



The KLIWAS North Sea Climatology

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For the evaluation and assessment of regional climate models reference data are needed. Within the governmental research program KLIWAS the ERA-40 reanalysis was used as forcing for regional coupled climate model hind-cast runs and as reference of the actual climate state. Since existing reanalyses are based on various assimilated observations that are inhomogeneously distributed in space and time, the question arises how accurately the present climate can be described for regional evaluations concerning these limitations, especially in near-coastal regions.

For evaluation purposes of regional characteristics in the North Sea area, the KLIWAS North Sea Climatology was developed in close cooperation between the Federal Maritime and Hydrographic Agency (BSH), Deutscher Wetterdienst (DWD) and the Integrated Climate Data Center (ICDC). It provides in its first version long-term records of monthly and yearly mean 2 m air temperature, dew point temperature and sea level pressure data on a horizontal $1^\circ \times 1^\circ$ grid from 1950-2010, as well as hydrographic data on sea water temperature and salinity on a horizontal $0.25^\circ \times 0.5^\circ$ grid at 179 depth levels from 1890-2011 with matching grid cell centres.

All atmospheric products are based on high quality controlled data provided by the Centre for Global Marine Meteorological Observations of DWD, all hydrographic data were interpolated and quality controlled prior to the processing. A set of heuristic rules has been implemented to assure the best possible spatial and temporal coverage.

Both climatologies are provided as graphic display and download on the ICDC website at <http://icdc.zmaw.de/knsc.html>. They will be updated regularly regarding new observations and additional atmospheric and hydrographic parameters. Variable reference periods can be extracted. Comparisons of KNSC 2 m air temperature and sea level pressure with reanalyses data are currently prepared and first results are planned to be included in this presentation. An extension to the Baltic Sea is desirable for future endeavours, as well as the inclusion of bio-geo-chemical data.