

## Supplementary Material to:

### The UKC2 regional coupled environmental prediction system

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#### S1 Introduction

This supplementary material to the main paper is designed to help users of the UKC2 system in configuring their systems correctly.

The configurations are made available to registered researchers as rose suites on the <https://code.metoffice.gov.uk/trac/roses-> repository.

Table S1 provides a summary of the UKC2 configurations. The terminology is described in more detail in the main paper and in Table 2.

Configuration	Status	Comment	Suite id
UKA2g	Atmosphere only	Global OSTIA SST boundary condition persisted	u-ag678g
UKA2h	Atmosphere only	High-resolution UKO2g SST boundary condition persisted	u-ag678h
UKO2g	Ocean only	Global (17 km) Unified Model meteorology forcing	u-ag679g
UKO2h	Ocean only	High resolution UKA2h UM meteorology forcing	u-ag679h
UKW2g	Wave only	Global (17 km) Unified Model wind forcing	u-ag680g
UKW2h	Wave only	High resolution UKA2h UM wind forcing	u-ag680h
UKW2c	Wave only	As UKW2h, with UKO2h current forcing (wind + current)	u-ag680c
UKW2l	Wave only	As UKW2c with UKO2l water level forcing (wind + current + level)	u-ag680l
UKC2ao	Coupled A-O	Atmosphere-ocean coupled suite, no wave interactions	u-ag681
UKC2ow	Coupled O-W	Ocean-wave "partially coupled" suite, no atmosphere interactions	u-ag682
UKC2aow	Coupled A-O-W	Fully coupled atmosphere-ocean-wave suite	u-ag683

Table S1: Summary of UKC2 system coupled and uncoupled evaluation suites

## S2 Details of UKA2 vertical level set

In the vertical, the MetUM uses the terrain-following height coordinate  $\eta$ , which is normalised to be  $\eta = 0$  at the lower boundary, and  $\eta = 1$  at a height  $z_T$ , the height of the fixed model lid. In between, the height above mean sea level at any given point,  $z$ , is defined by

$$z = \eta z_T + h \left(1 - \frac{\eta}{\eta_I}\right)^2, \quad 0 \leq \eta \leq \eta_I$$

$$z = \eta z_T, \quad \eta_I \leq \eta \leq z_T$$

where  $h$  is the height of the model orography above the earth's mean radius and  $\eta_I$  is the level at and above which the levels are flat. The namelists below detail the level sets used with UKC2. In these namelists, the variable `z_top_of_model=zT` (in metres), `eta_theta` is the array of  $\eta$  values for the levels on which the prognostic potential temperature ( $\theta$ ) is held including the surface, `eta_rho` is the array of  $\eta$  values for the levels on which the prognostic density ( $\rho$ ) is held and `first_constant_r_rho_level` is the  $\rho$ -level at which  $\eta = \eta_I$ .

```
&VERTLEVS
```

```
z_top_of_model = 40000.00,
```

```
first_constant_r_rho_level= 62,
```

```
eta_theta=
```

```
0.000000E+00, 0.125000E-03, 0.541666E-03, 0.112500E-02, 0.187500E-02,  
0.279166E-02, 0.387500E-02, 0.512500E-02, 0.654166E-02, 0.812500E-02,  
0.987500E-02, 0.117916E-01, 0.138750E-01, 0.161250E-01, 0.185416E-01,  
0.211250E-01, 0.238750E-01, 0.267916E-01, 0.298750E-01, 0.331250E-01,  
0.365416E-01, 0.401250E-01, 0.438750E-01, 0.477916E-01, 0.518750E-01,  
0.561250E-01, 0.605416E-01, 0.651250E-01, 0.698750E-01, 0.747916E-01,  
0.798750E-01, 0.851250E-01, 0.905416E-01, 0.961250E-01, 0.101875E+00,  
0.107791E+00, 0.113875E+00, 0.120125E+00, 0.126541E+00, 0.133125E+00,  
0.139875E+00, 0.146791E+00, 0.153875E+00, 0.161128E+00, 0.168562E+00,  
0.176195E+00, 0.184059E+00, 0.192198E+00, 0.200673E+00, 0.209564E+00,  
0.218972E+00, 0.229023E+00, 0.239869E+00, 0.251691E+00, 0.264707E+00,  
0.279169E+00, 0.295371E+00, 0.313650E+00, 0.334391E+00, 0.358033E+00,  
0.385067E+00, 0.416049E+00, 0.451597E+00, 0.492400E+00, 0.539221E+00,  
0.592901E+00, 0.654367E+00, 0.724636E+00, 0.804818E+00, 0.896125E+00,  
0.100000E+01,
```

```
eta_rho=
```

```
0.624999E-04, 0.333333E-03, 0.833333E-03, 0.150000E-02, 0.233333E-02,  
0.333333E-02, 0.450000E-02, 0.583333E-02, 0.733333E-02, 0.900000E-02,  
0.108333E-01, 0.128333E-01, 0.150000E-01, 0.173333E-01, 0.198333E-01,  
0.225000E-01, 0.253333E-01, 0.283333E-01, 0.315000E-01, 0.348333E-01,  
0.383333E-01, 0.420000E-01, 0.458333E-01, 0.498333E-01, 0.540000E-01,  
0.583333E-01, 0.628333E-01, 0.675000E-01, 0.723333E-01, 0.773333E-01,  
0.825000E-01, 0.878333E-01, 0.933333E-01, 0.990000E-01, 0.104833E+00,  
0.110833E+00, 0.117000E+00, 0.123333E+00, 0.129833E+00, 0.136500E+00,  
0.143333E+00, 0.150333E+00, 0.157502E+00, 0.164845E+00, 0.172378E+00,  
0.180127E+00, 0.188128E+00, 0.196435E+00, 0.205118E+00, 0.214268E+00,  
0.223998E+00, 0.234446E+00, 0.245780E+00, 0.258199E+00, 0.271938E+00,  
0.287270E+00, 0.304511E+00, 0.324021E+00, 0.346212E+00, 0.371550E+00,  
0.400558E+00, 0.433823E+00, 0.471999E+00, 0.515811E+00, 0.566061E+00,  
0.623634E+00, 0.689502E+00, 0.764727E+00, 0.850471E+00, 0.948062E+00,
```

```
/
```

## S3 Example rose/MetUM/JULES/NEMO/WWIII namelist for a UKC2 case study simulation

Here, we include a set of MetUM, JULES, NEMO and WAVEWATCHIII rose namelists for a UKC2 simulation run at MetUM code base vn10.1, JULES vn4.2, NEMO vn3.6 (r5518), WAVEWATCHIII (vn4.18).

Note that for the interest of brevity, we have stripped out all “trigger ignored” variables (which are not read by the model) and all namelist entries that detail the diagnostic requests (i.e. `[namelist:domain(...)]`, `[namelist:nlstcall_pp(...)]`, `[namelist:streq(...)]`, `[namelist:time(...)]`, `[namelist:use(...)]`)

meta=um-atmos/vn10.1

[command]

default=run\_ukc2\_coupled

recon=um-recon

[env]

ATMOS\_EXEC=\${ROSE\_DATA}/../fcm\_make\_um/build-atmos/bin/um-atmos.exe

ATMOS\_KEEP\_MPP\_STDOUT=true

ATMOS\_STDOUT\_FILE=pe\_output/\${RUNID}.fort6.pe

COUPLER=\${COUPLER}

DATAM=\${ROSE\_DATA}/\${UM\_RST}

DATAW=\${ROSE\_DATA}/\${UM\_RST}

DIR\_BDA=<path\_to\_ocean\_boundaries> /amm15\_sjpza\_RMAX.1\_RIM15

DIR\_BDB=<path\_to\_ocean\_boundaries>/ amm15\_Baltic

DIR\_CORE=<path\_to\_ocean\_forcing>/fluxes

DIR\_DIRECT\_FLX=<path\_to\_ocean\_forcing> /fluxes

DIR\_MFS=

DR\_HOOK=0

ENS\_MEMBER=0

FASTRUN=.False.

HAS\_LBC=true

HISTORY=\${ROSE\_DATA}/\${RUNID}\_um/\${RUNID}.xhist

IS\_MULTI\_GRID=false

LBC\_FILEDIR=<path\_to\_wave\_boundaries>

MPICH\_GNI\_MAX\_EAGER\_MSG\_SIZE=65536

MPICH\_GNI\_MAX\_VSHORT\_MSG\_SIZE=8192

MPICH\_MAX\_THREAD\_SAFETY=multiple

MPICH\_NEMESIS\_ASYNC\_PROGRESS=mc

MP\_PGMMODEL=mpmd

NAMCOUPLE\_DIR=\${ROSE\_SUITE\_DIR}/app/\${ROSE\_TASK\_PREFIX}\_coupled/file

NAMCOUPLE\_STUB=namcouple\_ukc2\_use\_rmp\_nornf\_nom

NEMO\_ANCIL=<path\_to\_ocean\_ancillaries>

NEMO\_FORCE=

NEMO\_GRIDS=<path\_to\_ocean\_ancillaries>

NEMO\_INIT=

NEMO\_RIVERS=<path\_to\_river\_climatology>

NEMO\_START=<path\_to\_ocean\_restart\_file>

NEMO\_VERSION=306

OCEAN\_EXEC=\${CYLC\_SUITE\_SHARE\_DIR}/fcm\_make\_ocean/build-ocean/bin/nemo-cice.exe

OMP\_STACKSIZE=10G

OUTPUT\_FREQ=3600

PRINT\_STATUS=PrStatus\_Diag

RCF\_PRINTSTATUS=PrStatus\_Oper

RCF\_TIMER=false

RECONTMP=\${ROSE\_DATA}/\${RUNID}\_um/recontmp

RECON\_EXEC=\${CYLC\_SUITE\_SHARE\_DIR}/fcm\_make\_um/build-recon/bin/um-recon.exe

RECON\_KEEP\_MPP\_STDOUT=false

RECON\_STDOUT\_FILE=pe\_output/\${RUNID}.fort6.pe

RMP\_DIR=/data/d01/frhl/RMP\_UKC2\_nom

SPECTRAL\_FILE\_DIR=\${ROSE\_DATA}/etc/um\_spectral\_ukv

UM\_AINITDUMP=\${ROSE\_DATA}/glm\_t+0

UM\_ALABCIN=\${ROSE\_DATA}/\${UM\_RST}/\${RUNID}\_lbc

UM\_ALABCIN2=\${ROSE\_DATA}/\${UM\_RST}/\${RUNID}\_lbc

UM\_ASTART=\${ROSE\_DATA}/\${UM\_RST}/\${RUNID}.rcf

UM\_ATMANL=\${ROSE\_DATA}/\${UM\_RST}/\${RUNID}\_atmanl  
UM\_START=  
WAVE\_EXEC=\${ROSE\_DATA}/../fcm\_make\_ww3/build/bin/ww3\_shel  
WAVE\_START=<path\_to\_wave\_restart\_file>  
WV\_CURRENT\_FILE=amm15.current\_%Y%m%d.ww3  
WV\_LEVEL\_FILE=amm15.level\_%Y%m%d.ww3  
WV\_WIND\_FILE=UKA2-amm15.wind\_%Y%m%d.ww3  
WV\_WIND\_FREQ=3600  
XIOS\_EXEC=/data/d04/jcastill/xios-1.0/bin/xios\_server.exe  
flx\_type=cpl

[file:IDEALISE]  
source=(namelist:idealise)

[file:IOSCNTL]  
source=namelist:ioscntl namelist:io\_control namelist:prnt\_control

[file:NAMELIST]  
source=namelist:nlcfiles namelist:temp\_fixes namelist:model\_domain namelist:jules\_surface\_types  
namelist:jules\_surface namelist:jules\_radiation namelist:jules\_hydrology namelist:jules\_sea\_seaice  
namelist:jules\_soil namelist:jules\_vegetation namelist:jules\_snow namelist:urban\_switches namelist:nlstcatm  
namelist:planet\_constants namelist:run\_dust namelist:run\_ukca namelist:run\_gwd namelist:run\_murk  
namelist:run\_convection namelist:run\_bl namelist:run\_rivers namelist:run\_precip namelist:run\_radiation  
namelist:run\_cloud namelist:run\_aerosol namelist:lam\_config namelist:run\_ozone namelist:run\_free\_tracers  
namelist:ancilcta namelist:run\_eng\_corr namelist:run\_electric namelist:nlsizes namelist:nlstcall  
namelist:configid namelist:nlstcgen namelist:nlst\_mpp namelist:iau\_nl namelist:run\_stochastic  
namelist:run\_calc\_pmsl namelist:gen\_phys\_inputs namelist:lbc\_options namelist:run\_nudging  
namelist:run\_dyn namelist:run\_dyntest namelist:run\_sl namelist:run\_diffusion namelist:run\_cosp  
namelist:radfcia namelist:r2swcInl namelist:r2lwclnI namelist:clmchfcg namelist:acp namelist:acdiag  
namelist:jules\_nvegparm namelist:jules\_pftparm namelist:jules\_triffid namelist:jules\_elevate  
namelist:urban2t\_param namelist:nlstcall\_pp(:)

[file:RECONA]  
source=namelist:recon namelist:vertical namelist:horizont namelist:headers (namelist:items(:))  
(namelist:trans(:))

[file:SHARED]  
source=namelist:nlcfiles namelist:temp\_fixes namelist:model\_domain namelist:planet\_constants  
namelist:jules\_surface\_types namelist:jules\_surface namelist:jules\_radiation namelist:jules\_hydrology  
namelist:jules\_sea\_seaice namelist:jules\_soil namelist:jules\_vegetation namelist:jules\_snow  
namelist:urban\_switches namelist:nlstcatm namelist:run\_dust namelist:run\_ukca namelist:run\_gwd  
namelist:run\_murk namelist:run\_convection namelist:run\_bl namelist:run\_rivers namelist:run\_precip  
namelist:run\_radiation namelist:run\_cloud namelist:run\_aerosol namelist:lam\_config namelist:run\_ozone  
namelist:run\_free\_tracers namelist:ancilcta namelist:run\_eng\_corr namelist:run\_dyn namelist:run\_electric

[file:SIZES]  
source=namelist:nlsizes

[file:STASHC]  
source=(namelist:streq(:)) (namelist:domain(:)) (namelist:time(:)) (namelist:use(:))

[file:bathy\_meter.nc]  
mode=symlink  
source=\$NEMO\_GRIDS/amm15.bathydepth.hook.nc

[file:coordinates.bdy.nc]  
mode=symlink  
source=\$NEMO\_GRIDS/amm15.bdy.coordinates.rim15.nc

[file:coordinates.nc]  
mode=symlink  
source=\$NEMO\_GRIDS/amm15.coordinates.nc

[file:coordinates.skagbdy.nc]  
mode=symlink  
source=\$NEMO\_GRIDS/amm15.baltic.bdy.coordinates.nc

[file:fluxes/weights\_erai\_amm15\_bicubic.nc]  
mode=symlink  
source=\$NEMO\_GRIDS/weights\_erai\_amm15\_bicubic.nc

[file:geothermal\_heating.nc]  
mode=symlink  
source=\$NEMO\_FORCE/geothermal\_heating.nc

[file:grids.nc]  
mode=symlink  
source=\$ROSE\_DATA/etc/grids.nc

[file:ice\_in]  
source=namelist:setup\_nml namelist:grid\_nml namelist:domain\_nml namelist:tracer\_nml namelist:ice\_nml  
namelist:icefields\_nml

[file:masks.nc]  
mode=symlink  
source=\$ROSE\_DATA/etc/grids.nc

[file:namelist\_cfg]  
source=namelist:namrun namelist:namcfg namelist:namzgr namelist:namzgr\_sco namelist:namdom  
namelist:namsplit namelist:namcrs namelist:namtsd namelist:namsbc namelist:namsbc\_flx  
namelist:namsbc\_clio namelist:namsbc\_core namelist:namsbc\_mfs namelist:namsbc\_cpl namelist:namtra\_qsr  
namelist:namsbc\_rnf namelist:namsbc\_apr namelist:namsbc\_ssr namelist:namsbc\_alb namelist:namberg  
namelist:namlbc namelist:namcla namelist:namobc namelist:namagrif namelist:nam\_tide namelist:nambdy  
namelist:nambdy\_dta namelist:nambdy\_tide namelist:nambfr namelist:nambbc namelist:namdbl  
namelist:nameos namelist:namtra\_adv namelist:namtra\_adv\_mle namelist:namtra\_ldf namelist:namtra\_dmp  
namelist:namdyn\_adv namelist:namdyn\_vor namelist:namdyn\_hpg namelist:namdyn\_ldf namelist:namzdf  
namelist:namzdf\_ric namelist:namzdf\_tke namelist:namzdf\_kpp namelist:namzdf\_gls namelist:namzdf\_ddm  
namelist:namzdf\_tmx namelist:namsol namelist:nammpp namelist:namctl namelist:namnc4 namelist:namtrd  
namelist:namflo namelist:namptr namelist:namhsb namelist:nam\_diaharm namelist:namdct namelist:namobs  
namelist:nam\_asminc namelist:namsbc\_wave namelist:namdyn\_nept namelist:nam\_vvl namelist:nam\_diatmb  
namelist:nam\_dia25h namelist:namtra\_dwl

[file:namelist\_ref]  
mode=symlink  
source=/data/d01/fred/CO6\_INPUT\_DATA/namelist\_ref\_VN36STABLE

[namelist:acdiag]  
ldiagac=.true.  
lldac=.false.,.true.,.false.,.true.,.false.  
lrms=.false.

ltemp=.false.  
lverif=.false.

[namelist:acp]  
ac\_obs\_types=506  
ac\_order=1506  
alpha\_lhn=0.5  
diag\_rdots=2  
epsilon\_lhn=0.5  
fi\_scale\_lhn=6000.0  
l\_lhn=.true.  
l\_lhn\_fact=.true.  
l\_lhn\_filt=.true.  
l\_lhn\_limit=.false.  
l\_lhn\_scale=.true.  
l\_lhn\_search=.true.  
lac\_mes=.true.  
lhn\_diag=.true.  
!!lhn\_limit=1.0  
lhn\_range=18  
macdiag=36\*32  
no\_obs\_files=2  
npass\_rf\_lhn=2  
nudge\_lam=1.0e6  
obs\_format=3  
relax\_cf\_lhn=0.56  
remove\_neg\_lh=.true.  
tgetoba=506060  
tgetobb=406120,506060  
timea=506060  
timeb=406120,506060  
use\_conv\_in\_mops=.false.

[namelist:ancilcta]  
l\_sstanom=.false.  
lamipii=.false.  
nancil\_lookupsa=300

[namelist:clmchfcg]  
l\_clmchfcg=.false.

[namelist:configid]

[namelist:domain\_nml]  
distribution\_type='cartesian'  
distribution\_wght='block'  
ew\_boundary\_type='cyclic'  
nprocs='set\_by\_um'  
ns\_boundary\_type='tripoleT'  
processor\_shape='square-pop'

[namelist:gen\_phys\_inputs]  
l\_mr\_physics1=.false.  
l\_mr\_physics2=.false.

l\_use\_methox=.false.

```
[namelist:grid_nml]
grid_file='set_by_um'
grid_format='nc'
grid_type='tripole'
kcatbound=1
kmt_file='set_by_um'
```

```
[namelist:headers]
```

```
[namelist:horizont]
h_int_method=1
l_limit_rotations=.false.
orog_blend_weights=13*1.000,0.875,0.750,0.625,0.500,0.375,0.250,0.125
smcp_int_nearest_neighbour=.false.
```

```
[namelist:iau_nml]
iau_limitupperthetaincs_maxinc=100.0
iau_limitupperthetaincs_pbound=2.00000e+2
l_iau=.false.
```

```
[namelist:ice_nml]
advection='remap'
ahmax=0.5
albedo_type='default'
albicej=0.36
albicev=0.78
albsnowi=0.70
albsnowv=0.98
atm_data_dir='set_by_um'
atm_data_format='nc'
atm_data_type='default'
atmbndy='default'
calc_strair=.true.
calc_tsfc=.true.
conduct='MU71'
dpscale=1.0e-3
frzpnd='cesm'
fyear_init=1997
heat_capacity=.false.
hs0=0.03
hs1=0.03
kdyn=1
kitd=1
krdg_partic=1
krdg_redist=1
kstrength=1
mu_rdg=4.0
ndte=120
oceanmixed_file='unknown_oceanmixed_file'
oceanmixed_ice=.false.
ocn_data_dir='set_by_um'
ocn_data_format='nc'
pndaspect=0.8
```

precip\_units='mks'  
r\_ice=0.0  
r\_pnd=0.0  
r\_snw=1.5  
restore\_ice=.false.  
restore\_sst=.false.  
rfracmax=0.85  
rfracmin=0.15  
shortwave='default'  
snowinfil=.false.  
sss\_data\_type='default'  
sst\_data\_type='default'  
tfrzpt='constant'  
trestore=0  
update\_ocn\_f=.true.  
ustar\_min=0.0005  
ycycle=1

[namelist:io\_control]  
io\_data\_alignment=524288  
io\_external\_control=.false.  
io\_rbuffer\_count=4  
io\_rbuffer\_prefetch=2  
io\_rbuffer\_size=262144  
io\_timing=1  
io\_wbuffer\_size=524288  
l\_postp=.true.  
print\_runtime\_info=.true.

[namelist:iosctl]  
ios\_acquire\_model\_prsts=.true.  
ios\_as\_concurrency=72  
ios\_async\_levs\_per\_pack=300  
ios\_async\_send\_null=.false.  
ios\_async\_stats=.false.  
ios\_backoff\_interval=500  
ios\_buffer\_size=3072  
ios\_concurrency=400  
ios\_concurrency\_max\_mem=300  
ios\_debug\_no\_packing=.false.  
ios\_debug\_no\_subdomaining=.false.  
ios\_debug\_no\_write=.false.  
ios\_decomp\_model=0  
ios\_interleave=.true.  
ios\_local\_ro\_files=.true.  
ios\_lock\_meter=.false.  
ios\_offset=0  
ios\_print\_start\_time=.true.  
ios\_relaytoslaves=.true.  
ios\_serialise\_mpi\_calls=.false.  
ios\_spacing=36  
ios\_tasks\_per\_server=3  
ios\_thread\_0\_calls\_mpi=.false.  
ios\_timeout=120  
ios\_unit\_alloc\_policy=3



ios\_use\_async\_dump=.true.  
ios\_use\_async\_stash=.true.  
ios\_use\_helpers=.true.  
ios\_verbosity=1

[namelist:items(1)]  
ancilfilename=""  
domain=1  
source=3  
stash\_req=171,172,173,174,176,177,178,179,180,181,184,185,186,187,188,  
=189,191,192,193  
update\_anc=.false.

[namelist:items(24)]  
ancilfilename='<path\_to\_ancils>/qrparm.sst\_20131204\_amm15'  
domain=1  
source=2  
stash\_req=24  
update\_anc=.false.

[namelist:items(25)]  
ancilfilename=""  
domain=1  
source=8  
stash\_req=194,195  
update\_anc=.false.

[namelist:items(26)]  
ancilfilename=""  
domain=1  
source=6  
stash\_req=196  
update\_anc=.false.  
user\_prog\_rconst=0.011

[namelist:items(1586f59b)]  
ancilfilename='\${UM Ancil\_Soil\_Dir}/\${UM Ancil\_Soil\_File}'  
domain=1  
source=2  
stash\_req=47,223,44,48,46,41,40,220,207,43  
update\_anc=.false.

[namelist:items(2448f48c)]  
ancilfilename=""  
domain=1  
source=3  
stash\_req=166,167,168,169  
update\_anc=.false.

[namelist:items(28d70204)]  
ancilfilename=""  
domain=1  
source=3  
stash\_req=152,163,164,165,160  
update\_anc=.false.

[namelist:items(3ee8d673)]  
ancilfilename='\${UM Ancil\_Orog\_Dir}/\${UM Ancil\_Orog\_File}'  
domain=1  
source=2  
stash\_req=33,7,5,6  
update\_anc=.false.

[namelist:items(42b43bc3)]  
ancilfilename='\${UM Ancil\_Vegfrac\_Dir}/\${UM Ancil\_Vegfrac\_File}'  
domain=1  
source=2  
stash\_req=216  
update\_anc=.false.

[namelist:items(5bd7215c)]  
ancilfilename='\${UM Ancil\_Mask\_Dir}/\${UM Ancil\_Mask\_File}'  
domain=1  
source=2  
stash\_req=30  
update\_anc=.false.

[namelist:items(6c4b3f22)]  
ancilfilename=""  
domain=1  
source=3  
stash\_req=151,153,155,156,157,161,162,290  
update\_anc=.false.

[namelist:items(e3240330)]  
ancilfilename='\${UM Ancil\_Vegfunc\_Dir}/\${UM Ancil\_Vegfunc\_File}'  
domain=1  
source=2  
stash\_req=217,218  
update\_anc=.false.

[namelist:items(efd79afa)]  
ancilfilename='\${UM Ancil\_Ozone\_Dir}/\${UM Ancil\_Ozone\_File}'  
domain=1  
source=2  
stash\_req=60  
update\_anc=.false.

[namelist:jules\_elevate]  
surf\_hgt\_io=9\*0.00

[namelist:jules\_hydrology]  
b\_pdm=2.00  
dz\_pdm=1.00  
l\_hydrology=.true.  
l\_pdm=.true.  
l\_top=.false.  
l\_var\_rainfrac=.false.

[namelist:jules\_nvegparm]

albsnc\_nvg\_io=4.00000e-1,6.00000e-2,8.00000e-1,8.00000e-1  
albsnf\_nvg\_io=1.80000e-1,6.00000e-2,-1.00000,7.50000e-1  
albsnf\_nvgl\_io=0.16,0.06,0.03,0.75  
albsnf\_nvgu\_io=0.20,0.15,0.80,0.75  
catch\_nvg\_io=5.00000e-1,1.00000e+3,0.00000,0.00000  
ch\_nvg\_io=2.80000e+5,4.18000e+6,0.00000,0.00000  
emis\_nvg\_io=9.70000e-1,9.85000e-1,9.00000e-1,9.90000e-1  
gs\_nvg\_io=0.00000,0.00000,1.00000e-2,1.00000e+6  
infil\_nvg\_io=1.00000e-1,0.00000,5.00000e-1,0.00000  
vf\_nvg\_io=1.00000,1.00000,0.00000,0.00000  
z0\_nvg\_io=1.00000,1.00000e-4,1.00000e-3,5.00000e-4  
z0hm\_classic\_nvg\_io=1.00000e-7,2.50000e-1,2.00000e-2,2.00000e-1  
z0hm\_nvg\_io=1.00000e-7,2.50000e-1,2.00000e-2,2.00000e-1

[namelist:jules\_pftparm]

a\_wl\_io=0.65,0.65,0.005,0.005,0.10  
a\_ws\_io=10.00,10.00,1.00,1.00,10.00  
albsnc\_max\_io=1.50000e-1,1.50000e-1,6.00000e-1,6.00000e-1,4.00000e-1  
albsnc\_min\_io=3.00000e-1,3.00000e-1,8.00000e-1,8.00000e-1,8.00000e-1  
albsnf\_max\_io=1.00000e-1,1.00000e-1,2.00000e-1,2.00000e-1,2.00000e-1  
albsnf\_maxl\_io=0.095,0.059,0.128,0.106,0.077  
albsnf\_maxu\_io=0.215,0.132,0.288,0.239,0.173  
alnir\_io=0.45,0.35,0.58,0.58,0.58  
alnirl\_io=0.30,0.23,0.39,0.39,0.39  
alniru\_io=0.68,0.53,0.87,0.87,0.87  
alpar\_io=0.10,0.07,0.10,0.10,0.10  
alparl\_io=0.06,0.04,0.06,0.06,0.06  
alparu\_io=0.15,0.11,0.15,0.15,0.15  
alpha\_io=0.08,0.08,0.08,0.040,0.08  
b\_wl\_io=5\*1.667  
c3\_io=1,1,1,0,1  
catch0\_io=5\*5.00000e-1  
!!ci\_st\_io=33.46 33.46 34.26 29.98 34.26  
dcatch\_dlai\_io=5\*5.00000e-2  
dgl\_dm\_io=5\*0.0  
dgl\_dt\_io=9.0,9.0,0.0,0.0,9.0  
dqcrit\_io=0.090,0.060,0.100,0.075,0.100  
dz0v\_dh\_io=5.00000e-2,5.00000e-2,1.00000e-1,1.00000e-1,1.00000e-1  
emis\_pft\_io=0.9800,0.9900,0.9800,0.9800,0.9800  
eta\_sl\_io=5\*0.01  
f0\_io=0.875,0.875,0.900,0.800,0.900  
fd\_io=0.015,0.015,0.015,0.025,0.015  
fsmc\_of\_io=5\*0.00  
g\_leaf\_0\_io=5\*0.25  
glmin\_io=5\*1.0e-6  
!!gpp\_st\_io=1.29E-07 2.58E-08 2.07E-07 3.42E-07 1.68E-007  
infil\_f\_io=4.00000,4.00000,2.00000,2.00000,2.00000  
kext\_io=5\*5.00000e-1  
kn\_io=5\*0.78  
kpar\_io=5\*0.50  
lma\_io=0.0824,0.2263,0.0498,0.1370,0.0695  
neff\_io=0.8e-3,0.8e-3,0.8e-3,0.4e-3,0.8e-3  
nl0\_io=0.040,0.030,0.060,0.030,0.030  
nmass\_io=0.0210,0.0115,0.0219,0.0131,0.0219  
nr\_nl\_io=5\*1.00

ns\_nl\_io=0.10,0.10,1.00,1.00,0.10  
omega\_io=0.15,0.15,0.15,0.17,0.15  
omegal\_io=0.10,0.10,0.10,0.12,0.10  
omegau\_io=0.23,0.23,0.23,0.26,0.23  
omnir\_io=0.70,0.45,0.83,0.83,0.83  
omnirl\_io=0.50,0.30,0.53,0.53,0.53  
omniru\_io=0.90,0.65,0.98,0.98,0.98  
orient\_io=5\*0  
q10\_leaf\_io=5\*2.00  
r\_grow\_io=5\*0.25  
rootd\_ft\_io=3.00000,1.00000,5.00000e-1,5.00000e-1,5.00000e-1  
sigl\_io=0.0375,0.1000,0.0250,0.0500,0.0500  
tleaf\_of\_io=273.15,243.15,258.15,258.15,243.15  
tlow\_io=0.0,-5.0,0.0,13.0,0.0  
tupp\_io=36.0,31.0,36.0,45.0,36.0  
vint\_io=5.73,6.32,6.42,0.00,14.71  
vsl\_io=29.81,18.15,40.96,10.24,23.15  
z0hm\_classic\_pft\_io=1.65000,1.65000,1.00000e-1,1.00000e-1,1.00000e-1  
z0hm\_pft\_io=1.65000,1.65000,1.00000e-1,1.00000e-1,1.00000e-1

[namelist:jules\_radiation]

i\_sea\_alb\_method=2  
l\_albedo\_obs=.false.  
l\_dolr\_land\_black=.false.  
l\_snow\_albedo=.false.  
l\_spec\_albedo=.false.  
l\_spec\_sea\_alb=.true.

[namelist:jules\_sea\_seaice]

buddy\_sea=0  
emis\_sea=1.0000  
emis\_sice=1.0000  
iseasurfalg=1  
kappa\_seasurf=3.10000e-1  
kappai=2.09  
kappai\_snow=0.31  
l\_cice\_alb=.false.  
l\_ctile=.false.  
l\_sice\_heatflux=.false.  
l\_sice\_meltponds=.false.  
l\_sice\_multilayers=.false.  
l\_sice\_scattering=.false.  
l\_ssice\_albedo=.false.  
l\_tstar\_sice\_new=.false.  
nice=1  
seasalinityfactor=0.98  
z0h\_z0m\_miz=1.000  
z0h\_z0m\_sice=1.000  
z0miz=1.00000e-1  
z0sice=3.00000e-3

[namelist:jules\_snow]

cansnowpft=.false.,.true.,.false.,.false.,.false.  
frac\_snow\_subl\_melt=1  
l\_snowdep\_surf=.true.

nsmax=0

[namelist:jules\_soil]  
dzsoil\_io=0.1000,0.2500,0.6500,2.0000  
l\_dpsids\_dsdz=.false.  
l\_soil\_sat\_down=.false.  
l\_vg\_soil=.true.  
soilhc\_method=2

[namelist:jules\_surface]  
all\_tiles=0  
cor\_mo\_iter=3  
fd\_stab\_dep=1  
formdrag=1  
i\_modiscopt=1  
iscrntdiag=2  
isrfexcnvgust=0  
l\_aggregate=.false.  
l\_anthrop\_heat\_src=.true.  
l\_epot\_corr=.true.  
l\_flake\_model=.false.  
l\_land\_ice\_imp=.false.  
l\_point\_data=.false.  
orog\_drag\_param=0.01

[namelist:jules\_surface\_types]  
brd\_leaf=1  
c3\_grass=3  
c4\_grass=4  
ice=9  
lake=7  
ndl\_leaf=2  
nnvg=4  
npft=5  
shrub=5  
soil=8  
urban=6

[namelist:jules\_triffid]  
crop\_io=0,0,1,1,0  
g\_area\_io=0.005,0.004,0.25,0.25,0.05  
g\_grow\_io=5\*20.00  
g\_root\_io=5\*0.25  
g\_wood\_io=0.01,0.01,0.20,0.20,0.05  
lai\_max\_io=9.00,9.00,4.00,4.00,4.00  
lai\_min\_io=3.00,3.00,1.00,1.00,1.00

[namelist:jules\_vegetation]  
can\_model=4  
can\_rad\_mod=4  
ilayers=10  
l\_bvoc\_emis=.false.  
l\_ht\_compete=.false.  
l\_landuse=.false.  
l\_phenol=.false.

l\_q10=.true.  
l\_trait\_phys=.false.  
l\_triffid=.false.

[namelist:lam\_config]  
delta\_lat=0.015714  
delta\_lon=0.016334  
frstlata=-5.6112  
frstlona=353.0345  
n\_rims\_to\_do=5  
polelata=37.5000  
polelona=177.5000

[namelist:lbc\_options]  
l\_int\_uvw\_lbc=.true.  
l\_lateral\_boundary=.true.  
l\_old\_lbc\_file=.false.  
nrim\_timesa=100  
rimweightsa=5\*1.000,0.750,0.500,0.250,22\*0.000

[namelist:model\_domain]  
l\_regular=.false.  
model\_type=2

[namelist:nam\_asminc]  
ln\_asmdin=.false.  
ln\_asmiau=.false.  
ln\_bkgwri=.false.  
ln\_dyninc=.false.  
ln\_salfix=.false.  
ln\_sshinc=.false.  
ln\_trainc=.false.  
ln\_trjwri=.false.  
niaufn=0  
nitbkg=0  
nitdin=0  
nitiaufin=15  
nitiaustr=1  
nittrjfrq=0  
nn\_divdmp=0  
salfixmin=-9999

[namelist:nam\_dia25h]  
ln\_dia25h=.true.

[namelist:nam\_diaharm]  
nit000\_han=19  
nitend\_han=1440  
nstep\_han=18  
tname(1)='M2'  
tname(2)='K1'

[namelist:nam\_diatmb]  
ln\_diatmb=.true.

```
[namelist:nam_tide]
cname(1)='M2'
cname(2)='S2'
cname(3)='N2'
cname(4)='K2'
cname(5)='K1'
cname(6)='O1'
cname(7)='P1'
cname(8)='Q1'
cname(9)='M4'
cname(10)='MS4'
cname(11)='MN4'
ln_tide_pot=.true.
```

```
[namelist:nam_vvl]
ln_vvl_layer=.false.
ln_vvl_zstar=.true.
```

```
[namelist:namagrif]
ln_spc_dyn=.true.
nn_cln_update=3
rn_sponge_dyn=2880.0
rn_sponge_tra=2880.0
```

```
[namelist:nambbc]
ln_trabbc=.false.
```

```
[namelist:nambbl]
nn_bbl_adv=0
nn_bbl_ldf=0
```

```
[namelist:nambdy]
cn_coords_file='coordinates.bdy.nc','coordinates.skagbdy.nc'
cn_dyn2d='flather','flather'
cn_dyn3d='zero','zero'
cn_tra='frs','frs'
ln_coords_file=.true.,.true.
ln_mask_file=.false.
nb_bdy=2
nn_dyn2d_dta=3,1
nn_dyn3d_dta=1,1
nn_rimwidth=15,10
nn_tra_dta=1,1
```

```
[namelist:nambdy_dta]
bn_sal='amm15_bdyT',24,'vosaline',.true.,.false.,'daily','',"
bn_ssh='amm15_bt_bdyT',24,'sossheig',.true.,.false.,'daily','',"
bn_tem='amm15_bdyT',24,'votemper',.true.,.false.,'daily','',"
bn_u2d='amm15_bt_bdyU',24,'vobtcrtx',.true.,.false.,'daily','',"
bn_u3d='asdasdad',24,'vozocrtx',.true.,.false.,'daily','',"
bn_v2d='amm15_bt_bdyV',24,'vobtcrtv',.true.,.false.,'daily','',"
bn_v3d='asdasdasd',24,'vomecrtv',.true.,.false.,'daily','',"
cn_dir='./bdydta/'
ln_full_vel=.false.
```

[namelist:nambdy\_tide]  
filtide='bdyda/amm15\_bdytide\_tp'  
ln\_bdytide\_2ddta=.true.  
ln\_bdytide\_conj=.false.

[namelist:namberg]

[namelist:nambfr]  
ln\_bfr2d=.false.  
ln\_bfrimp=.true.  
ln\_loglayer=.true.  
nn\_bfr=2  
rn\_bfeb2=0.0  
rn\_bfri1=4.0e-4  
rn\_bfri2=2.5e-3  
!!rn\_bfrien=50.0  
rn\_bfrz0=0.003

[namelist:namcfg]  
cp\_cfg='amm'  
jp\_cfg=011  
jperio=0  
jpidta=1458  
jpiglo=1458  
jpizoom=1  
jpdta=1345  
jpglo=1345  
jpzoom=1  
jpkdta=51

[namelist:namcla]  
nn\_cla=0

[namelist:namcrs]

[namelist:namctl]  
ln\_ctl=.false.  
nn\_bench=0  
nn\_ictle=0  
nn\_ictls=0  
nn\_isplt=1  
nn\_jctle=0  
nn\_jctls=0  
nn\_jsplt=1  
nn\_print=0  
nn\_timing=1

[namelist:namdct]  
nn\_dct=15  
nn\_dctwri=15  
nn\_secdebug=112

[namelist:namdom]  
ldbletanh=.false.  
nn\_bathy=1



nn\_msh=0  
ppa0=999999.0  
ppa1=999999.0  
ppa2=999999.0  
ppacr=9.0  
ppacr2=999999.0  
ppdzmin=6.0  
ppe1\_deg=999999.0  
ppe1\_m=999999.0  
ppe2\_deg=999999.0  
ppe2\_m=999999.0  
ppglam0=999999.0  
ppgphi0=999999.0  
pphmax=5720.0  
ppkth=23.563  
ppkth2=999999.0  
ppsurr=999999.0  
rn\_rdt=60.0

[namelist:namdyn\_adv]  
ln\_dynadv\_cen2=.false.  
ln\_dynadv\_ubs=.false.  
ln\_dynadv\_vec=.true.

[namelist:namdyn\_hpg]  
ln\_dynhpg\_imp=.false.  
ln\_hpg\_djc=.false.  
ln\_hpg\_prj=.true.  
ln\_hpg\_sco=.false.  
ln\_hpg\_zco=.false.  
ln\_hpg\_zps=.false.

[namelist:namdyn\_ldf]  
ln\_dynldf\_bilap=.true.  
ln\_dynldf\_hor=.false.  
ln\_dynldf\_iso=.false.  
ln\_dynldf\_lap=.false.  
ln\_dynldf\_level=.true.  
rn\_ahm\_0\_blp=-6.0e7  
!!rn\_ahm\_0\_lap=30.0  
rn\_ahm\_m\_blp=-1.0e12  
rn\_ahm\_m\_lap=10.0  
rn\_cmsh=1  
rn\_cmsmag\_1=3.0  
rn\_cmsmag\_2=3

[namelist:namdyn\_nept]  
ln\_neptramp=.true.  
ln\_neptsimp=.false.  
ln\_smooth\_neptvel=.false.  
rn\_htrmax=200.0  
rn\_htrmin=100.0  
rn\_tslse=1.2e4  
rn\_tslsp=3.0e3

[namelist:namdyn\_vor]  
ln\_dynvor\_ee=.true.  
ln\_dynvor\_ene=.false.  
ln\_dynvor\_ens=.false.  
ln\_dynvor\_mix=.false.

[namelist:nameos]  
nn\_eos=0

[namelist:namflo]  
jpnfl=1  
jpnnewflo=0  
ln\_argo=.false.  
ln\_ariane=.true.  
ln\_flo\_ascii=.true.  
ln\_flork4=.false.  
ln\_rstflo=.false.  
nn\_stockfl=1440  
nn\_writefl=1440

[namelist:namhsb]  
ln\_diahsb=.false.

[namelist:namlbc]  
rn\_shlat=0.0

[namelist:nammpp]  
cn\_mpi\_send='l'  
jpnj='set\_by\_um'  
jpnij='set\_by\_um'  
jpnj='set\_by\_um'  
ln\_nnogather=.false.  
nn\_buffer=0

[namelist:namnc4]  
ln\_nc4zip=.true.  
nn\_nchunks\_i=4  
nn\_nchunks\_j=4  
nn\_nchunks\_k=31

[namelist:namobc]  
cn\_obcdta='annual'  
ln\_obc\_clim=.false.  
ln\_obc\_fla=.false.  
ln\_vol\_cst=.true.  
nn\_obcdta=0  
rn\_dpein=1.0  
rn\_dpeob=3000.0  
rn\_dpnin=1.0  
rn\_dpnob=3000.0  
rn\_dpsin=1.0  
rn\_dpsob=15.0  
rn\_dpwin=1.0  
rn\_dpwob=15.0  
rn\_volemp=1.0

```
[namelist:namobs]
ln_altbias=.false.
ln_ena=.false.
ln_grid_global=.true.
ln_grid_search_lookup=.false.
ln_ignmis=.true.
ln_profib=.false.
ln_s3d=.false.
ln_sla=.false.
ln_sladt=.false.
ln_slafb=.false.
ln_sst=.true.
ln_sstfb=.false.
ln_t3d=.false.
nmsshc=0
profibfiles='profiles_01.nc'
slafbfiles='sla_01.nc'
sstfbfiles='sst_01.nc','sst_02.nc','sst_03.nc','sst_04.nc','sst_05.nc'
```

```
[namelist:namptr]
ln_diaptr=.false.
```

```
[namelist:namrun]
cn_exp='set_by_um'
cn_ocerst_in='restart'
cn_ocerst_indir='./'
cn_ocerst_out='restart'
cn_ocerst_outdir='${ROSE_DATA}/${NEMO_RST}'
ln_clobber=.true.
ln_mskland=.false.
ln_rstart='set_by_um'
ln_rstdate=.true.
nn_date0='set_by_um'
nn_euler=1
nn_istate=0
nn_it000=1
nn_itend=1440
nn_leapy='set_by_um'
nn_stock=1440
nn_write=1440
```

```
[namelist:namsbc]
ln_apr_dyn=.true.
ln_blk_clio=.false.
ln_blk_core=.false.
ln_blk_mfs=.false.
ln_cdgw=.false.
ln_cpl=.true.
ln_dm2dc=.false.
ln_rnf=.true.
ln_ssr=.false.
nn_fsbc=1
nn_fwb=0
nn_ice=0
```

[namelist:namsbc\_alb]

[namelist:namsbc\_apr]

cn\_dir='./fluxes/'

ln\_apr\_abc=.true.

ln\_ref\_apr=.false.

rn\_pref=101000.0

sn\_apr='UKA2-amm15\_pressure\_1hr\_uko',1,'p\_msl',.true.,.false.,'daily',",","

[namelist:namsbc\_clio]

cn\_dir='./fluxes/'

sn\_ccov='flx',-1,'sociocl',.false.,.true.,'yearly',",","

sn\_humi='flx',-1,'sociohu',.true.,.true.,'yearly',",","

sn\_prec='flx',-1,'sociopl',.false.,.true.,'yearly',",","

sn\_tair='flx',-1,'socio2',.true.,.true.,'yearly',",","

sn\_utau='taux\_1m',-1,'sozotau',.true.,.true.,'yearly',",","

sn\_vtau='tauy\_1m',-1,'sometau',.true.,.true.,'yearly',",","

sn\_wndm='flx',-1,'sociowi',.true.,.true.,'yearly',",","

[namelist:namsbc\_core]

cn\_dir='./fluxes/'

ln\_taudif=.false.

rn\_pfac=1.0

rn\_vfac=1.

rn\_zqt=2.

rn\_zu=10.

sn\_humi='CUT\_ERAI\_INCLUDE\_MSLP',3,'Q2',.true.,.false.,'daily','weights\_era\_amm15\_bicubic.nc',"

sn\_prec='CUT\_ERAI\_INCLUDE\_MSLP',3,'TP',.true.,.false.,'daily','weights\_era\_amm15\_bicubic.nc',"

sn\_qlw='CUT\_ERAI\_INCLUDE\_MSLP',3,'STRD',.true.,.false.,'daily','weights\_era\_amm15\_bicubic.nc',"

sn\_qsr='CUT\_ERAI\_INCLUDE\_MSLP',3,'SSRD',.true.,.false.,'daily','weights\_era\_amm15\_bicubic.nc',"

sn\_snow='CUT\_ERAI\_INCLUDE\_MSLP',3,'SF',.true.,.false.,'daily','weights\_era\_amm15\_bicubic.nc',"

sn\_tair='CUT\_ERAI\_INCLUDE\_MSLP',3,'T2',.true.,.false.,'daily','weights\_era\_amm15\_bicubic.nc',"

sn\_wndi='CUT\_ERAI\_INCLUDE\_MSLP',3,'U10',.true.,.false.,'daily','weights\_era\_amm15\_bicubic.nc','U1'

sn\_wndj='CUT\_ERAI\_INCLUDE\_MSLP',3,'V10',.true.,.false.,'daily','weights\_era\_amm15\_bicubic.nc','V1'

[namelist:namsbc\_cpl]

sn\_rcv\_cal='none','no',",","

sn\_rcv\_co2='none','no',",","

sn\_rcv\_dqnsdt='none','no',",","

sn\_rcv\_emp='conservative','no',",","

sn\_rcv\_hsig='none','no',",","

sn\_rcv\_iceflx='none','no',",","

sn\_rcv\_mslp='coupled','no',",","

sn\_rcv\_phioc='none','no',",","

sn\_rcv\_qns='oce only','no',",","

sn\_rcv\_qsr='oce only','no',",","

sn\_rcv\_rnf='none','no',",","

sn\_rcv\_tau='oce only','no','spherical',",',U,V,F'

sn\_rcv\_taudmod='none','no',",","

sn\_rcv\_w10m='coupled','no',",","

sn\_snd\_alb='none','no',",","

sn\_snd\_co2='none','no',",","

sn\_snd\_crt='oce only','no','spherical',",',U,V'

sn\_snd\_crtw='oce only','no',",",',U,V'

```
sn_snd_ifrac='none','no','','"  
sn_snd_temp='oce only','no','','"  
sn_snd_thick='none','no','','"  
sn_snd_wlev='coupled','no','','"
```

```
[namelist:namsbc_flx]
```

```
cn_dir='./fluxes/'  
ln_foam_flx=.false.  
ln_shelf_flx=.true.  
sn_emp='flx_amm7',3,'sowafldo',.true.,.false.,'daily','"  
sn_press='pressure_amm7',1,'p_msl',.true.,.false.,'daily','"  
sn_qsr='flx_amm7',3,'soshfldo',.true.,.false.,'daily','"  
sn_qtot='flx_amm7',3,'sonsfldo',.true.,.false.,'daily','"  
sn_utau='windspd_u_amm7',1,'10mwind_u',.true.,.false.,'daily','"  
sn_vtau='windspd_v_amm7',1,'10mwind_v',.true.,.false.,'daily','"
```

```
[namelist:namsbc_mfs]
```

```
cn_dir='./ECMWF/'  
sn_clc='ecmwf',6,'clc',.true.,.false.,'daily','bilinear.nc','"  
sn_msl='ecmwf',6,'msl',.true.,.false.,'daily','bicubic.nc','"  
sn_prec='ecmwf',6,'precip',.true.,.true.,'daily','bicubic.nc','"  
sn_rhm='ecmwf',6,'rh',.true.,.false.,'daily','bilinear.nc','"  
sn_tair='ecmwf',6,'t2',.true.,.false.,'daily','bicubic.nc','"  
sn_wndi='ecmwf',6,'u10',.true.,.false.,'daily','bicubic.nc','"  
sn_wndj='ecmwf',6,'v10',.true.,.false.,'daily','bicubic.nc','"
```

```
[namelist:namsbc_rnf]
```

```
cn_dir='./'  
ln_rnf_depth=.true.  
ln_rnf_mouth=.false.  
ln_rnf_sal=.false.  
ln_rnf_tem=.false.  
rn_avt_rnf=10.0  
rn_hrnf=1000.0  
rn_rfact=1.0  
sn_cnf='runoff_1m_nomask',0,'socoefr0',.false.,.false.,'yearly','"  
sn_dep_rnf='rivers',24,'rodepth',.false.,.false.,'yearly','"  
sn_rnf='rivers',24,'rorunoff',.false.,.false.,'yearly','"
```

```
[namelist:namsbc_ssr]
```

```
cn_dir='./fluxes/'  
nn_sssr=0  
nn_sstr=1  
sn_sst='global-amm15_references_1hr_uko',1,'sosstref',.false.,.false.,'daily','','"
```

```
[namelist:namsbc_wave]
```

```
cn_dir_cdg='./'  
sn_cdg='cdg_wave',1,'drag_coeff',.true.,.false.,'daily','','"
```

```
[namelist:namsol]
```

```
nn_nmax=800  
nn_nmin=900  
nn_nmod=10  
nn_sol_arp=0  
nn_solv=1
```

rn\_eps=1.0e-6  
rn\_resmax=1.0e-10  
rn\_sor=1.92

[namelist:namsplit]  
ln\_bt\_nn\_auto=.true.  
nn\_baro=30

[namelist:namtra\_adv]  
ln\_traadv\_cen2=.false.  
ln\_traadv\_muscl=.false.  
ln\_traadv\_muscl2=.false.  
ln\_traadv\_qck=.false.  
ln\_traadv\_tvd=.true.  
ln\_traadv\_ubs=.false.

[namelist:namtra\_adv\_mle]

[namelist:namtra\_dmp]  
ln\_tradmp=.false.

[namelist:namtra\_dwl]  
ln\_tradwl=.false.  
ln\_vary\_lambda=.false.

[namelist:namtra\_ldf]  
ln\_botmix\_grif=.false.  
ln\_traldf\_bilap=.true.  
ln\_traldf\_gdia=.false.  
ln\_traldf\_grif=.false.  
ln\_traldf\_hor=.false.  
ln\_traldf\_iso=.false.  
ln\_traldf\_lap=.false.  
ln\_traldf\_level=.true.  
ln\_triad\_iso=.false.  
rn\_aeiv\_0=0.0  
rn\_aht\_0=-1.0e5  
rn\_ahtb\_0=0.0

[namelist:namtra\_qsr]  
cn\_dir='./'  
ln\_qsr\_2bd=.false.  
ln\_qsr\_bio=.false.  
ln\_qsr\_rgb=.true.  
ln\_traqsr=.true.  
nn\_chldta=0  
rn\_abs=0.66  
rn\_si0=0.35  
sn\_chl='chlorophyll',-1,'CHLA',.true.,.true.,'yearly',"

[namelist:namtrd]

[namelist:namtsd]  
cn\_dir='\$NEMO\_INIT'  
ln\_tsd\_init=.true.

```
ln_tsd_tradmp=.false.  
sn_sal='AMM.T.nc',-12,'vosaline',.false.,.true.,'yearly',''  
sn_tem='AMM.T.nc',-12,'votemper',.false.,.true.,'yearly',''
```

```
[namelist:namzdf]  
ln_zdfevd=.false.  
rn_avm0=0.1e-6  
rn_avt0=0.1e-6
```

```
[namelist:namzdf_ddm]  
rn_avts=1.0e-4  
rn_hsbfr=1.6
```

```
[namelist:namzdf_gls]  
ln_length_lim=.true.  
ln_sigpsi=.true.  
nn_bc_bot=1  
nn_bc_surf=1  
nn_clos=1  
nn_stab_func=2  
nn_z0_met=2  
rn_charn=100000.0  
rn_clim_galp=0.267  
rn_crban=100.0  
rn_emin=1.0e-6  
rn_epsmin=1.0e-12  
rn_frac_hs=1.3  
rn_hsro=0.02
```

```
[namelist:namzdf_kpp]  
ln_kpprimix=.true.  
nn_avb=0  
nn_ave=1  
rn_bvsqcon=-0.01e-7  
rn_difcon=1.0  
rn_difmiw=1.0e-4  
rn_difri=0.0050  
rn_difsiw=0.1e-4  
rn_riinfy=0.8
```

```
[namelist:namzdf_ric]  
ln_mldw=.true.  
nn_ric=2  
rn_alp=5.0  
rn_avmri=100.0e-4  
rn_ekmfc=0.7  
rn_mldmax=1000.0  
rn_mldmin=1.0  
rn_wtmix=10.0  
rn_wvmix=10.0
```

```
[namelist:namzdf_tke]  
ln_lc=.true.  
ln_mx10=.true.  
nn_etau=1
```

nn\_htau=0  
nn\_mxl=2  
nn\_pdl=1  
rn\_ebb=67.83  
rn\_ediff=0.1  
rn\_ediss=0.7  
rnEFR=0.05  
rn\_emin=1.0e-6  
rn\_emin0=1.0e-4  
rn\_lc=0.15  
rn\_mxl0=0.04

[namelist:namzdf\_tmx]  
ln\_tmx\_itf=.false.  
rn\_htmx=500.  
rn\_me=0.2  
rn\_n2min=1.0e-8  
rn\_tfe=0.333  
rn\_tfe\_itf=1.0

[namelist:namzgr]  
ln\_read\_zenv=.false.  
ln\_sco=.true.  
ln\_zps=.false.

[namelist:namzgr\_sco]  
ln\_s\_sf12=.true.  
ln\_s\_sh94=.false.  
ln\_sigcrit=.true.  
rn\_alpha=4.4  
rn\_bb=0.8  
rn\_efold=0.0  
rn\_hc=50.0  
rn\_rmax=0.1  
rn\_sbot\_max=7000.0  
rn\_sbot\_min=10.0  
rn\_theta=6.0  
rn\_thetb=1.0  
rn\_zb\_a=0.024  
rn\_zb\_b=-0.2  
rn\_zs=1.0

[namelist:nlcfiles]  
alabcin1='\$UM\_ALABCIN'  
astart='\$UM\_ASTART'  
atmanl='\$UM\_ATMANL'  
obs01='\$ROSE\_DATAC/\${ROSE\_TASK\_PREFIX}\_acobs'  
obs02='\$ROSE\_DATAC/\${ROSE\_TASK\_PREFIX}\_acobs'  
obs03='unset'  
obs04='unset'  
obs05='unset'  
streqlog='\$DATAW/\$RUNID.stash'

[namelist:nlsizes]  
bl\_levels=69



cloud\_levels=70  
global\_row\_length=950  
global\_rows=1025  
land\_field=294055  
model\_levels=70  
ozone\_levels=70  
river\_row\_length=950  
river\_rows=1025  
st\_levels=4  
var\_grid='\$ROSE\_DATA/etc/um\_horiz\_grid'  
vert\_lev='\$ROSE\_DATA/etc/um\_vertlevs\_UKV\_L70'  
wet\_levels=70

[namelist:nlst\_mpp]  
extended\_halo\_size\_ew=7  
extended\_halo\_size\_ns=7  
gcom\_coll\_limit=64  
global\_sum\_method=3

[namelist:nlstcall]  
ancil\_reftime=6\*0  
lclimrealyr=.false.  
ltimer=.false.  
model\_analysis\_mins=0  
model\_basis\_time=\$MODELBASIS  
num\_albcs=1  
run\_target\_end=\$TASKEND

[namelist:nlstcatm]  
a\_assim\_end\_min=360  
a\_assim\_start\_min=0  
i\_co2\_opt=1  
l\_couple\_master=.false.  
l\_oasis\_icecalve=.false.  
l\_oasis\_timers=.false.  
lcal360=.false.  
oasis\_couple\_freq=1

[namelist:nlstcgen]  
dump\_filename\_base='\$DATAM/\${RUNID}a\_d%Y%m%d%H'  
dump\_frequency\_units=1  
dump\_packim=1  
dumpfreqim=\$WV\_FC\_LEN  
i\_dump\_output=2  
l\_meaning\_sequence=.false.  
secs\_per\_periodim=86400  
steps\_per\_periodim=1440

[namelist:planet\_constants]  
i\_eqt=1  
i\_planet=3  
l\_fix\_solang=.false.  
l\_planet\_g=.false.  
l\_planet\_orbit=.false.  
sc=1361.000

```
[namelist:prnt_control]
prnt_force_flush=.false.
prnt_paper_width=80
prnt_split_lines=.false.
prnt_src_pref=.false.
prnt_writers=2
```

```
[namelist:r2lwclnl]
i_cnv_ice_lw=9
i_cnv_ice_lw2=9
i_cnv_water_lw=5
i_cnv_water_lw2=5
i_gas_overlap_lw=6
i_gas_overlap_lw2=6
i_scatter_method_lw=4
i_scatter_method_lw2=4
i_st_ice_lw=9
i_st_ice_lw2=9
i_st_water_lw=5
i_st_water_lw2=5
l_cfc113_lw=.false.
l_cfc113_lw2=.false.
l_cfc114_lw=.false.
l_cfc114_lw2=.false.
l_cfc11_lw=.true.
l_cfc11_lw2=.false.
l_cfc12_lw=.true.
l_cfc12_lw2=.false.
l_ch4_lw=.true.
l_ch4_lw2=.false.
l_co_lw=.false.
l_co_lw2=.false.
l_h2_lw=.false.
l_h2_lw2=.false.
l_hcfc22_lw=.false.
l_hcfc22_lw2=.false.
l_he_lw=.false.
l_he_lw2=.false.
l_hfc125_lw=.false.
l_hfc125_lw2=.false.
l_hfc134a_lw=.false.
l_hfc134a_lw2=.false.
l_k_lw=.false.
l_k_lw2=.false.
l_microphysics_lw=.false.
l_microphysics_lw2=.false.
l_n2o_lw=.true.
l_n2o_lw2=.false.
l_na_lw=.false.
l_na_lw2=.false.
l_nh3_lw=.false.
l_nh3_lw2=.false.
l_solar_tail_flux=.false.
l_solar_tail_flux_2=.false.
```

l\_tio\_lw=.false.  
l\_tio\_lw2=.false.  
l\_vo\_lw=.false.  
l\_vo\_lw2=.false.  
spectral\_file\_lw='sp\_lw\_ga3\_1'  
spectral\_file\_lw2='sp\_lw\_cloud3\_0'

[namelist:r2swcInl]  
i\_cnv\_ice\_sw=9  
i\_cnv\_ice\_sw2=9  
i\_cnv\_water\_sw=5  
i\_cnv\_water\_sw2=5  
i\_gas\_overlap\_sw=5  
i\_gas\_overlap\_sw2=5  
i\_st\_ice\_sw=9  
i\_st\_ice\_sw2=9  
i\_st\_water\_sw=5  
i\_st\_water\_sw2=5  
l\_ch4\_sw=.false.  
l\_ch4\_sw2=.false.  
l\_co\_sw=.false.  
l\_co\_sw2=.false.  
l\_h2\_sw=.false.  
l\_h2\_sw2=.false.  
l\_he\_sw=.false.  
l\_he\_sw2=.false.  
l\_k\_sw=.false.  
l\_k\_sw2=.false.  
l\_n2o\_sw=.false.  
l\_n2o\_sw2=.false.  
l\_na\_sw=.false.  
l\_na\_sw2=.false.  
l\_nh3\_sw=.false.  
l\_nh3\_sw2=.false.  
l\_o2\_sw=.true.  
l\_o2\_sw2=.false.  
l\_tio\_sw=.false.  
l\_tio\_sw2=.false.  
l\_vo\_sw=.false.  
l\_vo\_sw2=.false.  
spectral\_file\_sw='sp\_sw\_ga3\_0'  
spectral\_file\_sw2='sp\_sw\_cloud3\_0w'

[namelist:radfcDia]

[namelist:recon]  
ainitial='\$UM\_AINITDUMP'  
coast\_adj\_method=3  
dump\_pack=1  
input\_dump\_type=1  
l\_adj\_t\_soil=.false.  
l\_canopy\_snow\_throughfall=.true.  
l\_init\_tile\_t\_zerofrac=.false.  
l\_rcf\_init\_flexi=.false.  
l\_trans=.false.

l\_validity\_lookup\_u=.false.  
q\_min=2.000e-6  
reset\_data\_time=.true.  
select\_input\_fields=0  
use\_smc\_stress=.true.  
var\_recon=.false.  
w\_zero\_end=-1  
w\_zero\_start=-1

[namelist:run\_aerosol]  
l\_biomass=.false.  
l\_bmass\_lbc=.false.  
l\_dms\_lbc=.false.  
l\_nh3\_lbc=.false.  
l\_nitr\_lbc=.false.  
l\_nitrate=.false.  
l\_ocff=.false.  
l\_ocff\_lbc=.false.  
l\_so2\_lbc=.false.  
l\_soot=.false.  
l\_soot\_lbc=.false.  
l\_sulpc\_so2=.false.  
l\_use\_bmass\_sulpc=.false.  
l\_use\_nitrate\_sulpc=.false.  
l\_use\_ocff\_sulpc=.false.  
l\_use\_seasalt\_pm=.false.  
l\_use\_seasalt\_sulpc=.false.

[namelist:run\_bl]  
a\_ent\_shr\_nml=1.6  
alpha\_cd=2.0,68\*1.5  
bl\_res\_inv=0  
blending\_option=1  
calc\_prob\_of\_vis=0.666  
cbl\_op=2  
charnock=0.011  
dec\_thres\_cloud=0.10  
entr\_enhance\_by\_cu=1  
entr\_smooth\_dec=1  
flux\_grad=0  
fric\_heating=0  
i\_bl\_vn=3  
idyndiag=2  
keep\_ri\_fa=2  
kprof\_cu=2  
l\_full\_lambdas=.false.  
l\_lambdam2=.false.  
local\_fa=3  
nl\_bl\_levels=42  
prandtl=1  
pstb=2.000  
puns=0.500  
relax\_sc\_over\_cu=1  
sbl\_op=1  
sg\_orog\_mixing=3

subs\_couple\_fix=1  
variable\_ric=1

[namelist:run\_calc\_pmsl]  
l\_pmsl\_sor=.true.  
npmsl\_height=0.00

[namelist:run\_cloud]  
falliceshear\_method=1  
i\_cld\_area=1  
i\_rhcpt=0  
ice\_width=0.04  
l\_add\_cca\_to\_mcica=.false.  
l\_ceil\_cld\_filter=.false.  
l\_eacf=.true.  
l\_od\_cld\_filter=.false.  
l\_pc2=.false.  
l\_sharpen\_cbh\_diags=.true.  
rhcrit=0.960,0.940,0.920,0.900,0.890,0.880,0.870,0.860,0.850,0.840,  
=0.840,0.830,0.820,0.810,56\*0.800

[namelist:run\_convection]  
a\_convect\_seg\_size=16  
a\_convect\_segments=-99  
adapt=0  
amdet\_fac=1.00  
bl\_cnv\_mix=1  
cape\_bottom=5  
cape\_min=0.5  
cape\_timescale=750  
cape\_top=30  
cca2d\_dp\_opt=1  
cca2d\_md\_opt=1  
cca2d\_sh\_opt=2  
cca\_dp\_knob=0.0  
cca\_md\_knob=0.0  
cca\_sh\_knob=0.5  
ccw\_dp\_knob=0.0  
ccw\_for\_precip\_opt=4  
ccw\_md\_knob=0.0  
ccw\_sh\_knob=0.7  
cldbase\_opt\_dp=2  
cldbase\_opt\_md=2  
cldbase\_opt\_sh=0  
cnv\_wat\_load\_opt=0  
cvdiag\_inv=0  
cvdiag\_sh\_wtest=0.1  
dd\_opt=0  
deep\_cmt\_opt=0  
dil\_plume\_water\_load=0  
ent\_fac\_dp=1.00  
ent\_fac\_md=1.00  
ent\_opt\_dp=0  
ent\_opt\_md=0  
fac\_qsat=0.500

i\_convection\_vn=5  
iconv\_congestus=0  
iconv\_deep=0  
iconv\_mid=0  
iconv\_shallow=1  
icvdiag=1  
l\_3d\_cca=.true.  
l\_anvil=.false.  
l\_ccrad=.true.  
l\_conv\_hist=.false.  
l\_cv\_conserve\_check=.false.  
l\_eman\_dd=.false.  
l\_mom=.true.  
l\_mom\_dd=.false.  
l\_murk\_conv=.false.  
l\_new\_dd=.false.  
l\_param\_conv=.false.  
l\_rediagnosis=.false.  
l\_safe\_conv=.true.  
l\_snow\_rain=.false.  
limit\_pert\_opt=2  
mid\_cmt\_opt=0  
mid\_cnv\_pmin=0.00  
mparwtr=1.5000e-3  
n\_conv\_calls=1  
plume\_water\_load=0  
qlmin=3.0000e-4  
qstice=3.5e-3  
r\_det=0.75  
rad\_cloud\_decay\_opt=0  
sh\_pert\_opt=1  
t\_melt\_snow=274.15  
termconv=0  
tice=273.15  
!!tower\_factor=0.0  
tv1\_sd\_opt=2  
ud\_factor=1.0000  
w\_cape\_limit=10000.0

[namelist:run\_cosp]  
l\_cosp=.false.

[namelist:run\_diffusion]  
adjust\_theta\_end=70  
adjust\_theta\_start=30  
diag\_interval=1  
diff\_factor=1.0  
first\_norm\_print=1  
hdiffopt=3  
horizontal\_level=0  
l\_adjust\_theta=.true.  
l\_diag\_l2helm=.false.  
l\_diag\_l2norms=.false.  
l\_diag\_noise=.false.  
l\_diag\_print=.true.

```
l_diag_print_ops=.false.
l_diag_wind=.false.
l_flush6=.true.
l_pofil_hadgem2=.false.
l_print_div=.false.
l_print_lapse=.false.
l_print_max_wind=.false.
l_print_pe=.false.
l_print_shear=.false.
l_print_theta1=.false.
l_print_w=.false.
l_print_wmax=.true.
l_qpos=.true.
l_qpos_diag_pr=.false.
l_sponge=.false.
l_subfilter_horiz=.true.
l_subfilter_vert=.true.
l_tardiff_q=.false.
l_upper_ramp=.false.
l_vdiff_uv=.false.
mix_factor=0.20
norm_lev_end=70
norm_lev_start=1
pofil_opt=0
print_step=1
q_pos_method=4
q_pos_tracer_method=2
qlimit=1.000e-8
qpos_diag_limit=0
top_diff=0.10
top_filt_end=1000
top_filt_start=1000
turb_endlev_horiz=69
turb_endlev_vert=69
turb_startlev_horiz=2
turb_startlev_vert=2
!!up_diff_scale=0
vdiffopt=0
w_print_limit=0
```

```
[namelist:run_dust]
i_dust=0
l_dust_div1_lbc=.false.
l_dust_div2_lbc=.false.
l_dust_div3_lbc=.false.
l_dust_div4_lbc=.false.
l_dust_div5_lbc=.false.
l_dust_div6_lbc=.false.
```

```
[namelist:run_dyn]
alpha_relax_type=4
damp_height=40000.0
eg_vert_damp_profile=1
eta_s=0.7500
gcr_max_iterations=200
```

gcr\_precon\_option=4  
gcr\_tol=1.000e-3  
intrand\_seed=0  
l\_check\_moist\_inc=.false.  
l\_endgame=.true.  
l\_fix\_mass=.false.  
l\_mix\_ratio=.true.  
l\_sl\_bc\_correction=.true.

[namelist:run\_dyntest]  
gcr\_diagnostics=1  
gcr\_its\_avg\_step=12,24,1440  
l\_backwards=.false.  
l\_dry=.false.  
l\_dynamics\_only=.false.  
l\_exclude\_physics2=.false.  
l\_perturb\_ic\_theta=.false.  
l\_trap\_theta=.false.  
l\_trap\_uv=.true.  
l\_trap\_w=.false.  
problem\_number=0  
trap\_option=1  
uv\_limit=0

[namelist:run\_electric]  
electric\_method=2  
k1=0.042  
k2=0.20  
l\_use\_electric=.true.

[namelist:run\_eng\_corr]  
l\_emcorr=.false.

[namelist:run\_free\_tracers]  
l\_free\_tracer=.false.

[namelist:run\_gwd]  
gwd\_frc=1.00  
i\_gwd\_vn=4  
kay\_gwave=1.00  
l\_gw\_heating=.false.  
l\_gwd=.true.  
l\_smooth=.false.  
l\_use\_ussp=.false.

[namelist:run\_murk]  
l\_murk=.false.  
l\_murk\_lbc=.false.

[namelist:run\_nudging]  
l\_nudging=.false.

[namelist:run\_ozone]  
zon\_av\_ozone=.false.



```
[namelist:run_precip]
ai=2.3000e-2
ar=1.00
bi=2.0000
c_r_correl=0.900
ci_input=1.426110e+1
cic_input=1.024180e+3
di_input=4.164100e-1
dic_input=1.000000
l_autoconv_murk=.false.
l_diff_icevt=.true.
l_droplet_tpr=.true.
l_fsd_generator=.false.
l_it_melting=.false.
l_mcr_arcl=.false.
l_mcr_iter=.false.
l_mcr_qgraup=.true.
l_mcr_qgraup_lbc=.false.
l_mcr_qrain=.true.
l_mcr_qrain_lbc=.false.
l_psd=.true.
l_psd_global=.true.
l_rain=.true.
l_rainfall_as=.true.
l_sr2graup=.true.
l_subgrid_qcl_mp=.false.
l_taper_new=.false.
l_use_seasalt_autoconv=.false.
l_warm_new=.true.
ndrop_surf=7.5e+7
tnuc=-10.00
x1r=2.2000e-1
x2r=2.2000
z_peak_nd=150.0
```

```
[namelist:run_radiation]
a_lw_seg_size=16
a_sw_seg_size=16
aero_bl_levels=30
aeroscl_csk_clim=1.0000,0.3333,1.0000,1.0000,1.0000
alphac=0.80
alpham=0.50
c113mmr=0
c114mmr=0
c11mmr=1.129e-9
c12mmr=2.225e-9
ch4mmr=9.994e-7
co2_mmr=5.94100e-4
cusack_aero=3
cusack_aero_hgt=3
dp_corr_conv=0
dp_corr_strat=0
dtice=5.00
h_lwbands=9
h_swbands=6
```

hfc22mmr=0  
hfc125mmr=0.0  
hfc134ammr=0  
i\_cloud\_representation=2  
i\_cloud\_representation\_2=2  
i\_fsd=0  
i\_fsd\_2=0  
i\_inhom=1  
i\_inhom\_2=1  
i\_lw\_radstep\_perday\_diag=288  
i\_lw\_radstep\_perday\_prog=96  
i\_overlap=0  
i\_overlap\_2=0  
i\_ozone\_int=1  
i\_rad\_extra\_call=2  
i\_rad\_topography=4  
i\_sw\_radstep\_perday\_diag=288  
i\_sw\_radstep\_perday\_prog=96  
inhom\_cloud\_lw=0.70000,1.00000,0.50000,0.50000  
inhom\_cloud\_sw=0.70000,1.00000,0.50000,0.50000  
is\_ncol=0  
l\_bs1999\_abundances=.false.  
l\_consistent\_cdnc=.false.  
l\_quad\_t\_coast=.true.  
l\_rad\_deg=.false.  
l\_rad\_snow\_emis=.true.  
l\_rad\_szacor=.true.  
l\_rad\_use\_clim\_volc=.false.  
l\_radiation=.true.  
l\_sec\_var=.false.  
l\_t\_bdy\_surf=.true.  
l\_t\_land\_nosnow=.true.  
l\_t\_rad\_solid=.true.  
l\_use\_arclbiom=.false.  
l\_use\_arclblk=.false.  
l\_use\_arcllta=.false.  
l\_use\_arclldust=.false.  
l\_use\_arclloff=.false.  
l\_use\_arclssl=.false.  
l\_use\_arclsulp=.false.  
l\_use\_biogenic=.false.  
l\_use\_bmass\_direct=.false.  
l\_use\_bmass\_indirect=.false.  
l\_use\_cariolle=.false.  
l\_use\_dust=.false.  
l\_use\_nitrate\_direct=.false.  
l\_use\_nitrate\_indirect=.false.  
l\_use\_ocff\_direct=.false.  
l\_use\_ocff\_indirect=.false.  
l\_use\_seasalt\_direct=.false.  
l\_use\_seasalt\_indirect=.false.  
l\_use\_soot\_direct=.false.  
l\_use\_soot\_indirect=.false.  
l\_use\_sulpc\_direct=.false.  
l\_use\_sulpc\_indirect\_lw=.false.

```
l_use_sulpc_indirect_sw=.false.  
n2ommr=4.925e-7  
o2mmr=0.2314  
rad_mcica_sampling=2  
rad_mcica_sigma=0  
two_d_fsd_factor=1.414
```

```
[namelist:run_rivers]  
i_river_vn=2  
l_rivers=.true.  
river_step=900
```

```
[namelist:run_sl]  
depart_order=2  
high_order_scheme=8,1,1,1,1  
instability_diagnostics=0  
interp_vertical_search_tol=28  
l_conserve_tracers=.false.  
l_priestley_correct_theta=.false.  
moisture_conservation=0  
monotone_scheme=1,1,0,0,1  
ritchie_high_order_scheme=0  
ritchie_monotone_scheme=1  
thmono_height=1.00000e+3
```

```
[namelist:run_stochastic]  
i_pert_theta=2  
l_rp2=.false.  
l_skeb2=.false.  
l_spt=.false.  
l_stphseed_file=.false.  
lev_pert_theta=10  
mag_pert_theta=0.5  
npts_pert_theta=8  
stphseed=0
```

```
[namelist:run_ukca]  
i_ukca_conserve_method=0  
l_ukca=.false.  
l_ukca_asad_plev=.false.  
l_ukca_chem_plev=.false.
```

```
[namelist:setup_nml]  
days_per_year='set_by_um'  
dbug=.false.  
diag_file='ice_diag.d'  
diag_type='file'  
diagfreq=1920  
dt=1350.0  
dump_last=.true.  
dumpfreq='d'  
dumpfreq_n=10  
hist_avg=.true.  
histfreq='d','x','x','x','x'  
histfreq_n=10,1,1,1,1
```

```
history_dir='./'  
history_file='set_by_um'  
history_format='nc'  
ice_ic='set_by_um'  
incond_dir='./'  
incond_file='set_by_um'  
istep0=0  
latpnt(1)=90.0  
latpnt(2)=-65.0  
lonpnt(1)=0.0  
lonpnt(2)=-45.0  
ndyn_dt=1  
npt='set_by_um'  
pointer_file='set_by_um'  
print_global=.true.  
print_points=.true.  
restart='set_by_um'  
restart_dir='${DATAM}/CICEhist/'  
restart_file='set_by_um'  
runtype='initial'  
use_leap_years='set_by_um'  
write_ic=.false.  
year_init='set_by_um'
```

```
[namelist:temp_fixes]  
l_emis_ssi_full=.false.  
l_fail_p_layers_inconsis=.false.  
l_fix_arcl_eg_levs=.false.  
l_fix_conserv=.false.  
l_fix_drop_settle=.false.  
l_glue_conv5a=.false.  
l_jau_pc2check=.false.  
l_ignore_error_ancil_struct=.false.  
l_methox_fix=.false.  
l_mphys_gr_out=.false.  
l_pc2_homog_turb_q_neg=.false.  
l_rm_neg_par=.true.  
l_roughnesslength_fix=.true.  
l_stph_rhcrit_unbias=.false.
```

```
[namelist:tracer_nml]  
restart_aero=.false.  
restart_age=.false.  
restart_lvl=.false.  
restart_pond_cesm=.false.  
restart_pond_lvl=.false.  
tr_aero=.false.  
tr_iage=.false.  
tr_lvl=.false.  
tr_pond_cesm=.false.  
tr_pond_lvl=.false.
```

```
[namelist:urban2t_param]
```

```
[namelist:urban_switches]
```

```
l_moruses_albedo=.false.  
l_moruses_emissivity=.false.  
l_moruses_rough=.false.  
l_moruses_storage=.false.  
l_moruses_storage_thin=.false.  
l_urban2t=.false.
```

```
[namelist:vertical]  
v_int_order=2
```