

MIRAI MR07-01 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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Cruise ID: [MR07-01](#)

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/MR07-01_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 MR07-01 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR07-01.

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.

• Pressure sensor

Model : SBE9plus, Sea-Bird Electronics,Inc.

Serial number : 42423

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 : 031525
 - Measurement range : -5.0 to +35degC
 - Accuracy : 0.001degC
 - Resolution : 0.0002degC
 - 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 : 041206
 - 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 : 042240
 - 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 : 041088
 - 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 : 430394
 - 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
001M01	79492	031525	041206	430394
001AM01	79492	031525	041206	430394
001AM02	79492	031525	041206	430394
002M01	79492	031525	041206	430394
002M02	79492	031525	041206	430394
003M01	79492	031525	041206	430394
004M01	79492	031525	041206	430394
005M01	79492	031525	041206	430394
006M01	79492	031525	041206	430394
006M02	79492	031525	041206	430394
007M01	79492	031525	041206	430394
008M01	79492	031525	041206	430394
009M01	79492	031525	041206	430394
010M01	79492	031525	041206	430394
010M02	79492	031525	041206	430394
011M01	79492	031525	041206	430394
012M01	79492	031525	041206	430394
012M02	79492	031525	041206	430394
013M01	79492	031525	041206	430394
014M01	79492	031525	043036	430394
014M02	79492	031525	043036	430394
015M01	79492	031525	043036	430394
017M01	79492	031525	043036	430394
016M01	79492	031525	043036	430394
018M01	79511	032730	042240	430394
018M02	79511	032730	042240	430394
022M01	79511	032730	042240	430394
022M02	79511	032730	042240	430394
026M01	42423	031525	042240	430394
026M02	42423	031525	042240	430394
026M03	42423	031525	042240	430394
028M01	42423	031525	041088	430394
029M01	42423	031525	041088	430394
030M01	42423	031525	041088	430394
030M02	42423	031525	041088	430394
032M01	42423	031525	041088	430394
032M02	42423	031525	041088	430394

032M02	42423	031525	041088	430394
Cruise Name	Serial number of sensor			
035M01	42423	031525	041088	430394
035M02	42423	031525	041088	430394
036M01	42423	031525	041088	430394
038M01	42423	031525	041088	430394
037M01	42423	031525	041088	430394
039M01	42423	031525	041088	430394
039M02	42423	031525	041088	430394
042M01	42423	031525	041088	430394
042M02	42423	031525	041088	430394
044M01	42423	031525	041088	430394
046M01	42423	031525	041088	430394
046M02	42423	031525	041088	430394
046M03	42423	031525	041088	430394
045M01	42423	031525	041088	430394
043M01	42423	031525	041088	430394
041M01	42423	031525	041088	430394
040M01	42423	031525	041088	430394

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.
wfilter	Median filter removes spikes of fluorometer 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.

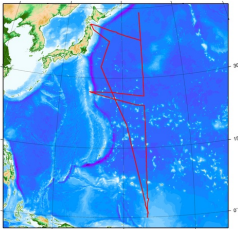
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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 (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



MR07-01
Ship Name: MIRAI
Period: 2007-02-16 - 2007-03-26
Chief Scientist: Kazuhiko Matsumoto (JAMSTEC)
Project Name: [Station KNOT]

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Update History

2017-06-22	An observation data was registerd.
2014-08-21	An observation data was registerd.
2014-07-30	An observation data was registerd.
2014-02-07	An observation data was registerd.
2013-03-27	An observation data was registerd.
2012-10-27	An observation data was registerd.

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MIRAI MR07-01 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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Cruise ID: [MR07-01](#)

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

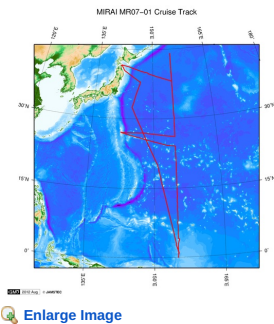
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



MR07-01
Ship Name: MIRAI
Period: 2007-02-16 - 2007-03-26
Chief Scientist: Kazuhiko Matsumoto (JAMSTEC)
Project Name: [Station KNOT]

Update History

2017-06-22	An observation data was registered.
2014-08-21	An observation data was registered.
2014-07-30	An observation data was registered.
2014-02-07	An observation data was registered.
2013-03-27	An observation data was registered.
2012-10-27	An observation data was registered.

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MIRAI MR07-01 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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Cruise ID: **MR07-01**

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

Data Policy: **JAMSTEC**

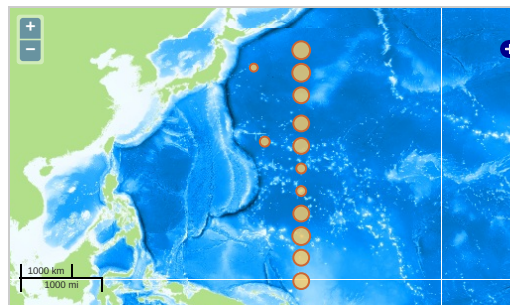
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

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.

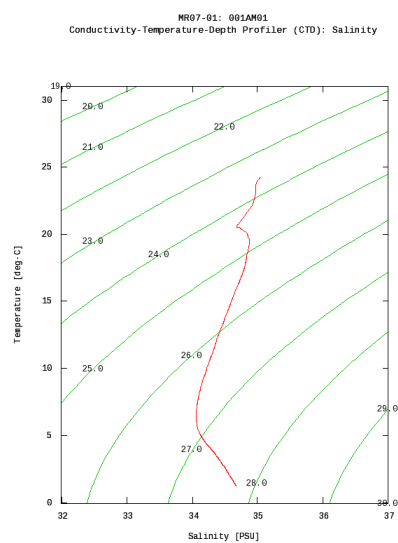


— ... Observation Line — ... Navigation ● ... Observation, Dive Point, Hole

Imagery reproduced from ...

Figures

001AM01




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"/> 001AM01.dat
<input type="checkbox"/> 001AM02.dat
<input type="checkbox"/> 001M01.dat
<input type="checkbox"/> 002M01.dat
<input type="checkbox"/> 002M02.dat
<input type="checkbox"/> 003M01.dat
<input type="checkbox"/> 004M01.dat
<input type="checkbox"/> 005M01.dat
<input type="checkbox"/> 006M01.dat
<input type="checkbox"/> 006M02.dat
<input type="checkbox"/> 007M01.dat
<input type="checkbox"/> 008M01.dat
<input type="checkbox"/> 009M01.dat

	010M01.dat
	011M01.dat
	012M01.dat
	012M02.dat
	013M01.dat
	014M01.dat
	014M02.dat
	015M01.dat
	016M01.dat
	017M01.dat
	018M01.dat
	018M02.dat
	022M01.dat
	022M02.dat
	026M01.dat
	026M02.dat
	026M03.dat
	028M01.dat
	029M01.dat
	030M01.dat
	030M02.dat
	032M01.dat
	032M02.dat
	033M01.dat
	035M01.dat
	035M02.dat
	036M01.dat
	037M01.dat
	038M01.dat
	039M01.dat
	039M02.dat
	040M01.dat
	041M01.dat
	042M01.dat
	042M02.dat
	043M01.dat
	044M01.dat
	045M01.dat
	046M01.dat
	046M02.dat
	046M03.dat
	ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
001AM01	2007-02-20 22:52	24.7700	148.5258
001AM02	2007-02-21 03:54	24.7791	148.4916
001M01	2007-02-18 09:00	37.9096	146.5755
002M01	2007-02-25 20:18	-0.0001	154.9971
002M02	2007-02-26 02:08	0.0025	154.9845
003M01	2007-02-26 07:03	0.9835	155.1308
004M01	2007-02-26 20:22	1.9996	154.9983
005M01	2007-02-27 05:42	2.9863	154.9995
006M01	2007-02-27 20:22	4.1648	155.0008
006M02	2007-02-28 02:04	4.1733	155.0061
007M01	2007-02-28 06:27	5.0656	154.9990
008M01	2007-02-28 20:21	5.9993	154.9988
009M01	2007-03-01 05:42	6.9871	154.9995
010M01	2007-03-01 20:21	8.0016	155.0004
010M02	2007-03-02 02:01	8.0138	155.0063
011M01	2007-03-02 07:09	8.9915	154.9976
012M01	2007-03-02 20:22	9.9978	154.9980
012M02	2007-03-03 01:35	10.0010	154.9695
013M01	2007-03-03 06:37	10.9830	154.9990
014M01	2007-03-03 20:21	11.9988	154.9966
014M02	2007-03-04 02:04	12.0715	154.9381
015M01	2007-03-04 07:14	12.9761	155.0016
016M01	2007-03-06 06:01	14.0150	154.9985
017M01	2007-03-05 20:16	14.9998	154.9988
018M01	2007-03-06 20:22	15.9986	154.9983
018M02	2007-03-07 01:52	16.0040	155.0011
022M01	2007-03-07 20:21	20.0020	154.9983
022M02	2007-03-08 01:46	20.0621	155.0245
026M01	2007-03-08 20:32	24.0050	155.0008
026M02	2007-03-09 01:43	24.0458	154.9923
026M03	2007-03-09 03:19	24.0471	154.9773
028M01	2007-03-13 04:21	26.0611	154.9956
029M01	2007-03-13 12:22	26.9831	155.0105
030M01	2007-03-13 21:05	27.9980	155.0035
030M02	2007-03-14 02:38	27.9365	155.0186
032M01	2007-03-14 20:23	30.0011	155.0530

Observation	Time and Date	Lat (°N)	Long (°E)
033M01	2007-03-15 07:29	30.9926	155.0050
035M01	2007-03-15 20:30	32.9970	154.9948
035M02	2007-03-16 02:01	32.9985	154.9950
036M01	2007-03-16 07:21	33.9820	154.9911
037M01	2007-03-17 05:30	35.0138	154.9950
038M01	2007-03-16 20:21	35.9985	155.0038
039M01	2007-03-17 20:22	37.0000	154.9986
039M02	2007-03-18 01:52	36.9430	154.9476
040M01	2007-03-22 21:16	38.0016	155.0053
041M01	2007-03-22 12:58	39.0120	154.9990
042M01	2007-03-19 04:11	39.7500	154.9590
042M02	2007-03-19 05:44	39.7695	154.9640
043M01	2007-03-22 00:59	41.0005	154.9993
044M01	2007-03-20 06:45	41.9858	154.9978
045M01	2007-03-21 12:38	43.0115	154.9901
046M01	2007-03-20 21:51	43.9958	154.9981
046M02	2007-03-21 03:42	44.0043	154.9838
046M03	2007-03-21 05:48	44.0198	155.0145

Related Information

MIRAI MR07-01 Cruise Track

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MR07-01
Ship Name: MIRAI
Period: 2007-02-16 - 2007-03-26
Chief Scientist: Kazuhiko Matsumoto (JAMSTEC)
Project Name: [Station KNOT]

Update History	
2017-06-22	An observation data was registered.
2014-08-21	An observation data was registered.
2014-07-30	An observation data was registered.
2014-02-07	An observation data was registered.
2013-03-27	An observation data was registered.
2012-10-27	An observation data was registered.

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Information of the Submersibles

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SHINKAI 6500

DEEP TOW

HYPER-DOLPHIN

URASHIMA

YOKOSUKA DEEP TOW

6K Camera DEEP TOW

6K Sonar DEEP TOW

KM-ROV

POWER GRAB SAMPLER (SHELL)

POWER GRAB SAMPLER (CLOW)

BMS

Go to a Cruise Information

Cruise ID:

Go to a Dive Information

Dive ID:

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