



**JAMSTEC** 国立研究開発法人  
海洋研究開発機構  
JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

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# JAMSTEC Ocean Data Systems

Takashi Hosono<sup>1</sup>, Yasunori Hanafusa<sup>1,2</sup>, Kazuyo Fukuda<sup>1</sup>, Akira Sonoda<sup>1</sup>

<sup>1</sup>Data Management Office, (JAMSTEC)

<sup>2</sup>Innovation promotion, Cooperation and Partnerships Department, (JAMSTEC)

# History of ocean observations and data management in JAMSTEC

- **1981** JAMSTEC started ocean research with R/V NATSUSHIMA and Shinkai2000
- **1998** Systematic data management was started in 1998 (R/V Mirai)
- **2007** “Data Policy” was established



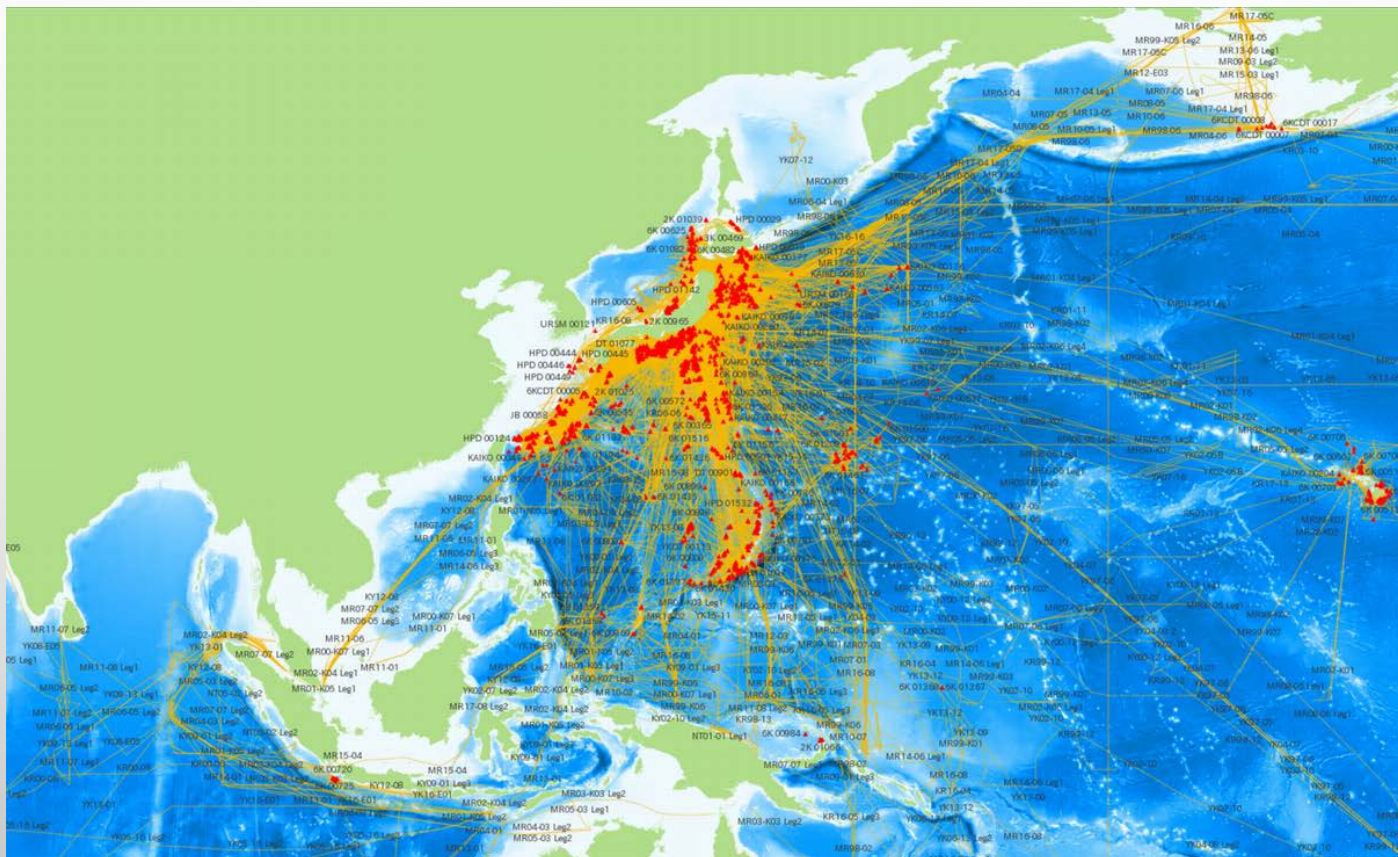
- JAMSTEC covers **very wide research areas**;  
Arctic – Antarctic, Pacific/Japan Sea – Indian Ocean – Atlantic, Above Ocean/Land – Sea Surface – Deep Sea – Under Sea Bottom, Physics/Chemistry – Biology – Solid Earth, etc.
- JAMSTEC has **various platforms**;  
RVs, Submersibles, Buoys, Floats, ROVs/AUVs, Land stations, Sea Bottom Stations, and High-Performance Computers



# Research cruises/dives of JAMSTEC

- JAMSTEC covers very wide Research Areas;  
Arctic – Antarctic, **Pacific/Japan Sea** – Indian Ocean – Atlantic

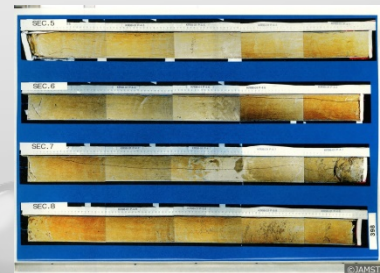
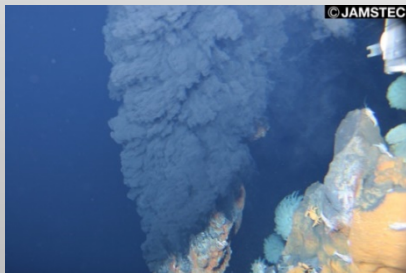
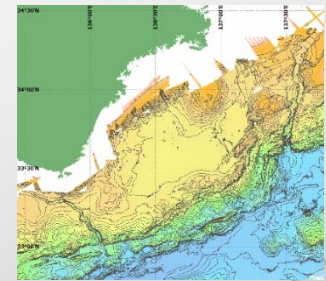
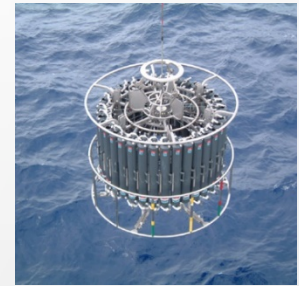
Data /samples from **1,821 cruises** and 5,298 dives are opened as of October 2018.





# Types of data/samples

- Physical, chemical, oceanographical data (ex. Temperature, Salinity, DO)
- Meteorological observation Data (ex. Temperature, Wind, Cloud )
- Geological survey Data (ex. Bathymetry, Gravity)
- Samples (ex. Rocks, Sediment Core, Organisms)
- Documents (ex. Cruise Reports)
- Photos and Videos



# Data policy of JAMSTEC

## Basic Policies on the Handling of Data and Samples by Japan Agency for Marine-Earth Science and Technology

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May 16, 2007

### 1. Purposes

This Basic Policies refers to the handling and scientific and educational use of the various kinds of Data and Samples obtained by the Japan Agency for Marine-Earth Science and Technology (hereinafter called "JAMSTEC") as the result of its scientific research and development.

JAMSTEC considers the Earth as a unique system that is largely influenced by the Ocean and is involved in a wide scope of fundamental research and development. Further, JAMSTEC aims to contribute to the sustainable advancement of the human community as well as the systematization and expansion of knowledge through public relations, the dissemination of research results and related education activities.

JAMSTEC possesses a large number of leading-edge facilities and equipment and has obtained Data and Samples of extremely high academic value. These Data and Samples are the common property of the human community, and it is important that they are made open for research and educational purposes and be available for use into the future on a global basis. JAMSTEC believes it is one of its most important missions to store these valuable Data and Samples for a long period of time and provide them in an easily accessible manner.

### 2. Definition of Data and Samples

The Data and Samples mentioned herein refer to those obtained through the use of JAMSTEC facilities and equipment or those derived from such operations.

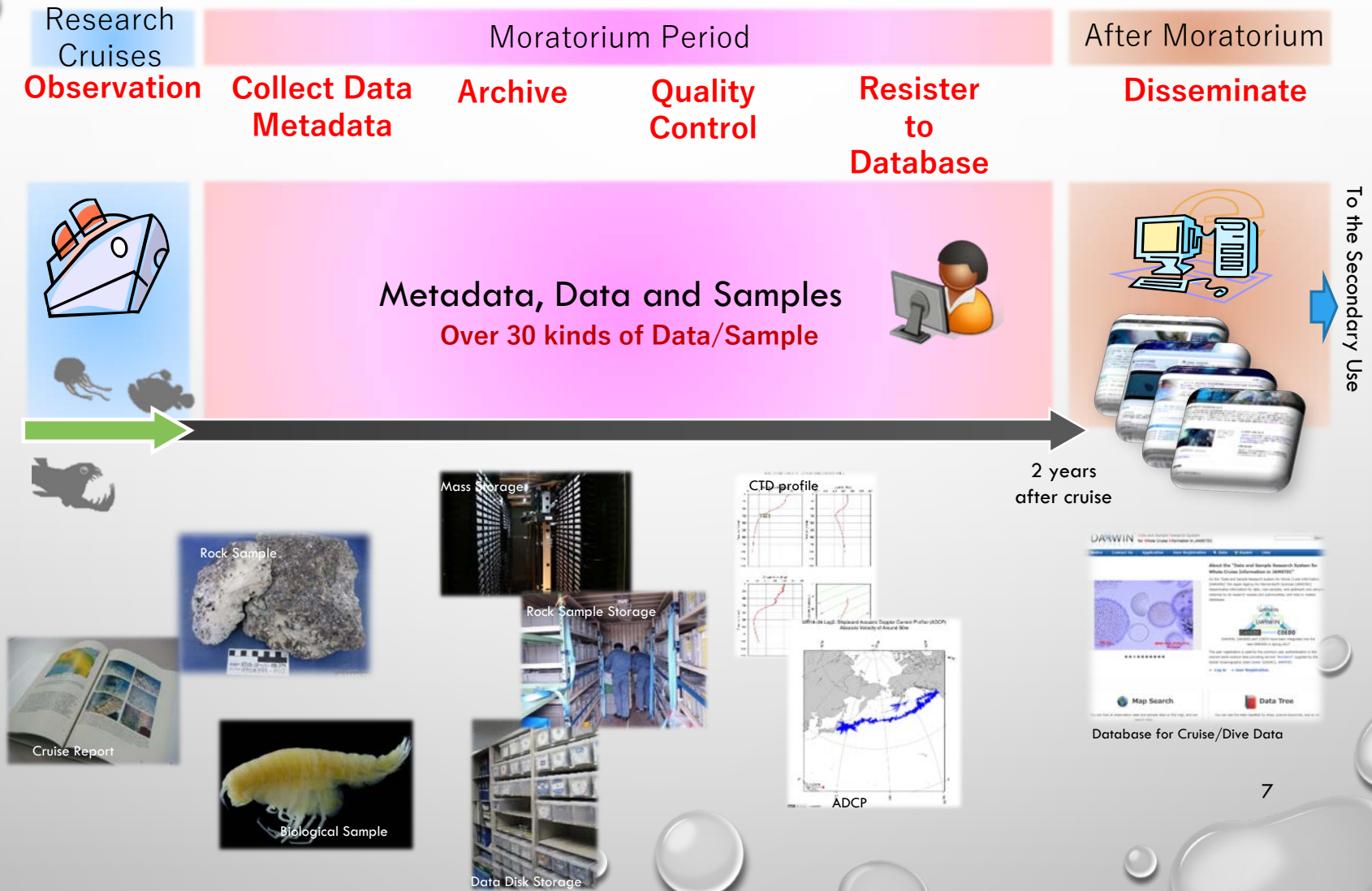
[http://www.jamstec.go.jp/e/database/data\\_policy.html](http://www.jamstec.go.jp/e/database/data_policy.html)

# Data policy of JAMSTEC

## Outlines of data policy:

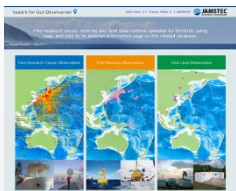
- Data/samples **belong to** JAMSTEC
- JAMSTEC **archives** data/samples
- JAMSTEC **opens** data/metadata/samples **after moratorium period** (basically 2 years)
- Data/sample are **free** for research and educational use

# Work flow from cruise to database



# Relationship between databases

Search for Our Observation



Search For Observation

Data Catalog



Search for Databases/Datasets

BISMaL



Database for Biodiversity

## Databases of JAMSTEC Cruise Data

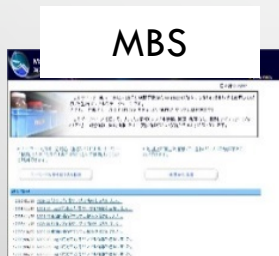


Database for Images



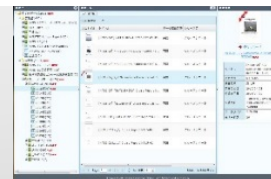
Database for whole Cruise

Cruise  
Dive  
Observation data  
Rock Sample  
Sediment Core Sample



Database for Marine Biological Sample

Document Catalog



Dissemination of Cruise Reports



Database for Cruise Information Management

<http://www.jamstec.go.jp/e/database>



# Databases

**DARWIN** Data and Sample Research System  
深海デブリデータベース  
Deep-sea Debris Database

Notice Contact Us

MIRAI MR10-02 Cruise

MR10-02  
Cruise Information  
Data List  
Related Cruises  
Related Publications  
Update History

Related Links  
Information of M  
Instruments  
Photo Gallery

Last Modified  
2016-04-07  
A cruise information registered.  
Updated data: Low Doppler Current Profiler (LADCP), Bathymetry, Bottle Sampling, Water Analysis, Cloud Ceilometer, Conductivity-Temperature Profiler (CTD), Gravimetry, Meteorology, Navigation, Pressure of CO2 (pCO2), Mie-scattering lidar, Maritime Aerosol optical properties, Radiosonde

**JAMSTEC**  
Data tree  
ALL Data  
Science  
TERRESTRIAL  
ATMOSPHERE  
BIOLOGICAL  
BIOSPHERE  
CRYOSPHERE  
LAND  
OCEAN  
SOLID EARTH  
PALEOCLIMATE  
SOLID EARTH  
Location  
CONTINENT  
GEOGRAPHIC REGION  
OCEAN

PHOTO ID:6K0020IN0017Hp01-17 1800x1200 (px)

**Marine Litter bin**

Dive Area: Nankai Trough  
Dive Date (LST): 1990/08/18  
Related Links

Magnifier Rotate Full screen

Download To download, you have to [login / user registration](#).  
\* Click [here](#) after login.

**Deep Sea Debris Database**  
JAMSTEC E-library of Deep-sea Images

\* The deep-sea videos and photos found in this website are released from "JAMSTEC E-library of Deep-Sea Images". Please see "Terms and Conditions" for use of videos and photos.  
\* [Adobe Flash Player](#) is required to view videos and photos.

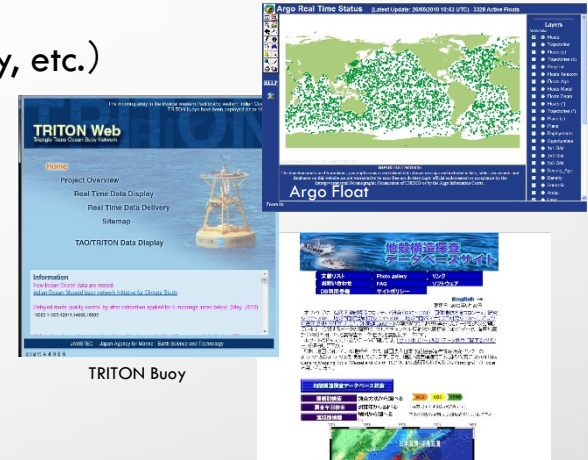
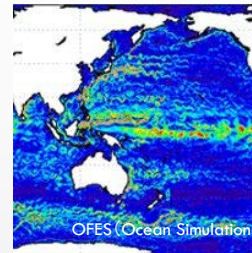
**View Currents**  
You can view the current maps of the past 48hrs.  
Advanced search  
Home Data List How to Use Japanese  
Image Movie  
<<Back Next>>  
Time Setting: 2017/04/18 13:00  
Latest Time of Observation: 2017/04/18 13:00  
Background  
Latitude/Longitude  
Depth Contour  
About this current map  
Current directions are shown by the direction of the arrows. The current rates are shown by the size and color of the arrows. Strong current is described by large and bright arrows.  
Please refer to the color bar below the map.

Estimated state of ocean for climate research (ESTOC)  
Our 4D-VAR data synthesis system is developed as a part of the Japan Agency for Marine-Earth Science and Technology (JAMSTEC)-Kyoto University collaborative program (known as "the K7 consortium"). T

Global Oceanographic DATA Center (GODAC)  
The Marine Biogeochemical Cycle Research Team has conducted research concerned with the interactions between climate variability and changes in marine ecosystem dynamics and biogeochemical cycles. T

# Handling of data by other platforms

- Kinds of research/observations
  - ✓ Ocean observations by other measures (TRITON Buoys, ARGO Floats, Sea Bottom Seismometers, etc.)
  - ✓ Terrestrial observations (Atmosphere, Ecosystem, Seismology, etc.)
  - ✓ Ocean floor drilling
  - ✓ Simulation data, assimilation data
- Methods of publication
  - ✓ By original databases
  - ✓ Open data files by Data Catalog
  - ✓ Off-line data provision on individual request

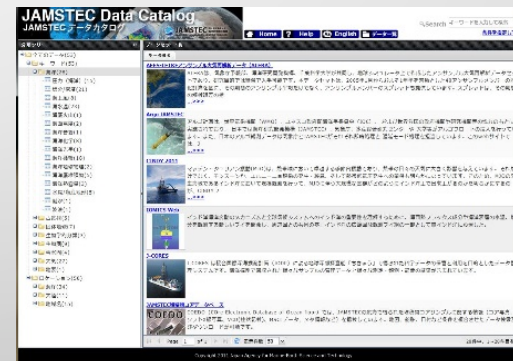


TRITON Web

Argo Real Time Status

Seismic Survey Database

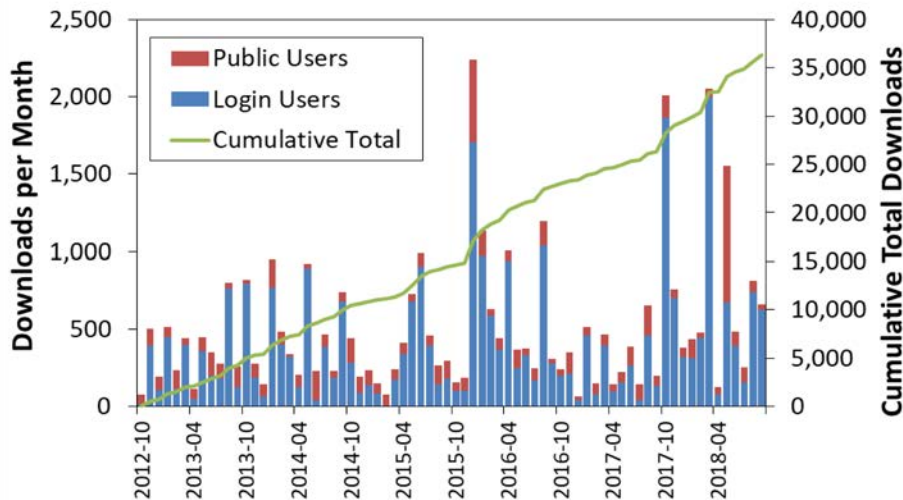
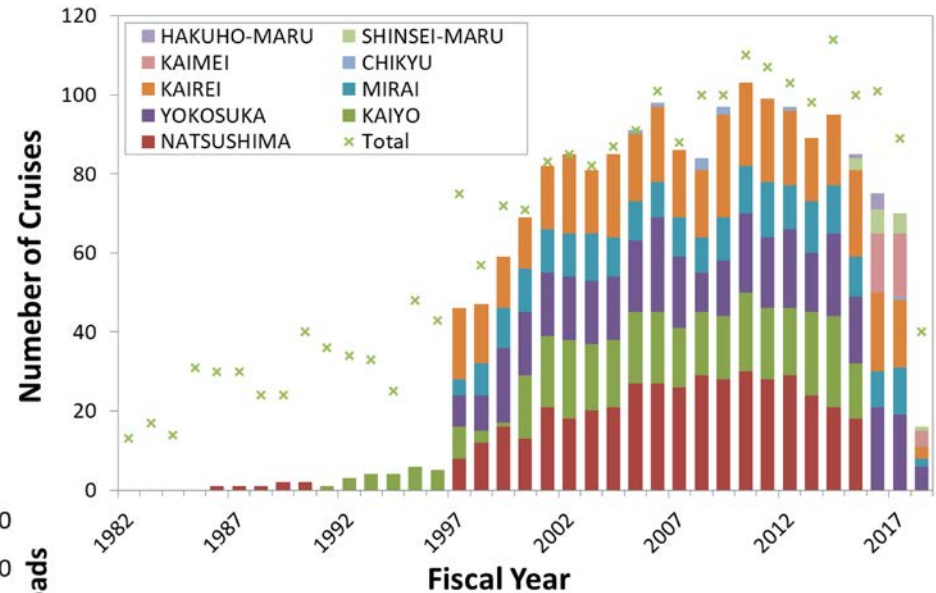
- **Data publication platform**  
**“Data Catalog” as a metadata repository in JAMSTEC**



JAMSTEC Data Catalog

# Status of data dissemination

- Number of data opened : 13,288
- Videos : 371,634 (scenes)  
Photos : 1,565,495 (photos)
- Rock Samples : 19,957  
Sediment core samples : 1,193  
Biological samples : 51,343



**Number of Cruises at least one data or one sample opened**

**Number of download from the cruise/dive database**

# Collaboration with other databases

JAMSTEC;

- Submits ocean observation data to IODE through JODC,
- Collects and provides biodiversity data around Japan to the Ocean Biogeographic Information System (OBIS, IODE), as an **Associate Data Unit** in Japan
- Provides metadata about rock samples to the **EarthChem** (International Portal Service of Geochemical Data)
- Provides metadata of JAMSTEC Data Catalog to the **Global Change Master Directory** (international portal of earth observation data)
- Became a data provider of the **GEOSS Portal** July 2017.





# Futures

The Data Management Office in JAMSTEC will go forward to become a “**Reliable Data Repository**” in the marine-earth science community by following ;

- **Standardization** in metadata, key words, protocols, formats, etc.  
ex. JAMSTEC use **DIF metadata schema** in some database
- **Collaboration** between international databases  
with automatic submit/harvest  
ex. JAMSTEC became a **data provider of GEOSS Portal** in 2017.
- Common IDs for datasets, researchers, institutions, funds, projects, etc.  
ex. Data Management Office will introduce **Data DOI** this year.



**Global Change Master Directory**  
**Directory Interchange Format (DIF)**  
<https://gcmd.gsfc.nasa.gov/add/difguide/index.html>



**GEOSS-AP Portal**  
<http://www.jamstec.go.jp/geossap/>



**Data Catalog**  
[http://www.godac.jamstec.go.jp/catalog/data\\_catalog/e/index.html](http://www.godac.jamstec.go.jp/catalog/data_catalog/e/index.html)

# Current actions for data DOI in JAMSTEC

- Minting data Digital Object Identifier (DOI) to JAMSTEC research data has been started **to improve its findability**.
- We minted DOIs to the following two datasets on a trial basis
- We are developing a data DOI management system and considering a sustainable workflow to mint and maintain DOI metadata.

**JAMSTEC Data Catalog**  
JAMSTEC データカタログ

Search Enter keywords

Home ? Help Japanese Data List Advanced search

Basic info. | [Detail info.](#)

**Global Nutrients Dataset 2013**

Title  
Global Nutrients Dataset 2013

Data Set Citation  
Dataset Creator **10.17596/0000001**

Dataset Title  
Global Nutrients Dataset 2013

Other Citation Details  
Data Citation: Michio Aoyama (2017) Global Nutrients Dataset 2013, JAMSTEC, doi: 10.17596/0000001.

Online Resource  
[http://www.godac.jamstec.go.jp/resource/data\\_catalog/GND13/GND13.zip](http://www.godac.jamstec.go.jp/resource/data_catalog/GND13/GND13.zip)

**JAMSTEC 文書カタログ**  
JAMSTEC Document Catalog

Search Enter keywords

Home Japanese Title List Advanced search

**WHP I10 REVISIT IN 2015 DATA BOOK**

Download (13.25 MB)

**10.17596/0000002**

File type	pdf
Language	English
File attribute	Downloadable



# Recent Issue : Data Burst

- The **Data amount** obtained by the RVs is **skyrocketing** (especially 2013 and 2014). This is due to the update of observation instruments (R/V MIRAI's doppler rader and R/V YOKOSUKA's MBES )
- Total data amount rose up to about **22 TB** (the amount of Image files : over **300TB**)

