



R/V Kaiyo Cruise Report

KY10-08 Leg. 2

Seismic study and earthquake observation study off Shikoku
and off Kii Peninsula areas

Jun. 16, 2010 – Jun. 22, 2010

Japan Agency for Marine-Earth Science and Technology

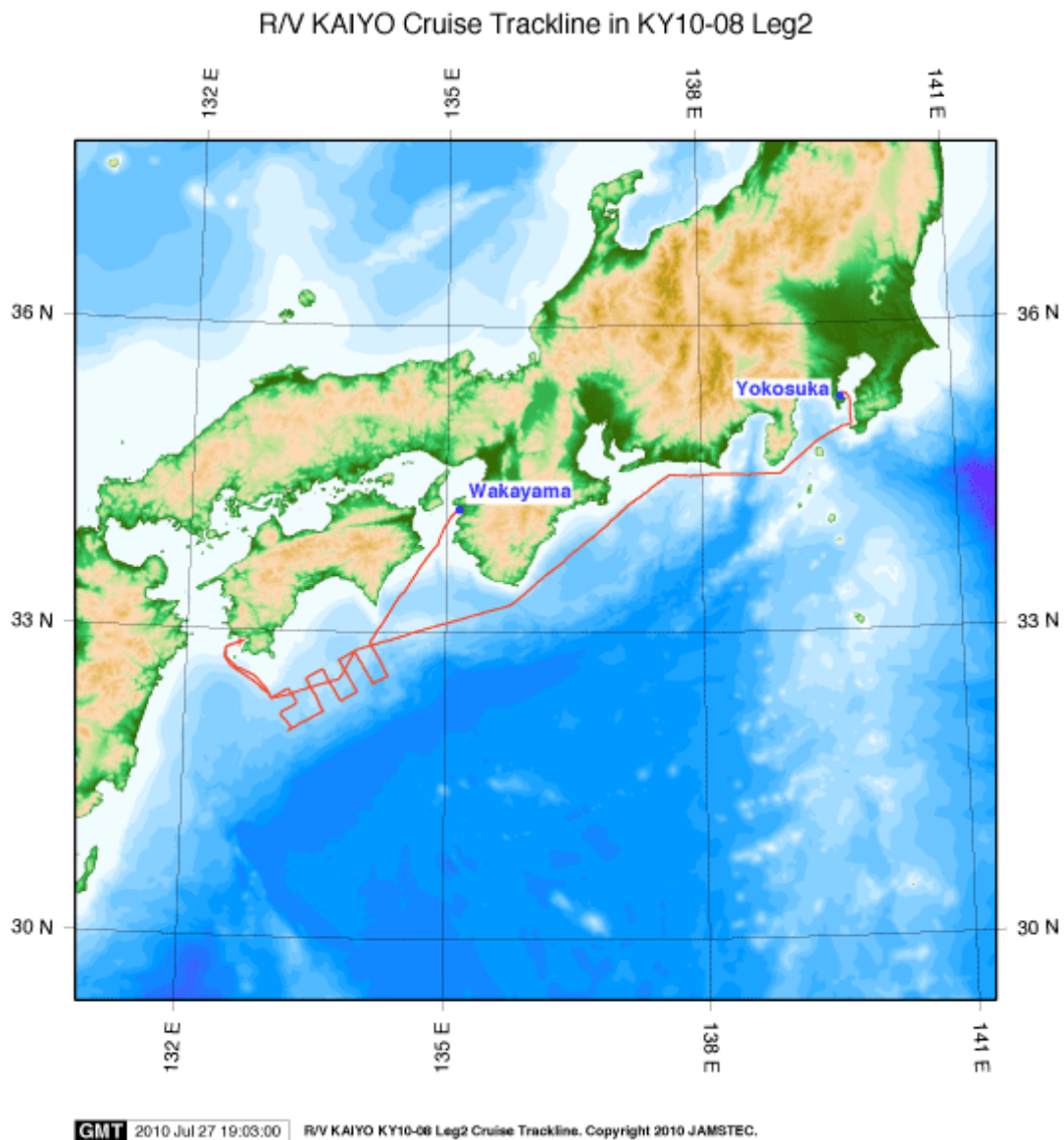
(JAMSTEC)

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1. Cruise Information :

- (1) Cruise number, Ship name: KY10-08 Leg.2 , R/V Kaiyo
- (2) Title of the cruise: 2010FY “Seismic study and earthquake observation study off Shikoku and off Kii Peninsula areas”
- (3) Title of proposal:
Seismic survey and observation study of evaluation for large earthquake synchronization in the Nankai Trough
- (4) Cruise period, Port call:
2010/6/16-6/22, WAKAYAMA Shimotsu Port to JAMSTEC (Yokosuka)
- (5) Research Area: off Shikoku area
- (6) Research Map:



2. Researchers and Participants the R/V KAIYO cruise KY10-08 Leg2

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(4) Participants

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Noriaki SHIMOMURA [NME]

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Hiroyoshi SHIMIZU [NME]

3. 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 ($M > 8$), have been repeatedly occurred from 100yr at 150yr cycles. Notable features in this region are the segmentation of the rupture zones and synchronization of these segments and cause super-great earthquakes. 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. To this purpose, OBSs were deployed off Shikoku by KAIREI KR09-14 and seismic refraction and reflection surveys were done. 180 OBSs recover in this cruise. These OBSs were deployed KR09-14 and will recorded seismic refraction and reflection survey data. 21 OBSs which are recording long-term seismic data observe continuously and will recover using KAIREI in next FY.

During this cruise Bathymetry, Gravity and Geomagnetic data record continuously.

(2) List of observation instruments :

1) Recovery of ocean bottom seismometers (OBSs)

21 OBSs were recovered on 7 survey Lines (SK01-07) off Shikoku.

2) Bathymetry, Gravity and Geomagnetic observation

During this cruise, bathymetry data have been recorded continuously by SEABEAM2100.

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

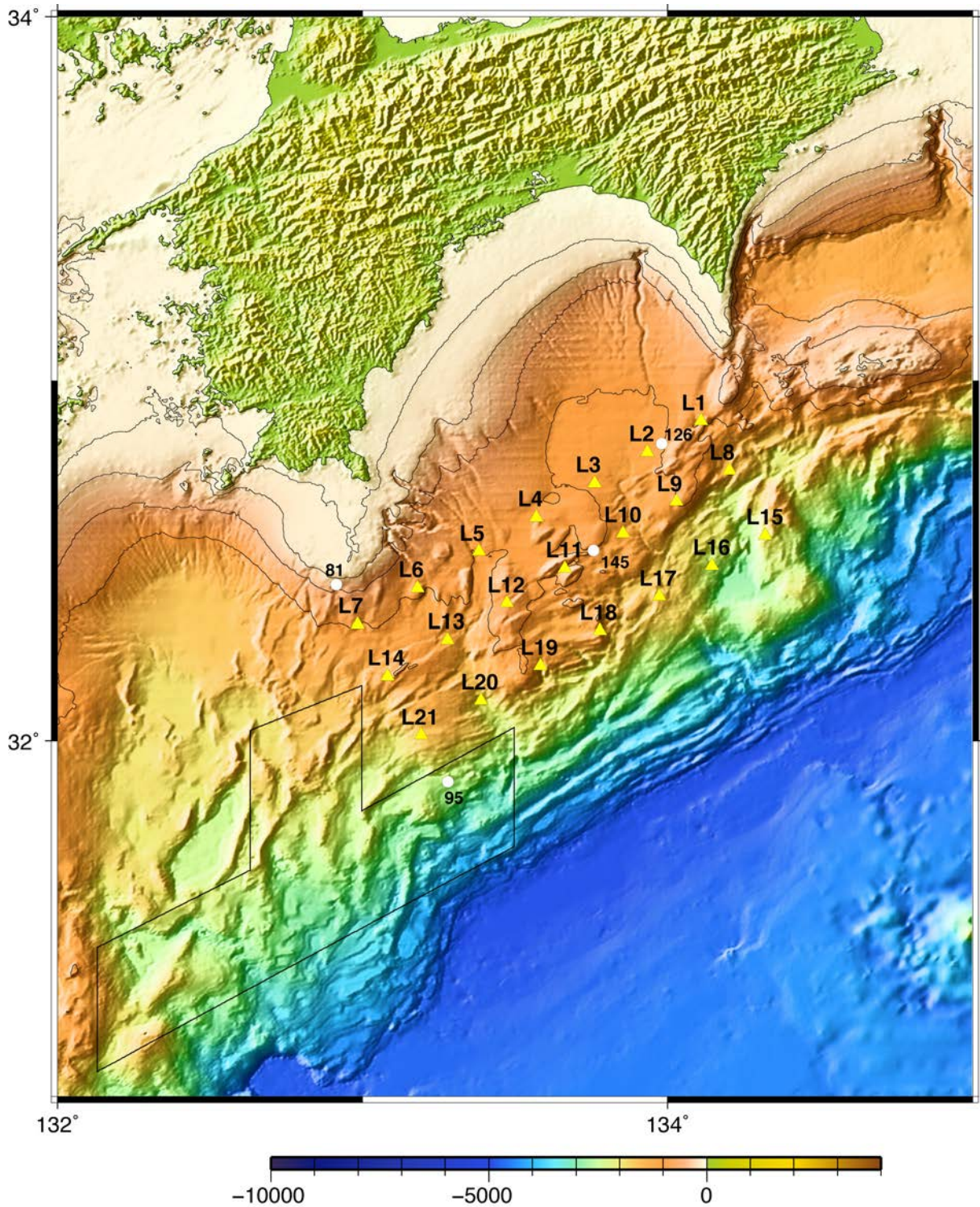
Expendable-Bathy Thermograph (XBT) has been conducted to correct the sonic speed for the bathymetry survey.

(3) Cruise log:

Date		Remarks
2010/6/16	Wed	Departure from WAKAYAMA Shimotsu Port and transit to survey area (off Shikoku area). Recover 3 OBSs (OBS No. L1, L8, L15)
2010/6/17	Thu	Recover 12 OBSs (OBS No. L16, L9, L2, L3, L10, L17, L18, L11, L4, L5, L12, L19).
2010/6/18	Fri	Recover 5 OBSs (OBS No. L20, L21, L14, L13, L6) and transit to Sukumo Bay to escape bad sea condition.
2010/6/19	Sat	Stay at Sukumo Bay and transit to survey area.
2010/6/20	Sun	Recover 1 OBS (OBS No. 7) and retry to recover No. 145 and 126 OBSs. These OBSs are not response and try to recover another time. Leave the survey area and transit to JAMSTEC (Yokosuka).
2010/6/21	Mon	Transit to JAMSTEC (Yokosuka) and stay Tateyama Bay.
2010/6/22	Tue	Arrive at JAMSTEC (Yokosuka).

(4) OBS locations

1) Location Map



White circles and yellow triangles show locations of deployed OBSs. 21 OBSs shown yellow triangles are for a long-term observation and 4 OBSs shown white circles are not recovered at KY10-02 cruise cause of not response.

2) Location list

Site	OBS Calibration position					Remarks
	Latitude(N)	Longitude(E)	Depth(m)	x	y	
81	32_26.1068	132_54.8299	339	-	-	1
95	31_53.2148	133_16.7730	2487	-	-	1
126	32_49.6347	133_58.8284	1031	-	-	1
145	32_31.8134	133_45.4227	1051	-	-	1

* Not recovered OBSs at KY10-02 cruise.

Site	OBS Calibration position					Remarks
	Latitude(N)	Longitude(E)	Depth(m)	x	y	
L1	32_53.4468	134_06.6147	954	-	-	1
L2	32_48.2484	133_56.0500	1078	-	-	1
L3	32_43.1085	133_45.6448	1049	-	-	1
L4	32_37.3997	133_34.1647	982	-	-	1
L5	32_31.7239	133_22.9030	1032	-	-	1
L6	32_25.6660	133_10.8656	839	-	-	1
L7	32_19.6165	132_59.0026	961	-	-	1
L8	32_45.2712	134_12.1693	1497	-	-	1
L9	32_40.0613	134_01.6908	960	-	-	1
L10	32_34.7824	133_51.2025	1174	-	-	1
L11	32_28.9345	133_39.7905	976	-	-	1
L12	32_23.0922	133_28.4215	937	-	-	1
L13	32_17.0009	133_16.6811	1215	-	-	1
L14	32_10.9478	133_04.9552	1166	-	-	1
L15	32_34.4411	134_19.2203	1998	-	-	1
L16	32_29.3760	134_08.7595	2318	-	-	1
L17	32_24.2451	133_58.3988	1608	-	-	1
L18	32_18.5344	133_46.7084	1234	-	-	1
L19	32_12.7261	133_34.9615	1268	-	-	1
L20	32_06.9358	133_23.3153	1950	-	-	1
L21	32_01.1155	133_11.5318	1613	-	-	1

Remarks:

1: OBS deployment location because of no OBS calibration.

4 . Notice on using:

This cruise report is a preliminary documentation as of the end of the cruise. It may not be corrected even if changes on content (i.e. taxonomic classifications) are found after publication. It may also be changed without notice. Data on the cruise report may be raw or not processed. Please ask the PI(s) for the latest information before using. Users of data or results of this cruise are requested to submit their results to Data Integration and Analysis Group (DIAG), JAMSTEC.