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Nemo-Nordic 2.0: Updated Baltic Sea model based on NEMO 4.0

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We present Nemo-Nordic 2.0, the latest version of the operational marine forecasting model for the Baltic Sea used and developed in the Baltic Monitoring Forecasting Centre (BAL MFC) under the Copernicus Marine Environment Monitoring Service (CMEMS). The most notable differences between Nemo-Nordic 2.0 and its predecessor Nemo-Nordic 1.0 are the switch from NEMO 3.6 to NEMO 4.0 and an increase in horizontal resolution from 2 to 1 nautical mile. In addition, the model's bathymetry and bottom friction formulation have been updated. The model configuration was specially tuned to represent Major Baltic Inflow events. Focusing on a 2-year validation period from October 1, 2014, covering one Major Baltic Inflow event, Nemo-Nordic 2.0 simulates Sea Surface Height (SSH) well: centralized Root-Mean-Square Deviation (CRMSD) is within 10 cm for most stations outside the Inner Danish Waters. CRMSD is higher at some stations where small-scale topographical features cannot be correctly resolved. SSH variability tends to be overestimated in the Baltic Sea and underestimated in the Inner Danish Waters. Nemo-Nordic 2.0 represents Sea Surface Temperature (SST) and Salinity (SSS) well, although there is a negative bias around -0.5°C in SST. The 2014 Major Baltic Inflow event is well reproduced. The simulated salt pulse agrees well with observations in the Arkona basin and progresses into the Gotland basin in 3 to 4 months.