



Improved oceanographic database for the Nordic Seas

A. Korablev (1), A. Pnyushkov (1), A. Smirnov (1), O. Johannessen (2), V. Ionov (3)

(1) Arctic and Antarctic Research Institute, (2) Nansen Environmental and Remote Sensing Center/Geophysical Institute, (3) Nansen International Science Fund (aakor@aari.nw.ru / +7 812 352 2688)

A new version of oceanographic database for the Norwegian, Greenland, Iceland and Barents Seas was completed under the project funded by INTAS-4620 'The Nordic Seas in the Global Climate System'. Initial data from more than 25 sources were merged together totally about 4.5 million of stations including WOD01 database, Climatic Atlas of the Arctic Seas, ICES, IMR, GFI, AWI, ARGO datasets, Russian data from different sources and others. Data have passed quality and duplicate controls, standard deviation check and were flagged by means specially designed software. An intricate algorithm was applied for duplicate control allowed to improve both oceanographic stations metadata and profiles composition by selecting optimal combination from multiple variants. Finally more that 400 thousand of stations left in the database for the 1900-2005 with considerable data increase for the 1990s. Increase in the stations number in comparison with WOD01 database for the same region and period amounts to more than 200 thousand of stations. Vertical interpolation and objective analysis (ordinary kriging) procedures embedded into software permit producing objectively interpolated fields based on selected data, for different horizontal levels and grid net. Irregular grid net can be used that an importance for data assimilation in models and their validation. Objectively interpolated fields for temperature, salinity and dissolved oxygen were computed for 0.25x0.5o latitude- longitude grid net for each month and year. It is represents a new climatology for the Nordic Seas region. Using this dataset heat and fresh water content were calculated and results will be discussed. Combined analysis of large scale fields and regional variations from standard stations, sections and polygons allows estimating timing and spatial pattern of different climatic regimes and anomalies propagation over the Nordic Seas.