MIRAI MR17-05C PARTICULATE ABSORPTION SPECTRA (ap)

Last Modified: 2019-09-17

ReadMe | Observation Data

Cruise ID: MR17-05C
PARTICULATE ABSORPTION SPECTRA (ap): Processed (PI)
Data Policy: JAMSTEC
Observation Items:
Science Keywords:

Data Information

Particles from discrete water samples were collected on 25 mm GF/F filters, and the filters were frozen in liquid nitrogen for transport back to the laboratory. Samples were analyzed within 3 months of the cruise. After thawing, filters were scanned in a double-beam bench-top spectrophotometer (Perkin-Elmer Lambda 18) equipped with a 15-cm Spectralon integrating sphere (RSA-PE-18, Labsphere). All measurements were done in the spectral range 300 to 850 nm with 1-nm resolution. Spectra were smoothed with a moving average window of variable width.

The general protocol follows that outlined in:
Stramski, D., R. A. Reynolds, S. Kaczmarek, J. Uitz and G. Zheng. 2015. Correction of pathlength amplification in the filter-pad technique for measurements of particulate absorption coefficient in the visible spectral region. Applied Optics, 54, 6763-6782. doi: 10.1364/AO.54.006763.

The absorption coefficient of total particulates, ap, and non-pigmented detritus, ad, were determined using the Transmittance filter-pad technique with the sample filters positioned inside the integrating sphere. Appropriate corrections for baseline (i.e., wet blank filter) were applied. For ad, sample filters were extracted with 95% methanol and then re-scanned. Correction for the pathlength amplification factor (beta) was applied following Stramski et al. 2015: ODS=0.323(ODF)^1.0867, where ODS is the calculated optical density in suspension, and ODF is the measured optical density of the sample filter. For ap spectra, values in the near-infrared were generally near zero or slightly positive, and no offset correction (so-called null point) was applied to these spectra. The ad spectra were adjusted so that the mean ad(800-850) equaled the mean ap(800-850). This reflects the common assumption that phytoplankton have negligible absorption in this spectral region.

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

For Using Data

Principal Investigator

Rick A. Reynolds (Scripps Institute of Oceanography)

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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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).

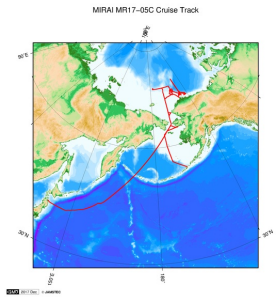
Instrument

Instrument:
Double-beam bench-top spectrophotometer (Perkin-Elmer Lambda 18) equipped with a 15-cm Spectralon integrating sphere (RSA-PE-18, Labsphere)
Instrument Information:

Data Format

Filename conventions for ap include a 2 digit code representing an internal water sample number. The file "SampleLog_ap_MR17-05C.txt" lists corresponding stations and depths for these samples, as well as the corresponding station name common to the entire cruise ("Station Alias").

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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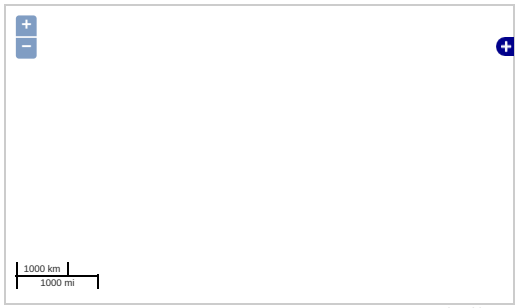
Observation Map



Imagery reproduced from ...

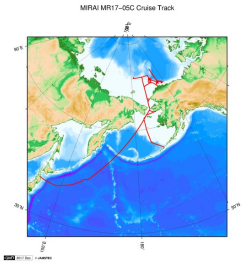
... Observation Line ... Navigation ... Observation, Dive Point, Hole

Data List

Add to Basket

File names
SIO_StationLog_MR17-05C.txt
SampleLog_ap_MR1705C.txt
ap.zip

Related Information



Enlarge Image

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Ship Name: MIRAI
Period: 2017-08-24 - 2017-10-01
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