

Assimilating NOAA's SST data and *in situ* T, S profiles into BSH operational circulation model for the North and Baltic Seas

Svetlana N. Losa^a, Sergey Danilov^a, Jens Schröter^a, Lars Nerger^a, Silvia Maßmann^b, and Frank Janssen^b

^a*Alfred Wegener Institute Helmholtz Center for Polar and Marine Research, Bremerhaven, Germany*
^b*Federal Maritime and Hydrographic Agency, Hamburg, Germany.*

The operational circulation model of the German Federal Maritime and Hydrographic Agency (BSH) has been augmented by a data assimilation (DA) system in order to improve the hydrography forecast of the North and Baltic Seas. The DA system has been developed based on the Singular Evolution Interpolated Kalman (SEIK) filter algorithm [1] coded within the Parallel Data Assimilation Framework [2], [3].

The quality of the forecast has been previously improved by assimilating sea surface temperature (SST) measurements obtained with the Advanced Very High Resolution Radiometer (AVHRR) aboard polar orbiting NOAA's satellites [4]. We investigate possible further improvements using *in situ* observational temperature and salinity data: MARNET time series and CTD and Scanfish measurements. The study addresses the problem of the local SEIK analysis accounting for the data within a certain radius. The localisation radius is considered spatially variable and dependent on the system local dynamics. As such, we define the radius of the data influence based on the energy superposition of the baroclinic and barotropic flows.

References

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