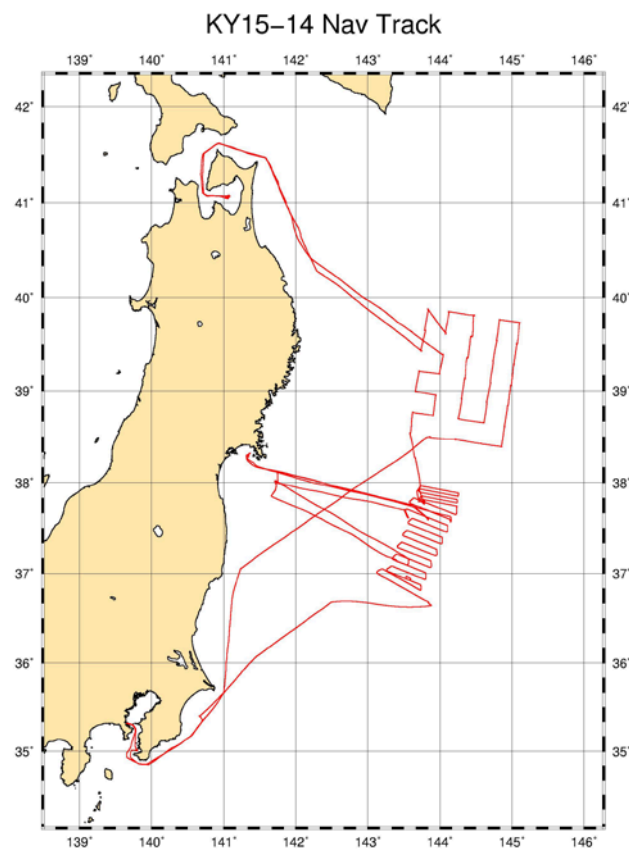


## Cruise Summary

### 1. Cruise Information

- Cruise ID: KY15-14
- Name of vessel: KAIYO
- Title of the cruise: Marine Geological and Geophysical surveys to investigate the nature of subduction zone mega earthquakes and tsunamis
  - 2. High resolution seismic surveys in the trench axis area
  - 5. Seismicity observation in the outer rise and trench axis region
- Chief scientist: Yasuyuki Nakamura [JAMSTEC]
- Representative of the Science Party: Shuichi Kodaira [JAMSTEC]
- Cruise period: September 2, 2015 – September 30, 2015
- Ports of departure / call / arrival: Yokosuka (JAMSTEC) - Yokosuka (JAMSTEC)
- Research area: Japan trench
  - Research map



## **2. Overview of the Observation**

- Survey overview

We conducted the high resolution seismic survey in the Japan trench axis area off Miyagi and Fukushima prefecture, southern part of the ruptured zone of the 2011 Tohoku earthquake, to understand the geological structure including the fault geometry in and around the trench axis region. The portable MCS system was used in this survey. We also conducted seismicity observation using OBSs to determine the precise hypocenter location and focal mechanisms of the earthquakes occurred in the Japan trench and outer rise off Sanriku area.

- Observations

- (1) High resolution seismic reflection survey

A cluster gun array with 380 inch<sup>3</sup> of total volume was towed at 5 m depth. The guns were fired every 37.5 m. Seismic data was recorded with a 168 channel, 1050-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) Recovery of Ocean Bottom Seismographs

Thirty five Ocean Bottom Seismographs deployed during NT15-10 cruise were retrieved.

- (3) XCTD casts

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

- (4) Bathymetry measurements

Bathymetry data were recorded during the cruise.