5.23 XCTD

(1) Personnel

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(2) Objective

The objective of XCTD (eXpendable Conductivity, Temperature & Depth profiler) observation in this cruise is to obtain the spatial structure of the ocean, especially for the meridional cross section in the south of equator along 80E.

(3) Methods

We observed the vertical profiles of the sea water temperature and salinity measured by XCTD-1 (manufactured by Tsurumi-Seiki Co.). The signal was converted by MK-130 (Tsurumi-Seiki Co.) and was recorded by MK-130 software (Ver.3.07) (Tsurumi-Seiki Co.). The specifications of the measured parameters are as in Table 5.23-1. We launched 14 probes by using automatic launcher during Leg-2 as listed in Table 5.23-2.

Table 5.23-1: The range and accuracy of parameters measured by XCTD-1.

Parameter	Range	Accuracy
Conductivity	0 ~ 60 [mS/cm]	+/- 0.03 [mS/cm]
Temperature	-2 ~ 35 [deg-C]	+/- 0.02 [deg-C]
Depth	0 ~ 1000 [m]	5 [m] or 2 [%] (either of them is major)

(4) Preliminary results

The vertical cross section along 80E on Nov.28-30 is displayed in Fig. 5.23-1. The “ridge” of the thermocline could found around 4S.

(5) Data archive

All data during this cruise will be submitted to the JAMSTEC Data Integration and Analysis Group (DIAG). The corrected datasets will be available at Mirai website at http://www.jamstec.go.jp/cruisedata/mirai/e/, and CINDY website.

Table 5.23-2: List of XCTD observations. SST (sea surface temperature) and SSS (sea surface salinity) at each launch are obtained by TSG (Section 5.13).

No.	Station	Date	Time	Latitude [dd-mm]	Longitude [dd-mm]	SST [deg-C]	SSS [PSU]	Probe S/N
X01	07-30S	2011/11/28	10:21	07-30.0495S	080-03.2303E	28.207	33.822	11063518
X02	07-00S	2011/11/28	12:59	06-59.9613S	079-38.5229E	28.458	33.717	11063519
X03	06-30S	2011/11/28	15:32	06-29.9337S	079-14.2016E	28.518	33.857	11079677
X04	06-00S	2011/11/28	18:23	05-59.9875S	078-49.7507E	28.653	33.883	11053320
X05	05-30S	2011/11/28	21:25	05-29.9931S	078-25.5407E	28.686	34.031	10079678
X06	04-30S	2011/11/29	17:09	04-30.0259S	078-19.0458E	28.974	34.201	11053316
X07	04-00S	2011/11/29	19:27	03-59.9417S	078-30.1535E	28.813	34.137	11053314
X08	03-30S	2011/11/29	21:38	03-30.0843S	078-41.2622E	28.664	34.047	11053313
X09	03-00S	2011/11/29	23:50	02-59.9457S	078-53.0346E	28.603	34.133	11053310
X10	02-30S	2011/11/30	02:03	02-29.0071S	079-04.2896E	28.874	34.401	11053317
X11	02-00S	2011/11/30	04:13	01-58.9488S	079-15.5740E	28.864	34.537	11053318
X12	01-30S	2011/11/30	06:19	01-29.7614S	079-26.4358E	29.153	34.648	11053309
X13	01-00S	2011/11/30	08:29	01-00.0104S	079-39.0446E	29.225	34.803	11053312
X14	00-50S	2011/11/30	10:40	00-30.0179S	079-50.3295E	28.908	35.062	11053315

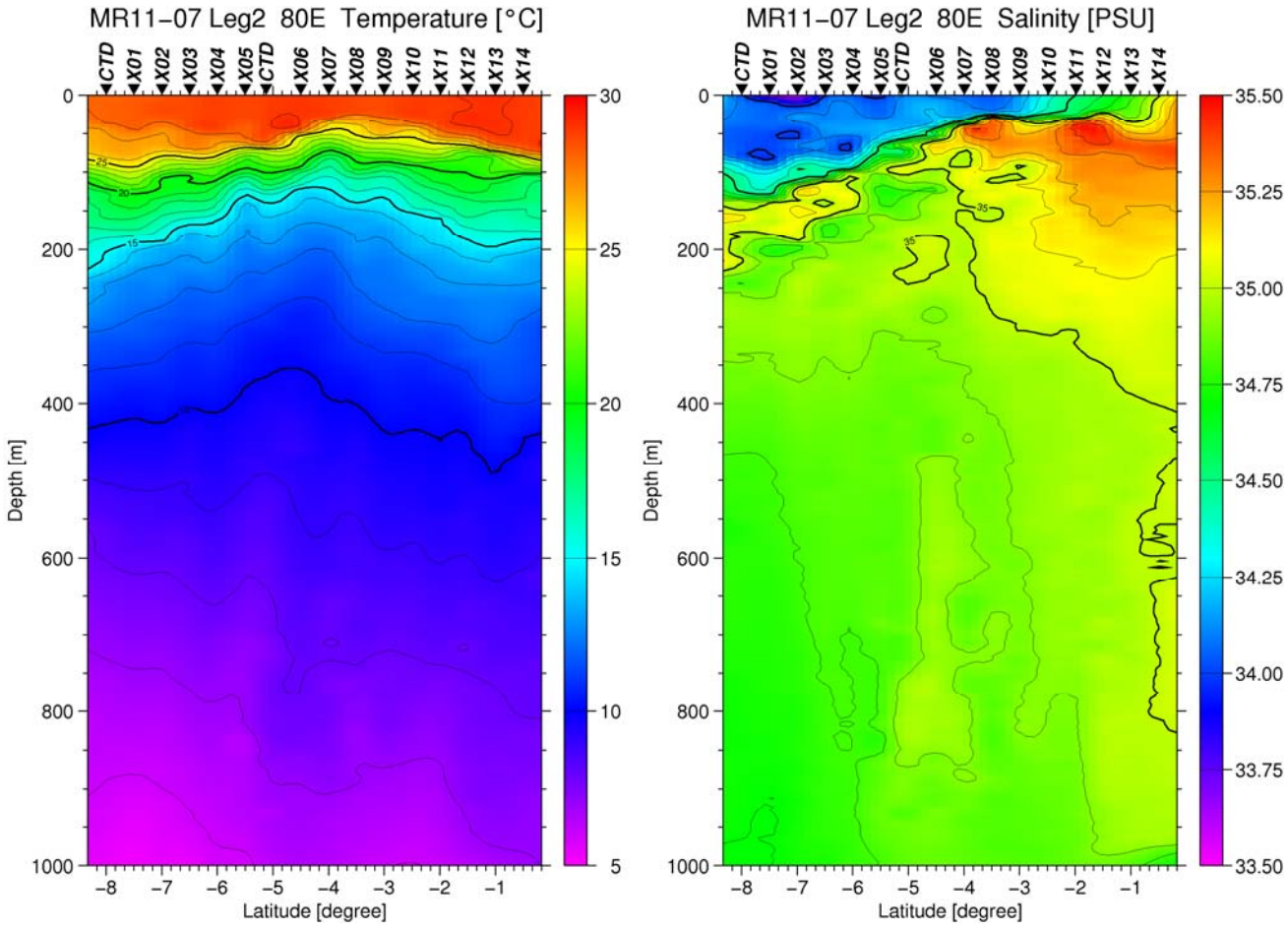

Fig.5.23-1: Vertical cross sections of the temperature (left) and the salinity (right) along 80E at Nov.28-30, 2011, obtained by combining XCTD and CTD observations (Section 5.14).