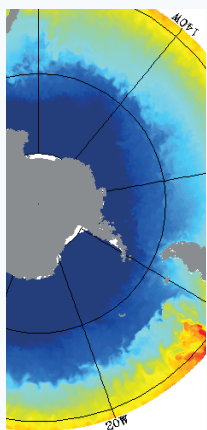


SYSTEM FOR GLOBAL OCEAN PHYSICAL ANALYSIS AND FORECAST AT 1/4°



Geographical coverage : Global Ocean (180°W-180°E; 77°S-90°N)
 Physics or Biogeochemistry : Physics
 Grid and Resolutions : ORCA025 [1/4°; 50 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 GEBCO on coast and continental shelf.
 Free run configuration name : ORCA025_LIM-T320
 Time step : 1440 s
 Update : Daily

Reference : PSY3V3R3

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°); Sea Surface Height (Jason2 ,Cryosat, Saral); InSitu temperature and salinity vertical profiles from Coriolis Center with Extra Quality control; hybrid MSSH
• Atmospheric forcings :	3-Hourly ECMWF operational forcings; Bulk CORE Formulation; Only 50% of the surface wind velocity is taken into account to compute wind stress
• Runoff :	Dai and Trenberth (2002) Monthly Climatology (Cf Bourdalle-Badie and Treguier, 2006); Addition of runoffs from iceberg melting;
• Open Boundary Conditions :	No

Initial Conditions and Relaxation

• Initial conditions :	T and S Levitus (2009); Ifremer/Cersat data for sea ice concentration and GLORYS2V1 for sea ice 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; New parameterisation of vertical mixing
• Advection :	TVD 2nd order centered scheme and energy/enstrophy conservation scheme
• Tracer diffusion :	Isopycnal laplacian
• Momentum diffusion :	Horizontal bilaplacian
• Horizontal diffusion coefficient for tracers and momentum :	aht0 = 300 m2/s ahm0 = -1.0 e11 m2/s
• Vertical diffusion coefficient for tracers and momentum :	avt0 = 1.0 e-5 m2/s avm0 = 1.0 e-4 m2/s