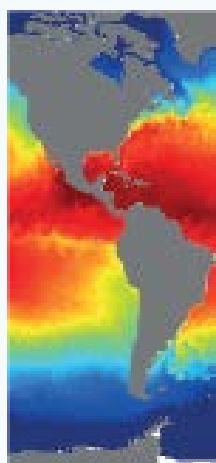


SYSTEM FOR GLOBAL OCEAN PHYSICAL ANALYSIS AT 1/12°



Geographical coverage	Global Ocean (180°W-180°E; 77°S-90°N)
Physics or Biogeochemistry	Physics
Grid and Resolutions	ORCA12 [1/12°; 50 levels]
Grid size	4322x3059x50 (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	ORCA12_LIM_T321
Time step	360 s
Update	Weekly

Reference: PSY4V3R1

Forcing and Data Assimilation

Data assimilation	Yes
Data assimilation scheme	SAM2v1 (Kalman filter with SEEK formulation) and bias correction (3D-Var) with Incremental Analysis Update
Data assimilated	CMEMS OSTIA SST; CMEMS Sea Ice Concentration; CMEMS SLA; in situ profile from CMEMS database; MDT adjusted based on CNES-CLS13; WOA 2013 climatology (temperature and salinity) below 2000 m (assimilation using a non-Gaussian error at depth)
Atmospheric forcings	3 Hourly ECMWF operational forcings; Bulk CORE Formulation
Runoffs	Update runoff Dai et al., 2009 + runoff fluxes coming from Greenland and Antarctica; adding of a trend (2.2mm/year) to the runoff
Open Boundary Conditions	No

Initial Conditions and Relaxation

Initial conditions	T and S Levitus (2009) for the Ocean; Ifremer/CERSAT data for sea ice concentration and GLORYS2V1 for sea ice thickness
Surface relaxation	Relaxation toward WOA 2013 at Gibraltar and Bab-el-Mandeb
Water column (3D) relaxation	No
Convection	By intensification of vertical mixing (diffusion term)

Parameterisation

Surface physics parameterisation	Free Surface (explicit + filtering)
Bottom friction	Non linear (constant bottom drag)
Lateral friction	Partial slip (shlat = 0.5); Mediterranean and Indonesia (shlat=2) and in Canadian straits and Cap Horn (shlat = 0)
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 biharmonic viscosity for momentum
Horizontal diffusion coefficient for tracers and momentum	aht0 = 80 m2/s ahm0 = -1.0 e11 m4/s
Vertical diffusion coefficient for tracers and momentum	avt0 = 1.0 e-5 m2/s avm0 = 1.0 e-4 m2/s