



R/V Kairei Cruise Report
KR11-E03

Seismic survey and observations in Japan Trench region

Apr. 28, 2011 – May. 21, 2011

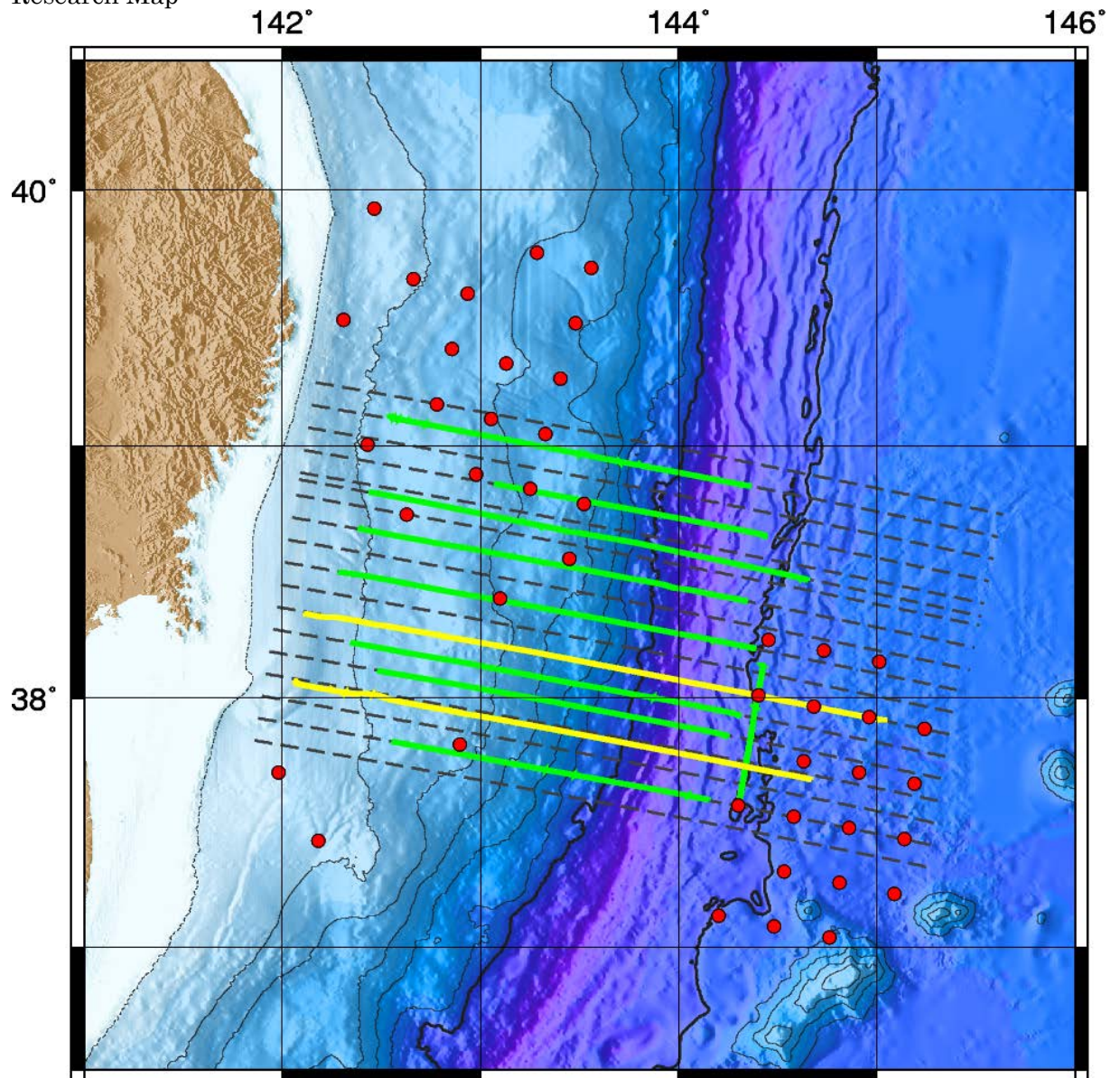
Japan Agency for Marine-Earth Science and Technology
(JAMSTEC)

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1. Cruise Information

- (1) Cruise Number, Ship name : KR11-E03, R/V Kairei
- (2) Title of the Cruise
FW2011 Seismic survey and observations in Japan Trench region
- (3) Cruise period, Port call
2011/04/28 – 2011/05/21, Yokosuka-Yokosuka
- (4) Research Area
Japan Trench region
- (5) Research Map



2. Researchers

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3. Overview of Observation

(1) Objectives

On 11 March 2011, the great 2011 Tohoku-oki earthquake (Mw 9.0) was occurred in the Japan trench region. This was the greatest earthquake that has been observed in Japan, and it caused devastating damages in the eastern Japan. To reveal the precise distribution of aftershocks in the main shock region and outer rise region, we deployed 43 OBSs, 23 OBSs in the main shock region and 20 OBSs in the outer rise region. In addition, to reveal the detailed crustal structure around the center of the reapture zone, we conducted multi-channel reflection seismic survey.

(2) Observations

1) OBS deployment.

Forty-three OBSs were deployed to observe aftershocks.

2) Airgun shooting.

We shot the airgun array of R/V Kairei along 9 lines (green lines in the figure). A 444-ch hydrophone streamer was towed during the shooting.

3) Bathymetry, magnetics and gravity observation.

During the cruise, bathymetry, magnetics and gravity data have been recorded continuously by SEABEAM2112.004, three component magnetometer and gravity meter, respectively. However, the SEABEAM system was broken down and we could not obtain the bathymetry data along the last two lines.

4. List of observation instruments

- (1) Ocean bottom seismometer (OBS)
- (2) 444-ch hydrophone streamer
- (3) SEABEAM2112.004
- (4) three component magnetometer
- (5) gravity meter.

5. Cruise log

Date	Remarks
2011/04/28	Departure from JAMSTEC(Yokosuka)
2011/04/29	OBS deployment
2011/04/30	OBS deployment
2011/05/01	OBS deployment
2011/05/02	Stay at Kamaishi bay
2011/05/03	OBS deployment
2011/05/04	OBS deployment, MCS survey (D02)
2011/05/05	MCS survey (D02, S21)
2011/05/06	MCS survey (D06)
2011/05/07	Stay at Kamaishi bay
2011/05/08	MCS survey (D17)
2011/05/09	MCS survey (D17)
2011/05/10	Stay at survey area
2011/05/11	MCS survey (D13)
2011/05/12	MCS survey (D13)
2011/05/13	Stay at Kamaishi bay
2011/05/14	MCS survey (D11)
2011/05/15	MCS survey (D11)
2011/05/16	MCS survey (D15)
2011/05/17	MCS survey (D09)
2011/05/18	MCS survey (D09, S21)
2011/05/19	MCS survey (D05)
2011/05/20	Transition to Yokosuka
2011/05/21	Arrival at JAMSTEC (Yokosuka)

6. OBS position (deploy position)

Site	Cast			
	Time UTC	Vessel position		
		Lat(S)	Lon(E)	Depth(m)
A01	2011/05/02 22:48:53	39_55.7191	142_27.9941	705.0
A04	2011/05/03 03:03:06	39_45.3875	143_17.1275	2083.0
A05	2011/05/03 04:05:23	39_41.8926	143_33.4565	2367.0
B02	2011/05/03 00:26:50	39_39.0846	142_39.6712	915.0
B03	2011/05/03 01:41:25	39_35.7623	142_56.1453	1548.0
B05	2011/05/03 05:14:26	39_28.8796	143_28.6172	2868.0
C01	2011/05/01 00:36:03	39_29.6407	142_18.4889	579.0
C03	2011/04/30 22:19:40	39_22.6235	142_51.3872	1681.0
C04	2011/04/30 20:49:20	39_19.1974	143_07.8232	1897.0
C05	2011/04/30 19:09:24	39_15.8689	143_24.2858	2393.0
D03	2011/04/30 13:45:38	39_09.7615	142_46.9655	1549.0
D04	2011/04/30 15:32:45	39_06.2117	143_03.4542	1886.0
D05	2011/04/30 17:24:21	39_02.8405	143_19.9722	2436.0
E02	2011/04/30 11:41:51	39_00.1732	142_25.8000	1103.0
E04	2011/04/30 09:22:17	38_53.2115	142_58.7948	1520.0
E05	2011/04/30 07:57:20	38_49.7677	143_15.2119	2287.0
E06	2011/04/30 06:30:33	38_46.3320	143_31.5271	2687.0
F03	2011/05/03 09:17:09	38_43.5410	142_37.8607	1266.0
F06	2011/05/03 12:24:58	38_33.3186	143_27.3098	2546.0
G05	2011/05/03 13:46:35	38_23.7263	143_06.0956	2186.0
JI05	2011/05/03 16:26:52	37_48.8673	142_54.0108	1635.0
K2	2011/05/03 20:51:44	37_42.2839	141_58.8118	478.0
L3	2011/05/03 19:13:18	37_25.6274	142_10.8864	836.0
JOR01	2011/04/30 02:57:23	38_13.8047	144_27.3584	5872.0
JOR02	2011/04/29 19:33:12	38_00.6697	144_24.2627	5972.0
JOR03	2011/04/29 10:59:17	37_34.1875	144_18.0347	5917.0
JOR04	2011/04/29 03:30:14	37_07.5918	144_12.2754	5942.0
JOR05	2011/04/30 01:49:55	38_11.3269	144_44.0557	5561.0
JOR06	2011/04/29 20:46:54	37_57.9487	144_41.0888	5661.0
JOR07	2011/04/29 18:06:37	37_44.6370	144_37.9020	5872.0
JOR08	2011/04/29 12:09:23	37_31.3697	144_35.0144	5945.0
JOR09	2011/04/29 09:32:27	37_18.1084	144_31.9350	5778.0
JOR10	2011/04/29 04:39:38	37_04.9989	144_28.9696	5698.0

JOR11	2011/04/30 00:37:46	38_08.6118	145_00.9364	5266.0
JOR12	2011/04/29 21:54:38	37_55.3804	144_57.8758	5495.0
JOR13	2011/04/29 16:55:04	37_42.0645	144_54.6145	5606.0
JOR14	2011/04/29 13:19:32	37_28.6893	144_51.8155	5654.0
JOR15	2011/04/29 08:29:05	37_15.4362	144_48.5383	5643.0
JOR16	2011/04/29 05:47:30	37_02.2077	144_45.7332	5038.0
JOR17	2011/04/29 23:01:35	37_52.6978	145_14.6981	5489.0
JOR18	2011/04/29 15:40:17	37_39.5125	145_11.4354	5477.0
JOR19	2011/04/29 14:27:47	37_26.1384	145_08.5393	5654.0
JOR20	2011/04/29 07:18:23	37_12.8554	145_05.5262	5777.0

7. Airgun lines (end points)

Line	Lat.	Lon.
D02_0	37_51.49867'N	142_19.70112'E
	37_51.29569'N	142_21.17944'E
D02_1	37_49.30742'N	142_35.41359'E
	37_35.43739'N	144_09.21714'E
D05_0	37_51.33072'N	144_13.13360'E
	38_06.67570'N	142_28.76626'E
D06_0	37_56.26211'N	144_16.78587'E
	38_13.27468'N	142_20.67538'E
D09_0	38_29.89811'N	142_19.27252'E
	38_11.70353'N	144_23.58923'E
D11_0	38_40.06118'N	142_25.07302'E
	38_23.09615'N	144_21.06618'E
D13_0	38_28.75272'N	144_37.23929'E
	38_49.04533'N	142_26.04936'E
D15_0	38_39.01476'N	144_24.83487'E
	38_51.04363'N	143_04.06886'E
D17_0	39_06.25707'N	142_33.76425'E
	38_50.43459'N	144_22.12453'E
S21_0	37_35.88817'N	144_18.53649'E
	37_52.92875'N	144_22.44359'E
S21_1	38_09.06915'N	144_26.16918'E
	37_49.37191'N	144_21.62538'E

8. 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.