



Global Marine In Situ Observations for Validation and Calibration of Remote Sensing Data from the DWD Marine Climate Data Centre

A. Andersson, B. Tinz, and L. Gates

Deutscher Wetterdienst, Hamburg, Germany (axel.andersson@dwd.de)

The Marine Climate Data Centre of Deutscher Wetterdienst (DWD) in Hamburg maintains an extensive climatological data base of more than 400 million individual observations of global oceanic surface and near surface atmospheric parameters. Apart from recent data, the archive consists of a large amount of historic data ranging back to the mid-19th century. Several data streams are combined into a consolidated data archive with regular additions of new data. Real-time data from ships, buoys and other marine measurement platforms are automatically retrieved from the Global Telecommunications System (GTS), and are consolidated in near real-time for the data base. Additional important data sources are Voluntary Observing Ships (VOS) that are collected offline and redistributed in delayed mode. Data from stationary measurements, such as from the research platforms in the North and Baltic Sea (FINO 1,2,3) complement the available data base.

In order to be applicable for climatological applications and validation purposes, the data undergoes a thorough quality control. To ensure the maximum degree of reliability, all observations are flagged based on several quality checks. These procedures do not only check the individual observation for formal errors and or climatological limits, but also implement cross-consistency, time sequence and neighbourhood checks for the specific measurement platform in order to identify data errors.

The presentation will give an overview of the available in situ data from the DWD Marine Climate Data Centre with a specific focus on SST and near surface atmospheric variables. Application examples will be given highlighting benefits and also caveats when using in situ marine observations for the validation and calibration of remote sensing data.