

## MIRAI MR03-K04 Leg3 Total CO<sub>2</sub> (TCO<sub>2</sub>)

Last Modified: 2019-06-28

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

Cruise ID: [MR03-K04 Leg3](#)

Total CO<sub>2</sub> (TCO<sub>2</sub>): Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

Observation Items: Total Dissolved inorganic carbon, Sea surface temperature, Sea surface salinity

Science Keywords:

OCEANS > OCEAN CHEMISTRY > INORGANIC CARBON  
OCEANS > SALINITY/DENSITY > SALINITY  
OCEANS > OCEAN TEMPERATURE > SEA SURFACE TEMPERATURE

Cruise Report

[http://www.godac.jamstec.go.jp/catalog/data/doc\\_catalog/media/MR03-K04\\_leg3\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR03-K04_leg3_all.pdf)

### [For Using Data](#)

Principal Investigator

Data Management Office

Use Constraints

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

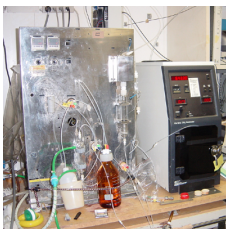
Data Citation

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

### Instrument

Instrument:

TCO<sub>2</sub> measurement system ( - MR09-03 Leg3)



### Information on Underway TCO<sub>2</sub> data observed on R/V MIRAI

Instrument : Carbon Dioxide Coulometer Model 5012; UIC Inc.

Method : Coulometric method

Precision : -

Reference Material/Calibration : -

TCO<sub>2</sub> samples are analyzed using coulometric technique (Ishii, et al., 1998). Batches of Certified Reference Material for TCO<sub>2</sub> analysis provided by Dr A. G. Dickson have been used for quality control. Significant offset, if any, has been corrected. Also, please refer to [cruise report](#) for details of the analytical method.

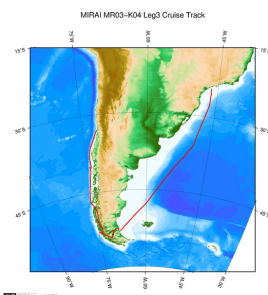
### Reference

Masao Ishii, Hisayuki Y. Inoue, Hidekazu Matsueda and Eiichiro Tanoue (1998) Close coupling between seasonal biological production and dynamics of dissolved inorganic carbon in the Indian Ocean sector and the western Pacific Ocean sector of the Antarctic Ocean. *Deep Sea Research Part I: Oceanographic Research Papers*, Volume 45, 7, 1187-1209.

### Note

- 1) Total alkalinity data was not calculated and its data column was filled with missing data value (-999).
- 2) For detailed information about this data, please make contact with Data Management Group (DMG) via "[Contact Us](#)" page.

### Related Information



[Enlarge Image](#)

### MR03-K04 Leg3

Ship Name: MIRAI

Period: 2003-10-19 - 2003-11-02

Chief Scientist: Naomi Harada (JAMSTEC)

Project Name: [Paleoceanography Research, Blue Earth Global Expedition 2003]

### Update History

2019-06-28	An observation data was registerd.
2018-10-23	An observation data was registerd.

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6K Sonar DEEP TOW  
KM-ROV  
POWER GRAB SAMPLER  
(SHELL)  
POWER GRAB SAMPLER  
(CLOW)  
BMS

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Cruise ID:

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Dive ID:

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**JAMSTEC** 国立研究開発法人  
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## MIRAI MR03-K04 Leg3 Total CO<sub>2</sub> (TCO<sub>2</sub>)

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Total CO<sub>2</sub> (TCO<sub>2</sub>): Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

### TCO<sub>2</sub> MRI

#### Data Format

The file is in variable length, comma separated text file (csv) format.

The line starts with "#" is a comment line which contains version information and so on.

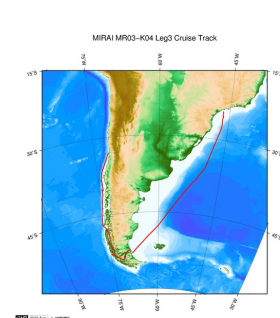
Column NO.	Column Heading	Comments
1	Ship	Ship name
2	Cruise	Cruise ID
3	Serial No.	Serial No.
4	Date	year (YYYY) in UTC
5		month (MM) in UTC
6		day (DD) in UTC
7	Time	hour (HH) in UTC
8		minute (MM) in UTC
9	Latitude	Latitude (degree) ; Positive in north
10	Longitude	Longitude (degree) ; degree in eastward (0 - 360)
11	TCO <sub>2</sub>	Total Dissolved inorganic carbon (umol/kg)
12	F	Quality flag for TCO <sub>2</sub>
13	TA_calcd	Total alkalinity (umol/kg) *
14	F	Quality flag for TA_calcd
15	SST	Sea surface temperature (degree-C)
16	F	Quality flag for SST
17	SSS	Sea surface salinity
18	F	Quality flag for SSS

\* : calculated from TCO<sub>2</sub>, SST, SSS and pCO<sub>2</sub> (Roy et al., 1993)

#### Definition of Quality Control Flags

- 2 - Good
- 3 - Questionable
- 4 - Bad
- 5 - Not reported
- 9 - No data

### Related Information



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#### MR03-K04 Leg3

Ship Name: MIRAI

Period: 2003-10-19 - 2003-11-02

Chief Scientist: Naomi Harada (JAMSTEC)

Project Name: [Paleoceanography Research, Blue Earth Global Expedition 2003]

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6K Sonar DEEP TOW  
KM-ROV  
POWER GRAB SAMPLER (SHELL)  
POWER GRAB SAMPLER (CLOW)  
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Dive ID:



## MIRAI MR03-K04 Leg3 Total CO2 (TCO2)

Last Modified: 2019-06-28

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Cruise ID: [MR03-K04 Leg3](#)

Total CO2 (TCO2): Processed (DMO)-QCed

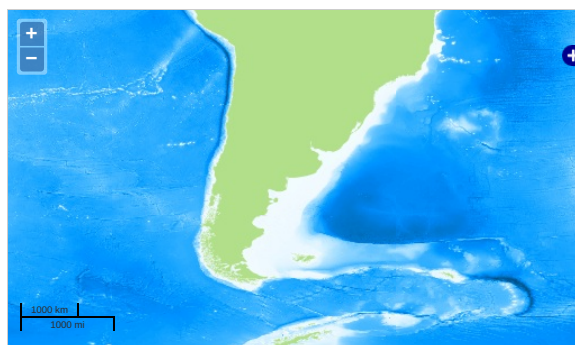
Data Policy: [JAMSTEC](#)

Observation Items: Total Dissolved inorganic carbon, Sea surface temperature, Sea surface salinity

Science Keywords:

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### Observation Map



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

Imagery reproduced from ...

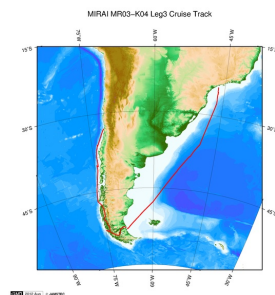
### Data List

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File names

☐ MR03-K04\_leg3\_tco2.csv

### Related Information



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Period: 2003-10-19 - 2003-11-02

Chief Scientist: Naomi Harada (JAMSTEC)

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