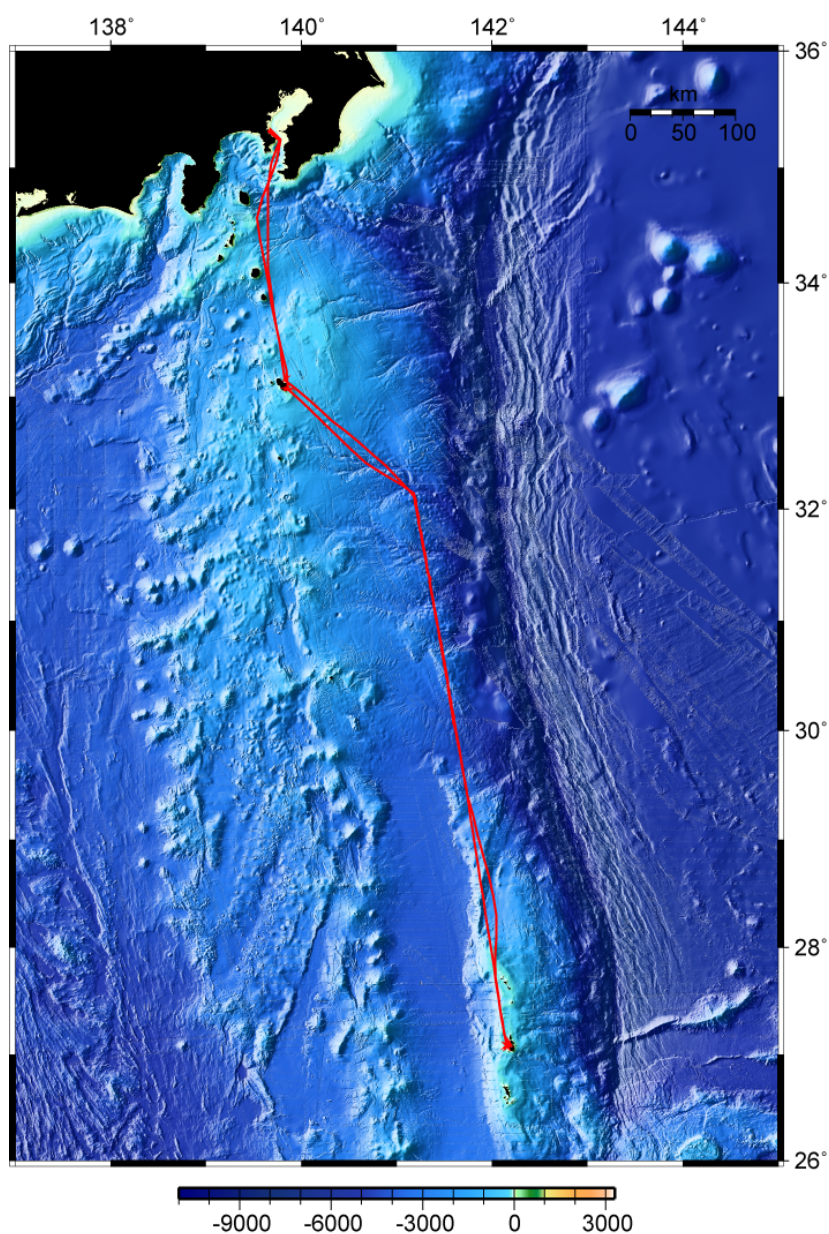


Cruise summary

1. Cruise Information :

- (1) Cruise number, Ship name: KY08-E03, R/V Kaiyo
- (2) Title of the cruise: "Seismic imaging in the Izu-Bonin intra-oceanic arc"
- (3) Chief Scientist [Affiliation]: Shuichi KODAIRA [JAMSTEC]
- (4) Representative of Science Party [Affiliation]:
Yoshio FUKAO [JAMSTEC],
- (5) Title of proposal:
Crustal growth of the Izu-Ogasawara oceanic island arc –Seismicity study for IODP Project IBM-,
- (6) Cruise period, Port call: 2008/11/6-11/21, JAMSTEC to JAMSTEC
- (7) Research Area: Izu-Ogasawara
- (8) Research Map:



2. Overview of Observation :

(1) Objectives :

IFREE have conducted seismic surveys in the Izu-Ogasawara area to understand crustal evolution process in intra-oceanic arcs since 2004. An intra-oceanic arc such as the IBM arc provides an excellent place to examine the process of evolution of new crust, because an intra-oceanic island arc is less affected by pre-existing continental crust than one at the edge of a continent. Previous petrological studies have proposed that post-Archean growth of andesitic continental crust was mainly accomplished by accretion of island arc crust onto continental crust. Understanding the processes of generation of new island arc crust is, therefore, fundamental to the examination of the processes by which continental crust develops on the present-day Earth. Main objectives of this cruise are to obtain high resolution seismic images around a proposed drill site of the IODP Project IBM by seismic refraction and reflection data. In addition to the seismic survey, we attempt to examine possible relationships between the fine seismic reflection image of sea water, which simultaneously obtained by MCS survey for sub-seafloor, and the velocity fine structures obtained by XCP and XCTD observations.

(2) List of observation instruments :

1) Refraction seismic survey

A Refraction seismic survey was conducted in the southeast off Tori-shima (KT04 line), the Izu-Ogasawara area, using the airgun array of R/V Kairei (KR08-E03 cruise) and ocean bottom seismographs (OBSs).

2) Deployment and recovery of ocean bottom seismographs (OBSs)

We deployed and recovered OBSs on the KT04 line.

3) Current and conductivity observations

We have conducted expendable current profiler (XCP) and expendable conductivity depth profiler (XCTD) on the KT04 line.

4) Bathymetry observation

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

5) Sea current observation

During this cruise, sea current data have been recorded continuously by Acoustic Doppler Current Profiler (ADCP).

6) Temperature and Conductivity observation for the correction of sonic speed

We have conducted two expendable bathy thermograph (XBT) and expendable conductivity temperature depth (XCTD) to correct the sonic speed for the bathymetry survey.