

&OLAMIN

! This file contains the configuration setting for the runs in
! "Simulated changes in Northwest US climate in response to Amazon
! deforestation", by David Medvigy, Robert L. Walko, Martin J. Otte, and
! Roni Avissar. This manuscript has been submitted to Journal of Climate
(JCLI-D-12-00775).

! The OLAM source code is available on Sourceforge. The simulations in the
! manuscript were done with revision 171.

! Please contact Dr. David Medvigy (dmedvigy@princeton.edu) with any questions
! about model configuration.

!-----
! Simulation title (64 chars)
!-----

NL%EXPNAME = 'OLAM simulation'

!-----
! Runtype: either MAKESFC, MAKEGRID, INITIAL, HISTORY, or PLOTONLY
!-----

! NL%RUNTYPE = 'MAKESFC'
! NL%RUNTYPE = 'MAKEGRID'
! NL%RUNTYPE = 'INITIAL'
NL%RUNTYPE = 'HISTORY'
! NL%RUNTYPE = 'PLOTONLY'
! NL%RUNTYPE = 'PARCOMBINE'

!-----
! Simulation ending time
!-----

NL%TIMEUNIT = 'd' ! Time units of TIMMAX: 's','m','h','d'
NL%TIMMAX = 5630. ! Ending time of this model run

!-----
! Start of simulation or ISAN processing (when model time counter TIME8 = 0.)
!-----

NL%ITIME1 = 0000 ! UTC
NL%IDATE1 = 1 ! Day
NL%IMONTH1 = 10 ! Month
NL%IYEAR1 = 1996 ! Year

!-----
! Vertical grid specifications
!-----


```
! 1 eliminates only sharp concavities (Method B)
! 2 eliminates both sharp and gentler concavities (original Method A)
! 3 activates the Method C refined mesh algorithm
NL%NCONCAVE = 3
```

```
! One group of values must be provided for each "grid" number NG = 2:NGRIDS
```

```
! NGRDLL(NG) = Number of geographic points that you use to define the extent
!               of grid NG
! GRDRAD(NG) = Radius of influence for grid NG. Any grid point closer than
!               this radius to any of the geographic points or to the line
!               segments that connect consecutive points in the sequence will
!               be included in the refined area.
! GRDLAT(NG,:) = latitude/longitude of all geographic points in the
! GRDLON(NG,:)  sequence for grid NG
```

```
! Grid 2:
NL%NGRDLL(2)      = 4
NL%GRDRAD(2)     = 1000.e3
NL%GRDLAT(2,1:4) = 6.1, -4.5, -18.5, -37.6
NL%GRDLON(2,1:4) = -73.7, -77.6, -66.6, -69.5
```

```
! Grid 3:
NL%NGRDLL(3)      = 4
NL%GRDRAD(3)     = 500.e3
NL%GRDLAT(3,1:4) = 6.1, -4.5, -18.5, -37.6
NL%GRDLON(3,1:4) = -75.7, -79.6, -68.6, -71.5
```

```
! Grid 4:
NL%NGRDLL(4)      = 2
NL%GRDRAD(4)     = 2000.e3
NL%GRDLAT(4,1:2) = 41.0, 41.0
NL%GRDLON(4,1:2) = -104.0, -90.0
```

```
! Grid 5:
NL%NGRDLL(5)      = 2
NL%GRDRAD(5)     = 1500.e3
NL%GRDLAT(5,1:2) = 41.0, 41.0
NL%GRDLON(5,1:2) = -104.0, -90.0
```

```
! Grid 6:
NL%NGRDLL(6)      = 2
NL%GRDRAD(6)     = 750.e3
NL%GRDLAT(6,1:2) = 41.0, 41.0
NL%GRDLON(6,1:2) = -101.0, -93.0
```

```
!-----
! Timestep and timestep ratios (One ratio for each Mesh Refinement Level (MRL))
!-----
```

```

NL%DTLONG = 60.      ! Coarse grid long timestep

NL%NDTRAT = 1,1,1,1,1,1      ! # long MRL timesteps per long MRL-1 timestep
NL%NACOUST = 6,6,6,6,6,6     ! # acoustic timesteps per long timestep
! NL%NACOUST = 2,2,2,2,2,2   ! # acoustic timesteps per long timestep

!-----
! Variable initialization input
!-----

NL%INITIAL = 2      ! Initial fields:  1 = horizontally homogeneous
                !                    2 = 3D heterogeneous
                !                    3 = longitudinally homogeneous

! input climate file:
NL%ZONCLIM = '../etc/ZONAVG_CLIMATE'

!-----
! Nudging parameters (used only if initial=2)
!-----

NL%NUDFLAG = 0      ! 4DDA nudging flag: 0 = no nudging
                !                    1 = nudge from isan files

NL%NUDXP = 0        ! NXP value for defining nudging grid

NL%TNUDCENT = 21600. ! 4DDA nudging time scale (s)

!-----
! Grid file path/name
!-----

NL%GRIDFILE = '/tigress-hsm/dmedvigy/sfcfiles/rev171/def.50km/gridfile_1.h5'

!-----
! History file I/O
!-----

NL%IOUTPUT = 1      ! 0-no files, 1-write files

NL%HFILEPREF = 'hist-fine-for/a' ! History file output path/prefix
NL%ICLOBBER = 1     ! 0 = stop if files exist, 1 = overwrite files
NL%ICOMPRESS = 3    ! 0 (no compress, fast) <-> 9 (max compress, slow)
NL%FRQSTATE = 2592000. ! Time interval between history files
NL%IPAR_OUT = 0     ! 1 = parallel output to single file, if
                ! supported by system (but disables compression)

NL%HFILIN = './fine-for-H-2000-11-09-000000.h5' ! History file input

```

```

!-----
! Topography initialization
!-----

NL%ITOPOFLG = 1    ! 1 = Read topo from standard TOPO_DATABASE file
                  ! 2 = Define topo in subroutine topo_init

! Surface topography database file path and name:
NL%TOPO_DATABASE = '/home/dmedvigy/olamdatah5/dem30s/TM'

!-----
! Model options / Numerical schemes
!-----

NL%NADDSC      = 0      ! Number of additional scalar species

NL%ICORFLG     = 1      ! Coriolis flag/2D v-component: 0 = off, 1 = on

NL%ISCAL_MONOT = 0      ! Monotonic advection for scalars (including moisture)
                  ! 0 = off, 1 = on

NL%DEBUG_FP    = .false. ! Detect floating point errors such as overflows,
                  ! INFs, divide-by-zeros, and NaNs (best if code is
                  ! compiled with debug options too)

NL%INIT_NANS   = .false. ! Initialize model variables to NaNs to catch
                  ! errors (useful if DEBUG_FP is set to .true.)

!-----
! Rayleigh friction parameters
!-----

NL%RAYF_ZMIN   = 35000. ! Damping for U, THIL - minimum height (m)
NL%RAYF_DISTIM = 270.0  ! Damping for U, THIL - model top disp time (s)
NL%RAYF_EXPON  = 1.0    ! Damping for U, THIL - exponent for profile

NL%RAYFW_ZMIN  = 35000. ! Damping for W - minimum height (m)
NL%RAYFW_DISTIM = 270.0 ! Damping for W - model top disp time
NL%RAYFW_EXPON = 1.0    ! Damping for W - exponent for profile

!-----
! Radiation parameters
!-----

NL%ISWRRTYP = 3    ! Shortwave radiation type:
NL%ILWRRTYP = 3    ! Longwave radiation type:
                  ! 0=none, 1=Chen, 2=Mahrer/Pielke, 3=Harrington
NL%RADFRQ   = 1800. ! Time interval between radiation tendency updates (s)

!-----

```

! Cumulus parameterization parameters

!-----
NL%NQPARM = 3,3,3,3,3,3,3,3 ! Cumulus parameterization scheme for each MRL
! 0=off, 1=Kuo, 2=Grell, 3=KF_eta, 4=Emanuel
NL%NQPARM_SH = 0,0,0,0,0,0,0,0 ! Shallow cumulus parameterization scheme
! for each MRL: 0=off, 1=Grell
NL%CONFRQ = 1200. ! Time interval (s) between cumulus param updates
NL%WCLDBS = .002 ! Minimum vertical motion (m/s) needed at cloud base
! to trigger convection in Kuo scheme

!-----
! Eddy diffusion coefficient parameters (one value for each MRL)
!-----

NL%IDIFFK = 2,2,2,2,2,2 ! Turbulent parameterization scheme:
! 0 = off
! 2 = Smagorinsky-Lilly-Hill
! 7 = Taylor
NL%CSX = .2,.2,.2,.2,.2,.2 ! Horizontal length scale coefficient
NL%CSZ = .2,.2,.2,.2,.2,.2 ! Vertical length scale coefficient
NL%XKHKM = 3.,3.,3.,3.,3.,3. ! Ratio of horiz K_h to K_m
NL%ZKHKM = 3.,3.,3.,3.,3.,3. ! Ratio of vert K_h to K_m
NL%AKMIN = 0.,0.,0.,0.,0.,0. ! Ratio of minimum horizontal eddy
! viscosity coefficient to typical value
! from deformation K

!-----
! Microphysics
!-----

NL%LEVEL = 3 ! Moisture complexity level:
! 0 = no moisture
! 1 = vapor only
! 2 = vapor and diagnosed cloud only
! 3 = use bulk microphysics
! Choices:
!-----!
NL%ICLOUD = 4 ! 0,1,4,5,6,7 ! 0 = category off
NL>IDRIZ = 4 ! 0,1,4,5,6,7 ! 1 for ICLOUD, IDRIZ = same as 4 but CPARAM,
NL%IRAIN = 2 ! 0,1,2,5 ! DPARAM are not used
NL%IPRIS = 5 ! 0,5,6,7 ! 1 for IRAIN, ISNOW, IAGGR, IGRAUP, IHAIL
NL%ISNOW = 2 ! 0,1,2,5 ! = same as 2 but RPARAM, SPARAM, APARAM,
NL%IAGGR = 2 ! 0,1,2,5 ! GPARAM, HPARAM not used
NL%IGRAUP = 2 ! 0,1,2,5 ! 2 = diameter specified and concn diagnosed

NL%HS = 0.0 ! Height (m MSL) of lowest sounding level
! Only used for IPSFLG=0 (if PS array is pressure)

NL%P_SFC = 1010.0 ! Surface Pressure (mb)
! Only used for IPSFLG=1 (if PS array is height)

```
!-----
```

! Sounding:	PS	TS	RTS	US	VS
! NL%SOUNDING = 0.0,	25.0,	10.0,	0.0,	0.0,	0.0,
1000.0,	16.0,	10.0,	0.0,	0.0,	0.0,
2000.0,	7.0,	10.0,	0.0,	0.0,	0.0,
3000.0,	-2.0,	10.0,	0.0,	0.0,	0.0,
4000.0,	-11.0,	10.0,	0.0,	0.0,	0.0,
5000.0,	-17.5,	10.0,	0.0,	0.0,	0.0,
6000.0,	-24.0,	80.0,	0.0,	0.0,	0.0,
7000.0,	-30.5,	50.0,	0.0,	0.0,	0.0,
8000.0,	-37.0,	50.0,	0.0,	0.0,	0.0,
9000.0,	-43.5,	5.0,	0.0,	0.0,	0.0,
10000.0,	-50.0,	1.0,	0.0,	0.0,	0.0,
11000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
12000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
14000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
16000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
18000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
18500.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
20000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
25000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
30000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
35000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
40000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
45000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,
50000.0,	-56.5,	1.0,	0.0,	0.0,	0.0,

```
!-----
```

! Leaf Variables

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!-----
```

NL%ISFCL = 1 ! Main flag for LEAF3 surface model:
! 0 = LEAF3 not used; surface drag coefficient and fluxes
! are set to zero in subroutine "noleaf" (where user
! may modify them)
! 1 = LEAF3 is used

NL%NZG = 21 ! Number of soil layers
NL%NZS = 3 ! Maximum number of snowcover layers

! Depth (m) of bottom of soil model grid levels


```
NL%SLZ = -5.00, -4.50, -4.00, -3.50, -3.00, -2.50, -2.00, -1.75,  
        -1.50, -1.25, -1.00, -0.85, -0.70, -0.60, -0.50, -0.40,  
        -0.30, -0.20, -0.15, -0.10, -0.05
```

! Initial soil moisture (fraction of saturation)

```
NL%SLMSTR = 0.55, 0.55, 0.55, 0.55, 0.55, 0.55, 0.55, 0.55,  
           0.55, 0.55, 0.55, 0.55, 0.55, 0.55, 0.55, 0.55,  
           0.55, 0.55, 0.55, 0.55
```

```
NL%LANDUSEFILE = '/tigress-hsm/dmedvigy/sfcfiles/rev171/def.50km/landh' !  
path/prefix for landuse file.
```

```
NL%SEAFILE = '/tigress-hsm/dmedvigy/sfcfiles/rev171/def.50km/seah' !  
path/prefix for landuse file.
```

```
NL%IVEGFLG = 1 ! 2 = Use default value assigned in subroutine  
NL%ISOILFLG = 1 ! mksfc.f90  
NL%NDVIFLG = 1 !  
NL%ISSTFLG = 1 ! 1 = Read data from standard database file  
NL%ISEAICEFLG = 1 !  
! ISSTFLG or ISEAICEFLG = 0 means that  
! the respective database name below points to a  
! .txt list of files, not the path and basename,  
! in a new schema to avoid call systems
```

```
NL%ISOILSTATEINIT = 0 ! 0 -- use slmstr  
                  ! 1 -- read from file
```

```
NL%ISOILDEPTHFLG = 0 ! 0 -- use NZG, SLZ for each grid cell  
                  ! 1 -- read file to get soil depth for each grid cell
```

! Surface database file paths and names

```
NL%VEG_DATABASE = '/home/dmedvigy/olamdatah5/oge2/OGE2_'  
NL%SOIL_DATABASE = '/home/dmedvigy/olamdatah5/fao/FAO_'  
NL%NDVI_DATABASE = '/home/dmedvigy/olamdatah5/ndvi/NDVI'  
NL%SST_DATABASE = '/home/dmedvigy/olamdatah5/seaobs/sst/SST'  
NL%SEAICE_DATABASE = '/home/dmedvigy/olamdatah5/seaobs/ice/ICE'  
NL%SOILSTATE_DB = '/tigress-hsm/dmedvigy/olam_inputs/STW/'  
NL%SOILDEPTH_DB =  
'/tigress-hsm/dmedvigy/olam_inputs/soil_depth/soil_depths.dat'
```

! Update flags for surface data

```
NL%IUPDNDVI = 1 ! 0/1 = No/Yes update of NDVI values during run  
NL%IUPDSST = 1 ! 0/1 = No/Yes update of SST values during run  
NL%IUPDSEAICE = 1 ! 0/1 = No/Yes update of SST values during run
```

```
NL%SEATMP = 280. ! Water surface temperature (K) if ISSTFLG = 2
```

NL%NVGCON = 8 ! LEAF-3 class if IVEGFLG = 2 (choices listed below:)

! 0 Ocean		
! 1 Lakes, rivers, streams	! 11 Tundra	
! 2 Ice cap/glacier	! 12 Evergreen shrub	
! 3 Desert, bare soil	! 13 Deciduous shrub	
! 4 Evergreen needleleaf tree	! 14 Mixed woodland	
! 5 Deciduous needleleaf tree	! 15 Crop/mixed farming, C3 grassland	
! 6 Deciduous broadleaf tree	! 16 Irrigated crop	
! 7 Evergreen broadleaf tree	! 17 Bog or marsh	
! 8 Short grass	! 18 Wooded grassland	
! 9 Tall grass	! 19 Urban and built up	
! 10 Semi-desert	! 20 Wetland evergreen broadleaf tree	

NL%NSLCON = 4 ! Default soil type if ISOILFLG = 2 (choices below:)

! 1 -- sand	2 -- loamy sand	3 -- sandy loam
! 4 -- silt loam	5 -- loam	6 -- sandy clay loam
! 7 -- silty clay loam	8 -- clay loam	9 -- sandy clay
! 10 -- silty clay	11 -- clay	12 -- peat

!-----
! ED Model variables
!-----

! Specify the grid cells for which you want to run ED.
!-----

! You can pinpoint individual locations.

NL%N_SOI = 0 ! number of sites of interest (SOIs). This could be zero.
NL%SOI_LAT = -2.0,7.0 ! list of the latitudes of the SOIs (degrees north)
NL%SOI_LON = -60.0,31.0 ! list of the longitudes of the SOIs (degrees east)

! You can also select rectangular regions

NL%N_ED_REGION = 0 ! number of regions for which you want to run ED.
NL%ED_REG_LATMIN = -15.0, 10.0 ! list of minimum latitudes of the ED regions.
NL%ED_REG_LATMAX = 12.0, 20.0
NL%ED_REG_LONMIN = -85.0, 50.0
NL%ED_REG_LONMAX = -35.0, 60.0

! Model options

!-----

NL%IED_INIT_MODE = 2
! 0 signifies a start from near-bare ground.
! 1 allows you to do a standard history restart.
! 2 allows you to do a history restart from ED1-type
! restart files.

NL%ISTOMA_SCHEME = 1 ! This is the scheme used to compute stomatal
! conductance and photosynthesis. Set to 0 to do

```

! the full, exact calculation each time. Set to 1
! to do the 'small perturbation' scheme.

NL%IPHEN_SCHEME = 0 ! This specifies the phenology scheme. 0 is for the
! original ED scheme. Other options coming soon.

NL%N_PLANT_LIM = 0 ! Determines whether (1) or not (0) plants can
! be limited by nitrogen

NL%N_DECOMP_LIM = 0 ! Determines whether (1) or not (0) decomposition
! can be limited by nitrogen

NL%INCLUDE_FIRE = 0 ! Determines whether (1) or not (0) simulation can have
fires

NL%IANTH_DISTURB = 0 ! Flag specifying whether (1) or not (0) to include
! anthropogenic disturbances such as agriculture,
! abandonment, and harvesting.

! Commonly changed parameters
! -----

NL%TREEFALL_DISTURBANCE_RATE = 0.01 ! Treefall disturbance rate, 1/years

NL%RUNOFF_TIME = 900.0 ! In offline runs (and maybe online, too),
! NL%RUNOFF_TIME = 86400.0 ! In offline runs (and maybe online, too),
! the forest could get saturated and
! develop a sfcwater pool of meters or
! more. In many cases, this is not realistic.
! This is the time scale in seconds for
! this water to disappear.

! Offline model control
! -----

NL%IED_OFFLINE = 0 ! Run the ED model offline (1) or coupled to OLAM (0)

NL%METCYC1 = 1997 ! For an offline run, first year of met data

NL%METCYC2 = 1997 ! For an offline run, last year of met data

! Model database files
! -----

! NL%ED_HFILIN =
'/cluster/home/dmm31/output/4deg/ed/r2/r2-1997-01-29-000000-ED-RESTART.dat'
NL%ED_HFILIN =
'/cluster/home/dmm31/ed_inputs/amazon_restart/lu.sa.05.restart.01.'

NL%ED_INPUTS_DIR = '/cluster/home/dmm31/grandcombin/data/ed_inputs/'

```

! Directory where chd, dgd, etc. data is kept.

NL%ED_OFFLINE_DB = './ED_OFFLINE_HEADER' ! File containing information for an offline run

!-----
! Isentropic control
!-----

! Input data file directories/prefixes

NL%ISDIRS = 1 ! Number of directory and file prefixes listed in
! iapr (limit of maxisdirs directory/file prefixes)
!
! -1 means that IAPR points to a .txt list of files

NL%IAPR = '/home/dmedvigy/dp-p'

!-----
! Plotting parameters
!-----

NL%NPLT = 0 ! Number of fields plotted at each time
! (limit of maxnplt fields in max_dims.f90)

NL%NPLT_FILES = 1 ! Number of history files to plot from for
! RUNTYPE = 'PLOTONLY'. (limit of maxpltfiles defined
! in max_dims.f90)

NL%FRQPLT = 3600. ! Plot frequency (for RUNTYPE = 'INITIAL' or 'HISTORY')

NL%DTVEC = 1200. ! Scaling time (seconds) for plotted velocity vectors

NL%HEADSPEED = 3. ! Scaling speed for arrow head length in plotted
! velocity vectors

NL%STEMLENGTH = 3.e3 ! Geographic distance (m) of wind barb stem for size scaling

NL%VEC_MAXMRL = 6 ! The maximum mesh refinement level when plotting
! velocity vectors with the "V" pltspec

NL%PRTVAL_SIZE = 'small' ! Relative size of font when printing values on the
! plot: 'small', 'medium', or 'large'

NL%PLTTYPER = 0 ! 0 = NCAR graphics meta file
! 1 = postscript file
! 2 = pdf file (requires ncar graphics 4.4.0 or later)
! Postscript and pdf output best for plotonly run

NL%PLTNAME = 'gmeta' ! Note: .ps or .pdf will be appended to pltname

! for postscript or pdf output

NL%PLTORIENT = 0 ! 0 = portrait, 1 = landscape
! (only for postscript or pdf output)

NL%ZPLOT_MIN = -1.0 ! For vertical or cone plots, these specify the vertical
NL%ZPLOT_MAX = -1.0 ! extent of the plots (m); use -1.0 to indicate the
! default top and bottom of the model

!-----
! List of history files to plot from for RUNTYPE = 'PLOTONLY'
!-----

NL%PLT_FILES =
'/scratch/gpfs/LUSTRE/dmedvigy/olam/rev171/con.50km/a-H-2000-11-09-000000.h5',
! '/scratch/gpfs/LUSTRE/dmedvigy/olam/rev171/con.50km/b-H-2005-11-13-000000.h5',
'./hist/a-H-1997-05-01-010000.h5',
'./hist/a-H-1997-05-01-020000.h5'

!-----
! Plotting Specifications
! (limit of maxnplt fields set in max_dims.f90)
!-----

NL%PLOTSPECS =

!-----
! PROJECTN: PLTSPEC2:
!-----

! L = Lat/lon cylindrical	T,F,L,O = Tiles, Fillcnt, Linecnt, Overlay L on F
! P = Polar stereographic	P = Print value
! O = Orthographic	I,J = local Index, all indices
! Z = Horizontal cartesian	B,U,V,v = Barb, U-normvec, V-normvec, v(totvec)
! C = Cone	G = Grid cells
! V = Vertical plane	g = land/sea grid cells
!	D = Dual grid cells
!	b,t = grid border, border + ticks + labels
!	n,i = field name, field name + info block
!	c = colorbar
!	M,m = Map filled, map lined
!	C = Cone circle plotted
!	p,s = plot on const p sfc, plot near-sfc value
!	W = Window dimensions as specified
!	e = flag indicating "external" field
!	f = frameoff (no frame call)
!	1,2,3,4 = panel number in frame window
!	N = No extras

!	!	!	!	view azimuth
!	!	!	!	for 'C'
!	!	!	!	or 'V'
! FLDNAME	!	color table	!	projectn

```

!-----
'TOPM'           , '0', 401, 'GFmcitW',   -58., -17.,   100.,   8000.e3,   0.
'TOPM'           , '0', 401, 'GFmcitW',   -99., 41.,   100.,   6000.e3,   0.
'GLATW'          , '0', 12, 'FGmPiticW',   -84., 40.,   100.,   2000.e3,   0.
'GLONW'          , '0', 12, 'FGmPiticW',   -84., 40.,   100.,   2000.e3,   0.
'TOPM'           , '0', 29, 'G',           0., 90.,   100.,  12000.e3,   0.
'TOPM'           , '0', 29, 'GJ',          0., 90.,   100.,  12000.e3,   0.
'W_IRANK'        , '0', 77, 'Tmcit',        0., 0.,   100.,   3000.e3,   0.
'W_IRANK'        , '0', 77, 'TGmcit',       0., -15.,  100.,   3000.e3,   0.
'W_IRANK'        , '0', 77, 'TPmcit',      -75., -15.,  100.,   3000.e3,   0.
'W_IRANK'        , '0', 77, 'TPGmcit',     -75., -15.,  100.,   3000.e3,   0.
'TOPM'           , '0', 29, 'TPGJmcitW',   -75., -15.,  100.,   8000.e3,   0.
'LEAF_CLASS'     , '0', 14, 'TPGI mcitW',   -75., -15.,  100.,   8000.e3,   0.
'LEAF_CLASS'     , '0', 14, 'TPGI mcitW',   -75., -15.,  100.,   3000.e3,   0.
'SFC_TEMPC'       , '0', 52, 'TPGI mcitW',   -75., -15., 3000.,   3000.e3,   0.
'CAN_TEMPC'       , '0', 17, 'TPGI mcitW',   -75., -15.,   30.,   3000.e3,   0.
'AIRTEMPC'       , '0', 17, 'TPGI mcitsW',  -75., -15.,   30.,   3000.e3,   0.
'FCCELL_ILSF'    , '0', 77, 'TPGI mcitW',   -75., -15.,   30.,   3000.e3,   0.
'FCCELL_IWLS'    , '0', 77, 'TPGI mcitW',   -75., -15.,   30.,   3000.e3,   0.
'FCCELL_IW'      , '0', 77, 'TPGgI mcitW',  -75., -15.,   30.,   3000.e3,   0.
'FCCELL_KW'      , '0', 77, 'TPGI mcitW',   -75., -15.,   30.,   3000.e3,   0.

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! End of OLAMIN namelist
! Some example plotting specifications that you may use:

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'WC'             , '0', 108, 'FmcitW',     -85., 30.,   1000.,   5000.e3,   0.
'RHO'            , '0', 18, 'FmcitW',     -85., 30.,   1000.,   5000.e3,   0.
'PRESS'          , '0', 17, 'FmcitW',     -85., 30.,   1000.,   5000.e3,   0.
'THIL'           , '0', 20, 'FmcitW',     -85., 30.,   1000.,   5000.e3,   0.
'THETA'          , '0', 20, 'FmcitW',     -85., 30.,   1000.,   5000.e3,   0.
'AIRTEMPK'       , '0', 20, 'FmcitW',     -85., 30.,   1000.,   5000.e3,   0.
'AIRTEMPC'       , '0', 100, 'FmcitW',    -85., 30.,   1000.,   5000.e3,   0.
'SH_W'           , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'SH_V'           , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'SH_C'           , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'SH_D'           , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'SH_R'           , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'SH_P'           , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'SH_S'           , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'SH_A'           , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'SH_G'           , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'SH_H'           , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'SH_CP'          , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'SH_TOTCOND'    , '0', 5, 'FmcitW',       -85., 30.,   1000.,   5000.e3,   0.
'CON_C'          , '0', 200, 'FmcitW',    -85., 30.,   1000.,   5000.e3,   0.
'CON_D'          , '0', 200, 'FmcitW',    -85., 30.,   1000.,   5000.e3,   0.
'CON_R'          , '0', 200, 'FmcitW',    -85., 30.,   1000.,   5000.e3,   0.
'CON_P'          , '0', 200, 'FmcitW',    -85., 30.,   1000.,   5000.e3,   0.
'CON_S'          , '0', 200, 'FmcitW',    -85., 30.,   1000.,   5000.e3,   0.

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'CON_A'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'CON_G'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'CON_H'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'CON_CCN'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'CON_GCCN'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'CON_IFN'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'VKM'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'FTHRD'	, '0', 300, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'SPEEDV'	, '0', 54, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'AZIMV'	, '0', 104, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ZONAL_WINDV'	, '0', 106, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'MERID_WINDV'	, '0', 106, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'SPEEDW'	, '0', 54, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'AZIMW'	, '0', 104, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ZONAL_WINDW'	, '0', 106, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'MERID_WINDW'	, '0', 106, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RVORTZM'	, '0', 127, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'TVORTZM'	, '0', 127, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'DIVERG'	, '0', 306, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ZPLEV'	, '0', 28, 'FmpcitW',	-85., 30.,	500.,	5000.e3,	0.
'RSHORT_TOP'	, '0', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RSHORTUP_TOP'	, '0', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RLONGUP_TOP'	, '0', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RSHORT'	, '0', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RSHORTUP'	, '0', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RLONG'	, '0', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RLONGUP'	, '0', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ALBEDT'	, '0', 6, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'VKM_SFC'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'SFLUX_W'	, '0', 201, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'SENSFLUX'	, '0', 102, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'VAPFLUX'	, '0', 127, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'LATFLUX'	, '0', 102, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'PCPRD'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'PCPRR'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'PCPRP'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'PCPRS'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'PCPRA'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'PCPRG'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'PCPRH'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'PCPRTOT'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'CONPRR'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'TOTPRR'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ACCPD'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ACCPR'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ACCPP'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ACCPSP'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ACCPA'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ACCPG'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ACCPH'	, '0', 200, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.

'ACPTOT'	, '0', 200, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'ACONPR'	, '0', 200, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'ATOTPR'	, '0', 200, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'SOIL_TEXT'	, '0', 9, 'TmcitW',	-85.,30.,	21.,	5000.e3,	0.
'SOIL_ENERGY'	, '0', 105, 'TmcitW',	-85.,30.,	21.,	5000.e3,	0.
'SOIL_TEMPC'	, '0', 100, 'TmcitW',	-85.,30.,	21.,	5000.e3,	0.
'SOIL_FRACLIQ'	, '0', 6, 'TmcitW',	-85.,30.,	21.,	5000.e3,	0.
'SOIL_WATER'	, '0', 6, 'TmcitW',	-85.,30.,	21.,	5000.e3,	0.
'SFWAT_MASS'	, '0', 200, 'TmcitW',	-85.,30.,	1.,	5000.e3,	0.
'SFWAT_ENERGY'	, '0', 105, 'TmcitW',	-85.,30.,	1.,	5000.e3,	0.
'SFWAT_TEMPC'	, '0', 100, 'TmcitW',	-85.,30.,	1.,	5000.e3,	0.
'SFWAT_FRACLIQ'	, '0', 6, 'TmcitW',	-85.,30.,	1.,	5000.e3,	0.
'SFWAT_DEPTH'	, '0', 201, 'TmcitW',	-85.,30.,	1.,	5000.e3,	0.
'NLEV_SFWAT'	, '0', 9, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'VEG_NDVIC'	, '0', 6, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'VEG_TEMPC'	, '0', 100, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'VEG_WATER'	, '0', 201, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'STOM_RESIST'	, '0', 200, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'GROUND_SHV'	, '0', 5, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'SOIL_DEPTH'	, '0', 5, 'TmcitW',	-85.,30.,	21.,	5000.e3,	0.
'SEATP'	, '0', 2, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'SEATF'	, '0', 2, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'SEATC'	, '0', 2, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'SEAICEP'	, '0', 6, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'SEAICEF'	, '0', 6, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'SEAICEC'	, '0', 6, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'LEAF_CLASS'	, '0', 1, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'AREA'	, '0', 202, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'ROUGH'	, '0', 201, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'CAN_TEMPC'	, '0', 100, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'CAN_SHV'	, '0', 5, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'SFC_TEMPC'	, '0', 100, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'SFC_SSH'	, '0', 5, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'SENSFLUX_LS'	, '0', 102, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'VAPFLUX_LS'	, '0', 127, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'LATFLUX_LS'	, '0', 102, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'RSHORT_LS'	, '0', 413, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'RSHORT_DIFFUSE_LS'	, '0', 413, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'RLONG_LS'	, '0', 413, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'RLONGUP_LS'	, '0', 413, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'RLONG_ALBEDO_LS'	, '0', 6, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'ALBEDO_BEAM_LS'	, '0', 6, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'ALBEDO_DIFFUSE_LS'	, '0', 6, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'FCELL_ILSF'	, '0', 124, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'FCELL_IWLS'	, '0', 124, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'FCELL_IW'	, '0', 124, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'FCELL_KW'	, '0', 124, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'FCELL_AREA'	, '0', 202, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'FCELL_ARFATM'	, '0', 6, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.
'FCELL_ARFLS'	, '0', 6, 'TmcitW',	-85.,30.,	1000.,	5000.e3,	0.

'FCELL_SENS'	, 'O', 102, 'TmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'FCELL_VAP'	, 'O', 127, 'TmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'FCELL_LAT'	, 'O', 102, 'TmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'FCELL_AIRTEMPC'	, 'O', 100, 'TmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'FCELL_AIRTEMPK'	, 'O', 20, 'TmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'FCELL_CANTEMPC'	, 'O', 100, 'TmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'TOPM'	, 'O', 401, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'TOPW'	, 'O', 401, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'GLATM'	, 'O', 103, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'GLONM'	, 'O', 103, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'GLATW'	, 'O', 103, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'GLONW'	, 'O', 103, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'LPM'	, 'O', 124, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'LPU'	, 'O', 124, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'LCU'	, 'O', 124, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'LPV'	, 'O', 124, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'LCV'	, 'O', 124, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'LPW'	, 'O', 124, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'LSW'	, 'O', 124, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RSHORT_AVG'	, 'O', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RSHORTUP_AVG'	, 'O', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RLONG_AVG'	, 'O', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RLONGUP_AVG'	, 'O', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RSHORT_TOP_AVG'	, 'O', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RSHORTUP_TOP_AVG'	, 'O', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'RLONGUP_TOP_AVG'	, 'O', 413, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'SENSFLUX_AVG'	, 'O', 102, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'LATFLUX_AVG'	, 'O', 102, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'VAPFLUX_AVG'	, 'O', 127, 'FmcitW',	-85., 30.,	1000.,	5000.e3,	0.
'ITAB_W_IW(1)'	, 'O', 124, 'TGmcit',	-85., 30.,	1000.,	5000.e3,	0.
'WC'	, 'C', 108, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'RHO'	, 'C', 7, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'PRESS'	, 'C', 8, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'THIL'	, 'C', 11, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'THETA'	, 'C', 11, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'AIRTEMPK'	, 'C', 4, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'AIRTEMPC'	, 'C', 100, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_W'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_V'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_C'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_D'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_R'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_P'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_S'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_A'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_G'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_H'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_CP'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SH_TOTCOND'	, 'C', 5, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'CON_C'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.

'CON_D'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'CON_R'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'CON_P'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'CON_S'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'CON_A'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'CON_G'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'CON_H'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'CON_CCN'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'CON_GCCN'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'CON_IFN'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'VKM'	, 'C', 200, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'FTHRD'	, 'C', 300, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SPEEDV'	, 'C', 54, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'AZIMV'	, 'C', 104, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'ZONAL_WINDV'	, 'C', 106, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'MERID_WINDV'	, 'C', 106, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'SPEEDW'	, 'C', 54, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'AZIMW'	, 'C', 104, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'ZONAL_WINDW'	, 'C', 106, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'MERID_WINDW'	, 'C', 106, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.
'DIVERG'	, 'C', 306, 'FmcitW',	-85., 30.,	90.,	5000.e3,	0.