



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

Member Report 2014 - BSH

Jan H. Reissmann

9.5.2014



Observations - Status



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

- Temperature, salinity, current, oxygen content (from oxygen optodes RINKO), radioactivity and meteorological data by the MARNET (*Marine Environmental Monitoring Network in the North Sea and Baltic Sea*) running with 9 platform stations (thereof 5 in the Baltic Sea) and 8 stations for sea state (thereof 3 in the Baltic Sea). The station “Fehmarn Belt” is offline due to general maintenance, which last until 2015.
- Annual monitoring cruise in the western Baltic Sea with chemical focus
- Sea level data provided by Water and Shipment Agencies (WSAs)
- SST and ice coverage from NOAA-AVHRR and MetOp remote sensing data

Observations - Status



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

- Chlorophyll-a (Chl-a) from MODIS remote sensing data
- The monitoring network is supplemented by research-platforms for wind plants: FINO: FINO1 in the southern German Bight runs since 2003, FINO3 started at the beginning of 2011 in the northern German Bight and FINO2 (Baltic Sea) measurements started 2008.
- Wave measurements at FINO2 are operational.
- Sea level data measured with a radar gauge (RADAC) are available now, but not yet operational. Levelling is done via GPS.

Observations - New Initiatives



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

- FINO2 is equipped with oceanographic instruments since April 2013. Measurements are carried out by the IOW on behalf of the BSH.
- The former MERIS products for Chl-a (currently from MODIS), yellow substance (CDOM), total suspended matter (SPM) and transparency will be replaced by corresponding products of the new Ocean and Land Colour Instrument (OLCI) on Sentinel 3. The data are expected to be available earliest in summer 2015.

operational (version 4):

- Baroclinic 3dim. circulation model (BSHcmod) using 3 nested grids (6 nm, 3 nm, 0.5 nm), 3 day forecasts, 1 x daily
- Barotropic 2dim. storm surge model (BSHsmod) using 2 nested grids (6 nm, 3 nm), 4 x daily, forecasts up to 7 days
- Baroclinic 3dim. circulation model (HBM) with high resolution (90m) for river Elbe

operational - on demand:

- Eulerian and Lagrangian dispersion models (BSHdmod & SeatrackWeb) for different substances, i.e. SPM

Modelling - New Initiatives



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

pre-operational:

- New circulation model HBM (HIROMB-BOOS-Model); operational in MyOcean-2 Baltic Marine Forecasting Centre , in co-operation with DMI, FMI, SMHI, MSI
- Data assimilation for SST and temperature/salinity profiles based on LSEIK filter, 3nm&0.5nm grid
- Multi-model-ensemble for SST, SSS and transports for the North Sea and the Baltic Sea based on all available model results from NOOS and BOOS partners

under development:

- Coupled circulation and wave model
- New model for ice dynamics
- Ecosystem model (ERGOM) in co-operation with DMI and ERGOM-Group
- Data assimilation scheme for ecosystem model

Publicly available via internet (www.bsh.de):

- **Observations**
- **Forecasts**
- **Miscellaneous**

Observations:

- MARNET monitoring network in real-time: temperature, salinity, current, oxygen content, sea state, radioactivity, meteorological data
- Remote sensing: SST, ice and chl-a
- Ice reports

Forecasts:

- Tides
- Sea level (accompanied with measurements from WSAs)
- Storm surges
- Currents
- Briefing for beach visits

Miscellaneous:

- Climatological time series
- DOD Data Centre: general data requests
- MURSYS reporting system: environmental reports
- GeoSeaPortal: interface to geo information data including observations
- Bathymetric data: sets listed, available on request

Contributions directly to BOOS:

- **Processing of some products for BOOS homepage by Inge Menzenhauer-Schumacher/ BSH**
- **Data and products on BOOS homepage**
- **Data on ftp server with access for BOOS members**

Data and products on BOOS homepage:

- MARNET data
- Current and transport forecasts for the Baltic Sea and the North Sea/Baltic Sea transition area
- Presentation of results from Multi-model-ensemble
- Weekly SST-Map of the entire Baltic Sea derived from remote sensing data
- Sea level measurements provided by WSAs

Data on ftp server with access for BOOS members:

- MARNET data (access also EU-wide)
- Sea level measurements provided by WSAs
- Simulated sea level data
- Simulated sea state data (sea state measurements part of MARNET data)
- Simulated transports in the Baltic Sea and the North Sea/Baltic Sea transition area
- Full resolution ADCP current data from ARKONA and DARSS station

Dissemination - New Initiatives



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

- Simulated transports from FCOO will be included in BOOS.org
- Comparisons of simulations and in-situ data on demand
- Results from Multi-model-ensemble for the Baltic Sea available from BSH ftp server

Relevant National Projects



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

DeMarine-2: A national project to foster the operational use of marine Copernicus-services

FINO: Research platforms North Sea and Baltic Sea (research to determine the effects on the marine flora and fauna)

KLIWAS: "Impacts of climate change on navigation and waterways – options to adapt"

RAVE: Research Activities at "Alpha-Ventus"
(accompanying/secondary research for off-shore wind park "Alpha Ventus")

MDI-DE: Marine Data Infrastructure: Development of an marine data infrastructure for Germany

Relevant International Projects



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

MyOcean-2: EU-FP7 project for the Copernicus-Marine Core Service –

- Production and distribution unit for in-situ data of the North-West Shelf
- Modelling/Validation/Quality Assurance for North West Shelf and Baltic Sea
- Back-up production unit for Baltic MFC

SIDERI/EuroARGO: European contribution to a global ocean observatory

Working groups in **IOC – IODE** (Committee on International Oceanographic Data Exchange)

SeaDataNet 2: An Integrated Infrastructure Initiative of the EU Sixth Framework (main BSH topic: Cruise summary reports)

Geo-Seas: EU-FP7 project: Pan-European infrastructure for management of marine and ocean geological and geophysical data

EMODNET2: A pilot component for a final operational European Marine Observation and Data Network, launched by DG MARE. It aims to assemble fragmented and inaccessible marine data into interoperable, continuous and publicly available data streams for complete maritime basins.

POGO: The Eurofleets 2 Alliance brings together 24 marine exploration fleet owners and specialized teams with the objective of building a coherent pan-European approach to research vessels management including cruise programmes and cruise reports.

Additional Information



BUNDESAMT FÜR
SEESCHIFFFAHRT
UND
HYDROGRAPHIE

- On average about 65 % data availability of T/S data from MARNET:
40% (Darss mainly due to maintenance 2013) to 98% (Arkona)
- On average about 45 % data availability of current data from MARNET:
18% (Darss bottom, maintenance 2013) to 75% (Arkona bottom)
- MDI-DE operational after project end in 2013