MIRAI MR17-05C Spectral absorption coefficient of CDOM (colored dissolved organic matter)

Last Modified: 2019-09-17

ReadMe | Observation Data

Cruise ID: MR17-05C
Spectral absorption coefficient of CDOM (colored dissolved organic matter): Processed (PI)
Data Policy: JAMSTEC
Observation Items:
Science Keywords:

Data Information

Descrete seawater water sample was filtered through 0.2 µm pore-sized polycarbonate filter (Whatman nuclepore membrene) with gentle vacuum pressure (~100 mmHg). Filtered seawater samples were kept in a refregirator on board. After going back to laboratory on land, the samples were frozen in a freezer until analysis. Frozen samples were thawed in a refregirator and then kept for 12 hours at room temperature.
Optical density (OD) of thawed sample was scaned from 250 to 720 nm with 0.5 nm increment using a spectrophotometer (UltraPath, World Precision Instruments) with 200 cm optical path length. Milli-Q water was used as a reference. Shift of baseline due to difference in refractive index between pure water and seawater was corrected according to Nelson et al. (2007, doi:10.1016/j.dsr.2007.02.006). Further baseline correction was conducted by subtracting the OD of Milli-Q water from OD of the sample, and subtracting 5 nm average value around 685 nm, where aCDOM can be assumed to be 0 (Babin et al., 2003).
OD values were then converted to an absorption using following equation
aCDOM = 2.303 OD / 2.080
where 2.303 is a factor for converting base e to base 10 logarithms and 2.080 is theeffective optical path length (m).
More detailed discription of the measurment is presented in Babin et al (2003, doi:10.1029/2001JC000882).

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR17-05C_all.pdf

For Using Data

Principal Investigator

Toru Hirawake (Hokkaido University)

Use Constraints

See Terms and Conditions about constrain of use.

Data Citation

Nishino, S., 2017, R/V Mirai Cruise Report MR17-05C, 209pp., JAMSTEC, Yokosuka, Japan.

Upon consultation in advance with the chief of investigation and the person(s) in charge of research issues who gathered that data, we request that the text of the results material contain a statement to the effect that it was obtained during the R/V Mirai cruise of MR17-05C, the Chief Scientist, Shigeto Nishino (JAMSTEC), and the following Principal Investigators (PIs) for gathering the data.

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Shigeto Nishino
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PI
Toru Hirawake (Hokkaido Unviersity)

Please also mention that this cruise was supported by the Arctic Challenge for Sustainability (ArCS) Project, which was funded by the Ministry of Education, Culture, Sports, Science and Technology of Japan (MEXT), and the Global Change Observation Mission-Climate (GCOM-C) mission of Japan Aerospace Exploration Agency (JAXA).

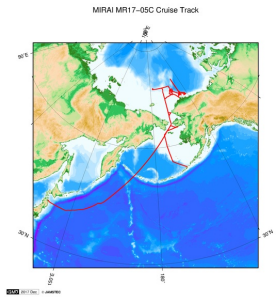
Instrument

Instrument:
UltraPath (World Precision Instruments)
Instrument Information:

Data Format

Microsoft excel format. Details are described in the "Readme" sheet. Station times and locations are given in the file "SampleLog_aCDOM_MR1705C.xlsx".

Related Information



Enlarge Image

MR17-05C
Ship Name: MIRAI
Period: 2017-08-24 - 2017-10-01
Chief Scientist: Shigeto Nishino (JAMSTEC)
Project Name: [Arctic Ocean Climate System Reaserch]
Proposal ▸ Arctic Challenge for Sustainability (ArCS)
Title:

Update History

2019-09-17	An observation data was registerd.

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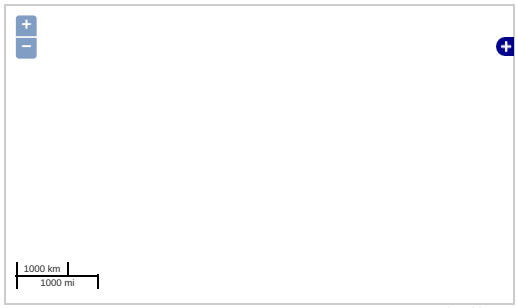
Observation Map



Imagery reproduced from ...

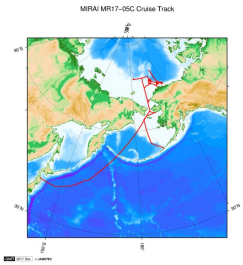
... Observation Line ... Navigation ... Observation, Dive Point, Hole

Data List

Add to Basket

File names
MR17-05C_CDOM_UltraPath.xlsx
SampleLog_aCDOM_MR1705C.xlsx

Related Information



Enlarge Image

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