

OceanSITES



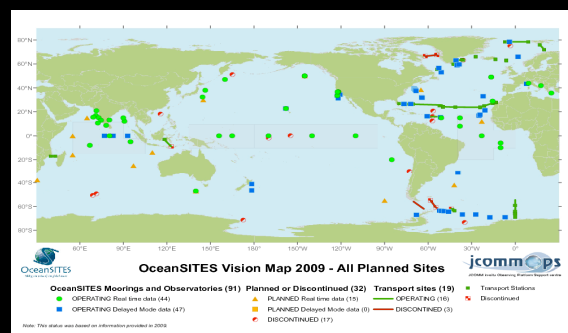
About OceanSITES

The OceanSITES program is the global network of open-ocean sustained time series sites, called ocean reference stations, being implemented by an international partnership of researchers. OceanSITES provides fixed-point time series of various physical, biogeochemical, and atmospheric variables at different locations around the globe, from the atmosphere and sea surface to the seafloor. The program's objective is to build and maintain a multidisciplinary global network for a broad range of research and operational applications including climate, carbon, and ecosystem variability and forecasting and ocean state validation. All OceanSITES data are publicly available. More information about the project is available at:

<http://www.oceansites.org>.

Characteristics of OceanSITES

- GOOS/CLIVAR/POGO sponsored activity and deeply related to JCOMM and IOCCP
 - Goal is to make the data publicly available as soon as received and quality-controlled by the owner/operator
 - only Eulerian data, i.e. data from time-series fixed points, no ship sections or underway data, no surveys with vessels or gliders around a site.
 - The system is collecting multidisciplinary time-series data : physical, meteorological, chemical, biological and geophysical timeseries observations.
 - An International Steering Team provides guidance, coordination, outreach, and oversight for the implementation, data management and capacity building
- <http://www.oceansites.org/team/index.html>
- Participation of 20 countries (at 2010) (Australia/ Bermuda /Canada / Cape Verde / Chile / Faroe Island / France / Germany / Greece / Iceland / India / Italy / Japan / Netherland / New Zealand / Norway / Spain / Taiwan China / UK / US)



OceanSITES data management structure and data access

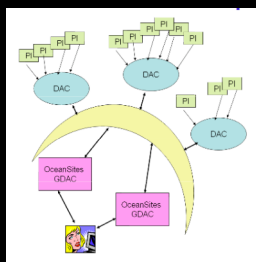
The data flow within OceanSITES is carried out through three organizational units: PIs, DACs, GDACs.

The Principal Investigator (PI), typically a scientist at a research institution, maintains the observing platform and the sensors that deliver the data. He or she is responsible for providing the data and all auxiliary information to a Data Assembly Center (DAC).

The DAC assembles OceanSITES-compliant files from this information and delivers these to the two Global Data Assembly Centers (GDACs), where they are made publicly available.

The GDAC distributes the best copy of the data files. When a higher quality data file (e.g. calibrated data) is available, it replaces the previous version of the data file.

The user can access the data at either GDAC, cf. section "GDAC organization". Archive of preliminary or real-time data is beyond the scope of the OceanSITES GDACs; this issue should be addressed by the long term archive policy for OceanSITES (under study).



GDAC
 NDBC: National Data Buoy Center, USA
 Coriolis: IFREMER Coriolis, France

DAC (potential)
 BERGEN: University of Bergen Geophysical Institute, Norway
 CCHDO: CLIVAR and Carbon Hydrographic Office, USA
 CDIAC: Carbon Dioxide Information Analysis Center, USA
 IMOS: Australian Integrated marine Observing System, Australia
 INDOCS: Indian National Center for Marine Observation Services, India
 JAMSTEC: Japan Agency for Marine-Earth Science and Technology, Japan
 MBARI: Monterey Bay Aquarium Research Institute, USA
 MEDS: MEDS, Canada
 NIOZ: Royal Netherlands Institute for Sea Research, Netherlands
 NOCS: National Oceanographic Center, Southampton, UK
 PMEL: NOAA Pacific Marine Environmental Laboratory, USA
 SIO: Scripps Institute for Oceanography, USA
 WHOI: Woods Hole Oceanographic Institution, USA

User Obligations

A user of OceanSITES data is expected to read and understand OceanSITES user's manual and the documentation about the data as contained in the "attributes" of the NetCDF data files, as these contain essential information about data quality and accuracy. A user of OceanSITES data must comply with the requirements set forth in the attributes "distribution_statement" and "citation" of the NetCDF data files.

NetCDF: network Common Data Form

<http://www.unidata.ucar.edu/software/netcdf/docs/BestPractices.html>

JAMSTEC activity in OceanSITES

Two projects of JAMSTEC participate OceanSITES. Both projects are deeply collaborated with NOAA-PMEL

One is JKEO project. As the Kuroshio Extension region is the one of the largest heat flux regions in the world, the high quality surface heat flux data there is necessary for better understanding of global climate system. Using the in-situ data observed by a surface flux buoy at JKEO-site in the mixed water region between two SST fronts associated respectively with the Oyashio and the Kuroshio Extension together with that at KEO-site to the south of the Kuroshio Extension region, we will develop the method estimating high quality sea surface heat flux in the Kuroshio Extension region from the satellite remote sensing data. A surface buoy (K-TRIRON) in the Kuroshio region in the western North Pacific acquires atmospheric and oceanographic data and supplies a part of these data to OceanSITES.

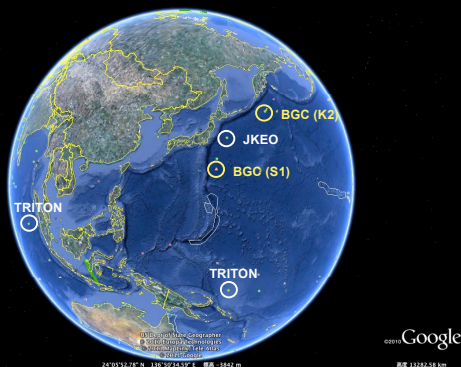
JKEO project: <http://www.jamstec.go.jp/orqc/ocorp/ksfsg/data/jkeo/index.html>
 Data: http://www.jamstec.go.jp/orqc/ocorp/ksfsg/data/jkeo/JKEOcean_site.htm

The other is TRITON project. The scientific objectives are to elucidate the processes of heat and fresh water flux in the center of western Pacific warm water pool. It consists of ENSO monitoring TAO/TRITON array. In future, the buoy at this site will be used for high precision measurement of SST to validate the satellite products. It will be also utilized for measuring partial pressure of CO2 in the water for a study of carbon flux. TRITON buoys also acquire atmospheric and oceanographic data in the western equatorial Pacific and supply a part of these data to OceanSITES.

TRITON project: http://www.jamstec.go.jp/jamstec/TRITON/real_time/overview.php/po.php
 Data: http://www.jamstec.go.jp/OceanSITES/data_j.html

In addition, JAMSTEC time-series biogeochemical observation in the western North Pacific (BGC project) intends to participate the oceanSITES program. Based on time-series observation at sub-arctic and sub-tropical gyres by using research vessels, mooring systems and satellite, this project clarifies changes in ecosystem and biogeochemical material cycles by climate / oceanic change and its feedback.

BGC project: <http://www.jamstec.go.jp/rigc/ebcrp/mbcrt/research.html>

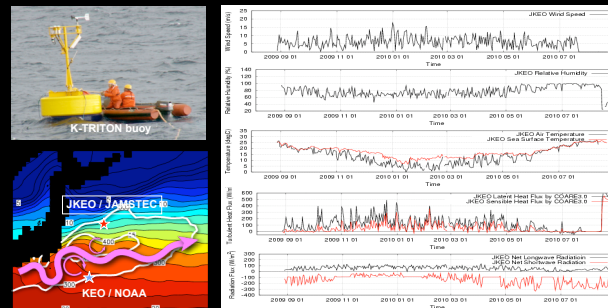


JAMSTEC OceanSITES-related time-series stations (circled on OceanSITES Google earth map)

JKEO

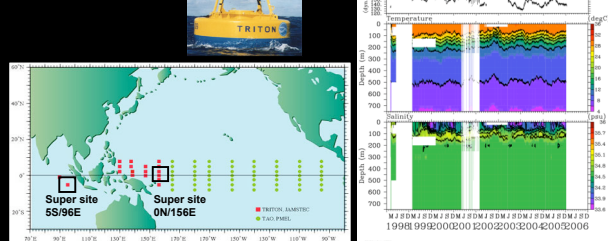
Kuroshio extension: meso and sub-meso scale phenomena

Air-sea interaction: heat flux



TRITON

ENSO events
 Dipole phenomena



BGC Change in material cycles and ecosystem by the climate change and its feedback

