

MIRAI MR13-06 Leg1 Atmospheric carbon dioxide (CO₂), methane (CH₄), and carbon monoxide (CO)

Last Modified: 2018-01-23

[ReadMe](#) [Observation Data](#)

Cruise ID: [MR13-06 Leg1](#)

Atmospheric carbon dioxide (CO₂), methane (CH₄), and carbon monoxide (CO) : Processed (PI)

Data Policy: [JAMSTEC](#)

Observation Items:

Science Keywords:

Data Information

The data are time series of the 10-minute averages of atmospheric CO₂, CH₄, and CO mixing ratios observed during the entire MR13-06 cruise period. The dried air sample (the dew point of less than -20°) was introduced into a cavity ring down spectroscopy (CRDS) analyzer (model G-2401, Picarro Inc., CA) at a flow rate of 100 mL/min. The CRDS analyzer were periodically (every 24 hour) calibrated against three standard gases, of which CO₂, CH₄, and CO mixing ratios were determined against NIES's original standard scales. The estimated precisions (1σ) were about 0.02 ppm for CO₂, 0.3 ppb for CH₄, and 0.9 ppb for CO. The CO₂ and CO data with the standard deviations for the CO₂ data of larger than 0.2 ppm are rejected because such data were considered to be contaminated by the engine exhaust of R/V Mirai. Note that the engine exhaust has little influence on the CH₄ mixing ratios.

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR13-06_leg1-2_all.pdf

For Using Data

Principal Investigator

Yasunori Tohjima (National Institute for Environmental Studies, Center for Global Environmental Research)

Use Constraints

See [Terms and Conditions](#) about constrain of use.

Data Citation

See [Terms and Conditions](#) about data citation.

Instrument

Instrument:

Cavity ring down spectroscopy

(CRDS) analyzer (model G-2401,

Picarro Inc., CA)

Instrument Information:

The instruments are comprised of a diaphragm pump, a thermoelectric dehumidifier, a Nafion® tube dryer, a gas sample selecting unit, a cavity ring down spectroscopy (CRDS) analyzer (model G-2401, Picarro Inc., CA), and three standard gases compressed into 10-L aluminum high-pressure cylinders.



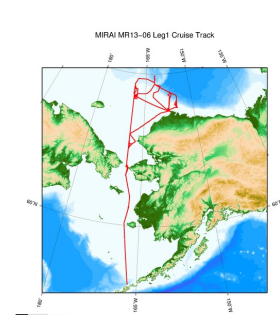
Data Format

Tab-delimited text data. The units of CO₂, CH₄, and CO are ppm (μmol/mol), ppb (nmol/mol), and ppb, respectively. The standard deviations (sd) for the 10 minute averages are given.

Date(y/m/d h:m:s) Lat(deg.) Lon(deg.) CO₂(ppm) sd(ppm) n CH₄(ppb) sd(ppb) n CO(ppb) sd(ppb) n

2013/8/28 0:00:00 54.196 193.46 9999.0 9999.0 9999.0 1882.8 1.7330 120.00 9999.0 9999.0 9999.0

Related Information



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MR13-06 Leg1

Ship Name: MIRAI

Period: 2013-08-28 - 2013-10-07

Chief Scientist: Shigeto Nishino (JAMSTEC)

Project Name: [Arctic Ocean Climate System Research]

Proposal ▶ Study on environmental changes in the sea-ice reduction regions of the Arctic Ocean

Title:

Update History

2018-01-23	An observation data was registered.
2015-11-30	An observation data was registered.

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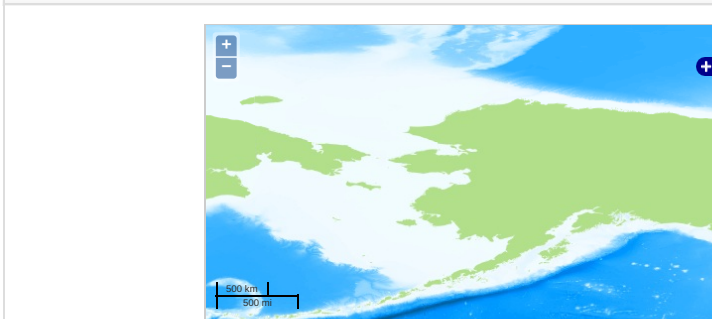
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Observation Items:

Science Keywords:

Observation Map



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

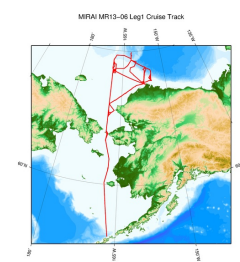
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File names

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Related Information



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