

MIRAI MR08-05 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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

Cruise ID: [MR08-05](#)

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/MR08-05_all.pdf

[For Using Data](#)

Principal Investigator

Data Management Office

Use Constraints

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

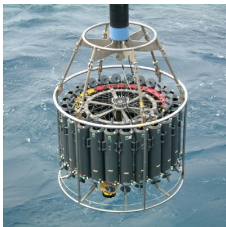
Data Citation

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

Instrument

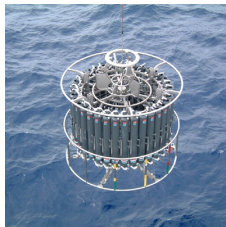
Instrument:

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



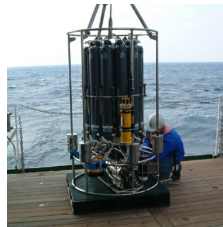
Instrument:

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



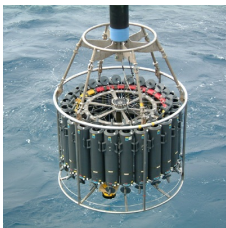
Instrument:

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 MR08-05 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR08-05.

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 : 79492

Measurement range : up to 10500m

Accuracy : 0.015% F.S.

Resolution : 0.001% F.S.

• 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 : 031464

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

- Resolution : 0.0002degC
- Salinity sensor
 - Model : SBE4, Sea-Bird Electronics,Inc.
 - Serial number : 042435
 - Measurement range : 0.0 to 7 S/m
 - Accuracy : 0.0003 S/m
 - Resolution : 0.00004 S/m
 - Salinity sensor
 - Model : SBE4, Sea-Bird Electronics,Inc.
 - Serial number : 043036
 - Measurement range : 0.0 to 7 S/m
 - Accuracy : 0.0003 S/m
 - Resolution : 0.00004 S/m
 - Salinity sensor
 - Model : SBE4, Sea-Bird Electronics,Inc.
 - Serial number : 042854
 - Measurement range : 0.0 to 7 S/m
 - Accuracy : 0.0003 S/m
 - Resolution : 0.00004 S/m
 - DO sensor
 - Model : SBE43, Sea-Bird Electronics,Inc.
 - Serial number : 430330
 - Measurement range : 120% of surface saturation
 - Accuracy : 2% of saturation

Sensors used in each cast is as follows.

Cast name	Serial number of sensor			
	Pressure	Temperature	Salinity	Dissolved Oxygen
S01M01	79492	031464	042435	430330
S01M02	79492	031464	042435	430330
S01M03	79492	031464	042435	430330
S01M04	79492	031464	042435	430330
S01M05	79492	031464	042435	430330
S01M06	79492	031464	042435	430330
S02M01	79492	031464	042435	430330
S03M01	79492	031464	042435	430330
S04M03	79511	031464	042435	430330
S05M01	79511	031464	042435	430330
S06M01	79511	031464	042435	430330
S07M01	79511	031464	042435	430330
S07M02	79511	031464	042435	430330
S07M03	79511	031464	042435	430330
S07M04	79511	031464	042435	430330
S07M05	79511	031464	043036	430330
S07M06	79492	031464	042854	430330
S08M01	79492	031464	042854	430330
S09M01	79492	031464	042854	430330
S10M01	79492	031464	042854	430330
S11M01	79492	031464	042854	430330
S11M02	79492	031464	042854	430330
S11M03	79492	031464	042854	430330
S11M04	79492	031464	042854	430330
S11M05	79492	031464	042854	430330
S11M06	79492	031464	042854	430330
S11M07	79492	031464	042854	430330
S11M08	79492	031464	042854	430330
S11M09	79492	031464	042854	430330
S11M10	79492	031464	042854	430330
S12M01	79492	031464	042854	430330
S13M01	79492	031464	042854	430330
S14M01	79492	031464	042854	430330
S14M02	79492	031464	042854	430330
S14M03	79492	031464	042854	430330
S15M01	79492	031464	042854	430330
S15M02	79492	031464	042854	430330

Calibration Information

Calibration Information is as follows.

[Calibration Information](#)

Data processing

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

("*" is not SEASOFT original procedure.)

command	function
datcnv	Convert raw data to engineering units, and store converted data in file.
tcorp*	Corrected the pressure sensitivity of the temperature(SBE3) sensor.
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.
wfilter	Median filter removes spikes of fluorometer data.
section	Extract rows of data from file

command	function
loopedit	Mark a scan with badflag if scan fails pressure reversal or minimum velocity tests.
despike*	Remove spikes of the data.
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.

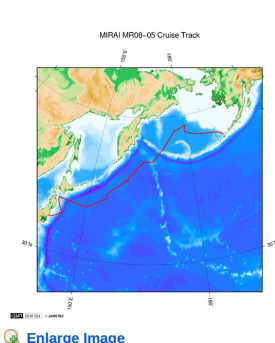
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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 (fluorescence intensity, transmittance, 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



MR08-05

Ship Name: MIRAI
 Period: 2008-10-11 - 2008-11-07
 Chief Scientist: Makio Honda (JAMSTEC)
 Project Name: [Station K2, Station KNOT]
 Proposal ▶ The study of ecosystem and materials' cycle in the North Pacific
 Title:

Update History

2017-06-22	An observation data was registerd.
2014-08-02	An observation data was registerd.
2014-02-15	An observation data was registerd.
2014-02-13	An observation data was registerd.
2013-03-27	An observation data was registerd.
2013-03-26	An observation data was registerd.
2012-10-27	An observation data was registerd.

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SHINKAI 6500

DEEP TOW

HYPER-DOLPHIN

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MIRAI MR08-05 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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Cruise ID: [MR08-05](#)

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

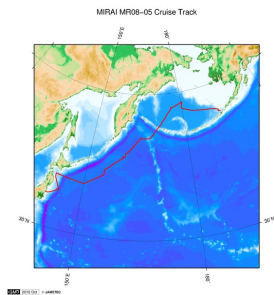
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



[Enlarge Image](#)

MR08-05

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Period: 2008-10-11 - 2008-11-07
Chief Scientist: Makio Honda (JAMSTEC)
Project Name: [Station K2, Station KNOT]
Proposal ▶ The study of ecosystem and materials' cycle in the North Pacific
Title:

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Last Modified: 2017-06-22

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Cruise ID: **MR08-05**

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

Data Policy: **JAMSTEC**

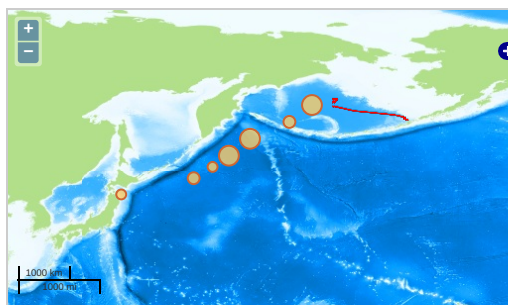
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

Science Keywords:

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

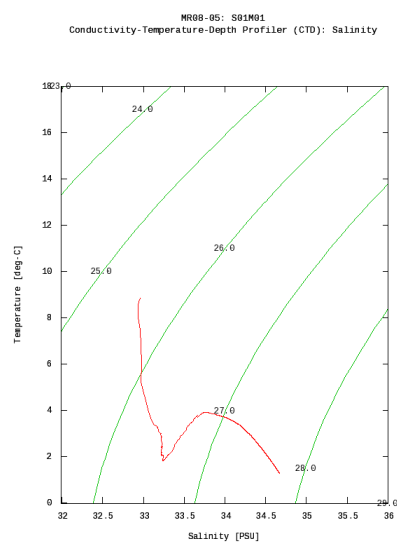
Observation Map

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



Figures

S01M01



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"/>	S01M01.dat
<input type="checkbox"/>	S01M02.dat
<input type="checkbox"/>	S01M03.dat
<input type="checkbox"/>	S01M04.dat
<input type="checkbox"/>	S01M05.dat
<input type="checkbox"/>	S01M06.dat
<input type="checkbox"/>	S02M01.dat
<input type="checkbox"/>	S03M01.dat
<input type="checkbox"/>	S04M03.dat
<input type="checkbox"/>	S05M01.dat
<input type="checkbox"/>	S06M01.dat
<input type="checkbox"/>	S07M01.dat
<input type="checkbox"/>	S07M02.dat

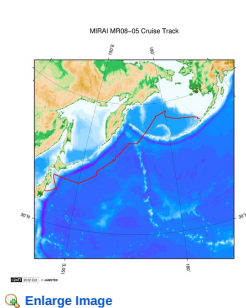
File Names

S07M04.dat
S07M05.dat
S07M06.dat
S08M01.dat
S09M01.dat
S10M01.dat
S11M01.dat
S11M02.dat
S11M03.dat
S11M04.dat
S11M05.dat
S11M06.dat
S11M07.dat
S11M08.dat
S11M09.dat
S11M10.dat
S12M01.dat
S13M01.dat
S14M01.dat
S14M02.dat
S14M03.dat
S15M01.dat
S15M02.dat
ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
S01M01	2008-10-14 16:55	56.9978	176.0043
S01M02	2008-10-14 22:46	56.9995	175.9886
S01M03	2008-10-15 00:29	57.0003	175.9965
S01M04	2008-10-15 05:07	57.0381	175.9898
S01M05	2008-10-15 06:54	56.9998	176.0056
S01M06	2008-10-15 17:19	57.0055	176.0020
S02M01	2008-10-16 16:52	56.0006	174.6693
S03M01	2008-10-17 00:55	55.0155	173.3574
S04M03	2008-10-17 21:14	53.9981	171.9988
S05M01	2008-10-18 05:21	53.0015	170.6688
S06M01	2008-10-18 12:03	52.0043	169.3400
S07M01	2008-10-19 05:16	51.0000	165.0011
S07M02	2008-10-19 17:23	51.0003	165.0000
S07M03	2008-10-19 21:01	51.0316	165.0041
S07M04	2008-10-20 02:03	50.9970	165.0505
S07M05	2008-10-20 07:57	50.9880	165.0650
S07M06	2008-10-20 22:27	51.0478	165.2889
S08M01	2008-10-21 14:33	50.0011	163.7491
S09M01	2008-10-22 00:09	49.0058	162.5070
S10M01	2008-10-22 09:50	48.0020	161.2520
S11M01	2008-10-23 22:00	46.9975	160.0016
S11M02	2008-10-24 04:10	46.9923	160.0040
S11M03	2008-10-24 08:30	46.9998	160.0026
S11M04	2008-10-25 01:58	47.0126	159.9928
S11M05	2008-10-26 04:58	46.9991	159.9983
S11M06	2008-10-26 06:25	47.0021	160.0173
S11M07	2008-10-26 18:21	47.0023	160.0073
S11M08	2008-10-26 20:55	46.9991	160.0003
S11M09	2008-10-27 20:55	46.9965	160.0165
S11M10	2008-10-28 03:22	46.9988	159.9298
S12M01	2008-10-29 19:58	46.0096	158.3551
S13M01	2008-10-30 06:36	44.9996	156.6681
S14M01	2008-10-30 22:44	44.0010	154.9961
S14M02	2008-10-31 00:48	44.0158	154.9836
S14M03	2008-10-31 03:31	44.0396	154.9975
S15M01	2008-11-02 21:12	41.1173	142.1361
S15M02	2008-11-03 00:03	41.1140	142.1328

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