

MIRAI MR07-07 Leg1 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

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Cruise ID: [MR07-07 Leg1](#)

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/MR07-07_leg1_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.

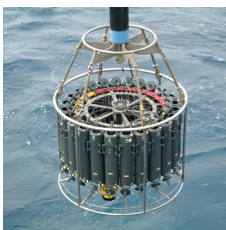
Data Citation

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

Instrument

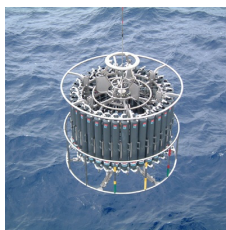
Instrument:

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



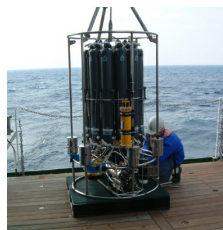
Instrument:

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



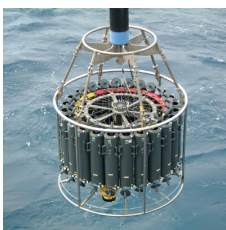
Instrument:

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 MR07-07 Leg1 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR07-07 Leg1.

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 : 031524

Measurement range : -5.0 to +35degC

Accuracy : 0.001degC

Resolution : 0.0002degC

• Salinity sensor

Model : SBE4, Sea-Bird Electronics, Inc.

Serial number : 041203

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
T01M01	79511	031524	041203	430394
C01M01	79511	031524	041203	430394
C02M01	79511	031524	041203	430394
C03M01	79511	031524	041203	430394
C04M01	79511	031524	041203	430394
C05M01	79511	031524	041203	430394
C06M01	79511	031524	041203	430394
C07M02	79511	031524	041088	430394
C08M01	79511	031524	041088	430394
C09M01	79511	031524	041088	430394
C10M01	79511	031524	041088	430394
C11M01	79511	031524	041088	430394
C12M01	79511	031524	041088	430394
C13M01	79511	031524	041088	430394
C14M01	79511	031524	041088	430394
C15M01	79511	031524	041088	430394
C16M01	79511	031524	041088	430394
C17M01	79511	031524	041088	430394
C18M01	79511	031524	041088	430394
C19M01	79511	031524	041088	430394
C20M01	79511	031524	041088	430394
C21M01	79511	031524	041088	430394
C22M01	79511	031524	041088	430394
C23M01	79511	031524	041088	430394

Calibration Information

Calibration Information is as follows.

[Calibration Information](#)

Data processing

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

command	function
datcrv	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.
loopeit	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.

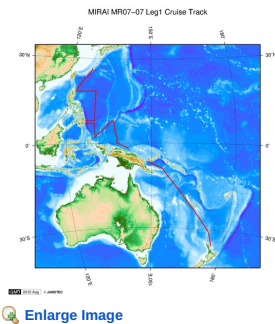
[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)

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



MR07-07 Leg1

Ship Name: MIRAI

Period: 2007-12-27 - 2008-01-25

Chief Scientist: Yuji Kashino (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.
2014-07-30	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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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

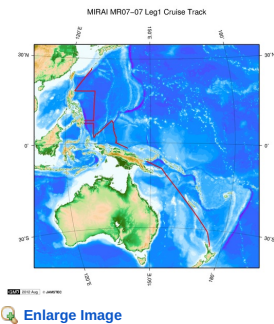
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

Sample Program

[ex_read2.f](#)

Related Information



MR07-07 Leg1

Ship Name: MIRAI

Period: 2007-12-27 - 2008-01-25

Chief Scientist: Yuji Kashino (JAMSTEC)

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

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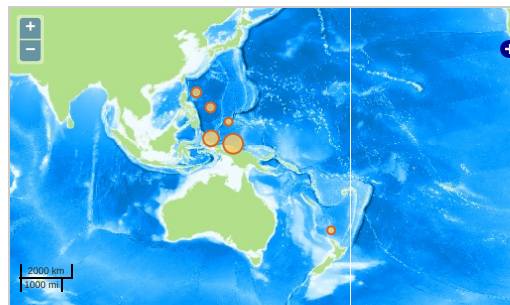
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

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.

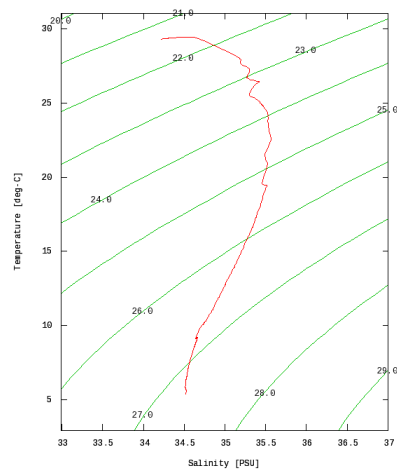


Figures

C01M01



MR07-07 Leg1: C01M01
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"/>	C01M01.dat
<input type="checkbox"/>	C02M01.dat
<input type="checkbox"/>	C03M01.dat
<input type="checkbox"/>	C04M01.dat
<input type="checkbox"/>	C05M01.dat
<input type="checkbox"/>	C06M01.dat
<input type="checkbox"/>	C07M02.dat
<input type="checkbox"/>	C08M01.dat
<input type="checkbox"/>	C09M01.dat
<input type="checkbox"/>	C10M01.dat
<input type="checkbox"/>	C11M01.dat
<input type="checkbox"/>	C12M01.dat
<input type="checkbox"/>	C13M01.dat

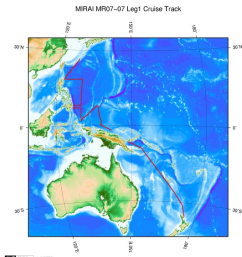
File Name

 C15M01.dat
 C16M01.dat
 C17M01.dat
 C18M01.dat
 C19M01.dat
 C20M01.dat
 C21M01.dat
 C22M01.dat
 C23M01.dat
 T01M01.dat
 ex_read2.f (Sample Program)


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

Observation	Time and Date	Lat. [°]	Lon. [°]
C01M01	2008-01-06 07:47	0.0706	138.0800
C02M01	2008-01-07 04:53	0.4963	137.9991
C03M01	2008-01-07 07:51	0.9926	138.0003
C04M01	2008-01-08 08:44	1.4920	138.0008
C05M01	2008-01-08 20:57	1.9815	138.1125
C06M01	2008-01-09 10:05	2.4855	137.8351
C07M02	2008-01-09 22:54	2.9993	137.6663
C08M01	2008-01-10 01:47	3.4858	137.5051
C09M01	2008-01-10 04:43	3.9890	137.3355
C10M01	2008-01-10 07:39	4.4863	137.1698
C11M01	2008-01-10 20:55	4.8420	137.2885
C12M01	2008-01-11 07:19	5.4880	137.0053
C13M01	2008-01-12 08:41	5.9864	137.0018
C14M01	2008-01-12 20:24	7.8663	136.4615
C15M01	2008-01-15 02:11	1.9963	130.2096
C16M01	2008-01-16 03:56	7.0003	129.9996
C17M01	2008-01-16 22:19	6.9976	126.6048
C18M01	2008-01-17 05:18	8.0008	126.6906
C19M01	2008-01-18 04:33	7.9681	130.0125
C20M01	2008-01-20 00:47	12.9871	129.9963
C21M01	2008-01-21 00:42	18.3193	129.9990
C22M01	2008-01-21 20:52	18.3335	124.9960
C23M01	2008-01-22 06:31	18.3348	122.6080
T01M01	2007-12-29 01:55	-30.6670	172.8885

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Ship Name: MIRAI
Period: 2007-12-27 - 2008-01-25
Chief Scientist: Yuji Kashino (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS)]


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