

MIRAI MR11-02 Chlorophyll

Last Modified: 2013-08-29

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

Cruise ID: [MR11-02](#)

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/MR11-02_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 MR11-02 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 : 1-11
- 4) Size fractionated : None(Total chl.) and 4
- 5) Filter and filtration : Whatman GF/F 25mm (for Total chl.), polycarbonate filter 47mm (pore size ; 10.0μm,3μm,1μm) and Whatman GF/F25mm (for Size fractionated)
- 6) Extract reagent : N,N-dimethylformamide
- 7) Extract time : 24 hours or 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 et al., 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

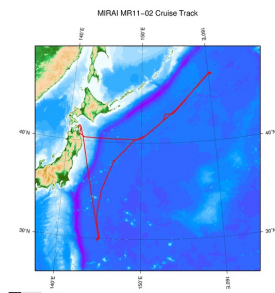
Data processing

Fully compatible with Windows.

Reference material

Chlorophyll a : Sigma-Aldrich Co.

Related Information



[Enlarge Image](#)

MR11-02

Ship Name: MIRAI

Period: 2011-02-11 - 2011-03-09

Chief Scientist: Makio Honda (JAMSTEC)

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

Proposal ▶ Studies on the microbial-geochemical processes that regulate the operation of the biological pump in the subarctic and subtropical regions of the western North Pacific

Update History

2013-08-29	An observation data was registered.
2013-05-11	An observation data was registered.

JAMSTEC

[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](#)

[MIRAI](#)

[KAIREI](#)

[CHIKYU](#)

[KAIMEI](#)

[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](#)

Go to a Cruise Information

Cruise ID:

Go to a Dive Information

Dive ID:

Copyright 2011 Japan Agency for Marine-Earth Science and Technology



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

MIRAI MR11-02 Chlorophyll

Last Modified: 2013-08-29

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

Cruise ID: [MR11-02](#)

Chlorophyll: Processed (PI)

Data Policy: [JAMSTEC](#)

Chlorophyll Data Sheet Format

Format information describes column no., column heading mnemonic and comments of chlorophyll data sheet in MR11-02.

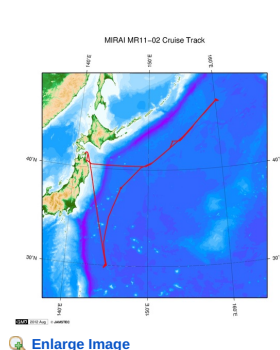
Missing value is presented by -9.

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



MR11-02

Ship Name: MIRAI

Period: 2011-02-11 - 2011-03-09

Chief Scientist: Makio Honda (JAMSTEC)

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

Proposal Title: Studies on the microbial-geochemical processes that regulate the operation of the biological pump in the subarctic and subtropical regions of the western North Pacific

Update History

2013-08-29	An observation data was registered.
2013-05-11	An observation data was registered.

JAMSTEC

[Site Policy](#)
[Privacy Policy](#)
[Application for Data and Samples](#)
[Data Policy](#)

[What's New](#)
[Update History](#)

Lists

[Publication List](#)
[Amount of Public Info.](#)

[Data](#)
[Map Search](#)
[Data Tree](#)
[Detailed Search](#)

Information of the Ships

[NATSUSHIMA](#)
[KAIYO](#)
[YOKOSUKA](#)
[MIRAI](#)
[KAIREI](#)
[CHIKYU](#)
[KAIMEI](#)

Information of the Submersibles

[KAIKO](#)
[SHINKAI 2000](#)
[SHINKAI 6500](#)
[DEEP TOW](#)
[HYPER-DOLPHIN](#)
[URASHIMA](#)

Go to a Cruise Information

Cruise ID:

Go to a Dive Information

Dive ID:

Feeds

SHINSEI MARU
HAKUHO MARU

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

Copyright 2011 Japan Agency for Marine-Earth Science and
Technology



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

MIRAI MR11-02 Chlorophyll

Last Modified: 2013-08-29

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

Cruise ID: [MR11-02](#)

Chlorophyll: Processed (PI)

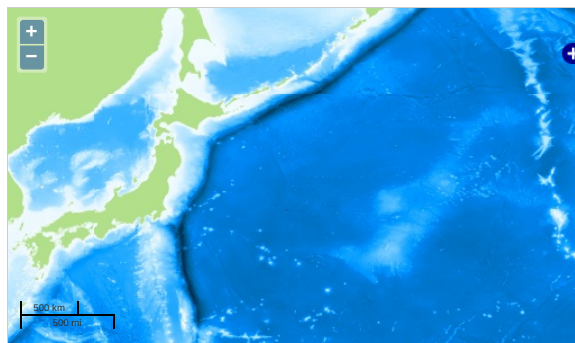
Data Policy: [JAMSTEC](#)

Observation Items: Size fractionated chlorophyll concentration

Science Keywords:

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

Observation Map



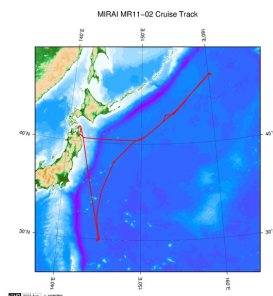
... Observation Line ... Navigation ... Observation, Dive Point, Hole

Data List

File names

☐ MR11-02_Ch1.csv

Related Information



[Enlarge Image](#)

MR11-02

Ship Name: MIRAI

Period: 2011-02-11 - 2011-03-09

Chief Scientist: Makio Honda (JAMSTEC)

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

Proposal ▶ Studies on the microbial-geochemical processes that regulate the operation of the biological pump in the subarctic and subtropical regions of the western North Pacific

Update History

2013-08-29	An observation data was registered.
2013-05-11	An observation data was registered.

JAMSTEC
[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](#)
[MIRAI](#)
[KAIREI](#)
[CHIKYU](#)
[KAIMEI](#)
[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](#)

Go to a Cruise Information

Cruise ID:

Go to a Dive Information

Dive ID: