



# R/V Kaiyo Cruise Report

KY11-E02

Seismic study in the Izu-Ogasawara region

Mar. 28, 2011 – Apr. 05, 2011

Japan Agency for Marine-Earth Science and Technology  
(JAMSTEC)

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1 . Cruise Information :

( 1 ) Cruise number, Ship name: KY11-E02, R/V Kaiyo

( 2 ) Title of the cruise:

2010FY “Seismic study in the Izu-Ogasawara region”

( 3 ) Title of proposal:

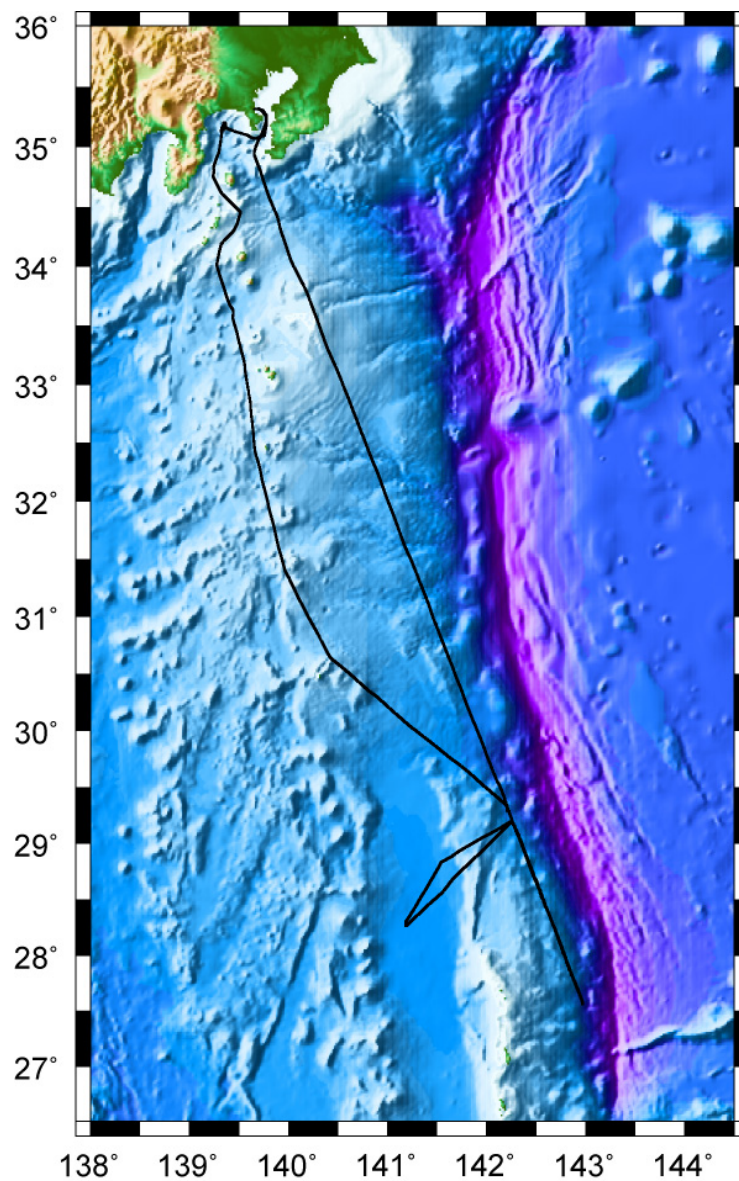
Crustal growth of the Izu-Ogasawara oceanic island arc –Seismic study for IODP  
Project IBM-

( 4 ) Cruise period, Port call:

2011/03/28-04/05, JAMSTEC (Yokosuka) to JAMSTEC (Yokosuka)

( 5 ) Research Area: Izu-Ogasawara region

( 6 ) Research Map:



## 2. Researchers

( 1 ) Chief Scientist [Affiliation]: Takeshi SATO [JAMSTEC]

( 2 ) Representative of Science Party [Affiliation]:

Yoshiyuki TATSUMI [JAMSTEC]

( 3 ) Science party list:

Shuichi KODAIRA [JAMSTEC]

Narumi TAKAHASHI [JAMSTEC]

Yuka KAIHO [JAMSTEC]

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Naoto NOGUCHI [JAMSTEC]

### 3. Overview of Observation :

#### (1) Objectives :

In the Izu-Ogasawara area, IFREE has conducted seismic surveys intensively to understand crustal evolution of oceanic arcs since 2004. The objectives of this cruise are to reveal the distribution of the detail crustal structure in the fore-arc area and in these planed drill points of the “Project IBM” being one of an IODP proposal. In this cruise, OBSs were recovered because the recovery of OBSs by KR11-05 cruise was interrupted by the 2011 Off the Pacific Coast of Tohoku Earthquake in Japan.

#### (2) List of observation instruments :

##### 1) Recovery of ocean bottom seismometers (OBSs)

43 OBSs (KT06\_1-43) deployed off north-northeast of Chichi-jima by KR11-05 Leg1 cruise were recovered.

##### 2) Bathymetry observation

During this cruise, bathymetry data have been recorded continuously by SEABEAM2112.

##### 3) Temperature observation for the correction of sonic speed

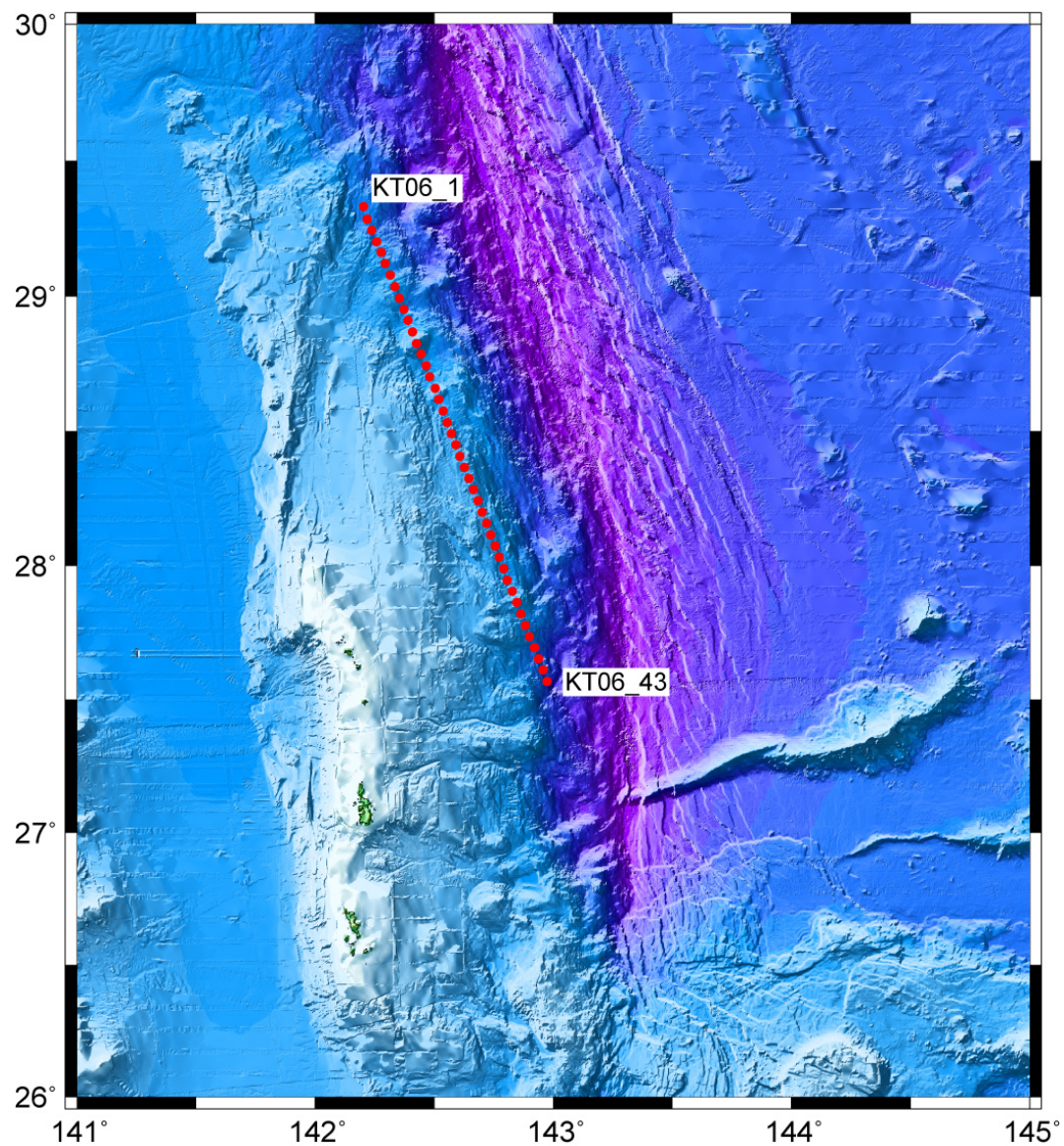
Expendable-Bathy Thermograph (XBT) was conducted to correct the sonic speed for the bathymetry survey.

#### (3) Cruise log:

| Date       |     | Remarks                                                                                 |
|------------|-----|-----------------------------------------------------------------------------------------|
| 2011/03/38 | Mon | Departure from JAMSTEC (Yokosuka), and transit to survey area                           |
| 2011/03/29 | Tue | Transit to survey area and recovery of OBSs (KT06_2-3)                                  |
| 2011/03/30 | Wed | Holding of the observation due to the bad sea condition and recovery of OBSs (KT06_4-7) |
| 2011/03/31 | Thu | Recovery of OBSs (KT06_8-21,23-25)                                                      |
| 2011/04/01 | Fri | Recovery of OBSs (KT06_26-40)                                                           |
| 2011/04/02 | Sat | Recovery of OBSs (KT06_1,22,41-43)                                                      |
| 2011/04/03 | Sun | Transit to JAMSTEC (Yokosuka)                                                           |
| 2011/04/04 | Mon | Transit to JAMSTEC (Yokosuka)                                                           |
| 2011/04/05 | Tue | Transit to JAMSTEC (Yokosuka) and Arrive at there                                       |

(4) Seismic lines

1) OBSs locations



Red circles show locations of recovered OBSs.

(1) OBS list

| Site   | OBS Calibration position |              |          |        |       | Remarks |
|--------|--------------------------|--------------|----------|--------|-------|---------|
|        | Latitude(N)              | Longitude(E) | Depth(m) | x      | y     |         |
| KT06_1 | 29_19.8748               | 142_12.1399  | 4794.5   | -      | -     | 1       |
| KT06_2 | 29_17.1174               | 142_13.0753  | 4883.0   | -107.5 | -1.0  |         |
| KT06_3 | 29_14.6407               | 142_14.1973  | 4843.1   | -      | -     | 1       |
| KT06_4 | 29_12.1329               | 142_15.4167  | 4821.3   | -      | -     | 1       |
| KT06_5 | 29_09.7516               | 142_16.5220  | 4581.5   | -76.7  | -10.0 |         |
| KT06_6 | 29_07.2454               | 142_17.6525  | 4452.9   | 7.3    | -10.0 |         |

|         |            |             |        |        |        |   |
|---------|------------|-------------|--------|--------|--------|---|
| KT06_7  | 29_04.6922 | 142_18.8812 | 4389.7 | -      | -      | 1 |
| KT06_8  | 29_02.1444 | 142_20.0705 | 4055.1 | -      | -      | 1 |
| KT06_9  | 28_59.6354 | 142_21.1377 | 4054.7 | -41.3  | -3.3   |   |
| KT06_10 | 28_57.1451 | 142_22.2370 | 4464.0 | -      | -      | 1 |
| KT06_11 | 28_54.6848 | 142_23.3218 | 4373.1 | 10.0   | -36.7  |   |
| KT06_12 | 28_52.0454 | 142_24.4190 | 3910.9 | 13.3   | -6.7   |   |
| KT06_13 | 28_49.5339 | 142_25.4792 | 3334.9 | -23.3  | -10.0  |   |
| KT06_14 | 28_47.1370 | 142_26.6546 | 4217.5 | -46.7  | -53.3  |   |
| KT06_15 | 28_44.5706 | 142_27.8263 | 4123.9 | -      | -      | 1 |
| KT06_16 | 28_42.1677 | 142_28.8290 | 4160.0 | -93.3  | -100.0 |   |
| KT06_17 | 28_39.5603 | 142_30.1202 | 4115.0 | 23.3   | -40.0  |   |
| KT06_18 | 28_37.0847 | 142_31.0749 | 3642.0 | 26.7   | 33.3   |   |
| KT06_19 | 28_34.4878 | 142_32.1835 | 3699.5 | -23.3  | 13.3   |   |
| KT06_20 | 28_31.9679 | 142_33.2103 | 3556.9 | -      | -      | 1 |
| KT06_21 | 28_29.4749 | 142_34.2269 | 3329.5 | -80.0  | -3.3   |   |
| KT06_22 | 28_27.0334 | 142_35.4016 | 3123.4 | -      | -      | 1 |
| KT06_23 | 28_24.4773 | 142_36.4473 | 3142.1 | -23.3  | 3.3    |   |
| KT06_24 | 28_22.0041 | 142_37.5378 | 3157.7 | -73.3  | -46.7  |   |
| KT06_25 | 28_19.4840 | 142_38.6725 | 3155.6 | 3.3    | -26.7  |   |
| KT06_26 | 28_16.9679 | 142_39.8037 | 3141.5 | -76.7  | -13.3  |   |
| KT06_27 | 28_14.4817 | 142_40.9459 | -      | 26.7   | -3.3   |   |
| KT06_28 | 28_11.9372 | 142_42.0360 | 3167.2 | -40.0  | 23.3   |   |
| KT06_29 | 28_09.4385 | 142_43.0967 | 3154.2 | 46.7   | 3.3    |   |
| KT06_30 | 28_06.8989 | 142_44.1417 | 3342.5 | -6.7   | -23.3  |   |
| KT06_31 | 28_04.4128 | 142_45.2306 | 3623.7 | -53.3  | -56.7  |   |
| KT06_32 | 28_01.9044 | 142_46.3572 | 3567.4 | -      | -      | 1 |
| KT06_33 | 27_59.3750 | 142_47.4555 | 3823.0 | -      | -      | 1 |
| KT06_34 | 27_56.7475 | 142_48.3797 | 3813.9 | -      | -      | 1 |
| KT06_35 | 27_54.2738 | 142_49.5510 | 3739.0 | -70.0  | -86.7  |   |
| KT06_36 | 27_51.7664 | 142_50.6833 | 3513.7 | -26.7  | -30.0  |   |
| KT06_37 | 27_49.2251 | 142_51.7615 | 4065.8 | 13.3   | 3.3    |   |
| KT06_38 | 27_46.5945 | 142_52.8859 | 4029.0 | -93.3  | 30.0   |   |
| KT06_39 | 27_44.1384 | 142_53.9342 | 4318.2 | -      | -      | 1 |
| KT06_40 | 27_41.6203 | 142_55.1279 | 5126.5 | -80.0  | -26.7  |   |
| KT06_41 | 27_39.1299 | 142_56.2277 | 5465.6 | 23.3   | -30.0  |   |
| KT06_42 | 27_36.6899 | 142_57.3153 | 5427.4 | -      | -      | 1 |
| KT06_43 | 27_34.0433 | 142_58.3264 | 5796.5 | -120.0 | -103.3 |   |

Remarks:

1: OBS calibration position conducted by KR11-05 Leg1 cruise

4 . Notice on using:

This cruise report is a preliminary documentation as of the end of the cruise. It may not be corrected even if changes on content (i.e. taxonomic classifications) are found after publication. It may also be changed without notice. Data on the cruise report may be raw or not processed. Please ask the PI(s) for the latest information before using. Users of data or results of this cruise are requested to submit their results to Data Integration and Analysis Group (DIAG), JAMSTEC.