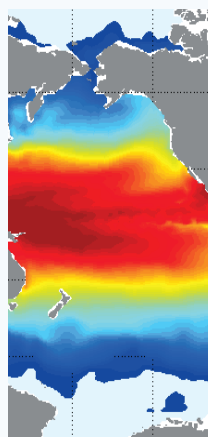


SYSTEM FOR GLOBAL OCEAN PHYSICAL REANALYSIS AT 1/4°



Geographical coverage : Global Ocean (180°W-180°E; 77°S-90°N)
 Physics or Biogeochemistry : Physics
 Grid and Resolutions : ORCA025 [1/4°; 75 levels]
 Grid size : 1442x1021x50 (partial steps)
 Code et Version : Nemo3.1
 Data assimilation : Yes
 Sea Ice Modeling : LIM2 EVP Sea Ice Model
 Tides : No
 Bathymetry : ETOPO1 for deep ocean and GEBCO1 on coast and continental shelf.
 Free run configuration name : ORCA025_LGGE_MJM105b
 Time step : 1440 s
 Update : None

Reference : GLORYS2V3

Forcing and Data Assimilation

• Data assimilation :	Yes
• Data assimilation scheme:	SAM2v1 (Kalman filter with SEEK formulation) with Incremental Analysis Update and bias correction
• Data assimilated :	- Sea Surface Temperature (Reynolds AVHRR-AMSR 1/4°), - Reprocessing of Sea Surface Height (Jason1, Jason2, Envisat, T/P, GFO, ERS1-2), - Reprocessing of InSitu temperature and salinity vertical profiles from Coriolis Center. - CNES-CLS MSSH (Rio 2009) - Sea ice concentration (Cersat)
• Atmospheric forcings	- 3-Hourly ERA-interim ECMWF forcings; - Bulk CORE Formulation with radiative flux correction and diurnal cycle
• Runoff :	Dai and Trenberth (2002) Monthly Climatology
• Open Boundary Conditions :	No

Initial Conditions and Relaxation

• Initial conditions :	- T and S Levitus (1998) and PHC2.1 in the Arctic Ocean and Medatlas for Mediterranean Sea. - NSIDC Bootstrap for Sea ice concentration and thickness.
• Surface relaxation :	No
• Water column (3D) relaxation :	No
• Convection :	By intensification of vertical mixing (diffusion term)

Parameterisation

• Surface physics parametrisation :	Free Surface (explicit + filtering)
• Bottom friction :	Non linear (constant bottom drag)
• Lateral friction :	Partial slip (shlat = 0.5)
• Vertical mixing :	TKE 1.5 closure scheme
• Advection :	TVD 2nd order centered scheme
• Tracer diffusion :	Isopycnal laplacian
• Momentum diffusion :	Horizontal bilaplacian + laplacian (2000m ² /s) in Ob and lenissei estuaries
• Horizontal diffusion coefficient for tracers and momentum :	ah _{t0} = 300 m ² /s ah _{m0} = -1.0 e11 m ² /s
• Vertical diffusion coefficient for tracers and momentum :	av _{t0} = 1.0 e-5 m ² /s av _{m0} = 1.0 e-4 m ² /s