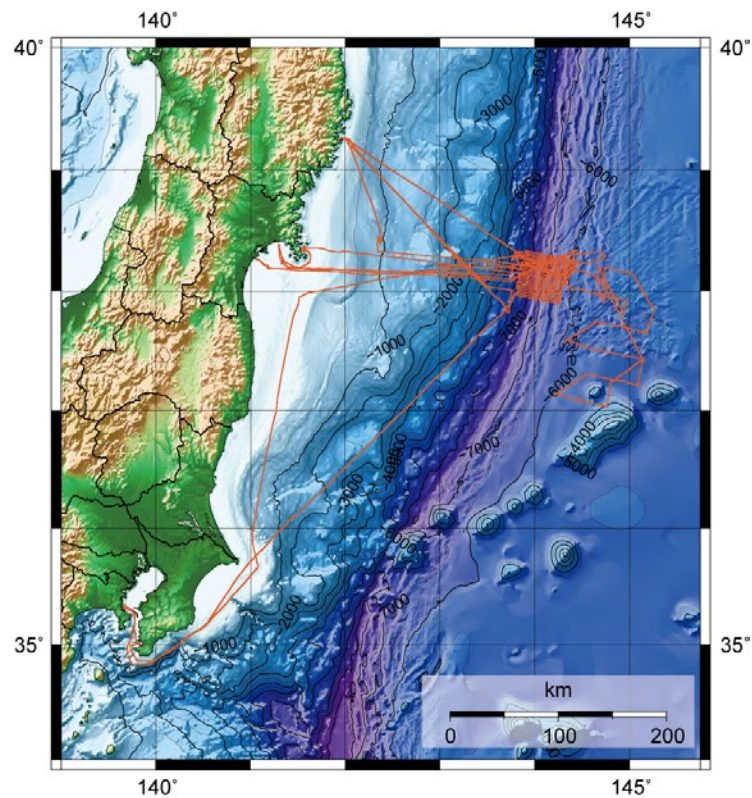


Cruise Summary

1. Cruise Information

- Cruise ID: KR13-06
- Name of vessel: KAIREI
- Title of the cruise: 2012FY “Tsunami prediction system and comprehensive research in the Japan Trench”
- Chief scientist: Mikiya Yamashita (Leg 1) [JAMSTEC], Yasuyuki Nakamura (Leg 2) [JAMSTEC]
- Representative of the Science Party: Shuichi Kodaira [JAMSTEC]
- Title of proposal: Tsunami prediction system and comprehensive research in the Japan Trench (Part 1. Seismic survey and earthquake observation)
- Cruise period: 2013/03/02 – 2013/03/30
 - [Leg 1] 2013/03/02 – 2013/03/14, [Leg 2] 2013/03/14 – 2013/03/30
- Ports of call: JAMSTEC (Yokosuka) – Sendai-Shiogama – JAMSTEC (Yokosuka)
- Research area: Japan Trench, Off Miyagi
- Research map



2. Overview of the Observation

- Survey overview

On 11 March 2011, the great earthquake (the 2011 Off the Pacific Coast of Tohoku Earthquake: Mw 9.0) occurred in the forearc area of the Japan Trench region. This earthquake caused devastating damages in the Tohoku and the Kanto regions. Especially, the huge tsunami struck to the Pacific coast in these regions and caused considerable damage. This research cruise was conducted as a part of “Research program on tsunamis and earthquakes occurred off the Pacific coast of Tohoku” funded by the Ministry of Education, Culture, Sports, Science, and Technology of Japan. To understand the mechanism of this great earthquake and tsunami and tectonics around the source area of this earthquake, and to collect the information about the mitigating of the disaster such as this earthquake, it is very important to clarify the detailed crustal structure in the Japan Trench region. The main objective of this cruise is the revealing the detailed structure at the vicinity of trench axis area off Miyagi prefecture, using high resolution (portable) multichannel reflection seismic system.

- Observations

- (1) High resolution seismic reflection survey

A cluster gun array with 380 inch³ of total volume was towed at 5 m depth. The guns were fired every 37.5 m. Seismic data was recorded with a 192 channel, 1300-m-long streamer cable, which was towed at 6 m depth. Twenty two seismic lines were completed during the cruise. Source signature observation was also conducted.

- (2) XCTD casts

The XCTD casts were conducted three times during the cruise to obtain accurate velocity profile in the water column.

- (3) Bathymetry, Geomagnetic, Gravity measurements

Bathymetry, geomagnetic and gravity data were recorded during the cruise.

- (4) Recovery of Ocean Bottom Seismographs

Twenty two Ocean Bottom Seismographs deployed during previous cruises were retrieved.