OceanSITES: A Worldwide Network of Deepwater Reference Stations

Johannes Karstensen, Tom Trull
co-chairs OceanSITES observing network

OceanSITES - observations in support for:
Vision
Time series observations are an essential element of a global ocean observing system. They provide a unique view of the full temporal behavior of a system; accurate reference and long-time baseline data; and the maximum possible range of interlinked variables from the seafloor to the atmosphere while enabling shared resources.

Mission
The OceanSITES network ensures optimal collection, delivery and promotion of highest-quality, long-term, high-frequency time series data at fixed locations in the open ocean. OceanSITES addresses multidisciplinary data worldwide and over the full-depth water column from the air/sea interface to the seafloor.
OceanSITES time series stations

- Regional/local observing objectives
- Grouping at global level
  - Transport Moored Arrays
  - Air/sea flux reference sites
  - GlobalOceanWatch
  - Deep Ocean
- Funding: National/Institutes
OceanSITES time series stations

- Regional/local observing objectives
- Grouping at global level
  - Transport Moored Arrays
  - Air/sea flux reference sites
  - GlobalOceanWatch
  - Deep Ocean
- Funding: National/Institutes

Currently >270 moorings operational
20 countries (US has 116 moorings)

In total >3500 mooring deployments are archived
OceanSITES Organigram

- Steadily improves netCDF based time series data format (*OceanSITES format*)
  - Dissemination system: DACs, GDACs, JCOMMOPS
  - Data shared (FTP, THREADS) via NDBC and Coriolis

Data management Team

Executive team (Incl. co-chairs)

Science Committee
(*PI’s, site manager, associated scientists*)

Technical Coordinator (30%)

- part of a large network of partners
- Gain access to and enhance usership of infrastructure
- Get assistance for initiating new sustained time-series programs
- Enhance foodprint of your observations
- Technological development
OceanSITES network data examples


Data:
- pCO2/pH data at https://doi.org/10.7289/V5DB8043
- T, S, currents: OceanSITES netCDF on THREADS/FTP
OceanSITES and GOOS/GCOS

- One key objective of our coordination is making the observations and the observing effort visible in international systems such as GOOS/GCOS.
- The official link is via JCOMM-OPS.
- JCOMM-OPS was set up for Argo (notifications) but is now serving all observing networks (GO-SHIP, GLOSS, DBCP, ...).
OceanSITES data challenges

- Metadata fields
- Metadata definitions e.g. Instrument vocabulary (across all sites >100 different instrument types)
- Compatibility with Global system (JCOMMOPS)
- **Standards** for auxiliary data (ship service, decoding? Expocode)
- Discovery and tracking of distributed (non-netCDF) data e.g. genomic analysis of samples, sediment trap data analysis
- Structuring and archiving data products (e.g. flux time series)
- Ensure that complex data carries adequate metadata (omics)
- Make data ready for use (e.g. Obs4MIPs)
- Release OceanSITES community endorsed Best Practices
| Data References (include names of documents and links) | OceanSITES: IFREMER Coriolis (FTP). ftp://ftp.ifremer.fr/ifremer/oceansites/  
Taking the Pulse of the Global Ocean

www.oceansites.org
oceansites.jcommops.org