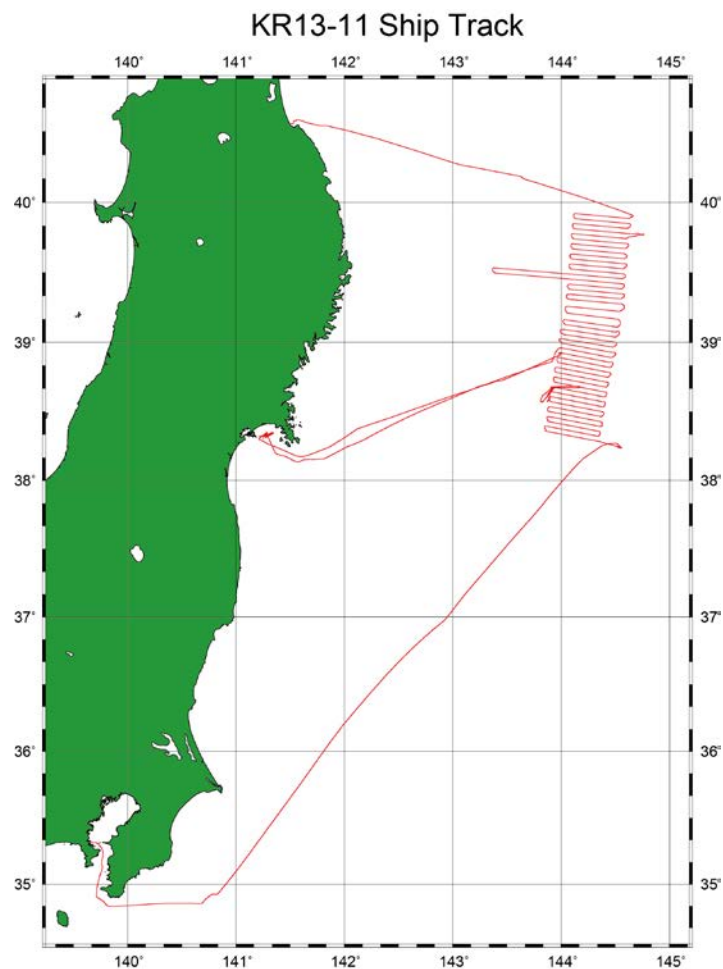


Cruise Summary

1. Cruise Information

- Cruise ID: KR13-11
- Name of vessel: KAIREI
- Title of the cruise: FY25 Focused researches and surveys in the Japan Trench
- Chief scientist: Yasuyuki Nakamura [JAMSTEC]
- Representative of the Science Party: Shuichi Kodaira [JAMSTEC]
- Title of proposal: Researches and surveys on earthquakes and Tsunamis occurred off Tohoku. Part 2, Seismic surveys (1)
- Cruise period: 2013/07/12 – 2013/07/29
- Ports of call: Yokosuka – Hachinohe
- Research area: Japan Trench off Miyagi and Iwate
- Research map



2. Overview of the Observation

- Survey Overview

The 2011 Off the Pacific Coast of Tohoku Earthquake (Tohoku Earthquake: M9) was the largest earthquake in the Japanese history of earthquake observation. Various researches and studies following the earthquake have revealed that the plate boundary fault was ruptured through the vicinity of the Japan Trench axis during the earthquake. This phenomenon explodes widely accepted conceptual model of the subduction zone earthquake. Thus further investigation focused into the trench axis area is necessary to correctly understand the mechanism of the great subduction zone earthquakes and Tsunami generation. Several Tsunamigenic great earthquakes have occurred in the Japan Trench area before the 2011 Tohoku Earthquake, therefore understanding of the background structure of this region is indispensable to prevent or mitigate the disasters caused by the future great earthquakes.

The purpose of this cruise is to obtain detailed structural image around the Japan Trench axis area 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. Forty-four seismic lines were completed during the cruise. Source signature observation was also conducted.

- (2) XCTD casts

One XCTD cast was carried out 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.