

MIRAI MR02-K06 Leg2 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: [MR02-K06 Leg2](#)

Conductivity-Temperature-Depth Profiler (CTD): Processed (DMO)-QCed

Data Policy: [JAMSTEC](#)

Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

Science Keywords:

OCEANS > OCEAN CHEMISTRY > OXYGEN
OCEANS > OCEAN TEMPERATURE > WATER TEMPERATURE
OCEANS > SALINITY/DENSITY > SALINITY

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/MR02-K06_leg2_all.pdf

For Using Data

Principal Investigator

Data Management Office

Use Constraints

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

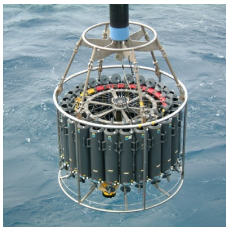
Data Citation

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

Instrument

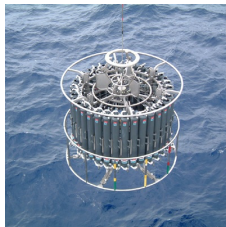
Instrument:

Water sampling system with CTD (30
litters * 24 bottles)



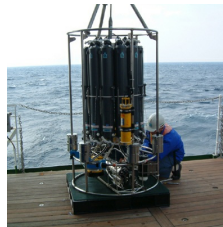
Instrument:

Water sampling system with CTD (12
litters * 36 bottles)



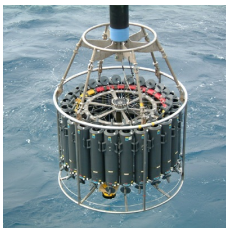
Instrument:

Water sampling system with CTD (12
litters * 12 bottles)



Instrument:

Conductivity temperature depth
measurements (CTD)



Overview

CTD(Conductivity-Temperature-Depth profiler) is used to observe the vertical profiles of temperature and conductivity.

Usually, this system is operated with multicylinder water sampler.

Observed signal is transmitted from sensor to the operation room on board using wire cable, and electric power is supplied from vessel to sensor.

Details of sensors attached to CTD system for MR02-K06 Leg2 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR02-K06 Leg2.

SEASAVE(ver 5.27b) for data acquisition

SEASOFT(ver 5.27b) for data processing

Data presented on this website is averaged over 1db.

System

• Pressure sensor

Model : SBE9plus, Sea-Bird Electronics,Inc.

Serial number : 79511

Measurement range : up to 10500m

Accuracy : 0.015% F.S.

Resolution : 0.001% F.S.

• Temperature sensor

Model : SBE3, Sea-Bird Electronics,Inc.

Serial number : 032730

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

Resolution : 0.0002degC

• Salinity sensor

Model : SBE4, Sea-Bird Electronics,Inc.

Serial number : 041088

Measurement range : 0.0 to 7 S/m

Accuracy : 0.0003 S/m

Resolution : 0.00004 S/m

Sensors used in each cast is as follows.

Cast name	Serial number of sensor			
	Pressure	Temperature	Salinity	Dissolved Oxygen
C01s01	79511	032730	041088	-
C01s02	79511	032730	041088	-
C02s01	79511	032730	041088	-
C02s02	79511	032730	041088	-
C03s01	79511	032730	041088	-
C03s02	79511	032730	041088	-
C04s01	79511	032730	041088	-
C04s02	79511	032730	041088	-
C05s01	79511	032730	041088	-
C05s02	79511	032730	041088	-
C05s03	79511	032730	041088	-
C06s01	79511	032730	041088	-
C06s02	79511	032730	041088	-
C07s01	79511	032730	041088	-
C07s02	79511	032730	041088	-
C08s01	79511	032730	041088	-
C08s02	79511	032730	041088	-
C08s03	79511	032730	041088	-
C09s01	79511	032730	041088	-
C09s02	79511	032730	041088	-
C10s01	79511	032730	041088	-
C10s02	79511	032730	041088	-
C10s03	79511	032730	041088	-
C10s04	79511	032730	041088	-

Calibration Information

Calibration Information is as follows.

[Calibration Information](#)

Data processing

(1) Data processing sequence for SEASOFT is as follows;

command	function
datcnv	Convert raw data to engineering units, and store converted data in file.
section	Extract rows of data from file.
alignctd	Align data relative to pressure(typically used for conductivity, temperature, and oxygen).
wildedit	Mark a data value with badflag to eliminate wild points.
celltm	Perform conductivity thermal mass correction.
filter	Low-pass filter columns of data.
loopedit	Mark a scan with badflag if scan fails pressure reversal or minimum velocity tests.
binavg	Average data, basing bins on pressure, depth, scan number, or time range.
derive	Calculate salinity, density, etc..
split	Split data in file into upcast and downcast files.

(2) Quality control

QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure.

- 1) The gradient check of adjacent depth data
- 2) The density inversion check
- 3) The broad range check set up at given ocean space and depth

Please see the site of NODC of the following link for quality control procedure in detail.

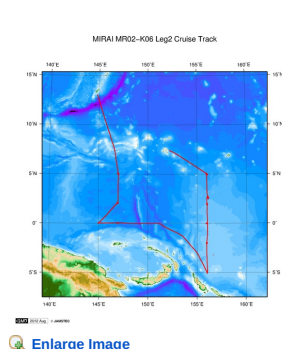
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

In addition, an abnormal value is identified by a visual check, and the data after visual QC is released.

Note

- (1) In this cruise, there is extra data (fluorescence intensity, distance to bottom) in additional to temperature, salinity, dissolved oxygen that has been opened to the public. Please contact us from "Contact Us" above if necessary.

Related Information



MR02-K06 Leg2

Ship Name: MIRAI
Period: 2002-12-17 - 2003-01-12
Chief Scientist: Kentaro Ando (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS)]

[Enlarge Image](#)

Update History

2017-06-22	An observation data was registerd.
2014-08-20	An observation data was registerd.

2014-07-18	An observation data was registerd.
2014-02-06	An observation data was registerd.
2012-12-25	An observation data was registerd.

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HAKUHO MARU

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SHINKAI 6500
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HYPER-DOLPHIN
URASHIMA
YOKOSUKA DEEP TOW
6K Camera DEEP TOW
6K Sonar DEEP TOW
KM-ROV
POWER GRAB SAMPLER (SHELL)
POWER GRAB SAMPLER (CLOW)
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MIRAI MR02-K06 Leg2 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

 Cruise ID: [MR02-K06 Leg2](#)

Conductivity-Temperature-Depth Profiler (CTD): Processed (DMO)-QCed

 Data Policy: [JAMSTEC](#)

CTD DMO

Format Description for the Corrected Data

Provided in the Exchange Format of CCHDO (CLIVAR and Carbon Hydrographic Data Office). Please see the following link for details of Exchange Format.

[CCHDO | CLIVAR & Carbon Hydrographic Data Office](#)

Data in following cruise is not expressed with Exchange Format. Please see the site of each cruise for format.

MR02-K05 Leg1

MR04-05

Format Description for the QCed Data

Each data file contains one line header (meta data) followed by data lines for each cast.

The number of data lines are recorded in the header.

Header part

No.	Column	Content	Format	Remarks
1	1	Header ID	a1	fixed as '#'
2	3 - 6	Data ID	a4	CTD
3	8 - 22	Cruise ID	a15	MYYY-(K)XX(_legx)
4	24 - 31	Cast name	a8	
5	33 - 40	Date	i8	YYYYMMDD (UTC)
6	42 - 45	Time	i4	hhmm (UTC)
7	47 - 55	Latitude	i2,a1,f5.2,a1	dd-mm.mmN(S)
8	57 - 66	Longitude	i3,a1,f5.2,a1	ddd-mm.mmE(W)
9	68 - 71	Number of data lines	i4	
10	72 - 73	Terminator	-	CR+LF

Data part

No.	Column	Content	Unit	Format	Remarks
1	1 - 11	Pressure	dbar	f11.3	
2	12 - 22	Temperature	deg-C	f11.4	ITS-90
3	23 - 33	Salinity	PSU	f11.4	PSS-78
4	34 - 44	Dissolved oxygen	umol/kg	f11.3	
5	45 - 55	Flag	-	i11	1 - 7 : space 8 : flag of pressure 9 : flag of temperature 10 : flag of salinity 11 : flag of dissolved oxygen * reference : Definition of Quality Control Flags
6	56 - 57	Terminator	-	-	CR+LF

Each contents of the data part is stored in 11 bytes.

Missing value is presented by '-5', and error value is presented by '-9'.

Definition of Quality Control Flags

1. Depth Flags

- 0 - accepted value
- 1 - error in recorded depth (same or less than previous depth)
- 2 - density inversion

2. Observed Level Flags

- N - missing value
- 0 - accepted value
- 1 - range outlier (outside of broad range check)
- 2 - failed inversion check
- 3 - failed gradient check
- 4 - zero anomaly
- 5 - failed combined gradient and inversion checks
- 6 - failed range and inversion checks
- 7 - failed range and gradient checks
- 8 - failed range and zero anomaly checks
- 9 - failed range and combined gradient and inversion checks
- A - failed visual check

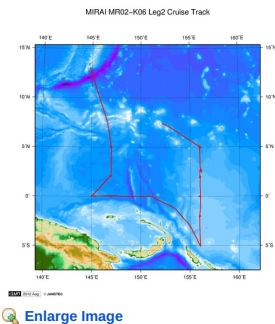
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

Sample Program

[ex_read2.f](#)

Related Information



MR02-K06 Leg2

Ship Name: MIRAI

Period: 2002-12-17 - 2003-01-12

Chief Scientist: Kentaro Ando (JAMSTEC)

Project Name: [Tropical Ocean Climate Study (TOCS)]

Update History

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KM-ROV

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(SHELL)

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BMS

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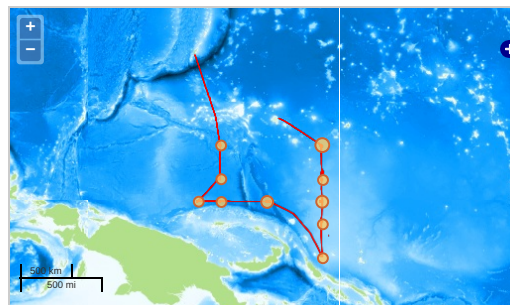
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

Science Keywords:

OCEANS > OCEAN CHEMISTRY > OXYGEN
OCEANS > OCEAN > WATER
TEMPERATURE TEMPERATURE
OCEANS > SALINITY/DENSITY > SALINITY

Observation Map

1. Clicking the icon displays a balloon with observation information.
2. Then click the observation name, figures will be displayed.

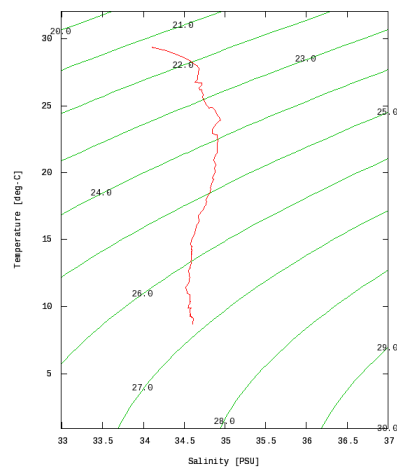


Figures

C01s01



MR02-K06 Leg2: C01s01
Conductivity-Temperature-Depth Profiler (CTD): Salinity



Only values evaluated as "good : all flags are 0" are plotted in profiles.
Please see Format Page for the definition of quality flags.

Data List

[Add to Basket](#)

☐ File names

<input type="checkbox"/>	C01s01.dat
<input type="checkbox"/>	C01s02.dat
<input type="checkbox"/>	C02s01.dat
<input type="checkbox"/>	C02s02.dat
<input type="checkbox"/>	C03s01.dat
<input type="checkbox"/>	C03s02.dat
<input type="checkbox"/>	C04s01.dat
<input type="checkbox"/>	C04s02.dat
<input type="checkbox"/>	C05s01.dat
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<input type="checkbox"/>	C05s03.dat
<input type="checkbox"/>	C06s01.dat
<input type="checkbox"/>	C06s02.dat

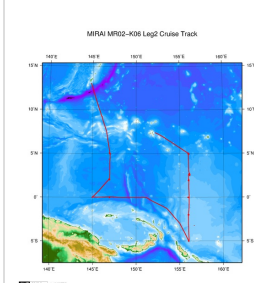
File names

C07s02.dat
C08s01.dat
C08s02.dat
C08s03.dat
C09s01.dat
C09s02.dat
C10s01.dat
C10s02.dat
C10s03.dat
C10s04.dat
ex_read2.f (Sample Program)

- Observation List
The list of observation is shown as follows.

Observation	Time and Date	Lat. [°]	Lon. [°]
C01s01	2002-12-19 02:03	5.0125	146.9736
C01s02	2002-12-19 03:57	5.0233	146.9675
C02s01	2002-12-21 02:05	2.0163	146.9928
C02s02	2002-12-21 03:44	2.0176	146.9940
C03s01	2002-12-22 17:57	0.0238	144.9916
C03s02	2002-12-23 01:00	-0.0001	144.9946
C04s01	2002-12-24 01:53	-0.0033	147.0080
C04s02	2002-12-24 03:23	-0.0070	147.0081
C05s01	2002-12-25 17:53	0.0018	151.0643
C05s02	2002-12-25 20:53	0.0183	151.0841
C05s03	2002-12-26 00:59	0.0078	151.1010
C06s01	2002-12-28 00:59	-4.9958	156.0115
C06s02	2002-12-28 02:57	-4.9926	156.0055
C07s01	2002-12-30 00:56	-1.9873	156.0050
C07s02	2002-12-30 02:55	-1.9913	156.0023
C08s01	2003-01-02 02:24	0.0190	155.9483
C08s02	2003-01-02 03:53	0.0146	155.9563
C08s03	2003-01-02 05:52	0.0183	155.9411
C09s01	2003-01-04 01:24	1.9481	156.0209
C09s02	2003-01-04 03:10	1.9478	156.0231
C10s01	2003-01-06 01:09	5.0480	155.9570
C10s02	2003-01-06 03:24	4.9956	156.0076
C10s03	2003-01-06 17:53	4.9736	155.9935
C10s04	2003-01-07 00:51	5.0011	155.9111

Related Information



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Ship Name: MIRAI
Period: 2002-12-17 - 2003-01-12
Chief Scientist: Kentaro Ando (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS)]

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