

## SHINSEI MARU KS-17-J05 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-12-13

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

Cruise ID: [KS-17-J05](#)

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/KS-17-J05\\_all.pdf](http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/KS-17-J05_all.pdf)

### [For Using Data](#)

**Principal Investigator**

Data Management Office

**Use Constraints**

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

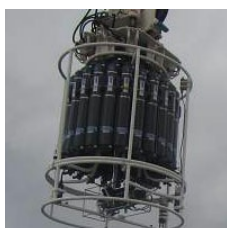
**Data Citation**

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

### Instrument

Instrument:

CTD (conductivity temperature depth measurements)



### 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 KS17-J05 cruise are presented in "System".

The following software, developed and supplied by the Sea-Bird Electronics, Inc., was used in KS17-J05.

SEASAVE(ver 7.21f) for data acquisition

SEASOFT(ver 7.21i) for data processing

Data presented on this website is averaged over 1db.

### System

• Pressure sensor

Model : SBE9plus, Sea-Bird Electronics, Inc.

Serial number : 127419

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 : 5760

Measurement range : -5.0 to +35degC

Accuracy :0.001degC

Resolution : 0.0002degC

• Salinity sensor

Model : SBE4, Sea-Bird Electronics, Inc.

Serial number : 4205

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 : 2525

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
C1_1	127419	5760	4205	2525
C2_1	127419	5760	4205	2525
C3_1	127419	5760	4205	2525

Cast name	Serial Number of Sensor	Pressure	Temperature	Salinity	Dissolved Oxygen
C4_1	127419	5760	4205	2525	
C5_1	127419	5760	4205	2525	
C6_1	127419	5760	4205	2525	
D3_1	127419	5760	4205	2525	
D4_1	127419	5760	4205	2525	
D5_1	127419	5760	4205	2525	
D6_1	127419	5760	4205	2525	
D7_1	127419	5760	4205	2525	
D8_1	127419	5760	4205	2525	
H1_1	127419	5760	4205	2525	
H2_1	127419	5760	4205	2525	
H3_1	127419	5760	4205	2525	
H4_1	127419	5760	4205	2525	
H5_1	127419	5760	4205	2525	
H6_1	127419	5760	4205	2525	
O1_1	127419	5760	4205	2525	
O2_1	127419	5760	4205	2525	
O3_1	127419	5760	4205	2525	
O4_1	127419	5760	4205	2525	
O5_1	127419	5760	4205	2525	
O6_1	127419	5760	4205	2525	

### Data processing

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

"\*4\*" is not SEASOFT original procedure.

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.
filter	Low-pass filter columns of data.
wfilter	Median filter removes spikes of fluorometer data.
alignctd	Align data relative to pressure(typically used for conductivity, temperature, and oxygen)
celltm	Perform conductivity thermal mass correction.
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.
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.

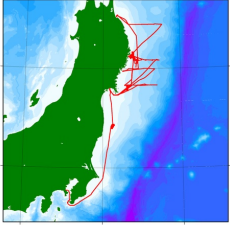
**[QUALITY CONTROL AND PROCESSING OF HISTORICAL OCEANOGRAPHIC TEMPERATURE, SALINITY, AND OXYGEN DATA](#)**

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, photosynthetic active radiation, transmittance, turbidity, surface PAR, 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



SHINSEI MARU KS-17-J05 Cruise Track

**KS-17-J05**  
 Ship Name: SHINSEI MARU  
 Period: 2017-03-12 - 2017-03-30  
 Chief Scientist: Masahide Wakita (JAMSTEC)  
 Project Name: [Tohoku Ecosystem-Associated Marine Sciences (TEAMS)]  
 Proposal Title: Marine Ecosystems Investigation, Impact by the mega-earthquake (the 2011 Earthquake of the Pacific coast of Tohoku) and Tsunami: For Recovery and Rebuilding of Sanriku Fisheries Activities



### Update History

2017-12-13      An observation data was registerd.

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 YOKOSUKA  
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#### Information of the Submersibles

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 SHINKAI 6500  
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 YOKOSUKA DEEP TOW  
 6K Camera DEEP TOW  
 6K Sonar DEEP TOW  
 KM-ROV  
 POWER GRAB SAMPLER

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Dive ID:

(SHELL)  
POWER GRAB SAMPLER  
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JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

## SHINSEI MARU KS-17-J05 Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2017-12-13

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

 Cruise ID: [KS-17-J05](#)

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 : <a href="#">Definition of Quality Control Flags</a>
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

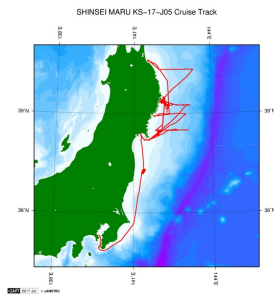
QCed data were added flag according to the NODC (National Oceanographic Data Center) quality control procedure, additionally visually checked. Please see the site of NODC of the following link for quality control procedure.

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

#### Sample Program

[ex\\_read2.f](#)

#### Related Information



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#### KS-17-J05

Ship Name: SHINSEI MARU

Period: 2017-03-12 - 2017-03-30

Chief Scientist: Masahide Wakita (JAMSTEC)

Project Name: [Tohoku Ecosystem-Associated Marine Sciences (TEAMS)]

Proposal Title: Marine Ecosystems Investigation, Impact by the mega-earthquake (the 2011 Earthquake of the Pacific coast of Tohoku) and Tsunami: For Recovery and Rebuilding of Sanriku Fisheries Activities

#### Update History

2017-12-13	An observation data was registered.
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Conductivity-Temperature-Depth Profiler (CTD): Processed (DMO)-QCed

Data Policy: **JAMSTEC**

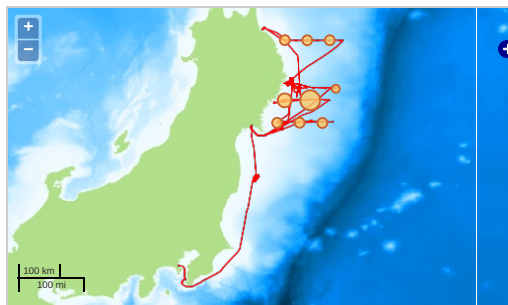
Observation Items: Pressure, Temperature, Salinity, Dissolved oxygen

Science Keywords:

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

### Observation Map

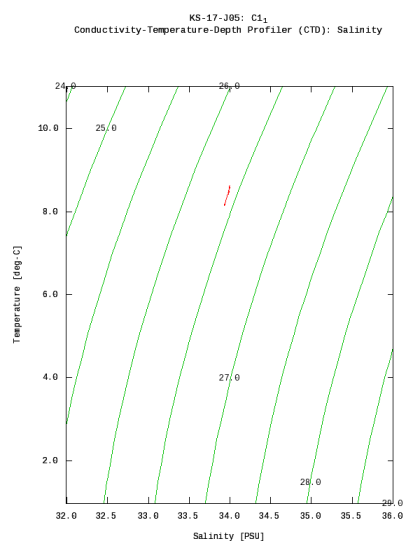
1. Clicking the icon displays a balloon with observation information.
2. Then click the observation name, figures will be displayed.



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

### Figures

C1\_1



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

- ☐ C1\_1.dat
- ☐ C2\_1.dat
- ☐ C3\_1.dat
- ☐ C4\_1.dat
- ☐ C5\_1.dat
- ☐ C6\_1.dat
- ☐ D3\_1.dat
- ☐ D4\_1.dat
- ☐ D5\_1.dat
- ☐ D6\_1.dat
- ☐ D7\_1.dat
- ☐ D8\_1.dat
- ☐ H1\_1.dat

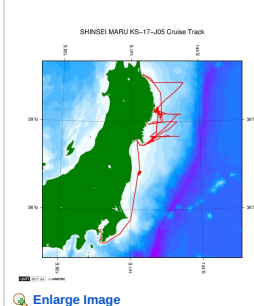
## File names

[H3\\_1.dat](#)  
[H4\\_1.dat](#)  
[H5\\_1.dat](#)  
[H6\\_1.dat](#)  
[O1\\_1.dat](#)  
[O2\\_1.dat](#)  
[O3\\_1.dat](#)  
[O4\\_1.dat](#)  
[O5\\_1.dat](#)  
[O6\\_1.dat](#)  
[ex\\_read2.f \(Sample Program\)](#)

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

Observation	Time and Date	Lat. [°]	Lon. [°]
C1_1	2017-03-13 06:57	39.0001	142.0004
C2_1	2017-03-13 09:45	39.0013	142.1655
C3_1	2017-03-13 13:40	39.0003	142.3645
C4_1	2017-03-12 18:24	39.0028	142.5660
C5_1	2017-03-12 13:56	39.0025	142.8035
C6_1	2017-03-12 09:38	38.9828	143.0011
D3_1	2017-03-24 12:53	38.5011	141.8334
D4_1	2017-03-24 16:10	38.4926	142.0780
D5_1	2017-03-26 10:37	38.5035	142.3331
D6_1	2017-03-26 06:34	38.5241	142.5978
D7_1	2017-03-26 02:30	38.4985	142.8373
D8_1	2017-03-25 22:03	38.4996	143.0830
H1_1	2017-03-16 07:00	40.3365	142.0038
H2_1	2017-03-16 22:12	40.3341	142.2520
H3_1	2017-03-17 01:49	40.3335	142.5010
H4_1	2017-03-17 06:00	40.3330	142.7490
H5_1	2017-03-17 10:32	40.3341	143.0011
H6_1	2017-03-17 15:08	40.3325	143.2556
O1_1	2017-03-23 08:58	39.2501	142.1668
O2_1	2017-03-23 12:06	39.2331	142.3334
O3_1	2017-03-23 15:34	39.2686	142.4991
O4_1	2017-03-20 06:34	39.2485	142.6678
O5_1	2017-03-20 11:25	39.2470	142.9230
O6_1	2017-03-20 16:15	39.2570	143.1351

## Related Information



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 Project Name: [Tohoku Ecosystem-Associated Marine Sciences (TEAMS)]  
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