

Use of observation uncertainty estimates to improve sea ice concentration assimilation

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The assimilation of sea ice concentration observations plays a vital role in the initialisation and constraint of models. Near-real-time observations of sea ice concentration from the EUMETSAT OSI SAF (Ocean and Sea Ice Satellite Application Facility) are assimilated into several Met Office systems: OSTIA (Operational Sea Surface Temperature and Ice Analysis system; used as a boundary condition for numerical weather prediction), FOAM (Forecast Ocean Assimilation Model) and GloSea (Global Seasonal prediction system).

Currently, the ice concentration observation error estimates used in the assimilation are defined *a priori*, for each season. New developments from the OSI SAF mean that ice uncertainty estimates are now included with each near-real-time sea ice concentration observation.

The effect on sea ice assimilation of using the latest ice observation uncertainties compared to using pre-defined uncertainties has been assessed using the OSTIA system and results will be presented. Preliminary results on the effect on sea ice forecasting using the FOAM system may also be shown.