



Development of TOPAZ4 prototype

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The TOPAZ system constitutes the Arctic forecasting system of the MyOcean project. In its new version TOPAZ4, both the model and data assimilation method have been improved. The model has a higher vertical resolution, uses the latest version of HYCOM 2.2, takes river run-off based on a hydrological model (TRIP), and improved surface forcing field from ERA-interim. The above changes led to significant improvements of the water mass distribution in the Arctic, of their exchanges between the Arctic and North Atlantic Basins, and of the sea-ice extent.

The EnKF assimilates asynchronous track altimeter data and sea-ice drift, uses an improved localization method, and solves the analysis in the ensemble space in order to reduce the computational time. Thus it can assimilate observations at higher resolution such as high resolution OSTIA SST. TOPAZ4 will replace the current system and produce a fully assimilative reanalysis for the period 2003-2008 on October 2010.