

MIRAI MR08-05 Chlorophyll

Last Modified: 2013-08-29

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Cruise ID: [MR08-05](#)

Chlorophyll: Processed (DMO)-QCed

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/MR08-05_all.pdf

i 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 MR08-05 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 : 8-9
- 4) Size fractionated : None(Total chl.) or 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

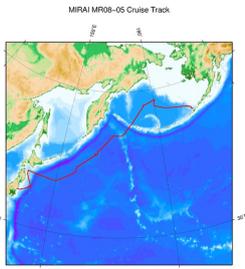
Data processing

Fully compatible with Windows 95.

Reference material

Chlorophyll a : Sigma chemical Co.

Related Information



[Enlarge Image](#)

MR08-05

Ship Name: MIRAI
 Period: 2008-10-11 - 2008-11-07
 Chief Scientist: Makio Honda (JAMSTEC)
 Project Name: [Station K2, Station KNOT]
 Proposal ▶ The study of ecosystem and materials' cycle in the North Pacific
 Title:

Update History

| | |
|------------|-------------------------------------|
| 2013-08-29 | An observation data was registered. |
| 2012-10-26 | An observation data was registered. |

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Chlorophyll Data Sheet Format

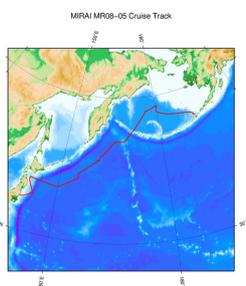
Format information describes column no., column heading mnemonic and comments of chlorophyll data sheet in MR08-05.
Missing value is presented by -9.

| 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 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 Quality flags) |
| 10 | CTD Depth | CTD Depth (m) |
| 11 | CTD PRS | CTD Pressure (dbar) |
| 12 | CTDPRS_FLAG_W | CTD Pressure flag (for explanation see 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) |
| 29 | Remarks | Station name |

about 21 to 28)

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

Related Information



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Chief Scientist: Makio Honda (JAMSTEC)

Project Name: [Station K2, Station KNOT]

Proposal ▶ The study of ecosystem and materials' cycle in the North Pacific

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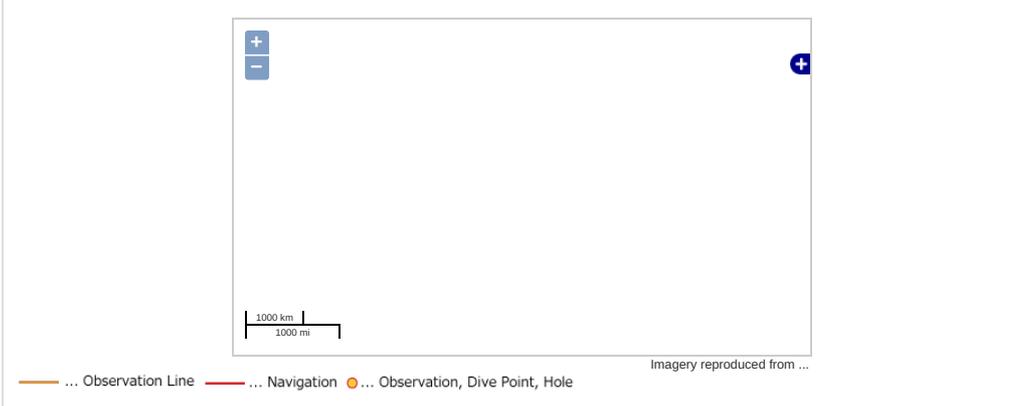
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Observation Map

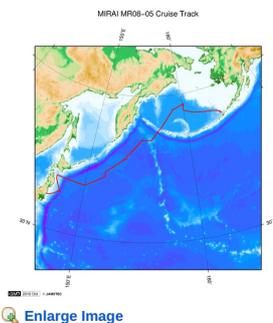


Data List

File names

MR08-05_Ch1.csv

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