DARWIN+
Data and Sample Research System
for Whole Cruise Information in JAMSTEC

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MIRAI MR05-03 Leg1 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

ReadMe | Observation Data | Data Format

Cruise ID: MR05-03 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/MR05-03_leg1-3_all.pdf

> ℹ **For Using Data**
>
> **Principal Investigator**
> Data Management Office
>
> JAMSTEC / BPPT joint cruise in the Indonesian waters.
>
> **Use Constraints**
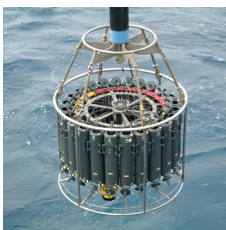> See **Terms and Conditions** about constrain of use.
>
> **Data Citation**
> See **Terms and Conditions** about data citation.
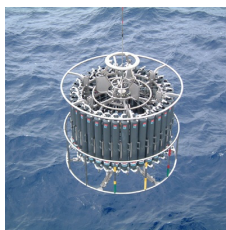
Instrument

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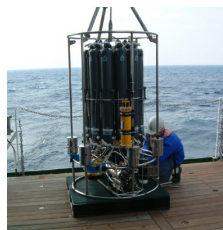Water sampling system with CTD (30 litters * 24 bottles)

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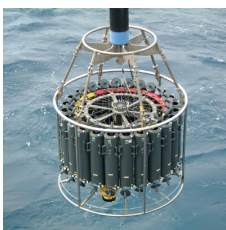Water sampling system with CTD (12 litters * 36 bottles)

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 MR05-03 Leg1 cruise are presented in "System".
 The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR05-03 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 : 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 : 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

Sensors used in each cast is as follows.

| Cast name | Serial number of sensor | | | |
	Pressure	Temperature	Salinity	Dissolved Oxygen
C01M01	42423	032730	041206	-
C01M02	42423	032730	041206	-
C01M03	42423	032730	041206	-
C01M04	42423	032730	041206	-
C01M05	42423	032730	041206	-
C01M06	42423	032730	041206	-
C01M07	42423	032730	041206	-
C01M08	42423	032730	041206	-
C02M01	42423	032730	041206	-
C02M02	42423	032730	041206	-
C02M03	42423	032730	041206	-
C02M04	42423	032730	041206	-
C02M05	42423	032730	041206	-
C02M06	42423	032730	041206	-
C02M07	42423	032730	041206	-
C03M01	42423	032730	041206	-
C03M02	42423	032730	041206	-
C03M03	42423	032730	041206	-
C03M04	42423	032730	041206	-
C03M05	42423	032730	041206	-
C03M06	42423	032730	041206	-
C03M07	42423	032730	041206	-
C04M01	42423	032730	041206	-
C04M02	42423	032730	041206	-
C04M03	42423	032730	041206	-
C04M04	42423	032730	041206	-
C04M05	42423	032730	041206	-
C04M06	42423	032730	041206	-
C04M07	42423	032730	041206	-
C04M08	42423	032730	041206	-
C05M01	42423	032730	041206	-
C05M02	42423	032730	041206	-
C05M03	42423	032730	041206	-
C05M04	42423	032730	041206	-
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C06M02	42423	032730	041206	-
C06M03	42423	032730	041206	-
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C06M05	42423	032730	041206	-
C06M06	42423	032730	041206	-
C06M07	42423	032730	041206	-
C06M08	42423	032730	041206	-
C06M09	42423	032730	041206	-
C06M10	42423	032730	041206	-
C06M11	42423	032730	041206	-
C06M12	42423	032730	041206	-

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.
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.
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.
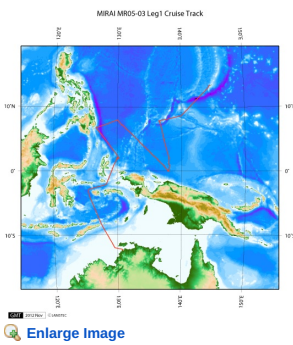
　　1) The gradient check of adjacent depth data

　　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.

Related Information

MIRAI MR05-03 Leg1 Cruise Track

🔍 **Enlarge Image**

MR05-03 Leg1
Ship Name: MIRAI
Period: 2005-07-03 - 2005-07-25
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.
2014-08-21	An observation data was registerd.
2014-07-26	An observation data was registerd.
2014-02-07	An observation data was registerd.
2013-03-27	An observation data was registerd.
2012-11-25	An observation data was registerd.

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MIRAI MR05-03 Leg1 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

ReadMe   **Observation Data**   **Data Format**

Cruise ID: **MR05-03 Leg1**
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	MRYY-(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
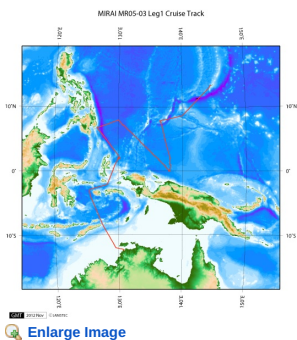   A - failed visual check

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

MR05-03 Leg1
Ship Name: MIRAI
Period: 2005-07-03 - 2005-07-25
Chief Scientist: Kentaro Ando (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS)]

MIRAI MR05-03 Leg1 Cruise Track

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Update History

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SHINSEI MARU
HAKUHO MARU

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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

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MIRAI MR05-03 Leg1 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

| ReadMe | **Observation Data** | Data Format |

Cruise ID: **MR05-03 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	

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 ...
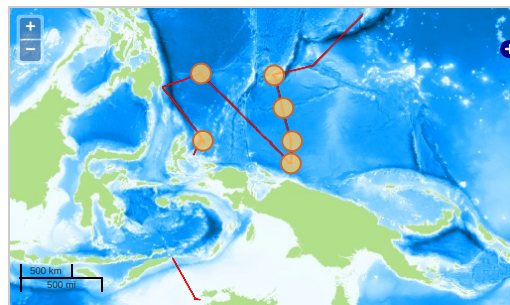
—— ... Observation Line   —— ... Navigation   🔴 ... Observation, Dive Point, Hole
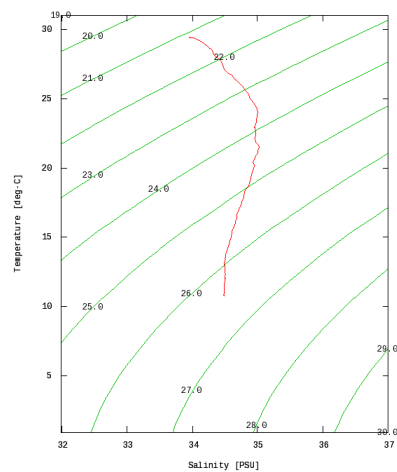
Figures

C01M01

MR05-03 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**
☐	C01M01.dat
☐	C01M02.dat
☐	C01M03.dat
☐	C01M04.dat
☐	C01M05.dat
☐	C01M06.dat
☐	C01M07.dat
☐	C01M08.dat
☐	C02M01.dat
☐	C02M02.dat
☐	C02M03.dat
☐	C02M04.dat
☐	C02M05.dat

- ☐ C02M06.dat
- ☐ C02M07.dat
- ☐ C03M01.dat
- ☐ C03M02.dat
- ☐ C03M03.dat
- ☐ C03M04.dat
- ☐ C03M05.dat
- ☐ C03M06.dat
- ☐ C03M07.dat
- ☐ C04M01.dat
- ☐ C04M02.dat
- ☐ C04M03.dat
- ☐ C04M04.dat
- ☐ C04M05.dat
- ☐ C04M06.dat
- ☐ C04M07.dat
- ☐ C04M08.dat
- ☐ C05M01.dat
- ☐ C05M02.dat
- ☐ C05M03.dat
- ☐ C05M04.dat
- ☐ C05M05.dat
- ☐ C05M06.dat
- ☐ C05M07.dat
- ☐ C05M08.dat
- ☐ C06M01.dat
- ☐ C06M02.dat
- ☐ C06M03.dat
- ☐ C06M04.dat
- ☐ C06M05.dat
- ☐ C06M06.dat
- ☐ C06M07.dat
- ☐ C06M08.dat
- ☐ C06M09.dat
- ☐ C06M10.dat
- ☐ C06M11.dat
- ☐ C06M12.dat
- ☐ ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
C01M01	2005-07-05 21:42	7.8418	136.5096
C01M02	2005-07-05 23:32	7.6635	136.6803
C01M03	2005-07-06 02:55	7.8363	136.4953
C01M04	2005-07-06 06:53	7.8561	136.4766
C01M05	2005-07-06 07:26	7.8628	136.4676
C01M06	2005-07-06 21:41	7.6660	136.6843
C01M07	2005-07-07 03:22	7.6758	136.6405
C01M08	2005-07-07 06:54	7.6766	136.6396
C02M01	2005-07-07 21:38	4.9416	137.3308
C02M02	2005-07-08 03:28	4.9025	137.2866
C02M03	2005-07-08 04:14	4.8998	137.2820
C02M04	2005-07-08 06:51	4.9361	137.3163
C02M05	2005-07-08 21:39	4.8590	137.2893
C02M06	2005-07-09 03:53	4.8675	137.3000
C02M07	2005-07-09 06:52	4.8629	137.2949
C03M01	2005-07-09 21:39	1.9968	138.1038
C03M02	2005-07-10 02:53	1.9945	138.1118
C03M03	2005-07-10 03:51	2.0333	138.0816
C03M04	2005-07-10 06:52	2.0470	138.0685
C03M05	2005-07-10 21:38	2.0555	138.0795
C03M06	2005-07-11 03:51	2.0135	138.0540
C03M07	2005-07-11 06:52	2.0048	138.0543
C04M01	2005-07-11 21:37	0.0240	138.0018
C04M02	2005-07-12 02:23	0.0548	138.0011
C04M03	2005-07-12 03:09	0.0618	138.0269
C04M04	2005-07-12 04:50	0.0370	137.9196
C04M05	2005-07-12 06:49	0.0331	137.9616
C04M06	2005-07-12 21:37	0.0263	137.9173
C04M07	2005-07-13 02:51	-0.0031	137.9875
C04M08	2005-07-13 06:52	0.0001	137.9835
C05M01	2005-07-15 08:59	8.0005	130.0133
C05M02	2005-07-15 21:38	7.9876	130.0108
C05M03	2005-07-16 03:51	7.9843	130.0326
C05M04	2005-07-16 06:51	7.9895	130.0286
C05M05	2005-07-16 21:39	7.9415	130.0653
C05M06	2005-07-17 03:22	7.9375	130.0676
C05M07	2005-07-17 04:21	7.9358	130.0663
C05M08	2005-07-17 06:52	7.9970	130.0055
C06M01	2005-07-19 21:38	2.0291	130.1898
C06M02	2005-07-20 01:21	2.0326	130.1910
C06M03	2005-07-20 03:50	2.0333	130.1950

Observation	Time and Date	Lat.[°]	Lon.[°]
C06M04	2005-07-20 21:36	2.0352	130.2578
C06M05	2005-07-20 21:36	1.9876	129.8978
C06M06	2005-07-21 02:52	2.0025	129.9270
C06M07	2005-07-21 04:22	1.9881	129.9256
C06M08	2005-07-21 06:50	1.9976	129.8993
C06M09	2005-07-21 21:52	2.0343	130.0368
C06M10	2005-07-22 00:52	2.0573	130.0528
C06M11	2005-07-22 03:53	2.0710	130.0703
C06M12	2005-07-22 06:52	2.0591	130.0831

Related Information

MIRAI MR05-03 Leg1 Cruise Track

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MR05-03 Leg1
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Period: 2005-07-03 - 2005-07-25
Chief Scientist: Kentaro Ando (JAMSTEC)
Project Name: [Tropical Ocean Climate Study (TOCS)]

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HAKUHO MARU

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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)
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Dive ID: [----] [____] Go

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JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY