Data Assimilation on HBM Circulation Model within MyOcean2 project

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To ensure good quality of the operational marine forecasts, it is very important to keep the state of the operational ocean model as close to the real physical state of the ocean as possible. However, applying observations into a model is far from trivial.

In the MyOcean project, the Baltic Monitoring and Forecasting Centre (BALMFC) aims to combine the modelling efforts around Baltic Sea. As a part of this, a data assimilation system, based on optimal interpolation, originally developed in SMHI for HIROMB model has been added in hydrodynamic HIROMB-BOOS Model (HBM).

BALMFC aims to create a common framework for operational data assimilation around Baltic Sea. This is done by combining and further developing the existing implementations. As a collaborative work between FMI (Finnish Meteorological Institute), SMHI (Swedish Meteorological and Hydrological Institute), DMI (Danish Meteorological Institute) and BSH (Bundesamt für Seeschifffahrt und Hydrographie), the long term aim is to have one unified data assimilation platform for the Baltic Sea models. As initial phase, the satellite Sea Surface Temperature (SST) has been assimilated. Improvements on the forecast quality will be discussed. To further develop the assimilation system, salinity and temperature measurements from ferryboxes are discussed, as well as the possibilities of assimilating ice observations in the model. We also discuss the possibilities to use ARGO floats as a data source for data assimilation schemes.