Contribution ID: **6** Type: **Oral presentation**

Assessing the impact of Hybrid DA and inflation settings in a global ocean ensemble system at the Met Office

Monday, 17 May 2021 15:45 (15 minutes)

A global ocean and sea-ice ensemble forecasting system is being developed based on the present operational FOAM (Forecasting Ocean Assimilation Model) system run at the Met Office. This uses a 1/4° resolution NEMO ocean model and CICE sea-ice model, and assimilates data using the NEMOVAR system. NEMOVAR is primarily a variational data assimilation system, but now has the capability to perform hybrid ensemble variational assimilation. An ensemble of hybrid 3DEnVars with perturbed observations (values and locations) has been set-up, with each member forced at the surface by a separate member of the Met Office ensemble atmospheric prediction system (MOGREPS). The ensemble size is 37 members (including an unperturbed member). The system includes stochastic model perturbations developed at CMRE, and an ensemble inflation method based on Relaxation to Prior Spread (RTPS).

We perform several reanalysis runs of the ensemble system with different weights for the ensemble and model components of the covariance hybrid background error covariance and different ensemble inflation factors. This is done to test the sensitivity of the results to the settings and with a view to finding the optimal settings. The performance of these runs is assessed by looking at impact on the innovation statistics, the ensemble reliability and ensemble skill.

Which theme does your abstract refer to?

Data assimilation methods (algorithmic developments in variational, ensemble and hybrid DA, covariance modelling, etc)

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