

BOOS Annual Meeting 2016

Member report

Country	Germany
Institution(s)	Bundesamt für Seeschifffahrt und Hydrographie
Observations Status and new initiatives	<p><u>Status:</u></p> <ul style="list-style-type: none"> • Temperature, salinity, current, oxygen content (from various oxygen optodes), radioactivity and meteorological data by the MARNET (<i>Marine Environmental Monitoring Network in the North Sea and Baltic Sea</i>) running with 9 platform stations (thereof 5 in the Baltic Sea) and 8 stations for sea state (thereof 3 in the Baltic Sea). The stations “Fehmarn Belt” and “NSB-3” are still offline due to general maintenance, which will last until September 2016. • 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 • 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 in the northern German Bight since 2009, and FINO2 in the Baltic Sea since 2008. • Wave measurements at all three FINO platforms are operational. • Sea level data measured with a radar gauge (RADAC) at all three FINO platforms are operational. Levelling is done via GPS. • Oceanographic measurements at FINO2 are operational since 2014. These measurements are carried out by the IOW on behalf of the BSH. <p><u>New initiatives:</u></p> <ul style="list-style-type: none"> • 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. Availability of sample data to users is still pending. The release of first OLCI data to expert users is expected in May 2016. • Evaluation of acoustic sensors at offshore wind farm Gode Wind (German Bight) • Data transmission from NSB-2 and 3 via inmarsat was successfully tested and is ready for routine operation now. inmarsat data transmission is planned for other platforms, e.g. Fehmarn Belt. • Test operation of Canadian NOMAD (Navy Oceanographic Meteorological Automatic Device) buoy at FINO1 ended with tearing from anchor. The buoy was recovered, but the data recorded during the test is still not available.
Modelling Status and new initiatives	<p><u>Status:</u></p> <p>operational on national level:</p> <ul style="list-style-type: none"> • Baroclinic 3dim. circulation model (BSHcmod) using 3 nested grids (6 nm, 3 nm, 0.5 nm), 3 day forecasts, 2 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, 2 x daily <ul style="list-style-type: none"> • on demand: Eulerian and Lagrangian dispersion models (BSHdmod & SeatrackWeb) for different substances, i.e. SPM

	<p>operational on European level:</p> <ul style="list-style-type: none"> • Back-up production unit of Baltic Monitoring and Forecasting Center (MFC) for Copernicus Marine Environment Monitoring Service (CMEMS), baroclinic 3 dim. circulation model (HBM), 1nm, 60 hours forecast, 2x daily • Multi-model-ensemble of SST, SSS, SSC, SBT, SBS and transports in the North Sea and the Baltic Sea for CMEMS based on all available model results from NOOS and BOOS partners (Golbeck et al., 2015) • Modelling/validation/quality assurance for the North West Shelf and the Baltic Sea within CMEMS <p><u>New initiatives:</u></p> <p>pre-operational:</p> <ul style="list-style-type: none"> • Data assimilation for SST and temperature/salinity profiles based on LSEIK filter, 3nm&0.5nm grid • Biogeochemical model for North Sea and Baltic Sea with 2 nested grids (HBM+ERGOM) • high resolution coupled circulation (HBM) and wave (WAM) model (with German Weather Service, DWD) <p>under development:</p> <ul style="list-style-type: none"> • New model for ice dynamics (with DMI) • Data assimilation scheme for ecosystem model
<p>Dissemination Status and new initiatives</p>	<p><u>Status:</u></p> <p>Publicly available via internet (www.bsh.de):</p> <p>Observations:</p> <ul style="list-style-type: none"> • 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 • Circulation Calendar German Bight <p>Forecasts:</p> <ul style="list-style-type: none"> • Tides • Sea level (accompanied with measurements from WSAs) • Storm surges • Currents • Briefing for beach visits <p>Miscellaneous:</p> <ul style="list-style-type: none"> • Climatological time series • DOD Data Centre: general data requests • MDI-DE: Marine Data Infrastructure for Germany • MURSYS reporting system: environmental reports • GeoSeaPortal: interface to geo information data including observations • Bathymetric data: sets listed, available on request

	<p>Contributions directly to BOOS: (by Inge Menzenhauer-Schumacher/BSH)</p> <ul style="list-style-type: none"> • Processing of some products for BOOS homepage • Some assistance in migration to and arranging of new BOOS homepage <p>Data and products on BOOS homepage:</p> <ul style="list-style-type: none"> • 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 • Simulated transports from FCOO have been included <p>Data on ftp server with access for BOOS members:</p> <ul style="list-style-type: none"> • 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 • Results from Multi-model-ensemble for the Baltic Sea <p>Service on European level:</p> <ul style="list-style-type: none"> • Production and distribution unit of CMEMS for in-situ data observed on the North-West Shelf <p><u><i>New initiatives:</i></u></p> <ul style="list-style-type: none"> • North Sea Climatology (ocean and atmosphere) produced by the ended KLIWAS project will be extended to the Baltic Sea by the expert network of BMVI (Federal Ministry of Transport and Digital Infrastructure) in the next two years • Comparisons of simulations and in-situ data on demand
<p>Relevant national projects</p>	<p>MERAMO: A national project to support the public authorities with results and products for the Marine Strategy Framework Directive (MSFD) from an assimilative hydrodynamical-biogeochemical model system</p> <p>NKS-MCS: A national Copernicus project to support German users and foster the use of marine Copernicus data</p> <p>FINO: Research platforms North Sea and Baltic Sea (research to determine the effects on the marine flora and fauna)</p> <p>RAVE: Research Activities at “Alpha-Ventus” (accompanying/secondary research for off-shore wind park “Alpha Ventus”)</p> <p>NOAH: North Sea - Observation and Assessment of Habitats: develop a comprehensive geo-referenced inventory of physical, biogeochemical and biological seafloor properties in the German Bight ("habitat atlas").</p> <p>RACE-II: Regional Atlantic Circulation and Global Change. BSH focus on bi-directional water mass transfer between North Atlantic and Northern North Sea.</p>

<p>Relevant International projects</p>	<p>ODIP (II): Ocean data interoperability platform</p> <p>Working groups in IOC – IODE (Committee on International Oceanographic Data Exchange)</p> <p>SeaDataNet II continued, III granted: An Integrated Infrastructure Initiative of the EU Sixth Framework (main BSH topic: Cruise summary reports)</p> <p>EMODNET II/III: 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.</p> <p>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.</p>
<p>Additional information</p>	<ul style="list-style-type: none"> • No statistics on data availability of T/S data from Baltic MARNET: technical problems in data access by analysis software • No statistics on data availability of current data from Baltic MARNET: technical problems in data access by analysis software