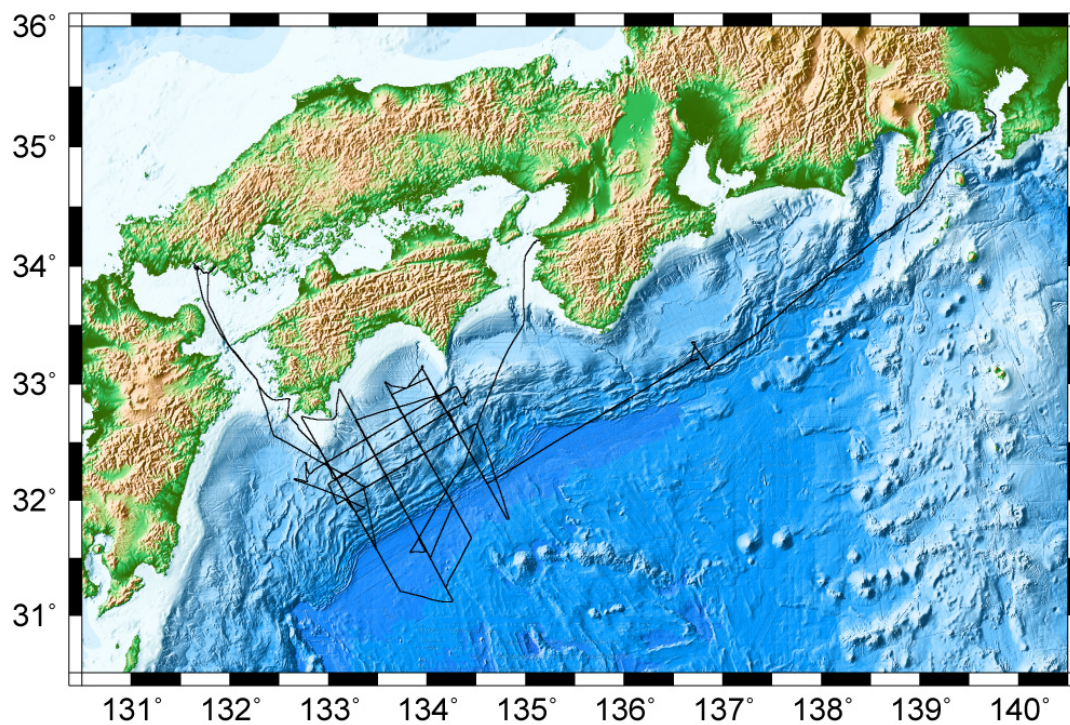


Cruise summary

1. Cruise Information :

- (1) Cruise number, Ship name: KR09-14, R/V Kairei
- (2) Title of the cruise: 2009FY “Seismic study and earthquake observation study off Shikoku and off Kii Peninsula areas”
- (3) Chief Scientist [Affiliation]: Takeshi SATO [JAMSTEC]
- (4) Representative of Science Party [Affiliation]:
Yoshiyuki KANEDA [JAMSTEC]
- (5) Title of proposal:
Seismic survey and observation study of evaluation for large earthquake synchronization in the Nankai Trough
- (6) Cruise period, Port call:
2009/9/30-10/20, JAMSTEC (Yokosuka) to Wakayama Port
- (7) Research Area: off Shikoku and off Kii Peninsula areas
- (8) Research Map:



2. Overview of Observation :

(1) Objectives :

This research cruise was conducted as a part of the study of “Research program concerning interaction between the Tokai, Tonankai, and Nankai Earthquakes” funded by the Ministry of Education, Culture, Sports, Science, and Technology of Japan.

In the Nankai Trough seismic subduction zone, a number of great earthquakes ($M > 8$), such as 1944 Tonankai and 1946 Nankai earthquakes, have been repeatedly occurred. Notable features in this region are the segmentation of the rupture zones and synchronization of these segments. To understand the structure factors controlling the segmentation and the synchronization of rupture zones, it is necessary to reveal the detailed structure variations and seismic activities in this subduction zone. The objectives of this cruise are to reveal detailed seismic structure and seismic activity off Shikoku, Nankai trough, and the activity of the low frequency tremors off Kii Peninsula.

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(2) List of observation instruments :

1) Recovery and deployment of broad-band ocean bottom seismometers (BBOBSs)

3 BBOBSs were recovered and 2 BBOBSs were deployed off Kii Peninsula area.

2) Deployment of ocean bottom seismometers (OBSs)

201 OBSs were deployed on 7 survey lines (SK01-07) off Shikoku area.

3) Seismic refraction/reflection survey

A seismic refraction/reflection survey using a tuned air-gun array of 7,800 cubic inch and OBSs were conducted on 7 survey lines (SK01-07) off Shikoku area. However, on a part of SK05 line, a volume of a tuned air-gun array is 7,200 cubic inch because of an air-gun system trouble.

4) Multi-channel seismic (MCS) reflection survey

MCS survey using a tuned air-gun array of 7,800 cubic inch and a 444 channel hydrophone streamer with a 12.5 m group interval was planned to conduct off Shikoku area. However, this survey could not be conducted because of typhoon and some air-gun system troubles.

5) Bathymetry, Gravity and Geomagnetic observation

During this cruise, bathymetry, gravity and geomagnetic data have been recorded continuously by SEABEAM2112, gravity meter (KSS-31) and three-component magnetometer (SFG1214), respectively.

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

Expendable-Bathy Thermograph (XBT) has been conducted to correct the sonic speed for the bathymetry survey.