

MIRAI MR99-K06 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: [MR99-K06](#)

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/MR99-K06_all.pdf

[For Using Data](#)

Principal Investigator

Data Management Office

JAMSTEC / BPPT joint cruise in the Indonesian waters.

Use Constraints

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

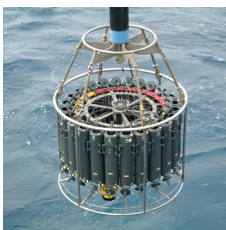
Data Citation

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

Instrument

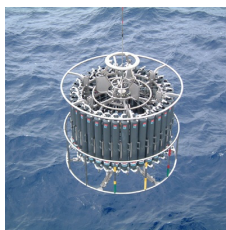
Instrument:

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



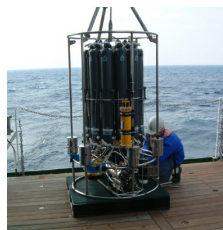
Instrument:

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



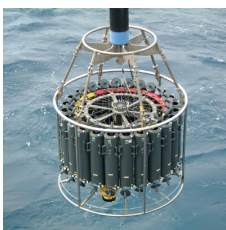
Instrument:

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 MR99-K06 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR99-K06.

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 : 51190

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 : 031524

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

Resolution : 0.0002degC

• Salinity sensor

Model : SBE4, Sea-Bird Electronics,Inc.

Serial number : 041202

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
0001S01	51190	031524	041202	-
0002S01	51190	031524	041202	-
0003S01	51190	031524	041202	-
0004S01	51190	031524	041202	-
0005S01	51190	031524	041202	-
0006S01	51190	031524	041202	-
0007S01	51190	031524	041202	-
0008S01	51190	031524	041202	-
0009S01	51190	031524	041202	-
0010S01	51190	031524	041202	-
0011S01	51190	031524	041202	-
0012S01	51190	031524	041202	-
0013S01	51190	031524	041202	-
0014S01	51190	031524	041202	-
0015S01	51190	031524	041202	-
0016S01	51190	031524	041202	-
0017S01	51190	031524	041202	-
0018S01	51190	031524	041202	-
0019S01	51190	031524	041202	-
0020S01	51190	031524	041202	-

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.
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.
section	Extract rows of data from file.
loopedit	Mark a scan with badflag if scan fails pressure reversal or minimum velocity tests.
derive	Calculate oxygen. (with oxygen sensor)
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.

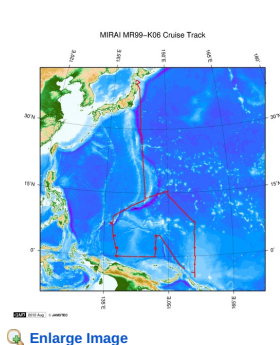
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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 (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



MR99-K06
 Ship Name: MIRAI
 Period: 1999-10-13 - 1999-11-18
 Chief Scientist: Kentaro Ando (JAMSTEC)
 Project Name: [Tropical Ocean Climate Study (TOCS)]

Update History

2017-06-22	An observation data was registerd.
2016-04-07	An observation data was registerd.
2014-07-12	An observation data was registerd.
2014-02-07	An observation data was registerd.

2013-03-27
2013-01-25

An observation data was registerd.
An observation data was registerd.

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Dive ID:

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海洋研究開発機構

JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

MIRAI MR99-K06 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

 Cruise ID: [MR99-K06](#)

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

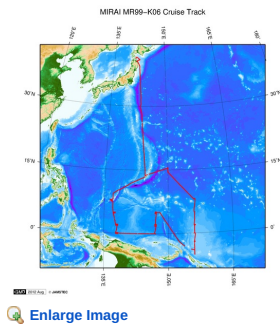
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



MR99-K06
Ship Name: MIRAI
Period: 1999-10-13 - 1999-11-18
Chief Scientist: Kentaro Ando (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS)]

Update History

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Data Policy: **JAMSTEC**

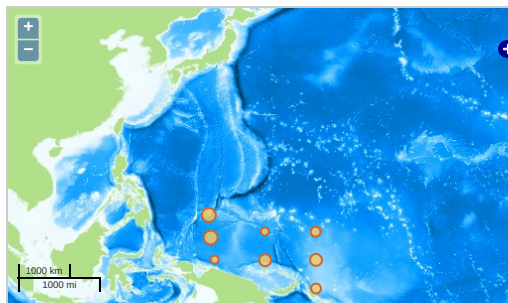
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

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.

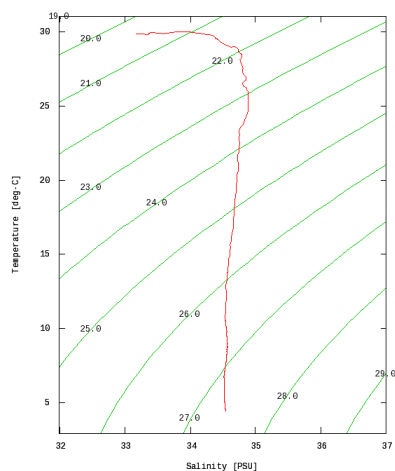


Imagery reproduced from ...

Figures

0001S01

MR99-K06: 0001S01
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

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File names

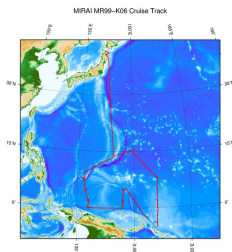
- ☐ 0001S01.dat
- ☐ 0002S01.dat
- ☐ 0003S01.dat
- ☐ 0004S01.dat
- ☐ 0005S01.dat
- ☐ 0006S01.dat
- ☐ 0007S01.dat
- ☐ 0008S01.dat
- ☐ 0009S01.dat
- ☐ 0010S01.dat
- ☐ 0011S01.dat
- ☐ 0012S01.dat
- ☐ 0013S01.dat
- ☐ 0014S01.dat
- ☐ 0015S01.dat
- ☐ 0016S01.dat
- ☐ 0017S01.dat
- ☐ 0018S01.dat

File names
0019S01.dat
0020S01.dat
ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
0001S01	1999-10-21 21:51	8.0008	136.9986
0002S01	1999-10-22 13:02	6.9996	137.0010
0003S01	1999-10-22 17:53	5.9995	136.9991
0004S01	1999-10-22 23:00	4.9643	137.0995
0005S01	1999-10-23 11:27	4.0000	137.3306
0006S01	1999-10-23 21:55	2.9993	137.5521
0007S01	1999-10-25 03:34	2.0620	138.0834
0008S01	1999-10-25 22:50	0.9986	137.9985
0009S01	1999-10-27 03:45	0.0820	138.0341
0010S01	1999-10-29 08:32	-0.0250	147.0028
0011S01	1999-10-30 02:08	0.0696	146.8293
0012S01	1999-10-30 21:51	1.9993	146.9991
0013S01	1999-11-03 02:54	5.0553	146.9448
0014S01	1999-11-06 00:57	-5.0570	156.0371
0015S01	1999-11-07 00:54	-2.0236	155.9458
0016S01	1999-11-09 02:54	0.0278	156.0376
0017S01	1999-11-10 02:51	2.0716	155.9950
0018S01	1999-11-10 21:54	1.9221	155.9916
0019S01	1999-11-13 03:50	5.0341	155.9691
0020S01	1999-11-14 02:53	7.9641	156.0206

Related Information



[Enlarge Image](#)

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