

MIRAI MR11-05 Leg1 Chlorophyll

Last Modified: 2013-08-20

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

Cruise ID: [MR11-05 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/MR11-05_leg1-2_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 MR11-05 Leg1 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 : 16
- 4) Size fractionated : None(Total chl.) and 4
Whatman GF/F 25mm (for Total chl.)
- 5) Filter and filtration : polycarbonate filter 47mm (pore size;10.0μm,3.0μm,1.0μm)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)
Non-acidification method (Blue Mercury Vapor)
- 12) Lamp : 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.

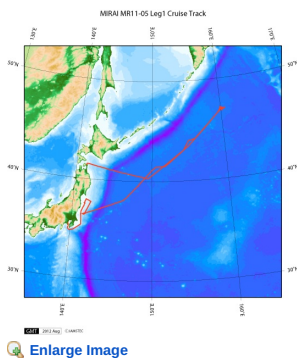
Specifications of Fluorometer (TURNER DESIGNS)

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

Reference material

Pure chlorophyll a : Sigma-Aldrich Co.

Related Information



MR11-05 Leg1

Ship Name: MIRAI
Period: 2011-06-26 - 2011-07-16
Chief Scientist: Makio Honda (JAMSTEC)
Project Name: [Station K2, Station KNOT]
Proposal ▶ Effects of meso-zooplankton on food web and vertical flux
Title:

Update History

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| 2013-08-20 | An observation data was registerd. |
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KAIREI
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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

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Chlorophyll Data Sheet Format

Format information describes column no., column heading mnemonic and comments of chlorophyll data sheet in MR11-05 Leg1.

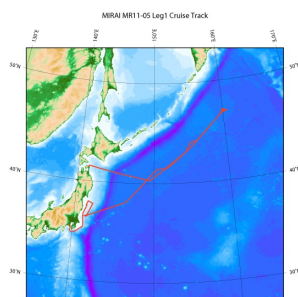
Missing value is presented by -9.

| 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



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MR11-05 Leg1

Ship Name: MIRAI

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Chief Scientist: Makio Honda (JAMSTEC)

Project Name: [Station K2, Station KNOT]

Proposal ▶ Effects of meso-zooplankton on food web and vertical flux

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BMS

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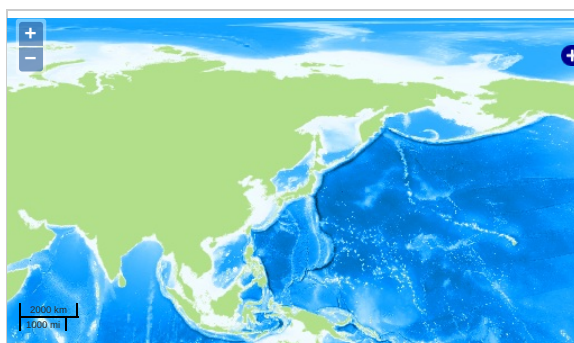
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Observation Map



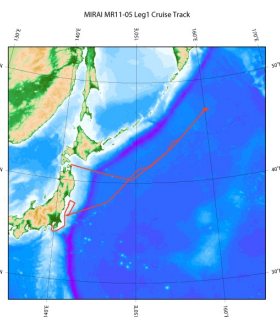
... Observation Line ... Navigation ... Observation, Dive Point, Hole

Data List

File names

☐ MR11-05_leg1_Ch1.csv

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