

# BOOS Annual Meeting 2015

## Member report

<b>Country</b>	Germany
<b>Institution(s)</b>	Bundesamt für Seeschifffahrt und Hydrographie
<b>Observations Status and new initiatives</b>	<p><u>Status:</u></p> <ul style="list-style-type: none"> <li>• Temperature, salinity, current, oxygen content (from oxygen optodes RINKO), 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 station “Fehmarn Belt” is offline due to general maintenance, which will last until 2016.</li> <li>• Annual monitoring cruise in the western Baltic Sea with chemical focus</li> <li>• Sea level data provided by Water and Shipment Agencies (WSAs)</li> <li>• SST and ice coverage from NOAA-AVHRR and MetOp remote sensing data</li> <li>• Chlorophyll-a (Chl-a) from MODIS remote sensing data</li> <li>• 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 2009 in the northern German Bight and FINO2 (Baltic Sea) measurements started 2008.</li> <li>• Wave measurements at FINO2 are operational.</li> <li>• Sea level data measured with a radar gauge (RADAC) at FINO2 are operational now. Levelling is done via GPS.</li> </ul> <p><u>New initiatives:</u></p> <ul style="list-style-type: none"> <li>• FINO2 is equipped with oceanographic instruments since April 2013. Measurements are carried out by the IOW on behalf of the BSH.</li> <li>• 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.</li> </ul>
<b>Modelling Status and new initiatives</b>	<p><u>Status:</u></p> <p><b>operational on national level:</b></p> <ul style="list-style-type: none"> <li>• Baroclinic 3dim. circulation model (BSHcmod) using 3 nested grids (6 nm, 3 nm, 0.5 nm), 3 day forecasts, 1 x daily</li> <li>• Barotropic 2dim. storm surge model (BSHsmod) using 2 nested grids (6 nm, 3 nm), 4 x daily, forecasts up to 7 days</li> <li>• Baroclinic 3dim. circulation model (HBM) with high resolution (90m) for river Elbe</li> </ul> <ul style="list-style-type: none"> <li>• <b>on demand:</b> Eulerian and Lagrangian dispersion models (BSHdmod &amp; SeatrackWeb) for different substances, i.e. SPM</li> </ul> <p><b>operational on European level:</b></p> <ul style="list-style-type: none"> <li>• HBM (HIROMB-BOOS-Model); operational in COPERNICUS Baltic Marine Forecasting Centre, in co-operation with DMI, FMI, SMHI, MSI</li> </ul>

	<p><b><u>New initiatives:</u></b></p> <p><b>pre-operational:</b></p> <ul style="list-style-type: none"> <li>• Data assimilation for SST and temperature/salinity profiles based on LSEIK filter, 3nm&amp;0.5nm grid</li> <li>• Multi-model-ensemble for SST, SSS, SSC, SBT, SBS and transports for the North Sea and the Baltic Sea based on all available model results from NOOS and BOOS partners; publication submitted</li> <li>• Biogeochemical model for North Sea and Baltic Sea with 2 nested grids (HBM+ERGOM)</li> <li>• high resolution coupled (by file exchange) circulation (HBM) and wave model (WAM) (with German Weather Service, DWD)</li> </ul> <p><b>under development:</b></p> <ul style="list-style-type: none"> <li>• Coupled (with OASIS coupler) circulation and wave model</li> <li>• New model for ice dynamics (with DMI)</li> <li>• Data assimilation scheme for ecosystem model</li> </ul>
<p><b>Dissemination</b> Status and new initiatives</p>	<p><b><u>Status:</u></b></p> <p><b>Publicly available via internet (<a href="http://www.bsh.de">www.bsh.de</a>):</b></p> <p><b>Observations:</b></p> <ul style="list-style-type: none"> <li>• MARNET monitoring network in real-time: temperature, salinity, current, oxygen content, sea state, radioactivity, meteorological data</li> <li>• Remote sensing: SST, ice and chl-a</li> <li>• Ice reports</li> <li>• Circulation Calendar German Bight</li> </ul> <p><b>Forecasts:</b></p> <ul style="list-style-type: none"> <li>• Tides</li> <li>• Sea level (accompanied with measurements from WSAs)</li> <li>• Storm surges</li> <li>• Currents</li> <li>• Briefing for beach visits</li> </ul> <p><b>Miscellaneous:</b></p> <ul style="list-style-type: none"> <li>• Climatological time series</li> <li>• DOD Data Centre: general data requests</li> <li>• MDI-DE: Marine Data Infrastructure for Germany</li> <li>• MURSYS reporting system: environmental reports</li> <li>• GeoSeaPortal: interface to geo information data including observations</li> <li>• Bathymetric data: sets listed, available on request</li> </ul> <p><b>Contributions directly to BOOS:</b></p> <ul style="list-style-type: none"> <li>• Processing of some products for BOOS homepage by Inge Menzenhauer-Schumacher/BSH</li> </ul>

	<p><b>Data and products on BOOS homepage:</b></p> <ul style="list-style-type: none"> <li>• MARNET data</li> <li>• Current and transport forecasts for the Baltic Sea and the North Sea/Baltic Sea transition area</li> <li>• Presentation of results from Multi-model-ensemble</li> <li>• Weekly SST-Map of the entire Baltic Sea derived from remote sensing data</li> <li>• Sea level measurements provided by WSAs</li> <li>• Simulated transports from FCOO have been included</li> </ul> <p><b>Data on ftp server with access for BOOS members:</b></p> <ul style="list-style-type: none"> <li>• MARNET data (access also EU-wide)</li> <li>• Sea level measurements provided by WSAs</li> <li>• Simulated sea level data</li> <li>• Simulated sea state data (sea state measurements part of MARNET data)</li> <li>• Simulated transports in the Baltic Sea and the North Sea/Baltic Sea transition area</li> <li>• Full resolution ADCP current data from ARKONA and DARSS station</li> <li>• Results from Multi-model-ensemble for the Baltic Sea</li> </ul> <p><u><b>New initiatives:</b></u></p> <ul style="list-style-type: none"> <li>• Comparisons of simulations and in-situ data on demand</li> </ul>
<p><b>Relevant national projects</b></p>	<p><b>DeMarine-2:</b> A national project to foster the operational use of marine Copernicus-services</p> <p><b>FINO:</b> Research platforms North Sea and Baltic Sea ( research to determine the effects on the marine flora and fauna)</p> <p><b>RAVE:</b> Research Activities at “Alpha-Ventus” (accompanying/secondary research for off-shore wind park “Alpha Ventus”)</p>
<p><b>Relevant International projects</b></p>	<p><b>MyOcean-2/FO:</b> HORIZON-2020 project for the Copernicus-Marine Core Service, resulting in <b>Copernicus Marine Environment Monitoring Service:</b></p> <ul style="list-style-type: none"> <li>• Production and distribution unit for in-situ data of the North-West Shelf</li> <li>• Modelling/Validation/Quality Assurance for North West Shelf and Baltic Sea</li> <li>• Back-up production unit for Baltic MFC</li> </ul> <p>Working groups in <b>IOC – IODE</b> (Committee on International Oceanographic Data Exchange)</p> <p><b>SeaDataNet 2:</b> An Integrated Infrastructure Initiative of the EU Sixth Framework (main BSH topic: Cruise summary reports)</p> <p><b>EMODNET 2:</b> 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><b>POGO:</b> 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><b>RACE!:</b> Regional Atlantic Circulation and Global Change. BSH focus on bi-directional water mass transfer between North Atlantic and Northern North Sea.</p>
<p><b>Additional information</b></p>	<ul style="list-style-type: none"> <li>• On average about 76 % data availability of T/S data from Baltic MARNET: 52% (Oderbank ) to 96% (Arkona)</li> <li>• On average about 78 % data availability of current data from Baltic MARNET: 77% (Arkona bottom) to 79% (Darsser Sill surface)</li> <li>• Founding member of Euro-Argo ERIC (17.07.2014)</li> </ul>