MOM-SIS / ACCESS-OM2 MOM5 namelist comparisons

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

Tables auto-generated by nmltab (https://github.com/aekiss/nmltab). Missing variables are shown as blank. Variables are weblinks to source code searches. Greyed variables are ignored (greying only works in groups with use_this_module shown, so typically doesn't work for tables of differences).

TODO: namelists for CICE (see AK email to Petra 2017-11-15) TODO: namelists for MATM

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1 MOM namelist 'input.nml'

- 1deg_jra55v13_ryf9091_spinup_A-input.nml is Andy's 1deg namelist from 2017-11-06: /g/data3/hh5/tmp/cosima/access-om2/1deg_jra55v13_ryf9091_spinup_A/output039/ocean/input.nml
- GFDL_ESM2M_input-cut.nml is GFDL_ESM2M_input.nml from Steve's email 2017-10-18 with irrelevant atmos/ESM namelist groups cut out.
- 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
- russ-accessom-mom4p1-input.nml is an old MOM4p1 ACCESS-OM input from years ago (Russ' email 2017-10-17)
- 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
- kiss_accessom2_025deg_jra55_ryf_logfile.000000.out is the MOM output file /short/v45/aek156/access-om2/control/025deg_jra55_ryf/archive/output144/ocean/logfile.000000.out, modified by deleting lines not starting with whitespace (regex replace ^[^\s]+.*\$ with nothing), replacing salt_flxmh_flux with salt_flx mh_flux, removing ascii gremlins from end of FIELDS_IN and FIELDS_OUT lines, and deleting the copy of input.nml from the start (to work around bug in nmltab.py). So this shows the values specified in input.nml, plus default values for those not specified in input.nml. However there are some namelist groups it doesn't include, e.g. generic_tracer, monin_obukhov_nml, ocean_albedo_nml, ocean_bihcst_friction_nml, ocean_nphysics_util_nml, ocean_nphysicsa_nml, ocean_nphysicsa_nml, ocean_nphysicsb_nml, ocean_nphysicsc_nml, ocean_overflow_ofp_nml, ocean_rough_nml, ocean_shortwave_csiro_nml, ocean_xlandinsert_nml, ocean_xlandmix_nml, xgrid_nml [and ocean_vert_kpp_nml, was replaced by ocean_vert_kpp_mom4p1_nml in MOM5, and bg_diff_lat_dependence_nml, ocean_polar_filter and ocean_vert_kpp_iow which are not in the MOM5 code at all]; there may be more.

Other useful info:

• Griffies et al. (2015) p973

1.1 Differences between new ACCESS-OM2 configs

Only differences are shown. We aim to make this list as short as possible...

Baston size-mil	Group	Variable	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
Efens. Lornell fleiset write Visiogle mount mutt trecedure, write Visiogle mount mutt trecedure, write Visiogle mount mutt trecedure, write mutt trecedure, write mutt trecedure, write mutt trecedure, write mutt tree, write 4370	&auscom_ice_nml		3600		600
	9 frag in mad			'	'm
docean and well diags after 1520 4320	&IIIIS_IO_IIIIIL				'multi' 'multi'
Seconhigherhi	&ocean_adv_vel_diag_nml				576
	&ocean_barotropic_nml				576
No.	&ocean_bihgen_friction_nml				False
docean Japgen Inicition mml bittom Sport Tex Accean Japgen Inicition mml k.smaga.miss 0.0 R. Smaga.miss 0.0 1.0 R. Smaga.miss 0.0 1.0 R. Smaga.miss 0.0 1.0 restrict.polar visic ratio 0.35 1.0 see this module 0.0 1.0 visionity scale by missing by more 1.0 1.0 viscosity scale by missing by more 1.0 1.0 docean.mixidownshipe.mid 6.0 1.0 1.0 docean.mixidownshipe.mid 6.0 1.0 1.0 1.0 docean.mixidownshipe.mid 6.0 1.0					0.0
Socean Jappen Iniciden amil bettern Sport in Tree Incention of Resinancial in the Resinancial International International International International International International Intern					1.0
	&ocean_lapgen_friction_nml			2.0	2.0
Part					
Part					
Page					
March Marc					
Note				False	False
Viscosity_scale_by_rossby					
Korean_mixidownslope.nml viscosity_scale_by_resoly_power 4.0 Korean_mixidownslope.nml False mixidownslope_mask False incomplement Tead_mixidownslope_mask False Kocean_model_mix d.c.cean 3600 1200 Kocean_model_mix d.c.cean 3600 1200 Kocean_mphysics_mix use_mphysics True False Kocean_mphysics_utilLmn agm_closure_eady_are_mixed True False Kocean_mphysics_utilLmnt agm_closure_eady_are_mixed True False Kocean_mphysics_utilLmnt agm_closure_eady_are_mixed True False Kocean_mphysics_utilLmnt agm_closure_eady_are_mixed True False Agm_closure_eady_are_mixed True True False Agm_closure_eady_are_mixed True True True agm_closure_eady_are_mixed True True False agm_closure_eady_are_mixed True False False agm_closure_eady_are_mixed True False False					
Socean_mixdownslope.nml debug_nits.module mixdownslope.npls (pill passes) False mixdownslope.npls (pill passes) False mixdownslope.npls (pill passes) False mixdownslope.npls (pill passes) False (pill		VISCOSITY_SCALE_DY_FOSSDY			
mixidownstope_mask_pdfi False mixidownstope_mask_pdfi False mixidownstope_mask_pdfi False mixidownstope_mask False	&ocean_mixdownslope_nml				
Microsumpose	woccan a mixed material and a				
Social model mile Title False (a) Social model mile d. d. c.		mixdownslope_npts			
Eccean.model.mil dccean 5500 1200 io.layout 4,3 6,5 6 10 0 <td></td> <td></td> <td></td> <td></td> <td></td>					
No.	& ocean model nml				False 150
& cocan_nphysics_nml use_nphysics_crime Tice False & cocan_nphysics_util_nml agm_closure_eady_ave_mixed	&ocean_modet_mint				10, 15
& cean_nphysics_nml use_nphysics_module True False & cean_nphysics_util_nml agm_closure_eady_ave_mixed True True True True True True True True agm_closure_eady_semoth_hord True agm_closure_eady_smooth_hord True agm_closure_eady_smooth_space False agm_closure_eady_smooth_space False False agm_closure_eady_smooth_space False False agm_closure_eady_smooth_space agm_closure_eady_smooth_space agm_closure_eady_smooth_space agm_closure_eady_eady_mooth_space agm					80, 75
& cean_nphysics_util_nml agm 6000 1000 agm_closure_eady_ave_mixed agm_closure_eady_cap agm_closure_eady_cap agm_closure_eady_month_horz agm_closure_eady_month_horz agm_closure_eady_month_horz agm_closure_eden_gamma agm_closure_eden_gamma agm_closure_eden_gamma agm_closure_eden_gamma agm_closure_eden_gamma agm_closure_eden_gamma agm_closure_eden_gamma agm_closure_eden_gamma false 1000 agm_closure_eden_gamma agm_closure_eden_gamma agm_closure_eden_gamma agm_closure_eden_gamma folio_gam_closure_eden_gamma folio_gam_closure_eden_gam_month_horz false 1000	&ocean_nphysics_nml	use_nphysicsc			False
agm_closure_eady_cape_mixed agm_closure_eady_cape_mixed agm_closure_eady_cape_mixed agm_closure_eady_month_notr agm_closure_eady_month_notr agm_closure_eady_month_notr agm_closure_eady_month_notr agm_closure_eaden_gamma 0.0 agm_closure_eaden_gamma 0.0 agm_closure_eaden_gamma 50.0 100.0 agm_closure_eaden_gamma 50.0 100.0 agm_closure_min 50.0 100.0 agm_smooth_space agm_space agm_s					False
agm.closure_eady_cap True agm.closure_eady_smooth_erc True agm.closure_eady_smooth_erc True agm.closure_eady_smooth_erc True agm.closure_eade_gamma 00 agm.closure_eade_gamma 00 agm.closure_eade_gamma 00 agm.closure_grid_scaling True agm.closure_grid_scaling True agm.closure_grid_scaling agm.closure_min 500 1000 agm.damping_time 45.0 agm.smooth_space false agm.smooth_space false agm.smooth_space false agm.smooth_space false agm.smooth_space false agm.smooth_erc true false agm.smooth_erc false ag	&ocean_nphysics_util_nml			100.0	100.0
agm.closure_eady_smooth_norz True agm.closure_eady_smooth_vort True agm.closure_eady_smooth_vort agm.closure_eady_smooth_vort agm.closure_eden_gamma 0.0 agm.closure_eden_gamma 0.0 agm.closure_eden_greatbatch False agm.closure_min 500 100.0 agm.closure_min 500 100.0 agm.closure_min 500 agm.smooth_space False agm.smooth_space False agm.smooth_space False agm.smooth_time False agm.smooth_time False agm.smooth_time False agm.smooth_time True False agm.smooth_time agm.smooth_tim					
agm.closure.eady.smooth.vert True agm.closure.eaden.gamma 0.0 agm.closure.eaden.gamma 0.0 agm.closure.eaden.gamma 0.0 agm.closure.eaden.gambatch False agm.closure.gid .scaling True agm.closure.min 5.00 100.0 agm.gam.closure.min 5.00 100.0 agm.gam.gamping.time 45.0 agm.smooth.space False agm.smooth.time False drhodz.mon4p1 True False agm.smooth.time True					
agm.closure_den_greatbatch False agm.closure_grid_scaling True agm.closure_grid_scaling agm.closure_min 500 100.0 agm.damping_time 45.0 agm.smooth_space False agm.smooth_time False agm.smooth_vert True agm.smooth_vert True agm.smooth_vert agm.smooth_ve		agm_closure_eady_smooth_vert			
agm.closure_grid_scaling agm.smooth_space agm.smooth_		agm_closure_eden_gamma			
agm_closure_min agm_damping_time agm_smooth_space agm_smooth_space agm_smooth_time agm_smooth_space agm_smooth_time agm_smoo					
agm.damping.time agm.smooth.space agm.smooth.space agm.smooth.time agm.smoot				1000	100.0
Balse Bals				100.0	100.0
drhodz_mom4p1 True False nphysics_util_zero_init True		agm_smooth_space	False		
kocean_nphysicsc_nml True &ocean_nphysicsc_nml bv_freq_smooth_vert True bvp_bc_mode 2 bvp_min_speed 0.1 bvp_speed 0.0 bvp_speed 0.0 debug_this_module False do_gm_skewsion True epsln_bv_freq 1 × 10 ⁻¹² gm_skewsion_bvproblem True gm_skewsion_modes False neutral_eddy_depth True neutral_eddy_depth True number_bc_modes 2 regularize_psi False smooth_psi True tmask_neutral_on True tmsk_neutral_on True turb_blayer_min 50.0 use_this_module True &cean_solo_nml dt_cpl 3600 1200 &cean_tracer_diag_nml diag_step 4320 4320					
&ocean_nphysicsc_nml bv_freq_smooth_vert byp_bc_mode True bvp_bc_mode 2 bvp_min_speed 0.1 bvp_speed 0.0 debug_this_module False do_gm_skewsion True do_neutral_diffusion True epsln_bv_freq 1 × 10 ⁻¹² gm_skewsion_bvproblem True gm_skewsion_modes False neutral_eddy_depth True				False	False
bvp_bc_mode 2	&ocean nohysicsc nml				
bvp_speed 0.0 debug_this_module False do_gm_skewsion True do_neutral_diffusion True epsln_bv_freq 1 × 10 ⁻¹² qm_skewsion_bvproblem True qm_skewsion_modes False neutral_eddy_depth True neutral_eddy_depth True neutral_physics_limit neutral_physics_limit	doctorial physics and a second physical physics and a second physical physics and a second physical ph				
debug_this_module False do_gm_skewsion True do_neutral_diffusion True do_neutral_diffusion True epsh_bv_freq 1 × 10^{-12} m_skewsion_bv_freq 1 × 10^{-					
do_gm_skewsion True do_neutral_diffusion True epsln_bv_freq 1 × 10 ⁻¹²					
do_neutral_diffusion					
epsln_bv_freq 1 × 10 ⁻¹² gm_skewsion_bvproblem True gm_skewsion_modes False neutral_eddy_depth True neutral_physics_limit True neutral_physics_limit True number_bc_modes 2 regularize_psi False smax_psi 0.01 smax_psi 0.01 smax_psi True tmask_neutral_on True turb_blayer_min 50.0 use_this_module True False &ocean_solo_nml days 1460 31 dt_cpld 3600 1200 &ocean_tracer_diag_nml diag_step 4320					
gm_skewsion_byproblem True gm_skewsion_modes False neutral_eddy_depth True neutral_physics_limit True number_bc_modes 2 regularize_psi False smax_psi 0.01 smooth_psi True tmask_neutral_on True turb_blayer_min 50.0 use_this_module True False &ocean_solo_nml days 1460 31 dt_cpld 3600 1200 &ocean_tracer_diag_nml diag_step 4320 4320					
neutral_eddy_depth neutral_physics_limit neutral_physics_limit neutral_physics_limit neutral_physics_limit neutral_physics_limit neutral_physics_limit neutral_physics_limit True neutral_physics_limit True neutral_physics_limit neutral_physi		gm_skewsion_bvproblem	True		
neutral_physics_limit True number_bc_modes 2 regularize_psi False smax_psi 0.01 smooth_psi True tmask_neutral_on True turb_blayer_min 50.0 use_this_module True False &ocean_solo_nml days 1460 31 dt_cpld 3600 1200 &ocean_tracer_diag_nml diag_step 4320 4320					
number_bc_modes 2 regularize_psi False smax_psi 0.01 smooth_psi True tmask_neutral_on True turb_blayer_min 50.0 use_this_module True False &ocean_solo_nml days 1460 31 dt_cpld 3600 1200 &ocean_tracer_diag_nml diag_step 4320 4320					
regularize_psi False smax_psi 0.01 smooth_psi True tmask_neutral_on True turb_blayer_min 50.0 use_this_module True False &ocean_solo_nml days 1460 31 dt_cpld 3600 1200 &ocean_tracer_diag_nml diag_step 4320 4320					
smax_psi 0.01 smooth_psi True tmask_neutral_on True turb_blayer_min 50.0 use_this_module True False &ocean_solo_nml days 1460 31 dt_cpld 3600 1200 &ocean_tracer_diag_nml diag_step 4320 4320					
tmask_neutral_on turb_blayer_min turb_blayer_min use_this_module True turb_blayer_min use_this_module True False &ocean_solo_nml days 1460 31 dt_cpld 3600 1200 &ocean_tracer_diag_nml diag_step 4320 4320		smax_psi	0.01		
turb_blayer_min use_this_module 50.0 True False &ocean_solo_nml days 1460 31 dt_cpld 3600 1200 &ocean_tracer_diag_nml diag_step 4320 4320		smooth_psi			
use_this_module True False &ocean_solo_nml days 1460 31 dt_cpld 3600 1200 &ocean_tracer_diag_nml diag_step 4320 4320					
&ocean_solo_nml days 1460 31 dt_cpld 3600 1200 &ocean_tracer_diag_nml diag_step 4320 4320				Falco	False
&ocean_tracer_diag_nml dt_cpld 3600 1200 4320 4320	&ocean_solo_nml				30
&ocean_tracer_diag_nml diag_step 4320 4320			3600	1200	600
		diag_step			576
&ocean_velocity_diag_nml diag_step 4320 energy_diag_step 4320 4320	&ocean_velocity_diag_nml				576 5760

Group (continued)	Variable	new/	new/	new/
		control/	control/	control/
		1deg	025deg	01deg
		jra55_ryf/	jra55_ryf/	jra55_ryf/
		ocean/	ocean/	ocean/
		input.nml	input.nml	input.nml
&xgrid_nml	do_alltoall			True
	do_alltoallv			True

1.2 Old and new ACCESS-OM2 configs (differences highlighted)

1.2.1 accessom2_1deg_jra55_ryf

Group	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml
&auscom_ice_nml	aice_cutoff	0.15	0.15
	chk_i2o_fields	False	False
	chk_o2i_fields	False	False
	do_ice_once	False	False
	dt_cpl	3600 Felse	3600 Falso
	fixmeltt frazil.factor	False 1.0	False 1.0
	iceform_adj_salt	False	False
	icent_factor	1.0	1.0
	kmxice	5	5
	pop_icediag	True	True
	redsea_gulfbay_sfix	True	True
	sign_stflx	1.0	1.0
	tmelt	-0.216	-0.216
	use_ioaice	True	True
&bg_diff_lat_dependence_nml	bg_diff_eq	1×10^{-6}	
8 diag manager nml	lat_low_bgdiff	20.0	T
&diag_manager_nml	debug_diag_manager issue_oor_warnings	False	True True
&fms_io_nml	fileset_write	'single'	'single'
S. S	threading_read	'multi'	'multi'
	threading_write	'single'	'single'
&fms_nml	clock_grain	'LOOP'	'COMPONENT
	domains_stack_size		115200
&mom_oasis3_interface_nml	fields_in	'u₋flux',	'u_flux',
		'v_flux',	'v_flux',
		'lprec', 'fprec',	'lprec', 'fprec',
		'salt_flx',	'salt_flx',
		'mh_flux', 'sw_flux',	'mh_flux',
		'q_flux',	'sw_flux', 'q_flux',
		't_flux',	't_flux',
		'lw_flux',	'lw_flux',
		'runof', 'p',	'runof', 'p',
		'aice',	'aice',
		'wfimelt',	'wfimelt',
		'wfiform'	'wfiform'
	fields_out	't_surf',	't_surf',
		's_surf',	's_surf',
		'u_surf',	'u_surf',
		'v_surf', 'dssldx',	'v_surf', 'dssldx',
		'dssldy',	'dssldy',
		'frazil'	'frazil'
	num_fields_in	15	15
	num_fields_out	7	7
	send_after_ocean_update	True	True
	send_before_ocean_update	False	False
&monin_obukhov_nml	neutral		True
&mpp_io_nml	deflate_level		5
&ocean_adv_vel_diag_nml	shuffle diag step	4320	4320
woccan_auv_vet_utay_nint	diag_step large_cfl_value	4320 10.0	10.0
	max_cfl_value	10.0	100.0
	verbose_cfl	True	True
&ocean_advection_velocity_nml	max_advection_velocity	0.5	0.5
&ocean_albedo_nml	ocean_albedo_option		2
&ocean_barotropic_nml	barotropic_halo	10	10
	barotropic_time_stepping_a	True	True
	barotropic_time_stepping_b	False	False
	debug_this_module	False	False
	diag_step	4320	4320
	eta_max	8.0	8.0
	frac_crit_cell_height	0.2	0.2
	pred_corr_gamma smooth_eta_diag_laplacian	0.2 True	0.2 True
	smooth_eta_t_biharmonic	False	False
	smooth_eta_t_laplacian	True	True
	31100til_cta_t_taptaciaii	iiuc	iiuc

	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml
	smooth_pbot_t_biharmonic	False	False
	smooth_pbot_t_laplacian truncate_eta	True False	True False
	use_legacy_barotropic_halos	False	False
	vel_micom_bih	0.01	0.01
	vel_micom_lap	0.05	0.05
	vel_micom_lap_diag	0.2	0.2
	verbose_truncate	True	True False
&ocean_bbc_nml	zero_tendency bmf_implicit		True
Woccur_DDC_11111	cdbot	0.001	0.001
	cdbot_hi		0.007
	cdbot_law_of_wall	False	
	cdbot_roughness_length		False
	cdbot_roughness_uamp uresidual		True 0.05
	use_geothermal_heating	False	False
&ocean_bbc_ofam_nml	read_tide_speed	False	
	uresidual2_max	1.0	
&ocean_bih_friction_nml	bih_friction_scheme	'general'	'general'
&ocean_bih_tracer_nml &ocean_bihcst_friction_nml	use_this_module use_this_module	False False	False False
&ocean_bingen_friction_nml	use_tnis_module bottom_5point	True	True
woccun_bingcn_mcdon_milt	eq_lat_micom	0.0	0.0
	eq_vel_micom_aniso	0.0	0.0
	eq_vel_micom_iso	0.0	0.0
	equatorial_zonal	False	False
	k_smag_aniso k_smag_iso	0.0 2.0	0.0 2.0
	ncar_boundary_scaling	True	True
	ncar_boundary_scaling_read		True
	ncar_rescale_power	2	2
	ncar_vconst_4	2×10^{-8}	2×10^{-8}
	ncar_vconst_5 use_this_module	5 True	5 True
	vel_micom_aniso	0.0	0.0
	vel_micom_bottom	0.01	0.01
	vel_micom_iso	0.04	0.04
	visc_crit_scale	0.25	0.25
&ocean_convect_nml	convect_full_scalar convect_full_vector	False True	
	use_this_module	False	False
&ocean_coriolis_nml	acor		
		0.5	0.5
	use_this_module	True	True
&ocean_density_nml	eos_linear	True False	True False
&ocean_density_nml	eos_linear eos_preteos10	True False True	True False True
&ocean_density_nml	eos_linear eos_preteos10 layer_nk	True False True 80	True False True 80
&ocean_density_nml	eos_linear eos_preteos10	True False True	True False True
&ocean_density_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_max	True False True 80 1030.0 1020.0 1038.0	True False True 80 1030.0 1020.0 1038.0
	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_max potrho_min	True False True 80 1030.0 1020.0 1028.0	True False True 80 1030.0 1020.0 1038.0 1028.0
&ocean_domains_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_max potrho_min max_tracers	True False True 80 1030.0 1020.0 1038.0 1028.0 10	True False True 80 1030.0 1020.0 1038.0
	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_max potrho_min max_tracers cprime_aiki	True False True 80 1030.0 1020.0 1038.0 1028.0 10	True False True 80 1030.0 1020.0 1038.0 1028.0 5
&ocean_domains_nml &ocean_form_drag_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_max potrho_min max_tracers cprime_aiki use_this_module	True False True 80 1030.0 1020.0 1038.0 1028.0 10	True False True 80 1030.0 1020.0 1038.0 1028.0 5
&ocean_domains_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_max potrho_min max_tracers cprime_aiki use_this_module frazil_only_in_surface	True False True 80 1030.0 1020.0 1038.0 1028.0 10	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False False
&ocean_domains_nml &ocean_form_drag_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_max potrho_min max_tracers cprime_aiki use_this_module frazil_only_in_surface freezing_temp_preteos10	True False True 80 1030.0 1020.0 1038.0 1028.0 10 0.6 False	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False True
&ocean_domains_nml &ocean_form_drag_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min max_tracers cprime_aiki use_this_module frazil_only_in_surface freezing_temp_simple	True False True 80 1030.0 1020.0 1038.0 1028.0 10 0.6 False	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False False False False
&ocean_domains_nml &ocean_form_drag_nml &ocean_frazil_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min max_tracers cprime_aiki use_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_simple use_this_module	True False True 80 1030.0 1020.0 1038.0 1028.0 10 0.6 False True True	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False True False True False True
&ocean_domains_nml &ocean_form_drag_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min potrho_min max_tracers cprime_aiki use_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_simple use_this_module debug_this_module	True False True 80 1030.0 1020.0 1038.0 1028.0 10 0.6 False	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False False False False
&ocean_domains_nml &ocean_form_drag_nml &ocean_frazil_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min max_tracers cprime_aiki use_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_simple use_this_module	True False True 80 1030.0 1020.0 1038.0 1028.0 10 0.6 False True True True False 0	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False True False True False True
&ocean_domains_nml &ocean_form_drag_nml &ocean_frazil_nml &ocean_grids_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min potrho_min max_tracers cprime_aiki use_this_module debug_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_simple use_this_module debug_this_module debug_this_module freezing_temp_oreteos10 freezi	True False True 80 1030.0 1020.0 1038.0 1028.0 10 0.6 False True True True False 0 1.0	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False True False True
&ocean_domains_nml &ocean_form_drag_nml &ocean_frazil_nml &ocean_grids_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min max_tracers cprime_aiki use_this_module debug_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_simple use_this_module debug_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_orphile use_this_module freed_rho0_profile days_to_increment fraction_increment	True False True 80 1030.0 1020.0 1038.0 1028.0 10 0.6 False True True True False 0 1.0 1800	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False True False True False True False False
&ocean_domains_nml &ocean_form_drag_nml &ocean_frazil_nml &ocean_grids_nml &ocean_increment_eta_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min potrho_min max_tracers cprime_aiki use_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_simple use_this_module debug_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_imple use_this_module debug_this_module freezing_temp_imple use_this_module desc_to_increment fraction_increment use_this_module	True False True 80 1030.0 1020.0 1038.0 1028.0 10 0.6 False True True True True False 0 1.0 1800 False	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False True False True False True
&ocean_domains_nml &ocean_form_drag_nml &ocean_frazil_nml &ocean_grids_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min potrho_min max_tracers cprime_aiki use_this_module debug_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 debug_this_module debug_this_module debug_this_module debug_this_module debug_this_module debug_this_module debug_this_module desc_this_module desc_to_increment secs_to_increment use_this_module days_to_increment	True False True 80 1030.0 1020.0 1038.0 1028.0 10 0.6 False True True True True False 0 1.0 1800 False 0	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False True False True False True False False
&ocean_domains_nml &ocean_form_drag_nml &ocean_frazil_nml &ocean_grids_nml &ocean_increment_eta_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min potrho_min max_tracers cprime_aiki use_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_simple use_this_module debug_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_imple use_this_module debug_this_module freezing_temp_imple use_this_module desc_to_increment fraction_increment use_this_module	True False True 80 1030.0 1020.0 1038.0 1028.0 10 0.6 False True True True True False 0 1.0 1800 False	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False True False True False True False True False
&ocean_domains_nml &ocean_form_drag_nml &ocean_frazil_nml &ocean_grids_nml &ocean_increment_eta_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min potrho_min max_tracers cprime_aiki use_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_preteos10 freezing_temp_oreteos10 f	True False True 80 1030.0 1020.0 1038.0 1028.0 10 0.6 False True True True True False 0 1.0 1800 False 0 1.0 1.0	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False True False True False True False False
&ocean_domains_nml &ocean_form_drag_nml &ocean_frazil_nml &ocean_grids_nml &ocean_increment_eta_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min potrho_min max_tracers c_prime_aiki use_this_module debug_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_simple use_this_module debug_this_module frazil_only_in_surface freezing_temp_oreteos10	True False True 80 1030,0 1020,0 1038,0 1028,0 10 0.6 False True True True True False 0 1,0 1800 False 0 1,0 1800 False 0 1,0 1800 False	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False True False True False
&ocean_domains_nml &ocean_form_drag_nml &ocean_frazil_nml &ocean_grids_nml &ocean_increment_eta_nml &ocean_increment_tracer_nml	eos_linear eos_preteos10 layer_nk neutralrho_max neutralrho_min potrho_min potrho_min max_tracers cprime_aiki use_this_module frazil_only_in_surface freezing_temp_preteos10 freezing_temp_simple use_this_module debug_this_module frazil_only_in_surface freezing_temp_freezing_temp_simple use_this_module debug_this_module debug_this_module read_rho0_profile days_to_increment fraction_increment use_this_module days_to_increment use_this_module	True False True 80 1030,0 1020,0 1038,0 1028,0 10 0.6 False True True True True False 0 1,0 1800 False 0 1,0 1800 False	True False True 80 1030.0 1020.0 1038.0 1028.0 5 False False False True False True False

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml
&ocean_lap_friction_nml	lap_friction_scheme	'general'	'general'
&ocean_lap_tracer_nml	use_this_module	False	False
&ocean_lapcst_friction_nml	use_this_module	False	False
&ocean_lapgen_friction_nml	bottom_5point	True	True
	k_smag_aniso	0.0	0.0
	k_smag_iso	0.0	0.0
	ncar_only_equatorial	True	
	restrict_polar_visc	True	True
	restrict_polar_visc_lat	60.0	60.0
	restrict_polar_visc_ratio	0.35	0.35
	use_this_module	True	True
	vconst_1	8 000 000.0	
	vconst_2 vconst_3	0.0 0.8	
		5×10^{-9}	
	vconst_4 vconst_5	5 × 10 ³	
		300 000 000.0	
	vconst_6 vconst_7	100.0	
	vel_micom_iso	0.1	0.1
	viscosity_ncar	True	False
	viscosity_ncar_2000	False	ו מנטכ
	viscosity_ncar_2007	True	
	viscosity_scale_by_rossby	True	True
	viscosity_scale_by_rossby_power	4.0	4.0
&ocean_mixdownslope_nml	debug_this_module	False	False
Woccur anni North Stope anni C	mixdownslope_mask_gfdl	False	False
	mixdownslope_npts	4	4
	read_mixdownslope_mask	False	False
	use_this_module	True	True
&ocean_model_nml	baroclinic_split	1	1
	barotropic_split	80	80
	cmip_units	True	True
	debug	False	False
	dt_ocean	3600	3600
	io_layout	4, 3	4, 3
	layout	16, 15	16, 15
	surface_height_split	1	1
	time_tendency	'twolevel'	'twolevel'
	vertical_coordinate	'zstar'	'zstar'
&ocean_momentum_source_nml	rayleigh_damp_exp_from_bottom		False
	use_rayleigh_damp_table	True	True
	use_this_module	True	True
&ocean_nphysics_nml	debug_this_module	False	False
	use_nphysicsa	False	False
	use_nphysicsb	False	False
	use_nphysicsc	True	True
	use_this_module	True	True
&ocean_nphysics_util_nml	agm .	600.0	600.0
	agm_closure	True	True
	agm_closure_baroclinic	True	True
	agm_closure_buoy_freq	0.004	0.004
	agm_closure_eady_ave_mixed agm_closure_eady_cap	True True	True
	agm_closure_eady_cap agm_closure_eady_smooth_horz	True	True True
	agm_closure_eady_smooth_not2 agm_closure_eady_smooth_vert	True	True
	agm_closure_eden_gamma	0.0	0.0
	agm_closure_eden_greatbatch	False	False
	agm_closure_grid_scaling	True	True
	agm_closure_length	50 000.0	50 000.0
	agm_closure_length_bczone	False	False
	agm_closure_length_fixed	False	False
	agm_closure_length_rossby	False	False
	agm_closure_lower_depth	2000.0	2000.0
	agm_closure_max	600.0	600.0
	agm_closure_min	50.0	50.0
	agm_closure_scaling	0.07	0.07
	agm_closure_upper_depth	100.0	100.0
			45.0
	aom_dampino time	45.0	40.0
	agm_damping_time agm_smooth_space	45.0 False	False
	agm_smooth_space		
		False	False
	agm_smooth_space agm_smooth_time	False False	False False

जा क्षा क्षा क्षा क्षा क्षा क्षा क्षा क्ष	Group (continued) Variab	hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml
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Access mphysics and butters shoulded False False Security	vel_micc	o.0	0.0
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Department			
Part			
Book			
Second pressure mile			
Reduct Provide State Pro	gm_skewsion_mod	es False	
Manufache American Registrate part Registr			
Patter P			
Smax psi			
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Bocon operators.mmi			
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Socean_overenchange_nml tips_legacy_divuid False			
Botes of the state of			
Noverech.nupts A			False
Note			
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Scocean.overflow.ofp.nml use.this.module False False &cocean.polar.filter.nml use.this.module False False &cocean.pressure.nml geto.pressure.nore False False &cocean.rivermix.nml debug.this.module False False inver.diffuse.temp False True True <td< td=""><td></td><td></td><td>raise</td></td<>			raise
&ocean_overflow_ofp_nml use_this_module False False &ocean_polar_filter.mml 2800_pressure_force False False &ocean_pressure_force False False Accean_pressure_force False False &ocean_rivermix.nml debug_this_module False True True river_diffusion.thickness 0.0 0			False
&ocean_polar_filter_nml use_this module False False &ocean_pressure_nml debug_this_module False False &ocean_fivermix_nml debug_this_module False True inver_diffuse salt False True inver_diffuse salt False True inver_diffusion_thickness 0.0 0.0 decean_river_diffusion_thickness 0.0 0.0 decean_river_diffusion_t			
& cocean_rivermix.nml debug this_module river_diffuse_state plate river_diffuse_temp False river_fite river_diffuse_temp False river_diffuse_temp Mode of the plate river_diffuse_temp False river_diffuse_temp Fal		ile False	False
Pate		ce	False
River diffusion thickness	· · · · · · · · · · · · · · · · · · ·		
Priver_diffusion_thickness			
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&ocean.riverspread.nml use this.module True False &ocean.rough.nml rough.scheme beljaars &ocean.sbr.nml avg.sfr.temp.salt.eta True True avg.sfr.velocity True True avg.sfr.velocity True True adv. db. bitwise.exact.sum False False db. bitwise.exact.sum False False db. db. bitwise.exact.sum False False db. bitwise.exact.sum False False db. bitwise.exact.sum False False max.delta.salinity.restore 0.5 0.5 max.delta.salinity.restore.mask.gdl False False restore.mask.gdl False False restore.mask.gdl False False restore.mask.gdl False False gast.restore.ass.at.flux True True salt.restore.ass.at.flux True True salt.restore.usder.ice True True use.waterflux True True			
&ocean_riverspread_nml use_this_module True False &ocean_rough_nml fough_scheme 'beljaars' &ocean_sbc_nml avg_sfc_temp_salt_eta True True avg_sfc_velocity True True True avg_sfc_velocity True True False do_bitwise_exact_sum False False do_filux_correction False False max_deta_salinity_restore 0.5 0.5 max_deta_salinity_restore 0.5 0.5 salt_correction_maskfall False False restore_maskgdl False False restore_maskgdl False False galt_restore_assalt_flux True True salt_restore_assalt_flux True True temp_restore_tscale 15.0 <td< td=""><td></td><td></td><td></td></td<>			
&ocean_rough_nml tough_scheme 'beljaars' &ocean_sbc_nml avg_sfc_temp_salt_eta True True avg_sfc_velocity True True catvingspread False False db_bitwise_exact_sum False False db_bitw.correction False False land_model_heat_fluxes False False max_delta_salinity_restore 0.5 0.5 salt_restore_mask_gfdl False False restore_mask_gfdl False 1.0 0.0 sa			
& ocean_sbc_nml avg_sfc_temp_salt_eta True True avg_sfc_velocity True True True True True True True True False False False Go_flux_correction Ealse False False Go_flux_correction False True True True True True True True True True False			
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zero_net_water_couple_restore True True		on	False
	zero_net_water_couple_resto	re True	True

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml
	zero_net_water_coupler	True	True
	zero_net_water_restore	True	True
	zero_surface_stress zero_water_fluxes	False False	False False
&ocean_sbc_ofam_nml	restore_mask_ofam	False	raise
a occursocolumnimic	river_temp_ofam	False	
&ocean_shortwave_csiro_nml	read_depth	True	
	use_this_module	True	False
	zmax_pen	7000	
&ocean_shortwave_gfdl_nml	debug_this_module	False	False
	enforce_sw_frac	True	True
	optics_manizza optics_morel_antoine	True	True False
	read_chl	False	True
	sw_pen_fixed_depths	False	iiuc
	use_this_module	False	True
	zmax_pen	200.0	300.0
&ocean_shortwave_jerlov_nml	use_this_module	False	False
&ocean_shortwave_nml	use_shortwave_csiro	True	False
	use_shortwave_gfdl	False	True
	use_shortwave_jerlov use_this_module	False True	False True
&ocean_sigma_transport_nml	sigma_advection_on	False	iiue
& Ocean_Signa_cransport_innt	sigma_advection_sigs_only	False	
	sigma_diffusion_on	True	
	sigma_diffusivity_ratio	$1 imes 10^{-6}$	
	sigma_just_in_bottom_cell	True	
	sigma_umax	0.01	
	smooth_sigma_thickness	True	
	smooth_sigma_velocity smooth_velmicom	True 0.2	
	thickness_sigma_layer	100.0	
	thickness_sigma_max	100.0	
	thickness_sigma_min	100.0	
	tmask_sigma_on	False	
	tracer_mix_micom	True	
	use_this_module	True	False
&ocean_solo_nml	vel_micom calendar	0.05 'NOLEAP'	'NOLEAP'
goreau-2010-11111	date_init	1,1,1,0,0,0	1, 1, 1, 0, 0, 0
	days	1460	1460
	debug_this_module	False	
	dt_cpld	3600	3600
	hours	0	0
	minutes	0	0
	months seconds	0	0
	years	0	0
&ocean_sponges_eta_nml	use_this_module	False	False
&ocean_sponges_tracer_nml	damp_coeff_3d	False	. 4.50
	use_this_module	False	False
&ocean_sponges_velocity_nml	use_this_module	False	False
&ocean_submesoscale_nml	coefficient_ce		0.05
	debug_this_module	False	False
	front_length_const front_length_deform_radius	5000.0 True	5000.0 True
	limit_psi	True	True
	limit_psi_velocity_scale	0.5	0.5
	min_kblt	4	4
	smooth_advect_transport		True
	smooth_advect_transport_num		4
	smooth_hblt	False	False
	smooth_psi smooth_psi_num		True 3
	submeso_advect_flux		False
	submeso_advect_limit		True
	submeso_advect_upwind		True
	submeso_advect_zero_bdy		True
	submeso_diffusion		False
	submeso_diffusion_biharmonic		True
	submeso_diffusion_scale submeso_limit_flux	True	10.0
	submeso_timit_flux submeso_skew_flux	iiue	True
	Submeso_skew_itux		iiuc

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml
	use_hblt_equal_mld	True	True
	use_psi_legacy		False
	use_this_module	True	True
&ocean_tempsalt_nml	debug_this_module	False	False
	pottemp_2nd_iteration	True	True
	pottemp_equal_contemp s_max	55.0	True 70.0
	s_max_limit	42.0	42.0
	s_min	-1.0	0.0
	s_min_limit	0.0	2.0
	t_max	55.0	55.0
	t_max_limit	32.0	32.0
	t_min	-5.0	-20.0
	t_min_limit	-2.0	-5.0
	temperature_variable	'conservative temp'	'potential temp'
&ocean_thickness_nml	debug_this_module	False	False
	debug_this_module_detail	False	False
	initialize_zero_eta	False	
	read_rescale_rho0_mask	False	. .
	rescale_mass_to_get_ht_mod	70	False
	rescale_rho0_basin_label rescale_rho0_mask_qfdl	7.0 False	
	rescale_rno0_mask_grai rescale_rho0_value	0.75	
	thickness_dzt_min	1.0	
	thickness_dzt_min_init	2.0	
	thickness_method	'energetic'	'energetic'
&ocean_topog_nml	min_thickness	25.0	
&ocean_tracer_advect_nml	advect_sweby_all	True	
	async_domain_update	True	
	debug_this_module	False	False
	read_basin_mask	4720	False
&ocean_tracer_diag_nml	diag_step do_bitwise_exact_sum	4320 False	4320 False
	tracer_conserve_days	1.0	30.0
&ocean_tracer_nml	age_tracer_max_init	0.0	0.0
Wooding and Control of the Control o	debug_this_module	False	False
	frazil_heating_after_vphysics	True	True
	frazil_heating_before_vphysics	False	False
	limit_age_tracer	True	True
	remap_depth_to_s_init	False	False
	use_tempsalt_check_range	True	True
	zero_tendency zero_tracer_source	False False	False False
&ocean_velocity_diag_nml	debug_this_module	False	False
Coccan_retocity_diag_ninit	debug_triis_inodate diaq_step	4320	4320
	energy_diag_step	4320	4320
	large_cfl_value	10.0	10.0
	max_cfl_value	100.0	100.0
&ocean_velocity_nml	adams_bashforth_third	True	True
	max_cgint	_1.0	1.0
	truncate_velocity	True	False
	truncate_velocity_value	2.0	2.0
	truncate_verbose zero_tendency	True False	True False
	zero_tendency zero_tendency_explicit_a	raise	False
	zero_tendency_explicit_b		False
	zero_tendency_implicit		False
&ocean_vert_kpp_iow_nml	use_this_module	False	False
&ocean_vert_kpp_mom4p0_nml	use_this_module	False	
&ocean_vert_kpp_mom4p0_nml &ocean_vert_kpp_mom4p1_nml	diff_cbt_iw	0.0	0.0
	diff_cbt_iw diff_con_limit	0.0 0.1	
	diff_cbt_iw <mark>diff_con_limit</mark> double_diffusion	0.0 0.1 True	True
	diff_cbt_iw <mark>diff_con_limit</mark> double_diffusion kbl_standard_method	0.0 0.1 True False	True False
	diff_cbt_iw diff_con_limit double_diffusion kbl_standard_method ricr	0.0 0.1 True False 0.3	True False 0.3
	diff_cbt_iw diff_con_limit double_diffusion kbl_standard_method ricr smooth_blmc	0.0 0.1 True False 0.3 False	True False 0.3 False
	diff_cbt_iw diff_con_limit double_diffusion kbl_standard_method ricr smooth_blmc smooth_ri_kmax_eq_kmu	0.0 0.1 True False 0.3 False True	True False 0.3 False True
	diff_cbt_iw diff_con_limit double_diffusion kbl_standard_method ricr smooth_blmc smooth_ri_kmax_eq_kmu use_this_module	0.0 0.1 True False 0.3 False True True	True False 0.3 False True True
	diff_cbt_iw diff_con_limit double_diffusion kbl_standard_method ricr smooth_blmc smooth_ri_kmax_eq_kmu	0.0 0.1 True False 0.3 False True	True False 0.3 False True
	diff_cbt_iw diff_con_limit double_diffusion kbl_standard_method ricr smooth_blmc smooth_ri_kmax_eq_kmu use_this_module visc_cbu_iw visc_con_limit afkph_00	0.0 0.1 True False 0.3 False True True 0.0 0.1	True False 0.3 False True True
&ocean_vert_kpp_mom4p1_nml	diff_cbt_iw diff_con_limit double_diffusion kbl_standard_method ricr smooth_blmc smooth_ri_kmax_eq_kmu use_this_module visc_cbu_iw visc_con_limit	0.0 0.1 True False 0.3 False True True 0.0	True False 0.3 False True True

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml
	bryan_lewis_diffusivity	False	False
	bryan_lewis_lat_depend	True 35.0	False
	bryan_lewis_lat_transition	33.0 1.15	
	dfkph_00 dfkph_90	0.95	
	hwf_diffusivity	0.93	False
	hwf_min_diffusivity		2×10^{-6}
	hwf_n0_2omega		20.0
	linear_taper_diff_cbt_table	False	20.0
	sfkph_00	4.5×10^{-5}	
	sfkph_90	4.5×10^{-5}	
	use_diff_cbt_table	False	False
	vert_diff_back_via_max	True	True
	vert_mix_scheme	'kpp	'kpp
	zfkph_00	mom4p1'	mom4p1'
	zfkph_90	250 000.0	
&ocean_vert_tidal_nml	background_diffusivity	5×10^{-6}	0.0
	background_viscosity	0.0001	0.0001
	decay_scale	300.0	500.0
	drag_dissipation_use_cdbot		True
	drhodz_min	$1 imes 10^{-12}$	$1 imes 10^{-10}$
	fixed_wave_dissipation	False	False
	max_drag_diffusivity	0.01	
	max_wave_diffusivity	0.01	0.01
	mixing_efficiency_n2depend	True	True
	read_roughness	True	True
	read_tide_speed	True	True
	read_wave_dissipation	False	False
	reading_roughness_amp	True	True
	reading_roughness_length	False	False
	roughness_scale	20 000.0	12 000.0
	shelf_depth_cutoff	160.0	-1000.0
	tide_speed_data_on_t_grid use_drag_dissipation	True True	True True
	use_legacy_methods	nue	False
	use_this_module	True	True
	use_uns_inodute use_wave_dissipation	True	True
	wave_energy_flux_max	0.1	0.1
&ocean_xlandinsert_nml	use_this_module	False	False
	verbose_init	True	
&ocean_xlandmix_nml	use_this_module	False	False
	verbose_init	True	
	xlandmix_kmt	True	
&xgrid_nml	interp_method	'second order'	'second order'
	make_exchange_reproduce	False	False
	nsubset		16

1.2.2 accessom2_025deg_jra55_ryf

We aim to have as few differences as possible, as this is where we've invested most $SU\dots$

Group	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml
&auscom_ice_nml aice_cutoff	0.15	0.15
chk.i2o_fields	False	False
chk_o2i_fields	False	False
do_ice_once	False	False
dt_cpl	1200	1800
fixmeltt	False	False
frazil_factor	1.0	1.0
iceform_adj_salt	False	False
icemlt_factor	1.0	1.0
kmxice	5	5
pop_icediag	True	True
sign_stflx	1.0	1.0
tmelt	-0.216	-0.216

	Variable	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml
&diag_manager_nml	use_ioaice debug_diag_manager	True True	True True
Conguniting Carrier	issue_oor_warnings	True	True
&fms_io_nml	fileset_write	'single'	'multi'
	threading_read threading_write	'multi' 'single'	'multi' 'multi'
&fms_nml	clock_grain	'LOOP'	'COMPONENT'
	domains_stack_size		115200
&mom_oasis3_interface_nml	fields_in	'u_flux',	'u_flux',
		'v_flux', 'lprec', 'fprec',	'v_flux', 'lprec', 'fprec',
		'salt_flx',	'salt_flx',
		'mh_flux',	'mh_flux',
		'sw_flux',	'sw_flux',
		'q_flux', 't_flux',	'q_flux', 't_flux',
		'lw_flux',	'lw_flux',
		'runof', 'p',	'runof', 'p',
		'aice', 'wfimelt',	'aice', 'wfimelt',
		wnmett, 'wfiform'	wilmett, 'wfiform'
	fields_out	't_surf',	't_surf',
		's_surf',	's_surf',
		'u_surf', 'v_surf',	'u_surf', 'v_surf',
		'dssldx',	'dssldx',
		'dssldy',	'dssldy',
	num Estas in	'frazil'	'frazil'
	num_fields_in num_fields_out	15 7	15 7
	send_after_ocean_update	True	True
	send_before_ocean_update	False	False
&monin_obukhov_nml	neutral deflate_level	True	True 5
&mpp_io_nml	shuffle		1
&ocean_adv_vel_diag_nml	diag_step	4320	4320
	large_cfl_value	10.0	10.0
	max_cfl_value verbose_cfl	100.0 True	100.0 True
&ocean_advection_velocity_nml	max_advection_velocity		
&ocean_albedo_nml		0.5	0.5
	ocean_albedo_option	2	2
&ocean_barotropic_nml	barotropic_halo	2 10	2 10
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a	2 10 True	2 10 True
&ocean_barotropic_nml	barotropic_halo	2 10 True False False	2 10
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step	2 10 True False False 4320	2 10 True False False 4320
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max	2 10 True False False 4320 8.0	2 10 True False False 4320 8.0
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height	2 10 True False False 4320 8.0 0.2	2 10 True False False 4320 8.0 0.2
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_diag_laplacian	2 10 True False False 4320 8.0 0.2 0.2 True	2 10 True False False 4320 8.0 0.2 0.2 True
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_diag_laplacian smooth_eta_t_biharmonic	2 10 True False False 4320 8.0 0.2 0.2 True False	2 10 True False False 4320 8.0 0.2 0.2 True False
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_diag_laplacian smooth_eta_t_biharmonic smooth_eta_t_laplacian	2 10 True False False 4320 8.0 0.2 0.2 True False True	2 10 True False False 4320 8.0 0.2 0.2 True False True
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_diag_laplacian smooth_eta_t_biharmonic	2 10 True False False 4320 8.0 0.2 0.2 True False	2 10 True False False 4320 8.0 0.2 0.2 True False
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_diag_laplacian smooth_eta_t_biharmonic smooth_pbot_t_biharmonic smooth_pbot_t_laplacian truncate_eta	2 10 True False False 4320 8.0 0.2 True False True False True False True False	2 10 True False False 4320 8.0 0.2 True False True False True False True False
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_diag_laplacian smooth_eta_t_biharmonic smooth_pbot_t_biharmonic smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos	2 10 True False False 4320 8.0 0.2 True False True False True False False False False False	2 10 True False False 4320 8.0 0.2 True False True False True False False False False False
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_t_biharmonic smooth_eta_t_biharmonic smooth_pbot_t_laplacian smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_bih	2 10 True False False 4320 8.0 0.2 0.2 True False True False True False False False False False Folse False False False False False	2 10 True False False 4320 8.0 0.2 0.2 True False True False True False False False False Folse Folse Folse Folse Folse Folse Folse
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_diag_laplacian smooth_eta_t_biharmonic smooth_pbot_t_biharmonic smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_lap vel_micom_lap_diag	2 10 True False False 4320 8.0 0.2 0.2 True False True False True False False False 0.01 0.05	2 10 True False False 4320 8.0 0.2 0.2 True False True False False False False Folse
&ocean_barotropic_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_diag_laplacian smooth_eta_t_biharmonic smooth_pbot_t_laplacian smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_lap vel_micom_lap_diag verbose_truncate	2 10 True False False 4320 8.0 0.2 0.2 True False True False False True False False False True False True False True False True Talse True True True Talse True	2 10 True False False 4320 8.0 0.2 0.2 True False True False False False False False False True False True False True False True True True True True True True Tru
	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_diag_laplacian smooth_eta_t_laplacian smooth_eta_t_laplacian smooth_pbot_t_biharmonic smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_lap vel_micom_lap vel_micom_lap_diag verbose_truncate zero_tendency	2 10 True False False 4320 8.0 0.2 0.2 True False True False	2 10 True False False 4320 8.0 0.2 0.2 True False True False
&ocean_barotropic_nml &ocean_bbc_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_diag_laplacian smooth_eta_t_laplacian smooth_eta_t_laplacian smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_lap vel_micom_lap_diag verbose_truncate zero_tendency bmf_implicit	2 10 True False False 4320 8.0 0.2 0.2 True False True True True True True True	2 10 True False False 4320 8.0 0.2 0.2 True False True False False False True False False False False True True True True True True True Tru
	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_t_biharmonic smooth_eta_t_biharmonic smooth_pbot_t_laplacian smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_lap vel_micom_lap vel_micom_lap vel_micom_lap_diag verbose_truncate zero_tendency bmf_implicit cdbot cdbot_hi	2 10 True False False 4320 8.0 0.2 0.2 True False O.01 0.05 0.2 True False True False True False O.07 True False	2 10 True False False 4320 8.0 0.2 0.2 True False O.01 0.05 0.2 True False True False True Foloro O.05 0.2 True False True O.001
	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_t_biharmonic smooth_eta_t_biharmonic smooth_pbot_t_laplacian smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_lap vel_micom_lap vel_micom_lap vel_micom_lap_diag verbose_truncate zero_tendency bmf_implicit cdbot cdbot_roughness_length	2 10 True False False 4320 8.0 0.2 0.2 True False O.01 0.05 0.2 True False True False True False True False O.07 False	2 10 True False False 4320 8.0 0.2 0.2 True False O.01 0.05 0.2 True False True False True False True False True False True False
	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_t_binarmonic smooth_eta_t_binarmonic smooth_pbot_t_laplacian smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_lap vel_micom_lap vel_micom_lap vel_micom_lap verbose_truncate zero_tendency bmf_implicit cdbot cdbot_roughness_length cdbot_roughness_length	2 10 True False False 4320 8.0 0.2 0.2 True False True False False True False True False True False True False True False True False 0.01 0.05 0.2 True False True False True False True False True False True False True True True True True True True Tru	2 10 True False False 4320 8.0 0.2 0.2 True False True False False True True False True 0.001
	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_t_biharmonic smooth_eta_t_biharmonic smooth_pbot_t_biharmonic smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_lap vel_micom_lap vel_micom_lap vel_micom_lap verbose_truncate zero_tendency bmf_implicit cdbot cdbot_roughness_length cdbot_roughness_uamp uresidual	2 10 True False False 4320 8.0 0.2 True False True False True False True False True False O.01 0.05 0.2 True False True 0.001 0.007 False True 0.007	2 10 True False False 4320 8.0 0.2 0.2 True False True False False True False True False False 0.01 0.05 0.2 True False True O.001 0.007 False True 0.007
&ocean_bbc_nml &ocean_bih_friction_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_t_binarmonic smooth_eta_t_binarmonic smooth_pbot_t_laplacian smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_lap vel_micom_lap vel_micom_lap vel_micom_lap verbose_truncate zero_tendency bmf_implicit cdbot cdbot_roughness_length cdbot_roughness_length	2 10 True False False 4320 8.0 0.2 0.2 True False True False False True False True False True False True False True False True False 0.01 0.05 0.2 True False True False True False True False True False True False True True True True True True True Tru	2 10 True False False 4320 8.0 0.2 0.2 True False True False False True True False True 0.001
&ocean_bbc_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_t_biharmonic smooth_eta_t_biharmonic smooth_pbot_t_laplacian smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_lap vel_micom_lap vel_micom_lap vel_micom_lap vel_micom_lap verbose_truncate zero_tendency bmf_implicit cdbot cdbot_roughness_length cdbot_roughness_uamp uresidual use_geothermal_heating bih_friction_scheme tracer_mix_micom	2 10 True False False 4320 8.0 0.2 True False True O.001 0.007 False True 0.005 False 'general' True	2 10 True False False 4320 8.0 0.2 True False True O.001 0.007 False True 0.005 False 'general'
&ocean_bbc_nml &ocean_bih_friction_nml	barotropic_halo barotropic_time_stepping_a barotropic_time_stepping_b debug_this_module diag_step eta_max frac_crit_cell_height pred_corr_gamma smooth_eta_t_biharmonic smooth_eta_t_biharmonic smooth_pbot_t_laplacian smooth_pbot_t_laplacian truncate_eta use_legacy_barotropic_halos vel_micom_lap vel_micom_lap vel_micom_lap vel_micom_lap vel_micom_lap verbose_truncate zero_tendency bmf_implicit cdbot cdbot_roughness_length cdbot_roughness_uamp uresidual use_geothermal_heating bih_friction_scheme	2 10 True False False 4320 8,0 0,2 0,2 True False True False False True False False 0,01 0,05 0,2 True False True 0,001 0,007 False True 0,005 False True 0,05 False	2 10 True False False 4320 80 0.2 True False True False False 0.01 0.05 0.2 True False True False False True False False True O.001 0.007 False True 0.05 False

Group (continued)	Variable	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml
&ocean_bihgen_friction_nml	bottom_5point	False	False
	eq_lat_micom	0.0	0.0
	eq_vel_micom_aniso	0.0	0.0
	eq_vel_micom_iso	0.0	0.0
	equatorial_zonal	False 0.0	False 0.0
	k_smag_aniso k_smag_iso	2.0	2.0
	ncar_boundary_scaling	True	True
	ncar_boundary_scaling_read	True	True
	ncar_rescale_power	2	2
	ncar_vconst_4	2×10^{-8}	$2 imes 10^{-8}$
	ncar_vconst_5	5	5
	use_this_module	True	True
	vel_micom_aniso	0.0	0.0
	vel_micom_bottom	0.0	0.0
	vel_micom_iso visc_crit_scale	0.0 1.0	0.0 1.0
&ocean_convect_nml	convect_full_scalar	True	1.0
ACCCALLCONVECTABILITY	convect_full_vector	False	
	use_this_module	False	False
&ocean_coriolis_nml	acor	0.5	0.5
	use_this_module	True	True
&ocean_density_nml	eos_linear	False	False
	eos_preteos10	True	True
	layer_nk	80	80
	neutralrho_max	1038.0	1030.0
	neutralrho_min	1028.0	1020.0
	potrho_max	1038.0	1038.0
&ocean_domains_nml	potrho_min max_tracers	1028.0	1028.0
&ocean_form_drag_nml	use_this_module	False	False
&ocean_frazil_nml	debug_this_module	False	False
document and a second a second and a second	frazil_only_in_surface	False	False
	freezing_temp_preteos10	True	True
	freezing_temp_simple	False	False
	use_this_module	True	True
&ocean_grids_nml	debug_this_module	False	False
&ocean_increment_eta_nml	use_this_module	False	False
&ocean_increment_tracer_nml	use_this_module	False	False
&ocean_increment_velocity_nml	use_this_module	False	False
&ocean_lap_friction_nml	lap_friction_scheme	'general'	'general'
&ocean_lap_tracer_nml	use_this_module	False	False False
&ocean_lapcst_friction_nml &ocean_lapgen_friction_nml	use_this_module k_smaq_iso	False 2.0	raise
&ocean_tapgen_inction_init	use_this_module	False	False
&ocean_mixdownslope_nml	debug_this_module	False	raise
a decembration of the second o	use_this_module	False	False
&ocean_model_nml	baroclinic_split	1	1
	barotropic_split	80	80
	cmip_units	True	True
	debug	False	False
	dt_ocean	1200	1200
	io_layout	6, 5 48, 40	6, 5 48, 40
	layout surface_height_split	48, 40 1	48, 40 1
	time_tendency	'twolevel'	'twolevel'
	vertical_coordinate	'zstar'	'zstar'
&ocean_momentum_source_nml	rayleigh_damp_exp_from_bottom	False	False
	use_rayleigh_damp_table	True	True
	use_this_module	True	True
&ocean_nphysics_nml	debug_this_module	False	False
	use_nphysicsa	False	False
	use_nphysicsb	False	False
	use_nphysicsc	False	False
&ocean_nphysics_util_nml	use_this_module	False 100.0	False 100.0
Coccan_nphysics_utit_nint	agm agm_closure	True	True
	agm_closure_baroclinic	True	True
	agm_closure_buoy_freq	0.004	0.004
	agm_closure_length	50 000.0	50 000.0
	agm_closure_length_bczone	False	False
	agm_closure_length_bczone agm_closure_length_fixed agm_closure_length_rossby	False False False	False False False

Group (continued)	Variable	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml
	agm_closure_lower_depth	2000.0	2000.0
	agm_closure_max	600.0	600.0
	agm_closure_min	100.0	100.0
	agm_closure_scaling	0.07	0.07
	agm_closure_upper_depth aredi	100.0 600.0	100.0 600.0
	aredi_equal_agm	False	False
	drhodz_mom4p1	False	False
	drhodz_smooth_horz	False	False
	drhodz_smooth_vert	False	False
	rossby_radius_max rossby_radius_min	100 000.0 15 000.0	100 000.0 15 000.0
	smax	0.002	13 000.0
	swidth	0.002	
	tracer_mix_micom	False	False
	vel_micom	0.0	0.0
&ocean_nphysicsa_nml	use_this_module	False	False
&ocean_nphysicsb_nml &ocean_nphysicsc_nml	use_this_module use_this_module	False False	False False
&ocean_npnysicsc_nml &ocean_operators_nml	use_tnis_modute use_legacy_div_ud	False	False
&ocean_overexchange_nml	debuq_this_module	False	False
	overexch_npts	4	4
	overexch_weight_far	False	False
	overflow_umax	5.0	5.0
&ocean_overflow_nml	use_this_module debug_this_module	False False	False
&ocean_overnow_nimi	use_this_module	False	False
&ocean_overflow_ofp_nml	debug_this_module	False	Tuise
	diag_step	4320	
	do_entrainment_para_ofp	False	
	do_mass_ofp	True	
	frac_exchange_src max_vol_trans_ofp	1.0	
	use_this_module	False	False
&ocean_polar_filter_nml	use_this_module	False	False
&ocean_pressure_nml	zero_pressure_force	False	False
&ocean_rivermix_nml	debug_this_module	False	False
	river_diffuse_salt river_diffuse_temp	False False	True True
	river_diffusion_thickness	0.0	0.0
	river_diffusivity	0.0	0.0
	river_insertion_thickness	40.0	40.0
	use_this_module		True
&ocean_riverspread_nml &ocean_rough_nml	use_this_module	True	
WILLIAM TORRING THE		False	False
	rough_scheme	False 'beljaars'	False 'beljaars'
&ocean_sbc_nml	rough_scheme avg_sfc_temp_salt_eta	False 'beljaars' True	False 'beljaars' True
	roughscheme avg_sfc.temp.salt_eta avg_sfc_velocity calvingspread	False 'beljaars'	False 'beljaars'
	roughscheme avg_sfc.temp.salt_eta avg_sfc.velocity calvingspread do_bitwise_exact_sum	False 'beljaars' True True False False	False 'beljaars' True True False False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction	False 'beljaars' True True False False False	False 'beljaars' True True False False False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes	False 'beljaars' True True False False False False False	False 'beljaars' True True False False False False False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore	False 'beljaars' True True False False False False False Folse Folse	False 'beljaars' True True False False False False O.5
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes	False 'beljaars' True True False False False False False	False 'beljaars' True True False False False False False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask restore_mask_gfdl	False 'beljaars' True True False False False O.5 O.0 False False	False 'beljaars' True True False False False O.5 0.0 False False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity	False 'beljaars' True True False False False O.5 O.0 False False	False 'beljaars' True True False False False O.5 0.0 False False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale	False 'beljaars' True True False False False Folse False O.5 O.0 False False Folse Folse O.0	False 'beljaars' True True False False False O.5 0.0 False False 0.00 0.0 0.0 0.0 0.0
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale salt_restore_as_salt_flux	False 'beljaars' True True False False False O.5 O.0 False False O.0 True	False 'beljaars' True True False False False O.5 O.0 False False O.0 True
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale	False 'beljaars' True True False False False Folse False O.5 O.0 False False Folse Folse O.0	False 'beljaars' True True False False False O.5 0.0 False False 0.00 0.0 0.0 0.0 0.0
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask gfdl runoff_salinity salt_correction_scale salt_restore_as_salt_flux salt_restore_tscale salt_restore_under_ice temp_restore_itscale	False 'beljaars' True True False False False False O.5 O.0 False False O.0 True 60.0 True	False 'beljaars' True False False False False O.5 O.0 False False O.0 True 60.0 True —10.0
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale salt_restore_as_aslt_flux salt_restore_tscale salt_restore_under_ice temp_restore_tscale use_full_patm_for_sea_level	False 'beljaars' True True False False False False O.5 O.0 False False O.0 True 60.0 True —10.0 False	False 'beljaars' True False False False False O.5 O.0 False False O.0 True 60.0 True —10.0 False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale salt_restore_as_salt_flux salt_restore_tscale salt_restore_tscale use_full_patm_for_sea_level use_waterflux	False 'beljaars' True True False False False False O.5 O.0 False False O.0 True 60.0 True —10.0 False True	False 'beljaars' True False False False False O.5 O.0 False False O.00 True 60.0 True —10.0 False True
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale salt_restore_as_salt_flux salt_restore_tscale salt_restore_tscale use_full_patm_for_sea_level use_waterflux zero_heat_fluxes	False 'beljaars' True True False False False False O.5 O.0 False False O.0 True 60.0 True -10.0 False True False	False 'beljaars' True False False False False O.0 False False O.0 True 60.0 True -10.0 False True False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale salt_restore_as_salt_flux salt_restore_tscale salt_restore_tscale use_full_patm_for_sea_level use_waterflux zero_heat_fluxes zero_net_salt_correction	False 'beljaars' True True False False False False O.5 O.0 False False O.0 True 60.0 True -10.0 False True False True False False	False 'beljaars' True False False False False O.0 False False O.0 True 60.0 True -10.0 False True False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale salt_restore_as_salt_flux salt_restore_tscale salt_restore_tscale use_full_patm_for_sea_level use_waterflux zero_heat_fluxes	False 'beljaars' True True False False False False O.5 O.0 False False O.0 True 60.0 True -10.0 False True False	False 'beljaars' True False False False False O.0 False False O.0 True 60.0 True -10.0 False True False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale salt_restore_as_salt_flux salt_restore_tscale salt_restore_under_ice temp_restore_tscale use_full_patm_for_sea_level use_waterflux zero_heat_fluxes zero_net_salt_correction zero_net_salt_crestore zero_net_water_correction zero_net_water_correction	False 'beljaars' True True False False False False 0.5 0.0 False False 0.0 True 60.0 True -10.0 False True False True False True False False	False 'beljaars' True False False False False O.5 O.0 False False O.0 True 60.0 True 10.0 False False False False True False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale salt_restore_as_salt_flux salt_restore_tscale salt_restore_under_ice temp_restore_tscale use_waterflux zero_heat_fluxes zero_net_salt_correction zero_net_salt_restore zero_net_water_correction zero_net_water_correction zero_net_water_coupler	False 'beljaars' True True False False False False 0.5 0.0 False False 0.0 True 60.0 True 60.0 True False True False True False False True False	False 'beljaars' True False False False False O.5 O.0 True 60.0 True 60.0 True False True False True False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale salt_restore_as_salt_flux salt_restore_tscale salt_restore_under_ice temp_restore_tscale use_full_patm_for_sea_level use_waterflux zero_heat_fluxes zero_net_salt_restore zero_net_water_couple_restore zero_net_water_coupler zero_net_water_coupler zero_net_water_coupler	False 'beljaars' True True False False False False 0.5 0.0 False False 0.0 0.0 True 60.0 True -10.0 False True False True False False True False True False True True True	False 'beljaars' True False False False False O.5 O.0 False False O.0 True 60.0 True False True False True False False True False False False
	rough_scheme avg_sfc_temp_salt_eta avg_sfc_velocity calvingspread do_bitwise_exact_sum do_flux_correction land_model_heat_fluxes max_delta_salinity_restore max_ice_thickness read_restore_mask restore_mask_gfdl runoff_salinity salt_correction_scale salt_restore_as_salt_flux salt_restore_tscale salt_restore_under_ice temp_restore_tscale use_waterflux zero_heat_fluxes zero_net_salt_correction zero_net_salt_restore zero_net_water_correction zero_net_water_correction zero_net_water_coupler	False 'beljaars' True True False False False False 0.5 0.0 False False 0.0 True 60.0 True 60.0 True False True False True False False True False	False 'beljaars' True True False False False O.5 O.0 False False O.0 True 60.0 True -10.0 False True False

Steen John Novel (Efficial) See 19 (19 miles) See 19 (19 miles)<	Group (continued)	Variable	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml
Decess shortwee gittlmit Select		read_depth		Falsa
Scenar. shortwave_gill.nami debugs_mis_modules Filture				False
Page	&ocean_shortwave_gfdl_nml	debug_this_module		False
Part				True True
				False
Communication				True
Scenar Shortware Jeffor American use shortware Jeffor False Fal				True 300.0
Second S	&ocean_shortwave_jerlov_nml			False
Bost	&ocean_shortwave_nml			False
Bocean.signa.transport.mni				True False
				True
Signe Sign	&ocean_sigma_transport_nml			
Signate Sign				
Signa University Content Signa University Signa U				
Smooth symmetric process True		sigma_just_in_bottom_cell	True	
Michael Sagma and Michael Sa				
Table Tabl				
Secen.solo.ml Sec. ml Sec. m		tmask_sigma_on	False	
& coean.solo.ml daleadir NOLEA' 1,11,0,00 1,11,10,10,10				Falsa
&ocean_solo.nml calendar date_init d				False
days 31 32 dit.pid dit.pid 1200 1200 dit.pid 1200 1200 hours 0 minutes 0 months 0 seconds 0 years 0 & ocean.sponges.eta.nml use.this.module False False & ocean.sponges.tracer.nml diamp.coeff 3d & ocean.sponges.tracer.nml use.this.module False False & ocean.sponges.tracer.nml use.this.module False False & ocean.sponges.velocity.nml use.this.module False False & ocean.submesoscale.nml debug.this.module False False & ocean.submesos.advet.transport.nml debug.this.module Talse False & ocean.submesos.advet.transport.nml debug.transport.nml debug.this.module Talse False & ocean.submesos.advet.thiml True True True & ocean.submesos.advet.thiml True Tr	&ocean_solo_nml		'NOLEAP'	'NOLEAP'
				1, 1, 1, 0, 0, 0
Bounds				31 1200
months seconds 0 & seconds destitis destitis false & seconduction false false		•	0	0
& cean.sponges.eta.nml seconds years 0 & cean.sponges.tracer.nml damp.coeff_sid False & cean.sponges.tracer.nml use.this.module False & cean.sponges.velocity.nml use.this.module False False & cean.submesoscale.nml debug.this.module False				0
Socean_sponges_eta_nmll use_this_module False & Socean_sponges_tracer_nml damp_coeff_sid False & Locan_sponges_velocity_nml use_this_module False False & Socean_submesoscale_nml debug_this_module False False False & Accean_submesoscale_nml debug_this_module False <				0
&ocean_sponges_tracer_nml diamp_coeff_3d False		years	0	0
& Cocean.sponges.velocity.nml use.this.module False False & Cocean.sponges.velocity.nml use.this.module False False OS OX				False
&ocean_submesoscale_nml coefficient_ce debug_this_module agise Fals Gebug_this_module false False Fals front_length_const 5000.0 5	wotean_sponges_tracer_nint			False
Bellet B				False
front_length_const 50000 50000 front_length_deform_radius True	&ocean_submesoscale_nml			0.05
front_length_deform_radius True True limit_psi True Irin limit_psi Irine Irin limit_psi Irine Irin limit_psi_velocity_scale 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5 0.5		front_length_const		5000.0
limit_psi_velocity_scale min_kblt 4 min_kblt 4 smooth_advect_transport True Tru smooth_advect_transport_num 4 smooth_bblt False Fals smooth_psi True Tru smooth_psi True True Tru smooth_psi True True True True True True True True		front_length_deform_radius	True	True
min_kbit 4 smooth_advect_transport True Tru smooth_advect_transport_num 4 smooth_bt False Fals smooth_psi True Tru smooth_psi True True submeso_advect_flux False Fals submeso_advect_limit True True submeso_advect_tupwind True True submeso_advect_zero_bdy True True submeso_advect_zero_bdy True True submeso_diffusion_biharmonic True True submeso_diffusion_biharmonic True True submeso_diffusion_scale 10.0 10.0 submeso_skew_flux True True submeso_skew_flux True sub				True 0.5
smooth_advect_transportTrueTruesmooth_advect_transport_num4smooth_bltFalseFalsesmooth_psiTrueTruesmooth_psiTrueTruesmooth_psiTrueTruesmooth_psiFalseFalsesubmeso_advect_fluxFalseFalsesubmeso_advect_upwindTrueTruetrueTrueTruesubmeso_advect_zero_bdyTrueTruesubmeso_advect_zero_bdyTrueTruesubmeso_diffusionFalseFalsesubmeso_diffusion.exale10.010submeso_diffusion.exale10.010submeso_skew_fluxTrueTruetruetrueTrueTrueuse_tbit_equal_mldTrueTrueuse_tbit_equal_mldTrueTruewse_tbit_equal_mldTrueTrueuse_tbit_equal_mldTrueTrue&ccean_tempsalt_nmldebug_this_moduleFalseFalse&ccean_tempsalt_nmldebug_this_moduleFalseFalse&ccean_tempsalt_nmldebug_this_moduleFalseFalsepottemp_equal_contempTrueTrueTruetrueTrueTrueTrues_max70.070				4
smooth_hblt False Falter smooth_psi True True smooth_psi_num 3 submeso_advect_flux False Falter submeso_advect_limit True True True submeso_advect_upwind True True submeso_advect_upwind True True submeso_advect_zero_bdy True True submeso_diffusion False Falter submeso_diffusion False Falter submeso_diffusion_biharmonic True True submeso_diffusion_scale 10.0 10.0 submeso_skew_flux True True submeso_skew_flux True sub		smooth_advect_transport		True
Smooth_psi True True Smooth_psi Sm				4 False
smooth_psi_num 3 submeso_advect_flux False Falt submeso_advect_Limit True Tru submeso_advect_upwind True True submeso_advect_upwind True True true True True true True True duse_psi_legacy False False submeso_advect_upwind Tru				True
submeso_advect_limit True True Submeso_advect_upwind True True Submeso_advect_upwind True True Submeso_advect_zero_bdy True True Submeso_advect_zero_bdy True True Submeso_diffusion		smooth_psi_num		3
submeso_advect_upwind True Tru submeso_advect_zero_bdy True Tru submeso_diffusion False False submeso_diffusion_biharmonic True Tru submeso_diffusion_scale 10.0 10 submeso_skew_flux True Tru use_phtlequal_mld True Tru use_psi_legacy False False use_this_module True True &ocean_tempsalt_nml debug_this_module False False pottemp_2nd_iteration True Tru Tru pottemp_equal_contemp True Tru s_max 70.0 70				False True
submeso_advect_zero_bdy True Tru submeso_diffusion		submeso_advect_upwind		True
submeso_diffusion_biharmonic True True submeso_diffusion_scale 10.0 10 submeso_skew_flux True True True Use_hblt_equal_mld True True Use_psi_legacy False False False Use_this_module True True True Use_psi_legacy False False False True True True True True True True Tru		submeso_advect_zero_bdy		True
submeso_diffusion_scale 10.0 10 submeso_skew_flux True Tru use_hblt_equal_mld True Tru use_psi_legacy False False use_this_module True Tru &ocean_tempsalt_nml debug_this_module False False pottemp_2nd_iteration True Tru pottemp_equal_contemp True Tru s_max 70.0 70				False True
use_hblt_equal_mld True True use_psi_legacy False False use_this_module True True &ocean_tempsalt_nml debug_this_module False False pottemp_2nd_iteration True				10.0
&ocean_tempsalt_nmluse_psi_legacy use_this_moduleFalse TrueFal&ocean_tempsalt_nmldebug_this_module pottemp_2nd_iterationFalseFalpottemp_2nd_iterationTrueTrupottemp_equal_contempTrueTrus_max70.070				True
&ocean_tempsalt_nmluse_this_module debug_this_moduleTrueTrue& ocean_tempsalt_nmldebug_this_module pottemp_2nd_iterationFalseFalsepottemp_2nd_iterationTrueTruepottemp_equal_contempTrueTrues_max70.070				True False
&ocean_tempsalt_nmldebug_this_moduleFalseFalsepottemp_2nd_iterationTrueTrupottemp_equal_contempTrueTrus_max70.070				True
pottemp_equal_contemp True Tru s_max 70.0 70	&ocean_tempsalt_nml	debug_this_module	False	False
s_max 70.0 70				True
				True 70.0
			42.0	42.0
s_min 0,0 0		s_min	0.0	0.0

Group (continued)	Variable	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml
	s_min_limit	2.0	2.0
	t_max	55.0	55.0
	t_max_limit t_min	32.0 —20.0	32.0 —20.0
	t_min_limit	-20.0 -5.0	-20.0 -5.0
	temperature_variable	'potential	'potential
		temp'	. temp'
&ocean_thickness_nml	debug_this_module	False	False
	debug_this_module_detail	False	False
	rescale_mass_to_get_ht_mod thickness_dzt_min	False 2.0	False
	thickness_dzt_min_init	10.0	
	thickness_method	'energetic'	'energetic'
&ocean_tracer_advect_nml	debug_this_module	False	False
	read_basin_mask	False	False
&ocean_tracer_diag_nml	diag_step	4320	4320
	do_bitwise_exact_sum tracer_conserve_days	False 30.0	False 30.0
&ocean_tracer_nml	age_tracer_max_init	0.0	0.0
woccurrent and a second a second and a second a second and a second a second and a second and a second and a	debug_this_module	False	False
	frazil_heating_after_vphysics	True	True
	frazil_heating_before_vphysics	False	False
	limit_age_tracer	True	True
	remap_depth_to_s_init	False	False
	use_tempsalt_check_range	True False	True False
	zero_tendency zero_tracer_source	False	False
&ocean_velocity_diag_nml	debug_this_module	False	False
accountriction, and a second accountriction accountriction and a second accountriction accountriction accountriction and a second accountriction accountriction and a second accountriction ac	diag_step	4320	4320
	energy_diag_step	4320	4320
	large_cfl_value	10.0	10.0
	max_cfl_value	100.0	100.0
&ocean_velocity_nml	adams_bashforth_third	True	True
	max_cgint truncate_velocity	1.5 False	1.0 False
	truncate_velocity_value	2.0	2.0
	truncate_verbose	True	True
	zero_tendency	False	False
	zero_tendency_explicit_a	False	False
	zero_tendency_explicit_b	False	False
9 according to the control of the co	zero_tendency_implicit	False	False
&ocean_vert_kpp_iow_nml &ocean_vert_kpp_mom4p1_nml	use_this_module diff_cbt_iw	False 0.0	False 0.0
COCCUIT-YCTC-RPP-IIIIIIIIIIIII	double_diffusion	True	True
	kbl_standard_method	False	False
	ricr	0.3	0.3
	smooth_blmc	False	False
	smooth_ri_kmax_eq_kmu	True	True
	use_this_module visc_cbu_iw	True 0.0	True 0.0
&ocean_vert_mix_nml	aidif	1.0	1.0
	bryan_lewis_diffusivity	False	False
	bryan_lewis_lat_depend	False	False
	hwf_diffusivity	False	False
	hwf_min_diffusivity	2×10^{-6}	2×10^{-6}
	hwf_n0_2omega	20.0 Falso	20.0 Falso
	use_diff_cbt_table vert_diff_back_via_max	False True	False True
	vert_mix_scheme	'kpp	'kpp
		mom4p1'	mom4p1'
&ocean_vert_tidal_nml	background_diffusivity	0.0	0.0
	background_viscosity	0.0001	0.0001
	decay_scale	500.0	500.0
	drag_dissipation_use_cdbot	True $1 imes 10^{-10}$	True $1 imes 10^{-10}$
	drhodz_min fixed_wave_dissipation	1 × 10 ⁻¹⁰ False	1 × 10 ⁻¹⁰ False
	max_wave_diffusivity	0.01	0.01
	mixing_efficiency_n2depend	True	True
	read_roughness	True	True
	read_tide_speed	True	True
	read_wave_dissipation	False	False
	reading_roughness_length	True	True
	reading_roughness_length	False	False

Group (continued)	Variable	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml
	roughness_scale	12 000.0	12 000.0
	shelf_depth_cutoff	-1000.0	-1000.0
	tide_speed_data_on_t_grid	True	True
	use_drag_dissipation	True	True
	use_legacy_methods	False	False
	use_this_module	True	True
	use_wave_dissipation	True	True
	wave_energy_flux_max	0.1	0.1
&ocean_xlandinsert_nml	use_this_module	False	False
&ocean_xlandmix_nml	use_this_module	False	False
&surface_flux_nml	ncar_ocean_flux	True	
	raoult_sat_vap	True	
&xgrid_nml	interp_method	'second	'second
		order'	order'
	make_exchange_reproduce	False	False
	nsubset	16	16

1.2.3 accessom2_01deg_jra55_ryf

Group	Variable	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
&auscom_ice_nml	aice_cutoff	0.15	0.15
	chk_i2o_fields	False	False
	chk_o2i_fields	False	False
	do_ice_once	False	False
	dt_cpl	150	600
	fixmeltt	False	False
	frazil_factor	1.0	1.0
	iceform_adj_salt	False	False
	icemlt_factor	1.0	1.0
	kmxice	5	5
	pop_icediag	True	True
	sign_stflx	1.0	1.0
	tmelt	-0.216	-0.216
	use_ioaice	True	True
&diag_manager_nml	debug_diag_manager		True
	issue_oor_warnings	False	True
	max_axes	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	'multi'	'multi'
	max_files_r	700	
	max_files_w	700	
	threading_read	'multi'	'multi'
	threading_write	'multi'	'multi'
&fms_nml	clock_grain	'LOOP'	'COMPONENT
	domains_stack_size	115200	115200
	print_memory_usage	False	
&generic_tracer_nml	do_generic_cfc	False	
	do_generic_topaz	False	
	do_generic_tracer	False	
&mom_oasis3_interface_nml	fields_in	'u_flux',	'u_flux',
		'v_flux',	'v_flux',
		'lprec', 'fprec',	'lprec', 'fprec',
		'salt_flx',	'salt_flx',
		'mh_flux',	'mh_flux',
		'sw_flux',	'sw_flux',
		'q_flux',	'q_flux',
		't_flux',	't_flux',
		'lw_flux',	'lw_flux',
		'runof', 'p',	'runof', 'p',
		'aice',	'aice',
		'wfimelt',	'wfimelt',
		'wfiform'	'wfiform'

February 1.3.000 1.3	Group (continued)	Variable	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
		fields_out	't_surf', 's_surf', 'u_surf', 'v_surf', 'dssldx', 'dssldy',	't_surf', 's_surf', 'u_surf', 'v_surf', 'dssldx', 'dssldy',
Send affers.cocan.pubote Time T				
Amonin cobalishos amil enterial Faite Faite Tow dempo to until deligate Jeet 5 5 decean advived digrami digrapte Julian 100 100 docean advived digrami digrapte Julian 100 100 Accean advived digrami accean advived modelling and personal personal digraph and personal digraph an				
Ampo to mind definite level 5 5 Submitted 1 1 1 1 10 100			False	False
Society and well diag mil diag diag step 576	&mpp_10_nmi			
Socian abeedion velocity, nml mass off-viction velocity, nml Tou Tou Socian abbedion, mml occan abbedion, mml Control abbediod, pulped in 2 2 2 Socian abbedion, mml decensa abbedion, mml 2 2 2 Socian abbedion, mml description, mml absorbropic, fume suppong, a miss of pales of false of fals	&ocean_adv_vel_diag_nml	diag_step	576	576
docean advection velocity mail websee city Time Time docean abbed mill ocean abbed mill 0 Cean abbed mill 10 10 docean abbed mill bartorigic mill 10 10 10 docean bis decling mills bartorigic mills stepping abbed between mills module False				
&ocean bardropic mil bardropic fabilo 10 10 bardropic films Expiring a bardropic films. Expiring a fabre fability films. Modelle fability. Mode	&ocean_advection_velocity_nml	max_advection_velocity	0.2	0.5
Bartortopic.time.stepping.ab True Fate Fate	&ocean_albedo_nml			
Bartonic time stepping.b False False Gebug.th.in.module False	&ocean_barotropic_nint	•		
diag. tag. 576		barotropic_time_stepping_b	False	False
Smooth_etal_talpalpaichs Tale Tale Tale Smooth_etal_talpaich Tale Tale Tale Smooth_etal_talpaich Tale Tale		frac_crit_cell_height	0.2	0.2
Smooth_teta_L haiptacian Time True True Smooth_pbt_L haiptacian Time True Smooth_pbt_L haiptacian Time True Smooth_pbt_L haiptacian Time True True truncate_eta true_teta true_t				
Smooth pbott.labharmoin False False Smooth pbott.labharmoin Telle				
Smooth_plot_L Laplacian trucate at False F		smooth_eta_t_laplacian	True	True
False Fals				
		use_legacy_barotropic_halos	False	False
& cocan_bbc_mml zero_tendency False False & cocan_bbc_mml bmf_implicit True True c cobot 0.001 0.001 cdbot_roughness_length False False cdbot_roughness_length False False cdbot_roughness_length False False cdbot_roughness_length False False cdcean_bih_friction_mml use_geothermal_heating False & cocean_bih_tracer_mml tracer_mis_miscon True & cocean_bih_tracer_mml tracer_mis_miscon 0.001 & cocean_bih_tracer_mml tracer_mis_miscon 0.001 & cocean_bih_tracer_mml tracer_miscon 0.001 <		•		
&ocean_bbc.nml bmf_implicit True True cdbot cdbot 0.0001 0.0001 cdbot.roughness_length False False False False False Cdbot_roughness_length False False False Cdbot_roughness_length False False False False Cdbot_roughness_length False				
Cabbot C	&orean bhr nml	1 61 115	_	
Cdbot_roughness_length False False Cdbot_roughness_uamp True	Woccan_boc_init			
decembility Cdbot_roughness_uamp uresiduat uresiduat uresiduat use_geothermal_heating Titue permatike Titue permatike &ccean_bih.friction.nml bih.friction.scheme general 'general' &ccean_bih.tracer_nml tracer_mix_micon True 'general' use_this.module False False &ccean_bihstst.friction_nml use_this.module False False &ccean_bihgen.friction.nml bottom_Spoint False False &ccean_bihgen.friction.nml eq_ust_micon 0.0 0.0 eq_vel_miconm.aisis 0.0 0.0 0.0 0.0 eq_vel_micon_misis 0.0				
Base				
&ocean_bih_friction_nml bih_friction_scheme 'general' 'general' &ocean_bih_tracer_nml tracer_mix_micom Irus wel_micom 0001 &ocean_bihcst_friction_nml use_this_module False &ocean_bihgen_friction_nml buttom_5point False &ocean_bihgen_friction_nml 00 00 eq_vel_micom_aniso 00 00 e_vel_micom_aniso 00 00 e_vel_micom_aniso 00 00 e_vel_micom_aniso 00 0 e_vel_micom_aniso <t< td=""><td></td><td>uresidual</td><td></td><td></td></t<>		uresidual		
&ocean_bih_tracer_nml tracer_mix_micom use_this_module ve_l_micom True false ve_micom False 0.0001 &ocean_bihgen_friction_nml use_this_module ve_l_micom False 1.5se False 1.5se &ocean_bihgen_friction_nml bottom_5point 1.5se False 1.5se False 1.5se &ocean_bihgen_friction_nml eq_lat_micom 0.0 0.0 0.0 eq_vel_micom_aniso 0.0 0.0 0.0 0.0 0.0 eq_vel_micom_iso 0.0 <				
Base False Vert.micom V				general
&ocean_bihcst_friction_nml use_this_module False False &ocean_bihgen_friction_nml bottom_Spoint False False eq_lat_micom 0.0 0.0 eq_vel_micom_aniso 0.0 0.0 equatorial_zonal False False k_smag_aniso 0.0 0.0 k_smag_iso 2.0 2.0 ncar_boundary_scaling True True ncar_boundary_scaling_read True True ncar_vconst_4 2 × 10^-8 2 × 10^-8 ncar_vconst_5 5 5 5 use_this_module True True vel_micom_aniso 0.0 0.0 vel_mi	ween_bii_dideci_liiit			False
&ocean_bihgen_friction_nml bottom_5point eq_ulat_micom False eq_alat_micom Column to the page of the				F.1
eq_lat_micom 0.0 0				
eq_vel_micom_iso 0.0 0.0 equatorial_zonal False False k_smag_aniso 0.0 0.0 k_smag_iso 0.0 0.0 mcar_boundary_scaling_read True True mcar_escale_power 2 2 mcar_vconst_4 2 × 10^-8 2 × 10^-8 mcar_vconst_5 5 5 mcar_vconst_5 5 5 mcar_vconst_5 5 5 mcar_vconst_5 5 5 use_this_module True True vel_micom_aniso 0.0 0.0 vel_micom_bottom 0.0 0.0 vel_micom_iso 0.0	avecan_bingen_meton_ann	eq_lat_micom	0.0	0.0
Equatorial_zonal False False k_smag_aniso 0.0 0.0 k_smag_iso 2.0 2.0 ncar_boundary_scaling True ncar_boundary_scaling_read True ncar_rescale_power 2 2 ncar_vconst_4 2 × 10^8 2 × 10^8 ncar_vconst_5 5 5 ncar_vconst_5 5 5 use_this_module True rue True vel_micom_aniso 0.0 0.0 vel_micom_bottom 0.0 0.0 vel_micom_iso 0.0 0.0		eq_vel_micom_aniso		
k_smag_aniso 0.0 0.0 k_smag_iso 2.0 2.0 ncar_boundary_scaling True True ncar_boundary_scaling_read True True ncar_vconst_4 2 × 10^-8 2 × 10^-8 ncar_vconst_5 5 5 use_this_module True True vel_micom_aniso 0.0 0.0 vel_micom_bottom 0.0 0.0 vel_micom_bottom<				
		k_smag_aniso	0.0	0.0
ncar_boundary_scaling_read True True ncar_rescale_power 2 2 ncar_vconst_4 2 × 10^-8 2 × 10^-8 ncar_vconst_5 5 5 use_this_module True True vel_micom_aniso 0,0 0,0 vel_micom_bottom 0,0 0,0 vel_micom_iso 0,0 0,0 vel_micom_iso 0,0 0,0 vel_micom_iso 0,0 0,0 vel_micom_iso 0,0 0,0 visc_crit_scale 1,0 1,0 &ocean_convect_nml convect_full_scalar True convect_full_vector False				
ncar_rescale_power 2 2 ncar_vconst_4 2 × 10^-8 2 × 10^-8 ncar_vconst_5 5 5 use_this_module True True vel_micom_aniso 0.0 0.0 vel_micom_bottom 0.0 0.0 vel_micom_iso 0.0 0.0 visc_crit_scale 1.0 1.0 &ocean_convect_nml convect_full_scalar True convect_full_vector False use_this_module False False				
ncar_vconst_5 5 5 use_this_module True True vel_micom_aniso 0.0 0.0 vel_micom_bottom 0.0 0.0 vel_micom_iso 0.0 0.0 visc_crit_scale 1.0 1.0 &ocean_convect_nml convect_full_scalar True convect_full_vector False use_this_module False False		ncar_rescale_power	2	2
use_this_module True True vel_micom_aniso 0.0 0.0 vel_micom_bottom 0.0 0.0 vel_micom_iso 0.0 0.0 visc_crit_scale 1.0 1.0 &ocean_convect_nml convect_full_scalar True convect_full_vector False use_this_module False False				
vel_micom_aniso 0.0 0.0 vel_micom_bottom 0.0 0.0 vel_micom_iso 0.0 0.0 visc_crit_scale 1.0 1.0 &ocean_convect_nml convect_full_scalar True convect_full_vector False use_this_module False False				
vel_micom_iso 0.0 0.0 visc_crit_scale 1.0 1.0 &ocean_convect_nml convect_full_scalar True convect_full_vector False use_this_module False False		vel_micom_aniso	0.0	0.0
visc_crit_scale 1.0 1.0 & ocean_convect_nml convect_full_scalar True convect_full_vector False use_this_module False False				
&ocean_convect_nml convect_full_scalar True convect_full_vector False use_this_module False False				
use_this_module False False	&ocean_convect_nml	convect_full_scalar	True	2.0
				Ealaa
	&ocean_coriolis_nml	use_tnis_module acor	0.5	0.5

	Variable	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	use_this_module	True	True
&ocean_density_nml	eos_linear	False	False
	eos_preteos10	True	True
	layer_nk neutralrho_max	80 1038.0	80 1030.0
	neutralrho_min	1038.0	1030.0
	potrho_max	1038.0	1038.0
	potrho_min	1028.0	1028.0
&ocean_domains_nml	max_tracers	5	5
&ocean_form_drag_nml	use_this_module	False	False
&ocean_frazil_nml	debug_this_module	False	False
	frazil_only_in_surface	False	False
	freezing_temp_preteos10	True	True
	freezing_temp_simple use_this_module	False True	False
&ocean_grids_nml	debug_this_module	False	True False
&ocean_increment_eta_nml	use_this_module	False	False
&ocean_increment_tracer_nml	use_this_module	False	False
&ocean_increment_velocity_nml	use_this_module	False	False
&ocean_lap_friction_nml	lap_friction_scheme	'general'	'general'
&ocean_lap_tracer_nml	use_this_module	False	False
&ocean_lapcst_friction_nml	use_this_module	False	False
&ocean_lapgen_friction_nml	k_smag_iso	2.0	
	use_this_module	False	False
&ocean_mixdownslope_nml	debug_this_module	False	
0	use_this_module	False	False
&ocean_model_nml	baroclinic_split	1 80	1 80
	barotropic_split <mark>cmip_units</mark>	80	True
	debug	False	False
	dt_ocean	150	150
	io_layout	10, 15	10, 15
	layout	80,75	80,75
	surface_height_split	1	1
	time_tendency	'twolevel'	'twolevel'
&ocean_momentum_source_nml	vertical_coordinate rayleiqh_damp_exp_from_bottom	'zstar' False	'zstar' False
xocean_momentum_source_mint	use_rayleigh_damp_table	True	True
	use_this_module	True	True
Rocean_nphysics_nml	debug_this_module	False	False
	use_nphysicsa	False	False
	use_nphysicsb	False	False
	use_nphysicsc	False	False
	use_this_module	False	False
&ocean_nphysics_util_nml	agm	100.0	100.0
	agm_closure agm_closure_baroclinic	True True	True True
	agm_closure_buoy_freq	0.004	0.004
	agm_closure_length	50 000.0	50 000.0
	agm_closure_length_bczone	False	False
		i atsc	
	agm_closure_length_fixed	False	
	agm_closure_length_rossby	False False	False False
	agm_closure_length_rossby agm_closure_lower_depth	False False 2000.0	False False 2000.0
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max	False False 2000.0 600.0	False False 2000.0 600.0
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min	False False 2000.0 600.0 100.0	False False 2000.0 600.0 100.0
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling	False False 2000.0 600.0 100.0 0.07	False False 2000.0 600.0 100.0 0.07
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth	False False 2000.0 600.0 100.0 0.07 100.0	False False 2000.0 600.0 100.0 0.07 100.0
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling	False False 2000.0 600.0 100.0 0.07	False False 2000.0 600.0 100.0 0.07 100.0 600.0
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth aredi	False False 2000.0 600.0 100.0 0.07 100.0 600.0	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth aredi aredi_equal_agm drhodz_mom4p1 drhodz_smooth_horz	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth aredi aredi_equal_agm drhodz_mom4p1 drhodz_smooth_horz drhodz_smooth_vert	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False False	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False False
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth aredi aredi_equal_agm drhodz_mom4p1 drhodz_smooth_horz drhodz_smooth_vert rossby_radius_max	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False False 100 000.0	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False 100 000.0
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth aredi aredi_equal_agm drhodz_mom4p1 drhodz_smooth_horz drhodz_smooth_vert rossby_radius_max rossby_radius_min	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False False 100 000.0 15 000.0	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False 100 000.0
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth aredi aredi_equal_agm drhodz_mom4p1 drhodz_smooth_horz drhodz_smooth_vert rossby_radius_max rossby_radius_min	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False False 100 000.0 15 000.0	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False 100 000.0
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth aredi aredi_equal_agm drhodz_mom4p1 drhodz_smooth_horz drhodz_smooth_vert rossby_radius_max rossby_radius_min smax swidth	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False False 100 000.0 15 000.0 0.002	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False 100 000.0 15 000.0
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth aredi aredi_equal_agm drhodz_mom4p1 drhodz_smooth_horz drhodz_smooth_vert rossby_radius_max rossby_radius_min smax swidth tracer_mix_micom	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False 100 000.0 15 000.0 0.002 0.002 False	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False 100 000.0 15 000.0
&ocean_nphysicsa_nml	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth aredi aredi_equal_agm drhodz_mom4p1 drhodz_smooth_horz drhodz_smooth_vert rossby_radius_max rossby_radius_min smax swidth tracer_mix_micom vel_micom	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False False 100 000.0 15 000.0 0.002	False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False 100 000.0 15 000.0
&ocean_nphysicsa_nml &ocean_nphysicsb_nml	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth aredi aredi_equal_agm drhodz_mom4p1 drhodz_smooth_horz drhodz_smooth_vert rossby_radius_max rossby_radius_min smax swidth tracer_mix_micom	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False 100 000.0 15 000.0 0.002 0.002 False 0.0	False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False 100 000.0 15 000.0 False
	agm_closure_length_rossby agm_closure_lower_depth agm_closure_max agm_closure_min agm_closure_scaling agm_closure_upper_depth aredi aredi_equal_agm drhodz_mom4p1 drhodz_smooth_horz drhodz_smooth_vert rossby_radius_max rossby_radius_min smax swidth tracer_mix_micom vel_micom use_this_module	False False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False 100 000.0 15 000.0 0.002 0.002 False 0.0 False	False 2000.0 600.0 100.0 0.07 100.0 600.0 False False False 100 000.0 15 000.0 False

Group (continued)	Variable	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	overexch_npts overexch_weight_far	4 False	4 False
	overflow_umax	5.0	5.0
	use_this_module	False	False
&ocean_overflow_nml	debug_this_module	False	Ealco
&ocean_overflow_ofp_nml	use_this_module debug_this_module	False False	False
a decurity and a decu	diag_step	5760	
	do_entrainment_para_ofp	False	
	do_mass_ofp frac_exchange_src	True 1.0	
	max_vol_trans_ofp	10 000 000.0	
	use_this_module	False	False
&ocean_polar_filter_nml	use_this_module	False	False
&ocean_pressure_nml &ocean_rivermix_nml	zero_pressure_force	False False	False False
&ocean_rivermix_nml	debug_this_module river_diffuse_salt	True	True
	river_diffuse_temp	True	True
	river_diffusion_thickness	0.0	0.0
	river_diffusivity	0.0	0.0
	river_insertion_thickness use_this_module	40.0 True	40.0 True
&ocean_riverspread_nml	debug_this_module	False	
	use_this_module	True	False
&ocean_rough_nml	rough_scheme	'beljaars'	'beljaars'
&ocean_sbc_nml	avg_sfc_temp_salt_eta avg_sfc_velocity	True True	True True
	calvingspread	False	False
	do_bitwise_exact_sum	False	False
	do_flux_correction	False	False
	land_model_heat_fluxes	False 0.5	False 0.5
	max_delta_salinity_restore max_ice_thickness	0.0	0.0
	read_restore_mask	False	False
	restore_mask_gfdl	False	False
	runoff_salinity salt_correction_scale	0.0 0.0	0.0 0.0
	salt_restore_as_salt_flux	True	True
	salt_restore_tscale	60.0	60.0
	salt_restore_under_ice	True	True
	temp_restore_tscale use_full_patm_for_sea_level	—10.0 False	—10.0 False
	use_waterflux	True	True
	zero_heat_fluxes	False	False
	zero_net_salt_correction	False	False
	zero_net_salt_restore zero_net_water_correction	True False	True False
	zero_net_water_couple_restore	True	True
	zero_net_water_coupler	True	True
	zero_net_water_restore	True	True
	zero_surface_stress zero_water_fluxes	False False	False False
&ocean_shortwave_csiro_nml	use_this_module	False	False
&ocean_shortwave_gfdl_nml	debug_this_module	False	False
	enforce_sw_frac	True	True
	optics_manizza optics_morel_antoine	True False	True False
	optics_moret_antome read_chl	True	True
	use_this_module	True	True
9 short was independent	zmax_pen	300.0	300.0
&ocean_shortwave_jerlov_nml	use_this_module use_shortwave_csiro	False False	False False
&ocean shortwave nml	use_shortwave_gfdl	True	True
&ocean_shortwave_nml			
&ocean_shortwave_nml	use_shortwave_jerlov	False	False
	use_this_module	True	True
&ocean_shortwave_nml &ocean_sigma_transport_nml	use_this_module sigma_advection_on	True False	
	use_this_module sigma_advection_on sigma_advection_sgs_only	True	
	use_this_module sigma_advection_on	True False False	
	use_this_module sigma_advection_on sigma_advection_sgs_only sigma_diffusion_on sigma_diffusivity_ratio sigma_just_in_bottom_cell	$\begin{array}{c} \text{True} \\ \text{False} \\ \text{False} \\ \text{True} \\ 1 \times 10^{-6} \\ \text{True} \end{array}$	
	use_this_module sigma_advection_on sigma_advection_sgs_only sigma_diffusion_on sigma_diffusivity_ratio	$\begin{tabular}{ll} True \\ False \\ False \\ True \\ 1 \times 10^{-6} \end{tabular}$	

Group (continued)	Variable	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	smooth_velmicom	0.2	•
	thickness_sigma_layer	100.0	
	thickness_sigma_max	100.0 100.0	
	thickness_sigma_min tmask_sigma_on	False	
	tracer_mix_micom	True	
	use_this_module	False	False
	vel_micom	0.05	
&ocean_solo_nml	calendar	'NOLEAP'	'NOLEAP'
	date_init days	1, 1, 1, 0, 0, 0 30	1, 1, 1, 0, 0, 0 30
	dt_cpld	150	600
	hours	0	0
	minutes	0	0
	months	0	0
	seconds	0	0
0	years	0	0
Rocean_sponges_eta_nml	use_this_module	False	False
&ocean_sponges_tracer_nml	damp_coeff_3d use_this_module	False False	False
&ocean_sponges_velocity_nml	use_this_module use_this_module	False	False
&ocean_submesoscale_nml	coefficient_ce	0.05	0.05
× 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0 0	debug_this_module	False	False
	front_length_const	5000.0	5000.0
	front_length_deform_radius	True	True
	limit_psi	True	True
	limit_psi_velocity_scale	0.5	0.5
	min_kblt	4 True	4 True
	smooth_advect_transport smooth_advect_transport_num	True 4	True 4
	smooth_advect_transport_indiff smooth_hblt	False	False
	smooth_psi	True	True
	smooth_psi_num	3	3
	submeso_advect_flux	False	False
	submeso_advect_limit	True	True
	submeso_advect_upwind	True	True
	submeso_advect_zero_bdy submeso_diffusion	True	True
	submeso_diffusion_biharmonic	False True	False True
	submeso_diffusion_scale	10.0	10.0
	submeso_skew_flux	True	True
	use_hblt_equal_mld	True	True
	use_psi_legacy	False	False
	use_this_module	True	True
kocean_tempsalt_nml	debug_this_module	True	False
	pottemp_2nd_iteration	True True	True
	pottemp_equal_contemp s_max	70.0	True 70.0
	s_max_limit	42.0	42.0
	s_min	0.0	0.0
	s_min_limit	2.0	2.0
	t_max	55.0	55.0
	t_max_limit	32.0	32.0
	t_min t_min_limit	-20.0	-20.0
	t_min_limit temperature_variable	— 5.0 'potential	—5.0 'potential
	temperature_variable	temp'	temp'
kocean_thickness_nml	debug_this_module	False	False
	debug_this_module_detail	False	False
	rescale_mass_to_get_ht_mod	False	False
	thickness_dzt_min	2.0	
	thickness_dzt_min_init	10.0	
Coccan tracer advect nml	thickness_method	'energetic'	'energetic'
kocean_tracer_advect_nml	debug_this_module read_basin_mask	False False	False False
&ocean_tracer_diag_nml	read_basin_mask diag_step	576	576
xoccun-tracer-unay-nine	do_bitwise_exact_sum	False	False
	tracer_conserve_days	30.0	30.0
kocean_tracer_nml	age_tracer_max_init	0.0	0.0
	debug_this_module	False	False
	frazil_heating_after_vphysics	True	True
	frazil_heating_before_vphysics	False	False
	limit_age_tracer	True	True

Group (continued)	Variable	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	remap_depth_to_s_init	False	False
	use_tempsalt_check_range	True	True
	zero_tendency	False	False
	zero_tracer_source	False	False
&ocean_velocity_diag_nml	debug_this_module	False	False
	diag_step energy_diag_step	576 5760	576 5760
	large_cfl_value	10.0	10.0
	max_cfl_value	100.0	100.0
&ocean_velocity_nml	adams_bashforth_third	True	True
	max_cgint	1.0	1.0
	truncate_velocity	False	False
	truncate_velocity_value	2.0	2.0
	truncate_verbose	True	True
	zero_tendency zero_tendency_explicit_a	False False	False False
	zero_tendency_explicit_b	False	False
	zero_tendency_implicit	False	False
&ocean_vert_kpp_iow_nml	use_this_module	False	False
&ocean_vert_kpp_mom4p1_nml	diff_cbt_iw	0.0	0.0
	double_diffusion	True	True
	kbl_standard_method	False	False
	ricr	0.3	0.3
	smooth_blmc	False True	False
	smooth_ri_kmax_eq_kmu use_this_module	True	True True
	visc_cbu_iw	0.0	0.0
&ocean_vert_mix_nml	aidif	1.0	1.0
	bryan_lewis_diffusivity	False	False
	bryan_lewis_lat_depend	False	False
	hwf_diffusivity	False	False
	hwf_min_diffusivity	2×10^{-6}	2×10^{-6}
	hwf_n0_2omega	20.0	20.0
	use_diff_cbt_table	False	False
	vert_diff_back_via_max vert_mix_scheme	True 'kpp	True 'kpp
	Verential	mom4p1'	mom4p1'
&ocean_vert_tidal_nml	background_diffusivity	0.0	0.0
	background_viscosity	0.0001	0.0001
	decay_scale	500.0	500.0
	drag_dissipation_use_cdbot	True	True
	drhodz_min	1×10^{-10}	1×10^{-10}
	fixed_wave_dissipation	False	False
	max_wave_diffusivity mixing_efficiency_n2depend	0.01 True	0.01 True
	read_roughness	True	True
	read_tide_speed	True	True
	read_wave_dissipation	False	False
	reading_roughness_amp	True	True
	reading_roughness_length	False	False
	roughness_scale	12 000.0	12 000.0
	shelf_depth_cutoff tide_speed_data_on_t_grid	-1000.0	—1000.0 True
	tide_speed_data_on_t_grid use_drag_dissipation	True True	True
	use_legacy_methods	False	False
	use_this_module	True	True
	use_wave_dissipation	True	True
	wave_energy_flux_max	0.1	0.1
&ocean_xlandinsert_nml	use_this_module	False	False
&ocean_xlandmix_nml	use_this_module	False	False
&sat_vapor_pres_nml	show_all_bad_values	True	
&surface_flux_nml	ncar_ocean_flux	True	
&xgrid_nml	<mark>raoult_sat_vap</mark> do_alltoall	True True	True
wyndamit	do_alltoallv	True	True
	interp_method	'second	'second
		order'	order'
	make_exchange_reproduce	False	False
	nou-book	16	16
	nsubset <mark>xgrid_log</mark>	False	10

1.3 Old and new ACCESS-OM2 configs (differences highlighted)

Group	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ 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
	dt_cpl	3600	3600	1200	1800	150	600
	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 redsea_gulfbay_sfix	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		True
	issue_oor_warnings	False	True	True	True	False	True
	max_axes max_files					300 1000	
	max_input_fields					700	
	max_num_axis_sets					40	
	max_output_fields					700	
&fms_io_nml	checksum_required					False	
	fileset_write	'single'	'single'	'single'	'multi'	'multi'	'multi'
	max_files_r					700	
	max_files_w	'	?mal#i?	'mandei'	'ma!#!'	700 'multi'	'
	threading_read threading_write	'multi' 'single'	'multi' 'single'	'multi' 'single'	'multi' 'multi'	'multi'	'multi' 'multi'
&fms_nml	clock_grain	'LOOP'	'COMPONENT'	'LOOP'	'COMPONENT'	'LOOP'	COMPONENT
	domains_stack_size	200.	115200	200.	115200	115200	115200
	print_memory_usage					False	
&generic_tracer_nml	do_generic_cfc					False	
	do_generic_topaz					False	
&mom_oasis3_interface_nml	do_generic_tracer fields_in	'u_flux',	'u_flux',	'u_flux',	'u_flux',	False 'u_flux',	'u_flux',
WIIIOIII_0d5i53_IIIterrace_IIIIIt	lietus_iii	u_nux, 'v_flux',	u_nux, 'v_flux',	v_flux,	u_nux, 'v_flux',	'v_flux',	'v_flux',
		'lprec', 'fprec',	'lprec', 'fprec',	'lprec', 'fprec',	'lprec', 'fprec',	'lprec', 'fprec',	'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', 'lw_flux',	't_flux', 'lw_flux',	't_flux', 'lw_flux',	't_flux', 'lw_flux',	't_flux', 'lw_flux',	't_flux', 'lw_flux',
		'runof', 'p',	'runof', 'p',	'runof', 'p',	'runof', 'p',	'runof', 'p',	'runof', 'p',
		'aice',	'aice',	'aice',	'aice',	'aice',	'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', 'v_surf',	'u_surf', 'v_surf',	'u_surf', 'v_surf',	'u_surf', 'v_surf',	'u_surf', 'v_surf',	'u_surf', 'v_surf',
		'dssldx',	v_suri, 'dssldx',	v_suri, 'dssldx',	'dssldx',	v_suri, 'dssldx',	'dssldx',
		'dssldy',	'dssldy',	'dssldy',	'dssldy',	'dssldy',	'dssldy',
		'frazil'	'frazil'	'frazil'	'frazil'	'frazil'	'frazil'
	num_fields_in	15	15	15	15	15	15
	num_fields_out	_ 7	_ 7	7	_ 7	7	7
	send_after_ocean_update	True	True	True	True	True	True
&monin_obukhov_nml	send_before_ocean_update neutral	False	False True	False True	False True	False True	False
&monin_obuknov_nint &mpp_io_nml	deflate_level		True 5	iiue	True 5	True 5	True 5
миррыодини	shuffle		1		1	1	1
&ocean_adv_vel_diag_nml	diag_step	4320	4320	4320	4320	576	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
	verbose_cfl	True	True	True	True	True	True
&ocean_advection_velocity_nml	max_advection_velocity	0.5	0.5	0.5	0.5	0.2	0.5
&ocean_albedo_nml	ocean_albedo_option		2	2	2	2	2
&ocean_barotropic_nml	barotropic_halo	10	10	10	10	10	10

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	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
	diag_step	4320	4320	4320	4320	576	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	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	0.03	0.03	0.03	0.5	0.03
	verbose_truncate	True	True	True	True	True	True
	zero_tendency		False	False	False	False	False
&ocean_bbc_nml	bmf_implicit	•	True	True	True	True	True
	cdbot	0.001	0.001	0.001	0.001	0.001	0.001
	cdbot_hi cdbot_law_of_wall	False	0.007	0.007	0.007	0.007	0.007
	cdbot_taw_or_watt	raise	False	False	False	False	False
	cdbot_roughness_uamp		True	True	True	True	True
	uresidual		0.05	0.05	0.05	0.05	0.05
	use_geothermal_heating	False	False	False	False	False	False
&ocean_bbc_ofam_nml	read_tide_speed	False					
0 12 6 4	uresidual2_max	1.0	, ,	, ,,	, ,,	, ,	, ,
&ocean_bih_friction_nml &ocean_bih_tracer_nml	bih_friction_scheme tracer_mix_micom	'general'	'general'	'general'	'general'	'general' True	'general'
&ocean_bin_tracer_nint	use_this_module	False	False	True False 0.001	False	False 0.001	False
&ocean_bihcst_friction_nml	vel_micom use_this_module	False	False	False	False	False	False
&ocean_bihgen_friction_nml	bottom_5point	True	True	False	False	False	False
a seed in 2011 general containing	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 2.0	0.0 2.0	0.0 2.0	0.0 2.0	0.0 2.0	0.0 2.0
	k_smag_iso ncar_boundary_scaling	True	True	True	True	True	True
	ncar_boundary_scaling_read	iide	True	True	True	True	True
	ncar_rescale_power	2	2	2	2	2	2
	ncar_vconst_4	2×10^{-8}	2×10^{-8}	$2 imes 10^{-8}$	2×10^{-8}	2×10^{-8}	$2 imes 10^{-8}$
	ncar_vconst_5	_ 5	_ 5	5	_ 5	_ 5	_ 5
	use_this_module vel_micom_aniso	True	True	True	True	True	True
	vel_micom_aniso vel_micom_bottom	0.0 0.01	0.0 0.01	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0
	vel_micom_iso	0.01	0.01	0.0	0.0	0.0	0.0
	visc_crit_scale	0.25	0.25	1.0	1.0	1.0	1.0
&ocean_convect_nml	convect_full_scalar	False		True		True	
	convect_full_vector	True	_	False	_	False	_
0	use_this_module	False	False	False	False	False	False
&ocean_coriolis_nml	acor	0.5 True	0.5 True	0.5 True	0.5 Truo	0.5 True	0.5
&ocean_density_nml	use_this_module eos_linear	True False	True False	True False	True False	True False	True False
ween a constraint	eos_preteos10	True	True	True	True	True	True
	layer_nk	80	80	80	80	80	80
	neutralrho_max	1030.0	1030.0	1038.0	1030.0	1038.0	1030.0
	neutralrho_min	1020.0	1020.0	1028.0	1020.0	1028.0	1020.0
	potrho_max	1038.0	1038.0	1038.0	1038.0	1038.0	1038.0
&ocean_domains_nml	potrho_min max_tracers	1028.0 10	1028.0	1028.0	1028.0	1028.0	1028.0
&ocean_form_drag_nml	cprime_aiki	0.6))))	j j
woccun_rorm_uray_nint	use_this_module	False	False	False	False	False	False
&ocean_frazil_nml	debug_this_module		False	False	False	False	False
	frazil_only_in_surface		False	False	False	False	False
	freezing_temp_preteos10		True	True	True	True	True
	3 1 1	_					
	freezing_temp_simple	True	False	False	False	False	False
&ocean_grids_nml	3 1 1	True True True	False True False	False True False	False True False	False True False	False True False

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
&ocean_increment_eta_nml	days_to_increment fraction_increment	0 1.0					
	secs_to_increment	1800					
	use_this_module	False	False	False	False	False	False
&ocean_increment_tracer_nml	days_to_increment fraction_increment	0 1.0					
	secs_to_increment	1800					
	use_this_module	False	False	False	False	False	False
&ocean_increment_velocity_nml	days_to_increment	0					
	fraction_increment secs_to_increment	1.0 1800					
	use_this_module	False	False	False	False	False	False
&ocean_lap_friction_nml	lap_friction_scheme	'general'	'general'	'general'	'general'	'general'	'general'
&ocean_lap_tracer_nml	use_this_module	False	False	False	False	False	False
&ocean_lapcst_friction_nml &ocean_lapgen_friction_nml	use_this_module bottom_5point	False True	False True	False	False	False	False
woccan_tapgen_metion_mit	k_smaq_aniso	0.0	0.0				
	k_smag_iso	0.0	0.0	2.0		2.0	
	ncar_only_equatorial	True	Torre				
	restrict_polar_visc restrict_polar_visc_lat	True 60.0	True 60.0				
	restrict_polar_visc_ratio	0.35	0.35				
	use_this_module	True	True	False	False	False	False
	vconst_1	0.00 000 8 0.0					
	vconst_2 vconst_3	0.0					
	vconst_4	5×10^{-9}					
	vconst_5	3					
	vconst_6	300 000 000.0 100.0					
	vconst_7 vel_micom_iso	0.1	0.1				
	viscosity_ncar	True	False				
	viscosity_ncar_2000	False					
	viscosity_ncar_2007 viscosity_scale_by_rossby	True True	True				
	viscosity_scale_by_rossby_power	4.0	4.0				
&ocean_mixdownslope_nml	debug_this_module	False	False	False		False	
	mixdownslope_mask_gfdl	False	False				
	mixdownslope_npts read_mixdownslope_mask	4 False	4 False				
	use_this_module	True	True	False	False	False	False
&ocean_model_nml	baroclinic_split	1	1	1	1	1	1
	barotropic_split	80	_ 80	_ 80	80	80	_ 80
	cmip_units debug	True False	True False	True False	True False	False	True 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 time_tendency	1 'twolevel'	1 'twolevel'	1 'twolevel'	1 'twolevel'	1 'twolevel'	1 'twolevel'
	vertical_coordinate	'zstar'	'zstar'	'zstar'	'zstar'	'zstar'	'zstar'
&ocean_momentum_source_nml	rayleigh_damp_exp_from_bottom		False	False	False	False	False
	use_rayleigh_damp_table use_this_module	True	True	True	True	True	True
&ocean_nphysics_nml	debug_this_module	True False	True False	True False	True False	True False	True False
- Coccurrently Sted Little	use_nphysicsa	False	False	False	False	False	False
	use_nphysicsb	False	False	False	False	False	False
	use_nphysicsc use_this_module	True	True True	False False	False False	False False	False False
&ocean_nphysics_util_nml	use_tnis_module aqm	True 600.0	600.0	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 Truo	0.004	0.004	0.004	0.004	0.004
	agm_closure_eady_ave_mixed agm_closure_eady_cap	True True	True True				
	agm_closure_eady_smooth_horz	True	True				
	agm_closure_eady_smooth_vert	True	True				
	agm_closure_eden_gamma	0.0 False	0.0 Falso				
	agm_closure_eden_greatbatch agm_closure_grid_scaling	False True	False True				
	agm_closure_length	50 000.0	50 000.0	50 000.0	50 000.0	50 000.0	50 000.0
	agm_closure_length_bczone	False	False	False	False	False	False
	agm_closure_length_fixed	False	False	False	False	False	False

	Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
September Part September Part September Se								
Section								
				0.07	0.07		0.07	0.07
Part					100.0	100.0	100.0	100.0
		3 1 3						
Part								
					600.0	600.0	600.0	600.0
Part					False	False	False	False
					100 000 0	100 000 0	100 000 0	100 000 0
			15 000.0	25 000.0		15 000.0		13 00010
No. No.					0.002			
Sociesn.nphysicis.nml use his module social positional positiona								
Second physics								
					False	False	False	False
Begins B	&ocean_npnysicsc_nmi							
No. 1999 199								
Patrice			True	True				
Mumber for modes 2 2 2 2 3 3 3 3 3 3								
Smark Dis Oli								
Secontrops True T		regularize_psi						
cocan_operators.nml Use_legacy_div_use 50.0 50.0 False								
Palse Pals								
& ccean_operators_nml use legacy_div_ud False					False	False	False	False
& cean_overexhange_nml debug.this.module overexh_npts overexh_npts are overexh_npts. False between the cean_overexh.npts are overexh_npts are overexh_npts. False between the cean_overflow. False between th	&ocean_operators_nml		nuc					
overexch .neight.rar 4 pase 4 pase 4 pase 4 pase 4 pase 6 pase False pase pase False pase pase False pase pase pase False pase pase pase pase pase pase pase pa			False					
overenden overenden False			False					
coverflow.umax 5.0								
Scorean_overflow_nml Gebug this_module use_this_module		•						
& ccean_overflow_nml debug_this_module use_this_module False False								
Balance	&ocean overflow nml			False		raise		raise
& occean_overflow_ofp_nml debug_this_module False				False		False		False
	&ocean_overflow_ofp_nml							
True	·	diag_step						
True								
Imax.vol.trans.ofp10 000 000.010 000 000.0use_this_moduleFalseFalseFalseFalseFalse&ocean_polar_filter_nmluse_this_moduleFalseFalseFalseFalseFalse&ocean_pressure_nmlzero_pressure_forceFalseFalseFalseFalseFalseFalse&ocean_rivermix_nmldebug_this_moduleFalseFalseFalseFalseFalseFalseFalseFalseFalseFalseFalseFalseTrueFalseTrueFalseTrueFalseTrueTrueTrueTrueTrueFalseTrueTrueFalseTrueFalseTrueTrueFalseTrueTrueFalseTrue<								
&ocean_polar_filter_nmluse_this_moduleFalseFalseFalseFalseFalseFalseFalse&ocean_polar_filter_nmluse_this_moduleFalseFalseFalseFalseFalseFalse&ocean_pressure_nmlzero_pressure_forceFalseFalseFalseFalseFalseFalse&ocean_rivermix_nmldebug_this_module river_diffuse_salt river_diffuse_saltFalseFalseFalseFalseFalseFalseFalseTrueFalseTrueFalseTrueTrueTrueTrueFalseTrueFalseTrueFalseTrueTrueTrueFalseTrueFalseTrueTrueTrueTrueTrueFalseTrueTrueTrueTrueTrueTrueTrueTrue&ocean_riverspread_nmldebug_this_module use_this_moduleTrueFalseFalseFalseFalse&ocean_rough_nmldebug_this_module use_this_moduleTrueFalseFalseFalseTrueFalse&ocean_rough_nmlfough_scheme'beljaars''beljaars''beljaars''beljaars''beljaars''beljaars''beljaars'&ocean_sbc_nmlavg_sfc_temp_salt_eta avg_sfc_velocityTrueTrueTrueTrueTrueTrueTrueTrue								
&ocean_polar_filter_nmluse_this_moduleFalseFalseFalseFalseFalseFalse&ocean_pressure_nmlzero_pressure_forceFalseFalseFalseFalseFalse&ocean_rivermix_nmldebug_this_module river_diffuse_salt river_diffuse_saltFalseFalseFalseFalseFalseFalseFalseTrueFalseTrueFalseTrueTrueTrueTrueFalseTrueFalseTrueFalseTrueTrueTrueTrueFalseTrueFalseTrueFalseTrueTrueTrueTrueFalseTrueTrueFalseTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueFalseFalseFalse&ocean_riverspread_nmldebug_this_module use_this_moduleTrueFalseFalseFalseFalseTrueFalse&ocean_rough_nmldebug_this_module use_this_moduleTrueFalseFalseFalseTrueFalse&ocean_rough_nmlfough_scheme'beljaars''beljaars''beljaars''beljaars''beljaars''beljaars'&ocean_sbc_nmlavg_sfc_temp_salt_eta avg_sfc_velocityTrueTrueTrueTrueTrueTrueTrueTrueTrue				False		False		False
& ocean_pressure_nmlzero_pressure_forceFalseFalseFalseFalseFalseFalse& ocean_rivermix_nmldebug_this_module river_diffuse_salt river_diffuse_saltFalse FalseTrueFalseTrueTrueTrueFalseTrueFalseTrueFalseTrueTrueTrueFalseTrueFalseTrueFalseTrueTrueTrueFalseTrueFalseTrueFalseTrueTrueTrueTrueFalseTrueTrueTrueTrueTrueTrueTrueTrueCocean_riverspread_nmldebug_this_module use_this_moduleTrueFalseFalseTrueFalse& ocean_rough_nmldebug_this_module use_this_moduleTrueFalseFalseTrueFalse& ocean_sbc_nmlavg_sfc_temp_salt_etaTrueTrueTrueTrueTrueTrueTrueTrue& ocean_sbc_nmlavg_sfc_temp_salt_etaTrueTrueTrueTrueTrueTrueTrueTrueTrue	&ocean_polar_filter_nml		False					
& ocean_rivermix_nmldebug_this_module river_diffuse_salt river_diffuse_saltFalse FalseFalse TrueFalse FalseFalse TrueFalse TrueFalse TrueTrue TrueTrue Trueriver_diffusion_thickness river_diffusion_thickness river_diffusion_thickness river_diffusivity river_diffusivity river_insertion_thickness use_this_module0.0 40.0 <								
river_diffuse_temp False True False True 0.0	•	debug_this_module			False			False
river_diffusion_thickness 0.0 <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td> <td></td>								
river_diffusivity 0.0 40.0 4								
river_insertion_thickness40.040.040.040.040.040.040.0use_this_moduleTrueTrueTrueTrueTrueTrueTrueTruedebug_this_moduleTrueFalseFalseFalseTrueFalseuse_this_moduleTrueFalseFalseFalseTrueFalse&ocean_rough_nmlrough_scheme'beljaars''beljaars''beljaars''beljaars''beljaars''beljaars''beljaars'&ocean_sbc_nmlavg_sfc_temp_salt_etaTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrue								
use_this_moduleTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueFalseFalseFalseFalseTrueFalse&ocean_rough_nnlrough_scheme'beljaars''beljaars''beljaars''beljaars''beljaars''beljaars''beljaars'&ocean_sbc_nmlavg_sfc_temp_salt_etaTrueTrueTrueTrueTrueTrueTrueTrueavg_sfc_velocityTrueTrueTrueTrueTrueTrue		•						
& Ocean_riverspread_nmldebug_this_moduleTrueFalseFalseFalseFalseTrueFalse& Ocean_rough_nmlrough_scheme'beljaars''beljaars''beljaars''beljaars''beljaars''beljaars'& Ocean_sbc_nmlavg_sfc_temp_salt_etaTrueTrueTrueTrueTrueTrueTrueTrueavg_sfc_velocityTrueTrueTrueTrueTrueTrueTrue								
use_this_moduleTrueFalseFalseFalseTrueFalse&ocean_rough_nnllrough_scheme'beljaars''beljaars''beljaars''beljaars''beljaars'&ocean_sbc_nmlavg_sfc_temp_salt_etaTrueTrueTrueTrueTrueTrueTrueTrueavg_sfc_velocityTrueTrueTrueTrueTrueTrueTrue	&ocean_riverspread_nml		iiuc	iiuc	nuc	iiuc		iiuc
& ocean_rough_nmlrough_scheme'beljaars''beljaars''beljaars''beljaars''beljaars'& ocean_sbc_nmlavg_sfc_temp_salt_eta avg_sfc_velocityTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrueTrue			True	False	False	False		False
avg_sfc_velocity True True True True True True True	&ocean_rough_nml			'beljaars'	'beljaars'		'beljaars'	'beljaars'
	&ocean_sbc_nml							
calvingspread False False False False False			True					
		calvingspread		False	False	False	False	False

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	do_bitwise_exact_sum		False	False	False	False	False
	do_flux_correction land_model_heat_fluxes		False False	False False	False False	False False	False False
	max_delta_salinity_restore	0.5	0.5	0.5	0.5	0.5	0.5
	max_ice_thickness	8.0	0.0	0.0	0.0	0.0	0.0
	read_restore_mask	False	False	False	False	False	False
	restore_mask_gfdl	False	False	False	False	False	False
	runoff_salinity	0.0	0.0	0.0	0.0	0.0	0.0
	salt_correction_scale	_	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	True	True	True	True	True	True
	waterflux_tavg	False					
	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_couple_restore zero_net_water_coupler	True	True	True	True	True	True
	zero_net_water_coupler	True	True	True	True	True	True
	zero_surface_stress	False	False	False	False	False	False
	zero_water_fluxes	False	False	False	False	False	False
&ocean_sbc_ofam_nml	restore_mask_ofam	False					
	river_temp_ofam	False					
&ocean_shortwave_csiro_nml	debug_this_module			False			
	read_depth	True		True			
	use_this_module	True	False	False	False	False	False
8 ocean shortwaye afdl nml	zmax_pen debug_this_module	7000 False	False	7000 False	False	False	False
&ocean_shortwave_gfdl_nml	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	True	True	True	True	True
	sw_pen_fixed_depths	False					
	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
	use_shortwave_gfdl 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	iide	False	nuc	False	nuc
	sigma_advection_sgs_only	False		False		False	
	sigma_diffusion_on	True		True		True	
	sigma_diffusivity_ratio	$1 imes 10^{-6}$		$1 imes 10^{-6}$		1×10^{-6}	
	sigma_just_in_bottom_cell	True		True		True	
	sigma_umax	0.01		0.01		0.01	
	smooth_sigma_thickness	True		True		True	
	smooth_sigma_velocity smooth_velmicom	True 0.2		True 0.2		True 0.2	
	thickness_sigma_layer	100.0		100.0		100.0	
	tilickiicss_siqilia_tayel	100.0		100.0		100.0	
	thickness sigma max					100.0	
	thickness_sigma_max thickness_sigma_min	100.0		100.0		100.0	
				100.0 False		False	
	thickness_sigma_min	100.0		False True			
	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module	100.0 False True True	False	False True False	False	False True False	False
	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module vel_micom	100.0 False True True 0.05		False True False 0.05		False True False 0.05	
&ocean_solo_nml	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module vel_micom calendar	100.0 False True True 0.05	'NOLEAP'	False True False 0.05	'NOLEAP'	False True False 0.05	'NOLEAP'
&ocean_solo_nml	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module vel_micom calendar date_init	100.0 False True True 0.05 'NOLEAP' 1,1,1,0,0,0	'NOLEAP' 1, 1, 1, 0, 0, 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0	'NOLEAP' 1, 1, 1, 0, 0, 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0	'NOLEAP' 1, 1, 1, 0, 0, 0
&ocean_solo_nml	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module vel_micom calendar date_init days	100.0 False True True 0.05 'NOLEAP' 1,1,1,0,0,0 1460	'NOLEAP'	False True False 0.05	'NOLEAP'	False True False 0.05	'NOLEAP'
&ocean_solo_nml	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module vel_micom calendar date_init days debug_this_module	100.0 False True True 0.05 'NOLEAP' 1,1,1,0,0,0 1460 False	'NOLEAP' 1,1,1,0,0,0 1460	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 31	'NOLEAP' 1, 1, 1, 0, 0, 0 31	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 30	'NOLEAP' 1, 1, 1, 0, 0, 0 30
&ocean_solo_nml	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module vel_micom calendar date_init days	100.0 False True True 0.05 'NOLEAP' 1,1,1,0,0,0 1460	'NOLEAP' 1, 1, 1, 0, 0, 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0	'NOLEAP' 1, 1, 1, 0, 0, 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0	'NOLEAP' 1, 1, 1, 0, 0, 0
&ocean_solo_nml	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module vel_micom calendar date_init days debug_this_module dt_cpld	100.0 False True True 0.05 'NOLEAP' 1,1,1,0,0,0 1460 False 3600	'NOLEAP' 1,1,1,0,0,0 1460 3600	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 31	'NOLEAP' 1, 1, 1, 0, 0, 0 31 1200	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 30	'NOLEAP' 1,1,1,0,0,0 30 600
&ocean_solo_nml	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module vel_micom calendar date_init days debug_this_module dt_cpld hours	100.0 False True True 0.05 'NOLEAP' 1,1,1,0,0,0 1460 False 3600 0	'NOLEAP' 1,1,1,0,0,0 1460 3600 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 31 1200 0	'NOLEAP' 1,1,1,0,0,0 31 1200 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 30 150 0	'NOLEAP' 1,1,1,0,0,0 30 600 0
&ocean_solo_nml	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module vel_micom calendar date_init days debug_this_module dt_cpld hours minutes	100.0 False True 0.05 'NOLEAP' 1,1,1,0,0,0 1460 False 3600 0	'NOLEAP' 1,1,1,0,0,0 1460 3600 0 0 0 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 31 1200 0 0 0 0	'NOLEAP' 1,1,1,0,0,0 31 1200 0 0 0 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 30 150 0 0 0 0	'NOLEAP' 1,1,1,0,0,0 30 600 0 0 0 0
	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module vel_micom calendar date_init days debug_this_module dt_cpld hours minutes months seconds years	100.0 False True True 0.05 'NOLEAP' 1,1,1,0,0,0 1460 False 3600 0 0 0 0	'NOLEAP' 1,1,1,0,0,0 1460 3600 0 0 0 0 0 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 31 1200 0 0 0 0 0 0	'NOLEAP' 1,1,1,0,0,0 31 1200 0 0 0 0 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 30 150 0 0 0 0 0	'NOLEAP' 1,1,1,0,0,0 30 600 0 0 0 0 0 0
&ocean_solo_nml &ocean_sponges_eta_nml &ocean_sponges_tracer_nml	thickness_sigma_min tmask_sigma_on tracer_mix_micom use_this_module vel_micom calendar date_init days debug_this_module ift_cpld hours minutes months seconds	100.0 False True 0.05 'NOLEAP' 1,1,1,0,0,0 1460 False 3600 0	'NOLEAP' 1,1,1,0,0,0 1460 3600 0 0 0 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 31 1200 0 0 0 0	'NOLEAP' 1,1,1,0,0,0 31 1200 0 0 0 0	False True False 0.05 'NOLEAP' 1,1,1,0,0,0 30 150 0 0 0 0	'NOLEAP' 1,1,1,0,0,0 30 600 0 0 0 0

	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
&ocean_sponges_velocity_nml	use_this_module	False	False	False	False	False	False
&ocean_submesoscale_nml	coefficient_ce	F.1	0.05	0.05	0.05	0.05	0.05
	debug_this_module	False	False	False	False	False	False
	front_length_const front_length_deform_radius	5000.0 True	5000.0 True	5000.0 True	5000.0 True	5000.0 True	5000.0 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	True	True	True	True
	smooth_psi_num		3	3	3	3	3
	submeso_advect_flux		False	False	False	False	False
	submeso_advect_limit		True	True	True	True	True
	submeso_advect_upwind		True	True	True	True	True
	submeso_advect_zero_bdy		True	True	True	True	True
	submeso_diffusion		False	False	False	False	False
	submeso_diffusion_biharmonic		True	True	True	True	True
	submeso_diffusion_scale	_	10.0	10.0	10.0	10.0	10.0
	submeso_limit_flux	True	_	_	_	_	_
	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	False
	pottemp_2nd_iteration	True	True	True	True	True	True
	pottemp_equal_contemp	550	True	True	True	True	True
	s_max	55.0	70.0	70.0	70.0	70.0	70.0
	s_max_limit	42.0	42.0	42.0	42.0	42.0	42.0
	s_min s_min_limit	-1.0 0.0	0.0 2.0	0.0 2.0	0.0 2.0	0.0 2.0	0.0
		55.0	55.0	55.0	55.0	55.0	2.0 55.0
	t_max 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	-20.0 -5.0	-20.0 -5.0	-20.0 -5.0	-5.0	-20.0 -5.0
	temperature_variable	'conservative	'potential	'potential	'potential	'potential	'potential
	temperature 2 randote		•	•	poteritiat_		
		temp'	temp'	temp'	temp'	temp'	•
&ocean_thickness_nml	debug_this_module	temp' False	temp' False	temp' False	temp' False	temp' False	temp'
&ocean_thickness_nml	debug_this_module debug_this_module_detail	False	False	False	False	False	temp' False
&ocean_thickness_nml	debug_this_module_detail	False False					temp'
&ocean_thickness_nml	3	False	False	False	False	False	temp' False
&ocean_thickness_nml	debug_this_module_detail initialize_zero_eta	False False False	False	False	False	False	temp' False
&ocean_thickness_nml	debug_this_module_detail initialize_zero_eta read_rescale_rho0_mask	False False False	False False	False False	False False	False False	temp' False False
&ocean_thickness_nml	debug_this_module_detail initialize_zero_eta read_rescale_rho0_mask rescale_mass_to_get_ht_mod	False False False False	False False	False False	False False	False False	temp' False False
&ocean_thickness_nml	debug_this_module_detail initialize_zero_eta read_rescale_rho0_mask rescale_mass_to_get_ht_mod rescale_rho0_basin_label	False False False False	False False	False False	False False	False False	temp' False False
&ocean_thickness_nml	debug_this_module_detail initialize_zero_eta read_rescale_rho0_mask rescale_mass_to_get_ht_mod rescale_rho0_basin_label rescale_rho0_mask_gfdl	False False False False 7.0 False	False False	False False False	False False	False False	temp' False False
&ocean_thickness_nml	debug_this_module_detail initialize_zero_eta read_rescale_rho0_mask rescale_mass_to_get_ht_mod rescale_rho0_basin_label rescale_rho0_mask_gfdl rescale_rho0_value	False False False False False 7.0 False 0.75 1.0 2.0	False False	False False False 2.0 10.0	False False False	False False False 2.0 10.0	temp' False False False
	debug_this_module_detail initialize_zero_eta read_rescale_rho0_mask rescale_mass_to_get_ht_mod rescale_rho0_basin_label rescale_rho0_mask_gfdl rescale_rho0_value thickness_dzt_min thickness_dzt_min_init thickness_method	False False False False False 7.0 False 0.75 1.0 2.0 'energetic'	False False	False False False	False False	False False False	temp' False False
&ocean_topog_nml	debug_this_module_detail initialize_zero_eta read_rescale_rho0_mask rescale_mass_to_get_ht_mod rescale_rho0_basin_label rescale_rho0_mask_gfdl rescale_rho0_value thickness_dzt_min thickness_dzt_min_init thickness_method min_thickness	False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0	False False False	False False False 2.0 10.0	False False False	False False False 2.0 10.0	temp' False False False
	debug_this_module_detail initialize_zero_eta read_rescale_rho0_mask rescale_mass_to_get_ht_mod rescale_rho0_basin_label rescale_rho0_mask_gfdl rescale_rho0_value thickness_dzt_min thickness_dzt_min_init thickness_method min_thickness advect_sweby_all	False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True	False False False	False False False 2.0 10.0	False False False	False False False 2.0 10.0	temp' False False False
&ocean_topog_nml	debug_this_module_detail	False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True	False False False	False False False 2.0 10.0 'energetic'	False False False	False False False 2.0 10.0 'energetic'	temp' False False False 'energetic'
&ocean_topog_nml	debug_this_module_detail	False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True	False False False False	False False False 2.0 10.0 energetic	False False False 'energetic'	False False False 2.0 10.0 energetic	temp' False False False 'energetic'
&ocean_topog_nml &ocean_tracer_advect_nml	debug_this_module_detail	False False False False 7.0 False 0.75 1.0 2.0 energetic 25.0 True True False	False False False 'energetic' False False	False False 2.0 10.0 energetic False False False	False False 'energetic' False False	False False False 2.0 10.0 energetic False False False	ralse False False 'energetic' False False
&ocean_topog_nml	debug_this_module_detail	False False False False False 7.0 False 0.75 1.0 2.0 energetic 25.0 True True False	False False 'energetic' False False 4320	False False 2.0 10.0 energetic False False 4320	False False 'energetic' False False 4320	False False 2.0 10.0 energetic False False False 576	ralse False False 'energetic' False False False False False False False False
&ocean_topog_nml &ocean_tracer_advect_nml	debug_this_module_detail	False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 4320 False	False False 'energetic' False False 4320 False	False False 2.0 10.0 energetic False False 4320 False	False False 'energetic' False False 4320 False	False False 2.0 10.0 energetic False False False False 576 False	ralse False False 'energetic' False False False False False False False
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml	debug_this_module_detail	False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 4320 False 1.0	False False 'energetic' False False 4320 False 30.0	False False 2.0 10.0 energetic False False 4320 False 30.0	False False 'energetic' False False 4320 False 30.0	False False 2.0 10.0 energetic False False False 576 False 30.0	ralse False False 'energetic' False False 576 False 30.0
&ocean_topog_nml &ocean_tracer_advect_nml	debug_this_module_detail	False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 4320 False 1.0 0.0	False False 'energetic' False False 4320 False 30.0 0.0	False False 2.0 10.0 energetic False False 4320 False 30.0 0.0	False False 'energetic' False False 4320 False 30.0 0.0	False False 2.0 10.0 'energetic' False False 576 False 30.0 0.0	ralse False 'energetic' False 576 False 30.0 0.0
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml	debug_this_module_detail initialize_zero_eta read_rescale_rho0_mask rescale_mass_to_get_ht_mod rescale_rho0_basin_label rescale_rho0_mask_gfdl rescale_rho0_value thickness_dzt_min thickness_dzt_min_init thickness_dzt_min_init thickness_method min_thickness advect_sweby_all async_domain_update debug_this_module read_basin_mask diag_step do_bitwise_exact_sum tracer_conserve_days age_tracer_max_init debug_this_module	False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 4320 False 1.0 0.0 False	False False False 'energetic' False False 4320 False 30.0 0.0 False	False False 2.0 10.0 'energetic' False False 4320 False 30.0 0.0 False	False False False 'energetic' False False 4320 False 30.0 0.0 False	False False False 2.0 10.0 'energetic' False 576 False 30.0 0.0 False	remp' False False 'energetic' False 576 False 30.0 0.0 False
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml	debug_this_module_detail initialize_zero_eta read_rescale_rho0_mask rescale_mass_to_get_ht_mod rescale_rho0_basin_label rescale_rho0_mask_gfdl rescale_rho0_value thickness_dzt_min thickness_dzt_min.init thickness_dzt_min.init thickness_mathod min_thickness advect_sweby_all async_domain_update debug_this_module read_basin_mask diag_step do_bitwise_exact_sum tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics	False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 4320 False 1.0 0.0 False True	False False False 'energetic' False False 4320 False 30.0 0.0 False True	False False 2.0 10.0 'energetic' False False 4320 False 30.0 0.0 False True	False False False 'energetic' False False 4320 False 30.0 0.0 False True	False False 2.0 10.0 'energetic' False 576 False 30.0 0.0 False True	ralse False False 'energetic' False 576 False 30.0 0.0 False True
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml	debug_this_module_detail	False False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 4320 False 1.0 0.0 False True False	False False False 'energetic' False False 4320 False 30.0 0.0 False True False	False False 2.0 10.0 'energetic' False 4320 False 30.0 0.0 False True False	False False False 'energetic' False False 4320 False 30.0 0.0 False True False	False False 2.0 10.0 'energetic' False 576 False 30.0 0.0 False True False	ralse False False 'energetic' False 576 False 30.0 0.0 False True False
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml	debug_this_module_detail initialize_zero_eta read_rescale_rho0_mask rescale_mass_to_get_ht_mod rescale_rho0_basin_label rescale_rho0_mask_gfdl rescale_rho0_value thickness_dzt_min thickness_dzt_min.init thickness_dzt_min.init thickness_method min_thickness advect_sweby_all async_domain_update debug_this_module read_basin_mask diag_step do_bitwise_exact_sum tracer_conserve_days age_tracer_max_init debug_this_module frazil_heating_after_vphysics frazil_heating_before_vphysics limit_age_tracer	False False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 4320 False 1.0 0.0 False True False	False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False	False False False 2.0 10.0 'energetic' False False 4320 False 30.0 0.0 False True False True False	False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False	False False False 2.0 10.0 'energetic' False False 576 False 30.0 0.0 False True False True False	ralse False 'energetic' False False 30.0 0.0 False True False True False
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml	debug_this_module_detail	False False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 4320 False 1.0 0.0 False True False True False True False False True False	False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False False	False False 2.0 10.0 'energetic' False False 4320 False 30.0 0.0 False True False True False	False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False False	False False False 2.0 10.0 'energetic' False False 576 False 30.0 0.0 False True False True False	ralse False 'energetic' False False 576 False 30.0 0.0 False True False True False
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml	debug_this_module_detail	False False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 4320 False 1.0 0.0 False True	False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False True False True	False False 2.0 10.0 'energetic' False False 4320 False 30.0 False True False True False True False True	False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False True False True	False False 2.0 10.0 10.0 'energetic' False False 576 False 30.0 0.0 False True False True False True False True	ralse False False 'energetic' False 576 False 30.0 0.0 False True False True False True
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml	debug_this_module_detail	False False False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 4320 False 1.0 0.0 False True False	False False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False True False True False True False	False False 2.0 10.0 10.0 'energetic' False False 4320 False 30.0 0.0 False True False True False True False True False	False False False 'energetic' False False False False False False True False True False True False True False	False False 2.0 10.0 10.0 'energetic' False False 576 False 30.0 0.0 False True False True False True False True False	ralse False 'energetic' False 576 False 30.0 0.0 False True False True False True False
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml &ocean_tracer_nml	debug_this_module_detail	False False False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 4320 False 1.0 0.0 False True False True False True False True False True False False True False False True False False False False False False False	False False False 'energetic' False False False False False False True False True False True False False False False False False False False False	False False 2.0 10.0 10.0 energetic' False False 4320 False 30.0 0.0 False True False True False True False	False False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False True False False False False False False	False False 2.0 10.0 10.0 energetic False False 576 False 30.0 0.0 False True False True False True False True False	ralse False 'energetic' False False 576 False 30.0 0.0 False True False False True False False False False
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml	debug_this_module_detail	False False False False False False False 7.0 False 0.75 1.0 2.0 energetic 25.0 True True False 1.0 0.0 False True False True False True False True False True False	False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False True False	False False 2.0 10.0 10.0 energetic False False 4320 False 30.0 0.0 False True False True False True False	False False False False False False False False False False True False True False True False False False False False False False False False	False False 2.0 10.0 10.0 energetic False False 576 False 30.0 0.0 False True False True False True False False False False True False	ralse False False False False False False False 576 False 30.0 0.0 False True False True False False False False False False False False False
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml &ocean_tracer_nml	debug_this_module_detail	False False False False False False False 7.0 False 0.75 1.0 2.0 energetic 25.0 True True False 1.0 0.0 False True False True False True False True False False True False	False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False True False	False False 2.0 10.0 10.0 energetic False False 4320 False 30.0 0.0 False True False True False True False	False False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False True False	False False 2.0 10.0 10.0 energetic False False 576 False 30.0 0.0 False True False True False True False	ralse False False 'energetic' False 576 False 30.0 0.0 False True False True False False False False 576
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml &ocean_tracer_nml	debug_this_module_detail	False False False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 1.0 0.0 False True False True False True False	False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False	False False 2.0 10.0 10.0 energetic False False 4320 False 30.0 0.0 False True False True False	False True False True False	False False 2.0 10.0 10.0 energetic False False 576 False 30.0 0.0 False True False True False True False	ralse False False 'energetic' False False 576 False 30.0 0.0 False True False True False False False False 5760 False
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml &ocean_tracer_nml	debug_this_module_detail	False False False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 1.0 0.0 False True False	False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False True False False 4320 4320 4320 4320 40.0	False False 2.0 10.0 10.0 energetic False False 4320 False 30.0 0.0 False True False True False True False False 4320 False True False	False False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False True False False 4320 4320 4320 4320 10.0	False False 2.0 10.0 10.0 energetic False False 576 False 30.0 0.0 False True False True False True False False False 576 5760 10.0	ralse False True False
&ocean_topog_nml &ocean_tracer_advect_nml &ocean_tracer_diag_nml &ocean_tracer_nml	debug_this_module_detail	False False False False False False False 7.0 False 0.75 1.0 2.0 'energetic' 25.0 True True False 1.0 0.0 False True False True False True False	False False False 'energetic' False False 4320 False 30.0 0.0 False True False True False	False False 2.0 10.0 10.0 energetic False False 4320 False 30.0 0.0 False True False True False	False True False True False	False False 2.0 10.0 10.0 energetic False False 576 False 30.0 0.0 False True False True False True False	ralse False

Group (continued)	Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	truncate_velocity	True	False	False	False	False	False
	truncate_velocity_value	_2.0	_2.0	_2.0	2.0	_2.0	2.0
	truncate_verbose	True	True	True	True	True	True
	zero_tendency zero_tendency_explicit_a	False	False False	False False	False False	False False	False False
	zero_tendency_explicit_b		False	False	False	False	False
	zero_tendency_implicit		False	False	False	False	False
&ocean_vert_kpp_iow_nml	use_this_module	False	False	False	False	False	False
&ocean_vert_kpp_mom4p0_nml	use_this_module	False					
&ocean_vert_kpp_mom4p1_nml	diff_cbt_iw diff_con_limit	0.0 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	False	False	False	False	False	False
	smooth_ri_kmax_eq_kmu	True	True	True	True	True	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
&ocean_vert_mix_nml	visc_con_limit afkph_00	0.1 0.65					
COCCOT_VELL_HHA_HHIL	аткрп_оо afkph_90	0.65					
	aikpii_90 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	True	False	False	False	False	False
	bryan_lewis_lat_transition	35.0					
	dfkph_00	1.15					
	dfkph_90	0.95		F .	F.1	F 1	F 1
	hwf_diffusivity		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
	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	'kpp	'kpp	'kpp	'kpp	'kpp
	-	mom4p1'	mom4p1'	mom4p1'	mom4p1'	mom4p1'	mom4p1'
	zfkph_00	250 000.0 250 000.0					
&ocean_vert_tidal_nml	zfkph_90 background_diffusivity	5×10^{-6}	0.0	0.0	0.0	0.0	0.0
&ocean_vert_tidat_nint	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		True	True	True	True	True
	drhodz_min	$1 imes 10^{-12}$	$1 imes 10^{-10}$	$1 imes 10^{-10}$	$1 imes 10^{-10}$	$1 imes 10^{-10}$	1×10^{-10}
	fixed_wave_dissipation	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
	mixing_efficiency_n2depend read_roughness	True	True	True	True	True	True
	read_rougnness read_tide_speed	True True	True True	True True	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	20 000.0	12 000.0	12 000.0	12 000.0	12 000.0	12 000.0
	shelf_depth_cutoff	160.0	-1000.0	-1000.0	-1000.0	-1000.0	-1000.0
	tide_speed_data_on_t_grid	True	True	True	True	True	True
		Irua	True	True	True	True	True
	use_drag_dissipation	True		Ealco	Ealco	Enlan	
	use_legacy_methods		False	False	False	False True	False
	use_legacy_methods use_this_module	True	False True	True	True	True	True
	use_legacy_methods		False				
&ocean_xlandinsert_nml	use_legacy_methods use_this_module use_wave_dissipation	True True	False True True	True True	True True	True True	True True
&ocean_xlandinsert_nml	use_legacy_methods use_this_module use_wave_dissipation wave_energy_flux_max	True True 0.1 False True	False True True 0.1 False	True True 0.1 False	True True 0.1 False	True True 0.1 False	True True 0.1 False
&ocean_xlandinsert_nml &ocean_xlandmix_nml	use_legacy_methods use_this_module use_wave_dissipation wave_energy_flux_max use_this_module verbose_init use_this_module	True True 0.1 False True False	False True True 0.1	True True 0.1	True True 0.1	True True 0.1	True True 0.1
	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 0.1 False True False True	False True True 0.1 False	True True 0.1 False	True True 0.1 False	True True 0.1 False	True True 0.1 False
&ocean_xlandmix_nml	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 0.1 False True False	False True True 0.1 False	True True 0.1 False	True True 0.1 False	True True 0.1 False	True True 0.1 False
&ocean_xlandmix_nml &sat_vapor_pres_nml	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 show_all_bad_values	True True 0.1 False True False True	False True True 0.1 False	True True 0.1 False False	True True 0.1 False	True True 0.1 False False	True True 0.1 False
&ocean_xlandmix_nml	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 show_all_bad_values ncar_ocean_flux	True True 0.1 False True False True	False True True 0.1 False	True True 0.1 False False	True True 0.1 False	True True 0.1 False False True True	True True 0.1 False
&ocean_xlandmix_nml &sat_vapor_pres_nml &surface_flux_nml	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 show_all_bad_values ncar_ocean_flux raoult_sat_vap	True True 0.1 False True False True	False True True 0.1 False	True True 0.1 False False	True True 0.1 False	True True 0.1 False False True True True True	True True 0.1 False
&ocean_xlandmix_nml &sat_vapor_pres_nml	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 show_all_bad_values ncar_ocean_flux raoult_sat_vap do_alltoall	True True 0.1 False True False True	False True True 0.1 False	True True 0.1 False False	True True 0.1 False	True True 0.1 False False True True True True True True	True True 0.1 False False
&ocean_xlandmix_nml &sat_vapor_pres_nml &surface_flux_nml	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 show_all_bad_values ncar_ocean_flux raoult_sat_vap	True True 0.1 False True False True	False True True 0.1 False	True True 0.1 False False	True True 0.1 False	True True 0.1 False False True True True True	True True 0.1 False

Group (continued) Variable	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
make_exchange_reproduce	False	False	False	False	False	False
nsubset		16	16	16	16	16
xgrid_log					False	

1.4 All variables in all 9 configs (differences highlighted)

Section Sect	Group	Variable	original/ GFDL ESM2M input- cut.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/ russ- accessom- mom4p1- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
Company	&auscom_ice_nml	aice_cutoff					P*************************************	0.15		•	0.15
Misser M	Guddennine										False
		chk_o2i_fields							False	False	False
Second S		do_ice_once						False	False	False	False
		dt_cpl						3600	3600	1800	600
Section Sect											False
											1.0
Second S											
The Content											
Sign of											
Seguestical Segu	,							iiue		iiue	iiue
Composition	<u>'</u>							10		10	10
State Stat											
About Manuse Ma											True
Scouples.ment Betters.teres 1	&bg_diff_lat_depende										
Computer		lat_low_bgdiff						20.0			
Calendar	&coupler_nml			0	0	0	0				
Content											
Concession Time False											
Comment				•	ŭ	-	v				
Main											
Bool Bridge False											
True											
				i atse	i atse	i alse	raise				
Belland True False Fal				True	True	True	True				
True											
Record 1800 1700 3600 1800											
Community 12 0 0 180		dt_atmos	1800	7200	3600	1800	1800				
Decenuppes 96		dt_cpld	7200	7200	3600	1800					
See lag fluxer		months									
&diag_integral_untl file_name integral_out			96	0	0	0	0				
Integral.out Inte											
Bully Different 10 10 -10 -10 -10 -10 -10	&diag_integral_nml	file_name									
Company					3	-	3				
## True											
	0 4:	time_units	days	days	days	days	'days'		T	Т	T
False									Irue	irue	Irue
Max.axes 200 100 300			Ealco	Ealco	Ealco	Ealco	Ealco	Ealco	Truo	Truo	Truo
max_nies 50	L							raise	iiue	iiue	iiue
max.input.fields				100							
Max.num.axis.sets 200 100 40 40 40 40 40 40				699							
Max.output_fields	n										
## Act False False	_										
divert_stocks_report True	mix_snaps										
March Marc	&flux_exchange_nml	debug_stocks	False	False							
Molicides False &fms_io_nml checksum_required False filteset_write 'single' 'multi' 'multi' 'single' 'single' 'multi' 'multi' max_files_w 300 200 700			True	True							
&fms_io_nml checksum_required False fileset_write 'single' 'multi' 'multi' 'single' 'single' 'multi' 'multi'<	do_a			False	True	True	True				
Fileset_write	&fms in nml		4				Falsa				
max_files_w 300 200 70	WIIII2_IU_IIIIIL			'cinala'	'multi'	'multi'		'cinala'	'cinale'	'multi'	'multi'
max_files_w 300 200 700 700 700 700			300					single	single	mutti	muttl
threading_read 'multi'											
threading_write 'single' 'multi' 'multi' 'multi' 'single' 'single' 'multi' 'multi' &fms_nml clock_grain 'COMPONENT' 'LOOP' 'LOOP' 'LOOP' 'LOOP' 'LOOP' 'COMPONENT' 'COMPONENT' <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>'multi'</td><td>'multi'</td><td>'multi'</td><td>'multi'</td></t<>								'multi'	'multi'	'multi'	'multi'
&fms_nml clock_grain (COMPONENT) 'LOOP' 'LOOP' 'LOOP' 'LOOP' 'LOOP' 'LOOP' 'LOOP' 'COMPONENT'											'multi'
Description Companies Co	&fms_nml		'COMPONENT'								COMPONENT
stack_size 0 0 &generic_tracer_nml do_generic_cfc False False False False do_generic_topaz True True False False False do_generic_tracer True True False False &ice_albedo_nml t_range 10.0 10.0 &ice_model_nml add_diurnal_sw False True alb_ice 0.65 0.615 0.68 0.68 alb_sno 0.85 0.825 0.85 0.85 0.85					115200	115200	115200				115200
do_generic_topaz do_generic_tracer True False False False False False False &ice_albedo_nml t_range Lice_model_nml 10.0 10.0 10.0 &ice_model_nml add_diurnal_sw alb_ice False 0.65 0.615 0.68 0.68 alb_sno 0.85 0.825 0.85 0.85 0.85	pr		0	0	False	False	False				
do_generic_topaz do_generic_tracer True False False False False False False &ice_albedo_nml t_range Lice_model_nml 10.0 10.0 10.0 &ice_model_nml add_diurnal_sw alb_ice False 0.65 0.615 0.68 0.68 alb_sno 0.85 0.825 0.85 0.85 0.85	&generic_tracer_nml		False								
&ice_albedo_nml t_range 10.0 10.0 &ice_model_nml add_diurnal_sw alb_ice False O.65 True O.615 0.68 0.68 0.68 alb_sno 0.85 0.825 0.85 0.85 0.85 0.85				True							
&ice_model_nml add_diurnal_sw alb_ice False 0.65 True 0.615 0.68 0.68 alb_sno 0.85 0.825 0.85 0.85 0.85					False	False	False				
alb_ice 0.65 0.615 0.68 0.68 0.68 alb_sno 0.85 0.825 0.85 0.85 0.85	&ice_albedo_nml										
alb_sno 0.85 0.825 0.85 0.85 0.85	&ice_model_nml										
channel_viscosity 500 000.0				0.825	0.85	0.85	0.85				
		channel_viscosity	500 000.0								

Group (continued) Variable	original/ GFDL ESM2M input- cut.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/ russ- accessom- mom4p1- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
cm2_bugs	False	False			•		прислип	прислик	трислик
do_icebergs h_lo_lim	True $1 imes 10^{-10}$	False $1 imes 10^{-10}$	False	False	False				
heat_rough_ice	1 × 10	0.0005	0.0005	0.0005	0.0005				
ice_bulk_salin	0.005	0.005	0.005	0.005	0.005				
io_layout layout	1, 2 15, 2		10, 12	64, 30 64, 30	8, 9 40, 45				
mom_rough_ice	13, 2		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				
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 really_debug		True False	True False	True False	True False				
reatty_debug sicn_shift		0.1	0.1	0.1	0.1				
speed_limit	0.5								
time_average_weight	False	0	0	٥	٥				
traj_sample_hrs use_operator_splitting	0	0 True	0 True	0 True	0 True				
use_roundoff_fix	True	nuc	nuc	nuc	nuc				
verbose	True	False	False	False	False				
werbose_hrs &mom_oasis3_interface_nml fields_in	120	2400	2400	2400	2400	'u_flux',	'u_flux',	'u_flux',	'u_flux',
						'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'tw_flux', 'runof', 'p', 'aice', 'wfimelt', 'wfiform'	'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux, 't_flux, 'lw_flux, 'runof', 'p', 'aice', 'wfimelt', 'wfiform'	'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux, 't_flux, 'lw_flux, 'runof', 'p', 'aice', 'wfimelt', 'wfiform'	'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'lw_flux', 'runof', 'p', 'aice', 'wfinett', 'wfiform'
fields_out						't_surf, 's_surf, 'u_surf, 'v_surf, 'dssldx', 'dssldy', 'frazil'	't_surf', 's_surf', 'u_surf', 'v_surf', 'dssldx', 'dssldy', 'frazil'	't_surf', 's_surf', 'u_surf', 'v_surf', 'dssldx', 'dssldy', 'frazil'	't_surf', 's_surf', 'u_surf', 'v_surf', 'dssldx', 'dssldy', 'frazil'
num_fields_in						15 7	15 7	15 7	15
num_fields_out send_after_ocean_update						True	True	True	7 True
send_before_ocean_update						False	False	False	False
&monin_obukhov_nml neutral rich_crit stable_option	10.0	True	True	True	True		True	True	True
zeta_trans	0.5								
&mpp_io_nml deflate_level					5		5	5	5
shuffle & ocean_adv_vel_diag_nml diag_step	1200	12	4320	4320	43200	120	4320	4320	576
large_cfl_value	10.0	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	100.0
<pre>&ocean_advection_velocity_nml max_advection_velocity</pre>	False 0.5	False 0.5	True 0.5	True 0.5	True 0.2	False 0.5	True 0.5	True 0.5	True 0.5
&ocean_albedo_nml	5	2	2	2	2		2	2	2
ocean_albedo_option &ocean_barotropic_nml barotropic_halo			10	10	10		10	10	10
barotropic_leap_froq		False	10	10	10	False	10	10	10
barotropic_pred_corr		True				True			
barotropic_time_stepping_a	True False		True False	True False	True False		True False	True False	True False
barotropic_time_stepping_b barotropic_time_stepping_mom4p0	raise	True	raise	raise	rdise	True	raise	raise	raise
barotropic_time_stepping_mom4p1		False				False			

Group (continued) Variable	original/ GFDL ESM2M input- cut.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/ russ- accessom- mom4p1- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
debug_this_module	False	False	False	False	False	False	False	False	False
diag_step do_bitwise_exact_sum	1200 True	12	4320	4320	43200	120	4320	4320	576
eta_max	8.0	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	0.2
pred_corr_gamma	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
smooth_eta_diag_laplacian smooth_eta_t_biharmonic	True True	True True	True True	True True	True False	True True	True False	True False	True False
smooth_eta_t_laplacian	False	False	False	False	True	False	True	True	True
smooth_pbot_t_biharmonic	True	True	True	True	False	True	False	False	False
smooth_pbot_t_laplacian	False	False	False	False	True	False	True	True	True
truncate_eta	False	False	False	False	False	False	False	False	False
use_legacy_barotropic_halos	0.01	0.01	False	False	False	0.01	False	False	False
vel_micom_bih vel_micom_lap	0.01 0.05	0.01 0.05	0.01 0.05	0.01 0.05	0.01 0.05	0.01 0.05	0.01 0.05	0.01 0.05	0.01 0.05
vel_micom_lap_diag	1.0	1.0	0.05	0.5	0.5	0.03	0.03	0.2	0.03
verbose_truncate	True	True	True	True	True	True	True	True	True
zero_tendency	False	False	False	False	False	False	False	False	False
&ocean_bbc_nml bmf_implicit	0.003	0.000	True	True	True	0.004	True	True	True
cdbot cdbot_hi	0.002	0.002	0.001 0.007	0.001 0.007	0.001 0.007	0.001	0.001 0.007	0.001 0.007	0.001 0.007
cdbot_law_of_wall			0.007	0.007	0.007	False	0.007	0.007	0.007
cdbot_roughness_length			False	False	False	1 4150	False	False	False
cdbot_roughness_uamp			True	True	True		True	True	True
uresidual	0.05	0.05	0.05	0.05	0.05		0.05	0.05	0.05
use_geothermal_heating	True	True	False	False	False	False	False	False	False
&ocean_bbc_ofam_nml read_tide_speed uresidual2_max						False 1.0			
&ocean_bih_friction_nml bih_friction scheme	'general'	'general'	'general'	'general'	'general'	'general'	'general'	'general'	'general'
&ocean_bih_tracer_nml tracer_mix_micom			True	True	True				
use_this_module	False	False	False	False	False	False	False	False	False
vel_micom			0.001	0.001	0.001				
&ocean_bihcst_friction_nml use_this module	False	False	False	False	False	False	False	False	False
&ocean_bihgen_friction_nml bottom_5point	True	True	False	False	False	True	True	False	False
eq_lat_micom eq_vel_micom_aniso	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	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	0.0
equatorial_zonal	False	False	False	False	False	False	False	False	False
k_smag_aniso	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
k_smag_iso	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
ncar_boundary_scaling ncar_boundary_scaling_read	True	True	True False	True True	True True	True	True True	True True	True True
ncar_rescale_power	2	2	2	2	2	2	2	2	2
ncar_vconst_4	$2 imes 10^{-8}$	$2 imes 10^{-8}$	$2 imes 10^{-8}$	2×10^{-8}	$2 imes 10^{-8}$	$2 imes 10^{-8}$	2×10^{-8}	$2 imes 10^{-8}$	$2 imes 10^{-8}$
ncar_vconst_5	5	5	5	5	5	5	5	5	5
use_this_module	True	True	True	True	True	True	True	True	True
vel_micom_aniso vel_micom_bottom	0.0 0.01	0.0 0.01	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.01	0.0 0.01	0.0 0.0	0.0 0.0
vel_micom_iso	0.01	0.01	0.0	0.0	0.0	0.01	0.01	0.0	0.0
visc_crit_scale	0.25	0.25	1.0	1.0	1.0	0.25	0.25	1.0	1.0
&ocean_convect_nml convect_full_scalar			True	True	True	False			
convect_full_vector			False	False	False	True	F .	F .	
use_this_module	False	False 0.5	False 0.5	False	False	False 0.5	False 0.5	False 0.5	False 0.5
&ocean_coriolis_nml acor use_this_module	0.5 True	0.5 True	0.5 True	0.5 True	0.5 True	0.5 True	0.5 True	0.5 True	0.5 True
&ocean_density_nml eos_linear	False	nue	False	False	False	iiue	False	False	False
eos_preteos10	True		True	True	True		True	True	True
layer_nk linear_eos	80	80 False	80	80	80	80 False	80	80	80
unear <u>e</u> os neutralrho_max	1030.0	1030.0	1038.0	1038.0	1038.0	1030.0	1030.0	1030.0	1030.0
neutralrho_min	1020.0	1020.0	1038.0	1038.0	1028.0	1030.0	1020.0	1020.0	1030.0
potrho_max	1038.0	1038.0	1038.0	1038.0	1038.0	1038.0	1038.0	1038.0	1038.0
potrho_min	1028.0	1028.0	1028.0	1028.0	1028.0	1028.0	1028.0	1028.0	1028.0
teos10_eos						False			
&ocean_domains_nml max_tracers &ocean_drifters_nml use_this_module	False	False				20	5	5	5
&ocean_form_drag_nml	False	False	False	False	False	0.6 False	False	False	False

Group (continued) Variable	original/ GFDL ESM2M input- cut.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/ russ- accessom- mom4p1- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
&ocean_frazil_nml debug_this_module	False	False	False	False	False		False	False	False
frazil_only_in_surface	True	True	True	True	True	False	False	False	False
freezing_temp_accurate freezing_temp_preteos10		False				True	True	True	True
freezing_temp_simple	True	True	True	True	True	False	False	False	False
use_this_module	True	True	True	True	True	True	True	True	True
&ocean_grids_nml debug_this_module	True	True	False	False	False	True	False	False	False
do_bitwise_exact_sum	True	Falsa				F-I			
read_rho0_profile &ocean_increment_eta_nml	False	False				False			
days_to_increment						O			
fraction_increment						1.0			
secs_to_increment	F-I	Falsa	F-I	F-1	Falas	3600	F-I	Falsa	Falsa
use_this_module &ocean_increment_tracer_nml	False	False	False	False	False	False	False	False	False
days_to_increment						U			
fraction_increment						1.0			
secs_to_increment	_	_	_	_	_	3600	_	_	
use_this_module	False	False	False	False	False	False	False	False	False
&ocean_increment_velocity_nml days_to_increment						0			
fraction_increment secs_to_increment						1.0 3600			
use_this_module	False	False	False	False	False	False	False	False	False
&ocean_lap_friction_nml lap_friction	'general'	'general'	'general'	'general'	'general'	'general'	'general'	'general'	'general'
scheme &ocean_lap_tracer_nml use_this	False	False	False	False	False	False	False	False	False
module &ocean_lapcst_friction_nml use_this	False	False	False	False	False	False	False	False	False
module &ocean_lapgen_friction_nml	True	True				True	True		
bottom_5point	0.0	0.0				0.0	2.0		
k_smag_aniso k_smag_iso	0.0 0.0	0.0 0.0	2.0	2.0	2.0	0.0 0.0	0.0 0.0		
ncar_only_equatorial	0.0	0.0	2.0	2.0	2.0	True	0.0		
restrict_polar_visc	True	True				True	True		
restrict_polar_visc_lat	60.0	60.0				60.0	60.0		
restrict_polar_visc_ratio use_this_module	0.35	0.35	Ealco	False	False	0.35 True	0.35	Ealco	False
vconst_1	True	True	False	raise	raise	8 000 000.0	True	False	raise
vconst_2						0.0			
vconst_3						0.8			
vconst_4						5×10^{-9}			
vconst_5 vconst_6						3 300 000 000.0			
vconst_7						100.0			
vel_micom_iso	0.1	0.1				0.1	0.1		
viscosity_ncar	False	False				False	False		
viscosity_ncar_2000						False			
viscosity_ncar_2007 viscosity_scale_by_rossby	True	True				True True	True		
viscosity_scale_by_rossby_power	4.0	4.0				4.0	4.0		
&ocean_mixdownslope_nml debug_this_module	False	False	False	False	False	False	False		
mixdownslope_mask_gfdl	True	True				False	False		
mixdownslope_npts	4	4				4	4		
read_mixdownslope_mask use_this_module	True True	True True	False	False	False	False True	False True	False	False
&ocean_model_nml baroclinic_split	1	1	raise 1	raise 1	raise	1	1	raise 1	raise 1
barotropic_split	80	80	80	80	60	80	80	80	80
cmip_units	False					True	True	True	True
debug	False	False	False	False	False	False	False	False	False
dt_ocean impose_init_from_restart	7200 True	7200 False	3600	1800	150	3600	3600	1200	150
inpose_init_non_restart io_layout	1, 4	า สเวต		64, 30	8,9		4, 3	6, 5	10, 15
layout	12, 8	6,4	10, 12	64, 30	40, 45	12, 10	16, 15	48, 40	80,75
surface_height_split	1	1	1	1	1	1	1	1	1
time_tendency vertical_coordinate	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'
&ocean_momentum_source_nml rayleigh_damp_exp_from_bottom	'zstar'	'zstar'	'zstar' False	'zstar' False	'zstar' False	'zstar'	'zstar' False	'zstar' False	'zstar' False
use_rayleigh_damp_table			True	True	True	True	True	True	True

module					put.nml	sis01v5KDS75 WOA13_in- put.nml	mom4p1- input.nml	jra55_ryf/ ocean/ input.nml	jra55_ryf/ ocean/ input.nml	jra55_ryf/ ocean/ input.nml
	debug_this	False	False	False	False	False	False	False	False	False
	use_nphysicsa	False	False	False	False	False	False	False	False	False
i i	use_nphysicsb	False	True	False	False	False	False	False	False	False
	use_nphysicsc	True	False	False	False	False	True	True	False	False
	_this_module	True	True	False	False	False	True	True	False	False
&ocean_nphysics_util_nml	. agm	800.0	0.008	100.0	100.0	100.0	600.0	600.0	100.0	100.0
	agm_closure	True	True	True	True	True	True	True	True	True
•	ure_baroclinic	True	True	True	True	True	True	True	True	True
	ure_buoy_freq	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004	0.004
agm_closure_ead	uy_ave_IIIIxeu ure_eady_cap	True True	True True				True True	True True		
agm_closure_eady.		True	True				True	True		
agm_closure_eady		True	True				True	True		
agm_closure_		0.0	0.0				0.0	0.0		
agm_closure_ede		False	False				False	False		
agm_closure	e_grid_scaling	True	True				True	True		
	losure_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	50 000.0
agm_closure_le		False	False	False	False	False	False	False	False	False
•	_length_fixed	False	False	False	False	False	False	False	False	False
agm_closure_l	length_rossby _lower_depth	False 2000.0	False 2000.0	False 2000.0	False 2000.0	False 2000.0	False 2000.0	False 2000.0	False 2000.0	False 2000.0
•	_closure_max	800.0	800.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0
	n_closure_min	100.0	100.0	100.0	100.0	100.0	50.0	50.0	100.0	100.0
	osure_scaling	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07	0.07
	_upper_depth	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
	damping_time	45.0	45.0				45.0	45.0		
agm_s	smooth_space	False	False				False	False		
agm.	_smooth_time	False	False				False	False		
	aredi	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0	600.0
	di_equal_agm	False	False	False	False	False	False	False	False	False
	odz_mom4p1 _smooth_horz	True False	True False	False False	False False	False False	True False	True False	False False	False False
	_smooth_vert	False	False	False	False	False	False	False	False	False
	_util_zero_init	True	True	ruisc	ruse	Tube	True	True	ratsc	ruisc
	y_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	100 000.0
	y_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	15 000.0
	smax	0.005	0.005	0.002	0.002	0.002				
	swidth	0.002	0.002	0.002	0.002	0.002				
trace	er_mix_micom	False	False	False	False	False	False	False	False	False
9 accon unbusiesa uml	vel_micom	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
&ocean_nphysicsa_nml debug_this_module		False	False							
	ear_gm_taper	True	True							
	_physics_limit	True	True							
	hysics_simple	False	False							
	ral_sine_taper sk_neutral_on	True True	True True							
	this_module	False	False	False	False	False	False	False	False	False
&ocean_nphysicsb_nml debug_this_module	_tm3_modute	False	False	Tuisc	ruse	ruisc	ruisc	ruse	ruisc	ruse
	layer_smooth	True	True							
	_physics_limit	True	True							
	urb_thick_min	50.0	50.0							
	b_thick_min_k e_this_module	5 False	5 True	False	False	False	False	False	False	False
&ocean_nphysicsc_nml bv_freq_smooth_vert	Lins_module	True	nue	raise	raise	raise	True	True	raise	raise
	bvp_bc_mode	2					2	2		
	/p_min_speed	0.1					0.1	0.1		
	bvp_speed	0.0					0.0	0.0		
	_this_module	False					False	False		
	_gm_skewsion	True					True	True		
	itral_diffusion	True					True	True		
	epsln_bv_freq	1×10^{-12}					1×10^{-12}	1×10^{-12}		
		True False					True False	True False		
gm_skewsic	WSION MODE						True			
gm_skewsic gm_ske	wsion_modes						IIII	ILITE		
gm_skewsic gm_ske neutra	l_eddy_depth	True						True True		
gm_skewsic gm_ske neutra neutral	l_eddy_depth _physics_limit	True True					True 2	True		
gm_skewsic gm_ske neutra neutral numt	l_eddy_depth	True					True			
gm_skewsic gm_ske neutra neutral numt	l_eddy_depth _physics_limit per_bc_modes	True True 2					True 2	True 2		

Group (continued) Variable	original/ GFDL ESM2M input- cut.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/ russ- accessom- mom4p1- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
tmask_neutral_on	True				p	True	True		
turb_blayer_min	50.0					50.0	50.0		
use_this_module	True	False	False	False	False	True	True	False	False
&ocean_operators_nml use_legacy_div_ud	True		False	False	False		False	False	False
&ocean_overexchange_nml debug this_module	False	False	False	False	False	False	False	False	False
overexch_check_extrema overexch_npts	False 4	False 4	4	4	4	False 4	4	4	4
overexch_weight_far	False	False	False	False	False	False	False	False	False
overflow_umax	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0	5.0
use_this_module	False	False	False	False	False	False	False	False	False
&ocean_overflow_nml debug_this_module	False	False	False	False	False	False			
use_this_module	False	False	False	False	False	False	False	False	False
&ocean_overflow_ofp_nml			False	False	False				
debug_this_module diaq_step			4320	4320	43200				
do_entrainment_para_ofp			False	False	False				
do_enass_ofp			True	True	True				
frac_exchange_src			1.0	1.0	1.0				
max_vol_trans_ofp			10 000 000.0	10 000 000.0	10 000 000.0				
use_this_module			False	False	False		False	False	False
&ocean_polar_filter_nml use_this module	False	False	False	False	False	False	False	False	False
&ocean_pressure_nml zero_pressure_force			False	False	False		False	False	False
&ocean_rivermix_nml calving_insertion_thickness	40.0	40.0							
debug_this_module	False	False	False	False	False	False	False	False	False
discharge_combine_runoff_calve	False	True							
do_bitwise_exact_sum river_diffuse_salt	True False	False	False	False	False	False	True	True	True
river_diffuse_temp	False	False	False	False	False	False	True	True	True
river_diffusion_thickness	0.0	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	0.0
river_insertion_thickness	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0	40.0
runoff_insertion_thickness	40.0	40.0	-	-	-	-	-	-	_
use_this_module	True	True	True 'false'	True 'false'	True 'false'	True	True	True	True
&ocean_riverspread_nml debug_this_module			.iaise	.iaise	.iaise				
use_this_module	False	False	True	True	True	True	False	False	False
&ocean_rough_nml rough_scheme	'beljaars'	'beljaars'	'beljaars'	'beljaars'	'beljaars'		'beljaars'	'beljaars'	'beljaars'
&ocean_sbc_nml avg_sfc_temp_salt_eta	True	True	True	True	True	True	True	True	True
avg_sfc_velocity	True	True	True	True	True	True	True	True	True
calvingspread	False	False	False	False	False		False	False	False
do_bitwise_exact_sum do_flux_correction	True		False False	False False	False False		False False	False False	False False
eta_restore_tscale	-10.0		ruisc	Tube	raise		ruisc	Tuisc	ruisc
ice_salt_concentration						0.005			
land_model_heat_fluxes	True	False	False	False	False		False	False	False
max_delta_salinity_restore			0.5	0.5	0.5	0.5	0.5	0.5	0.5
max_ice_thickness	8.0	8.0	1.0 Falso	1.0	1.0	8.0 Falso	0.0	0.0 Falso	0.0 Falso
read_restore_mask restore_mask_qfdl			False False	False False	False False	False False	False False	False False	False False
runoff_salinity			0.0	0.0	0.0	0.0	0.0	0.0	0.0
runoffspread	False	False	0.0	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	0.0
salt_restore_as_salt_flux			True	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	60.0
salt_restore_under_ice	0.0		True	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	-10.0
use_full_patm_for_sea_level	True	True	False	False	False		False	False	False
use_waterflux	True	True	True	True	True	True	True	True	True
use_waterflux_override_calving	False								
use_waterflux_override_evap	False								
use_waterflux_override_fprec waterflux_tavq	False False	False				False			
zero_heat_fluxes	Lqrzg	Larse	False	False	False	False	False	False	False
zero_net_pme_eta_restore	False		. 400	. 4.50	· ausc	. 4.50	. 4.50	. 4.50	. uisc

Group (continued) Variable	original/ GFDL ESM2M input- cut.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/ russ- accessom- mom4p1- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
zero_net_salt_correction			False	False	False		False	False	False
zero_net_salt_restore			True	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	True
zero_net_water_coupler zero_net_water_restore			True True	True True	True True	True True	True True	True True	True True
zero_net_water_restore zero_pme_fluxes			iiue	iiue	False	iiuc	iiuc	iiue	iiue
zero_river_fluxes					False				
zero_runoff_fluxes					True				
zero_surface_stress			False	False	False	False	False	False	False
<pre>cero_water_fluxes &ocean_sbc_ofam_nml</pre>			False	False	False	False False	False	False	False
restore_mask_ofam						False			
river_temp_ofam						False			
&ocean_shortwave_csiro_nml			True			True			
read_depth									
use_this_module	False	False	True	False	False	True	False	False	False
&ocean_shortwave_qfdl_nml debuq	False	False	7000 False	False	False	7000 False	False	False	False
this_module	rdise	raise	Lqrzg	raise	LGIZE	Ldl2G	FdlSC	raise	Larze
enforce_sw_frac	True	True	True	True	True	True	True	True	True
optics_manizza	True	True	True	True	True	True	True	True	True
optics_morel_antoine	False	False	False	False	False		False	False	False
override_f_vis	False	False		_	_		_	_	_
read_chl	False	False	False	True	True	False False	True	True	True
sw_pen_fixed_depths use_this_module	True	True	False	True	True	False	True	True	True
zmax_pen	200.0	200.0	300.0	300.0	300.0	200.0	300.0	300.0	300.0
&ocean_shortwave_jerlov_nml use this_module	False	False	False	False	False	False	False	False	False
&ocean_shortwave_nml use_shortwave_csiro	False	False	True	False	False	True	False	False	False
use_shortwave_gfdl	True	True	False	True	True	False	True	True	True
use_shortwave_jerlov	False	False	False	False	False	False	False	False	False
use_this_module &ocean_sigma_transport_nml	True False	True False	True False	True False	True False	True False	True	True	True
sigma_advection_on									
sigma_advection_sgs_only	False	False	False	False	False	False			
sigma_diffusion_on	True	True	True	True	True	True			
sigma_diffusivity_ratio	1×10^{-6}	1×10^{-6}	1×10^{-6}	1×10^{-6}	1×10^{-6}	1×10^{-6}			
sigma_just_in_bottom_cell sigma_umax	True 0.01	True 0.01	True 0.01	True 0.01	True 0.01	True 0.01			
smooth_sigma_thickness	True	True	True	True	True	True			
smooth_sigma_velocity	True	True	True	True	True	True			
smooth_velmicom	0.2	0.2	0.2	0.2	0.2	0.2			
thickness_sigma_layer	100.0	100.0	100.0	100.0	100.0	100.0			
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	True	False	False	False	True	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'
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
days						0 3600	1460 3600	31 1200	30 600
dt_cpld hours						0	0	0	0
minutes						0	0	0	0
months						12	0	0	0
seconds						0	0	0	0
years		F .			-		0	0	0
&ocean_sponges_eta_nml use_this module	False	False	False	False	False	False	False	False	False
&ocean_sponges_tracer_nml damp_coeff_3d	False	False	False	False	False	False			
use_this_module	False	False	False	False	False	False	False	False	False
&ocean_sponges_velocity_nml use	False	False	False	False	False	False	False	False	False
this_module									
&ocean_submesoscale_nml coefficient_ce			0.05	0.05	0.05		0.05	0.05	0.05
debug_this_module	False	False	False	False	False	False	False	False	False
front_length_const	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0
front_length_deform_radius	True	True	True	True	True	True	True	True	True

Group (continued) Variable	original/ GFDL ESM2M input- cut.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/ russ- accessom- mom4p1- input.nml	new/ control/ 1deg jra55_ryf/ ocean/	new/ control/ 025deg jra55_ryf/ ocean/	new/ control/ 01deg jra55_ryf/ ocean/
limit_psi	True	True	True	True	put.nml True	True	input.nml True	input.nml True	input.nml True
limit_psi_velocity_scale	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
min_kblt	4	4	4	4	4	4	4	4	4
smooth_advect_transport			True	True	True		True	True	True
smooth_advect_transport_num	False	False	4 False	4 Falsa	4 Falsa	False	4 False	4 False	4
smooth_hblt smooth_psi	False	False	False True	False True	False True	False	False True	False True	False True
smooth_psi_num			3	3	3		3	3	3
submeso_advect_flux			False	False	False		False	False	False
submeso_advect_limit			True	True	True		True	True	True
submeso_advect_upwind			True	True	True		True	True	True
submeso_advect_zero_bdy submeso_diffusion			True False	True False	True False		True False	True False	True 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_limit_flux	True	True				True			
submeso_skew_flux	_	_	True	True	True	_	True	True	True
use_hblt_equal_mld use_psi_legacy	True True	True	True	True False	True False	True	True False	True	True False
use_psi_tegacy use_this_module	True	True	False True	True	True	True	True	False True	True
&ocean_tempsalt_nml	False	False	False	False	False	nuc	False	False	False
debug_this_module									
pottemp_2nd_iteration	True	True	True	True	True	True	True	True	True
pottemp_equal_contemp	550	550	True	True	True	55.0	True	True	True
s_max s_max_limit	55.0 42.0	55.0 42.0	70.0 42.0	70.0 42.0	70.0 42.0	55.0 42.0	70.0 42.0	70.0 42.0	70.0 42.0
s_min	-1.0	-1.0	0.0	0.0	0.0	-1.0	0.0	0.0	0.0
s_min_limit	5.0	5.0	2.0	2.0	2.0	0.0	2.0	2.0	2.0
t_max	55.0	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	32.0
t_min	-5.0	-5.0	-20.0	-20.0	-20.0	-5.0	-20.0	-20.0	-20.0
t_min_limit	-1.9	-1.9	-5.0	-5.0	-5.0	-2.0	-5.0	-5.0	-5.0
temperature_variable teos10	'potential temp'	'potential temp'	'potential temp'	'potential temp'	'potential temp'	'conservative temp' False	'potential temp'	'potential temp'	'potential temp'
&ocean_thickness_nml debug_this module	False	False	False	False	False	False	False	False	False
debug_this_module_detail	False	False	False	False	False	False	False	False	False
initialize_zero_eta	False	False				False			
read_rescale_rho0_mask	True	True	Ealso	Ealco	Ealco	False	Ealco	Ealco	Ealco
rescale_mass_to_get_ht_mod rescale_rho0_basin_label	7.0	7.0	False	False	False	7.0	False	False	False
rescale_rho0_mask_qfdl	True	True				False			
rescale_rho0_value	0.75	0.75				0.75			
thickness_dzt_min	2.0	2.0	2.0	2.0	2.0	1.0			
thickness_dzt_min_init	2.0	2.0	10.0	10.0	10.0	2.0			
thickness_method &ocean_time_filter_nml use_this_module	'energetic' False	'energetic' False	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'
&ocean_topog_nml min_thickness	5.0	5.0				25.0			
&ocean_tracer_advect_nml advect_sweby_all	False	False	False	False	False	True			
compute_gyre_overturn_diagnose						True			= :
debug_this_module do_fast_compute	False	False	False	False	False	False True	False	False	False
limit_with_upwind	False	False							
read_basin_mask			False	False	False	True	False	False	False
&ocean_tracer_diag_nml diag_step	1200 Falso	12 False	48 Falso	48 Falso	43200 Falso	120 Falso	4320 Falso	4320 Falso	576
do_bitwise_exact_sum smooth_mld	False True	False True	False	False	False	False	False	False	False
tracer_conserve_days	100.0	100.0	30.0	30.0	30.0	1.0	30.0	30.0	30.0
&ocean_tracer_nml age_tracer_max_init	$1 \times 10^{+40}$	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
debug_this_module	False	False	False	False	False	False	False	False	False
frazil_heating_after_vphysics	True	True	True	True	True	True	True	True	True
frazil_heating_before_vphysics	False	False	False	False	False	False	False	False	False
interpolate_tdiag_to_pbott	False								
<mark>interpolate_tprog_to_pbott</mark> limit_age_tracer	False True	True	True	True	True	True	True	True	True
remap_depth_to_s_init	False	False	False	False	False	False	False	False	False
tmask_limit_ts_same	True	True	rauc	iaisc	i disc	i alsc	ו ענגנ	i alsc	i alse
unask_mme is septic					Truc		True	T	Truo
use_tempsalt_check_range					True		iiue	True	True
	False False	False False	False False	False False	False False	False False	False False	False	False False

Group (continued) Variable	original/ GFDL ESM2M input- cut.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/ russ- accessom- mom4p1- input.nml	new/ control/ 1deg jra55_ryf/ ocean/	new/ control/ 025deg jra55_ryf/ ocean/	new/ control/ 01deg jra55_ryf/ ocean/
&ocean_velocity_diag_nml debug_this	False	False	False	False	put.nml False	False	input.nml False	input.nml False	input.nml False
module	4200	42	4720	4720	47200	420	4720	4720	F7.
diag_step energy_diag_step	1200 1200	12 12	4320 4320	4320 4320	43200 43200	120 120	4320 4320	4320 4320	576 5760
large_cfl_value	10.0	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	100.0
&ocean_velocity_nml adams bashforth_third	True	True	True	True	True	True	True	True	True
max_cgint truncate_velocity	False	False	1.5 False	1.5 False	1.0 False	1.0 False	1.0 False	1.0 False	1.0 False
truncate_velocity_value	2.0	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	True
zero_tendency	False	False	False	False	False	False	False	False	False
zero_tendency_explicit_a zero_tendency_explicit_b			False False	False False	False False		False False	False False	False False
zero_tendency_implicit			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_nml use_this_module	False	False							
&ocean_vert_kpp_mom4p1_nml diff_cbt_iw	0.0		0.0	0.0	0.0		0.0	0.0	0.0
double_diffusion	True		True	True	True		True	True	True
kbl_standard_method ricr	0.3		0.3	0.3	False 0.3		False 0.3	False 0.3	False 0.3
smooth_blmc	True		True	True	False		False	False	False
smooth_ri_kmax_eq_kmu	nuc		nuc	iiuc	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
wsfc_combine_runoff_calve &ocean_vert_kpp_nml diff_cbt_iw	False	0.0				0.0			
diff_con_limit		0.0				0.0			
double_diffusion		True				True			
kbl_standard_method		0.7				True			
ricr smooth_blmc		0.3 True				0.3 True			
use_this_module		True				True			
visc_cbu_iw		0.0				0.0			
visc_con_limit	0.475	0.475				0.1			
&ocean_vert_mix_nml afkph_00 afkph_90	0.675 0.725	0.675 0.725				0.65 0.75			
aidif	1.0	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	False
bryan_lewis_lat_depend	True	True	False	False	False	True	False	False	False
bryan_lewis_lat_transition dfkph_00	35.0 1.15	35.0 1.15				35.0 1.15			
dfkph_90	1.15	1.15				0.95			
hwf_diffusivity			False	False	False		False	False	False
hwf_min_diffusivity			2×10^{-6}	2×10^{-6}	2×10^{-6}		2×10^{-6}	2×10^{-6}	2×10^{-6}
hwf_n0_2omega linear_taper_diff_cbt_table	False	False	20.0	20.0	20.0	False	20.0	20.0	20.0
quebec_2009_10_bug	False	i alst							
sfkph_00	4.5×10^{-5}	4.5×10^{-5}				4.5×10^{-5}			
sfkph_90	4.5×10^{-5}	4.5×10^{-5}	F 1	F .		4.5×10^{-5}	F .	F .	
use_diff_cbt_table vert_diff_back_via_max	False True	False True	False True	False True	False True	False True	False True	False True	False True
vert_uiiback_via_niax vert_mix_scheme	'kpp	'kpp'	'kpp	'kpp	'kpp	'kpp'	'kpp	'kpp	'kpp
	mom4p1'		mom4p1'	mom4p1'	mom4p1'		mom4p1'	mom4p1'	mom4p1'
zfkph_00	250 000 000.0	250 000 000.0				250 000.0			
&ocean_vert_tidal_nml	250 000 000.0	250 000 000.0	0.0	0.0	0.0	$\frac{250000.0}{5\times10^{-6}}$	0.0	0.0	0.0
background_diffusivity background_viscosity	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
decay_scale	300.0	300.0	500.0	500.0	500.0	300.0	500.0	500.0	500.0
drag_dissipation_use_cdbot			True	True	True		True	True	True
drhodz_min	1×10^{-12}	1×10^{-12}	1×10^{-10}	1×10^{-10}	1×10^{-10}	1×10^{-12}	1×10^{-10}	1×10^{-10}	1×10^{-10}
fixed_wave_dissipation	False	False	False	False	False	False	False	False	False
max_drag_diffusivity max_wave_diffusivity	0.01	0.01	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	True
read_roughness	True	True	True	True	True	True	True	True	True
read_tide_speed	True	True	True	True	True	True	True	True	True
read_wave_dissipation	False	False	False	False	False	False	False	False	False

Group (continued)	Variable	original/ GFDL ESM2M input- cut.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/ russ- accessom- mom4p1- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
readi	ng_roughness_amp	True	True	True	True	True	True	True	True	True
reading	_roughness_length	False	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	12 000.0
	shelf_depth_cutoff	160.0	160.0	-1000.0	-1000.0	-1000.0	160.0	-1000.0	-1000.0	-1000.0
tide_spe	eed_data_on_t_grid	True	True	True	True	True	True	True	True	True
us	se_drag_dissipation	True	True	True	True	True	True	True	True	True
u	se_legacy_methods	True		False	False	False		False	False	False
	use_this_module	True	True	True	True	True	True	True	True	True
us	e_wave_dissipation	True	True	True	True	True	True	True	True	True
	e_energy_flux_max	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
&ocean_xlandinsert_ use_this_module	nml	True	True	False	False	False	False	False	False	False
	verbose_init	True	True				True			
&ocean_xlandmix_nr	ml use_this_module	True	True	False	False	False	False	False	False	False
	verbose_init	True	True				True			
	xlandmix_kmt	True	True				True			
&redseafix_nml	redsea_gulfbay_sfix			True						
&sat_vapor_pres_nm construct_table_wrt_		True	True							
construct_tab	ole_wrt_lig_and_ice	True	True							
sh	now_all_bad_values					True				
&surface_flux_nml	ncar_ocean_flux			True	True	True				
	old_dtaudv	False								
	raoult_sat_vap			True	True	True				
&topography_nml	topog_file	'INPUT/	'INPUT/							
		navy_topog-	navy_topog-							
		ra-	ra-							
		phy.data.nc'	phy.data.nc'							
&xgrid_nml	do_alltoall			True	True	True				True
	do_alltoallv			True	True	True				True
	interp_method	'second order'	'second order'	'second order'	'second order'	'second order'		'second order'	'second order'	'second order'
make_ex	xchange_reproduce	True	True	False	False	False		False	False	False
	nsubset			16	16	16		16	16	16
	xgrid_log			False	False	False				

1.5 All variables in GFDL & ACCESS configs (differences highlighted)

Group	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.o1	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
&auscom_ice_nml	aice_cutoff			0.15	0.15	0.15	0.15	0.15	0.15	0.15
	chk_fields_period						1			
chk	_fields_start_time						0			
	chk_i2o_fields chk_o2i_fields			False	False	False	False	False	False	False
	do_ice_once			False False	False False	False False	False False	False False	False False	False False
	dt_cpl			3600	3600	3600	1800	1800	150	600
	fixmeltt			False	False	False	False	False	False	False
	frazil_factor			1.0	1.0	1.0	1.0	1.0	1.0	1.0
	iceform_adj_salt			False	False	False	False	False	False	False
	icemlt_factor			1.0	1.0	1.0	1.0 345	1.0	1.0	1.0
	ige igs						328			
	ire1						324			
	ire2						331			
	irs1						314			
	irs2						325			
	jge jgs						198 189			
	jre1						196			
	jre2						180			
	jrs1						169			
	jrs2						169			
	kmxice			5	5	5	5	5	5	5
	ksmax limit_srfstress						5 False			
	mstress						2.0			
	pop_icediaq			True	True	True	True	True	True	True
re	edsea_gulfbay_sfix				True	True	False			
	sfix_hours						12			
	sign_stflx			1.0	1.0	1.0	1.0	1.0	1.0	1.0
	tlthk0 tmelt			-0.216	-0.216	-0.216	10.0 0.216	-0.216	-0.216	-0.216
	use_ioaice			-0.216 True	True	True	-0.216 True	-0.210 True	-0.210 True	-0.210 True
&bg_diff_lat_depender				1×10^{-6}	1×10^{-6}					
	lat_low_bgdiff			20.0	20.0					
&coupler_nml	atmos_npes	0	0							
	atmos_nthreads	4 'NOLEAD'	'NOLEAD'							
	calendar check_stocks	'NOLEAP' 0	'NOLEAP' 0							
	concurrent	True	False							
	current_date	1, 1, 1, 0, 0, 0	1, 1, 1, 0, 0, 0							
	days	0	2							
	do_atmos	True	False							
	do_flux	True	T							
	do_ice do_land	True True	True False							
	do_ocean	True	True							
	dt_atmos	1800	7200							
	dt_cpld	7200	7200							
	months	12	0							
	ocean_npes use_lag_fluxes	96 True	0 True							
&data_override_nml	use_lag_ituxes	iiue	nue				False			
debug_data_override	grid_center_bug						False			
&diag_integral_nml	file_name	'diag	'diag							
		integral.out'	integral.out'							
	output_interval	1.0	1.0							
9 diag server	time_units	'days'	'days'				F-1			
&diag_manager_nml append_pelist_name							False			
dah	conserve_water ug_diag_manager					True	True True	True		True
deb	do_diag_field_log					irue	False	irue		irue
						Terra	True	True	False	True
	sue_oor_warnings	False	False	False	False	True	iiue	iiue	raise	iiue
	sue_oor_warnings max_axes	False 200	False 100	False	False	irue	60	iiue	300	iiue

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.ou	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	max_file_attributes						2			
	max_files	50	(00				31		1000	
	max_input_fields max_num_axis_sets	800 200	699 100				300 25		700 40	
ľ	max_out_per_in_field	200	100				150		10	
	max_output_fields	1300	699				300		700	
mix_sna	pshot_average_fields	False	False				False			
	oor_warnings_fatal prepend_date						False True			
regio	n_out_use_alt_value						True			
	use_cmor						False			
	write_bytes_in_file						False			
&flux_exchange_nn	nl debug_stocks divert_stocks_report	False True	False True							
	_area_weighted_flux	False	False							
40	nblocks	4	ratio							
&fms_io_nml	checksum_required						True		False	
	debug_mask_list						False			
	dr_set_size fileset_write		'single'	'single'	'single'	'single'	10 'single'	'multi'	'multi'	'multi'
	fms_netcdf_override		Jingic	Jillytt	Single	Jillyte	True	matti	mutti	mutu
	fms_netcdf_restart						True			
	format						'netcdf'			
	iospec_ieee32 max_files_r	300	200				'-N', 'ieee_32' 40		700	
	max_files_w	300	200				40		700	
	print_chksum						False			
	read_all_pe						True			
show onen n	read_data_bug amelist_file_warning						False False			
snow_open_n	threading_read	'multi'	'multi'	'multi'	'multi'	'multi'	'multi'	'multi'	'multi'	'multi'
	threading_write		'single'	'single'	'single'	'single'	'single'	'multi'	'multi'	'multi'
	time_stamp_restart		_	-		_	True			
&fms_nml	clock_flags	'COMPONENT'	'LOOP'	'LOOP'	'LOOP'	'COMPONENT'	'NONE' 'LOOP'	'COMPONENT'	'LOOP'	'COMPONENT'
	clock_grain domains_stack_size	5000000	8000000	LOUP	LOOP	115200	0	115200	115200	115200
	iospec_ieee32	300000				113200	'-N', 'ieee_32'	113200	113200	113200
	print_memory_usage						False		False	
	read_all_pe stack_size	0	0				True 0			
	warning_level	U	U				'warning'			
&generic_tracer_nn		False	False						False	
•	do_generic_topaz	True	True						False	
Post sal time am	do_generic_tracer	True	True				Terra		False	
&get_cal_time_nml allow_calendar_con							True			
&horiz_interp_nml	reproduce_siena						False			
&ice_albedo_nml	t_range	10.0	10.0							
&ice_model_nml	add_diurnal_sw	False	True							
	alb_ice alb_sno	0.65 0.85	0.615 0.825							
	channel_viscosity	500 000.0	0.023							
	cm2_bugs	False	False							
	do_icebergs	True	False							
	h_lo_lim heat_rough_ice	1×10^{-10}	1×10^{-10} 0.0005							
	ice_bulk_salin	0.005	0.0005							
	io_layout	1, 2								
	layout	15, 2								
	nsteps_adv nsteps_dyn	1 72	1 108							
	num_part	6	6							
	spec_ice	False	False							
	t_range_melt	1.0	10.0							
&icebergs_nml	wd_turn	0.0	0.0							
bergy_bit_erosion_f	raction		0.0							
	debug		False							
mak	e_calving_reproduce	True	_							
	parallel_reprod really_debug		True							
	really_debug sicn_shift		False 0.1							
	JidlaJiiil		0.1							

Group (continued) Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.ou	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
speed_limit	0.5								
time_average_weight	False								
traj_sample_hrs	0	0							
use_operator_splitting use_roundoff_fix	True	True							
verbose	True	False							
verbose_hrs	120	2400							
&mom_oasis3_interface_nml fields_in			'u_flux', 'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'lw_flux', 'runof', 'p',	'u_flux', 'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'tw_flux', 'runof', 'p',	'u_flux', 'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'tw_flux', 'runof', 'p',	'u_flux', 'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'tw_flux', 'runof', 'p',	'u_flux', 'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'tw_flux', 'runof', 'p',	'u_flux', 'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'tw_flux', 'runof', p',	'u_flux', 'v_flux', 'lprec', 'fprec', 'salt_flx', 'mh_flux', 'sw_flux', 'q_flux', 't_flux', 'lw_flux', 'runof', 'p',
			'aice', 'wfimelt',	'aice', 'wfimelt',	'aice', 'wfimelt',	'aice', 'wfimelt',	'aice', 'wfimelt',	'aice', 'wfimelt',	'aice', 'wfimelt',
			williett,	williett,	williett,	'wfiform'	williett,	williett,	williett,
fields_out			't_surf',	't_surf',	't_surf',	't_surf',	't_surf',	't_surf',	't_surf',
			's_surf',	's_surf',	's_surf',	's_surf',	's_surf',	's_surf',	's_surf',
			'u_surf', 'v_surf',	'u_surf', 'v_surf',	'u_surf', 'v_surf',	'u_surf', 'v_surf',	'u_surf', 'v_surf',	'u_surf', 'v_surf',	'u_surf', 'v_surf',
			'dssldx',	'dssldx',	'dssldx',	'dssldx',	'dssldx',	'dssldx',	'dssldx',
			'dssldy',	'dssldy',	'dssldy',	'dssldy',	'dssldy',	'dssldy',	'dssldy',
			'frazil'	'frazil'	'frazil'	'frazil'	'frazil'	'frazil'	'frazil'
num_fields_in num_fields_out			15 7	15 7	15 7	15 7	15 7	15 7	15 7
send_after_ocean_update			True	True	True	True	True	True	True
send_before_ocean_update			False	False	False	False	False	False	False
&monin_obukhov_nml neutral rich_crit	10.0	True			True		True	True	True
stable_option	10.0								
zeta_trans	0.5								
&mpp_io_nml deflate_level					5	-1	5	5	5
global_field_on_root_pe header_buffer_val						True 16384			
io_clocks_on						False			
shuffle					1	0	1	1	1
&ocean_adv_vel_diag_nml diag_step	1200	12	120	4320	4320	4320	4320	576	576
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	10.0 100.0
verbose_cfl	False	False	False	True	True	True	True	True	True
&ocean_advection_velocity_nml						False			
constant_advection_velocity									
debug_this_module inflow_nboundary						False False			
max_advection_velocity	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.2	0.5
read_advection_transport						False			
read_advection_velocity &ocean_albedo_nml	5	2			2	False	2	2	2
ocean_albedo_option	3	2			2		2	2	7
&ocean_barotropic_nml alphat						0.948			
barotropic_halo		F :	F :	10	10	10	10	10	10
barotropic_leap_frog barotropic_pred_corr		False True	False True						
barotropic_time_stepping_a	True	iiue	iiue	True	True	True	True	True	True
barotropic_time_stepping_b	False			False	False	False	False	False	False
barotropic_time_stepping_mom4p0		True	True						
<pre>barotropic_time_stepping_mom4p1</pre>	False	False False	False False	False	False	False	False	False	False
debug_tills_modute diag_step	1200	12	120	4320	4320	4320	4320	576	576
do_bitwise_exact_sum	True					False			
eta_max	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0	8.0
<mark>eta_offset</mark> frac_crit_cell_height	0.2	0.2	0.2	0.2	0.2	1×10^{-12} 0.2	0.2	0.2	0.2
rrac_crit_ceit_neight geoid_forcing	0.2	0.2	0.2	0.2	0.2	0.2 False	U.Z	0.2	0.2
ideal_initial_eta						False			
ideal_initial_eta_amplitude						5.0			
ideal_initial_eta_xwidth						100 000.0			
ideal_initial_eta_ywidth						100 000.0			

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.o1	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
initsum_with_	_bar_mom4p0						False			
initsum_with_							True			
	$pbot_offset$						$1 imes 10^{-12}$			
	l_corr_gamma	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2	0.2
smooth_anompb_b smooth_anompb							False False			
smooth_eta_dia							False			
smooth_eta_c		True	True	True	True	True	True	True	True	True
	_t_biharmonic	True	True	True	False	False	False	False	False	False
smooth_eta_t_b							False			
	t_bt_laplacian	F-I	F-I	F-I	Т	Т	False	T	Т	T
	ta_t_laplacian _t_biharmonic	False True	False True	False True	True False	True False	True False	True False	True False	True False
smooth_pbot_t_bihar		iiue	iiue	iiue	raise	raise	False	raise	raise	raise
	ot_t_laplacian	False	False	False	True	True	True	True	True	True
	dal_forcing_8						False			
tidal	_forcing_ideal						False			
tida	al_forcing_m2						False			
	truncate_eta	False	False	False	False	False	False	False	False	False
i dela h	udrho_bih ih_vel_micom						False			
uarno_b	udrho_bt_bih						0.01 False			
	udrho_bt_lap						False			
	udrho_lap						False			
udrho_la	ap_vel_micom						0.05			
use_legacy_bar					False	False	False	False	False	False
	el_micom_bih	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
	com_bih_diag						0.1			
	el_micom_lap	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05	0.05
vel_mi	com_lap_diag verbose_init	1.0	1.0	0.2	0.2	0.2	0.2 True	0.2	0.5	0.2
ver	bose_truncate	True	True	True	True	True	True	True	True	True
	rite_a_restart	iide	nuc	nuc	iiuc	nuc	True	nuc	nuc	nuc
	ro_coriolis_bt						False			
	zero_eta_ic						False			
	zero_eta_t						False			
zero.	_eta_tendency						False			
	zero_eta_u						False False			
	ero_forcing_bt ear_forcing_bt						False			
	ero_tendency	False	False	False		False	False	False	False	False
&ocean_bbc_nml	bmf_implicit					True	True	True	True	True
	bmf_max						1.0			
	cdbot	0.002	0.002	0.001	0.001	0.001	0.001	0.001	0.001	0.001
(cdbot_gamma						40.0			
	cdbot_hh cdbot_hi					0.007	1100.0 0.007	0.007	0.007	0.007
cdho	t_law_of_wall			False	False	0.007	False	0.007	0.007	0.007
Cubo	cdbot_lo			ruisc	rusc		0.001			
cdbot_roug	hness_length					False	False	False	False	False
	ghness_uamp					True	True	True	True	True
	cdbot_uu						1.0			
	cdbot_wave						False			
	t_geothermal						0.001			
	_this_module .rough_length						False 0.01			
taw_or_watt_	uresidual	0.05	0.05			0.05	0.05	0.05	0.05	0.05
use_geothe	ermal_heating	True	True	False	False	False	False	False	False	False
	uvmag_max						10.0			
&ocean_bbc_ofam_nml				False	False		False			
	esidual2_max			1.0	1.0		0.05			
&ocean_bih_friction_nml	bih_friction	'general'	'general'	'general'	'general'	'general'	'general'	'general'	'general'	'general'
scheme	_this_module						False			
dobug	rite_a_restart						True			
							0.0			
W	abih									
&ocean_bih_tracer_nml							True			
&ocean_bih_tracer_nml h	abih norz_s_diffuse norz_z_diffuse						False			
&ocean_bih_tracer_nml 	abih norz_s_diffuse norz_z_diffuse ffusivity_mask						False False			
&ocean_bih_tracer_nml 	abih norz_s_diffuse norz_z_diffuse	False	False	False	False	False	False	False	True False	False

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.oi	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
&ocean_bihcst_friction_nmuse_this_module	l	False	False	False	False	False	me.00000.0t	False	False	False
&ocean_bihgen_friction_nn	nl	True	True	True	True	True	False	False	False	False
debug.	_this_module						False			
	eq_lat_micom	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
· · · · · · · · · · · · · · · · · · ·	micom_aniso	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
•	el_micom_iso atorial_zonal	0.0 False	0.0 False	0.0 False	0.0 False	0.0 False	0.0 False	0.0 False	0.0 False	0.0 False
	rial_zonal_lat	raise	raise	raise	raise	False	0.0	raise	raise	raise
	_smaq_aniso	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	k_smag_iso	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
	ndary_scaling	True	True	True	True	True	True	True	True	True
ncar_boundary.			_		_	True	True	True	True	True
	escale_power	2 40-8	2×10^{-8}	2×10^{-8}	2 40-8	2	2	2	2×10^{-8}	2 40-8
	car_vconst_4 car_vconst_5	2×10^{-8}	2 × 10 ⁻⁶	2 × 10 ⁻⁶	2×10^{-8} 5	2×10^{-8} 5	2×10^{-8} 5	2×10^{-8}	2 × 10 ⁻³	2×10^{-8} 5
	neptune e_depth_min)	J	3	,	J	False 100.0	,	J	,
neptur	ne_length_eq						4200.0			
neptune	_length_pole						17 000.0			
	tune_scaling						_1.0			
	tune_smooth						True			
	smooth_num iiso_bih_back						1 False			
	_friction_max						1.0			
side_drag_fri							1.0			
side_drag_friction							10.0			
	.drag_friction						False			
	_this_module	True	True	True	True	True	True	True	True	True
	micom_aniso	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
	icom_bottom el_micom_iso	0.01 0.04	0.01 0.04	0.01 0.04	0.01 0.04	0.01 0.04	0.0 0.0	0.0 0.0	0.0 0.0	0.0
	isc_crit_scale	0.04	0.04	0.04	0.04	0.04	1.0	1.0	1.0	1.0
	erge_scaling	0.23	0.23	0.23	0.23	0.23	0.0	1.0	1.0	1.0
&ocean_blob_nml bitwise_							False			
blob	_small_mass						1000.0			
	_this_module						False			
	e_exact_sum						False			
	really_debug						0./ False			
&ocean_convect_nml	reatty_ucbug			False	False		True		True	
convect_full_scalar				1 0100						
convec	ct_full_vector			True	True		False		False	
(convect_ncon						False			
	ncon	F .	F.,	F 1	F .	F 1	7	F 1	F.,	
&ocean_coriolis_nml	_this_module acor	False 0.5	False 0.5	False 0.5	False 0.5	False 0.5	False 0.5	False 0.5	False 0.5	False 0.5
	_this_module	0.5	0.5	0.5	0.5	0.5	False	0.5	0.5	0.5
	_this_module	True	True	True	True	True	True	True	True	True
&ocean_density_nml alph	na_linear_eos						0.255			
	ta_linear_eos						0.0			
	_smooth_vert						True			
	_this_module						False			
•	equal_potrho e_exact_sum						False False			
	z_diaq_stable						True			
anno di	eos_linear	False			False	False	False	False	False	False
ec	os_preteos10	True			True	True	True	True	True	True
	eos_teos10						False			
	epsln_drhodz						1×10^{-10}			
	_drhodz_diag						1×10^{-10}			
grad_nrho_lrpot	rho_compute lrpotrho_max						False 10.0			
	lrpotrno_max lrpotrho_min						10.0			
grau_milu_	layer_nk	80	80	80	80	80	80	80	80	80
	linear_eos		False	False						
mask_do	main_restart						False			
	ensity_omega						False			
	ensity_potrho	40700	40700	40700	40700	40700	True	40700	40700	40700
	utralrho_max	1030.0	1030.0	1030.0	1030.0	1030.0	1038.0	1030.0	1038.0	1030.0
ne	utralrho_min	1020.0	1020.0	1020.0	1020.0	1020.0	1028.0	1020.0	1028.0	1020.0

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.oi	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
nı	ım_121_passes						1			
	p_test	10700	10700	10700	10700	10700	1000.0 1038.0	10700	10700	1038.0
	potrho_max potrho_min	1038.0 1028.0	1038.0 1028.0	1038.0 1028.0	1038.0 1028.0	1038.0 1028.0	1038.0	1038.0 1028.0	1038.0 1028.0	1038.0
	potrho_press	1020.0	1020.0	1020.0	1020.0	1020.0	2000.0	1020.0	1020.0	1020.0
	press_standard						0.0			
	rho0_density						False			
	s_test						20.0 —1.0			
smax	smax_diag min_in_column						— 1.0 False			
	ification_factor						False			
	sn_test						35.0			
	t_test						20.0			
	teos10_eos theta_max			False			30.0			
	theta_min						-2.0			
	tn_test						20.0			
update_dia	gnostic_factors						False			
	write_a_restart						True			
&ocean_domains_nml	halo			20	10	-	1	_	r	,
	max_tracers x_cyclic_offset			20	10	5	5 0	5	5	5
	y_cyclic_offset						0			
&ocean_drifters_nml	output_interval						1			
u	se_this_module	False	False				False			
&ocean_form_drag_nml							600.0			
Hab.	cprime_aiki			0.6	0.6		0.3 False			
form_drag_aiki_	ig_this_module						3			
	i_bottom_layer						False			
	iki_gradh_max						0.05			
	i_gradh_power						1.0			
	ki_scale_by_gm						False			
form_drag_aiki_	scale_by_gradn j_gbatch_alpha						False 300 000 000.0			
	batch_alpha_f2						False			
	oatch_f2overn2						False			
	atch_f2overnb2						False			
form_drag_gba	ntch_f2overno2						False			
form_c form_drag_gba	lrag_gbatch_no						0.005 False			
	atch_surf_layer						False			
	urf_blayer_min						3			
	n_squared_min						1×10^{-10}			
	ım_121_passes						1			
	form_drag_aiki						False			
	m_drag_gbatch se_this_module	False	False	False	False	False	False False	False	False	Fals
	orm_drag_max	Talse	Talse	1 0130	raise	1 0130	1.0	i alse	i alse	1 013
	verbose_init						True			
	form_drag_max						1.0			
&ocean_frazil_nml							True			
debu	ig_this_module	False	False			False	False	False	False	Fals
frazil	frazil_factor only_in_surface	True	True	False		False	1.0 False	False	False	Fals
	temp_accurate	nuc	False	True		ruisc	ruise	raise	ruse	1 415
	emp_preteos10					True	True	True	True	Tru
	g_temp_simple	True	True	False	True	False	False	False	False	Fals
	g_temp_teos10	-	-	_	-	_	False	-	_	_
us ocean_grids_nml <mark>debu</mark>	se_this_module	True True	True True	True True	True True	True False	True False	True False	True False	Tru: Fals
	/ise_exact_sum	True	iiue	iiue	nue	1 0135	False	ו מואד	ו מנטכ	rals
	nd_rho0_profile	False	False	False	False		False			
	verbose_init						True			
	write_grid				_		False			
&ocean_increment_eta_r	ml			0	0		1			
days_to_increment frac	tion_increment			1.0	1.0		1.0			
	s_to_increment			3600	1800		0			
	se_this_module	False	False	False	False	False	False	False	False	Fals
	r_nml			0	0		1			

Group (continued) Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.oı	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
fraction_increment secs_to_increment			1.0 3600	1.0 1800		1.0			
use_this_module	False	False	False	False	False	False	False	False	False
&ocean_increment_velocity_nml	Tube	Tutse	0	0	Tabe	1	Tuisc	ruise	Tuisc
days_to_increment fraction_increment			1.0	1.0		1.0			
secs_to_increment			3600	1800		0			
use_this_module &ocean_lap_friction_nml	False	False	False	False	False	False False	False	False	False
debug_this_module lap_friction_scheme	'general'	'general'	'general'	'general'	'general'	'general'	'general'	'general'	'general'
write_a_restart	generat	generat	generat	generat	generat	True	generat	generat	generat
&ocean_lap_tracer_nml alap						0.0			
horz_s_diffuse						True			
horz_z_diffuse						False			
read_diffusivity_mask tracer_mix_micom						False False			
use_this_module	False	False	False	False	False	False	False	False	False
vel_micom	Tabe	ruisc	ruisc	ruse	Tabe	0.0	raise	ruise	ruisc
verbose_init						True			
&ocean_lapcst_friction_nml use_this_module	False	False	False	False	False		False	False	False
&ocean_lapgen_friction_nml async_domain_update						False			
blocksize	_	_	_	_	_	10			
bottom_5point	True	True	True	True	True	False			
debug_ncar_a debug_ncar_b						False False			
debug_this_module						False			
divergence_damp						False			
divergence_damp_vel_micom						0.0			
eq_lat_micom						0.0			
eq_vel_micom_aniso eq_vel_micom_iso						0.0			
equatorial_no_smaq						False			
equatorial_zonal						False			
equatorial_zonal_lat						0.0			
k_smag_aniso	0.0 0.0	0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 2.0		2.0	
k_smag_iso ncar_isotropic_at_depth	0.0	0.0	0.0	0.0	0.0	False		2.0	
ncar_isotropic_at_depth_visc						10 000.0			
ncar_isotropic_depth						4000.0			
ncar_isotropic_off_equator						False			
ncar_only_equatorial			True	True		False False			
neptune neptune_depth_min						100.0			
neptune_length_eq						1200.0			
neptune_length_pole						3000.0			
neptune_smooth						True			
neptune_smooth_num restrict_polar_visc	True	True	True	True	True	1 False			
restrict_polar_visc restrict_polar_visc_lat	60.0	60.0	60.0	60.0	60.0	60.0			
restrict_polar_visc_ratio	0.35	0.35	0.35	0.35	0.35	0.35			
side_drag_friction_max						1.0			
side_drag_friction_scaling						1.0			
side_drag_friction_uvmag_max use_side_drag_friction						10.0 False			
use_side_drag_inction use_this_module	True	True	True	True	True	False	False	False	False
vconst_1			0.000 000 8	8 000 000.0		10 000 000.0	. 200	. 4.00	. 4.00
vconst_2			0.0	0.0		0.0			
vconst_3			0.8	0.8		0.16			
vconst_4 vconst_5			5×10^{-9}	5×10^{-9}		2×10^{-8} 3			
vconst_6			300 000 000.0	300 000 000.0		10 000 000.0			
vconst_7			100.0	100.0		100.0			
vconst_8						45.0			
vel_micom_aniso	0.4	0.4	0.4	0.4	0.4	0.0			
vel_micom_iso visc_vel_scale_length	0.1	0.1	0.1	0.1	0.1	0.0 150 000.0			
visc_vet_scate_tength viscosity_ncar	False	False	False	True	False	False			
	. 4.50	. 4.50	False	False	. 4.50	True			
viscosity_ncar_2000			raise	raise		IIUC			

Group (continued) Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.oı	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
viscosity_scale_by_rossby	True	True	True	True	True	False			
viscosity_scale_by_rossby_power	4.0	4.0	4.0	4.0 False	4.0	2.0		False	
&ocean_mixdownslope_nml debug_this_module	False	False	False	raise	False	False		False	
do_bitwise_exact_sum						False			
mixdownslope_frac_central						0.25			
mixdownslope_mask_gfdl	True	True	False	False	False	False			
mixdownslope_npts	4	4	4	4	4	1 False			
mixdownslope_weight_far mixdownslope_width						raise 1			
read_mixdownslope_mask	True	True	False	False	False	False			
use_this_module	True	True	True	True	True	False	False	False	False
&ocean_model_nml baroclinic_split	1	1	1	1	1	1	1	1	1
barotropic_split	80	80	_ 80	_ 80	_ 80	80	_ 80	80	_ 80
<mark>cmip_units</mark> debug	False False	False	True False	True False	True False	True False	True False	False	True False
debug dt_ocean	7200	7200	3600	3600	3600	1800	1200	150	150
horizontal_grid	. 200	. 200				'bgrid'			
impose_init_from_restart	True	False				False			
io_layout	1,4		42.40	4, 3	4, 3	6,5	6, 5	10, 15	10, 15
layout mask_table	12, 8	6, 4	12, 10	16, 15	16, 15	48, 40 'INPUT'	48, 40	80,75	80,75
reinitialize_thickness						False			
surface_height_split	1	1	1	1	1	1	1	1	1
time_tendency	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'	'twolevel'
use_blobs						False			
use_velocity_override	2	242			2	False	,,		2
vertical_coordinate &ocean_momentum_source_nml	'zstar'	'zstar'	'zstar'	'zstar'	'zstar'	'zstar' False	'zstar'	'zstar'	'zstar'
debug_this_module						raise			
rayleigh_damp_exp_from_bottom					False	False	False	False	False
rayleigh_damp_exp_scale						100.0			
rayleigh_damp_exp_time			_		_	864 000.0	_		_
use_rayleigh_damp_table use_this_module	False	Falso	True True	True	True	True True	True	True	True
verbose_init	raise	False	ilue	True	True	True	True	True	True
&ocean_nphysics_new_nml						False			
drhodz_smooth_horz									
drhodz_smooth_vert						False			
smax use_this_module						0.01 False			
vel_micom_smooth						0.2			
&ocean_nphysics_nml debug_this	False	False	False	False	False	False	False	False	False
module									
use_nphysicsa	False	False	False	False	False	False	False	False	False
use_nphysicsb	False	True	False	False	False	False False	False	False	False
use_nphysicsc use_this_module	True True	False True	True True	True True	True True	False	False False	False False	False False
write_a_restart	Huc	nuc	iiuc	nac	iruc	True	ruisc	ruise	ruisc
&ocean_nphysics_util_new_nml						1			
num_121_passes			4000	4000	4000		1000	4000	4000
&ocean_nphysics_util_nml agm	800.0	800.0	600.0	600.0	600.0		100.0	100.0	100.0
agm_closure agm_closure_baroclinic	True True	True True	True True	True True	True True		True True	True True	True True
agm_closure_buoy_freq	0.004	0.004	0.004	0.004	0.004		0.004	0.004	0.004
agm_closure_eady_ave_mixed	True	True	True	True	True				
agm_closure_eady_cap	True	True	True	True	True				
agm_closure_eady_smooth_horz	True	True	True	True	True				
agm_closure_eady_smooth_vert agm_closure_eden_gamma	True 0.0	True 0.0	True 0.0	True 0.0	True 0.0				
agm_closure_eden_greatbatch	False	False	False	False	False				
agm_closure_grid_scaling	True	True	True	True	True				
agm_closure_length	50 000.0	50 000.0	50 000.0	50 000.0	50 000.0		50 000.0	50 000.0	50 000.0
agm_closure_length_bczone	False	False	False	False	False		False	False	False
agm_closure_length_fixed agm_closure_length_rossby	False False	False False	False False	False False	False False		False False	False False	False False
agm_closure_lengtn_rossby 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	50.0	50.0	50.0		100.0	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	45.0	45.0				

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log-	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	agm_smooth_space	False	False	False	False	False	file.000000.oı			
	agm_smooth_time	False	False	False	False	False				
	aredi	600.0	600.0	600.0	600.0	600.0		600.0	600.0	600.0
	aredi_equal_aqm	False	False	False	False	False		False	False	False
	drhodz_mom4p1	True	True	True	True	True		False	False	False
d	rhodz_smooth_horz	False	False	False	False	False		False	False	False
	lrhodz_smooth_vert	False	False	False	False	False		False	False	False
nph	nysics_util_zero_init	True	True	True	True	True		400,000,0	400,000,0	400,000,0
	rossby_radius_max rossby_radius_min	100 000.0 15 000.0	100 000.0 15 000.0	100 000.0 15 000.0	100 000.0 15 000.0	100 000.0 15 000.0		100 000.0 15 000.0	100 000.0 15 000.0	100 000.0 15 000.0
	smax	0.005	0.005	13 000.0	13 000.0	13 000.0		13 000.0	0.002	13 000.0
	swidth	0.003	0.003						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_n debug_this_module	ml	False	False							
neuti	ral_linear_gm_taper	True	True							
	eutral_physics_limit	True	True							
neu	tral_physics_simple	False	False							
	neutral_sine_taper	True	True							
	tmask_neutral_on	True	True False	False	False	Falsa		Falsa	Falsa	Falsa
&ocean_nphysicsb_n	use_this_module	False	False	False	False	False		False	False	False
debug_this_module	IIIIL	False								
	nblayer_smooth	True	True							
	eutral_physics_limit	True	True							
	surf_turb_thick_min	50.0	50.0							
Su	rf_turb_thick_min_k use_this_module	5 False	5 True	False	False	False		False	False	False
&ocean_nphysicsc_n		True	nue	True	True	True		raise	raise	raise
bv_freq_smooth_vert										
	bvp_bc_mode	2		2	2	2				
	bvp_min_speed	0.1		0.1	0.1	0.1				
	bvp_speed	0.0		0.0	0.0	0.0				
	debug_this_module do_qm_skewsion	False True		False True	False True	False True				
ä	lo_neutral_diffusion	True		True	True	True				
•	epsln_bv_freq	1×10^{-12}		1×10^{-12}	1×10^{-12}	1×10^{-12}				
gm_sl	kewsion_bvproblem	True		True	True	True				
	m_skewsion_modes	False		False	False	False				
	neutral_eddy_depth	True		True	True	True				
ne	eutral_physics_limit	True		True	True	True				
	number_bc_modes	2		2	2	2				
	regularize_psi	False		False	False	False				
	smax_psi smooth_psi	0.01		0.01	0.01	0.01				
	tmask_neutral_on	True True		True True	True True	True True				
	turb_blayer_min	50.0		50.0	50.0	50.0				
	use_this_module	True	False	True	True	True		False	False	False
&ocean_obc_nml	ctrop_inc						0.0, 0.0, 0.0,			
	ctrop_max						1.5, 1.5, 1.5, 1.5			
	ctrop_min						0.1, 0.1, 0.1, 0.1			
	ctrop_smooth						0.7, 0.7, 0.7, 0.7			
	direction						None			
	enh_fac_d						1.0, 1.0, 1.0,			
	enh_fac_v						0.9, 0.9, 0.9, 0.9			
	enh_pnts fieldname_eta						1, 1, 1, 1 'eta_t', 'none',			
	fieldname_ud						'none', 'none' 'ud', 'none',			
	filename_eta						'none', 'none' 'obc_eta			
	mename_eta						t.nc', 'none', 'none', 'none'			
	filename_tracer						'INPUT'			

Group (continued) Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log-	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
filename_ud						'obc_ud.nc', 'none', 'none',			
i <mark>e</mark>						'none' -999, -999, -999, -999			
iere						-999, -999, -999, -999			
iers						-999, -999, -999, -999			
is						-999, -999, -999, -999			
itre						-999, -999, -999, -999			
itrs						-999, -999, -999, -999			
je						-999, -999, -999, -999			
jere						-999, -999, -999, -999 -999, -999,			
jers js						-999, -999 -999, -999,			
jtre						-999, -999, -999, -999,			
jtrs						-999, -999, -999, -999,			
name						-999, -999 'test_obc',			
						'none', 'none', 'none'			
nobc obc_adjust_forcing_bt						0 False, False,			
obc_consider_convu						False, False False, False,			
obc_consider_sources						False, False False, False,			
						False, False, False, False,			
						False, False, False, False,			
						False, False, False, False,			
						False, False,			
						False, False, False, False,			
						False, False,			
						False, False, False, False,			
						False, False,			
						False, False, False, False,			
						False, False,			
						False, False, False, False,			
						False, False, False, False			
obc_enhance_diff_back						'NONE', 'NONE', 'NONE',			
obc_enhance_visc_back						'NONE' 'NONE',			
						'NONE', 'NONE', 'NONE'			
obc_eta						'NOTHIN', 'NOTHIN',			
						'NOTHIN', 'NOTHIN'			

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.oi	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	obc_flow_relax						1, 1, 1, 1, 1, 1, 1, 1, 1, 1,			
	obc_mix						'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD',			
	obc_nor						'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD'			
	obc_relax_tracer						False, False, False, False,			
	obc_tan						'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD'			

## (AD000000	Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log-	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg_ jra55_ryf/ ocean/ input.nml
NOGRADT NOGRAD		ohe tra						file.000000.oı	.		•
NOGRAD, NOGRAD		UUL_LI d									
NOGRAD, NOGRAD								'NOGRAD',			
NOGRAD, NOGRAD											
NOGRAD, NOGRAD								'NOGRAD',			
NOGANT,								'NOGRAD',			
NOGRAD, NOGRAD								'NOGRAD',			
NOGRAD,											
NOCRAD								'NOGRAD',			
NOGRAD, NOGR											
NOGRAD NOGR								'NOGRAD',			
NOGRAD,								'NOGRAD',			
NOGRAD,											
NOGRAD; NOGR								NOGRAD, 'NOGRAD'			
NOGRAD; NOGR								'NOGRAD',			
NOGRAD; NOGRAD, NOGR								'NOGRAD',			
NOGRAD; NOGRAD, NOGRAD;											
NOGRAD, False, Fals								'NOGRAD',			
NOGRAD; NOGR								'NOGRAD',			
NOGRAD											
NOGRAD Salse, False, False											
NOGRAD; NOGR								'NOGRAD',			
NOGRAD; NOGR								'NOGRAD',			
NOGRAD; NOGR											
"NOGRAD", "Alse, False, False								'NOGRAD',			
NOGRAD; NOGRAD NOGRAD; NOG											
NOGRAD; State, False, Fal											
NOGRAD; Palse, False, False											
NOGRAD; NOGRAD; NOGRAD; NOGRAD; NOGRAD; NOGRAD; NOGRAD; False, False								'NOGRAD',			
NOGRAD **obc.tracer_no_inflow** False,											
False, Fa											
False, Fa	obc_ti	racer_no_inflow									
False, Fa											
False, Fa											
False, Fa								False, False,			
False, False Obc_ud 'NOGRAD', 'NOGR											
False, False ODC_UD 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD' 'NOGRAD'											
False, False 'NOGRAD',								False, False,			
False, False 'NOGRAD',											
False, False 'NOGRAD', 'NOGRAD'											
False, False Obc_ud 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD'								False, False,			
False, False, False, False, False, False, False, False, False, False Obc_ud 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD'											
False, False, False, False, False, False, False, False Obc_ud 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD'											
False, False, False, False Obc_ud 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD' 'NOGRAD'											
False, False obc_ud 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD'								False, False,			
obc_ud 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD', 'NOGRAD'											
'NOGRAD', 'NOGRAD', 'NOGRAD'		obc_ud						'NOGRAD',			
'NOGRAD'								'NOGRAD',			
								NOGRAD', 'NOGRAD'			
obc_vert_advel_t False,	0	bc_vert_advel_t									
False, False								False, False			
<mark>obc. vert_advel_u</mark> False, False, False, False	ot	oc_vert_advel_u						False, False,			

Group (continued) Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log-	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
rel_clin_pnts						file.00000.ot 1,			
rel_coef_eta_in						0.0, 0.0, 0.0,			
rel_coef_eta_out						0.0 0.0, 0.0, 0.0, 0.0			
rel_coef_tracer_in						0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,			
<mark>rel_eta_pnts</mark> &ocean_operators_nml	True				False	0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0, 0.0,	False	False	False
use_legacy_div_ud									
&ocean_overexchange_nml debug this_module	False	False	False	False	False	False	False	False	False
do_bitwise_exact_sum overexch_check_extrema overexch_min_thickness overexch_npts	False 4	False	False	False	4	False False 4.0	4	A	4
overexch_stability	'	т	т	Т	т	0.25	7	7	
overexch_weight_far overexch_width overflow_delta overflow_mu	False	False	False	False	False	False 1 0.3333 0.0001	False	False	False
overflow_umax use_this_module	5.0 False	5.0 False	5.0 False	5.0 False	5.0 False	5.0 False	5.0 False	5.0 False	5.0 False
&ocean_overflow_nml debug_this_module do_bitwise_exact_sum	False	False	False	False	rusc	False False	ruise	False	ruise
no_return_flow overflow_delta overflow_mu overflow_umax transport_units						False 0.3333 0.0001 0.01 'Sv'			
use_this_module	False	False	False	False	False	False	False	False	False
&ocean_overflow_ofp_nml debug_this_module diag_step								False 5760	
do_entrainment_para_ofp do_mass_ofp frac_exchange_src max_vol_trans_ofp								False True 1.0 10 000 000.0	

Group (continued) Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.oi	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
use_this_module					False	1110.000000.01	False	False	False
&ocean_parameters_nml						4218.0			
cp_liquid_runoff									
cp_ocean						3992.103 223			
cp_solid_runoff grav						2106.0 9.8			
omega_earth						7.2921 ×			
						10^{-5}			
rho0						1035.0			
&ocean_polar_filter_nml	False	False	False	False	False	273.15	False	False	False
use_this_module	raise	raise	raise	raise	raise		raise	raise	raise
&ocean_pressure_nml						False			
debug_this_module									
zero_correction_term_grad						False			
zero_diagonal_press_grad zero_eta_over_h_zstar_pressure						False False			
zero_eta_over_n_zstar_pressure zero_pressure_force					False	False	False	False	False
&ocean_rivermix_nml	40.0	40.0			. 4.00	0.0		. 4.50	. 4100
calving_insertion_thickness									
debug_all_in_top_cell		F. !	F 1	F !		False	F. 1	F 1	
debug_this_module debug_this_module_heat	False	False	False	False	False	False False	False	False	False
discharge_combine_runoff_calve	False	True				True			
do_bitwise_exact_sum	True					False			
river_diffuse_salt	False	False	False	False	True	False	True	True	True
river_diffuse_temp	False	False	False	False	True	False	True	True	True
river_diffusion_thickness river_diffusivity	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	0.0 0.0	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	40.0
runoff_insertion_thickness	40.0	40.0	1010	10.0	1010	0.0	1010	.0.0	1010
use_this_module	True	True	True	True	True	True	True	True	True
&ocean_riverspread_nml						False		False	
debug_this_module riverspread_diffusion						False			
riverspread_diffusion_passes						0			
use_this_module	False	False	True	True	False	False	False	True	False
vel_micom_smooth						0.2			
&ocean_rough_nml rough_scheme	'beljaars'	'beljaars'	Т	T	'beljaars'	Tour	'beljaars'	'beljaars'	'beljaars'
&ocean_sbc_nml avg_sfc_temp_salt_eta avg_sfc_velocity	True True	True True	True True	True True	True True	True True	True True	True True	True True
calvingspread	False	False	iiuc	nuc	False	False	False	False	False
constant_hlf						True			
constant_hlv						True			
constant_sss_for_restore constant_sst_for_restore						35.0 12.0			
convert_river_to_pme						False			
debug_water_fluxes						False			
do_bitwise_exact_sum					False	False	False	False	False
do_flux_correction	True				False	False	False	False	False
do_langmuir eta_restore_tscale	-10.0					False — 30.0			
ice_salt_concentration	-10.0		0.005			- 30.0 0.005			
land_model_heat_fluxes	True	False	0.003		False	False	False	False	False
max_delta_salinity_restore			0.5	0.5	0.5	0.5	0.5	0.5	0.5
max_ice_thickness	8.0	8.0	8.0	8.0	0.0	0.0	0.0	0.0	0.0
read_restore_mask read_stokes_drift			False	False	False	False False	False	False	False
restore_mask_qfdl			False	False	False	False	False	False	False
rotate_winds						False			
runoff_salinity			0.0	0.0	0.0	0.0	0.0	0.0	0.0
runoff_temp_min	Ealaa	Enlan				0.0 Falso			
runoffspread salinity_ref	False	False				False 35.0			
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	True
salt_restore_tscale	-10.0	-10.0	15.0	15.0	60.0	60.0	60.0	60.0	60.0
salt_restore_under_ice			True	True	True	True	True	True	True
sbc_heat_fluxes_const sbc_heat_fluxes_const_seasonal						False False			
sbc_heat_fluxes_const_value						0.0			
tau_x_correction_scale	0.0					0.0			

Management Man	Group (continued) Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.oi	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
Part	tau_y_correction_scale	0.0								
Memory consent part 100										
The content of the										
March Marc			100	1.0	1.0	100		100	10.0	-10.0
Second S		-10.0	-10.0	-1.0	-1.0	-10.0		-10.0	-10.0	-10.0
Part Control Part										
The Content	use_full_patm_for_sea_level	True	True			False		False	False	False
Second										
Pale		T	T	T	T	Т		T	Т	Т
Part			Irue	Irue	Irue	Irue		Irue	Irue	True
Pale										
Part										
False Fals	waterflux_tavg	False	False	False	False		False			
Part		Falso		False	False	False		False	False	False
True		raise				Falsa		Falsa	False	False
Part Part Part Part Part Part Part Part True				True	True					True
True										False
True	zero_net_water_couple_restore			True	True	True	True	True	True	True
Palse Pals	zero_net_water_coupler			True	True	True	True	True	True	True
Reco. marter fluxes False				True	True	True		True	True	True
Pale False										
Palse False Fals										
False Fals				Falso	Falso	Falso		Falso	Falso	False
False Fals										False
Palse						7 4 13 0		. 4.50		
True										
Palse							False			
False False False False True True False				True	True					
Marca Marc		Ealco	Ealso	Truo	Truo	Ealco		Falso	Falso	False
Color		raise	raise			raise		raise	raise	raise
## False Fa				7000	7000		0.08			
Part										
Palse	debug_this_module	False	False	False	False	False	False	False	False	False
True		True	True	True	True	True		True	True	True
Palse Pals		True	Truce	Truce	Tuuo	Truce		Tuus	True	Teuro
False True True True				Irue	ITUE					True False
False False False False False False True T						raisc		1 disc	raisc	raisc
Sw. frac. Log Swy. morel. Fixed. depths False				False	False	True		True	True	True
Sw.pen.fixed.depths use.this.module True True False False False True True True True Palse False False True True True True Palse False Talse Talse Palse Talse Tals	sw_frac_top						0.0			
use this module zmax_pen True zmax_pen							False			
zmax.pen200.0200.0200.0200.0300.0300.0300.0300.0& ocean_shortwave_jerlov_nmlFalseFalseFalseFalseFalseFalseuse_shortwave_nmlFalseFalseTrueTrueFalseFalseFalseuse_shortwave_extFalseFalseTrue		-	.			-	-	.	.	-
&ocean_shortwave_jerlov_nml False False <t< td=""><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>True 300.0</td></t<>										True 300.0
use_this_module &ocean_shortwave_nml False False True True False False False use_shortwave_cstro use_shortwave_ext							300.0			False
use shortwave_ext False use_shortwave_gfdt True True False True	•	1 4650	. 4.50	. 4.50	. 4.50			. 4.50	. 4.50	
use_shortwave_gfdl True True False False True True Use_shortwave_gfdl True Use_shortwave_gfdl True Use_shortwave_gfdl True Use_shortwave_gfdl True Use_shortwave_gfdl True Use_shortwave_gfdl Use_this_module Use_shortwave_gfdl True Use_State Use_this_module Use_shortwave_gfdl True Use_True Use_state Use_this_module Use_shortwave_gfdl True Use_True Use_state Use_this_module Use_shortwave_gfdl Use_shortwave_gfd Use_shortwave_gfd Use_shortwave_gfd Use	&ocean_shortwave_nml	False	False	True	True	False	False	False	False	False
True True False										
use_shortwave_jertov False		_	_	F 1	F 1	-		-	-	-
use_this_module True &ccean_sigma_transport_nml 0.33333 0.33333 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0001 0.0000 0.0000 0.0000 0.0000 0.0000 0.0000 0.001 0										True False
&ocean_sigma_transport_nml 0,3333 campingoose_delta 0,0001 campingoose_mu 0,0001 debug_this_module False sigma_advection_check False sigma_advection_one False False False sigma_advection_sognoly False	•									True
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		nuc	nac	nuc	nuc	nuc		nuc	nuc	nuc
debug this module sigma_advection_check sigma_advection_on False										
$\begin{tabular}{ c c c c c c c c c c c c c c c c c c c$										
$\begin{tabular}{c ccccccccccccccccccccccccccccccccccc$										
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$		Ealaa	Enlan	Ealaa	Ealaa				Ealaa	
$\begin{array}{c ccccccccccccccccccccccccccccccccccc$										
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$										
$ \begin{array}{c ccccccccccccccccccccccccccccccccccc$		nuc	iiuc	iiuc	nuc				Huc	
sigma_just_in_bottom_cell True O.01		1×10^{-6}	1×10^{-6}	1×10^{-6}	1×10^{-6}				1×10^{-6}	
sigma_umax 0.01 0.01 0.01 0.01 0.01 0.01 smooth_sigma_thickness True True True True True True										
<mark>smooth_sigma_velocity True True True True True True True True</mark>										
	smooth_sigma_velocity	True	True	True	True		True		True	

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.oi	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
;	smooth_velmicom	0.2	0.2	0.2	0.2		0.2		0.2	
thick	kness_sigma_layer	100.0	100.0	100.0	100.0		100.0		100.0	
thic	:kness_sigma_max	100.0	100.0	100.0	100.0		100.0		100.0	
thic	ckness_sigma_min	100.0	100.0	100.0	100.0		100.0		100.0	
	tmask_sigma_on	False	False	False	False		False		False	
f	tracer_mix_micom	True	True	True	True		True		True	
	use_this_module	True	True	True	True	False	False	False	False	False
	vel_micom	0.05	0.05	0.05	0.05		0.05		0.05	
	verbose_init						True			
	write_a_restart						True			
&ocean_solo_nml	calendar			'NOLEAP'	'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	1, 1, 1, 0, 0, 0
	days			0	1460	1460	0	31	30	30
de	ebug_this_module				False		False			
	dt_cpld			3600	3600	3600	1800	1200	150	600
	hours			0	0	0	0	0	0	0
	layout_mask						0,0			

Mark State Mar	Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log-	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new, control, 01deg_ jra55_ryf, ocean, input.nm
0,000 0,00		mask_list				прислик	put.iiiit	6, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,	прислик	put	Присл
0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.								0, 0, 0, 0, 0,			
0.0.0.0 0.0.0.								0, 0, 0, 0, 0,			
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,											
0.0.0.0 0.0.0.								0, 0, 0, 0, 0,			
0.00.0 0.00.0 0.00.0 0.00.0 0.00.0 0.00.0								0, 0, 0, 0, 0,			
0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.0.											
0.000 0.0000								0, 0, 0, 0, 0,			
0,000, 0,								0, 0, 0, 0, 0,			
0.0.0.0 0.0.0.								0, 0, 0, 0, 0,			
0,0,0,0 0,0,0 0,0,0,0 0,0,0,0 0,0,0,0 0,0,0,0 0,0,0,0 0,0,0,0 0,0,0,0 0,0,0,0											
0,0,0,0 0,0,0 0,0,0,0 0,0,0,0 0,0,0,0 0,0,0,0 0,0,0,0 0,0,0,0 0,0,0,0 0,0,0,0								0, 0, 0, 0, 0,			
0,00,0, 0,00,0, 0,00,0, 0,00,0, 0,00,0, 0,00,0								0, 0, 0, 0, 0,			
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,											
0,00,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0								0, 0, 0, 0, 0,			
0,0,0,0 0,0,0 0,0,0 0,0,0,0 0,0,0 0,0,0 0,0,0 0,0,0 0,0,0 0,0,0 0,0,0 0,0,0 0,0,0 0,0,0 0,0,0 0,0,0 0,								0, 0, 0, 0, 0,			
0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,								0, 0, 0, 0, 0,			
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0,0,0,0, 0,0,0,0,0,0, 0,0,0,0,0, 0,0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0,0, 0,0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0, 0,0,0,0								0, 0, 0, 0, 0,			
0,0,0,0 0,0,0 0,0,0,0 0,0,0 0,0,0 0,0,0 0,0,0 0,0,0 0,0 0,0,0 0,0								0, 0, 0, 0, 0,			
0.0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0											
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,								0, 0, 0, 0, 0,			
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,								0, 0, 0, 0, 0,			
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,								0, 0, 0, 0, 0,			
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,								0, 0, 0, 0, 0, 0, 0, 0, 0, 0.			
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,								0, 0, 0, 0, 0,			
0,0,0,0,0 0,0,0,0,0 0,0,0,0,0,0 0,0,0,0,0,0 0,0,0,0,0,0,0,0,0,0,0,0,0,0 0,								0, 0, 0, 0, 0,			
0,0,0,0,0 0,0,0,0,0 0,0,0,0,0,0 0,								0, 0, 0, 0, 0,			
0,0,0,0,0 0,0,0,0,0 0,0,0,0,0 0,0,0,0,								0, 0, 0, 0, 0,			
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,								0, 0, 0, 0, 0,			
0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,0,								0, 0, 0, 0, 0,			
0,0,0,0,0, 0,0,0,0,0, 0,0,0,0,0, 0,0,0,0,0, 0,0,0,0,0, 0,0,0,0,0, 0,0,0,0,0, 0,0,0,0,0, 0,0,0,0,0, 0,0,0,0,0,0, 0,								0, 0, 0, 0, 0, 0, 0, 0, 0, 0.			
0,0,0,0,0, 0,0,0,0,0,0,0,0,0,0,0,0,0,0,								0, 0, 0, 0, 0,			
$\begin{array}{c} 0,0,0,0,0,\\ 0,0,0,0,0,\\ 0,0,0,0,0,\\ 0,0,0,0,$								0, 0, 0, 0, 0,			
$\begin{array}{c} 0,0,0,0,0,\\ 0,0,0,0,0,\\ 0,0,0,0,0,\\ 0,0,0,0,$								0, 0, 0, 0, 0,			
$\begin{array}{c} 0,0,0,0,0,\\ 0,0,0,0,0,\\ 0,0,0,0,0,\\ 0,0,0,0,$											
$\begin{array}{c} 0,0,0,0,0,\\ 0,0,0,0,0,\\ 0,0,0,0,0,\\ 0,0,0,0,$								0, 0, 0, 0, 0,			
$\begin{array}{c} 0,0,0,0,0,\\ 0,0,0,0,0,\\ 0,0,0,0,0,\\ 0,0,0,0,$								0, 0, 0, 0, 0,			
$\begin{array}{c} 0,0,0,0,0,0,\\ 0,0,0,0,0,0,\\ 0,0,0,0,0,0$											
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0								0, 0, 0, 0, 0,			
0, 57 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,								0, 0, 0, 0, 0,			
0, 0,								0, 0, 0, 0, 0,			
57 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0,								0, 0, 0, 0, 0,			
0, 0, 0, 0, 0,						57		0, 0, 0, 0, 0,			
0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0, 0								0, 0, 0, 0, 0,			

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.o	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	minutes			0	0	0	0	0	0	0
	months n_mask			12	0	0	0	0	0	0
restart	interval						0, 0, 0, 0, 0, 0			
	seconds			0	0	0	0	0	0	0
	years				0	0	1	0	0	0
	se_this	False	False	False	False	False	False	False	False	False
module &ocean_sponges_eta_ofam_nml	athroch						0.5			
	restore						1			
	lambda						0.0083			
	npower						1.0			
secs_to	_restore						0 720.0			
use_adaptive	taumin						7 20.0 False			
use_hard							False			
use_nor							False			
use_sponge_a	ifter_init						False			
&ocean_sponges_tracer_nml		False	False	False	False		False		False	
damp_coeff_3d use_this.	modulo	False	False	False	False	False	False	False	False	False
&ocean_sponges_tracer_ofam_n		raise	raise	raise	raise	raise	0.5	raise	raise	raise
athresh							0.5			
days_to	restore						1			
	deflate						False			
deflate.	fraction						0.6			
li li	lambda mit_salt						0.0083 False			
	salt_min						0.01			
limit_salt							3600.0			
lin	nit_temp						False			
	mp_min						-1.8			
limit_temp							10 800.0 1.0			
sers to	npower _restore						0			
300320	taumin						720.0			
use_adaptive	_restore						False			
use_hard							False			
use_nor							False			
use_sponge_a &ocean_sponges_velocity_nml	inter_init						False False			
damp_coeff_3d							1 4130			
use_this		False	False	False	False	False	False	False	False	False
&ocean_sponges_velocity_ofam	_nml						0.5			
athresh	rostova						1			
uays_to	_restore lambda						0.0083			
	npower						1.0			
secs_to	restore						0			
	taumin						720.0			
use_adaptive							False			
	d_thump malising						False False			
use_sponge_a							False			
&ocean_submesoscale_nml coefficient_ce						0.05	0.05	0.05	0.05	0.05
	ant_hblt						100.0			
debug_this.		False	False	False	False	False	False 1200	False	False	False
a front_leng	i <mark>ag_step</mark> th_const	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0	5000.0
front_length_deforr		True	True	True	True	True	True	True	True	True
	limit_psi	True	True	True	True	True	True	True	True	True
limit_psi_veloci	ity_scale	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
	min_kblt	4	4	4	4	4	4	4	4	4
minim smooth_advect_t	um_hblt					True	0.0 True	True	True	True
smooth_advect_transp						True	True	True	True	True
	oth_hblt	False	False	False	False	False	False	False	False	False
smooth_h	blt_num						2			
	ooth_psi					True	True	True	True	True
smooth_						5 Falso	3 Falso	3 False	3 False	5 Falso
submeso_adv	rect_flux					False	False	False	False	False

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.oi	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
suhme	so_advect_limit					True	True	True	True	True
	_advect_sweby					iiuc	False	nuc	nac	nuc
submeso.	_advect_upwind					True	True	True	True	True
	dvect_zero_bdy					True	True	True	True	True
submeso_diffus	meso_diffusion					False True	False True	False True	False True	False True
	_diffusion_scale					10.0	10.0	10.0	10.0	10.0
	meso_limit_flux	True	True	True	True		True			
subr	meso_skew_flux					True	True	True	True	True
	time_constant						86 400.0			
	e_hblt_constant hblt_equal_mld	True	True	True	True	True	False True	True	True	True
usc_	use_psi_legacy	True	iiuc	iiuc	nuc	False	False	False	False	False
u	se_this_module	True	True	True	True	True	True	True	True	True
&ocean_tempsalt_nml		False	False		False	False	False	False	True	False
debug_this_module	2.12	-	_	-	-	-	-	_	_	_
	p_2nd_iteration equal_contemp	True	True	True	True	True True	True True	True True	True True	True True
	it_ts_with_ideal					iiue	False	iiue	iiue	iiue
	vith_ideal_efold						1000.0			
	th_ideal_svalue						30.0			
reinit_ts_wi	th_ideal_tvalue	55.0	FF 0	55.0	55.0	70.0	10.0	70.0	70.0	70.0
	s_max s_max_limit	55.0 42.0	55.0 42.0	55.0 42.0	55.0 42.0	70.0 42.0	70.0 42.0	70.0 42.0	70.0 42.0	70.0 42.0
	s_min	-1.0	-1.0	-1.0	-1.0	0.0	0.0	0.0	0.0	0.0
	s_min_limit	5.0	5.0	0.0	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	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	32.0
	t_min t_min_limit	−5.0 −1.9	-5.0 -1.9	-5.0 -2.0	-5.0 -2.0	-20.0 -5.0	−20.0 −5.0	-20.0 -5.0	-20.0 -5.0	-20.0 -5.0
temne	rature_variable	'potential	-1.9 'potential	conservative		-J.o 'potential	-J.u 'potential	-J.o 'potential	j.u 'potential	j.o 'potential
	teos10	temp'	temp'	temp' False	temp'	temp'	temp' False	temp'	temp'	temp'
&ocean_thickness_nml	debug_this	False	False	False	False	False	False	False	False	False
module										
•	_module_detail _min_for_sigma	False	False	False	False	False	False 0.01	False	False	False
	ce_positive_dzt						False			
	n_init_thickness						1×10^{-5}			
full_s	tep_topography						False			
	tialize_zero_eta	False	False	False	False		False			
	ar_free_surface _num_bad_print						False 25			
IIIdX.	pbot0_simple						False			
read_reso	cale_rho0_mask	True	True	False	False		False			
re	ad_rho0_profile						False			
	_to_get_ht_mod					False	False	False	False	False
	noO_basin_label	7.0	7.0 Truo	7.0	7.0		-1.0			
	rho0_mask_gfdl cale_rho0_value	True 0.75	True 0.75	False 0.75	False 0.75		False 1.0			
	ckness_dzt_min	2.0	2.0	1.0	1.0		2.0		2.0	
thickne	ss_dzt_min_init	2.0	2.0	2.0	2.0		10.0		10.0	
	ckness_method	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'	'energetic'
	pdate_dzwu_k0						True			
&ocean_time_filter_nml use_this_module	write_a_restart	False	False				True			
&ocean_topog_nml debu	ua_this_module						True			
2.0000topog_mmt_acot	flat_bottom						False			
	flat_bottom_ht						5500.0			
	lat_bottom_kmt						50			
	kmt_recompute compute_offset						False 0			
KIIIÚ_FE	min_thickness	5.0	5.0	25.0	25.0		1.0			
	write_topog	5.0	5.0	23.0	23.0		False			
&ocean_tracer_advect_n		False	False	True	True		False			
advect_sweby_all					_					
•	domain_update			т	True		False			
compute_gyre_ove	ug_this_module	False	False	True False	False	False	False	False	False	False
	o_fast_compute	i aisc	1 0130	True	ו מנגכ	ו מנטכ	ו מנאכ	ו מנטכ	ו מנאכ	ו מנטכ
	it_with_upwind	False	False				False			

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log-	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
psom_limit	prather						file.000000.oı False			
read_bas				True		False	False	False	False	False
	_restart						True			
zero_tracer_adv							False			
zero_tracer_adv ocean_tracer_diag_nml buoya&							False 0.0003			
debuq_diagnose_	,						False			
debug_diagnose_							False			
debug_diagnose_							False			
debug_diagnose_							False			
	iag_step	1200 Falso	12 Falso	120 Falso	4320 Falso	4320 False	4320 Falso	4320 Falso	576	576
do_bitwise_ex	neta_crit	False	False	False	False	False	False 2.0	False	False	False
	il_factor						1.0			
	psu2ppt						1.004 867			
rho_g	rad_max						$1 imes 10^{+28}$			
	ırad_min						1×10^{-5}			
smooth_ka		_	_				0			
	oth_mld	True	True				False			
smooth_mld_for_sul		1000	100.0	1.0	1.0	700	True	700	30.0	700
tracer_conser _ocean_tracer_nml		$\frac{100.0}{1 \times 10^{+40}}$	100.0	1.0 0.0	1.0 0.0	30.0 0.0	30.0 0.0	30.0 0.0	0.0	30.0 0.0
&ocean_tracer_nmt		1 × 10 ,	0.0	0.0	0.0	0.0	0.0 True	0.0	0.0	0.0
debug_this.		False	False	False	False	False	False	False	False	False
frazil_heating_after_		True	True	True	True	True	True	True	True	True
frazil_heating_before_	vphysics	False	False	False	False	False	False	False	False	False
inflow_nb	,						False			
interpolate_tdiag_:		False					False			
interpolate_tprog_		False	Truce	Tuus	True	Terro	True True	Tura	True	Truce
umit_ag <mark>ocean_tpn</mark>	e_tracer	True	True	True	irue	True	False	True	True	True
remap_depth_		False	False	False	False	False	False	False	False	False
tmask_limit_		True	True	. 4.50	. 4.50	1 4130	True	, disc	. 4.50	7 4150
use_tempsalt_chec	ck_range				True	True	True	True	True	True
	a_restart						True			
	endency	False	False	False	False	False	False	False	False	False
zero_trace &ocean_tracer_util_nml	r_source	False	False	False	False	False	False False	False	False	False
debug_diagnose_mass_of_layer							raise			
epsln_diagnose_mass_	of_laver						1×10^{-5}			
rebin_onto_rho_al							True			
&ocean_velocity_advect_nml							False			
debug_this_module										
velocity_advect_c							True			
velocity_advect zero_velocity_adv							False False			
zero_velocity_adv zero_velocity_adv							False			
&ocean_velocity_diag_nml debu		False	False	False	False	False	False	False	False	False
module	·· 5									
d	iag_step	1200	12	120	4320	4320	4320	4320	576	576
do_bitwise_ex							False			
energy_d	-	1200	12	120	4320	4320	4320	4320	5760	5760
land_cell_n		100	100	100	10.0	100	100	100	10.0	10.0
	cfl_value 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	10.0 100.0
	bose_cfl	100.0	100.0	100.0	100.0	100.0	False	100.0	100.0	100.0
&ocean_velocity_nml							0.6			
adams_bashforth_epsilon										
adams_bashfor		True	True	True	True	True	True	True	True	True
	nstant_u						0.0			
co debug_this	nstant_v module						0.0 False			
	_module ax_cgint			1.0	1.0	1.0	1.5	1.0	1.0	1.0
truncate.		False	False	False	True	False	False	False	False	False
truncate_vel		i auc	raise	i disc	nuc	raisc	0.0	raisc	iauc	ruist
truncate_veloci		2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0	2.0
truncate.		True	True	True	True	True	True	True	True	True
update_velocity_via							True			
use_constant.							False			
	a_restart	F-1	Fe1	F-I	F-1	F-1	True	Fel	F-I	F-I-
zero_t zero_tendency_e	endency	False	False	False	False	False False	False	False False	False False	False
zero_tenuency_e	vhricit_q					raise	False	raise	raise	False

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.oi	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	ndency_explicit_b					False	False	False	False	False
zero_t &ocean_vert_kpp_iow_	tendency_implicit	False	False		False	False False	False	False False	False False	False False
use_this_module	311111	raise	i alse		i alse	i atse		Talse	i alse	i alse
&ocean_vert_kpp_mom	n4p0_nml	False	False		False					
use_this_module &ocean_vert_kpp_mom byf_from_below	n4p1_nml						False			
C	alc_visc_on_cgrid						False			
	concv cw_0						1.8 0.15			
de	bug_this_module						False			
	diff_cbt_iw	0.0			0.0	0.0	0.0	0.0	0.0	0.0
	diff_cbt_limit				0.4		0.005			
	diff_con_limit do_langmuir				0.1		0.1 False			
	double_diffusion	True			True	True	True	True	True	True
	hbl_with_rit						False			
kbl_s	standard_method				False	False	False	False	False	False
	kl_min l_smyth						2 2.0			
	lgam						1.04			
	limit_ghats						False			
lir	mit_with_hekman linear_hbl						True True			
	ltmax						5.0			
	non_local_kpp						True			
	radiation_iow						False			
	radiation_large radiation_zero						False False			
	ricr	0.3			0.3	0.3	0.3	0.3	0.3	0.3
	$shear_instability$						True			
	smooth_blmc	True			False	False	False	False	False	False
smootn.	_ri_kmax_eq_kmu use_max_shear				True	True	True False	True	True	True
use	sbl_bottom_flux						False			
	use_this_module	True			True	True	True	True	True	True
	variable_vtc visc_cbu_iw	0.0			0.0	0.0	False 0.0	0.0	0.0	0.0
	visc_cbu_limit	0.0			0.0	0.0	0.005	0.0	0.0	0.0
	visc_con_limit				0.1		0.1			
wsfc_comb	bine_runoff_calve	False					True 0.6			
&ocean_vert_kpp_nml	wstfac diff_cbt_iw		0.0	0.0			0.0			
woccur-rere-kpp=nne	diff_con_limit		0.0	0.1						
	double_diffusion		True	True						
kbl_s	standard_method ricr		0.3	True 0.3						
	smooth_blmc		True	True						
	use_this_module		True	True						
	visc_cbu_iw visc_con_limit		0.0	0.0 0.1						
&ocean_vert_mix_nml		0.675	0.675	0.1	0.65		0.55			
GGCCGII_TCIC_IIIX_IIII	afkph_90	0.725	0.725	0.75	0.75		0.55			
	aidif	_1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0	1.0
	_lewis_diffusivity lewis_lat_depend	True True	True True	False True	False True	False False	False False	False False	False False	False False
	wis_lat_transition	35.0	35.0	35.0	35.0	1 0136	35.0	1 0130	i atse	i alsc
	bug_this_module						False			
	dfkph_00	1.15	1.15	1.15	1.15		1.05			
	dfkph_90 diff_cbt_tanh	1.15	1.15	0.95	0.95		1.05 False			
d	liff_cbt_tanh_max						0.001			
d	diff_cbt_tanh_min						2×10^{-5}			
	iff_cbt_tanh_zmid						150.0			
	iff_cbt_tanh_zwid iwf_30_diffusivity						30.0 2×10^{-5}			
	_depth_transition						25 000 000.0			
	hwf_diffusivity					False	False	False	False	False
	nwf_diffusivity_3d					2×10^{-6}	False $2 imes 10^{-6}$	2×10^{-6}	2×10^{-6}	2×10^{-6}
	vf_min_diffusivity hwf_n0_2omega					2 × 10 ° 20.0	2 × 10 ° 20.0	2 × 10 ° 20.0	2 × 10 ° 20.0	2 × 10 ° 20.0
	uzzonicyu					20.0	20.0	20.0	20.0	20.0

		ESM2M input- cut.nml	MOM_SIS TOPAZ input.nml	russ- accessom- mom4p1- input.nml	hogg_acces- som2 1deg jra55_ryf input.nml	control/ 1deg jra55_ryf/ ocean/ input.nml	kiss_acces- som2 025deg jra55_ryf log-	control/ 025deg jra55_ryf/ ocean/ input.nml	hogg_acces- som2 01deg jra55_ryf input.nml	control/ 01deg jra55_ryf/ ocean/ input.nml
	linear_taper_diff_cbt_table	False	False	False	False		file.00000.ou False			
	num_121_passes						_ 1			
	quebec_2009_10_bug sfkph_00	False $4.5 imes 10^{-5}$	4.5×10^{-5}	4.5×10^{-5}	4.5×10^{-5}		False $4.5 imes 10^{-5}$			
	sfkph_90	4.5×10^{-5}	4.5×10^{-5}	4.5×10^{-5}	4.5×10^{-5}		4.5×10^{-5}			
	smooth_rho_n2						True			
	use_diff_cbt_table use_explicit_vert_diffuse	False	False	False	False	False	False True	False	False	False
	verbose_init						True			
	vert_diff_back_via_max	True	True	True	True	True	True	True	True	True
	vert_mix_scheme	'kpp mom4p1'	'kpp'	'kpp'	'kpp mom4p1'	'kpp mom4p1'	'kpp mom4p1'	'kpp mom4p1'	'kpp mom4p1'	'kpp mom4p1'
	vert_visc_back	шоштрі			шоштрі	шоштрі	False	шоштрі	шоштрі	шоштрі
	visc_cbu_back_max						0.01			
	visc_cbu_back_min visc_cbu_back_zmid						0.001 50.0			
	visc_cbu_back_zwid						30.0			
<mark>vr</mark>	mix_min_diss_bvfreq_scale						0.0006			
	vmix_min_diss_const vmix_min_diss_flux_ri_max						1×10^{-7} 0.2			
V	vmix_rescale_nonbouss						False			
	vmix_set_min_dissipation						False			
	zfkph_00	250 000 000.0	250 000 000.0	250 000.0	250 000.0		250 000.0			
&ocean_vert_	zfkph_90	250 000 000.0	250 000 000.0	$\frac{250000.0}{5\times10^{-6}}$	$\frac{250000.0}{5\times10^{-6}}$	0.0	250 000.0 0.0	0.0	0.0	0.0
background_d		0.0	0.0	2 × 10 -	3 × 10 -	0.0	0.0	0.0	0.0	0.0
ouchground_u	background_viscosity	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001	0.0001
	bottom_drag_cd						0.0024			
	debug_this_module decay_scale	300.0	300.0	300.0	300.0	500.0	False 500.0	500.0	500.0	500.0
	default_roughness_length	300.0	500.0	300.0	500.0	300.0	25.0	300.0	300.0	300.0
	default_tide_speed						0.01			
de	drag_dissipation_efold aq_dissipation_tide_period						True 43 200.0			
	lrag_dissipation_use_cdbot					True	True	True	True	True
	drag_mask_deep						True			
	drag_mask_deep_ratio	1 10-17	1 10-17	1 10-17	4 40-17	1 10-10	0.1	1 10-10	4 40-10	1 10-10
	drhodz_min fixed_wave_dissipation	$1 imes 10^{-12}$ False	$1 imes 10^{-12}$ False	$1 imes 10^{-12}$ False	$1 imes 10^{-12}$ False	$1 imes 10^{-10}$ False	$1 imes10^{-10}$ False	$1 imes 10^{-10}$ False	$1 imes 10^{-10}$ False	$1 imes 10^{-10}$ False
	max_drag_diffusivity	rube	rusc	0.01	0.01	ratsc	0.005	raisc	ruisc	rusc
	max_wave_diffusivity	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01
m'	mixing_efficiency ixing_efficiency_n2depend	True	True	True	True	True	0.2 True	True	True	True
1111	munk_anderson_p	iiue	iiuc	iiuc	iiuc	iiuc	0.25	iiue	iiue	iiuc
	munk_anderson_sigma						3.0			
	num_121_passes read_leewave_dissipation						1 False			
	read_roughness	True	True	True	True	True	True	True	True	True
	read_tide_speed	True	True	True	True	True	True	True	True	True
	read_wave_dissipation	False	False	False	False	False	False	False	False	False
ſ	reading_roughness_amp reading_roughness_length	True False	True False	True False	True False	True False	True False	True False	True False	True False
	roughness_scale	30 000.0	30 000.0	20 000.0	20 000.0	12 000.0	12 000.0	12 000.0	12 000.0	12 000.0
	shelf_depth_cutoff	160.0	160.0	160.0	160.0	-1000.0	-1000.0	-1000.0	-1000.0	-1000.0
	smooth_bvfreq_bottom smooth_rho_n2						True True			
	speed_min						0.005			
	tidal_diss_efficiency						0.333 33			
t	tide_speed_data_on_t_grid use_draq_dissipation	True True	True True	True True	True True	True True	True True	True True	True True	True True
	use_drag_dissipation use_leewave_dissipation	irue	irue	irue	irue	irue	False	iiue	irue	irue
	use_legacy_methods	True				False	False	False	False	False
	use_this_module	True	True	True	True	True	True	True	True	True
	use_wave_dissipation vel_micom_smooth	True	True	True	True	True	True 0.2	True	True	True
W	vave_diffusivity_monotonic						True			
	wave_energy_flux_max	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1	0.1
&ocean_vert_debug_this_ma							False			
acoug_tills_file	num_n2_smooth						1			
	num_ri_smooth						1			
	smooth_n2						True			

Group (continued)	Variable	original/ GFDL ESM2M input- cut.nml	original/ MOM_SIS TOPAZ input.nml	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ kiss_acces- som2 025deg jra55_ryf log- file.000000.oi	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	original/ hogg_acces- som2 01deg jra55_ryf input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	smooth_ri_number						True			
&ocean_wave_nml	damp_where_ice						True			
	debug_this_module						False			
	filter_wave_mom						True			
	use_this_module						False			
	use_tma						True			
	wavedamp						-10.0			
&ocean_xlandinsert	write_a_restart	True	True	False	False	False	True	False	False	False
use_this_module						raise		raise	False	raise
	verbose_init	True	True	True	True					
&ocean_xlandmix_n	ml use_this_module	True	True	False	False	False		False	False	False
	verbose_init	True	True	True	True					
0 .	xlandmix_kmt	True	True	True	True					
&sat_vapor_pres_nn construct_table_wrt	<u>_liq</u>	True	True							
	able_wrt_liq_and_ice	True	True							
	how_all_bad_values								True	
&surface_flux_nml	ncar_ocean_flux								True	
	old_dtaudv	False							-	
0 +: :	raoult_sat_vap						F-1		True	
&time_interp_extern debug_this_module							False			
	max_fields						100			
	max_files num_io_buffers						40 2			
&time_interp_nml							False			
	perthlike_behavior	'INPUT/	'INPUT/				raise			
&topography_nml	topog_file		-							
		navy_topog- ra-	navy_topog- ra-							
		phy.data.nc'	phy.data.nc'							
&xgrid_nml	do_alltoall	priy.uutu.ric	priy.uutu.iit						True	True
g	do_alltoally								True	True
	interp_method	'second	'second		'second	'second		'second	'second	'second
		order'	order'		order'	order'		order'	order'	order'
make_c	exchange_reproduce	True	True		False	False		False	False	False
	nsubset					16		16	16	16
	xgrid_log								False	

1.6 All variables in new configs (differences highlighted)

Group	Variable	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
&auscom_ice_nml	aice_cutoff	0.15	0.15	0.15
	chk_i2o_fields chk_o2i_fields	False False	False False	False False
	do_ice_once	False	False	False
	dt_cpl	3600	1800	600
	fixmeltt	False	False	False
	frazil_factor	1.0	1.0	1.0
	iceform_adj_salt	False	False	False
	icemlt_factor	1.0	1.0	1.0
	kmxice pop_icediag	5 True	5 True	5 True
	redsea_qulfbay_sfix	True	iiue	iiue
	sign_stflx	1.0	1.0	1.0
	tmelt	-0.216	-0.216	-0.216
	use_ioaice	True	True	True
&diag_manager_nml	debug_diag_manager	True	True	True
0.5	issue_oor_warnings	True	True	True
&fms_io_nml	fileset_write	'single' 'multi'	'multi' 'multi'	'multi' 'multi'
	threading_read threading_write	'single'	multi 'multi'	multi 'multi'
&fms_nml	clock_grain	'COMPONENT'	'COMPONENT'	'COMPONENT'
	domains_stack_size	115200	115200	115200
&mom_oasis3_interface_nml	fields_in	'u_flux',	'u_flux',	'u_flux',
		'v_flux',	'v₋flux',	'v_flux',
		'lprec', 'fprec',	'lprec', 'fprec',	'lprec', 'fprec',
		'salt_flx',	'salt_flx',	'salt_flx',
		'mh_flux', 'sw_flux',	'mh_flux',	'mh_flux', 'sw_flux',
		sw_itux, 'q_flux',	'sw_flux', 'q_flux',	'q_flux',
		't_flux',	't_flux',	't_flux',
		'lw_flux',	'lw_flux',	'lw_flux',
		'runof', 'p',	'runof', 'p',	'runof', 'p',
		'aice',	'aice',	'aice',
		'wfimelt',	'wfimelt',	'wfimelt',
	E-13	'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',	'dssldx',	'dssldx',
		'dssldy',	'dssldy',	'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
&monin_obukhov_nml	neutral	True	True	True
&mpp_io_nml	deflate_level	5	5	5
	shuffle	1	1	1
&ocean_adv_vel_diag_nml	diag_step	4320	4320	576
	large_cfl_value	10.0	10.0	10.0
	max_cfl_value verbose_cfl	100.0	100.0 True	100.0
&ocean_advection_velocity_nml	max_advection_velocity	True 0.5	0.5	True 0.5
&ocean_albedo_nml	ocean_albedo_option	2	2	2
&ocean_barotropic_nml	barotropic_halo	10	10	10
·	barotropic_time_stepping_a	True	True	True
	barotropic_time_stepping_b	False	False	False
	debug_this_module	False	False	False
	diag_step	4320	4320	576
	eta_max frac_crit_cell_height	8.0 0.2	8.0 0.2	8.0 0.2
	rrac_crit_cell_neight pred_corr_gamma	0.2	0.2	0.2
	pred_con_gamma smooth_eta_diag_laplacian	True	True	True
	smooth_eta_t_biharmonic	False	False	False
	smooth_eta_t_laplacian	True	True	True
	smooth_pbot_t_biharmonic	False	False	False
	smooth_pbot_t_laplacian	True	True	True
	truncate_eta	False	False	False
	use_legacy_barotropic_halos	False	False	False

Group (continued)	Variable	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	vel_micom_bih	0.01	0.01	0.01
	vel_micom_lap	0.05 0.2	0.05 0.2	0.05 0.2
	vel_micom_lap_diag verbose_truncate	U.2 True	True	True
	zero_tendency	False	False	False
&ocean_bbc_nml	bmf_implicit	True	True	True
	cdbot	0.001	0.001	0.001
	cdbot_hi	0.007	0.007	0.007
	cdbot_roughness_length cdbot_roughness_uamp	False True	False True	False True
	uresidual	0.05	0.05	0.05
	use_geothermal_heating	False	False	False
&ocean_bih_friction_nml	bih_friction_scheme	'general'	'general'	'general'
&ocean_bih_tracer_nml	use_this_module	False	False	False
&ocean_bihcst_friction_nml	use_this_module	False	False	False
&ocean_bihgen_friction_nml	bottom_Spoint eq_lat_micom	True 0.0	False 0.0	False 0.0
	eq_vel_micom_aniso	0.0	0.0	0.0
	eq_vel_micom_iso	0.0	0.0	0.0
	equatorial_zonal	False	False	False
	k_smag_aniso	0.0	0.0	0.0
	k_smag_iso	2.0 True	2.0 True	2.0 True
	ncar_boundary_scaling ncar_boundary_scaling_read	True	True	True
	ncar_rescale_power	2	2	2
	ncar_vconst_4	$2 imes 10^{-8}$	$2 imes 10^{-8}$	2×10^{-8}
	ncar_vconst_5	_ 5	_ 5	5
	use_this_module	True	True	True
	vel_micom_aniso vel_micom_bottom	0.0 0.01	0.0 0.0	0.0 0.0
	vel_micom_iso	0.04	0.0	0.0
	visc_crit_scale	0.25	1.0	1.0
&ocean_convect_nml	use_this_module	False	False	False
&ocean_coriolis_nml	acor	0.5	0.5	0.5
&ocean_density_nml	use_this_module eos_linear	True False	True False	True False
&ocean_density_nint	eos_preteos10	True	True	True
	layer_nk	80	80	80
	neutralrho_max	1030.0	1030.0	1030.0
	neutralrho_min	1020.0	1020.0	1020.0
	potrho_max	1038.0 1028.0	1038.0 1028.0	1038.0 1028.0
&ocean_domains_nml	potrho_min max_tracers	1028.0	1028.0	5
&ocean_form_drag_nml	use_this_module	False	False	False
&ocean_frazil_nml	debug_this_module	False	False	False
	frazil_only_in_surface	False	False	False
	freezing_temp_preteos10	True	True	True
	freezing_temp_simple use_this_module	False True	False True	False True
&ocean_grids_nml	debuq_this_module	False	False	False
&ocean_increment_eta_nml	use_this_module	False	False	False
&ocean_increment_tracer_nml	use_this_module	False	False	False
&ocean_increment_velocity_nml	use_this_module	False	False	False
&ocean_lap_friction_nml	lap_friction_scheme	'general'	'general'	'general'
&ocean_lap_tracer_nml &ocean_lapcst_friction_nml	use_this_module use_this_module	False False	False False	False False
&ocean_lapgen_friction_nml	bottom_5point	True	raise	raise
woccan_tapycn_mcton_nnt	k_smag_aniso	0.0		
	k_smag_iso	0.0		
	restrict_polar_visc	True		
	restrict_polar_visc_lat	60.0		
	restrict_polar_visc_ratio use_this_module	0.35 True	False	False
	vel_micom_iso	0.1	rdise	Lqt2G
	viscosity_ncar	False		
	viscosity_scale_by_rossby	True		
	viscosity_scale_by_rossby_power	4.0		
&ocean_mixdownslope_nml	debug_this_module	False		
	mixdownslope_mask_gfdl mixdownslope_npts	False 4		
	read_mixdownslope_mask	False		
	use_this_module	True	False	False
&ocean_model_nml	baroclinic_split	1	1	1
	23.23	_	_	_

Group (continued)	Variable	new/ control/ 1deg jra55_ryf/	new/ control/ 025deg jra55_ryf/	new/ control/ 01deg jra55_ryf/
		ocean/ input.nml	ocean/ input.nml	ocean/ input.nml
	barotropic_split	80	80	80
	cmip_units	True	True	True
	debug dt_ocean	False 3600	False 1200	False 150
	io_layout	4, 3	6, 5	10, 15
	layout	16, 15	48, 40	80,75
	surface_height_split time_tendency	1 'twolevel'	1 'twolevel'	1 'twolevel'
	vertical_coordinate	'zstar'	'zstar'	'zstar'
&ocean_momentum_source_nml	rayleigh_damp_exp_from_bottom	False	False	False
	use_rayleigh_damp_table	True	True	True
&ocean_nphysics_nml	use_this_module debug_this_module	True False	True False	True False
wocean_npmysics_nmt	use_nphysicsa	False	False	False
	use_nphysicsb	False	False	False
	use_nphysicsc	True	False	False
&ocean_nphysics_util_nml	use_this_module agm	True 600.0	False 100.0	False 100.0
a decard in project determine	agm_closure	True	True	True
	agm_closure_baroclinic	True	True	True
	agm_closure_buoy_freq	0.004	0.004	0.004
	agm_closure_eady_ave_mixed agm_closure_eady_cap	True True		
	agm_closure_eady_smooth_horz	True		
	agm_closure_eady_smooth_vert	True		
	agm_closure_eden_gamma	0.0		
	agm_closure_eden_greatbatch agm_closure_grid_scaling	False True		
	agm_closure_length	50 000.0	50 000.0	50 000.0
	agm_closure_length_bczone	False	False	False
	agm_closure_length_fixed	False	False	False
	agm_closure_length_rossby agm_closure_lower_depth	False 2000.0	False 2000.0	False 2000.0
	agm_closure_max	600.0	600.0	600.0
	agm_closure_min	50.0	100.0	100.0
	agm_closure_scaling	0.07	0.07	0.07
	agm_closure_upper_depth agm_damping_time	100.0 45.0	100.0	100.0
	agm_smooth_space	False		
	agm_smooth_time	False		
	aredi	600.0 False	600.0 False	600.0 False
	aredi_equal_agm drhodz_mom4p1	True	False	False
	drhodz_smooth_horz	False	False	False
	drhodz_smooth_vert	False	False	False
	nphysics_util_zero_init	True 100 000.0	100 000.0	100 000.0
	rossby_radius_max rossby_radius_min	15 000.0	15 000.0	15 000.0
	tracer_mix_micom	False	False	False
	vel_micom	0.0	0.0	0.0
&ocean_nphysicsa_nml &ocean_nphysicsb_nml	use_this_module use_this_module	False False	False False	False False
&ocean_nphysicsc_nml	bv_freq_smooth_vert	True	raise	raise
	bvp_bc_mode	2		
	bvp_min_speed	0.1		
	bvp_speed debug_this_module	0.0 False		
	do_qm_skewsion	True		
	do_neutral_diffusion	True		
	epsln_bv_freq	1×10^{-12}		
	gm_skewsion_bvproblem qm_skewsion_modes	True False		
	gm_skewsion_modes neutral_eddy_depth	True		
	neutral_physics_limit	True		
	number_bc_modes	2		
	regularize_psi	False		
	smax_psi smooth_psi	0.01 True		
	tmask_neutral_on	True		
	turb_blayer_min	50.0		
9 according to the control of the co	use_this_module	True	False	False
&ocean_operators_nml &ocean_overexchange_nml	use_legacy_div_ud debug_this_module	False False	False False	False False
xoccan_overexchange_nint	debug_triis_module	Lqf2G	rdlSt	raise

Group (continued)	Variable	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	overexch_npts	4	_ 4	4
	overexch_weight_far overflow_umax	False 5.0	False 5.0	False 5.0
	use_this_module	False	False	False
&ocean_overflow_nml	use_this_module	False	False	False
&ocean_overflow_ofp_nml	use_this_module	False	False	False
&ocean_polar_filter_nml	use_this_module	False	False	False
&ocean_pressure_nml	zero_pressure_force	False	False	False
&ocean_rivermix_nml	debug_this_module river_diffuse_salt	False True	False True	False True
	river_diffuse_temp	True	True	True
	river_diffusion_thickness	0.0	0.0	0.0
	river_diffusivity	0.0	0.0	0.0
	river_insertion_thickness	40.0	40.0	40.0
Roccan riverstread and	use_this_module use_this_module	True False	True False	True False
&ocean_riverspread_nml &ocean_rough_nml	rough_scheme	'beljaars'	'beljaars'	'beljaars'
&ocean_sbc_nml	avg_sfc_temp_salt_eta	True	True	True
	avg_sfc_velocity	True	True	True
	calvingspread	False	False	False
	do_bitwise_exact_sum	False	False	False
	do_flux_correction land_model_heat_fluxes	False False	False False	False False
	max_delta_salinity_restore	0.5	0.5	0.5
	max_ice_thickness	0.0	0.0	0.0
	read_restore_mask	False	False	False
	restore_mask_gfdl	False	False	False
	runoff_salinity salt_correction_scale	0.0 0.0	0.0 0.0	0.0 0.0
	salt_restore_as_salt_flux	True	True	True
	salt_restore_tscale	60.0	60.0	60.0
	salt_restore_under_ice	True	True	True
	temp_restore_tscale	-10.0	-10.0	-10.0
	use_full_patm_for_sea_level use_waterflux	False True	False True	False True
	zero_heat_fluxes	False	False	False
	zero_net_salt_correction	False	False	False
	zero_net_salt_restore	True	True	True
	zero_net_water_correction	False	False	False
	zero_net_water_couple_restore	True	True	True
	zero_net_water_coupler zero_net_water_restore	Irue True	True True	Irue True
	zero_surface_stress	False	False	False
	zero_water_fluxes	False	False	False
&ocean_shortwave_csiro_nml	use_this_module	False	False	False
&ocean_shortwave_gfdl_nml	debug_this_module	False	False	False
	enforce_sw_frac optics_manizza	True True	True True	True True
	optics_morel_antoine	False	False	False
	read_chl	True	True	True
	use_this_module	True	True	True
	zmax_pen	300.0	300.0	300.0
&ocean_shortwave_jerlov_nml &ocean_shortwave_nml	use_this_module use_shortwave_csiro	False False	False False	False False
QUEENI_SHOPEWAYE_HITE	use_shortwave_gfdl	True	True	True
	use_shortwave_jerlov	False	False	False
	use_this_module	True	True	True
&ocean_sigma_transport_nml	use_this_module	False	False	False
&ocean_solo_nml	calendar	'NOLEAP'	'NOLEAP'	'NOLEAP'
	date_init <mark>days</mark>	1, 1, 1, 0, 0, 0 1460	1, 1, 1, 0, 0, 0 31	1, 1, 1, 0, 0, 0 30
	dt_cpld	3600	1200	600
	hours	0	0	0
	minutes	0	0	0
		0	0	0
	months			^
	seconds	0	0	0
&orean sponges eta nmi	seconds years	0 0	0	0
&ocean_sponges_eta_nml &ocean_sponges_tracer_nml	seconds years use_this_module	0 0 False	0 0 False	0 False
&ocean_sponges_eta_nml &ocean_sponges_tracer_nml &ocean_sponges_velocity_nml	seconds years	0 0	0	0
&ocean_sponges_tracer_nml	seconds years use_this_module use_this_module use_this_module coefficient_ce	0 0 False False 0.05	0 0 False False	False False False 0.05
&ocean_sponges_tracer_nml &ocean_sponges_velocity_nml	seconds years use_this_module use_this_module use_this_module use_this_module	0 0 False False	0 0 False False	0 False False False

Group (continued)	Variable	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	front_length_deform_radius	True	True	True
	limit_psi limit_psi_velocity_scale	True 0.5	True 0.5	True 0.5
	min_kblt	4	4	4
	smooth_advect_transport	True	True	True
	smooth_advect_transport_num	4	4	4
	smooth_hblt	False	False	False
	smooth_psi	True	True 3	True 3
	smooth_psi_num submeso_advect_flux	3 False	False	False
	submeso_advect_limit	True	True	True
	submeso_advect_upwind	True	True	True
	submeso_advect_zero_bdy	True	True	True
	submeso_diffusion	False	False	False
	submeso_diffusion_biharmonic submeso_diffusion_scale	True 10.0	True 10.0	True 10.0
	submeso_skew_flux	True	True	True
	use_hblt_equal_mld	True	True	True
	use_psi_legacy	False	False	False
	use_this_module	True	True	True
&ocean_tempsalt_nml	debug_this_module	False	False	False
	pottemp_2nd_iteration pottemp_equal_contemp	True True	True True	True True
	pottemp_equat_contemp s_max	70.0	70.0	70.0
	s_max_limit	42.0	42.0	42.0
	s_min	0.0	0.0	0.0
	s_min_limit	2.0	2.0	2.0
	t_max	55.0	55.0	55.0
	t_max_limit t_min	32.0 — 20.0	32.0 —20.0	32.0 —20.0
	t_min_limit	-20.0 -5.0	-20.0 -5.0	20.0 5.0
	temperature_variable	'potential	'potential	'potential
		temp'	temp'	temp'
&ocean_thickness_nml	debug_this_module	False	False	False
	debug_this_module_detail	False	False	False
	rescale_mass_to_get_ht_mod	False	False	False
&ocean_tracer_advect_nml	thickness_method debug_this_module	'energetic' False	'energetic' False	'energetic' False
Woccan_tracer_advect_nint	read_basin_mask	False	False	False
&ocean_tracer_diag_nml	diag_step	4320	4320	576
	do_bitwise_exact_sum	False	False	False
	tracer_conserve_days	30.0	30.0	30.0
&ocean_tracer_nml	age_tracer_max_init	0.0	0.0	0.0
	debug_this_module frazil_heating_after_vphysics	False True	False True	False True
	frazil_heating_before_vphysics	False	False	False
	limit_age_tracer	True	True	True
	remap_depth_to_s_init	False	False	False
	use_tempsalt_check_range	True	True	True
	zero_tendency	False	False	False
&ocean velocity diag nml	zero_tracer_source debug_this_module	False False	False False	False False
&ocean_velocity_diag_nml	debug_tnis_module diaq_step	4320	4320	576
	energy_diag_step	4320	4320	5760
	large_cfl_value	10.0	10.0	10.0
	max_cfl_value	100.0	100.0	100.0
&ocean_velocity_nml	adams_bashforth_third	True	True	True
	max_cgint	1.0	1.0	1.0
	truncate_velocity truncate_velocity_value	False 2.0	False 2.0	False 2.0
	truncate_verbose	True	True	True
	zero_tendency	False	False	False
	zero_tendency_explicit_a	False	False	False
	zero_tendency_explicit_b	False	False	False
O annual transition and	zero_tendency_implicit	False	False	False
&ocean_vert_kpp_iow_nml	use_this_module	False	False	False
&ocean_vert_kpp_mom4p1_nml	diff_cbt_iw double_diffusion	0.0 True	0.0 True	0.0 True
	kbl_standard_method	False	False	False
	ricr	0.3	0.3	0.3
	smooth_blmc	False	False	False
	smooth_ri_kmax_eq_kmu	True	True	True
	use_this_module	True	True	True

Group (continued)	Variable	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	new/ control/ 025deg jra55_ryf/ ocean/ input.nml	new/ control/ 01deg jra55_ryf/ ocean/ input.nml
	visc_cbu_iw	0.0	0.0	0.0
&ocean_vert_mix_nml	aidif	1.0	1.0	1.0
	bryan_lewis_diffusivity	False	False	False
	bryan_lewis_lat_depend	False	False	False
	hwf_diffusivity	False	False	False
	hwf_min_diffusivity	2×10^{-6}	$2 imes 10^{-6}$	$2 imes 10^{-6}$
	hwf_n0_2omega	20.0	20.0	20.0
	use_diff_cbt_table	False	False	False
	vert_diff_back_via_max	True	True	True
	vert_mix_scheme	'kpp mom4p1'	'kpp mom4p1'	'kpp mom4p1'
&ocean_vert_tidal_nml	background_diffusivity	0.0	0.0	0.0
	background_viscosity	0.0001	0.0001	0.0001
	decay_scale	500.0	500.0	500.0
	drag_dissipation_use_cdbot	True	True	True
	drhodz_min	$1 imes 10^{-10}$	$1 imes 10^{-10}$	$1 imes 10^{-10}$
	fixed_wave_dissipation	False	False	False
	max_wave_diffusivity	0.01	0.01	0.01
	mixing_efficiency_n2depend	True	True	True
	read_roughness	True	True	True
	read_tide_speed	True	True	True
	read_wave_dissipation	False	False	False
	reading_roughness_amp	True	True	True
	reading_roughness_length	False	False	False
	roughness_scale	12 000.0	12 000.0	12 000.0
	shelf_depth_cutoff	-1000.0	-1000.0	-1000.0
	tide_speed_data_on_t_grid	True	True	True
	use_drag_dissipation	True	True	True
	use_legacy_methods	False	False	False
	use_this_module use_wave_dissipation	True True	True True	True True
		0.1	0.1	0.1
&ocean_xlandinsert_nml	wave_energy_flux_max use_this_module	False	False	False
&ocean_xlandmix_nml	use_this_module	False	False	False
&xgrid_nml	do_alltoall	1 0136	1 0136	True
waynu anni	do_attoatt do_atltoatly			True
	interp_method	'second	'second	'second
	interp_inetriou	order'	order'	order'
	make_exchange_reproduce	False	False	False
	nsubset	16	16	16

1.7 1 deg configs (differences only)

Group	Variable	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	1deg jra55v13 ryf9091 spinup_A- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ GFDL ESM2M input- cut.nml
&auscom_ice_nml	aice_cutoff	0.15	0.15	0.15	0.15	
	chk_i2o_fields	False	False	False	False	
	chk_o2i_fields	False	False	False	False	
	do_ice_once	False	False	False	False	
	dt_cpl	3600	3600	3600	3600	
	fixmeltt frazil_factor	False	False 1.0	False	False 1.0	
	iceform_adj_salt	1.0 False	False	1.0 False	False	
	icemlt_factor	1.0	1.0	1.0	1.0	
	kmxice	5	5	5	5	
	pop_icediag	True	True	True	True	
	redsea_gulfbay_sfix		True	True	True	
	sign_stflx	1.0	1.0	1.0	1.0	
	tmelt	-0.216	-0.216	-0.216	-0.216	
	use_ioaice	True	True	True	True	
&bg_diff_lat_dependence_nml	bg_diff_eq	1×10^{-6}	1×10^{-6}			
	lat_low_bgdiff	20.0	20.0			
&coupler_nml	atmos_npes					0
	atmos_nthreads					4
	calendar					'NOLEAP'
	check_stocks					0
	concurrent					True
	current_date					1, 1, 1, 0, 0, 0
	days					0 True
	do_atmos do_flux					True
	do_ice					True
	do_land					True
	do_ccean					True
	dt_atmos					1800
	dt_cpld					7200
	months					12
	ocean_npes					96
	use_lag_fluxes					True
&diag_integral_nml	file_name					'diag integral.out'
	output_interval time_units					1.0 'days'
&diag_manager_nml	debug_diag_manager			False	True	uays
Wildy_manager_mmt	issue_oor_warnings	False	False	True	True	False
	max_axes					200
	max_files					50
	max_input_fields					800
	max_num_axis_sets					200
	max_output_fields					1300
	mix_snapshot_average_fields					False
&flux_exchange_nml	debug_stocks					False
	divert_stocks_report					True
	do_area_weighted_flux					False
	nblocks					4
&fms_io_nml	fileset_write max_files_r	'single'	'single'	'single'	'single'	700
	max_files_r max_files_w					300 300
	threading_write	'single'	'single'	'cinalo'	'single'	300
&fms_nml	clock_grain	'single' 'LOOP'	'single' 'LOOP'	'single' 'LOOP'	'single' 'COMPONENT'	'COMPONENT'
WIII STILL	domains_stack_size	LOOI	LOOI	115200	115200	5000000
	stack_size			115200	113200	0
&generic_tracer_nml	do_generic_cfc					False
	do_generic_topaz					True
	do_generic_tracer					True
&ice_albedo_nml	t_range					10.0
&ice_model_nml	add_diurnal_sw					False
	alb_ice					0.65
	alb_sno					0.85
	channel_viscosity					500 000.0
	cm2_bugs					False
	do_icebergs					True
	h_lo_lim					1×10^{-10}
	ice_bulk_salin					0.005
	io_layout					1, 2

Group (continued)	Variable layout	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	1deg jra55v13 ryf9091 spinup_A- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ GFDL- ESM2M input- cut.nml
	nsteps_adv					1
	nsteps_dyn					72
	num_part spec_ice					6 False
	t_range_melt					1.0
	wd_turn					0.0
&icebergs_nml	make_calving_reproduce speed_limit					True 0.5
	time_average_weight					False
	traj_sample_hrs					_ 0
	use_roundoff_fix verbose					True True
	verbose_hrs					120
&mom_oasis3_interface_nml	fields_in	'u_flux',	'u_flux',	'u_flux',	'u_flux',	
		'v_flux', 'lprec', 'fprec',	'v_flux', 'lprec', 'fprec',	'v_flux', 'lprec', 'fprec',	'v_flux', 'lprec', 'fprec',	
		'salt_flx',	'salt_flx',	'salt_flx',	'salt_flx',	
		'mh_flux',	'mh_flux',	'mh_flux',	'mh_flux',	
		'sw_flux',	'sw_flux',	'sw_flux',	'sw_flux',	
		'q_flux', 't_flux',	'q_flux', 't_flux',	'q_flux', 't_flux',	'q_flux', 't_flux',	
		'lw_flux',	'lw_flux',	'lw_flux',	'lw_flux',	
		'runof', 'p',	'runof', 'p',	'runof', 'p',	'runof', 'p',	
		'aice', 'wfimelt',	'aice', 'wfimelt',	'aice', 'wfimelt',	'aice', 'wfimelt',	
		wifiform'	williett,	williett,	'wfiform'	
	fields_out	't_surf',	't_surf',	't_surf',	't_surf',	
		's_surf',	's_surf',	's_surf',	's_surf',	
		'u_surf', 'v_surf',	'u_surf', 'v_surf',	'u_surf', 'v_surf',	'u_surf', 'v_surf',	
		'dssldx',	'dssldx',	'dssldx',	'dssldx',	
		'dssldy',	'dssldy',	'dssldy',	'dssldy',	
	num_fields_in	'frazil' 15	'frazil' 15	'frazil' 15	'frazil' 15	
	num_fields_out	7	7	7	7	
	send_after_ocean_update	True	True	True	True	
&monin_obukhov_nml	send_before_ocean_update	False	False	False True	False	
&monin_oduknov_nint	neutral rich_crit			irue	True	10.0
	stable_option					2
	zeta_trans					0.5
&mpp_io_nml	deflate_level shuffle			5 1	5 1	
&ocean_adv_vel_diag_nml	diag_step	120	4320	4320	4320	1200
-	verbose_cfl	False	True	True	True	False
&ocean_albedo_nml	ocean_albedo_option barotropic_halo		10	2	2	5
&ocean_barotropic_nml	barotropic_leap_frog	False	10	10	10	
	barotropic_pred_corr	True				
	barotropic_time_stepping_a		True	True	True	True
	barotropic_time_stepping_b barotropic_time_stepping_mom4p0	True	False	False	False	False
	barotropic_time_stepping_mom4p1	False				
	diag_step	120	4320	4320	4320	1200
	do_bitwise_exact_sum smooth_eta_t_biharmonic	True	False	False	False	True True
	smooth_eta_t_laplacian	False	Faise True	Faise True	True	False
	smooth_pbot_t_biharmonic	True	False	False	False	True
	smooth_pbot_t_laplacian	False	True	True	True	False
	use_legacy_barotropic_halos vel_micom_lap_diag	0.2	False 0.2	False 0.2	False 0.2	1.0
	zero_tendency	False	0.2	False	False	False
&ocean_bbc_nml	bmf_implicit			True	True	
	cdbot	0.001	0.001	0.001	0.001	0.002
	cdbot_hi cdbot_law_of_wall	False	False	0.007	0.007	
	cdbot_roughness_length	iuuc	i uisc	False	False	
	cdbot_roughness_uamp			True	True	
	uresidual			0.05	0.05	0.05
		Falco	Enloc	Falco	Ealco	Truc
&ocean_bbc_ofam_nml	use_geothermal_heating read_tide_speed	False False	False False	False	False	True

Group (continued)	Variable	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	1deg jra55v13 ryf9091 spinup_A- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ GFDL- ESM2M input- cut.nml
&ocean_bihgen_friction_nml	ncar_boundary_scaling_read vel_micom_bottom	0.01	0.01	False 0.1	True 0.01	0.01
&ocean_convect_nml	convect_full_scalar	False	False	0.1	0.01	0.01
Woccun_convect_mint	convect_full_vector	True	True			
&ocean_density_nml	eos_linear		False	False	False	False
	eos_preteos10		True	True	True	True
	linear_eos	False				
&ocean_domains_nml	teos10_eos	False 20	10	г	г	
&ocean_drifters_nml	max_tracers use_this_module	20	10	5	5	False
&ocean_form_drag_nml	cprime_aiki	0.6	0.6			i disc
&ocean_frazil_nml	debug_this_module			False	False	False
	frazil_only_in_surface	False		False	False	True
	freezing_temp_accurate	True				
	freezing_temp_preteos10		-	True	True	-
9 access saids mad	freezing_temp_simple	False	True	False	False	True
&ocean_grids_nml	debug_this_module do_bitwise_exact_sum	True	True	False	False	True True
	read_rho0_profile	False	False			False
&ocean_increment_eta_nml	days_to_increment	0	0			. 3150
	fraction_increment	1.0	1.0			
	secs_to_increment	3600	1800			
&ocean_increment_tracer_nml	days_to_increment	0	0			
	fraction_increment	1.0	1.0			
Pagan ingrament valogity and	secs_to_increment	3600 0	1800			
&ocean_increment_velocity_nml	days_to_increment fraction_increment	1.0	1.0			
	secs_to_increment	3600	1800			
&ocean_lapgen_friction_nml	bottom_5point	True	True	True	True	True
	k_smag_aniso	0.0	0.0	0.0	0.0	0.0
	k_smag_iso	0.0	0.0	0.0	0.0	0.0
	ncar_only_equatorial	True	True	_	_	_
	restrict_polar_visc	True	True	True	True	True
	restrict_polar_visc_lat restrict_polar_visc_ratio	60.0 0.35	60.0 0.35	60.0 0.35	60.0 0.35	60.0 0.35
	use_this_module	True	True	True	True	True
	vconst_1	0.000 000 8	8 000 000.0			
	vconst_2	0.0	0.0			
	vconst_3	0.8	0.8			
	vconst_4	5×10^{-9}	5×10^{-9}			
	vconst_5 vconst_6	700,000,000,0	3 300 000 000.0			
	vconst_7	100.0	100.0			
	vel_micom_iso	0.1	0.1	0.1	0.1	0.1
	viscosity_ncar	False	True	False	False	False
	viscosity_ncar_2000	False	False	False		
	viscosity_ncar_2007	True	True	False	_	_
	viscosity_scale_by_rossby	True	True	True	True	True
&ocean_mixdownslope_nml	viscosity_scale_by_rossby_power mixdownslope_mask_gfdl	4.0 False	4.0 False	4.0 False	4.0 False	4.0 True
&ocean_mixdownstope_nint	read_mixdownslope_mask	False	False	False	False	True
&ocean_model_nml	cmip_units	True	True	True	True	False
	dt_ocean	3600	3600	3600	3600	7200
	impose_init_from_restart					True
	io_layout		4, 3	4, 3	4, 3	1, 4
	layout	12, 10	16, 15	16, 15	16, 15	12,8
&ocean_momentum_source_nml	rayleigh_damp_exp_from_bottom use_rayleigh_damp_table	Truo	True	False True	False True	
	use_rayteign_damp_table use_this_module	True True	True	True	True	False
&ocean_nphysics_util_nml	agm	600.0	600.0	600.0	600.0	800.0
, ,	agm_closure_max	600.0	600.0	600.0	600.0	800.0
	agm_closure_min	50.0	50.0	50.0	50.0	100.0
	smax					0.005
	swidth					0.002
&ocean_nphysicsa_nml	debug_this_module					False
	neutral_linear_gm_taper neutral_physics_limit					True True
	neutral_physics_simple					False
	neutral_sine_taper					True
	tmask_neutral_on					True
&ocean_nphysicsb_nml	debug_this_module					False
	nblayer_smooth					True
	neutral_physics_limit					True

Group (continued)	Variable	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	1deg jra55v13 ryf9091 spinup_A- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ GFDL ESM2M input- cut.nml
	surf_turb_thick_min					50.0
&ocean_operators_nml	surf_turb_thick_min_k use_legacy_div_ud			False	False	5 True
&ocean_overexchange_nml	overexch_check_extrema	False	False	Tuisc	ruisc	False
&ocean_overflow_nml	debug_this_module	False	False			False
&ocean_overflow_ofp_nml	use_this_module			False	False	
&ocean_pressure_nml	zero_pressure_force			False	False	40.0
&ocean_rivermix_nml	calving_insertion_thickness discharge_combine_runoff_calve					40.0 False
	do_bitwise_exact_sum					True
	river_diffuse_salt	False	False	True	True	False
	river_diffuse_temp	False	False	True	True	False
	runoff_insertion_thickness					40.0
&ocean_riverspread_nml	use_this_module	True	True	False	False	False
&ocean_rough_nml &ocean_sbc_nml	rough_scheme calvingspread			'beljaars' False	'beljaars' False	'beljaars' False
&ocean_soc_nint	do_bitwise_exact_sum			False	False	raise
	do_flux_correction			False	False	True
	eta_restore_tscale					-10.0
	ice_salt_concentration	0.005				-
	land_model_heat_fluxes max_delta_salinity_restore	0.5	0.5	False 0.5	False 0.5	True
	max_ice_thickness	8.0	8.0	0.0	0.0	8.0
	read_restore_mask	False	False	False	False	0.0
	restore_mask_gfdl	False	False	False	False	
	runoff_salinity	0.0	0.0	0.0	0.0	
	runoffspread salt_correction_scale			0.0	0.0	False 0.0
	salt_restore_as_salt_flux	True	True	True	True	0.0
	salt_restore_tscale	15.0	15.0	60.0	60.0	-10.0
	salt_restore_under_ice	True	True	True	True	
	tau_x_correction_scale					0.0
	tau_y_correction_scale					0.0
	temp_correction_scale temp_restore_tscale	-1.0	-1.0	-10.0	-10.0	1.0 10.0
	use_full_patm_for_sea_level	1.0	1.0	False	False	True
	use_waterflux_override_calving					False
	use_waterflux_override_evap					False
	use_waterflux_override_fprec	F-I	Falsa			False
	waterflux_tavg zero_heat_fluxes	False False	False False	False	False	False
	zero_net_pme_eta_restore	raisc	raisc	raisc	ratsc	False
	zero_net_salt_correction			False	False	
	zero_net_salt_restore	True	True	True	True	
	zero_net_water_correction	_	-	False	False	
	zero_net_water_couple_restore zero_net_water_coupler	True True	True True	True True	True True	
	zero_net_water_coupler	True	True	True	True	
	zero_surface_stress	False	False	False	False	
	zero_water_fluxes	False	False	False	False	
&ocean_sbc_ofam_nml	restore_mask_ofam	False	False			
&ocean_shortwave_csiro_nml	river_temp_ofam read_depth	False True	False True			
&OCEAL_SHOLLWAVE_CSHO_HINL	use_this_module	True	True	False	False	False
	zmax_pen	7000	7000	raisc	ratsc	raisc
&ocean_shortwave_gfdl_nml	optics_morel_antoine			False	False	False
	override_f_vis					False
	read_chl	False	False	True	True	False
	sw_pen_fixed_depths use_this_module	False False	False False	True	True	True
	zmax_pen	200.0	200.0	300.0	300.0	200.0
&ocean_shortwave_nml	use_shortwave_csiro	True	True	False	False	False
	use_shortwave_gfdl	False	False	True	True	True
&ocean_sigma_transport_nml	sigma_advection_on	False	False			False
	sigma_advection_sgs_only	False	False			False
	sigma_diffusion_on sigma_diffusivity_ratio	True 1×10^{-6}	True $1 imes 10^{-6}$			True $1 imes 10^{-6}$
	sigma_uniusivity_ratio sigma_just_in_bottom_cell	True	True			True
	sigma_umax	0.01	0.01			0.01
	smooth_sigma_thickness	True	True			True
	smooth_sigma_velocity	True	True			True
	smooth_velmicom	0.2	0.2			0.2
	thickness_sigma_layer	100.0	100.0			100.0

Group (continued)	Variable	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.mnl	1deg jra55v13 ryf9091 spinup_A- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ GFDL ESM2M input- cut.nml
	thickness_sigma_max thickness_sigma_min	100.0 100.0	100.0 100.0			100.0 100.0
	tmask_sigma_on	False	False			False
	tracer_mix_micom	True	True			True
	use_this_module	True	True	False	False	True
	vel_micom	0.05	0.05	11101 5401	NIOLEAD!	0.05
&ocean_solo_nml	calendar	'NOLEAP'	'NOLEAP'	'NOLEAP'	'NOLEAP'	
	date_init days	1, 1, 1, 0, 0, 0	1, 1, 1, 0, 0, 0 1460	1, 1, 1, 0, 0, 0	1, 1, 1, 0, 0, 0 1460	
	debug_this_module	· ·	False	· ·	1100	
	dt_cpld	3600	3600	3600	3600	
	hours	0	0	0	0	
	minutes	0	0	0	0	
	months seconds	12 0	0	0	0 0	
	years	U	0	2	0	
&ocean_sponges_tracer_nml	damp_coeff_3d	False	False			False
&ocean_submesoscale_nml	coefficient_ce			0.05	0.05	
	smooth_advect_transport			True	True	
	smooth_advect_transport_num			4 Truo	4 Truo	
	smooth_psi smooth_psi_num			True 3	True 3	
	submeso_advect_flux			False	False	
	submeso_advect_limit			True	True	
	submeso_advect_upwind			True	True	
	submeso_advect_zero_bdy			True	True	
	submeso_diffusion submeso_diffusion_biharmonic			False True	False True	
	submeso_diffusion_scale			10.0	10.0	
	submeso_limit_flux	True	True			True
	submeso_skew_flux			True	True	
	use_psi_legacy			False	False	True
&ocean_tempsalt_nml	debug_this_module pottemp_equal_contemp		False	False True	False True	False
	potternp_equat_contemp s_max	55.0	55.0	70.0	70.0	55.0
	s_min	-1.0	-1.0	0.0	0.0	-1.0
	s_min_limit	0.0	0.0	2.0	2.0	5.0
	t_min	-5.0	-5.0	-20.0	-20.0	-5.0
	t_min_limit temperature_variable	-2.0	-2.0 conservative	— 5.0 'potential	— 5.0 'potential	-1.9 'potential
	temperature_variable	temp'	temp'	temp'	temp'	temp'
	teos10	False	сер	temp	temp	сер
&ocean_thickness_nml	initialize_zero_eta	False	False			False
	read_rescale_rho0_mask	False	False			True
	rescale_mass_to_get_ht_mod rescale_rho0_basin_label	7.0	7.0	False	False	7.0
	rescale_rho0_mask_gfdl	False	False			True
	rescale_rho0_value	0.75	0.75			0.75
	thickness_dzt_min	1.0	1.0			2.0
	thickness_dzt_min_init	2.0	2.0			2.0
&ocean_time_filter_nml	use_this_module	350	35.0			False
&ocean_topog_nml &ocean_tracer_advect_nml	min_thickness advect_sweby_all	25.0 True	25.0 True			5.0 False
GOCCAIT_LIACET_AUYECL_TITTL	async_domain_update	iiue	True			FdlSE
	compute_gyre_overturn_diagnose	True	iiuc			
	do_fast_compute	True				
	limit_with_upwind					False
l ocean tracer dies and	read_basin_mask	True 120	4320	False 4320	False 4320	1200
&ocean_tracer_diag_nml	diag_step smooth_mld	120	4520	4520	4520	1200 True
	tracer_conserve_days	1.0	1.0	30.0	30.0	100.0
&ocean_tracer_nml	age_tracer_max_init	0.0	0.0	0.0	0.0	$1 \times 10^{+40}$
	interpolate_tdiag_to_pbott					False
	interpolate_tprog_to_pbott					False
	tmask_limit_ts_same		т	т	т	True
&ocean_velocity_diag_nml	use_tempsalt_check_range	120	True 4320	True 4320	True 4320	1200
wocean_velocity_ulag_nint	diag_step energy_diag_step	120	4320 4320	4320 4320	4320 4320	1200
&ocean_velocity_nml	max_cgint	1.0	1.0	1.0	1.0	1200
,	truncate_velocity	False	True	False	False	False
	zero_tendency_explicit_a			False	False	
	zero_tendency_explicit_b			False	False	
	zero_tendency_implicit			False	False	

Group (continued)	Variable	original/ russ- accessom- mom4p1- input.nml	original/ hogg_acces- som2 1deg jra55_ryf input.nml	1deg jra55v13 ryf9091 spinup_A- input.nml	new/ control/ 1deg jra55_ryf/ ocean/ input.nml	original/ GFDL ESM2M input- cut.nml
&ocean_vert_kpp_iow_nml	use_this_module		False	False	False	False
&ocean_vert_kpp_mom4p0_nml	use_this_module		False			False
&ocean_vert_kpp_mom4p1_nml	diff_cbt_iw		0.0	0.0	0.0	0.0
	diff_con_limit		_0.1	_	_	
	double_diffusion		True	True	True	True
	kbl_standard_method		False	False	False	0.7
	ricr smooth_blmc		0.3 False	0.3 False	0.3 False	0.3 True
	smooth_ri_kmax_eq_kmu		True	True	True	iiue
	use_this_module		True	True	True	True
	visc_cbu_iw		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				
	diff_con_limit	0.1				
	double_diffusion	True				
	kbl_standard_method	True				
	ricr	0.3				
	smooth_blmc	True				
	use_this_module	True				
	visc_cbu_iw	0.0				
&ocean_vert_mix_nml	visc_con_limit	0.1 0.65	0.65			0.675
&ocean_vert_mix_nmi	afkph_00 afkph_90	0.65	0.65			0.675
	bryan_lewis_diffusivity	False	0.75 False	False	False	0.725 True
	bryan_lewis_lat_depend	True	True	False	False	True
	bryan_lewis_lat_transition	35.0	35.0	Taisc	raisc	35.0
	dfkph_00	1.15	1.15			1.15
	dfkph_90	0.95	0.95			1.15
	hwf_diffusivity			False	False	
	hwf_min_diffusivity			2×10^{-6}	2×10^{-6}	
	hwf_n0_2omega			20.0	20.0	
	linear_taper_diff_cbt_table	False	False			False
	quebec_2009_10_bug					False
	sfkph_00	4.5×10^{-5}	4.5×10^{-5}			4.5×10^{-5}
	sfkph_90	4.5×10^{-5}	4.5×10^{-5}			4.5×10^{-5}
	vert_mix_scheme	'kpp'	'kpp mom4p1'	'kpp mom4p1'	'kpp mom4p1'	'kpp mom4p1'
	zfkph_00	250 000.0	250 000.0			250 000 000.0
	zfkph_90	250 000.0	250 000.0			250 000 000.0
&ocean_vert_tidal_nml	background_diffusivity	5×10^{-6}	5×10^{-6}	0.0	0.0	0.0
	decay_scale	300.0	300.0	500.0	500.0	300.0
	drag_dissipation_use_cdbot	4 40-17	4 40=17	True	True	1 10-17
	drhodz_min	1×10^{-12}	1×10^{-12}	1×10^{-10}	1×10^{-10}	1×10^{-12}
	max_drag_diffusivity	0.01 20 000.0	0.01 20 000.0	12 000.0	12 000.0	30 000.0
	roughness_scale shelf_depth_cutoff	160.0	160.0	-1000.0 -1000.0	-1000.0 -1000.0	160.0
	use_legacy_methods	100.0	100.0	False	- 1000.0 False	True
&ocean_xlandinsert_nml	use_this_module	False	False	False	False	True
Woodan_Addition (iiii)	verbose_init	True	True	raise	i alsc	True
&ocean_xlandmix_nml	use_this_module	False	False	False	False	True
	verbose_init	True	True	i uisc	i uisc	True
	xlandmix_kmt	True	True			True
&sat_vapor_pres_nml	construct_table_wrt_liq					True
Control Programme	construct_table_wrt_liq_and_ice					True
&surface_flux_nml	old_dtaudv					False
&topography_nml	topog_file					'INPUT/
						navy_topog- ra-
						1 1
						phy.data.nc'
&xgrid_nml	interp_method		'second	'second	'second	'second
&xgrid_nml	•		order'	order'	order'	'second order'
&xgrid_nml	interp_method make_exchange_reproduce nsubset					'second

2 CICE namelists 'cice_in.nml', 'input_ice.nml', 'input_ice_gfdl.nml', 'input_ice_monin.nml'

CICE documentation is here: http://oceans11.lanl.gov/trac/CICE/attachment/wiki/WikiStart/cicedoc.pdf?format=raw (HunkeLipscombTurnerJefferyElliott2015a-CICE5p1.pdf). Section 4.5.1 explains the meaning of '1', 'h', 'd', 'm', 'y', 'x' and their dependence on histfreq and histfreq_n. Mushy formulation (ktherm=2) was recommended by Hallberg to solve MOM problems with sea ice potentially being saltier than ocean when it has a fixed bulk salinity. See email to Petra 2017-11-15 and highlights in HunkeLipscombTurnerJefferyEllicICE5p1.pdf TODO: check whether all ice nmls are relevant

2.1 cice_in.nml

2.1.1 All variables in new configs (differences highlighted)

roup	Variable	new/ control/ 1deg jra55_ryf/ ice/	new/ control/ 025deg jra55_ryf/ ice/	new/ control/ 01deg jra55_ryf/ ice/
) J	disanth and an arms	cice_in.nml	cice_in.nml	cice_in.nml
&domain_nml	distribution_type	'cartesian'	'cartesian'	'cartesian'
	distribution_wght	'latitude'	'latitude'	'latitude'
	ew_boundary_type maskhalo_bound	'cyclic'	'cyclic' True	'cyclic' True
	maskhalo_dyn	True True	True	True
	maskhalo_remap	True	True	True
		24	480	1200
	nprocs ns_boundary_type	'tripole'	'tripole'	'tripole'
		'slenderX1'	'square-ice'	'square-ice'
Disposition and	processor_shape			
&dynamics_nml	advection	'remap'	'remap'	'remap'
	COSW	0.96	0.96	0.96
	dragio	0.005 36	0.005 36	0.005 36
	iceruf	0.0005	0.0005	0.0005
	kdyn	1	1	1
	krdg_partic	1	1	1
	krdg_redist	1	1	1
	kstrength	1	1	1
	mu_rdg	3	3	3
	ndte	120	120	120
	revised_evp	False	False	False
	sinw	0.28	0.28	0.28
&forcing_nml	atm_data_dir	'unknown	'unknown	'unknown
		atm_data	atm_data	atm_data
		dir'	dir'	dir'
	atm_data_format	'nc'	'nc'	'nc'
	atm_data_type	'default'	'default'	'default'
	atmbndy	'default'	'default'	'default'
	calc_strair	True	True	True
	calc_tsfc	True	True	True
	formdrag	False	False	False
	fyear_init	1	1	1
	oceanmixed_file	'unknown ocean-	'unknown ocean-	'unknown ocean-
	accommissed in	mixed_file'	mixed_file'	mixed_file'
	oceanmixed_ice ocn_data_dir	False 'unknown	False 'unknown	False 'unknown
	OCIT_data_dil	ocn_data dir'	ocn_data dir'	ocn_data dir'
	ocn_data_format	'nc'	'nc'	'nc'
	precip_units	'mks'	'mks'	'mks'
	restore_ice	False	False	False
	restore_sst	False	False	False
	sss_data_type	'default'	'default'	'default'
	sst_data_type	'default'	'default'	'default'
	trestore	0	0	0
	update_ocn_f	True	True	True
	upuate_ocn_i ustar_min	0.0005	0.0005	0.0005
		0.0003	0.0003	0.0003
Carid nm	ycycle arid file	'RESTART/	'RESTART/	'RESTART/
&grid_nml	grid_file	grid.nc'	grid.nc'	grid.nc'
	grid_format	'nc'	'nc'	'nc'
	grid_type	'tripole'	'tripole'	'tripole'
	kcatbound) 'DECTART/) 'DECTA DT /) 'DECTADE /
	kmt_file	'RESTART/	'RESTART/	'RESTART/
		kmt.nc'	kmt.nc'	kmt.nc'

Group (continued)	Variable	new/ control/ 1deg jra55_ryf/ ice/ cice_in.nml	new/ control/ 025deg jra55_ryf/ ice/ cice_in.nml	new/ control/ 01deg jra55_ryf/ ice/ cice_in.nml
&icefields_bgc_nml	f_aero	'X'	'X'	'Х'
	f_bgc_am_ml f_bgc_am_sk	'x' 'x'	'x' 'x'	'x' 'x'
	f_bgc_c_sk	, 'X'	, 'X'	, X,
	f_bgc_chl_sk	'x'	, , , , , , , , , , , , , , , , , , ,	'x'
	f_bgc_dms_sk	'x'	'X'	'X'
	f_bgc_dmsp_ml	'x' 'x'	'X'	'x' 'x'
	f_bgc_dmspd_sk f_bgc_dmspp_sk	, x 'x'	'x' 'x'	, X , X,
	f_bgc_n_sk	, 'X'	, , , , , , , , , , , , , , , , , , ,	'x'
	f_bgc_nit_ml	'x'	'x'	'x'
	f_bgc_nit_sk	'X'	'x'	, X,
	f_bgc_sil_ml f_bgc_sil_sk	'x' 'x'	'x' 'x'	'x' 'x'
	f_bphi	, 'X'	'X'	, x
	f_btin	'x'	'X'	'x'
	f_faero_atm	'x'	'x'	'x'
	f_faero_ocn	'X'	'X' '~~'	'X'
	f_fbri f_fn	'm' 'x'	'm' 'x'	'x' 'x'
	f_fn_ai	, x 'x'	x 'x'	х 'х'
	f_fnh	'x'	, , , , , , , , , , , , , , , , , , ,	'x'
	f_fnh_ai	'x'	'x'	'x'
	f_fno	'X'	'X'	, X,
	f_fno_ai f_fsil	'x' 'x'	'x' 'x'	'x' 'x'
	f_fsil_ai	, x 'X'	, x 'x'	, X 'X'
	f_grownet	'x'	'X'	'X'
	f_hbri	'm'	'm'	'x'
	f_ppnet	'x'	'X'	'X'
&icefields_drag_nml	f_cdn_atm f_cdn_ocn	'x' 'x'	'x' 'x'	'x' 'x'
	f_drag	, x 'x'	, x 'x'	, X 'X'
&icefields_mechred_nml	f_alvl	'm'	'm'	, X
	f_aparticn	'x'	'x'	'x'
	f_araftn	,'X'	'x'	, X,
	f <mark>_ardg</mark> f_ardgn	'm' 'x'	'm' 'x'	'x' 'x'
	f_aredistn	, 'X'	, 'X'	, 'X'
	f_dardq1dt	'x'	'x'	'x'
	f_dardg1ndt f_dardg2dt	'x'	'X'	'x'
	f_dardg2dt	'X'	'X'	'X'
	f_dardg2ndt f_dvirdgdt	'x' 'x'	'x' 'x'	'x' 'x'
	f_dvirdgndt	'x'	,x,	'x'
	f_krdgn	'x'	'x'	'x'
	f_opening	'X'	'x'	'x'
	f_vlvl f_vraftn	'm' 'x'	'm' 'x'	'x' 'x'
	f_vrdg	x 'm'	'm'	, x 'X'
	f_vrdgn	'x'	'x'	'x'
	f_vredistn	'x'	'X'	'X'
&icefields_nml	f_aice f_aicen	'm' 'm'	'm' 'm'	'm' 'v'
	f_aisnap	m 'x'	m 'x'	'x' 'x'
	f_albice	'm'	'm'	'x'
	f_albpnd	'x'	'x'	'x'
	f_albsni	'm'	'm'	'X'
	<mark>f_albsno</mark> f_alidr	'm' 'x'	'm' 'x'	'x' 'x'
	f_alvdr	, x 'X'	X 'X'	,x 'X'
	f_angle	True	True	True
	f_anglet	True	True	True
	f_bounds	False 'm'	False 'm'	False
	<mark>f_congel</mark> f_coszen	'x'	'X'	'x' 'x'
	f_daidtd	'm'	'n'	'x'
	f_daidtt	'm'	'm'	'x'
	f_divu	'm'	'm'	'X'
	f_dsnow f_dvidtd	'x' 'm'	'X' 'm'	'x' 'x'
	f_dvidtt	m 'm'	'm' 'm'	X 'X'
	f_dxt	True	True	True
	f_dxu	True	True	True

Group (continued) Variable	new/ control/ 1deg jra55_ryf/ ice/ cice_in.nml	new/ control/ 025deg jra55_ryf/ ice/ cice_in.nml	new/ control/ 01deg jra55_ryf/ ice/ cice_in.nml
f_dyt f_dyu	True True	True True	True
f_evap	irue 'x'	'x'	True 'x'
f_evap_ai	'm'	'm'	'x'
f_fcondtop_ai f_fcondtopn_ai	'm' 'm'	'm' 'm'	'x' 'x'
f_fhorn	'X'	'x'	'X'
f_fhocn_ai	'm'	'm'	'X'
f_flat f_flat_ai	'x' 'm'	'x' 'm'	'x' 'x'
f flatn_ai	'm'	'm'	'x'
f_flwdn	'm'	'm'	,χ' ,
f_flwup f_flwup_ai	'x' 'm'	'x' 'm'	'x' 'x'
f_fmeltt_ai	'x'	'x'	'x'
f_fmelttn_ai	'm'	'm'	'χ'
f <mark>_frazil</mark> f_fresh	'm' 'x'	'm' 'x'	'x' 'x'
f_fresh_ai	'm'	'm'	'x'
f_frz_onset f_frzmlt	'm' 'm'	'm' 'm'	'x' 'x'
f_fizalt	m 'x'	m 'x'	'x'
f_fsalt_ai	'm'	'm'	'x'
f_fsens f_fsens_ai	'x' 'm'	'x' 'm'	'x' 'x'
f_fsurf_ai	'x'	'x'	'x'
f_fsurfn_ai	'm'	'm'	'x'
f_fswabs f_fswabs_ai	'x' 'm'	'x' 'm'	'x' 'x'
f_fswdn	'm'	'm'	'x'
f_fswfac	'm'	'm'	'x'
f_fswthru f_fswthru_ai	'x' 'm'	'x' 'm'	'x' 'x'
f_fy	'x'	'x'	'x'
f_hi f_hisnap	'm' 'x'	'm' 'x'	'm' 'x'
f_hs	'm'	'm'	'm'
f_hte	True	True	True
f_htn f_iage	True 'm'	True 'm'	True 'x'
f_icepresent	'm'	'm'	'x'
f_meltb	'm'	'm'	'X'
f_meltl f_melts	'm' 'm'	'm' 'm'	'x' 'x'
f_meltt	'm'	'm'	'x'
f_mlt_onset f_ncat	'm' True	'm' True	'x' True
f_gref	'X'	'x'	'X'
f_rain	'x'	'x'	'x'
f_rain_ai f_shear	'm' 'm'	'm' 'm'	'x' 'x'
f_sice	'm'	'm'	'x'
f.ioi_f	'x'	'x'	'x'
f_sig2 f_sinz	'x' 'x'	'x' 'x'	'x' 'x'
f_snoice	'm'	'm'	'x'
f_snow	'X' 'm'	'X' 'm'	'x' 'x'
f_snow_ai f_sss	'm' 'm'	'm' 'm'	'x'
f_sst	'm'	'm'	'x'
f_strairx f_strairy	'm' 'm'	'm' 'm'	'x' 'x'
f_strootx	'm'	'm'	'x'
f_strony	'm'	'm'	'x'
f_strength f_strintx	'm' 'm'	'm' 'm'	'x' 'x'
f_strinty	'm'	'm'	'x'
f_strocnx	'm'	'm'	'x'
f_strocny f_strtltx	'm' 'm'	'm' 'm'	'x' 'x'
f_strtlty	'm'	'm'	'x'
f_tair f_tara	'm'	'm'	'X' Truo
f_tarea f_tinz	True 'x'	True 'x'	True 'x'
Lattic	Α,		^

Group (continued) Variable	new/ control/ 1deg jra55_ryf/ ice/ cice_in.nml	new/ control/ 025deg jra55_ryf/ ice/ cice_in.nml	new/ control/ 01deg jra55_ryf/ ice/ cice_in.nml
f_tmask	True	True	True
f_tref f_trsig	'x' 'm'	'x' 'm'	'x' 'x'
f_tsfc	'm'	'm'	'm'
f_tsnz	'x'	'x'	'x'
f_uarea f_uorn	True 'm'	True 'm'	True
f_uvel	'm'	'm'	'x' 'x'
f_vgrdb	False	False	False
f_vgrdi	False	False	False
f_vgrds f_vicen	False 'm'	False 'm'	False 'x'
f_vocn	'm'	'm'	, X,
<u>f_vvel</u>	'm'	'm'	'x'
&icefields_pond_nml f_apeff	'm'	'm'	'x'
<mark>f_apeff_ai</mark> f_apeffn	'm' 'x'	'm' 'x'	'x' 'x'
f_apond	'm'	'm'	'x'
f_apond_ai	'm'	'm'	'x'
f_apondn	'X' 'm'	'X' 'm'	'x' 'v'
f_hpond f_hpond_ai	'm' 'm'	'm' 'm'	'x' 'x'
f_hpondn	'x'	'x'	'x'
f_ipond	'm'	'm'	'x'
\$\frac{f_ipond_ai}{}\$ dpscale	'm' 0.001	'm' 0.001	'x' 0.001
frzpnd	'hlid'	'hlid'	'hlid'
hp1	0.01	0.01	0.01
hs0	0.0	0.0	0.0
hs1 pndaspect	0.03 0.8	0.03 0.8	0.03 0.8
rfracmax	1.0	1.0	1.0
rfracmin	0.15	0.15	0.15
&setup_nml days_per_year	365 False	365 False	365 Falso
dbug diag_file	'ice_diag.d'	'ice_diag.d'	False 'ice_diag.d'
diag_type	'file'	'file'	'file'
diagfreq	24	960	960
d <mark>t</mark> dump_last	3600 True	1200 True	400 True
dumpfreq	'y'	'y'	'm'
dumpfreq_n	1	1	3
hist_avg histfreq	True 'd', 'm', 'x', 'x',	True 'd', 'm', 'x', 'x',	True 'd', 'm', 'x', 'x',
пізатец	u, III, x, x, 'X'	u, III, x, x, 'X'	u, III, x, x, 'X'
histfreq_n	1, 1, 1, 1, 1	1, 1, 1, 1, 1	1, 1, 1, 1, 1
history_dir	'./OUTPUT/'	'./OUTPUT/'	'./OUTPUT/'
history_file ice_ic	'iceh' 'default'	'iceh' 'default'	'iceh' 'default'
incond_dir	'./OUTPUT/'	'./OUTPUT/	'./OUTPUT/'
incond_file	'iceh_ic'	'iceh_ic'	'iceh_ic'
istep0	0 90.0, —65.0	0 90.0, —65.0	0 90.0, —65.0
latpnt Lcdf64	90.0, —65.0 False	90.0, —65.0 True	90.0, —65.0 True
lonpnt	0.0, -45.0	0.0, -45.0	0.0, -45.0
ndtd	75040	1	1
<pre>npt pointer_file</pre>	35040 './RESTART/	2232 './RESTART/	6480 './RESTART/
pointer_inte	ice.restart	ice.restart	ice.restart
	file'	file'	file'
print_global	False	False	False
print_points restart	True False	True False	True False
restart_dir	'./RESTART/'	'./RESTART/'	'./RESTART/'
restart_ext	False	False	False
restart_file	'iced' 'nc'	'iced' 'nc'	'iced' 'nc'
restart_format runtype	nc 'initial'	nc 'initial'	nc 'initial'
use_leap_years	False	False	False
use_restart_time	True	True	True
write_ic year_init	False 1	False 1	False 1
&shortwave_nml ahmax	0.1	0.1	0.1
albedo_type	'default'	'default'	'default'

Biblican O.44	Group (continued)	Variable	new/ control/ 1deg jra55_ryf/ ice/	new/ control/ 025deg jra55_ryf/ ice/	new/ control/ 01deg jra55_ryf/ ice/
Balbanow 0,7					cice_in.nml
Abbrown 0.7 0.7 0.7 0.7 0.7 0.8 0.9					0.44
Albanow 0,98					0.86
dall_mit					0.7
di.nit					
Fig. 0.0					1.0
C_pnd			0.0		0.0
					0.0
Shortwape Gefault Ge					0.0
Statemen.mmi					1500.0
&thermounni a. a.pajid.mode 0.0005 0.0005 0.0005 chio 0.004 0.004 0.004 0.004 0.004 0.004 0.00 0.004 0.00 0.004 0.00 0.004 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 0.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 1.00 0.00					'default'
					-1.8
Chio	&thermo_nml				0.0005
					1.0
didd.slow.mode					
10					−5 ×
kitd 1		asacston_inouc	10^{-8}	10^{-8}	10^{-8}
Phi.c.stow.mode		kitd			1
phi i mushy 0.85					2
Rac_rapid_mode					0.05
&tracer.nml restart_age restart_age False restart_fy False False restart_fy False False restart_fy False False False restart_pond.esm False False False False False False False False restart_pond.esm False restart_pond.lvl False Fals					0.85
restart_ape		·			10.0
restart_Ly False	&tracer_nml				
restart_Uvi					
restart_pond_cesm False					False
restart_pond_top					False
					False
tr_fy False False <th< td=""><td></td><td></td><td>False</td><td>False</td><td>False</td></th<>			False	False	False
tr_iage					False
					False
tr_pond_cesm False					False
tr_pond_top					
kzbgc_nml tr_pond_topo False False False kzbgc_nml bgc_data_dir 'unknown 'decatt 'decatt.					
&zbgc_nml bgc_data_dir 'unknown 'dir 'dir 'dir 'dir 'dir 'dir 'default' 'defaul					False
bgc_data dir' dir' dir' dir' dir' dir' dir' dir'	&zbqc_nml				'unknown
nit_data_type 'default' 'default' 'default' 'default' phi_snow 0.5 0.5 0.5 0.5 restart_bgc False False False False restart_hbrine False False False False restore_bgc False False False False sil_data_type 'default' 'default' 'default' 'default' 'default' 'default' 'default' 'default' 'default' 'fealut' 'default' 'default' 'fealut'	•		bgc_data dir'	bgc_data dir'	bgc_data dir'
phi_snow 0.5 0.5 0.5 restart_bgc False False False restart_hbrine False False False restore_bgc False False False sil_data_type 'default' 'default' 'default' 'default' 'default' skl_bgc False False False False tr_bgc_am_sk False False False tr_bgc_chl_sk False False False tr_bgc_dms_sk False False False tr_bgc_dmspd_sk False False False		bgc_flux_type			'Jin2006'
restart_bgc False False False restart_hbrine False False False restore_bgc False False False restore_bgc False False False sil_data_type 'default' 'default' 'default' 'default' skl_bgc False False False tr_bgc_am_sk False False False tr_bgc_cc_sk False False False tr_bgc_cc_sk False False False tr_bgc_dms_sk False False False tr_bgc_dmspd_sk False False False False False False False					'default'
restart_hbrine False False False restore_bgc False False False sil_data_type 'default' 'default' 'default' 'default' skl_bgc False False False tr_bgc_am_sk False False False tr_bgc_c_sk False False False tr_bgc_chl_sk False False False tr_bgc_dms_sk False False False tr_bgc_dmspd_sk False False False False					0.5
restore_bgc False False False sil_data_type 'default' 'd					
sil_data_type 'default' 'd					False
skl_bgc False False False tr_bgc_am_sk False False False tr_bgc_cc_sk False False False tr_bgc_ccl_lsk False False False tr_bgc_dms_sk False False False tr_bgc_dmspd_sk False False False					'default'
tr_bgc_am_sk False False False tr_bgc_cc_sk False False False tr_bgc_ccl_lsk False False False tr_bgc_dms_sk False False False tr_bgc_dmspd_sk False False False					False
tr_bgc_cc_sk False		tr_bgc_am_sk			False
tr_bgc_dms_sk False Fals		tr_bgc_c_sk			False
tr_bgc_dmspd_sk					False
					False False

2.1.2 Old and new configs (differences only)

Group	Variable	original/ control/ 1deg jra55_ryf/	new/ control/ 1deg jra55_ryf/
		ice/ cice_in.nml	ice/ cice_in.nml
&setup_nml	print_points	False	True
&thermo_nml	ktherm	1	2

Group	Variable	original/	new/
		control/	control/
		025deg	025deg
		jra55_ryf/	jra55_ryf/
		ice/	ice/
		cice_in.nml	cice_in.nml
&setup_nml	print_points	False	True
&thermo_nml	ktherm	1	2

Group	Variable	original/	new/
		control/	control/
		01deg	01deg
		jra55_ryf/	jra55_ryf/
		ice/	ice/
		cice_in.nml	cice_in.nml
&setup_nml	print_points	False	True
&thermo_nml	ktherm	1	2

2.2 input_ice.nml

2.2.1 All variables in new configs (differences highlighted)

Group	Variable	new/ control/	new/ control/	new/ control/
		1deg jra55_ryf/ ice/input ice.nml	025deg jra55_ryf/ ice/input ice.nml	01deg jra55_ryf/ ice/input ice.nml
&coupling_nml	chk_a2i_fields	False	False	False
	chk_frzmlt_sst		False	False
	chk_gfdl_roughness	False	False	False
	chk_i2a_fields		False	False
	chk_i2o_fields		False	False
	chk_o2i_fields		False	False
	cst_ocn_albedo	True	True	True
	dt_cpl_ai	10800	10800	10800
	dt_cpl_io	3600	1200	400
	gfdl_surface_flux	True	True	True
	ice_fwflux	True	True	True
	ice_pressure_on	True	True	True
	limit_icemelt	False	False	False
	meltlimit	-200.0	-200.0	-200.0
	ocn_albedo	0.1	0.1	0.1
	pop_icediag	True	True	True
	precip_factor	1.0	1.0	1.0
	rotate_winds	True	True	True
	use_ocnslope	False	False	False
	use_umask	False	False	False

2.2.2 Old and new configs (differences only)

2.3 input_ice_gfdl.nml

2.3.1 All variables in new configs (differences highlighted)

Group	Variable	new/ control/ 1deg jra55_ryf/ ice/ input_ice gfdl.nml	new/ control/ 025deg jra55_ryf/ ice/ input_ice gfdl.nml	new/ control/ 01deg jra55_ryf/ ice/ input_ice gfdl.nml
&ocean_rough_nml	charnock	0.032	0.032	0.032
	do_cap40	False	False	False
	do_highwind	False	False	False
	rough_scheme	'beljaars'	'beljaars'	'beljaars'
	roughness_heat	5.8×10^{-5}	5.8×10^{-5}	5.8×10^{-5}
	roughness_min	$1 imes 10^{-6}$	$1 imes 10^{-6}$	$1 imes 10^{-6}$

Group (continued) Variable	new/ control/ 1deg jra55_ryf/ ice/ input_ice gfdl.nml	new/ control/ 025deg jra55_ryf/ ice/ input_ice gfdl.nml	new/ control/ 01deg jra55_ryf/ ice/ input_ice gfdl.nml
roughness_moist	5.8×10^{-5}	5.8×10^{-5}	5.8×10^{-5}
roughness_mom	5.8×10^{-5}	5.8×10^{-5}	5.8×10^{-5}
zcoh1	0.0	0.0	0.0
zcoq1	0.0	0.0	0.0
&surface_flux_nml alt_gustiness	False	False	False
gust_const	1.0	1.0	1.0
gust_min	0.0	0.0	0.0
ncar_ocean_flux	True	True	True
ncar_ocean_flux_orig	False	False	False
no_neg_q	False	False	False
old_dtaudv	False	False	False
raoult_sat_vap	False	False	False
use_mixing_ratio	False	False	False
use_virtual_temp	True	True	True

2.3.2 Old and new configs (differences only)

2.4 input_ice_monin.nml

2.4.1 All variables in new configs (differences highlighted)

Group	Variable	new/	new/	new/
		control/	control/	control/
		1deg	025deg	01deg
		jra55_ryf/	jra55_ryf/	jra55_ryf/
		ice/	ice/	ice/
		input_ice	input_ice	input_ice
		monin.nml	monin.nml	monin.nml
&monin_obukhov_nml	neutral	True	True	True

2.4.2 Old and new configs (differences only)

3 MATM namelist 'input_atm.nml'

3.1 All variables in new configs (differences highlighted)

Group Variable	new/ control/ 1deg jra55_ryf/ atmosphere/ input atm.nml	new/ control/ 025deg jra55_ryf/ atmosphere/ input atm.nml	new/ control/ 01deg jra55_ryf/ atmosphere/ input atm.nml
&coupling caltype	0	0	0
chk_a2i_fields	False	False	
chk_i2a_fields	False	False	
dataset	'jra55'	'jra55'	'jra55'
days_per_year	365	365	365
debug_output	False		
dt_atm	3600	1200	400
dt_cpl	10800	10800	10800
inidate	10101	10101	10101
init.date	10101	10101	10101
runtime	126144000	2678400	2592000
runtype	'NY'	'NY'	'NY'
truntime0	0	0	0

3.1.1 Old and new configs (differences only)

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.