Assimilation of FerryBox data in a circulation model of the North Sea

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Temperature and salinity data of a FerryBox are assimilated in a three-dimensional
circulation model of the North Sea. The FerryBox was mounted on a ferry communicating daily between Cuxhaven (Germany) and Harwich (United Kingdom). Using Optimum Interpolation, the data is assimilated into the Harvard Ocean Prediction
System (HOPS), the core of which is a three-dimensional primitive equations model.
HOPS is one-way nested in the forecast model of the German Federal Maritime and
Hydrographic Agency (BSH). From a set of identical twin experiments it is shown
that the data assimilation improves the forecast skill of temperature and salinity significantly along the ferry track.