Experiences from NEMO simulations on the Baltic Sea - sea ice and other sensitivities

Jonni Lehtiranta (1), Tuomas Kärnä (1), Simo Siiriä (1), Andrea Gierisch (2,1), Antti Westerlund (1), and Jari Haapala (1)

(1) Finnish Meteorological Institute, Marine Research, Helsinki, Finland, (2) Danish Meteorological Institute, Copenhagen, Denmark

The Finnish Meteorological Institute is currently running separate models to make operational predictions of water level, ice cover, waves and water circulation. The trend has long been towards more general and coupled models to better simulate the interplay of ocean, ice and atmosphere. We are in the process of adopting Nemo to fulfill these needs. We have set up the Nemo Nordic configuration that covers the Baltic Sea and developed a Kara Sea configuration and are running these pre-operationally. In addition we have experimented with hindcast runs with both NEMO 3.6 and 4.0.

In this work we will evaluate the skill of NEMO 3.6 and 4.0 on the Baltic Sea in terms of sea level, sea surface temperature, and the extent and mass of sea ice. The ice parameters will also be compared to results from our established multicategory sea ice model HELMI. We will also look into the sensitivity of these parameters to choices made in the model numerics.