

ProbaCast: Exploring the potential for probabilistic forecasting in myOcean

Arne Melsom¹

¹*Norwegian Meteorological Institute, PO Box 43 Blindern, NO 0313 Oslo, Norway*

Insufficient sampling of the ocean leads to uncertainties in the initial state of any ocean forecast. Non-linear processes lead to errors that increase with time. Even so, all forecasting in *myOcean* is performed as if the ocean behaves deterministically. The shortcomings of the adopted approach may be addressed by application of ensemble simulations for probabilistic forecasting. Ensemble simulations are presently run weekly in *myOcean*'s WP05 for use with the Ensemble Kalman Filter in the ocean analysis. We explore the potential for probabilistic forecasting by validation of ensemble results for sea ice concentration and objects that drift with the surface ocean currents.

The *ProbaCast* project started this summer, and we are presently in a phase where ensemble model results are accumulated for the purpose of validation with observations. Validation of sea ice concentration will be performed using sea ice concentration data based on radar observations, and we plan to use trajectories of surface drifters to validate surface currents. Metrics for validation of probabilistic forecasting in meteorology will be used for this purpose, and this validation will be implemented once an archive that covers a sufficiently long period has been established.

In the present presentation we will give describe a probabilistic forecast, and appropriate validation techniques for such a product. The amount of results from *ProbaCast* at the time of the MSD 2010 colloquium is believed to be insufficient for a proper validation. Nevertheless, we will present preliminary validation results using one or two of the metrics for probability forecasting of sea ice concentration.