KAIKO KAIKO 00561 Submersible Conductivity-Temperature-Depth Profiler (CTD)

Last Modified: 2018-01-31

ReadMe | Observation Data | Data Format

Dive No.: KAIKO 00561

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

Data Policy: JAMSTEC

Observation Items: Depth/Pressure, Temperature, Salinity

Science Keywords:

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

Cruise Report

http://www.godac.jamstec.go.jp/catalog/data/doc_catalog/media/KR12-14_all.pdf

For Using Data

Principal Investigator

Data Management Office

Use Constraints

See Terms and Conditions about constrain of use.

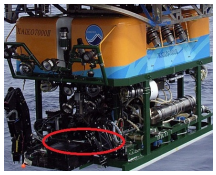
Data Citation

See Terms and Conditions about data citation.

Instrument

Instrument:

CTD measurement system equipped on the remotely operated vehicle "KAIKO" (- KAIKO 00641)



Overview

The CTD system mounted on the remotely operated vehicle "KAIKO" is consisted of SBE-49 FastCAT CTD Sensor of Sea-Bird Electronics, Inc. Its withstand depth is 10500m and its maximum depth of use is 7000m. Each parameter of conductivity, water temperature, and pressure can be measured in 1Hz and is transmitted to the CTD processing part. In the processing part, ASCII conversion is conducted.

Specifications

SBE-49 FastCAT, Sea-Bird Electronics, Inc.

Sensor	Measurement range	Accuracy	Model
Temperature	-5 to +35 deg-C	0.002 deg-C	SBE 49
Conductivity	0 to 9 S/m	0.0003 S/m	
Pressure	0 to 15000 psia	0.1% of full scale range	

Data collection and situations

The data collection in each dive starts from the high-voltage power supply to the vehicle starts, and ends when high-voltage de-energized.

Because of the installed position of the primary detecting element, the offset correction of 0.5m is added in depth of CTD.

The internal clock of CTD is synchronized, in each action, with ship's time server.

Data available here

The data available on this web site is 1-sec mean CTD data integrated with "KAIKO" vehicle (hereafter, the submersible vehicle) positioning data in latitude and longitude. The SSBL (Super Short Base Line) method is used to measure the submersible vehicle's position, which requires transponder mounted on the rear part of the vehicle and an array of transducers equipped on the lower front of the launcher. The position is measured by both phase lag measured from angles of received sound waves and distance calculated from travelling period of them. Because the baseline length (i.e., a distance between transducers and the transponder) is short, a horizontal error is about 2.5% of slant range (i.e., a distance between the submersible vehicle and the mother ship). The SSBL method has a characteristic that it is a little less accurate but easier to operate than the LBL (Long Base Line) method because it doesn't need to deploy sea-bed mounted transponder(s). Vertical profile of sound velocity is needed to calculate accurate distance from the travelling period. Therefore, the temperature measurement using XBT etc. of each sea area is executed.

The submersible vehicle positioning data was calculated by adding the relative distance to the mother ship's position. The simplified equation with the area-dependent coefficients every 30 degrees in latitude and longitude was applied to the distance (XY) to Lon/Lat conversion, which provided by Japan Coast Guard. Here, the original time interval of position data is more than 10 seconds. The noises remaining in the position data are manually eliminated and linearly interpolated when the speed calculated from adjacent two position data is greater than 1.5 knot which is the maximum operation speed of the submersible vehicle. Moreover, noises remained in the depth, temperature, and salinity data are visually checked and replaced to missing values only when the data seemed to be obviously abnormal.

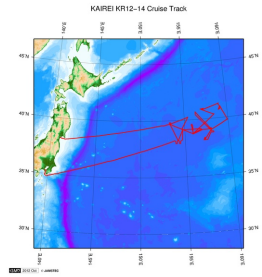
The CTD system was not installed as the observation equipment, but installed as one of the navigation equipment to monitor the ambient environmental conditions of the vehicle. So, note that the calibration interval of the equipment is not especially provided and the calibration of the equipment is irregularly executed.

After considering the accuracy of the sensors, the significant digit of data was changed as in the following list.

Data	Raw	On this web site
Pressure	0.001 [dbar]	0.1 [dbar]
Temperature	0.0001 [deg-C]	0.01 [deg-C]
Salinity	0.0001 [PSU]	0.01 [PSU]

Related Information

Cruise Data | Dive Data



Enlarge Image

KR12-14
Ship Name: KAIREI
Period: 2012-08-17 - 2012-09-04
Chief Scientist: Hisashi Utada (The University of Tokyo)
Proposal Title: New phase of Ocean Hemisphere Project: Imaging the normal oceanic mantle by advanced ocean bottom observations

Update History

2018-01-31	An observation data was registerd.

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Information of the Ships
NATSUSHIMA
KAIYO
YOKOSUKA
MIRAI
KAIREI
CHIKYU
KAIMEI
SHINSEI MARU
HAKUHO MARU

Information of the Submersibles
KAIKO
SHINKAI 2000
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

Go to a Dive Information
Dive ID: ---- Go

JAMSTEC 国立研究開発法人 海洋研究開発機構
JAPAN AGENCY FOR MARINE-EARTH SCIENCE AND TECHNOLOGY

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Submersible CTD Qced (KAIKO)

Header part

No.	Column	Item	Format	Remarks
1	1	Header ID	a1	fixed as '#'
2	3 - 37	Submersible vehicle	a35	KAIKO
3	39 - 48	Data ID	a10	CTD
4	50 - 70	Cruise ID	a21	KRYY-XX(_legx)
5	78 - 81	Dive number	a4	

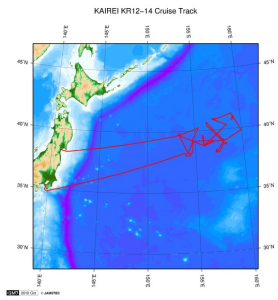
Data part

No.	Column	Item	Unit	Format	Remarks
1	1 - 8	Date	-	i8	YYYYMMDD (LST)
2	10 - 15	Time	-	i6	hhmmss (LST)
3	17 - 26	Latitude	degree	f10.5	No sign for the northern hemisphere. Negative for the southern hemisphere.
4	28 - 37	Longitude	degree	f10.5	No sign for the eastern hemisphere. Negative for the western hemisphere.
5	39 - 48	Pressure	dbar	f10.1	
6	50 - 59	Temperature	deg-C	f10.2	ITS-90
7	61 - 70	Salinity	PSU	f10.2	PSS-78
8	72 - 81	Dissolved oxygen	ml/l	f10.1	
9	83 - 92	Altitude	m	f10.1	
10	94 - 103	Vehicle heading	degree	f10.1	
11	105 - 114	pan	degree	f10.1	
12	116 - 125	tilt	degree	f10.1	

Missing value is presented by '-999'.

Related Information

Cruise Data Dive Data



Enlarge Image

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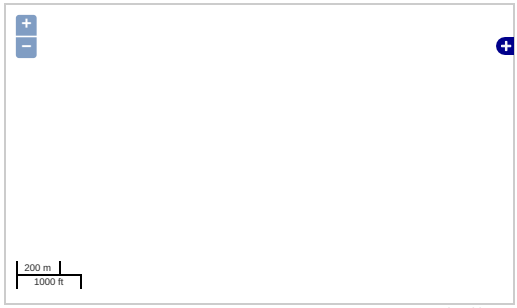
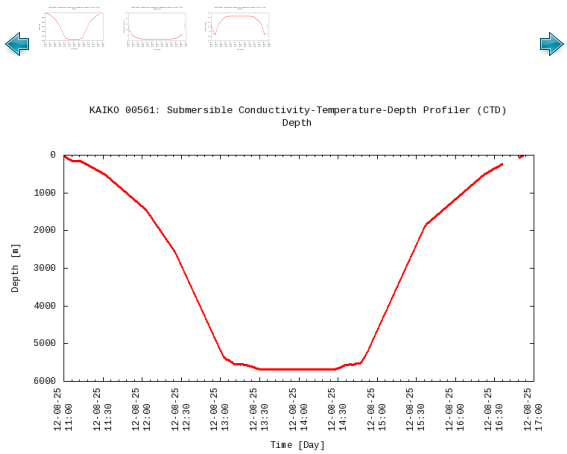
Observation Map



Imagery reproduced from ...

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

Figures



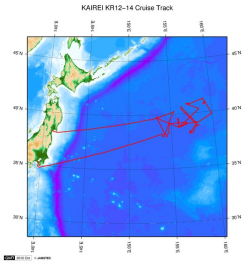
Data List

Add to Basket

File names
KAIKO_00561r.txt

Related Information

Cruise Data Dive Data



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