ASSIMILATION OF SAF MNOR SST DATA INTO A 3 DIMENSIONAL HYDRODYNAMICAL MODEL OF THE NORTH SEA AND BALTIC SEA.

Jacob L. Høyer, Jesper Larsen and Søren Andersen
Danish Meteorological Institute, Lyngbyvej 100, DK-2100 Copenhagen O

ABSTRACT

A SST assimilation scheme has been implemented in an eddy resolving z-coordinate ocean model covering the North Sea and the Baltic Sea. The assimilation scheme is a simplified Kalman filter tailored for assimilation of satellite SST observations. A series of Observing System Experiments (OSEs) have been performed for the year 2001. The experiments investigate the impact on the model forecasts when assimilating satellite SST products such as O&SI SAF observations for the MNOR region. The effect of including different in-situ measurements of SST in the assimilation has also been examined. Results are presented from experiments where optimally interpolated SSTs have been used in combination with the assimilation scheme. In general, the inclusion of SAF SST data shows a substantial improvement in the model performance. Compared against in situ observations, the RMS model errors of SST for year 2001 thus decrease from 1.2 to less than 0.7 deg. C.