

MIRAI MR10-05 Leg2 Chlorophyll

Last Modified: 2013-08-29

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

Cruise ID: [MR10-05 Leg2](#)

Chlorophyll: Processed (PI)

Data Policy: [JAMSTEC](#)

Observation Items: Size fractionated chlorophyll concentration

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/MR10-05_leg1-2_all.pdf

For Using Data

Principal Investigator

Shigeto Nishino (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 MR10-05 Leg2 cruise were obtained by the following methods.

Water sampling, filtration, devices and standard materials for analysis 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 : | 7-11 |
| 4) Size fractionated : | None(Total chl.) and 4 |
| 5) Filter and filtration : | Whatman GF/F 25mm (for Total chl.),
nuclepore filter 47mm (pore size;10.0μm,5.0μm,2.0μm)
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 : a few days | |
| 9) Analysis place : | MIRAI |
| 10) Analysis device : | Fluorometer |
| 11) Analysis method : | Non-acidification method (Welschmeyer, 1994) |
| 12) Lamp : | Blue F4T5, B2/BP |

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

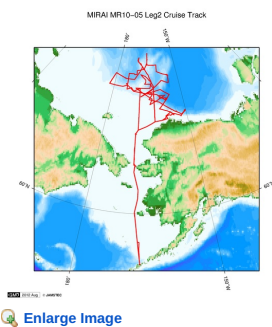
Data processing

Fully compatible with Windows 95.

Reference material

Chlorophyll a : Sigma chemical Co.

Related Information



MR10-05 Leg2

Ship Name: MIRAI
Period: 2010-09-02 - 2010-10-16
Chief Scientist: Motoyo Ito (JAMSTEC)
Project Name: [Arctic Ocean Climate System Reaserch]
Proposal ▶ Arctic Climate Oceanography
Title:

Update History

2013-08-29	An observation data was registerd.
2013-03-22	An observation data was registerd.

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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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YOKOSUKA
MIRAI
KAIREI
CHIKYU
KAIMEI
SHINSEI MARU
HAKUHO MARU

Information of the Submersibles

KAIKO
SHINKAI 2000
SHINKAI 6500
DEEP TOW
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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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JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

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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 MR10-05 Leg2.

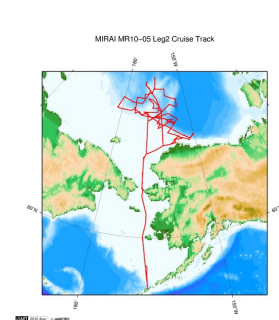
Missing value is presented by -9.

Column No.	Column Heading Mnemonic	Comments
1	CruiseID	CruiseID
2	STNNBR	Station number (refer to CTD cast table of cruise report)
3	CASTNO	Cast number (refer to CTD cast table of cruise report)
4	UTC Date	CTD start UTC date (refer to CTD cast table of cruise report)
5	UTC Time	CTD start UTC time (refer to CTD cast table of cruise report)
6	Latitude	CTD start position Latitude north degree (refer to CTD cast table of cruise re
7	Longitude	CTD start position Longitude east degree (refer to CTD cast table of cruise re
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 Chlorophyll quantity (Non-acidification method) (mg/m3)
14	CHLWEL_FLAG_W	Total Chlorophyll quantity (Non-acidification method)flag (for explanation see
15	1CHLWEL	Total Chlorophyll quantity (Non-acidification method) (mg/m3)
16	1CHLWEL_FLAG_W	Total Chlorophyll quantity (Non-acidification method)flag (for explanation see Qua
17	SIZECHL	10µm< Chlorophyllquantity (mg/m3)
18	SIZECHL_FLAG_W	10µm< Chlorophyllquantity flag (for explanation see Quality flags)
19	1SIZECHL	5 to 10µm Chlorophyllquantity (mg/m3)
20	1SIZECHL_FLAG_W	5 to 10µm Chlorophyllquantity flag (for explanation see Quality flags)
21	2SIZECHL	2 to 5µm Chlorophyllquantity (mg/m3)
22	2SIZECHL_FLAG_W	2 to 5µm Chlorophyllquantity flag (for explanation see Quality flags)
23	3SIZECHL	0.7 to 2µm Chlorophyllquantity (mg/m3)
24	3SIZECHL_FLAG_W	0.7 to 2µm Chlorophyllquantity flag (for explanation see Quality flags)

about 17 to 24)

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

Related Information



[Enlarge Image](#)

MR10-05 Leg2

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Period: 2010-09-02 - 2010-10-16

Chief Scientist: Motoyo Ito (JAMSTEC)

Project Name: [Arctic Ocean Climate System Reaserch]

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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

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6K Sonar DEEP TOW
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POWER GRAB SAMPLER (SHELL)
POWER GRAB SAMPLER

Go to a Cruise Information

Cruise ID:

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Dive ID:



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

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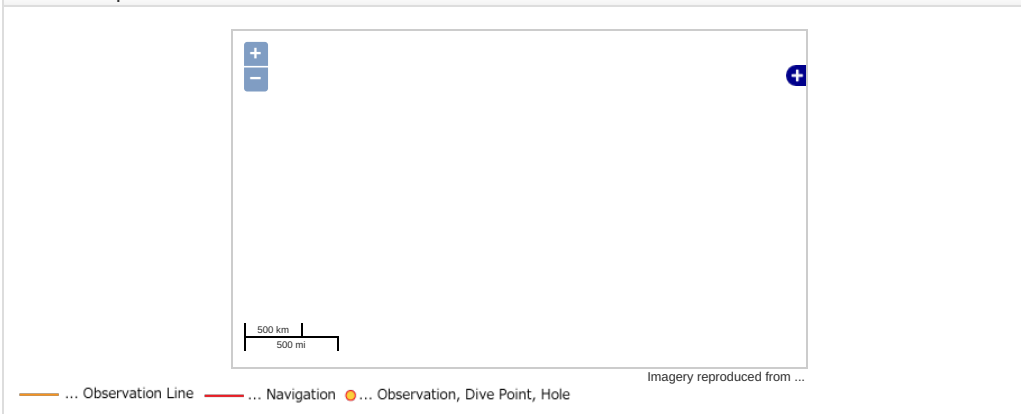
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Observation Map

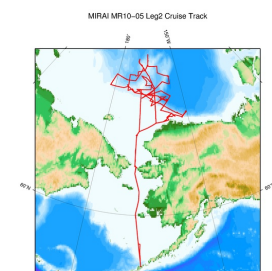


Data List

File names

☐ MR10-05_leg2_Ch1.csv

Related Information



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Ship Name: MIRAI
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[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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