GLORYS2: A Global ocean reanalysis simulation of the period 1992-present

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Over the last two decades, significant progresses to observe the ocean by in-situ or space sources have been made. In parallel, the ocean weather community developed sophisticated prediction systems with the capacity to resolve the mesoscale activity (1/12°, even higher) . The application of such prediction systems to climate studies is an exciting challenge, but it is not straightforward to obtain a satisfying solution due to inhomogeneous data provision (in time or in space).

In the framework of the European project GMES/MyOcean, several reanalyses have been carried out in a coordinated way by Mercator Ocean, LEGI-CNRS, Univ. of Reading, CMCC-INGV and CLS. GLORYS2 (Global Ocean Reanalysis Simulation) is Mercator Océan contribution to MyOcean reanalyses. It is a global ocean reanalysis describing the evolution of the ocean and sea-ice states covering the altimetric period (1992-present). This reanalysis system is based on the new global ocean $\frac{1}{4}°$ analysis and forecasting system (namely PS3V3) and benefits from the inputs of GLORYS1, a reanalysis simulation performed along the 2000's. The improvements concern the ocean/sea-ice model (NEMO3.1 source code, 75 vertical levels, CORE bulk fomulation, ...), forcing fields (ERA-Interim + correction), the assimilation scheme, data assimilated (AVHRR SST $\frac{1}{4}°$, ...) or the introduction of a correction to limit 3D large scale bias of temperature and salinity.

After a description of this reanalysis system, we will present the performances of the GLORYS2 simulation, produced by the HPC Centre at Meteo France.