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Data and Sample Research System
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MIRAI MR11-05 Leg1 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

ReadMe Observation Data Data Format

Cruise ID: **MR11-05 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/MR11-05_leg1-2_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 MR11-05 Leg1 cruise are presented in "System".
The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in MR11-05 Leg1.
SEASAVE(ver 7.20g) for data acquisition
SEASOFT(ver 7.18d) for data processing
Data presented on this website is averaged over 1db.

System
・Pressure sensor
Model : SBE9plus, Sea-Bird Electronics,Inc.
Serial number : 117457
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 : 034815
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

· 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
F01M01	117457	034815	041203	430394
F01M02	117457	034815	041203	430394
JKOM01	117457	034815	041203	430394
K02M01	117457	034815	041203	430394
K02M02	117457	034815	041203	430394
K02M03	117457	034815	041203	430394
K02M04	117457	034815	041203	430394
K02M05	117457	034815	041203	430394
K02M06	117457	034815	041203	430394
K02M07	117457	034815	041203	430394
K02M08	117457	034815	041203	430394
K02M09	117457	034815	041203	430394
K02M10	117457	034815	041203	430394
K02M11	117457	034815	041203	430394
KNTM01	117457	034815	041203	430394

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.
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

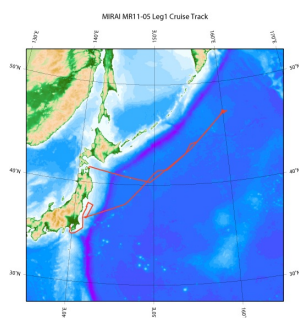Please see the site of NODC of the following link for quality control procedure in detail.

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

MIRAI MR11-05 Leg1 Cruise Track

MR11-05 Leg1
Ship Name: MIRAI
Period: 2011-06-26 - 2011-07-16
Chief Scientist: Makio Honda (JAMSTEC)
Project Name: [Station K2,Station KNOT]
Proposal ▶ Effects of meso-zooplankton on food web and vertical flux
Title:

Enlarge Image

Update History

2017-06-22	An observation data was registerd.
2014-08-08	An observation data was registerd.
2014-02-20	An observation data was registerd.
2013-07-30	An observation data was registerd.

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MIRAI MR11-05 Leg1 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-06-22

ReadMe Observation Data **Data Format**

Cruise ID: MR11-05 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
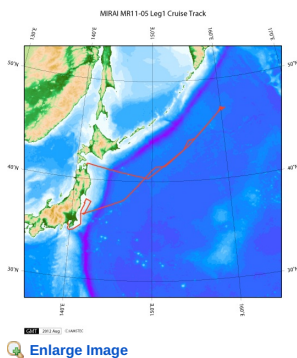   A - failed visual check

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

MIRAI MR11-05 Leg1 Cruise Track

Enlarge Image

MR11-05 Leg1
Ship Name: MIRAI
Period: 2011-06-26 - 2011-07-16
Chief Scientist: Makio Honda (JAMSTEC)
Project Name: [Station K2,Station KNOT]
Proposal ▶ Effects of meso-zooplankton on food web and vertical flux
Title:

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2017-06-22	An observation data was registerd.
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Last Modified: 2017-06-22

| ReadMe | Observation Data | Data Format |

Cruise ID: **MR11-05 Leg1**
Conductivity-Temperature-Depth Profiler (CTD): Processed (DMO)-QCed
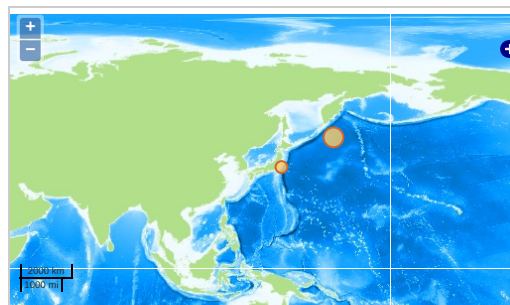**Data Policy**: **JAMSTEC**
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen
Science Keywords:

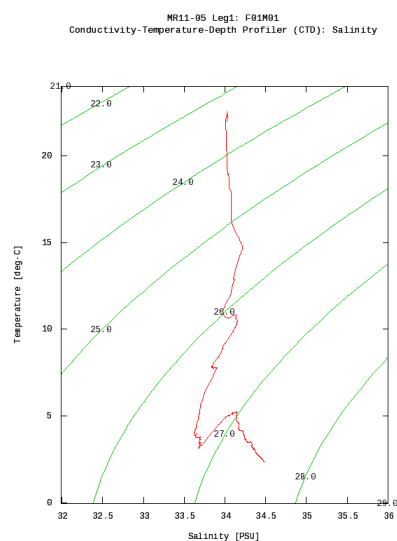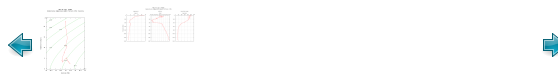| OCEANS | > OCEAN CHEMISTRY | > OXYGEN |
| OCEANS | > OCEAN TEMPERATURE | > WATER TEMPERATURE |
| OCEANS | > SALINITY/DENSITY | > SALINITY |

Observation Map

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

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

Imagery reproduced from ...

Figures

F01M01

MR11-05 Leg1: F01M01
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.
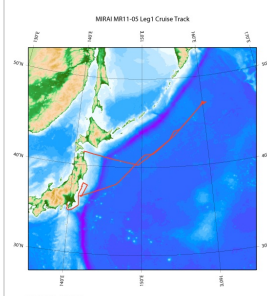
Data List

Add to Basket

	File names
☐	F01M01.dat
☐	F01M02.dat
☐	JKOM01.dat
☐	K02M01.dat
☐	K02M02.dat
☐	K02M03.dat
☐	K02M04.dat
☐	K02M05.dat
☐	K02M06.dat
☐	K02M07.dat
☐	K02M08.dat
☐	K02M09.dat
☐	K02M10.dat

File Names

- [ ] K02M11.dat
- [ ] KNTM01.dat
- [ ] ex_read2.f (Sample Program)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
F01M01	2011-07-12 17:34	36.4823	141.5028
F01M02	2011-07-12 23:50	36.4843	141.5035
JKOM01	2011-07-11 06:21	38.1100	146.4186
K02M01	2011-06-30 00:35	47.0391	159.9740
K02M02	2011-06-30 14:50	46.9978	160.2018
K02M03	2011-06-30 18:52	46.9971	160.1008
K02M04	2011-07-01 20:48	46.9993	160.0821
K02M05	2011-07-02 07:58	46.9903	160.0918
K02M06	2011-07-03 03:49	46.9253	160.1380
K02M07	2011-07-04 02:51	46.9860	159.9715
K02M08	2011-07-04 15:21	47.0001	160.0826
K02M09	2011-07-04 21:18	46.9990	160.0898
K02M10	2011-07-06 03:47	46.9291	160.1630
K02M11	2011-07-07 15:22	47.0055	160.0781
KNTM01	2011-07-09 07:37	44.0056	155.0209

Related Information

MIRAI MR11-05 Leg1 Cruise Track

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