zero_runoff_fluxes debug_this_module	True True 7000 False False True	False True True False	1.0 False False True False True False True False	False True False 7000 True True False True False True 'NOLEAP' 1,1,1,0,0,0	False True False 7000 True True False True False True 1,1,1,0,0,0 31	False True True False True 'NOLEAP' 1,1,1,0,0,0
&ocean_sbortwave_csiro_nml &ocean_shortwave_gfdl_nml &ocean_shortwave_nml	max_ice_thickness zero_pme_fluxes zero_river_fluxes zero_runoff_fluxes debug_this_module	True True 7000 False False True	False True True False	1.0 False False True False True False True False	False True False 7000 True True False True False True 'NOLEAP' 1, 1, 1, 0, 0, 0	False True False 7000 True True False True False True 'NOLEAP' 1,1,1,0,0,0	False True True False True 'NOLEAP' 1,1,1,0,0,0

Group (continued)	Variable	original/ fabio momsis1 input.nml	original/ paul_mom- sis025_in- put.nml	original/ fanghua mom- sis01v5KDS75 W0A13_in- put.nml	new_acces- som2 1deg ira55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
	months			•	0	0	0
	seconds				0	0	0
	years				0	0	0
&ocean_tempsalt_nml	debug_this_module	False	False	False	False	False	True
&ocean_tracer_advect_nml	advect_sweby_all	False	False	False			
&ocean_tracer_diag_nml	diag_step	48	48	43200	4320	4320	576
&ocean_tracer_nml	use_tempsalt_check_range			True	True	True	True
&ocean_velocity_diag_nml	diag_step	4320	4320	43200	4320	4320	576
	energy_diag_step	4320	4320	43200	4320	4320	5760
&ocean_velocity_nml	max_cgint	1.5	1.5	1.0	1.5	1.5	1.5
&ocean_vert_kpp_mom4p1_nml	kbl_standard_method			False	False	False	False
	smooth_blmc	True	True	False	False	False	False
	smooth_ri_kmax_eq_kmu			True	True	True	True
&redseafix_nml	redsea_gulfbay_sfix	True					
&sat_vapor_pres_nml	show_all_bad_values			True			True
&xgrid_nml	do_alltoall	True	True	True			True
	do_alltoallv	True	True	True			True
	xgrid_log	False	False	False			False

5 All variables in all 6 configs (differences highlighted)

Scoupler_nml Scou	0.15 False False False 3600 False 1.0 False 1.0 5 True True 1.0 —0.216 True	0.15 False False False 1200 False 1.0 False 1.0 5 True 1.0 -0.216 True	0.15 False False False 150 False 1.0 False 1.0 5 True
Chk_O2i_fields do_ice_once dt_cp	False False 3600 False 1.0 False 1.0 5 True True 1.0 —0.216	False False 1200 False 1.0 False 1.0 5 True 1.0 -0.216	False False 150 False 1.0 False 1.0 True
dd_cpl fixmettt fixmett fixmettt fixmett	False 3600 False 1.0 False 1.0 5 True True 1.0 — 0.216	False 1200 False 1.0 False 1.0 5 True 1.0 —0.216	False 150 False 1.0 False 1.0 5 True
Complex_nml	3600 False 1.0 False 1.0 5 True True 1.0 -0.216	1200 False 1.0 False 1.0 5 True 1.0 -0.216	150 False 1.0 False 1.0 5 True
Frazil factor	1.0 False 1.0 5 True True 1.0 —0.216	1.0 False 1.0 5 True 1.0 -0.216	1.0 False 1.0 5 True
ceform_adj_salt icemlt_factor kmxice pop_icediag redsea_gultbay_sfix sign_stfix tmelt tuse_ioaice	False 1.0 5 True True 1.0 -0.216	False 1.0 5 True 1.0 —0.216	False 1.0 5 True
Complet False Fa	1.0 5 True True 1.0 -0.216	1.0 5 True 1.0 -0.216	1.0 5 True
Redsea_gultbay_sfix Sign_stflx Timelt Sign_stflx Sign_stflx	5 True True 1.0 -0.216	5 True 1.0 -0.216	5 True
Sign_stflx timelit Use_ioaice	True 1.0 —0.216	1.0 0.216	
sign_stflx tmelt use_ioaice &coupler_nml atmos_npes calendar inoleapi inoleap	1.0 -0.216	-0.216	1.0
Ecoupler_nml atmos_npes calendar inoleapi in	-0.216	-0.216	1.0
&coupler_nml atmos_npes calendar inoleapi in			-0.216
calendar 'noleap' 'noleap' 'noleap' check_stocks 0 0 0 concurrent False False False current_date 1,1,1,0,0,0 1,1,1,0,0,0 1,1,1,0,0,0 days 0 365 1 do_atmos False False False do_ice True True True do_land False False False do_ocean True True True dt_color 1800 1800 dt_color 3600 1800 1800			True
check stocks 0 0 0 concurrent 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 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 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 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 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 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 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 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 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 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 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 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 1,1,1,0,0,0 1,			
concurrent False False current_date 1,1,1,0,0,0 1,1,1,0,0,0 1,1,1,0,0,0 days 0 365 1 do_atmos False False False do_ice True True True do_land False False False do_ocean True True True dt_atmos 3600 1800 1800 dt_cpld 3600 1800 1800			
current_date 1,1,1,0,0,0 1,1,1,0,0,0 1,1,1,0,0,0 do_atmos False False False do_ice True True True do_land False False False do_ocean True True True dt_atmos 3600 1800 1800 dt_cpld 3600 1800 1800			
do_atmosFalseFalseFalsedo_iceTrueTrueTruedo_landFalseFalseFalsedo_oceanTrueTrueTruedt_atmos360018001800dt_cpld360018001800			
do_iceTrueTrueTruedo_landFalseFalseFalsedo_oceanTrueTrueTruedt_atmos360018001800dt_cpld360018001800			
do_landFalseFalsedo_oceanTrueTrueTruedt_atmos360018001800dt_cpld360018001800			
do_ocean True True True dt_atmos 3600 1800 1800 dt_cpld 3600 1800 1800			
dt_cpld 3600 1800 1800			
months 12 0 0 ocean_npes 0 0 0			
use_lag_fluxes True True True			
&diag_integral_nml file_name 'diag 'diag 'diag			
integral.out' integral.out' integral.out' integral.out' $rac{ ext{output_interval}}{ ext{output_interval}} = -1.0 = -1.0 = -1.0$			
time_units 'days' 'days' 'days'			
&diag_manager_nml \\ \text{debug_diag_manager} \\ debug_diag_manager	True	True	
issue_oor_warnings False False False	True	True	False
max_axes 300 300 300 max_files 1000 1000 1000			300 1000
max_input_fields 700 700 700			700
<u>max_num_axis_sets</u> 40 40 40			40
max_output_fields 700 700 700			700
&flux_exchange_nml do_area_weighted_flux True True True &fms_io_nml checksum_required False			False
fileset_write 'multi' 'multi' 'multi'	'single'	'single'	'multi'
max_files_r 700 700 700	•	•	700
max_files_w 700 700 700	?la??	2142	700
threading_read 'multi' 'multi' 'multi' threading_write 'multi' 'multi' 'multi'	'multi' 'single'	'multi' 'single'	'multi' 'multi'
&fms_nml clock_grain 'LOOP' 'LOOP' 'LOOP'	'LOOP'	'LOOP'	'LOOP'
domains_stack_size			115200
print_memory_usage False False False False			False
&generic_tracer_nml do_generic_cfc False False do_generic_topaz False False False			False False
do_generic_tracer False False False			False
&ice_model_nml			
alb_sno			
<mark>do_icebergs</mark> False False False heat_rough_ice 0.0005 0.0005 0.0005			
ice_bulk_salin			
io_layout 64, 30 8, 9			
layout 10,12 64,30 40,45 mom_rough_ice 0.0005 0.0005 0.0005			
mom_rough_ice 0.0005 0.0005 nsteps_adv 1 1 6			
nsteps_dyn 72 72 144			
num_part 6 6 6			
spec_ice False False False			
t_range_melt 1.0 1.0 1.0 1.0 wd_turn 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			

Group (continued)	Variable	original/ fabio momsis1 input.nml	original/ paul_mom- sis025_in- put.nml	original/ fanghua mom- sis01v5KDS75 WOA13_in- put.nml	new_acces- som2 1deg - jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
	debug	False	False	False			
	parallel_reprod really_debug	True False	True False	True False			
	sicn_shift	0.1	0.1	0.1			
	traj_sample_hrs	0	0	0			
	use_operator_splitting	True	True	True			
	verbose verbose_hrs	False 2400	False 2400	False 2400			
&mom_oasis3_interface_nml	fields_in	2100	2100	2100	'u_flux',	'u_flux',	'u_flux',
					'v_flux',	'v_flux',	'v_flux',
					'lprec', 'fprec', 'salt_flx',	'lprec', 'fprec', 'salt_flx',	'lprec', 'fprec', 'salt_flx',
					'mh_flux',	'mh_flux',	mh_flux',
					'sw_flux',	'sw_flux',	'sw_flux',
					'q_flux',	'q_flux', '* fl'	'q_flux',
					't_flux', 'lw_flux',	't_flux', 'lw_flux',	't_flux', 'lw_flux',
					'runof', 'p',	'runof', 'p',	'runof', 'p',
					'aice',	'aice',	'aice',
					'wfimelt', 'wfiform'	'wfimelt', 'wfiform'	'wfimelt', 'wfiform'
	fields_out				't_surf',	villoriii 't_surf',	't_surf',
					's_surf',	's_surf',	's_surf',
					'u_surf',	'u_surf',	'u_surf',
					'v_surf', 'dssldx',	'v_surf', 'dssldx',	'v_surf', 'dssldx',
					'dssldy',	'dssldy',	'dssldy',
					'frazil'	'frazil'	'frazil'
	num_fields_in				15 7	15	15
	num_fields_out send_after_ocean_update				True	7 True	7 True
	send_before_ocean_update				False	False	False
&monin_obukhov_nml	neutral	True	True	True	True	True	True
&mpp_io_nml	deflate_level shuffle			5 1			5
&ocean_adv_vel_diag_nml	diaq_step	4320	4320	43200	4320	4320	<u>1</u> 576
	large_cfl_value	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
&ocean_advection_velocity_nml	verbose_cfl max_advection_velocity	True 0.5	True 0.5	True 0.2	True 0.5	True 0.5	True 0.2
&ocean_albedo_nml	ocean_albedo_option	2	2	2	2	2	2
&ocean_barotropic_nml	barotropic_halo	10	10	10	10	10	10
	barotropic_time_stepping_a	True	True	True	True	True	True
	barotropic_time_stepping_b debug_this_module	False False	False False	False False	False False	False False	False False
	debug_triis_inodute diaq_step	4320	4320	43200	4320	4320	576
	eta_max	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
	pred_corr_gamma smooth_eta_diag_laplacian	0.2 True	0.2 True	0.2 True	0.2 True	0.2 True	0.2 True
	smooth_eta_tiag_taptacian smooth_eta_t_biharmonic	True	True	False	False	False	False
	smooth_eta_t_laplacian	False	False	True	True	True	True
	smooth_pbot_t_biharmonic	True	True	False	False	False	False
	smooth_pbot_t_laplacian truncate_eta	False False	False False	True False	True False	True False	True 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
	vel_micom_lap	0.05	0.05	0.05	0.05	0.05	0.05
	<mark>vel_micom_lap_diag</mark> verbose_truncate	0.5 True	0.5 True	0.5 True	0.2 True	0.2 True	0.5 True
	zero_tendency	False	False	False	False	False	False
&ocean_bbc_nml	bmf_implicit	True	True	True	True	True	True
&ocean_bbc_nml	cdbot	0.001	0.001	0.001	0.001	0.001	0.001
		0.007	0.007 False	0.007 False	0.007 False	0.007 False	0.007 False
	cdbot_hi cdbot_roughness_length	False		i alsc	· uisc		
	cdbot_roughness_length	False True	True	True	True	True	Irue
	cdbot_roughness_length cdbot_roughness_uamp uresidual	True 0.05	True 0.05	0.05	0.05	0.05	0.05
9 anns hib finis	cdbot_roughness_length cdbot_roughness_uamp uresidual use_geothermal_heating	True 0.05 False	True 0.05 False	0.05 False	0.05 False	0.05 False	0.05 False
	cdbot_roughness_length cdbot_roughness_uamp uresidual use_geothermal_heating bih_friction_scheme	True 0.05 False 'general'	True 0.05 False 'general'	0.05 False 'general'	0.05 False 'general'	0.05 False 'general'	0.05 False 'general'
	cdbot_roughness_length cdbot_roughness_uamp uresidual use_geothermal_heating bih_friction_scheme tracer_mix_micom	True 0.05 False 'general' True	True 0.05 False 'general' True	0.05 False 'general' True	0.05 False 'general' True	0.05 False 'general' True	0.05 False 'general' True
&ocean_bih_friction_nml &ocean_bih_tracer_nml	cdbot_roughness_length cdbot_roughness_uamp uresidual use_geothermal_heating bih_friction_scheme	True 0.05 False 'general'	True 0.05 False 'general'	0.05 False 'general'	0.05 False 'general'	0.05 False 'general'	True 0.05 False 'general' True False 0.001

Group (continued)	Variable	original/ fabio momsis1 input.nml	original/ paul_mom- sis025_in- put.nml	original/ fanghua mom- sis01v5KDS75_ WOA13_in- put.nml	new_acces- som2 1deg - jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
&ocean_bihgen_friction_nml	bottom_5point	False 0.0	False 0.0	False 0.0	False 0.0	False 0.0	False 0.0
	eq_lat_micom eq_vel_micom_aniso	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
	equatorial_zonal	False	False	False	False	False	False
	k_smag_aniso	0.0	0.0	0.0	0.0	0.0	0.0
	k_smag_iso ncar_boundary_scaling	2.0 True	2.0 True	2.0 True	2.0 True	2.0 True	2.0 True
	ncar_boundary_scaling_read	False	True	True	True	True	True
	ncar_rescale_power	2	2	2	2	2	2
	ncar_vconst_4	$2 imes 10^{-8}$	$2 imes 10^{-8}$	$2 imes 10^{-8}$	$2 imes 10^{-8}$	$2 imes 10^{-8}$	$2 imes 10^{-8}$
	ncar_vconst_5	5	5	5	_ 5	5	5
	use_this_module vel_micom_aniso	True 0.0	True 0.0	True 0.0	True 0.0	True 0.0	True 0.0
	vel_micom_bottom	0.0	0.0	0.0	0.0	0.0	0.0
	vel_micom_iso	0.0	0.0	0.0	0.0	0.0	0.0
	visc_crit_scale	1.0	1.0	1.0	1.0	1.0	1.0
&ocean_convect_nml	convect_full_scalar	True	True	True	True	True	True
	convect_full_vector use_this_module	False	False	False	False	False	False
&ocean_coriolis_nml	use_tnis_module acor	False 0.5	False 0.5	False 0.5	False 0.5	False 0.5	False 0.5
adecun_conons_nine	use_this_module	True	True	True	True	True	True
&ocean_density_nml	eos_linear	False	False	False	False	False	False
	eos_preteos10	True	True	True	True	True	True
	layer_nk	80	80	80	80	80	80
	neutralrho_max neutralrho_min	1038.0 1028.0	1038.0 1028.0	1038.0 1028.0	1038.0 1028.0	1038.0 1028.0	1038.0 1028.0
	potrho_max	1038.0	1028.0	1038.0	1028.0	1038.0	1038.0
	potrho_min	1028.0	1028.0	1028.0	1028.0	1028.0	1028.0
&ocean_domains_nml	max_tracers				5	5	5
&ocean_form_drag_nml	use_this_module	False	False	False	False	False	False
&ocean_frazil_nml	debug_this_module	False	False	False	False	False	False
	frazil_only_in_surface freezing_temp_preteos10	True	True	True	False True	False True	False True
	freezing_temp_preteos10 freezing_temp_simple	True	True	True	False	False	False
	use_this_module	True	True	True	True	True	True
&ocean_grids_nml	debug_this_module	False	False	False	False	False	False
&ocean_increment_eta_nml	use_this_module	False	False	False	False	False	False
&ocean_increment_tracer_nml &ocean_increment_velocity_nml	use_this_module	False False	False False	False False	False False	False False	False False
&ocean_lap_friction_nml	use_this_module lap_friction_scheme	'general'	'general'	'qeneral'	'general'	'general'	'general'
&ocean_lap_tracer_nml	use_this_module	False	False	False	False	False	False
&ocean_lapcst_friction_nml	use_this_module	False	False	False	False	False	False
&ocean_lapgen_friction_nml	k_smag_iso	2.0	2.0	2.0	2.0	2.0	2.0
	use_this_module	False	False	False	False	False	False
&ocean_mixdownslope_nml	debug_this_module use_this_module	False False	False False	False False	False False	False False	False False
&ocean_model_nml	baroclinic_split	1	1	1	1	1	1
a decar in the control of the contro	barotropic_split	80	80	60	80	80	80
	cmip_units				True	True	
	debug	False	False	False	False	False	False
	dt_ocean	3600	1800	150	3600	1200	150
	io_layout layout	10,12	64, 30 64, 30	8, 9 40, 45	4, 3 16, 15	6, 5 48, 40	10, 15 80, 75
	surface_height_split	10, 12	1	1	10, 13	1	1
	time_tendency	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'
	vertical_coordinate	'zstar'	'zstar'	'zstar'	'zstar'	'zstar'	'zstar'
						F-1	False
&ocean_momentum_source_nml	rayleigh_damp_exp_from_bottom	False	False	False	False	False	
&ocean_momentum_source_nml	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table	True	True	True	True	True	True
	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table use_this_module	True True	True True	True True	True True	True True	True True
&ocean_momentum_source_nml &ocean_nphysics_nml	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table	True	True	True	True	True	True
	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table use_this_module debug_this_module	True True False	True True False False False	True True False False False	True True False	True True False	True True False
	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table use_this_module debug_this_module use_nphysicsa use_nphysicsb use_nphysicsc	True True False False False False	True True False False False False	True True False False False False	True True False False False False	True True False False False False	True True False False False False
&ocean_nphysics_nml	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table use_this_module debug_this_module use_nphysicsa use_nphysicsb use_nphysicsc use_this_module	True True False False False False False	True True False False False False False	True True False False False False	True True False False False False False	True True False False False False False	True True False False False False
	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table use_this_module debug_this_module use_nphysicsa use_nphysicsb use_nphysicsc use_this_module agm	True True False False False False False False False 100.0	True True False False False False False False 100.0	True True False False False False False	True True False False False False False	True True False False False False False False False False	True True False False False False False False False False
&ocean_nphysics_nml	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table use_this_module debug_this_module use_nphysicsa use_nphysicsb use_nphysicsc use_this_module agm agm_closure	True True False False False False False False Talse True	True True False False False False False False Talse True	True True False False False False False False Talse Talse	True True False False False False False False Talse True	True True False False False False False False Talse Talse Toucon	True True False False False False False Talse True
&ocean_nphysics_nml	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table use_this_module debug_this_module use_nphysicsa use_nphysicsb use_nphysicsc use_this_module agm agm_closure agm_closure_baroclinic	True True False False False False False Talse True True	True True False False False False False False True True	True True False False False False False Talse False True True	True True False False False False False Talse True True	True True False False False False False Talse True True	True True False False False False False False True
&ocean_nphysics_nml	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table use_this_module debug_this_module use_nphysicsa use_nphysicsb use_nphysicsc use_this_module agm agm_closure	True True False False False False False False Talse True	True True False False False False False False Talse True	True True False False False False False False Talse Talse	True True False False False False False False Talse True	True True False False False False False False Talse Talse Toucon	True True False False False False False 100.0 True
&ocean_nphysics_nml	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table use_this_module debug_this_module use_nphysicsa use_nphysicsb use_nphysicsc use_this_module agm agm_closure agm_closure_baroclinic agm_closure_length agm_closure_length	True True False False False False False Talse True 100.0 True True 0.004	True True False False False False False True 100.0 True True 0.004 50 000.0 False	True True False False False False False True 100.0 True True 0.004 50 000.0 False	True True False False False False False Talse True True 0.004	True True False False False False Too.0 True True 0.004 50 000.0 False	True True False False False False False True True 0.004
&ocean_nphysics_nml	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table use_this_module debug_this_module use_nphysicsa use_nphysicsb use_nphysicsc use_this_module agm agm_closure agm_closure_baroclinic agm_closure_length	True True False False False False False Talse True 0.004 50 000.0	True True False False False False False Talse True 0.004 50 000.0	True True False False False False False Tue True 100.0 True True 0.004 50 000.0	True True False False False False False Too.0 True True 0.004 50 000.0	True True False False False False False Talse True 0.004 50 000.0	True True False False False False False True 100.0 True True 0.004 50 000.0

Group (continued)	Variable	original/ fabio momsis1 input.nml	original/ paul_mom- sis025_in- put.nml	original/ fanghua mom- sis01v5KDS75_ WOA13_in- put.nml	input.nml	new_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
	agm_closure_lower_depth agm_closure_max	2000.0 600.0	2000.0 600.0	2000.0 600.0	2000.0 600.0	2000.0 600.0	2000.0 600.0
	agm_closure_min	100.0	100.0	100.0	100.0	100.0	100.0
	agm_closure_scaling	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
	aredi	600.0	600.0	600.0	600.0	600.0	600.0
	aredi_equal_agm drhodz_mom4p1	False False	False False	False False	False False	False False	False False
	drhodz_smooth_horz	False	False	False	False	False	False
	drhodz_smooth_vert	False	False	False	False	False	False
	rossby_radius_max	100 000.0	100 000.0	100 000.0	100 000.0	100 000.0	100 000.0
	rossby_radius_min smax	15 000.0 0.002	15 000.0 0.002	15 000.0 0.002	15 000.0 0.002	15 000.0 0.002	15 000.0 0.002
	swidth	0.002	0.002	0.002	0.002	0.002	0.002
	tracer_mix_micom	False	False	False	False	False	False
	vel_micom	0.0	0.0	0.0	0.0	0.0	0.0
&ocean_nphysicsa_nml	use_this_module use_this_module	False False	False False	False False	False False	False False	False False
&ocean_nphysicsb_nml &ocean_nphysicsc_nml	use_this_module	False	False	False	False	False	False
&ocean_operators_nml	use_legacy_div_ud	False	False	False	False	False	False
&ocean_overexchange_nml	debug_this_module	False	False	False	False	False	False
	overexch_npts	4 5-1	4 5-1	4	4	4 5-1	4 5-1
	overexch_weight_far overflow_umax	False 5.0	False 5.0	False 5.0	False 5.0	False 5.0	False 5.0
	use_this_module	False	False	False	False	False	False
&ocean_overflow_nml	debug_this_module	False	False	False	False	False	False
	use_this_module	False	False	False	False	False	False
&ocean_overflow_ofp_nml	debug_this_module	False 4320	False 4320	False 43200	False 4320	False 4320	False 5760
	diag_step do_entrainment_para_ofp	False	False	False	False	False	False
	do_mass_ofp	True	True	True	True	True	True
	frac_exchange_src	1.0	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	10 000 000.0
&ocean_polar_filter_nml	use_this_module use_this_module	False False	False False	False False	False False	False False	False False
&ocean_pressure_nml	zero_pressure_force	False	False	False	False	False	False
&ocean_rivermix_nml	debug_this_module	False	False	False	False	False	False
	river_diffuse_salt	False	False	False	False	False	True
	<mark>river_diffuse_temp</mark> river_diffusion_thickness	False 0.0	False 0.0	False 0.0	False 0.0	False 0.0	True 0.0
	river_diffusivity	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
-0.	use_this_module	True	True	True	True	True	True
&ocean_riverspread_nml	debug_this_module use_this_module	'.false' True	'.false' True	'.false' True	False	False	False True
&ocean_rough_nml	rough_scheme	'beljaars'	'beljaars'	'beljaars'	'beljaars'	'beljaars'	'beljaars'
&ocean_sbc_nml	avg_sfc_temp_salt_eta	True	True	True	True	True	True
	avg_sfc_velocity	True	True	True	True	True	True
	calvingspread do_bitwise_exact_sum	False False	False False	False False	False False	False False	False False
	do_bltwise_exact_sum do_flux_correction	False	False	False	False	False	False
	land_model_heat_fluxes	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 read_restore_mask	1.0 False	1.0 False	1.0 False	0.0 False	0.0 False	0.0 Falso
	restore_mask_gfdl	False	False	False	False	False	False False
	runoff_salinity	0.0	0.0	0.0	0.0	0.0	0.0
	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 salt_restore_under_ice	60.0 True	60.0 True	60.0 True	60.0 True	60.0 True	60.0 True
	temp_restore_tscale	-10.0	-10.0	-10.0	-10.0	-10.0	-10.0
	use_full_patm_for_sea_level	False	False	False	False	False	False
	use_waterflux	True	True	True	True	True	True
	zero_heat_fluxes zero_net_salt_correction	False False	False False	False False	False False	False False	False False
	zero_net_salt_correction	True	True	True	True	True	True
	zero_net_water_correction	False	False	False	False	False	False
	zero_net_water_couple_restore	True	True	True	True	True	True
	zero_net_water_coupler zero_net_water_restore	True True	True True	True True	True True	True	True True
						True	

Group (continued)	Variable	original/ fabio momsis1 input.nml	original/ paul_mom- sis025_in- put.nml	original/ fanghua mom- sis01v5KDS75_ WOA13_in- put.nml	new_acces- som2 1deg - jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
	zero_runoff_fluxes zero_surface_stress	False	False	True False	False	False	False
	zero_surface_stress zero_water_fluxes	False	False	False	False	False	False
&ocean_shortwave_csiro_nml	debug_this_module				False	False	
	read_depth use_this_module	True True	False	False	True False	True False	False
	use_triis_modute zmax_pen	7000	raise	False	7000	7000	raise
&ocean_shortwave_gfdl_nml	debug_this_module	False	False	False	False	False	False
	enforce_sw_frac	True	True	True	True	True	True
	optics_manizza optics_morel_antoine	True False	True False	True False	True False	True False	True False
	read_chl	False	True	True	True	True	True
	use_this_module	False	True	True	True	True	True
&ocean_shortwave_jerlov_nml	zmax_pen use_this_module	300.0 False	300.0 False	300.0 False	300.0 False	300.0 False	300.0 False
&ocean_shortwave_nml	use_shortwave_csiro	True	False	False	False	False	False
	use_shortwave_gfdl	False	True	True	True	True	True
	use_shortwave_jerlov	False	False	False	False	False	False
&ocean_sigma_transport_nml	use_this_module sigma_advection_on	True False	True False	True False	True False	True False	True False
	sigma_advection_sgs_only	False	False	False	False	False	False
	sigma_diffusion_on	True	True	True	True	True	True
	sigma_diffusivity_ratio sigma_just_in_bottom_cell	$1 imes 10^{-6}$ True	$1 imes 10^{-6}$ True	$1 imes10^{-6}$ True	$1 imes 10^{-6}$ True	$1 imes 10^{-6}$ True	$1 imes 10^{-6}$ True
	sigma_just_ini_bottom_cett sigma_umax	0.01	0.01	0.01	0.01	0.01	0.01
	smooth_sigma_thickness	True	True	True	True	True	True
	smooth_sigma_velocity	True	True	True	True	True	True
	smooth_velmicom thickness_sigma_layer	0.2 100.0	0.2 100.0	0.2 100.0	0.2 100.0	0.2 100.0	0.2 100.0
	thickness_sigma_max	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
	tmask_sigma_on tracer_mix_micom	False True	False True	False True	False True	False True	False True
	use_this_module	False	False	False	False	False	False
	vel_micom	0.05	0.05	0.05	0.05	0.05	0.05
&ocean_solo_nml	calendar date_init				'NOLEAP'	'NOLEAP'	'NOLEAP'
	date_iiit days				1, 1, 1, 0, 0, 0 1460	1, 1, 1, 0, 0, 0 31	1, 1, 1, 0, 0, 0
	dt_cpld hours				3600 0	1200 0	150 0
	minutes				0	0	0
	months seconds				0	0	0
	years				0	0	0
&ocean_sponges_eta_nml	use_this_module	False	False	False	False	False	False
&ocean_sponges_tracer_nml	damp_coeff_3d use_this_module	False False	False False	False False	False False	False False	False False
&ocean_sponges_velocity_nml	use_this_module	False	False	False	False	False	False
&ocean_submesoscale_nml	coefficient_ce	0.05	0.05	0.05	0.05	0.05	0.05
	debug_this_module	False 5000.0	False 5000.0	False 5000.0	False 5000.0	False 5000.0	False 5000.0
	front_length_const front_length_deform_radius	True	True	True	True	True	True
	limit_psi	True	True	True	True	True	True
	limit_psi_velocity_scale	0.5	0.5	0.5	0.5	0.5	0.5
	min_kblt smooth_advect_transport	4 True	4 True	4 True	4 True	4 True	4 True
	smooth_advect_transport_num	4	4	4	4	4	4
	smooth_hblt	False	False	False	False	False	False
	smooth_psi smooth_psi_num	True 3	True 3	True 3	True 3	True 3	True 3
	sinootii_psi_num submeso_advect_flux	5 False	5 False	5 False	5 False	5 False	5 False
	submeso_advect_limit	True	True	True	True	True	True
	submeso_advect_upwind submeso_advect_zero_bdy	True True	True True	True True	True True	True True	True True
	submeso_advect_zero_bdy submeso_diffusion	rrue False	False	False	False	False	False
	submeso_diffusion_biharmonic	True	True	True	True	True	True
	submeso_diffusion_scale	10.0	10.0	10.0	10.0	10.0	10.0
	submeso_skew_flux use_hblt_equal_mld	True True	True True	True True	True True	True True	True True
	use_psi_legacy	False	False	False	False	False	False
	use_this_module	True	True	True	True	True	True
&ocean_tempsalt_nml	debug_this_module	False	False	False	False	False	True
	pottemp_2nd_iteration	True	True	True	True	True	True

Group (continued)	Variable	original/ fabio momsis1 input.nml	original/ paul_mom- sis025_in- put.nml	original/ fanghua mom- sis01v5KDS75_ W0A13_in- put.nml	new_acces- som2 1deg - jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
	pottemp_equal_contemp	True	True	True	True	True	True
	s_max s_max_limit	70.0 42.0	70.0 42.0	70.0 42.0	70.0 42.0	70.0 42.0	70.0 42.0
	s_min	0.0	0.0	0.0	0.0	0.0	0.0
	s_min_limit	2.0	2.0	2.0	2.0	2.0	2.0
	t_max	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
	t_min t_min_limit	—20.0 —5.0	-20.0 -5.0	−20.0 −5.0	−20.0 −5.0	-20.0 -5.0	-20.0 -5.0
	temperature_variable	'potential	'potential	'potential	'potential	'potential	'potential
		temp'	temp'	temp'	temp'	temp'	temp'
&ocean_thickness_nml	debug_this_module	False	False	False	False	False	False
	debug_this_module_detail	False	False	False	False	False	False
	rescale_mass_to_get_ht_mod thickness_dzt_min	False 2.0	False 2.0	False 2.0	False 2.0	False 2.0	False 2.0
	thickness_dzt_min_init	10.0	10.0	10.0	10.0	10.0	10.0
	thickness_method	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'
&ocean_tracer_advect_nml	advect_sweby_all	False	False	False			
	debug_this_module	False	False	False	False	False	False
9 4:	read_basin_mask	False	False	False	False	False	False 576
&ocean_tracer_diag_nml	<mark>diag_step</mark> do_bitwise_exact_sum	48 False	48 False	43200 False	4320 False	4320 False	False
	tracer_conserve_days	30.0	30.0	30.0	30.0	30.0	30.0
&ocean_tracer_nml	age_tracer_max_init	0.0	0.0	0.0	0.0	0.0	0.0
	debug_this_module	False	False	False	False	False	False
	frazil_heating_after_vphysics	True	True	True	True	True	True
	frazil_heating_before_vphysics limit_age_tracer	False True	False True	False True	False True	False True	False True
	remap_depth_to_s_init	False	False	False	False	False	False
	use_tempsalt_check_range	ruise	1 0130	True	True	True	True
	zero_tendency	False	False	False	False	False	False
	zero_tracer_source	False	False	False	False	False	False
&ocean_velocity_diag_nml	debug_this_module	False	False	False	False	False	False
	diag_step energy_diag_step	4320 4320	4320 4320	43200 43200	4320 4320	4320 4320	576 5760
	large_cfl_value	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
&ocean_velocity_nml	adams_bashforth_third	True	True	True	True	True	True
	max_cgint	1.5	1.5	1.0	1.5	1.5	1.5
	truncate_velocity truncate_velocity_value	False 2.0	False 2.0	False 2.0	False 2.0	False 2.0	False 2.0
	truncate_verbose	True	True	True	True	True	True
	zero_tendency	False	False	False	False	False	False
	zero_tendency_explicit_a	False	False	False	False	False	False
	zero_tendency_explicit_b	False	False	False	False	False	False
Passan wort kan jaw ami	zero_tendency_implicit use_this_module	False False	False False	False False	False False	False False	False False
&ocean_vert_kpp_iow_nml &ocean_vert_kpp_mom4p1_nml	diff_cbt_iw	0.0	0.0	0.0	0.0	0.0	0.0
COCCUIT_VCTC_KPP_IIIOIII TPT_IIIII	double_diffusion	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
	smooth_blmc	True	True	False	False	False	False
	<mark>smooth_ri_kmax_eq_kmu</mark> use_this_module	True	True	True True	True True	True True	True True
	visc_cbu_iw	0.0	0.0	0.0	0.0	0.0	0.0
&ocean_vert_mix_nml	aidif	1.0	1.0	1.0	1.0	1.0	1.0
	bryan_lewis_diffusivity	False	False	False	False	False	False
	bryan_lewis_lat_depend	False	False	False	False	False	False
	hwf_diffusivity	False	False	False	False	False	False
	hwf_min_diffusivity hwf_n0_2omega	2×10^{-6} 20.0	2×10^{-6} 20.0	2×10^{-6} 20.0	2×10^{-6} 20.0	2×10^{-6} 20.0	2×10^{-6} 20.0
	use_diff_cbt_table	False	False	False	False	False	False
	vert_diff_back_via_max	True	True	True	True	True	True
	vert_mix_scheme	'kpp	'kpp	'kpp	'kpp	'kpp	'kpp
		mom4p1'	mom4p1'	mom4p1'	mom4p1'	mom4p1'	mom4p1'
&ocean_vert_tidal_nml	background_diffusivity	0.0	0.0	0.0	0.0	0.0	0.0 0.0001
	background_viscosity decay_scale	0.0001 500.0	0.0001 500.0	0.0001 500.0	0.0001 500.0	0.0001 500.0	500.0
	drag_dissipation_use_cdbot	True	True	True	True	True	True
	drhodz_min	1×10^{-10}	1×10^{-10}	1×10^{-10}	1×10^{-10}	1×10^{-10}	1×10^{-10}
	fixed_wave_dissipation	False	False	False	False	False	False
	max_wave_diffusivity	0.01	0.01	0.01	0.01	0.01	0.01
	mixing_efficiency_n2depend	True	True	True	True	True	True

Group (continued)	Variable	original/ fabio momsis1 input.nml	original/ paul_mom- sis025_in- put.nml	original/ fanghua mom- sis01v5KDS75 WOA13_in-	new_acces- som2 1deg jra55_ryf input.nml	new_acces- som2 025deg jra55_ryf input.nml	new_acces- som2 01deg jra55_ryf input.nml
				put.nml			
	read_roughness	True	True	True	True	True	True
	read_tide_speed	True	True	True	True	True	True
	read_wave_dissipation	False	False	False	False	False	False
	reading_roughness_amp	True	True	True	True	True	True
	reading_roughness_length	False	False	False	False	False	False
	roughness_scale	12 000.0	12 000.0	12 000.0	12 000.0	12 000.0	12 000.0
	shelf_depth_cutoff	-1000.0	-1000.0	-1000.0	-1000.0	-1000.0	-1000.0
	tide_speed_data_on_t_grid	True	True	True	True	True	True
	use_drag_dissipation	True	True	True	True	True	True
	use_legacy_methods	False	False	False	False	False	False
	use_this_module	True	True	True	True	True	True
	use_wave_dissipation	True	True	True	True	True	True
	wave_energy_flux_max	0.1	0.1	0.1	0.1	0.1	0.1
&ocean_xlandinsert_nml	use_this_module	False	False	False	False	False	False
&ocean_xlandmix_nml	use_this_module	False	False	False	False	False	False
&redseafix_nml	redsea_gulfbay_sfix	True					
&sat_vapor_pres_nml	show_all_bad_values			True			True
&surface_flux_nml	ncar_ocean_flux	True	True	True	True	True	True
	raoult_sat_vap	True	True	True	True	True	True
&xgrid_nml	do_alltoall	True	True	True			True
	do_alltoallv	True	True	True			True
	interp_method	'second	'second	'second	'second	'second	'second
		order'	order'	order'	order'	order'	order'
	make_exchange_reproduce	False	False	False	False	False	False
	nsubset	16	16	16	16	16	16
	xgrid_log	False	False	False			False

6 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,				pacinin	прислип	присппп	inputannt
		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, 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',							
	family_names	'dust_8.0' 'small_dust',							
	lainity_names	'large_dust',							
		'sulfate',							
		'aerosol',							
		'dust', 'pm2.5'							
	filename	'aerosol.climato	logy.nc'						
	in_family1	False, False,							
		False, True,							
		True, True, True, False,							
		True, False,							
		False, False							
	in_family2	False, False, False, False,							
		False, False, False, False,							
		False, False,							
		False, True,							
	in_family3	True, True True, False,							
		False, False,							
		False, False,							
		False, False,							
		False, False, False, False							
	in_family4	True, True,							
		True, True,							
		True, True,							
		True, True, True, True,							
		True, True							
	in_family5	False, False,							
		False, True,							
		True, True, True, False,							
		True, 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_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
	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	original/ hogg_acces- som2 - 1deg	original/ kiss_acces- som2 025deg	original/ hogg_acces- som2 01deg
			•	•		WOA13_in- put.nml	jra55_ryf input.nml	jra55_ryf input.nml	jra55_ryf input.nml
	aerosol_optical_names	'sulfate				putannt	присппс	приспп	прислик
		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 do_swaerosol	True True							
	lw_asy_filename	,,							
	lw acy root	,,							

'aerosol.optical.dat'

,,

Ido_swaerosol
Iw_asy_filename
Iw_asy_root
Iw_ext_filename
Iw_ext_root
Iw_ssa_filename
Iw_ssa_root
Optical_filename
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 volcanic_dataset_entry	False 1, 1, 1, 0, 0, 0							
&amip_interp_nml	data_set	'reynolds_oi'							
Patmas sa I ami	date_out_of_range co2_radiation_override	'fail' True							
&atmos_co2_nml	do_co2_emissions	False							
	do_co2_restore restore_klimit	True 24							
	restore_tscale	31 536 000.0							
&atmos_model_nml	nxblocks	2							
&auscom_ice_nml	nyblocks aice_cutoff	2					0.15	0.15	0.15
	chk_i2o_fields						False	False	False
	chk_o2i_fields do_ice_once						False False	False False	False False
	dt_cpl						3600	1200	150
	fixmeltt frazil_factor						False 1.0	False 1.0	False 1.0
	iceform_adj_salt						False	False	False
	icemlt_factor kmxice						1.0 5	1.0 5	1.0 5
	pop_icediag						True	True	True
	redsea_gulfbay_sfix sign_stflx						True 1.0	1.0	1.0
	tmelt						-0.216	-0.216	-0.216
Oha diff lat danandansa ami	use_ioaice						$\frac{\text{True}}{1 \times 10^{-6}}$	True	True
&bg_diff_lat_dependence_nml	bg_diff_eq lat_low_bgdiff						20.0		
&cana_nml can	opy_air_mass_for_tracers init_co2	10.0 0.000 286							
	turbulence_to_use	'lm3v'							
&cg_drag_nml	bt_0 calculate_ked	0.0015 False							
	cg_drag_freq	1800							
	cg_drag_offset	0 False							
	debug itest	12							
	jtest ktest	42 9							
	lat_limit	25.0							
&cloud_rad_nml	do_brenguier	False 2							
&cloud_spec_nml	overlap cloud_type_form	'strat'							
use_c &cloudrad_package_nml	loud_tracers_in_radiation microphys_form	True 'predicted'							
&clouds_nml	do_obs_clouds	False							
&coupler_nml	do_zonal_clouds atmos_npes	False 0	0	0	0	0			
acoupter_mint	atmos_nthreads	4		U	U	U			
	calendar check_stocks	'NOLEAP' 0	'NOLEAP' 0	'noleap' 0	'noleap' 0	'noleap' 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 0	1, 1, 1, 0, 0, 0 365	1, 1, 1, 0, 0, 0 1			
		n		U	נטנ				
	days do_atmos	0 True	False	False	False	False			
	days do_atmos do_flux	True True	False						
	days do_atmos	True True True True	False True False	False True False	False True False	True False			
	days do_atmos do_flux do_ice do_land do_ocean	True True True True True	False True False True	True False True	True False True	True False True			
	days do_atmos do_flux do_ice do_land	True True True True	False True False	True False	True False	True False			
	days do_atmos do_flux do_ice do_land do_ocean dt_atmos dt_cpld months	True True True True True True 1800 7200 12	False True False True 7200 7200 0	True False True 3600 3600	True False True 1800 1800 0	True False True 1800 1800 0			
	days do_atmos do_flux do_ice do_land do_ocean dt_atmos dt_cpld	True True True True True 1800 7200	False True False True 7200 7200 0	True False True 3600 3600	True False True 1800 1800	True False True 1800 1800			
&cu_mo_trans_nml &damping_driver_nml	days do_atmos do_flux do_ice do_land do_ocean dt_atmos dt_cpld months ocean_npes	True True True True True True 1800 7200 12 96	False True False True 7200 7200 0	True False True 3600 3600 12 0	True False True 1800 1800 0	True False True 1800 1800 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
	do_mg_drag do_topo_drag	True False							
	nlev_rayfric	1							
&diag_cloud_nml	trayfric	-40.0							
&diag_ctoud_nint	l_theqv lcnvcld	True False							
	linvers	False							
	lomega low_lev_cloud_index	True 16							
	nofog	False							
&diag_cloud_rad_nml	l_anom_abs_v	True							
	l_har_anvil l_har_coldcld	True True							
&diag_integral_nml	file_name	'diag	'diag	'diag	'diag	'diag			
		integral.out'	integral.out'	integral.out'	integral.out'	integral.out'			
	output_interval time_units	1.0 'days'	1.0 'days'	— 1.0 'days'	-1.0 'days'	-1.0 'days'			
&diag_manager_nml	debug_diag_manager	20,5	•	·	· · ·			True	
	issue_oor_warnings	False	False	False 300	False 300	False 300	False	True	False 300
	max_axes max_files	200 50	100	300 1000	300 1000	300 1000			300 1000
	max_input_fields	800	699	700	700	700			700
	max_num_axis_sets max_output_fields	200 1300	100 699	40 700	40 700	40 700			40 700
r	mix_snapshot_average_fields	False	False	700	700	700			700
&donner_deep_clouds_w_nm	nl <u>using_dge_lw</u>	True							
&donner_deep_nml	using_dge_sw cell_ice_size_type	True 'default'							
&uoimer_ueep_mm	cell_liquid_size_type	'bower'							
	debug	False							
	donner_deep_freq donner_deep_offset	1800 0							
	itest	53							
	jtest	32							
	ktest_model kttest	17 5							
sa	ve_donner_deep_diagnostics	True							
&edt_nml	do_gaussian_cloud	False							
	min_adj_time n_print_levels	1.0 14							
	num_pts_ij	0							
	use_extrapolated_ql	False							
&entrain_nml	use_qcmin apply_entrain	True True							
Certerani_min	ashear	25.0							
	beta_rad	0.5							
	convect_shutoff critjump	True 0.1							
	i_entprt_gl	112, 96, 89,							
	j_entprt_ql	105, 81, 97 71, 61, 56,							
	j_entprt_gt	64, 53, 46							
	num_pts_ij	0							
	parcel_buoy parcel_option	0.25 2							
	radperturb	0.1							
&esfsw_parameters_nml	sw_diff_streams	. 1							
&flux_exchange_nml	sw_resolution debug_stocks	'low' False	False						
aunzenenungeziiiit	divert_stocks_report	True	True						
	do_area_weighted_flux	False	False	True	True	True			
&fms_io_nml	nblocks checksum_required	4				False			False
G.MJ2IO2IIII	fileset_write		'single'	'multi'	'multi'	'multi'	'single'	'single'	'multi'
	max_files_r	300	200	700	700	700	-	-	700
	max_files_w threading_read	300 'multi'	200 'multi'	700 'multi'	700 'multi'	700 'multi'	'multi'	'multi'	700 '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 print_memory_usage	5000000	8000000	115200 False	115200 False	115200 False			115200 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	fanghua hog mom- sis01v5KDS75 WOA13_in- jra	original/ g_acces- som2 1deg 155_ryf nput.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml
	consv_te	0.7				· ·			
	layout mlat	1, 30 90							
	n_split	5							
	ncnst	4							
	nlev nlon	24 144							
	pnats	0							
	restart_format	'NETCDF'							
&gas_tf_nml	do_calcstdch4tfs	True							
	do_calcstdco2tfs do_calcstdn2otfs	True True							
	do_readstdch4tfs	False							
	do_readstdco2tfs	False							
	do_readstdn2otfs	False							
	do_writestdch4tfs do_writestdco2tfs	False False							
	do_writestdn2otfs	False							
	interp_form	'log'							
&generic_tracer_nml	do_generic_cfc	False	False	False	False	False			False
	do_generic_topaz do_generic_tracer	True True	True True	False False	False False	False False			False False
&glac_data_nml	dat_emis_dry	1.0	7100	. 3.50	. 4150	. 4.55			1 4130
•	dat_emis_sat	1.0							
	rsa_exp_global use_lm2_awc	10.0 True							
&glac_nml	conserve_glacier_mass	True							
ague_min	lm2	True							
&harvesting_nml	crop_seed_density	0.1							
	do_harvesting frac_wood_wasted_clear	False							
	frac_wood_wasted_ctean	0.25 0.25							
	grazing_intensity	0.25							
	grazing_residue	0.1							
&ice_albedo_nml	waste_below_ground_wood	False 10.0	10.0						
&ice_atbedo_nml	t_range add_diurnal_sw	False	True						
G. COZ.III G G CZ.III II	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	False						
	cm2_bugs do_icebergs	False True	False	False	False	False			
	h_lo_lim	1×10^{-10}	$1 imes 10^{-10}$						
	heat_rough_ice		0.0005	0.0005	0.0005	0.0005			
	ice_bulk_salin io_layout	0.005 1, 2	0.005	0.005	0.005 64, 30	0.005 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 num_part	72 6	108 6	72 6	72 6	144 6			
	spec_ice	False	False	False	False	False			
	t_range_melt	1.0	10.0	1.0	1.0	1.0			
0:	wd_turn	0.0	0.0	0.0	0.0	0.0			
&icebergs_nml	add_weight_to_ocean bergy_bit_erosion_fraction		0.0	False 0.0	False 0.0	False 0.0			
	debug		False	False	False	False			
	make_calving_reproduce	True							
	parallel_reprod		True	True	True	True			
	really_debug sicn_shift		False 0.1	False 0.1	False 0.1	False 0.1			
	speed_limit	0.5	0.1	0.1	V.1	V. <u>-</u>			
	time_average_weight	False	=	=	=	-			
	traj_sample_hrs	0	0 True	0 True	0 True	0 True			
	use_operator_splitting use_roundoff_fix	True	True	True	True	True			
	verbose	True	False	False	False	False			
	verbose_hrs	120	2400	2400	2400	2400			
&lake_data_nml	dat_emis_dry dat_emis_sat	1.0							
	dat_emis_sat dat_heat_capacity_ref	1.0 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				putannit	прислип	прислин	прислип
	f_iso_liq f_vol_ice	0.02, 0.01 0.003, 0.0							
	f_vol_liq	0.003, 0.0							
	lake_to_use	'from-rivers'							
&lake_nml	num_l albedo_to_use	20 'brdf-							
Ctarc_min	atocuo_to_usc	params'							
	float_ice_to_top	True							
&land_debug_nml &land_model_nml	watch_point io_layout	0, 0, 0, 1							
&tanu_modet_miit	layout	1, 30							
pro	hibit_negative_canopy_water	False							
&landuse_nml	tau_snow_t_adj	604 800.0 False							
&tanuuse_nint	do_landuse_change input_file	'INPUT/							
	•	landuse.nc'							
&lscale_cond_nml	do_evap	True							
&lw_gases_stdtf_nml &mg_drag_nml	nstdco2lvls acoef	496 1.0							
ag_urug_tiitt	do_conserve_energy	True							
	gmax	1.0							
µphys_rad_nml	source_of_sgsmtn lwem_form	'computed' 'fuliou'							
&moist_conv_nml	beta	0.0							
&moist_processes_nml	do_cmt	True							
	do_diag_clouds	False							
	do_donner_deep do_gust_cv	False False							
	do_legacy_strat_cloud	True							
	do_lsc	False							
	do_mca do_ras	False True							
	do_rh_clouds	False							
	do_strat	True							
&mom_oasis3_interface_nm	include_donmca_in_cosp	False					·. a	2. 42	·. a
&mom_oasis5_interrace_nii	nl fields_in						'u_flux', 'v_flux',	'u_flux', 'v_flux',	'u_flux' 'v_flux'
							'lprec', 'fprec',	'lprec', 'fprec',	'lprec', 'fprec'
							'salt_flx',	'salt_flx',	'salt_flx'
							'mh_flux', 'sw_flux',	'mh_flux', 'sw_flux',	'mh_flux' 'sw_flux'
							'q_flux',	'q_flux',	'q_flux'
							't_flux',	't_flux',	't_flux'
							'lw_flux', 'runof', 'p',	'lw_flux', 'runof', 'p',	'lw_flux' 'runof', 'p'
							'aice',	'aice',	'aice'
							'wfimelt',	'wfimelt',	'wfimelt'
	E-134						'wfiform'	'wfiform'	'wfiform
	fields_out						't_surf', 's_surf',	't_surf', 's_surf',	't_surf' 's_surf'
							'u_surf',	'u_surf',	'u_surf'
							'v_surf',	'v_surf',	'v_surf',
							'dssldx', 'dssldy',	'dssldx', 'dssldy',	'dssldx', 'dssldy',
							'frazil'	'frazil'	'frazil
	num_fields_in						15	15	15
	num_fields_out						7 True	7 True	7 True
	<pre>send_after_ocean_update send_before_ocean_update</pre>						False	True False	False
&monin_obukhov_nml	neutral		True	True	True	True		True	True
	rich_crit	10.0							
	stable_option zeta_trans	2 0.5							
&mpp_io_nml	deflate_level					5			5
	shuffle					1			1
&my25_turb_nml	akmin_land akmin_sea	5.0 0.0							
	do_thv_stab	True							
	tkemin	$1 imes 10^{-8}$							
&ocean_adv_vel_diag_nml	diag_step	1200	12	4320	4320	43200	4320	4320	576 10.0
	large_cfl_value max_cfl_value	10.0 100.0	10.0 100.0	10.0 100.0	10.0 100.0	10.0 100.0	10.0 100.0	10.0 100.0	10.0 100.0
	a.t_crt_rutut	200.0	200.0	200.0	200.0	200.0	200.0	200.0	100.0

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-	jra55_ryf	original/ kiss_acces- som2 025deg jra55_ryf	original/ hogg_acces- som2 01deg jra55_ryf
	verbose_cfl	False	False	True	True	put.nml True	input.nml True	input.nml True	input.nml True
&ocean_advection_velocity_r		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 barotropic_time_stepping_a	True	True	True	True	True	True	True	True
	barotropic_time_stepping_b	False		False	False	False	False	False	False
	pic_time_stepping_mom4p0	. 4.50	True	. 4.50		· uisc		. 4.50	. 4.50
	pic_time_stepping_mom4p1		False						
	debug_this_module	False	False	False	False	False	False	False	False
	diag_step do_bitwise_exact_sum	1200 True	12	4320	4320	43200	4320	4320	576
	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
	<pre>smooth_eta_t_laplacian smooth_pbot_t_biharmonic</pre>	False True	False True	False True	False True	True False	True False	True False	True 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
	<pre>vel_micom_lap_diag verbose_truncate</pre>	1.0 True	1.0 True	0.5 True	0.5 True	0.5 True	0.2 True	0.2 True	0.5 True
	zero_tendency	False	False	False	False	False	iiue	False	False
&ocean_bbc_nml	bmf_implicit		. 4.50	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 True	False	False True		False True	False True
	cdbot_roughness_uamp uresidual	0.05	0.05	0.05	True 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	Falso	Ealco	True False	True	True	Falco	True	True
	use_this_module vel_micom	False	False	0.001	False 0.001	False 0.001	False	False 0.001	False 0.001
&ocean_bihcst_friction_nml	use_this_module	False	False	False	False	False	False	False	False
&ocean_bihgen_friction_nml		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 k_smag_aniso	False 0.0	False 0.0	False 0.0	False 0.0	False 0.0	False 0.0	False 0.0	False 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 True	5 True	5 True	5 True	5 True	5 True	5 True	5 True
	use_this_module vel_micom_aniso	True 0.0	True 0.0	True 0.0	True 0.0	True 0.0	True 0.0	True 0.0	True 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	<u></u>		True	True	True	False	True	True
	convect_full_vector	F#1	Fe1	False	False	False	True	False	False
&ocean_coriolis_nml	use_this_module	False 0.5	False 0.5	False 0.5	False 0.5	False 0.5	False 0.5	False 0.5	False 0.5
woccan_conous_nint	acor use_this_module	True	True	True	U.S True	U.5 True	0.5 True	True	True
&ocean_density_nml	eos_linear	False	nuc	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					40	46
	neutralrho_max	1030.0	1030.0	1038.0	1038.0	1038.0	1030.0	1038.0	1038.0
	neutralrho_min	1020.0 1038.0	1020.0 1038.0	1028.0 1038.0	1028.0 1038.0	1028.0	1020.0 1038.0	1028.0 1038.0	1028.0 1038.0
	potrho_max potrho_min	1038.0	1038.0	1038.0	1038.0	1038.0 1028.0	1038.0	1038.0	1038.0
	pourio_min	1020.0	1020.0	1020.0	1020.0	1020.0	1020.0	1020.0	1020.0

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	False	False	False	Falsa	Falsa	0.6	Falsa	False
&ocean_frazil_nml	use_this_module debug_this_module	False False	False False	False False	False False	False False	False	False False	False False
WOCCUMENT OF THE PROPERTY OF T	frazil_only_in_surface	True	True	True	True	True		False	False
	freezing_temp_accurate		False						
f	reezing_temp_preteos10	-	-	-	-	-	-	True	True
	freezing_temp_simple use_this_module	True True	True True	True True	True True	True True	True True	False True	False 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 secs_to_increment						1.0 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	Enlan	Ealaa	Ealaa	Ealaa	Ealaa	1800 Falso	Ealaa	False
&ocean_increment_velocity_nml	use_this_module l days_to_increment	False	False	False	False	False	False 0	False	False
a decun american care vetocity a little	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 &ocean_lapcst_friction_nml	use_this_module use_this_module	False False	False False	False False	False False	False False	False False	False False	False False
&ocean_lapgen_friction_nml	bottom_5point	True	True	1 4136	1 4130	raise	True	1 4136	- 1 4150
	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 restrict_polar_visc	Truo	Truo				True True		
	restrict_polar_visc_lat	True 60.0	True 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 vconst_3						0.0 0.8		
	vconst_4						5×10^{-9}		
	vconst_5						3		
	vconst_6						300 000 000.0		
	vconst_7 vel_micom_iso	0.1	0.1				100.0 0.1		
	viscosity_ncar	False	False				True		
	viscosity_ncar_2000						False		
	viscosity_ncar_2007	_	_				True		
	viscosity_scale_by_rossby v_scale_by_rossby_power	True	True				True		
&ocean_mixdownslope_nml	debug_this_module	4.0 False	4.0 False	False	False	False	4.0 False	False	False
	nixdownslope_mask_gfdl	True	True	. 3.50	. 4150	. 3150	False	. 4.50	. 4130
	mixdownslope_npts	4	4				4		
re	ead_mixdownslope_mask	True	True	F-1	F-1	F-1	False	F-1	F-1
&ocean_model_nml	use_this_module baroclinic_split	True 1	True 1	False 1	False 1	False 1	True 1	False 1	False
woccun_mouct_mmt	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 impose_init_from_restart	7200 True	7200 False	3600	1800	150	3600	1200	150
	inpose_init_ironi_restart io_layout	1, 4	rdise		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' 'zstar'	'twolevel'	'twolevel' 'zstar'	'twolevel' 'zstar'	'twolevel' 'zstar'	'twolevel'
&ocean_momentum_source_nml	vertical_coordinate	'zstar'	'zstar'	'zstar' False	'zstar' False	'zstar' False	'zstar'	'zstar' False	'zstar' False
rayleigh_damp_exp_from_bottor				1 4150	iuuc	i disc		i disc	i uisc
	use_rayleigh_damp_table			True	True	True	True	True	True
	use_this_module	False	False	True	True	True	True	True	True
0									
&ocean_nphysics_nml	debug_this_module	False	False	False	False	False	False	False	False
&ocean_nphysics_nml		False False False	False False True	False False False	False False False	False False False	False 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_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
ag	m_closure_eady_ave_mixed agm_closure_eady_cap	True	True True				True		
am	_closure_eady_smooth_horz	True True	True				True True		
	_closure_eady_smooth_vert	True	True				True		
	agm_closure_eden_gamma	0.0	0.0				0.0		
	m_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
ā	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	(000	(00.0	(00.0	False	(00.0	(00.0
	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	False False
	drhodz_mom4p1 drhodz_smooth_horz	True	True	False		False	True	False	
	drhodz_smooth_vert	False False	False False	False False	False False	False False	False False	False False	False False
	nphysics_util_zero_init	True	True	raise	raise	raise	True	raise	raise
	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	15 000.0	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	F 1	F 1	F 1	F.1		F 1
0	use_this_module	False	True	False	False	False	False	False	False
&ocean_nphysicsc_nml	bv_freq_smooth_vert	True					True		
	bvp_bc_mode	2 0.1					2 0.1		
	bvp_min_speed bvp_speed	0.0					0.0		
	debug_this_module	False					False		
	do_qm_skewsion	True					True		
	do_neutral_diffusion	True					True		
	epsln_bv_freq	1×10^{-12}					1×10^{-12}		
	gm_skewsion_bvproblem	True					True		
	qm_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_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
	overflow_umax	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
&ocean_overflow_nml	use_this_module debug_this_module	False False	False False	False False	False False	False False	False False	False False	False False
&ocean_overitow_nint	use_this_module	False	False	False	False	False	False	False	False
&ocean_overflow_ofp_nml	debug_this_module	1 4130	1 4130	False	False	False	1 4130	False	False
	diag_step			4320	4320	43200		4320	5760
	do_entrainment_para_ofp			False	False	False True		False	False
	do_mass_ofp frac_exchange_src			True 1.0	True 1.0	1.0		True 1.0	True 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	False	False
&ocean_pressure_nml &ocean_rivermix_nml	zero_pressure_force calving_insertion_thickness	40.0	40.0	False	raise	raise		False	False
COCCUT_TIVETHIN_TIME	debug_this_module	False	False	False	False	False	False	False	False
disch	narge_combine_runoff_calve	False	True						
	do_bitwise_exact_sum	True	FI	F.1	F 1	F.1		F 1	-
	river_diffuse_salt river_diffuse_temp	False False	False False	False False	False False	False False	False False	False False	True 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 use_this_module	40.0 Truo	40.0 Truo	Т	Т	True	True	Т	Т
&ocean_riverspread_nml	debug_this_module	True	True	True '.false'	True '.false'	'false'	irue	True	True False
Coccun_inverspread_init	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 calvingspread	True False	True False	True False	True False	True False	True	True False	True False
	do_bitwise_exact_sum	raise	raise	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	٥٢	False	False
	max_delta_salinity_restore max_ice_thickness	8.0	8.0	0.5 1.0	0.5 1.0	0.5 1.0	0.5 8.0	0.5 0.0	0.5 0.0
	read_restore_mask	0.0	0.0	False	False	False	False	False	False
	restore_mask_gfdl			False	False	False	False	False	False
	runoff_salinity	F-1	Falsa	0.0	0.0	0.0	0.0	0.0	0.0
	runoffspread salt_correction_scale	False 0.0	False	0.0	0.0	0.0		0.0	0.0
	salt_restore_as_salt_flux	0.0		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	0.0		True	True	True	True	True	True
	tau_x_correction_scale tau_y_correction_scale	0.0 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
Į.	use_full_patm_for_sea_level	True	True	False	False	False	-	False	False
	use_waterflux	True	True	True	True	True	True	True	True
	_waterflux_override_calving se_waterflux_override_evap	False False							
	se_waterflux_override_fprec	False							
	waterflux_tavg	False	False				False		
	zero_heat_fluxes	Falsa		False	False	False	False	False	False
	zero_net_pme_eta_restore zero_net_salt_correction	False		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	o_net_water_couple_restore			True	True	True	True	True	True
	zero_net_water_coupler zero_net_water_restore			True True	True True	True True	True True	True True	True True
	zero_pme_fluxes zero_river_fluxes			nuc	iiue	False False	iiuc	iiue	nue
	zero_runoff_fluxes zero_surface_stress			False	False	True False	False	False	False
	zero_water_fluxes			False	False	False	False	False	False
&ocean_sbc_ofam_nml	restore_mask_ofam						False		
0 h	river_temp_ofam						False	-	
&ocean_shortwave_csiro_nm	l debug_this_module read_depth			True			True	False True	
	use_this_module	False	False	True	False	False	True	False	False
	zmax_pen			7000			7000	7000	

Second-phormone-gloid-real drobes glinis module False Fa	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
Pate										True
Second								True		True
March Marc					False	False	False		False	False
					False	True	True	False	True	True
Content Cont		sw_pen_fixed_depths								
Access an Anthrower perform row See Anthrower perform See Anthrower See Anth		use_this_module								True
										300.0
										False
Use - Instrumentation False Fals	XUCEdII_SHULLWAVE_HILL									True
Secon_signs_taresport_mml signs_askeretinos_no.ml Fable										False
Signal Advection.sgs.orly False		use_this_module	True		True				True	True
Signal diffusion on Time										False
Signal Affibiolity.note 1 x 10^-6 1	S	,								False
Signs Just in Solton cell Tue		•								
Signal amax	S									True
Second Signer where the second seco	Ĭ	• ,								0.01
Second		smooth_sigma_thickness								True
thickness.signal.super 1000 1000 1000 1000 1000 1000 1000 10		•								True
										0.2 100.0
Trick Tric		,								100.0
Mask signs and part False										100.0
		•	False	False	False	False	False	False	False	False
Cocean_solo_nmil Calendar C										True
Cocean_solo_nmmil Calestein Calestei										False
Care	&ocean solo nml		0.05	0.05	0.05	0.05	0.03			
	XOCEAN_SOLO_IIIIL									
Bours										30
Minimate		The state of the s								
Second Sponges										150
## Accean.sponges_tea.mml use_this_module										0
Seconds Seco										0
&ocean_sponges_tracer_nml use_this_module False										0
Social S									<u>~</u>	0
Second S										False
Second S	&ocean_sponges_tracer_nml									
Cocean_submesoscale_mml Coefficient_Co Gebug_this_module False	&ocean sponges velocity nml									False
False Fals			raise	ruse				ruise		0.05
Front_length_deform_radius True		debug_this_module			False	False	False		False	False
Limit_psi Limi										5000.0
Common	fro									True
min_kblt 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4 4										True 0.5
smooth_advect_transport_num smooth_advect_transport_num smooth_advect_transport_num smooth_advect_transport_num smooth_advect_transport_num smooth_psi_num s										4
smooth_advect_transport_num smooth_hblt smooth_hblt smooth_bit submeso_advect_timit su			•	•				•		True
Smooth_psi_num smooth_psi_num smooth_psi_num smooth_psi_num smooth_psi_num submeso_advect_flux submeso_advect_limit submeso_advect_limit submeso_advect_limit submeso_advect_limit submeso_advect_limit submeso_advect_limit submeso_advect_upwind submeso_advect_upwind submeso_advect_upwind submeso_advect_upwind submeso_advect_zero_bdy True True True True True True True submeso_advect_zero_bdy True True True True True True True Submeso_advect_zero_bdy True True True True True True True True		th_advect_transport_num			4	4	4		4	4
Smooth_psi_num Submeso_advect_flux Submeso_advect_limit Submeso_advect_limit Submeso_advect_limit Submeso_advect_limit Submeso_advect_upvind Submeso_advect_upvind Submeso_advect_zero_bdy Submeso_advect_zero_bdy Submeso_diffusion_biharmonic Submeso_diffusion_biharmonic Submeso_diffusion_scale Submeso_diffusion_scale Submeso_diffusion_scale Submeso_limit_flux Submeso_limit_flux Submeso_limit_flux Submeso_limit_flux Submeso_limit_flux Submeso_limit_flux Submeso_skew_flux Submeso_limit_flux Submeso_skew_flux Submeso_limit_flux Sub			False	False				False		False
Submeso_advect_flux submeso_advect_limit submeso_advect_limit submeso_advect_limit submeso_advect_upwind subme										True
submeso_advect_limit submeso_advect_upwind submeso_advect_upwind submeso_advect_upwind submeso_advect_zero_bdy True True True True True True True True										3 False
Submeso_advect_upwind submeso_advect_upwind submeso_advect_upwind submeso_advect_zero_bdy True True True True True True True True										True
submeso_diffusion False submeso_diffusion_biharmonic False True False False True False False True		submeso_advect_upwind			True	True	True		True	True
submeso_diffusion_scale True	S	•								True
submeso_lififusion_scale 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0 10.0	graham.									False
submeso_limit_flux True True <th< td=""><td>subm</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>True 10.0</td></th<>	subm									True 10.0
submeso_skew.flux True			True	True	10.0	10.0	10.0	True	10.0	10.0
use_hblt_equal_mld True False <			nuc	nuc	True	True	True	iiuc	True	True
use_this_module True Tr			True	True		True	True	True	True	True
&ocean_tempsalt_nmldebug_this_module pottemp_2nd_iterationFalseFalseFalseFalseFalseFalseFalseFalseFalseTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrue				_				_		False
pottemp_2nd_iterationTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrue <t< td=""><td>9 again to</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>True</td></t<>	9 again to									True
p <mark>ottemp_equal_contemp</mark> True True True True True True True True	&ucean_tempsalt_nml									True True
s_max 55.0 55.0 70.0 70.0 70.0 55.0 70.0 70			iiuc	iiue				iiue		True
				55.0		70.0				70.0
		s_max_limit								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_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
	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 'potential	—1.9 'potential	— 5.0 'potential	—5.0 'potential	— 5.0 'potential	- 2.0 conservative	— 5.0 'potential	— 5.0 'potential
	temperature_variable	potentiat temp'	temp'	temp'	temp'	temp'	temp'	temp'	temp'
&ocean_thickness_nml	debug_this_module	False	False	False	False	False	False	False	False
Coccun_tinekness_mmt	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_rhoO_basin_label	7.0	7.0				7.0		
	rescale_rho0_mask_gfdl	True	True				False		
	rescale_rho0_value	0.75	0.75	20	2.0	2.0	0.75	2.0	2.0
	thickness_dzt_min thickness_dzt_min_init	2.0 2.0	2.0 2.0	2.0 10.0	10.0	2.0 10.0	1.0 2.0	10.0	2.0 10.0
	thickness_method	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'
&ocean_time_filter_nml	use_this_module	False	False	chergetie	chergetie	chergetic	energene	chergetic	energene
&ocean_topog_nml	min_thickness	5.0	5.0				25.0		
&ocean_tracer_advect_nml	advect_sweby_all async_domain_update	False	False	False	False	False	True 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	700	700	700	4.0	700	700
	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 × 10 ⁺⁴⁰	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	debug_this_module frazil_heating_after_vphysics	False True	False True	False True	False True	False True	False True	False True	False True
	razil_heating_before_vphysics	False	False	False	False	False	False	False	False
	interpolate_tdiag_to_pbott	False	raisc	raisc	raisc	raisc	Taisc	raisc	raisc
	interpolate_tproq_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
0	zero_tracer_source	False	False	False	False	False	False	False	False
&ocean_velocity_diag_nml	debug_this_module diag_step	False 1200	False 12	False 4320	False 4320	False 43200	False 4320	False 4320	False 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 zero_tendency_implicit			False False	False False	False 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		False	False	1 0130	1 0130	i auc	False	i disc	1 0130
&ocean_vert_kpp_mom4p1		0.0	. 465	0.0	0.0	0.0	0.0 0.1	0.0	0.0
	double_diffusion kbl_standard_method	True		True	True	True False	True False	True False	True 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_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			putanit	прислин	тристи	прислин
&ocean_vert_mix_nml	visc_cbu_iw afkph_00	0.675	0.0 0.675				0.65		
Woccur_vere_mix_min	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 bryan_lewis_lat_transition	True 35.0	True 35.0	False	False	False	True 35.0	False	False
	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} 20.0	2×10^{-6}
	hwf_n0_2omega linear_taper_diff_cbt_table	False	False	20.0	20.0	20.0	False	20.0	20.0
	quebec_2009_10_bug	False	raisc				raisc		
	sfkph_00	4.5×10^{-5}	$4.5 imes 10^{-5}$				$4.5 imes 10^{-5}$		
	sfkph_90	4.5×10^{-5}	$4.5 imes 10^{-5}$				$4.5 imes 10^{-5}$		
	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	mom ipi	momitpi	mompi	250 000.0	momitpi	momipi
	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 drag_dissipation_use_cdbot	300.0	300.0	500.0 True	500.0 True	500.0 True	300.0	500.0 True	500.0 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 read_tide_speed	True True	True True	True True	True True	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
	<pre>shelf_depth_cutoff tide_speed_data_on_t_grid</pre>	160.0 True	160.0 True	—1000.0 True	−1000.0 True	−1000.0 True	160.0 True	−1000.0 True	−1000.0 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 0.1	True	True	True 0.1	True 0.1	True	True	True
&ocean_xlandinsert_nml	wave_energy_flux_max use_this_module	True	0.1 True	0.1 False	False	False	0.1 False	0.1 False	0.1 False
Coccan_xtanamscre_mmt	verbose_init	True	True	rusc	ruse	ruisc	True	ruisc	ruisc
&ocean_xlandmix_nml	use_this_module	True	True	False	False	False	False	False	False
	verbose_init	True	True				True		
0	xlandmix_kmt	True	True				True		
&ozone_nml	basic_ozone_type data_name	'fixed_year' 'ozone'							
	filename	'o3.climatology.	nc'						
	ozone_dataset_entry	1860, 1, 1, 0,							
		0,0							
&physics_driver_nml	do_modis_yim	False			<u> </u>				
&rad_output_file_nml	write_data_file	True							
&radiation_diag_nml	iradprt_gl jradprt_gl	20, 6 12, 20							
	num_pts_ij	0							
&radiation_driver_diag_nm		True							
&radiation_driver_nml	do_clear_sky_pass	True							
	rad_package	'sea_esf'							
	rad_time_step renormalize_sw_fluxes	10800 True							
	use_co2_tracer_field	True							
	using_restart_file	False							
	zenith_spec	'diurnally							
		varying'							
&radiative_gases_nml	ch4_data_source	'input'	<u></u>		<u> </u>				
	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-	original/ hogg_acces- som2 - 1deg jra55_ryf	original/ kiss_acces- som2 025deg jra55_ryf	original/ hogg_acces- som2 01deg jra55_ryf
						put.nml	input.nml	input.nml	input.nml
	ch4_variation_type co2_base_time	'linear' 101, 1, 1, 0, 0, 0							
	co2_ceiling	0.0016							
	co2_data_source	'predicted'							
	co2_dataset_entry co2_floor	1, 1, 1, 0, 0, 0 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 f113_variation_type	'time_series' 'linear'							
	f11_data_source	'input'							
	f11_dataset_entry	1860, 1, 1, 0, 0, 0							
	f11_specification_type	'time_series'							
	f11_variation_type f12_data_source	'linear' 'input'							
	f12_dataset_entry	1860, 1, 1, 0, 0, 0							
	f12_specification_type	'time_series'							
	f12_variation_type	'linear'							
	f22_data_source f22_dataset_entry	'input' 1860, 1, 1, 0,							
	122_uata3ct_critiy	0,0							
	f22_specification_type	'time_series'							
	f22_variation_type	'linear' 240							
	gas_printout_freq n2o_data_source	'input'							
	n2o_dataset_entry	1860, 1, 1, 0, 0, 0							
	n2o_specification_type	'time_series'							
	n2o_variation_type time_varying_ch4	'linear' False							
	time_varying_co2	False							
	time_varying_f11	False							
	time_varying_f113 time_varying_f12	False False							
	time_varying_f22	False							
	time_varying_n2o	False							
&random_number_streams_n	verbose	5 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,							
	aratio	0.0 1.0							
	modify_pbl	True							
	puplim	2000.0							
	rn_frac_bot rn_frac_top	0.5 0.975							
	rn_pbot	80 000.0							
	rn_ptop	50 000.0							
	tokioka_con	0.025							
	tokioka_on tokioka_plim	True 50 000.0							
&redseafix_nml	redsea_gulfbay_sfix	30 000.0		True					
&rh_based_clouds_nml	cirrus_cld_prop_form	'part' '93'							
&river_nml	cldht_type_form 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				F			
&river_physics_nml	20.0 True	True						
construct_table_wrt_liq_and_ice show_all_bad_values	True	True			True			True
&sealw99_nml continuum_form	'ckd2.1'							
do_lwcldemiss do_nlte	True 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 dz	0.05 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 f_geo_warm	0.0, 0.0 0.0, 0.0							
f_iso_cold	0.9, 0.6							
f_iso_warm	0.9, 0.6							
f_vol_cold f_vol_warm	0.09, 0.13 0.09, 0.13							
num_l	5							
\$ z0_momentum \$ snow_nml albedo_to_use	0.01 'brdf-							
&snow_nml albedo_to_use	params'							
max_snow	1000.0							
win_snow_mass &soil_data_nml comp	$\frac{1 \times 10^{-10}}{0.0001}$							
&soil_data_nml comp dat_emis_dry	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	1.0, 1.0, 1.0 2.0, 2.0, 2.0,							
uat_ti_uepi	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 num_l	10.0 20							
&soil_nml active_layer_drainage_acceleration	100.0							
albedo_to_use init_w	'brdf-maps' 500.0							
uptake_oneway	True							
uptake_to_use	'darcy2d-							
write_soil_carbon_restart	linearized' 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
0	use_static_veg	False							
&strat_cloud_nml	diff_thresh	0.1							
	dmin do_old_snowmelt	$1 imes 10^{-7}$ 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							
0 6 0 1	u00_profile	True							
&surface_flux_nml	ncar_ocean_flux	F-I		True	True	True		True	True
	old_dtaudv	False		True	True	True		True	True
&topo_rough_nml	raoult_sat_vap max_topo_rough	100.0		iiue	iiue	iiue		nue	iiue
αιορο_rough_nint	topo_rough_factor	0.01							
	use_topo_rough	True							
&topography_nml	topog_file	'INPUT/	'INPUT/						
Catopograpin)_iiiii	topogc	navy_topog-	navy_topog-						
		ra-	ra-						
		phy.data.nc'	phy.data.nc'						
&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 rad_to_use	'leuning' 'two-stream'							
	snow_rad_to_use	'paint-							
	billow_idu_tu_use	leaves'							
	tau_smooth_ncm	22.0							
_diff_driver_nml	do_conserve_energy	True							
_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	leasd	'a a a - : - d	True	True	True		Janes d	True
	interp_method	'second	'second	'second	'second	'second	'second	'second	'second
	make_exchange_reproduce	order' True	order' True	order' False	order' False	order' False	order' False	order' False	order' False
	make_exchange_reproduce nsubset	irue	irue	raise 16	raise 16	False 16	raise	False 16	False 16
	xgrid_log			False	False	False		10	False
	Agriu_l0g			าสเรต	i alse	ו מנטכ			1 0135