

MIRAI MR10-06 Chlorophyll

Last Modified: 2013-03-27

[ReadMe](#) [Observation Data](#) [Data Format](#) [Quality Information](#)

Cruise ID: [MR10-06](#)

Chlorophyll: Processed (PI)

Data Policy: [JAMSTEC](#)

Observation Items: Chlorophyll quantity

Science Keywords:

OCEANS > OCEAN CHEMISTRY > CHLOROPHYLL
BIOSPHERE > AQUATIC ECOSYSTEMS > PLANKTON > PHYTOPLANKTON
BIOSPHERE > ECOLOGICAL DYNAMICS > ECOSYSTEM FUNCTIONS > PHOTOSYNTHESIS

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR10-06_all.pdf

For Using Data

Principal Investigator

Kazuhiko Matsumoto (JAMSTEC)

Use Constraints

See [Terms and Conditions](#) about constrain of use.

Data Citation

See [Terms and Conditions](#) about data citation.

Instrument

Instrument:

Fluorometer (TURNER DESIGNS)



Overview

Chlorophyll data during MR10-06 cruise were obtained by the following methods.

Water sampling, filtration, and devices and standard materials for analysis for this method are outlined below.

For further information, please see Cruise Report.

Outline of water sampling, filtration and analysis

- | | |
|---|--|
| 1) Vertical sampling : | Niskin |
| 2) Surface sampling : | Bucket |
| 3) Sampling layer : | 3-11 |
| 4) Size fractionated : | None(Total chl.) and 4
Whatman GF/F 25mm (for Total chl.), |
| 5) Filter and filtration : | nuclepore filter 47mm (pore size ; 10μm,3μm,1μm) and Whatman GF/F25mm (for Size fractionated) |
| 6) Extract reagent : | N,N-dimethylformamide |
| 7) Extract time : | 24 hours and more at -20degC |
| 8) Preservation period of frozen filter paper : | - |
| 9) Analysis place : | MIRAI |
| 10) Analysis device : | Fluorometer |
| 11) Analysis method : | Non-acidification method (Welschmeyer, 1994), Acidification method (Holm-Hansen <i>et al.</i> , 1965)(for Total chl.)
Non-acidification method (Welschmeyer, 1994)(for Size fractionated) |
| 12) Lamp : | Non-acidification method (Blue Mercury Vapor),Acidification method (Daylight White) |

About Fluorometer (TURNER DESIGNS)

Fluorometer (Turner Design fluorometer (10-AU-005)) measures fluorescence of chlorophyll in a sample material extracted in organic solvent from phytoplankton, which consists of lamp, filter, fluorescence detector and keypad. Since each fluorescent material emits the specific wavelength of fluorescent activated by absorbing intrinsic wavelength of light, fluorescence of the sample material can be gained if only the spectrum of the fluorescent intensity are measured by using optical filter. Intensity of emission light is almost in proportion to density of chlorophyll when intensity of excitation light is constant. However, since absolute value of chlorophyll density cannot be read from fluorescence value, it is necessary to calibrate it by using reference material.

Specifications of Fluorometer (TURNER DESIGNS)

Manufacturer : Turner Designs, Inc.
Instruments type : 10-AU-005
Sensitivity : >0.03μL
Sample Range : 0.03 to 700μg/L
Optical system : dual beam

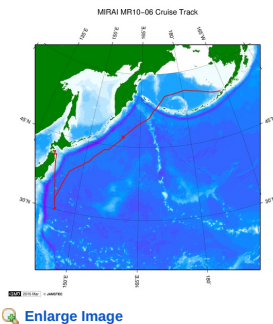
Data processing

Fully compatible with Windows 95.

Reference material

Chlorophyll a : Sigma chemical Co.

Related Information



MR10-06

Ship Name: MIRAI

Period: 2010-10-18 - 2010-11-16

Chief Scientist: Makio Honda (JAMSTEC)

Project Name: [Station K2, Station S1, Station KEO, Station KNOT]

Proposal ▶ Change in material cycles and ecosystem by the climate change and its feedback
Title:

Update History

Date	Description
2013-03-27	An observation data was registerd.

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Site Policy

Privacy Policy

Application for Data and Samples

Data Policy

What's New

Update History

Feeds

Lists

Publication List

Amount of Public Info.

Data

Map Search

Data Tree

Detailed Search

Information of the Ships

NATSUSHIMA

KAIYO

YOKOSUKA

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SHINSEI MARU

HAKUHO MARU

Information of the Submersibles

KAIKO

SHINKAI 2000

SHINKAI 6500

DEEP TOW

HYPER-DOLPHIN

URASHIMA

YOKOSUKA DEEP TOW

6K Camera DEEP TOW

6K Sonar DEEP TOW

KM-ROV

POWER GRAB SAMPLER

(SHELL)

POWER GRAB SAMPLER

(CLOW)

BMS

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Cruise ID:

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[ReadMe](#) [Observation Data](#) [Data Format](#) [Quality Information](#)

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Chlorophyll Data Sheet Format

Format information describes column no., column heading mnemonic and comments of chlorophyll data sheet in MR10-06.

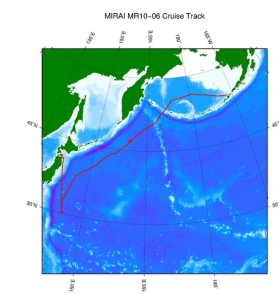
Missing value is presented by -9.

Column No.	Column Heading Mnemonic	Comments
1	CruiseID	CruiseID
2	STNNBR	Station number
3	CASTNO	Cast number
4	UTC Date	CTD start UTC date
5	UTC Time	CTD start UTC time
6	Latitude	CTD start position Latitude north degree
7	Longitude	CTD start position Longitude east degree
8	BTLNBR	Bottle identification number
9	BTLNBR_FLAG_W	Bottle quality flag (for explanation see CTD Quality flags)
10	CTD Depth	CTD Depth (m)
11	CTD PRS	CTD Pressure (dbar)
12	CTDPRS_FLAG_W	CTD Pressure flag (for explanation see CTD Quality flags)
13	CHLWEL	Total Chlorophylla quantity (Non-acidification method) (mg/m ³)
14	CHLWEL_FLAG_W	Total Chlorophylla quantity (Non-acidification method) flag (for explanation see Quality flags)
15	1CHLWEL	Total Chlorophylla quantity (Non-acidification method) (mg/m ³)
16	1CHLWEL_FLAG_W	Total Chlorophylla quantity (Non-acidification method) flag (for explanation see Quality flags)
17	CHLHOL	Total Chlorophylla quantity (Acidification method) (mg/m ³)
18	CHLHOL_FLAG_W	Total Chlorophylla quantity (Acidification method) flag (for explanation see Quality flags)
19	1CHLHOL	Total Chlorophylla quantity (Acidification method) (mg/m ³)
20	1CHLHOL_FLAG_W	Total Chlorophylla quantity (Acidification method) flag (for explanation see Quality flags)
21	SIZECHL	10μm< Chlorophylla quantity (mg/m ³)
22	SIZECHL_FLAG_W	10μm< Chlorophylla quantity flag (for explanation see Quality flags)
23	1SIZECHL	3 to 10μm Chlorophylla quantity (mg/m ³)
24	1SIZECHL_FLAG_W	3 to 10μm Chlorophylla quantity flag (for explanation see Quality flags)
25	2SIZECHL	1 to 3μm Chlorophylla quantity (mg/m ³)
26	2SIZECHL_FLAG_W	1 to 3μm Chlorophylla quantity flag (for explanation see Quality flags)
27	3SIZECHL	0.7 to 1μm Chlorophylla quantity (mg/m ³)
28	3SIZECHL_FLAG_W	0.7 to 1μm Chlorophylla quantity flag (for explanation see Quality flags)

about 21 to 28)

Size-fractionated samples were applied only Non-acidification method.

Related Information



[Enlarge Image](#)

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Site Policy
Privacy Policy
Application for Data and Samples
Data Policy

What's New
Update History
Feeds

Lists
Publication List
Amount of Public Info.

Data
Map Search
Data Tree
Detailed Search

Information of the Ships
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Cruise ID:

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Dive ID:

HAKUHO MARU

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6K Sonar DEEP TOW
KM-ROV
POWER GRAB SAMPLER
(SHELL)
POWER GRAB SAMPLER
(CLOW)
BMS

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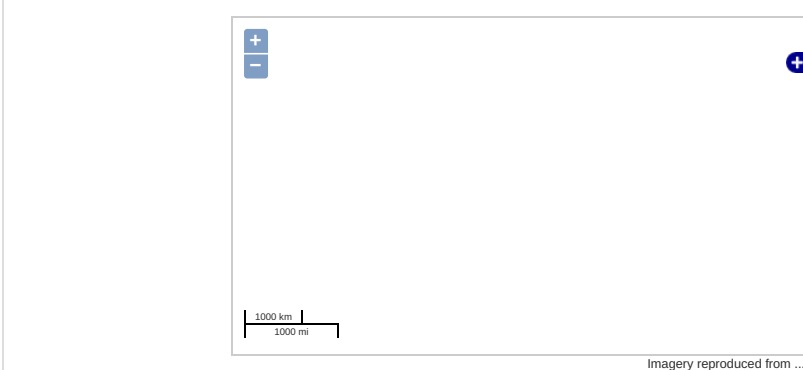
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Observation Map

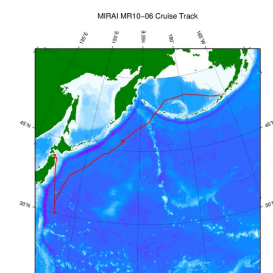


Data List

File names

☐ MR10-06_Ch1.csv

Related Information



[Enlarge Image](#)

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[Privacy Policy](#)
[Application for Data and Samples](#)
[Data Policy](#)
[What's New](#)
[Update History](#)
[Feeds](#)

Lists

[Publication List](#)
[Amount of Public Info.](#)
[Data](#)
[Map Search](#)
[Data Tree](#)
[Detailed Search](#)

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[NATSUSHIMA](#)
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[KAIKO](#)
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