Supplementary Material: Ocean and sea ice namelists for HadGEM3r1.1

a) NEMO namelist used in HadGEM3 r1.1

```
!! NEMO ORCA1 namelist suitable for NEMO vn3
!!
!!>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
!! NEMO/OPA  :  1 - run manager       (namrun)
!! namelists    2 - Domain            (nam_zgr, nam_zgr_sco, namdom)
!!              3 - Surface boundary (namsbc, namsbc_ana, namsbc_flx, namsbc_clio,
namsbc_core
!!                                    namsbc_cpl, namqsr, namsbc_rnf, namsbc_ssr,
namalb)
!!              4 - lateral boundary (namlbc, namcla, namobc, namagrif, nambdy,
namtide)
!!              5 - bottom  boundary (nambfr, nambbc, nambbl)
!!              6 - Tracer           (nameos, nam_traadv, nam_traldf, namtdp)
!!              7 - dynamics         (nam_dynadv, nam_dynvor, nam_dynhpg, namflg,
nam_dynspg,
!!                                    nam_dynldf)
!!              8 - Vertical physics (namzdf, namnpc, namric, namtke, namkpp, namddm)
!!              9 - miscellaneous    (namsol, nam_mpp, nam_mpp_dyndist, namctl)
!!>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>
!!======================================================================
!!                     ***  Run management namelists  ***
!!======================================================================
!!   namrun            parameters of the run
!!======================================================================

!-----------------------------------------------------------------------
&namrun        !   parameters of the run
!-----------------------------------------------------------------------
   no          =       0   !  job number
   cexper      =  "ahzze"  !  experience name
   ln_rstart   = .false.   !  start from rest (F) or from a restart file (T)
   nrstdt      =       2   !  restart control :
                           !       = 0 nit000 is not compared to the restart file
value
                           !       = 1 use ndate0 in namelist (not the value in the
restart file)
                           !       = 2 calendar parameters read in the restart file
   nit000      =       1   !  first time step
   nitend      =      720  !  last time step
   ndate0      = 19780901  !  initial calendar date yymmdd (used if nrstdt=1)
   nleapy      =      30   !  Leap year calendar (1) or not (0)
   ninist      =       0   !  output the initial state (1) or not (0)
   nstock      =     720   !  frequency of creation of a restart file
   nwrite      =     720   !  frequency of write in the output file
   ln_dimgnnn  = .false.   !  DIMG file format: 1 file for all processors (F) or by
processor (T)
   ln_cfout    = .true.    !  make output CF-compliant
   ln_trimout  = .true.    !  remove output wrapcols/rows
   ln_maskout  = .true.    !  apply land-sea mask to o/p
/
!!======================================================================
!!                     ***  Domain namelists  ***
!!======================================================================
!!   nam_zgr       vertical coordinate
!!   nam_zgr_sco   s-coordinate or hybrid z-s-coordinate
!!   namdom        space and time domain (bathymetry, mesh, timestep)
!!======================================================================

!-----------------------------------------------------------------------
&nam_zgr       !   vertical coordinate
!-----------------------------------------------------------------------
   ln_zco      = .false.   !  z-coordinate - full    steps  (T/F) ("key_zco" may also
be defined)
   ln_zps      = .true.    !  z-coordinate - partial steps  (T/F)
   ln_sco      = .false.   !  s- or hybrid z-s-coordinate   (T/F)
/
!-----------------------------------------------------------------------
&nam_zgr_sco   !   s-coordinate or hybrid z-s-coordinate
!-----------------------------------------------------------------------
```

```
   sbot_min    =  300.     !  minimum depth of s-bottom surface (>0) (m)
   sbot_max    = 5250.     !  maximum depth of s-bottom surface (= ocean depth) (>0)
(m)
   theta       =    6.0    !  surface control parameter (0<=theta<=20)
   thetb       =    0.75   !  bottom control parameter  (0<=thetb<= 1)
   r_max       =    0.15   !  maximum cut-off r-value allowed (0<r_max<1)
/
!-----------------------------------------------------------------------
&namdom        !   space and time domain (bathymetry, mesh, timestep)
!-----------------------------------------------------------------------
   ntopo       =    1      !  compute (=0) or read(=1) the bathymetry file
   e3zps_min   =   20.     !  the thickness of the partial step is set larger than the
minimum
   e3zps_rat   =    0.1    !  of e3zps_min and e3zps_rat * e3t   (N.B. 0<e3zps_rat<1)
   nmsh        =    0      !  create (=1) mesh file (coordinates,scale factors,masks)
or not (=0)
   nacc        =    0      !  =1 acceleration of convergence method used, rdt <
rdttra(k)
                           !  =0, no acceleration, rdt = rdttra
   atfp        =    0.1    !  asselin time filter parameter
   rdt         = 3600.     !  time step for the dynamics (and tracer if nacc=0)
   rdtmin      = 3600.     !  minimum time step on tracers (used if nacc=1)
   rdtmax      = 3600.     !  maximum time step on tracers (used if nacc=1)
   rdth        =  800.     !  depth variation of tracer time step  (used if nacc=1)
   rdtbt       =   60.     !  barotropic time step (for the split explicit algorithm)
                           !
        ("key_dynspg_ts")
   nclosea     =    0      !  = 0 no closed sea in the model domain
                           !  = 1 closed sea (Black Sea, Caspian Sea, Great US
Lakes...)
/
!!======================================================================
!!             ***  Surface Boundary Condition namelists  ***
!!======================================================================
!!   namsbc        surface boundary condition
!!   namsbc_ana    analytical         formulation
!!   namsbc_flx    flux               formulation
!!   namsbc_clio   CLIO bulk formulea formulation
!!   namsbc_core   CORE bulk formulea formulation
!!   namsbc_cpl    CouPLed            formulation
("key_coupled")
!!   namqsr        penetrative solar radiation
!!   namsbc_rnf    river runoffs
!!   namsbc_ssr    sea surface restoring term (for T and/or S)
!!   namalb        albedo parameters
!!======================================================================

!-----------------------------------------------------------------------
&namsbc        !   Surface Boundary Condition (surface module)
!-----------------------------------------------------------------------
   nn_fsbc     = 1         !  frequency of surface boundary condition computation
                           !               (= the frequency of sea-ice model call)
   ln_ana      = .false.   !  analytical formulation (T => fill namsbc_ana )
   ln_flx      = .false.   !  flux formulation       (T => fill namsbc_flx )
   ln_blk_clio = .false.   !  CLIO bulk formulation  (T => fill namsbc_clio)
   ln_blk_core = .false.   !  CORE bulk formulation  (T => fill namsbc_core)
   ln_cpl      = .true.    !  Coupled formulation    (T => fill namsbc_cpl )
   nn_ice      = 4         !  =0 no ice boundary condition   ,
                           !  =1 use observed ice-cover      ,
                           !  =2 LIM2 ice-model used
("key_lim2")
                           !  =3 LIM3 ice-model used
("key_lim3")
                           !  =4 CICE ice-model used
("key_cice")
   nn_ico_cpl  = 0         !  ice-ocean coupling :
                           !        =0 each nn_fsbc
                           !        =1 stresses recomputed each ocean time step
("key_lim3" only)
                           !        =2 combination of 0 and 1 cases
("key_lim3" only)
   ln_dm2dc    = .false.   !  daily mean to diurnal cycle short wave (qsr)
   ln_rnf      = .true.    !  runoffs (T => fill namsbc_rnf)
   ln_ssr      = .false.   !  Sea Surface Restoring on T and/or S (T => fill
namsbc_ssr)
   nn_fwb      = 0         !  FreshWater Budget:
                           !        =0 unchecked                          ,
```

```
                           !        =1 annual global mean of e-p-r set to zero   ,
                           !        =2 global mean of e-p-r set to zero at each
nn_fsbc time step
/
!-----------------------------------------------------------------------
&namqsr        !   penetrative solar radiation
!-----------------------------------------------------------------------
   ln_traqsr   = .true.    !  penetrative solar radiation (T) or not (F)
   rabs        =   0.26    !  fraction of qsr associated with xsi1
   xsi1        =   0.35    !  first depth of extinction
   xsi2        =   23.0    !  second depth of extinction
/
!-----------------------------------------------------------------------
&namsbc_rnf    !   runoffs namelist surface boundary condition
!-----------------------------------------------------------------------
!             !     file name      ! frequency (hours) ! variable   ! time interpol.
!  clim   ! 'yearly' or !
!             !                    !  (if <0  months)  !   name     !    (logical)
!  (T/F)  !  'monthly'  !
   sn_rnf    =   'runoff_1m_nomask' ,        -1.        , 'sorunoff' ,    .true.
, .true.  ,   'yearly'
   sn_cnf    =   'runoff_1m_nomask' ,         0.        , 'socoefr'  ,    .false.
, .true.  ,   'yearly'
!
   cn_dir       = './'      !  root directory for the location of the runoff files
   ln_rnf_emp   =   .true.  !  runoffs included into precipitation field (T) or into a
file (F)
   ln_rnf_mouth =   .true.  !  specific treatment at rivers mouths
   rn_hrnf      =   0.e0    !  depth over which enhanced vertical mixing is used
   rn_avt_rnf   =   1.e-3   !  value of the additional vertical mixing coef. [m2/s]
/
!!======================================================================
!!               ***  Lateral boundary condition  ***
!!======================================================================
!!   namlbc        lateral momentum boundary condition
!!   namcla        cross land advection
!!   namobc        open boundaries parameters                           ("key_obc")
!!   namagrif      agrif nested grid ( read by child model only )       ("key_agrif")
!!   nambdy        Unstructured open boundaries                         ("key_bdy")
!!   namtide       Tidal forcing at open boundaries
("key_bdy_tides")
!!======================================================================

!-----------------------------------------------------------------------
&namlbc        !   lateral momentum boundary condition
!-----------------------------------------------------------------------
   shlat       =    2.     !      shlat = 0 : free slip
                           !  0 < shlat < 2 : partial slip
                           !      shlat = 2 : no slip
                           !  2 < shlat     : strong slip
/
!-----------------------------------------------------------------------
&namcla        !   cross land advection
!-----------------------------------------------------------------------
   n_cla       =    0      !  advection between 2 ocean pts separates by land
/
!!======================================================================
!!                  ***  Bottom boundary condition  ***
!!======================================================================
!!   nambfr        bottom friction
!!   nambbc        bottom temperature boundary condition                ("key_trabbc")
!!   nambbl        bottom boundary layer scheme    ("key_trabbl_dif","key_trabbl_adv")
!!======================================================================

!-----------------------------------------------------------------------
&nambfr        !   bottom friction
!-----------------------------------------------------------------------
   nbotfr      =    1      !  type of bottom friction :
                           !        = 0 : no   slip,  = 2 : nonlinear friction
                           !        = 3 : free slip,  = 1 :    linear friction
   bfri1       =    4.e-4  !  bottom drag coefficient (linear case)
   bfri2       =    1.e-3  !  bottom drag coefficient (non linear case)
   bfeb2       =    2.5e-3 !  bottom turbulent kinetic energy background  (m^2/s^2)
/
!-----------------------------------------------------------------------
&nambbc        !   bottom temperature boundary condition
!-----------------------------------------------------------------------
```

```
   ngeo_flux   =    2      !  geothermal heat flux :
                           !         = 0 no flux considered
                           !         = 1 constant flux
                           !         = 2 variable flux (read in geothermal_heating.nc
in mW/m2)
   ngeo_flux_const = 86.4e-3  !  Constant value of geothermal heat flux [W/m2]
/
!-----------------------------------------------------------------------
&nambbl        !   bottom boundary layer scheme
!-----------------------------------------------------------------------
!                          !  diffusive bbl                              ("key_trabbl")
!                          !  advective bbl
("key_trabbl_adv")
   atrbbl      =  0.       !  lateral mixing coefficient in the bbl  [m2/s]
/
!!=====================================================================
!!                       Tracer (T & S ) namelists
!!=====================================================================
!!   nameos        equation of state
!!   nam_traadv    advection scheme
!!   nam_traldf    lateral diffusion scheme
!!   namtdp        tracer newtonian damping                             ("key_tradmp")
!!=====================================================================

!-----------------------------------------------------------------------
&nameos        !   ocean physical parameters
!-----------------------------------------------------------------------
   neos        =    0      !  type of equation of state and Brunt-Vaisala frequency
                           !     = 0, UNESCO (Jackett and McDougall (1994) McDougall
(1987) )
                           !     = 1, linear: rho(T)   = rau0 * ( 1.028 - ralpha * T )
                           !     = 2, linear: rho(T,S) = rau0 * ( rbeta * S - ralpha *
T )
   ralpha      =    2.e-4  !  thermal expension coefficient (neos= 1 or 2)
   rbeta       =    0.001  !  saline  expension coefficient (neos= 2)
/
!-----------------------------------------------------------------------
&nam_traadv    !   advection scheme for tracer
!-----------------------------------------------------------------------
   ln_traadv_cen2   =  .true.   !  2nd order centered scheme
   ln_traadv_tvd    =  .false.  !  TVD scheme
   ln_traadv_muscl  =  .false.  !  MUSCL scheme
   ln_traadv_muscl2 =  .false.  !  MUSCL2 scheme + cen2 at boundaries
   ln_traadv_ubs    =  .false.  !  UBS scheme
/
!-----------------------------------------------------------------------
&nam_traldf    !   lateral diffusion scheme for tracer
!-----------------------------------------------------------------------
!                               !  Type of the operator :
   ln_traldf_lap    =  .true.   !     laplacian operator
   ln_traldf_bilap  =  .false.  !     bilaplacian operator
                               !  Direction of action  :
   ln_traldf_level  =  .false.  !  iso-level
   ln_traldf_hor    =  .false.  !  horizontal (geopotential) (require "key_ldfslp"
when ln_sco=T)
   ln_traldf_iso    =  .true.   !  iso-neutral               (require "key_ldfslp")
!                              !  Coefficient
   aht0        =  1000.         !     horizontal eddy diffusivity for tracers [m2/s]
   ahtb0       =     0.         !     background eddy diffusivity for ldf_iso [m2/s]
   aeiv0       =  1000.         !     eddy induced velocity coefficient [m2/s]
("key_traldf_eiv")
/
!!=====================================================================
!!                     ***  Dynamics namelists  ***
!!=====================================================================
!!   nam_dynadv    formulation of the momentum advection
!!   nam_dynvor    advection scheme
!!   nam_dynhpg    hydrostatic pressure gradient
!!   namflg        hydrostatic pressure gradient time stepping
!!   nam_dynspg    surface pressure gradient                            (CPP key only)
!!   nam_dynldf    lateral diffusion scheme
!!=====================================================================

!-----------------------------------------------------------------------
&nam_dynadv    !   formulation of the momentum advection
!-----------------------------------------------------------------------
   ln_dynadv_vec = .true.  !  vector form (T) or flux form (F)
```

```
   ln_dynadv_cen2= .false. !  flux form - 2nd order centered scheme
   ln_dynadv_ubs = .false. !  flux form - 3rd order UBS      scheme
/
!-----------------------------------------------------------------------
&nam_dynvor    !   option of physics/algorithm (not control by CPP keys)
!-----------------------------------------------------------------------
   ln_dynvor_ene = .false. !  enstrophy conserving scheme
   ln_dynvor_ens = .true.  !  energy conserving scheme
   ln_dynvor_mix = .false. !  mixed scheme
   ln_dynvor_een = .false. !  energy & enstrophy scheme
/
!-----------------------------------------------------------------------
&nam_dynhpg    !   Hydrostatic pressure gradient option
!-----------------------------------------------------------------------
   ln_hpg_zco  = .false.   !  z-coordinate - full steps
   ln_hpg_zps  = .true.    !  z-coordinate - partial steps (interpolation)
   ln_hpg_sco  = .false.   !  s-coordinate (standard jacobian formulation)
   ln_hpg_hel  = .false.   !  s-coordinate (helsinki modification)
   ln_hpg_wdj  = .false.   !  s-coordinate (weighted density jacobian)
   ln_hpg_djc  = .false.   !  s-coordinate (Density Jacobian with Cubic polynomial)
   ln_hpg_rot  = .false.   !  s-coordinate (ROTated axes scheme)
   gamm        = 0.e0      !  weighting coefficient (wdj scheme)
/
!-----------------------------------------------------------------------
&namflg        !   algorithm flags (algorithm not control by CPP keys)
!-----------------------------------------------------------------------
   ln_dynhpg_imp = .false. !  hydrostatic pressure gradient: semi-implicit time scheme
(T)
                           !                                 centered      time scheme
(F)
   nn_dynhpg_rst =  0      !  add dynhpg implicit variables in restart ot not (1/0)
/
!-----------------------------------------------------------------------
!nam_dynspg    !   surface pressure gradient   (CPP key only)
!-----------------------------------------------------------------------
!                          !  explicit free surface
("key_dynspg_exp")
!                          !  filtered free surface
("key_dynspg_flt")
!                          !  split-explicit free surface
("key_dynspg_ts")
!                          !  rigid-lid
("key_dynspg_rl")

!-----------------------------------------------------------------------
&nam_dynldf    !   lateral diffusion on momentum
!-----------------------------------------------------------------------
!                               !  Type of the operator :
   ln_dynldf_lap    =  .true.   !     laplacian operator
   ln_dynldf_bilap  =  .false.  !     bilaplacian operator
!                               !  Direction of action  :
   ln_dynldf_level  =  .false.  !  iso-level
   ln_dynldf_hor    =  .true.   !  horizontal (geopotential) (require "key_ldfslp" in
s-coord.)
   ln_dynldf_iso    =  .false.  !  iso-neutral               (require "key_ldfslp")
                               !  Coefficient
   ahm0    = 10000.            !     horizontal eddy viscosity   [m2/s]
   ahmb0   =     0.            !     background eddy viscosity for ldf_iso [m2/s]
/
!!======================================================================
!!             Tracers & Dynamics vertical physics namelists
!!======================================================================
!!       namzdf        vertical physics
!!       namnpc        non penetrative convection
!!       namric        richardson number dependent vertical mixing      ("key_zdfric"
)
!!       namtke        TKE dependent vertical mixing                    ("key_zdftke"
)
!!       namkpp        KPP dependent vertical mixing                    ("key_zdfkpp"
)
!!       namddm        double diffusive mixing parameterization         ("key_zdfddm"
)
!!======================================================================

!-----------------------------------------------------------------------
&namzdf        !   vertical physics
!-----------------------------------------------------------------------
```

```
   avm0        =   1.2e-4  !  vertical eddy viscosity   [m2/s](background Kz if not
"key_zdfcst")
   avt0        =   1.2e-5  !  vertical eddy diffusivity [m2/s](background Kz if not
"key_zdfcst")
   ln_zdfnpc   = .false.   !  convection: Non-Penetrative algorithm (T) or not (F)
   ln_zdfevd   = .true.    !  convection: enhanced vertical diffusion (T) or not (F)
   avevd       = 100.      !  vertical coefficient for enhanced diffusion scheme
[m2/s]
   n_evdm      =   1       !  enhanced mixing apply on tracer (=0) or on tracer and
momentum (=1)
   ln_zdfexp   =  .false.  !  split explicit (T) or implicit (F) time stepping
   n_zdfexp    =   3       !  number of sub-timestep for ln_zdfexp=T
/
!-----------------------------------------------------------------------
&namtke        !   turbulent eddy kinetic dependent vertical diffusion  ("key_zdftke")
!-----------------------------------------------------------------------
   ln_rstke    = .false.   !  restart with tke from a run without tke (T) or not (F)
   nn_itke     =  50       !  number of iterative loops if ln_rstke=T
   rn_ediff    =   0.1     !  coef. for vertical eddy coef. (avt=rn_ediff*mxl*sqrt(e)
)
   rn_ediss    =   0.7     !  coef. of the Kolmogoroff dissipation
   rn_ebb      =   60.     !  coef. of the surface input of tke
   rn_efave    =   1.      !  boost of the tke diffusion ( avtke=rn_efave*avm )
   rn_emin     =   1.e-6   !  minimum value of tke [m2/s2]
   rn_emin0    =   1.e-4   !  surface minimum value of tke [m2/s2]
   nn_mxl      =   3       !  mixing length: = 0 bounded by distance to surface and
bottom
                           !                 = 1 bounded by local vertical scale
factor
                           !                 = 2 first vertical derivative of mixing
length
                           !
bounded by 1
                           !                 = 3 same criteria as 2 but applied in
different way
   nn_pdl      =   1       !  Prandtl number function of richarson number :
                           !                 =0 avt=avm
                           !                 =1 avt=pdl(Ri)*avm
   nn_avb      =   1       !  profile for constant background used on avt & avm (=1)
or not (=0)
   nn_ave      =   1       !  horizontal averaged on avt (=1) or not (=0)
   ln_mxl0     = .true.    !  mixing length scale surf value as fn of wind stress (T)
or not (F)
   rn_lmin     =   0.4     !  interior buoyancy length scale minimum value
   rn_lmin0    =   0.4     !  surface  buoyancy length scale minimum value
   nn_etau     =   0       !  exp. decreasing penetration of tke due to internal &
inertial waves
                           !       = 0 no penetration ( O(2 km) resolution)
                           !       = 1 additional tke source
                           !       = 2 additional tke source applied only at base of
mixed layer
   nn_htau     =   1       !  type of exponential decrease of tke penetration
                           !       = 0  constant 10 m length scale
                           !       = 1  meridional profile (5m in tropics, max 40m at
high lats)
                           !       = 2  meridional profile (5m in tropics, max 60m at
high lats)
   rn_efr      =   0.05    !  fraction of surface tke value which penetrates inside
the ocean
   ln_lc       = .false.   !  Langmuir cell effect
   rn_lc       =   0.15    !  coef. associated to Langmuir cells
   nn_havtb    =   0       !  horizontal shape for avtb (=1) or not (=0)
/
!-----------------------------------------------------------------------
&namddm        !   double diffusive mixing parameterization
("key_zdfddm")
!-----------------------------------------------------------------------
      avts     = 1.e-4     !  maximum avs (vertical mixing on salinity)
      hsbfr    = 1.6       !  heat/salt buoyancy flux ratio
/
!!======================================================================
!!                  ***  Miscelaneous namelists  ***
!!======================================================================
!!   nam_mpp           Massively Parallel Processing           ("key_mpp_mpi)
!!   nam_mpp_dyndist   Massively Parallel domain decomposition ("key_agrif" &&
"key_mpp_dyndist")
!!   namctl            Control prints & Benchmark
```

```
!!   namsol            elliptic solver / island / free surface
!!======================================================================

!-----------------------------------------------------------------------
&namsol        !   elliptic solver / island / free surface
!-----------------------------------------------------------------------
   nsolv       =      1    !  elliptic solver: =1 preconditioned conjugate gradient
(pcg)
                            !                   =2 successive-over-relaxation (sor)
                            !                   =3 FETI (fet)
("key_feti")
                            !                   =4 sor with extra outer halo
   nsol_arp    =      0    !  absolute/relative (0/1) precision convergence test
   nmin        =    300    !  minimum of iterations for the SOR solver
   nmax        =   2000    !  maximum of iterations for the SOR solver
   nmod        =     10    !  frequency of test for the SOR solver
   eps         =  1.e-6    !  absolute precision of the solver
   resmax      =  1.e-10   !  absolute precision for the SOR solver
   sor         =  1.92     !  optimal coefficient for SOR solver (to be adjusted with
the domain)
   epsisl      =  1.e-10   !  absolute precision on stream function solver
   nmisl       =   4000    !  maximum pcg iterations for island
("key_islands")
   rnu         =      1.   !  strength of the additional force used in filtered free
surface
/
!-----------------------------------------------------------------------
&nam_mpp       !   Massively Parallel Processing                          ("key_mpp_mpi)
!-----------------------------------------------------------------------
   c_mpi_send =  'S'       !  mpi send/receive type   ='S', 'B', or 'I' for standard
send,
                            !  buffer blocking send or immediate non-blocking sends,
resp.
   nn_buffer  =   0        !  size in bytes of exported buffer ('B' case), 0 no
exportation
/
```

b) CICE namelist used in HadGEM3 r1.1

```
&setup_nml
    days_per_year  = 360
  , year_init      = 1978
  , istep0         = 0
  , dt             = 3600.0
  , ndyn_dt        = 1
  , runtype        = 'initial'
  , ice_ic         = 'filename_init'
  , dumpfreq       = 'm'
  , dumpfreq_n     = 1
  , diagfreq       = 720
  , histfreq       = 'm'
  , histfreq_n     = 1
  , hist_avg       = .true.
  , history_format = 'nc'
  , write_ic       = .false.
/

&grid_nml
    grid_format  = 'nc'
  , grid_type    = 'tripole'
  , grid_file    = 'filename_grid.nc'
  , kmt_file     = 'filename_kmt.nc'
  , kcatbound    = 1
/

&domain_nml
    nprocs = 1
  , processor_shape   = 'square-ice'
  , distribution_type = 'rake'
  , distribution_wght = 'latitude'
  , ew_boundary_type  = 'cyclic'
  , ns_boundary_type  = 'tripole'
/

&tracer_nml
    tr_iage      = .false.
  , restart_age  = .false.
  , tr_pond      = .false.
  , restart_pond = .false.
/

&ice_nml
    kitd            = 1
  , kdyn            = 1
  , ndte            = 120
  , kstrength       = 1
  , krdg_partic     = 1
  , krdg_redist     = 1
  , advection       = 'remap'
  , heat_capacity   = .false.
  , shortwave       = 'default'
  , albedo_type     = 'default'
  , albicev         = 0.78
  , albicei         = 0.36
  , albsnowv        = 0.98
  , albsnowi        = 0.70
  , R_ice           = 0.
  , R_pnd           = 0.
  , R_snw           = 0.
  , atmbndy         = 'default'
  , fyear_init      = 1997
  , ycycle          = 1
  , atm_data_format = 'nc'
  , atm_data_type   = 'default'
```

```
, atm_data_dir    = 'unknown_atm_data_dir'
, calc_strair     = .false.
, calc_Tsfc       = .false.
, precip_units    = 'mks'
, Tfrzpt          = 'constant'
, update_ocn_f    = .true.
, oceanmixed_ice  = .false.
, ocn_data_format = 'nc'
, sss_data_type   = 'default'
, sst_data_type   = 'default'
, ocn_data_dir    = 'unknown_ocn_data_dir'
, oceanmixed_file = 'unknown_oceanmixed_file'
, restore_sst     = .false.
, trestore        =  0
, restore_ice     = .false.
```