An overview of data assimilation activities at CMCC

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Abstract
CMCC has developed a global ocean 3DVAR/FGAT data assimilation system capable of assimilating in-situ observations along with satellite altimetry and space-borne sea surface temperature measurements, and coupled with NEMO-LIM ocean and sea-ice models. The system is called OceanVar and it is implemented at different resolutions and for different applications. In particular, several global ocean reanalyses have been produced using OceanVar, ranging from those at eddy-permitting resolution and covering the meteorological satellite era (1979-onwards) to other at coarser resolution – 1/2 degree or 2 degrees – to cover longer periods or being coupled with biogeochemical models, respectively.

The system is also being implemented at eddy-resolving resolution for use in operational oceanography. We will provide an overview of OceanVar and the scientific choices behind its implementation, along with selected results from the different applications. On-going and future developments will also be discussed.