

MIRAI MR15-03 Leg1 Chlorophyll

Last Modified: 2017-12-31

ReadMe Observation Data Data Format Quality Information

Cruise ID: [MR15-03 Leg1](#)

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/MR15-03_leg1_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)



Outline of water sampling, filtration and analysis

- 1) Vertical sampling : Niskin
- 2) Surface sampling : Bucket
- 3) Sampling layer : 4-7 (for Total chl.) and 5-12 (for Size fractionated)
- 4) Size fractionated : None(for Total chl.) and 4, but 3 for Stn.063 cast001 - Stn.066 cast001
- 5) Filter and filtration : (for Total chl.) 0.7µm Whatman GF/F 25mm
(for Size fractionated) 20µm Nylon Net Filter(Merck Millipore Ltd.) 47mm, 10.0µm/2.0µm nuclepore filter 47mm, and 0.7µm Whatman GF/F25mm
- 6) Extract reagent : N,N-dimethylformamide
- 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)
- 12) Lamp : Non-acidification method (Blue Mercury Vapor)

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.

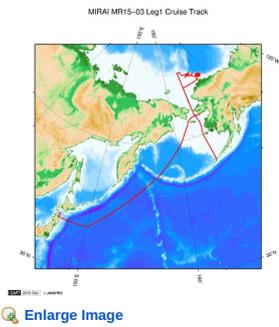
Specifications of Fluorometer (TURNER DESIGNS)

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

Chlorophyll a : Sigma chemical Co.

Related Information



MR15-03 Leg1

Ship Name: MIRAI
 Period: 2015-08-23 - 2015-10-06
 Chief Scientist: Shigeto Nishino (JAMSTEC)
 Project Name: [Arctic Ocean Climate System Research]
 Proposal ▶ Observational studies on the Arctic Ocean climate and ecosystem variability
 Title:

Update History

2017-12-31	An observation data was registered.
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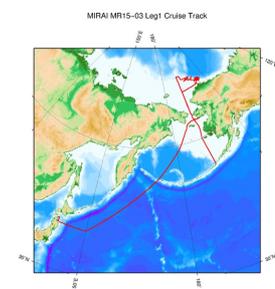
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Format information describes column no., column heading mnemonic and comments of chlorophyll data sheet obtained in MR15-03_leg1
Missing value is presented by -999.

Column No.	Column Heading Mnemonic	Units Mnemonic	Comments
1	EXPOCODE	-	Exploration code
2	STNNBR	-	Station number
3	CASTNO	-	Cast number
4	SAMPNO	-	Sample number
5	BTLNBR	-	Bottle number
6	BTLNBR_FLAG_W	-	Bottle quality flags *1
7	DATE	UTC	Date [MM/DD/YYYY]
8	TIME	UTC	Time [HH:MM]
9	LATITUDE	DEG	Latitude [N]
10	LONGITUDE	DEG	Longitude [E]
11	DEPTH	M	Bottom depth
12	CTDPRS	DBAR	CTD-pressure
13	CTDPRS_FLAG_W	-	Quality flags for CTD data *3
14	CTDDPT	M	CTD-depth
15	CTDDPT_FLAG_W	-	Quality flags for CTD data *3
16	CTDTMP	ITS-90	CTD-temperature (primary sensor)
17	CTDTMP_FLAG_W	-	Quality flags for CTD data *3
18	CTDTMP_1	ITS-90	CTD-temperature (secondary sensor)
19	CTDTMP_1_FLAG_W	-	Quality flags for CTD data *3
20	CHLWEL	UG/L	Chlorophyll a
21	CHLWEL_FLAG_W	-	Quality flags for water samples *2
22	CHLWEL_1	UG/L	Chlorophyll a (duplicate)
23	CHLWEL_1_FLAG_W	-	Quality flags for water samples *2
24	SIZECHL>20um	UG/L	Chlorophyll a > 20um
25	SIZECHL>20um_FLAG_W	-	Quality flags for water samples *2
26	SIZECHL10-20um	UG/L	Chlorophyll a 10-20um
27	SIZECHL10-20um_FLAG_W	-	Quality flags for water samples *2
28	SIZECHL2-10um	UG/L	Chlorophyll a 2-10um
29	SIZECHL2-10um_FLAG_W	-	Quality flags for water samples *2
30	SIZECHL<2um	UG/L	Chlorophyll a < 2um
31	SIZECHL<2um_FLAG_W	-	Quality flags for water samples *2
32	SIZECHL2-20um	UG/L	PI original value
33	SIZECHL2-20um_FLAG_W	-	PI original value

*1 refer to quality flags of Bottle.
*2 refer to quality information of samples.
*3 refer to quality flags of CTD data.

Related Information



MR15-03 Leg1

Ship Name: MIRAI
Period: 2015-08-23 - 2015-10-06
Chief Scientist: Shigeto Nishino (JAMSTEC)
Project Name: [Arctic Ocean Climate System Research]
Proposal ▶ Observational studies on the Arctic Ocean climate and ecosystem variability
Title:

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2017-12-31 An observation data was registered.

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[HYPER-DOLPHIN](#)
[URASHIMA](#)
[YOKOSUKA DEEP TOW](#)
[6K Camera DEEP TOW](#)
[6K Sonar DEEP TOW](#)
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[POWER GRAB SAMPLER \(SHELL\)](#)
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Dive ID:

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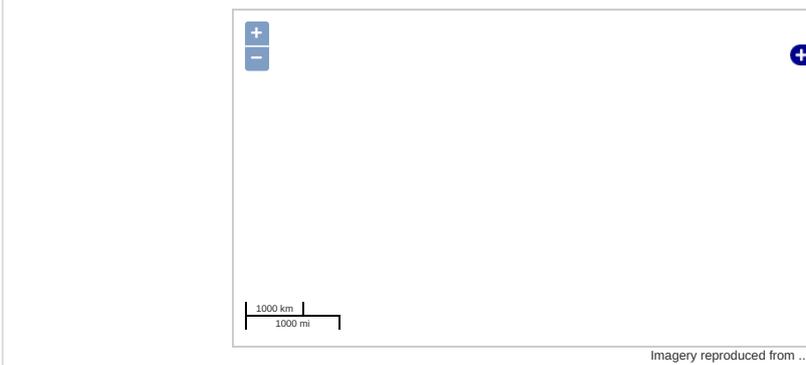
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Observation Map

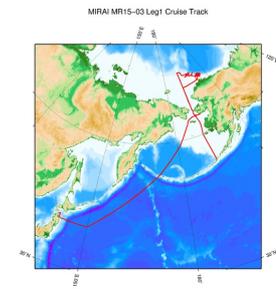


Data List

File names

MR15-03_leg1_chla.csv

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 CHIKYU
 KAIMEI
 SHINSEI MARU
 HAKUHO MARU

Information of the Submersibles

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