KAIYO KY01-11 Leg2 Expendable Conductivity-Temperature-Depth Profiler (XCTD)

Last Modified: 2012-12-25

ReadMe | Observation Data

Cruise ID: KY01-11 Leg2
Expendable Conductivity-Temperature-Depth Profiler (XCTD): Processed (PI)
Data Policy: JAMSTEC
Observation Items: Depth, 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/KY01-11_all.pdf

For Using Data

Principal Investigator
Yuji Kashino (JAMSTEC)

Use Constraints
See Terms and Conditions about constrain of use.

Data Citation
See Terms and Conditions about data citation.

Overview
Please see the cruise report(PDF file) for details of data.

XCTD data in the TOCS project

Oct.6, 2006
by Yuji Kashino

XCTD observations were carried out at some stations because of saving ship-time and to avoid pirates after the KY9901 cruises. For these observations, we used XCTD-1 probes, the data converter, MK-100, and a hand-held launcher made by Tsurumi Seiki Co. Ltd. Temperature and salinity were measured down to 1000m except for some casts. Depth values were calculated using the formula developed by Mizuno and Watanabe (1998).

Data processing was carried out as follows:
1) Data was first averaged in 1m bins.
2) Considering compatibility with CTD data set, depth values were then converted to pressure values. Then, temperature and salinity values were calculated every 1 dbar by interpolating values of the bins above and below.
3) Finally, a data set with the same format as CTD was created.

We checked XCTD performance at st.X029 during KY9901 cruise and X088 during KY9909, deploying more than two XCTD probes and comparing CTD data. The results demonstrated an accuracy of 0.01 K in temperature and 0.01-0.02 PSU in salinity. However, salinity offset with value of +/-0.05PSU was sometimes seen at the deepest layer (1000db). We did not correct this offset. Therefore, when XCTD data is used, please check T-S diagram and compare with climatorological data such as World Ocean Atlas.

Data format is almost the same as that of CTD defined in the WOCE Hydrographic Programme (WHP) as follows:

1st line:
Expedition designation (country code(49), ship code(XK), cruise/leg designation), line name and date(month/day/year).
format(9x,a10,12x,a5,6x,3i2)

2nd line:
Station number, the number of records, and cast number.
format(7x,i3,12x,i5,9x,i2)

3rd line:
date(day/month/year), time(hour/minute) and location(latitude/longitude, N/S: North/South, E/W: East/West).
format(i2,1x,a3,1x,i4,1x,i2,1x,i2,2x,i2,1x,f5.2,1x,a1,1x,i3,1x,f5.1,1x,a1)

4th line:
Headers for data columns.

5th line:
Units headers for data columns.
Pressure: deci-bar,
Temperature: degree (ITS-90),
Salinity: Practical Salinity Unit,
(For compatibility with CTD data set, columns of dissolved oxygen, number of observation per bin, and flags are added.)

6th line:
Separation

7th line-End of file:
Data lines (pressure, in-situ temperature, salinity). Pressure interval is one deci-bar. Data flags are always 2.
format(f8.1,2f8.3)

Following is a sample FORTRAN program.

```
------------------------------------------------------------------------
c
c   Sample program
c
```

```
c
      character expocode*10,lineid*5,NS*1,EW*2,cmonth*3,dummy*48
      dimension p(5000),t(5000),s(5000)
c
      open(10,file='G:TOCSKy0111XCTDK0111001.XCT',status='old')
c
      read(10,101) expocode,lineid,imo,idy,iyr
  101 format(9x,a10,12x,a5,6x,3i2)
      write(6,201) expocode,lineid,imo,idy,iyr
  201 format('EXPOCODE='a10,1x,'Line id='a5,1x,'Date=',i2,'/',i2,'/',i2)
c
      read(10,102) istnnbr,irec,icast
  102 format(7x,i3,12x,i5,9x,i2)
      write(6,202) istnnbr,irec,icast
  202 format('Stn No.=',i3,1x,'No of records=',i5,1x,'Cast No.=',i2)
c
      read(10,103) idy,cmon,iyr,ihr,imi,ilat,flat,NS,ilon,flon,EW
  103 format(i2,1x,a3,1x,i4,1x,i2,1x,i2,2x,i2,1x,f5.2,1x,a1,1x,i3,
     @       1x,f5.1,1x,a1)
      write(6,203) idy,cmon,iyr,ihr,imi,ilat,flat,NS,ilon,flon,EW
  203 format('Date=',i2,'/',a3,'/',i4,1x,'Time='i2,':',i2,1x,
     @       'Lat= ',i3,'-',f5.2,a1,1x,'Lon= ',i3,'-',f5.2,a1)
c
      read(10,'(a)') dummy
      read(10,'(a)') dummy
      read(10,'(a)') dummy
c
      do 10 n=1,irec
        read(10,104) p(n),t(n),s(n)
  104   format(f8.1,2f8.3)
        if( n.eq.1 .or. n.eq.irec ) then
          write(6,204) p(n),t(n),s(n)
  204     format('P=',f8.1,1x,'T=',f8.3,1x,'S=',f8.3)
        endif
   10 continue
      close(10)
      stop
      end
```

Others

Quality flags

Quality flags definitions for CTD/XCTD data

Byte Value	Definition
1	Not calibrated with water samples.
2	Acceptable measurement.
3	Quwstionable measurement.
4	Bad measurement.
5	Not reported.
6	Interpolated value.
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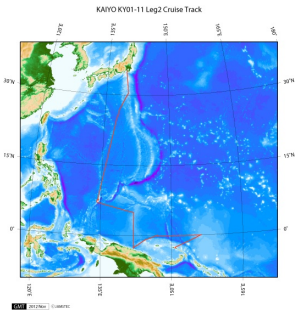
9	Not sampled.

Each CTD/XCTD parameter has two quality bytes, or flags, associated with it in two separate quality words. The definitions apply both to the analyst and the DQE quality words.

Related Information



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KY01-11 Leg2
Ship Name: KAIYO
Period: 2001-12-13 - 2002-01-07
Chief Scientist: Yuji Kashino (JAMSTEC)

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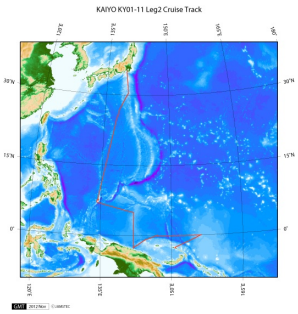

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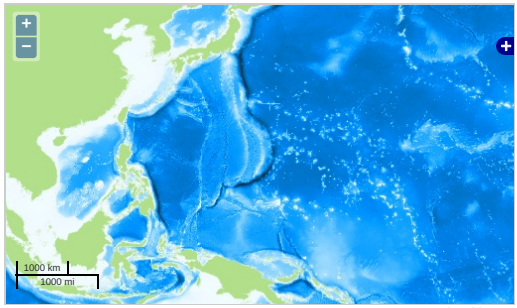
Observation Map



Imagery reproduced from ...

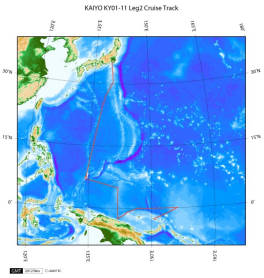
... Observation Line ... Navigation ... Observation, Dive Point, Hole

Data List

Add to Basket

File names
K0111020.XCT
K0111021.XCT
K0111022.XCT
K01110222.XCT
K0111023.XCT
K0111024.XCT
K0111025.XCT
K0111026.XCT
K0111027.XCT
KY01-11_leg2.sum

Related Information



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