

Cruise Summary

1. Cruise Information

(1) **Cruise ID:** KR16-18

(2) **Name of vessel:** Kairei

(3) **Title of the cruise:**

2016FY “Research project for compound disaster mitigation on the great earthquakes and tsunamis around the Nankai trough region”

(4) **Chief scientist [Affiliation]:** Tsutomu Takahashi [JAMSTEC]

(5) **Representative of the Science Party [Affiliation]:** Shuichi Kodaira [JAMSTEC]

(6) **Title of proposal:**

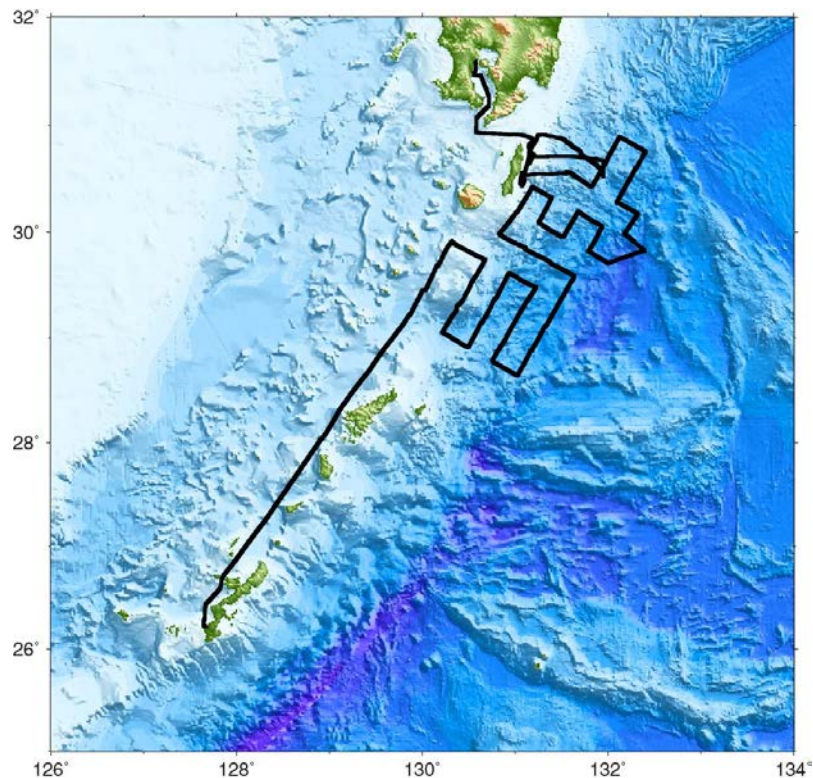
Research project for compound disaster mitigation on the great earthquakes and tsunamis around the Nankai trough region

(7) **Cruise period:** Dec. 17, 2016 – Dec. 26, 2016

(8) **Ports of departure / call / arrival:** Naha port to Kagoshima port

(9) **Research area:** Northern Ryukyu arc

(10) **Research map**



2. Overview of the Observation

(1) Objectives

Seismic studies in Ryukyu subduction zone are usually based on the seismic data on islands, and therefore island distribution causes a significant restriction of estimations of seismicity and underground structures in this area. To elucidate details of seismicity, lithospheric structures and plate geometry of this arc, we conduct a series of passive and active seismic surveys around Ryukyu arc, as a part of research project “Research project for compound disaster mitigation on the great earthquakes and tsunamis around the Nankai trough region” funded by Ministry of Education, Culture, Sports, Science and Technology (MEXT) of Japan. In 2015FY, we have conducted Multi Channel Seismic (MCS) surveys in northern part of Ryukyu arc that is adjacent to the mega-thrust fault zone of Nankai trough. MCS data clearly shows the reflected signals from the top of subducted Philippine Sea plate and many faults in the continental plate. In 2016 FY, we will conduct a passive seismic observation with 43 Ocean bottom seismograms in northern Ryukyu arc. We have deployed 43 OBSs during KR16-10 cruise in Sep. 2016. In this KR16-18 cruise, we successfully recovered all OBSs.

(2) List of observation

(a) OBS recovery

We have recovered 43 OBSs in northern Ryukyu arc. Pressure loggers (RBR TDR2050 and/or TD10000) were mounted on OBSs at 13 sites.

(b) Bathymetry, magnetic, and gravity observations:

Bathymetry, magnetic, and gravity data were recorded continuously throughout this cruise.