L. Default Parameter Values

The default parameter values can be found in the Fortran block data files blkdata.F and kmixbdta.F. Within the job shell script a file model.data is created which contains a subset of the model parameters and these values override the default values in the block data files. Here we list some of the most important model parameters and their default values for the 2×2 and 3×3 configurations. Many of these can be changed at run time by specifying their values in the namelists which are defined in the file nldefs.h.

Stand-alone 2×2 model configuration (accelerated run)

Horizontal viscosity	am = 8.0 e+8
Background vertical viscosity	$fkpm$ = 10.0
Horizontal diffusivity	ah = 0.0
Background vertical diffusivity	$fkph$ = 0.3
Bottom friction	$cdbot$ = 0.001
Eddy-induced advection coefficient	$athkdf$ = 0.6 e+7
Isopycnal diffusivity	$ahisop$ = 0.6 e+7
Inverse maximum slope	$slmxr$ = 100.0
KPP critical bulk Richardson number	$Ricr$ = 0.3
KPP critical local Richardson number	$Riinfty$ = 0.7
KPP shear vertical viscosity	$vvcric$ = 50.0
KPP shear vertical diffusivity	$vdcric$ = 50.0
KPP convective vertical viscosity	$vvclim$ = 1000.0
KPP convective vertical diffusivity	$vdclim$ = 1000.0
Strong heat restoring under ice	$restQp$ = 386.0
Strong salt restoring under ice	$restFp$ = 2.77
Weak ocean heat restoring	$restQm$ = 0.0
Weak ocean salt restoring	$restFm$ = 0.092
Number of layers which can form ice	$kmxice$ = 1
Tracer timestep	$dtts$ = 24000.0
Baroclinic velocity timestep	$dtuv$ = 2400.0
Barotropic velocity timestep	$dtsf$ = 2400.0
Tracer vertical acceleration	$dtxcel$ = 25∗1.0, 4∗5.0, 2∗6.0, 2∗7.0, 2∗8.0, 2∗9.0, 8∗10.0
Maximum number of scans	$mxscan$ = 1000
Barotropic convergence criterion	$crit$ = 2.0 e+7
Fraction of implicit Coriolis force	$acor$ = 0.0

Coupled 2×2 model configuration (synchronous run)

The only changes from the 2×2 stand-alone parameter values are

Tracer timestep	$dtts = 2400.0$
Tracer vertical acceleration	$dtxcel = 45{*}1.0$

and the four surface forcing restoring parameter values are irrelevant.

Stand-alone 3×3 model configuration (accelerated run)

Horizontal viscosity	$am = 3.0$ e+9
Background vertical viscosity	$fkpm = 16.7$
Horizontal diffusivity	$ah = 0.0$
Background vertical diffusivity	$fkph = 0.5$
Bottom friction	$cdbot = 0.001$
Eddy-induced advection coefficient	$athkdf = 0.8$ e+7
Isopycnal diffusivity	$ahisop = 0.8$ e+7
Inverse maximum slope	$slmxr = 100.0$
KPP critical bulk Richardson number	$Ricr = 0.3$
KPP critical local Richardson number	$Riinfty = 0.7$
KPP shear vertical viscosity	$vvcric = 50.0$
KPP shear vertical diffusivity	$vdcric = 50.0$
KPP convective vertical viscosity	$vvclim = 1000.0$
KPP convective vertical diffusivity	$vdclim = 1000.0$
Strong heat restoring under ice	$restQp = 386.0$
Strong salt restoring under ice	$restFp = 2.77$
Weak ocean heat restoring	$restQm = 0.0$
Weak ocean salt restoring	$restFm = 0.023$
Number of layers which can form ice	$kmxice = 1$
Tracer timestep	$dtts = 35040.0$
Baroclinic velocity timestep	$dtuv = 3504.0$
Barotropic velocity timestep	$dtsf = 3504.0$
Tracer vertical acceleration	$dtxcel = 14{*}1.0,\ 5{*}5.0,\ 6{*}10.0$
Maximum number of scans	$mxscan = 1000$
Barotropic convergence criterion	$crit = 1.0$ e+6
Fraction of implicit Coriolis force	$acor = 0.0$