Assessing observation impact in the Met Office's 1/12th of a degree global ocean forecasting system

Good quality and timely observations are crucial for providing accurate predictions of the ocean state. It is important that the ocean forecasting community assess the impact of observations in their systems to inform observation network design, to provide quantitative support for observing missions and to highlight deficiencies in the data assimilation methods. Observing System Experiments (OSEs) where observation are withheld from the forecasting system are commonly used to assess the relative impact of observations. The Synergistic Observing Network for Ocean Prediction (SynObs) is a UN decade project and the SynObs Flagship OSEs are a coordinated set of observation withholding experiments using different ocean forecasting systems. The coordinated OSEs allow us to evaluate the impact and synergy of different observation types in different ocean forecasting systems. One of the participating systems is the Met Office's 1/12th of a degree global ocean forecasting system. We will present results for the Met Office OSEs which demonstrate the impact of withholding altimeter, Argo and satellite sea surface temperature observations. We will assess the impact of the observations on near surface velocities prediction and for temperature and salinity prediction and we will identify the regions where the assimilation could be improved.

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