

Coordinating sustained coastal and ocean observing efforts in Germany



Strategy groups in the German Marine Research Consortium (KDM)

In KDM, the member institutes bundle their marine science expertise in order to represent them jointly to decision-makers and funders as well as the general public. Several strategic groups (SGs) have been established under the KDM umbrella to address overarching marine scientific topics with a high societal relevance, including observing systems, coastal and climate research, biodiversity, and marine biological as well as mineral resources.

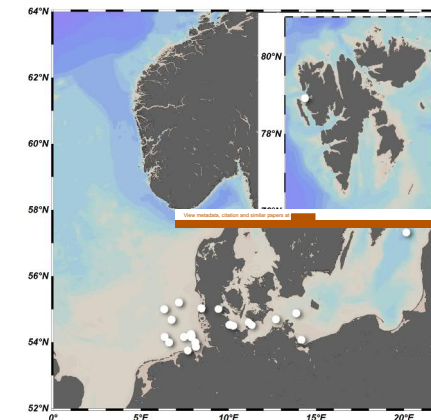
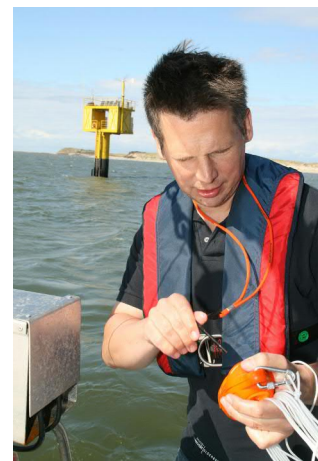
German coastal and ocean observing activities

German ocean observing activities have a regional focus on the North and Baltic Seas as well as the Atlantic Ocean, including the connected polar areas. However, more specific observations focusing on particular topics (e.g., connected to the Marine Strategy Framework Directive) are also carried out in other areas of the oceans. Observing activities include mandatory contributions (e.g., towards the Marine Strategy Framework Directive) as well as science-driven bottom-up initiatives. The activities are carried out by governmental agencies, research institutions, as well as universities and contribute to a number of large ocean observation initiatives (e.g., GCOS, ICOS, LTER).

Representing and coordinating coastal and ocean observing activities

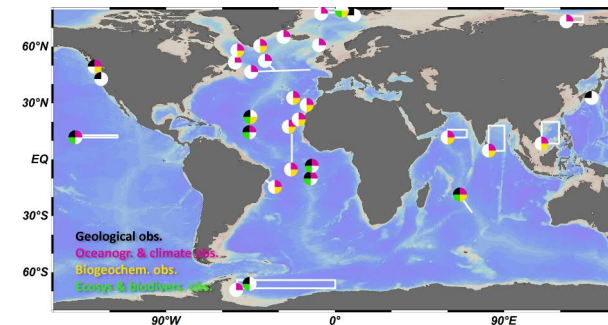
The Strategy Groups (SGs) for Sustained Ocean Observing and for Coastal Observing Systems are installed to strengthen the national coordination of ocean observing efforts and connect the large and heterogeneous group of institutions and people involved. The SGs address current and future observing needs and the associated technological challenges, as well as the seamless integration of Germany's observing efforts into European and global observing initiatives. Specific objectives of the SGs include:

- Representing German efforts in ocean observations, providing information on activities and forwarding meta-information to data centers (e.g. JCOMMOPS)
- Supporting the integration of national observations into European and international observing programs (e.g. GCOS, GOOS, BluePlanet, GEOSS)
- Supporting innovation in observing techniques and the development of scientific topics focusing on observing technologies and strategies
- Strengthen the operation and provision of marine research infrastructures in coastal and open ocean areas to provide permanent access for research projects and technology developments
- Developing strategies to expand and optimize national observing systems in consideration of stakeholder's needs and conventions
- Contributing to agenda processes and roadmaps in science strategy and funding
- Compiling recommendations for state of the art data management matching requirements of global data centers



Coastal observing systems under the auspices of German institutions and authorities are situated in the North and Baltic Seas, and Svalbard. Most systems perform physical observations in the water column and/or in the lowermost atmosphere. Monitoring of biogeochemical as well as biological parameters are carried out at many of the sites. Platforms in-

poles, lighthouses, lightships, as well as cabled observatories. See further details at:



Open ocean observation efforts under the auspices of German institutions. The quartered circles indicate positions of the observatories / observation programs and the main disciplines served (legend in lower left corner of the map). White lines and boxes next to the circles indicate areas or transects where multi-point observations are carried out. Observations are mostly obtained with research vessels, moorings, and benthic installations. See further details at:



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KDM Strategy Groups

KDM Strategy Group Coastal Observing Systems

Mission Statement

Aiming at an improved understanding of processes and mechanisms as well as their interactions in coastal areas and their compartments (air, water, sediment, and land) under the influence of regional and global environmental changes, the members of the KDM Strategy Group Coastal Observation Systems operate various stationary and mobile coastal observation systems.

Terms of Reference

The KDM Strategy Group has the following objectives:

- to carry out an inventory of the coastal observation systems and their operators,
- to establish the development of the infrastructure required for sustainable coastal monitoring in the long term,
- to promote interconnection with the open ocean observation systems,
- to promote the integration of stationary and non-stationary measurements in water, air, and sediment along the transition between land and coastal waters,
- to identify and promote the development of relevant new technologies and innovations
- to develop products (e.g. real-time information systems, early warning systems, indicators, forecasts, etc.)
- to communicate and publish results and products,
- to promote the education and training of students, scientists and technicians

KDM Strategy Group for Sustained Ocean Observing

Mission Statement

The 'Strategy Group for Sustained Open Ocean Observing' (SG-OO) represents the observation activities of KDM institutions that are geared towards long-term goals and concern the open ocean. The SG-OO aims to network and represent the entirety of German ocean observation activities at national level and to develop and promote strategies for a long-term and timely national contribution to global observation programs and initiatives.

Terms of Reference

The 'Strategy Group Sustained Open Ocean Observing' (SG-OO) represents the long-term, repeated and, in this sense, sustained observation activities of KDM institutions that focus on the open ocean and extend beyond the duration of individual projects. The SG-OO acts in coordination with the 'Strategy Group Coastal Monitoring Systems'. Fixed-point observations at time-series stations as well as observations along defined sections or sectors are considered. The focus is on the networking and integration across observing programs and the development of strategies to ensure a sustained contribution of national activities to global ocean observation. National contributions to globally motivated observations are considered as well (e.g. national contributions to Argo-Drifter programs, global pCO₂ networks, underway measurements, and biodiversity monitoring, for example in cold-water coral reefs).

The SG-OO addresses observational activities of all oceanographic disciplines (physical, chemical and biological oceanography including biodiversity observations, biogeochemistry, geology, and geophysics), from the atmosphere/sea ice/ocean/-interface across the entire water column and the ocean/seabed-interface to the sea floor. The ocean observation activities represented in the SG-OO aim to characterize natural processes and variabilities comprehensively and on appropriate time scales. Based on these observations, data on changes in environmental conditions in the oceans and their ecosystem impacts as a consequence of global climate events or direct anthropogenic influences are collected and made available for assessments of the current and future state of the oceans in the context of predictions. The SG-OO may also include activities near the coast, as long as they focus on interactions with the open ocean, as well as observational activities over shorter periods of time in regions where there is currently no possibility for longer-term repeated observations.

The following specific activities form the core of the work of the SG-OO:

- The SG-OO acts as the central contact for the German ocean observing community. It collects information from members on existing and planned ocean observing activities and makes them available to national (e.g. German GCOS) and international actors (e.g. JCOMMOPS Metadata Centre).

- The SG-OO initiates and supports the integration of national ocean observation activities into European and international ocean and earth observation systems (e.g. GCOS, GOOS, BluePlanet, GEOSS).
- The SG-OO is engaged in the development of scientific questions and the identification of suitable observation strategies and the innovations in observation technologies required for sustainable and efficient ocean observation.
- The SG-OO develops strategies for the expansion and optimization of national observation systems. In doing so, the characteristics of existing systems are taken into account as well as user (e.g. modelers) needs and existing international requirements and agreements. In this sense, the SG-OO contributes to roadmap and agenda processes (e.g. Mare:N) and to the development of funding instruments (e.g. within the framework of the German Marine Research Alliance DAM).
- The SG-OO develops recommendations to improve data collection and data dissemination for optimal and sustained scientific and social knowledge gain. This includes the consideration of the requirements of international data centers and data integrators as well as the standardization of quality control and the provision of relevant metadata. The SG-OO is committed to the goal of open access to primary and quality-controlled data (including real-time data).