

MIRAI MR10-01 Leg1 Chlorophyll

Last Modified: 2013-08-29

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

Cruise ID: [MR10-01 Leg1](#)

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/MR10-01_leg1-2_all.pdf

For Using Data

Principal Investigator

PI (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 MR10-01Leg1cruise were obtained by the following methods. See Data List for available data at each station. 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 : 16
- 4) Size fractionated : None(Total chl.) and 3
- 5) Filter and filtration : Whatman GF/F 25mm (for Total chl.)
nuclepore filter 47mm (pore size;10.0μm,3.0μm,1.0μm)
and Whatman GF/F25mm (for Size fractionated)
- 6) Extract reagent : N,N-dimethylformamide (HPLC-grade)
- 7) Extract time : more than 24 hours 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) and Acidification method (Holm-Hansen et al., 1965)
- 12) Lamp : Non-acidification method (Blue Mercury Vapor) and 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

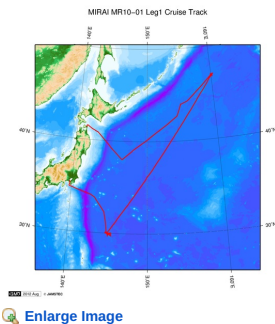
Data processing

Fully compatible with Windows 95.

Reference material

Pure chlorophyll a : Sigma chemical Co.

Related Information



MR10-01 Leg1

Ship Name: MIRAI

Period: 2010-01-19 - 2010-02-06

Chief Scientist: Kazuhiko Matsumoto (JAMSTEC)

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

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

Update History

2013-08-29	An observation data was registerd.
2012-09-28	An observation data was registerd.

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Chlorophyll Data Sheet Format

Format information describes column no., column heading mnemonic and comments of chlorophyll data sheet in MR10-01 Leg1.

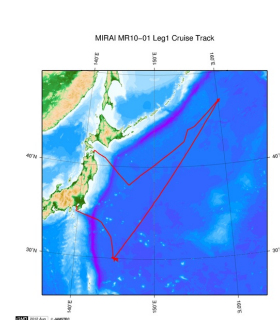
Missing value is presented by -9.

Column No.	Column Heading Mnemonic	Comments
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 report)
7	Longitude	CTD start position Longitude east degree (refer to CTD cast table of cruise report)
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/m ³)
14	CHLWEL_FLAG_W	Total Chlorophyll quantity (Non-acidification method)flag (for explanation see Quality flags)
15	1CHLWEL	Total Chlorophyll quantity (Non-acidification method) (mg/m ³)
16	1CHLWEL_FLAG_W	Total Chlorophyll quantity (Non-acidification method)flag (for explanation see Quality flags)
17	CHLHOL	Total Chlorophyll quantity (acidification method) (mg/m ³)
18	CHLHOL_FLAG_W	Total Chlorophyll quantity (acidification method)flag (for explanation see Quality flags)
19	1CHLHOL	Total Chlorophyll quantity (acidification method) (mg/m ³)
20	1CHLHOL_FLAG_W	Total Chlorophyll quantity (acidification method)flag (for explanation see Quality flags)
21	SIZECHL	10μm< Chlorophyllquantity (mg/m ³)
22	SIZECHL_FLAG_W	10μm< Chlorophyllquantity flag (for explanation see Quality flags)
23	1SIZECHL	3 to 10μm Chlorophyllquantity (mg/m ³)
24	1SIZECHL_FLAG_W	3 to 10μm Chlorophyllquantity flag (for explanation see Quality flags)
25	2SIZECHL	1 to 3μm Chlorophyllquantity (mg/m ³)
26	2SIZECHL_FLAG_W	1 to 3μm Chlorophyllquantity flag (for explanation see Quality flags)
27	3SIZECHL	1μm> Chlorophyllquantity (mg/m ³)
28	3SIZECHL_FLAG_W	1μm> Chlorophyllquantity flag (for explanation see Quality flags)

about 21 to 28)

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

Related Information



[Enlarge Image](#)

MR10-01 Leg1

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Period: 2010-01-19 - 2010-02-06

Chief Scientist: Kazuhiko Matsumoto (JAMSTEC)

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

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

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(SHELL)
POWER GRAB SAMPLER
(CLOW)
BMS

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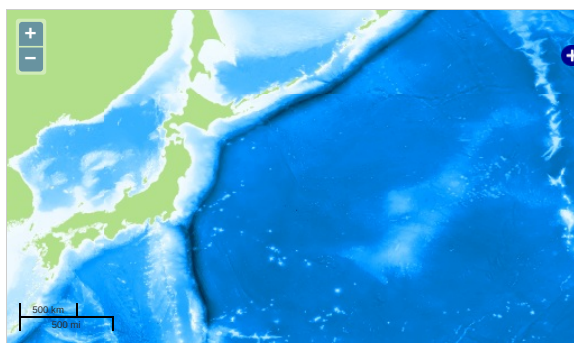
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Observation Map



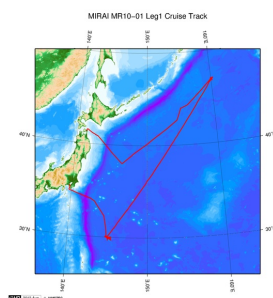
... Observation Line ... Navigation ... Observation, Dive Point, Hole

Data List

File names

☐ MR10_01_leg1_Ch1.csv

Related Information



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