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R/V Natsushima Cruise Report

NT12-29

Seismic study and earthquake observation in the area between off Kii and off Tokai

Nov. 09, 2012 – Nov. 26, 2012

Japan Agency for Marine-Earth Science and Technology

(JAMSTEC)

Contents:

1．Cruise Information：

（1）Cruise number, Ship name: NT12-29, R/V Natsushima

（2）Title of the cruise: 2012FY “Seismic study and earthquake observation in the area between the off Kii peninsula and off Tokai”

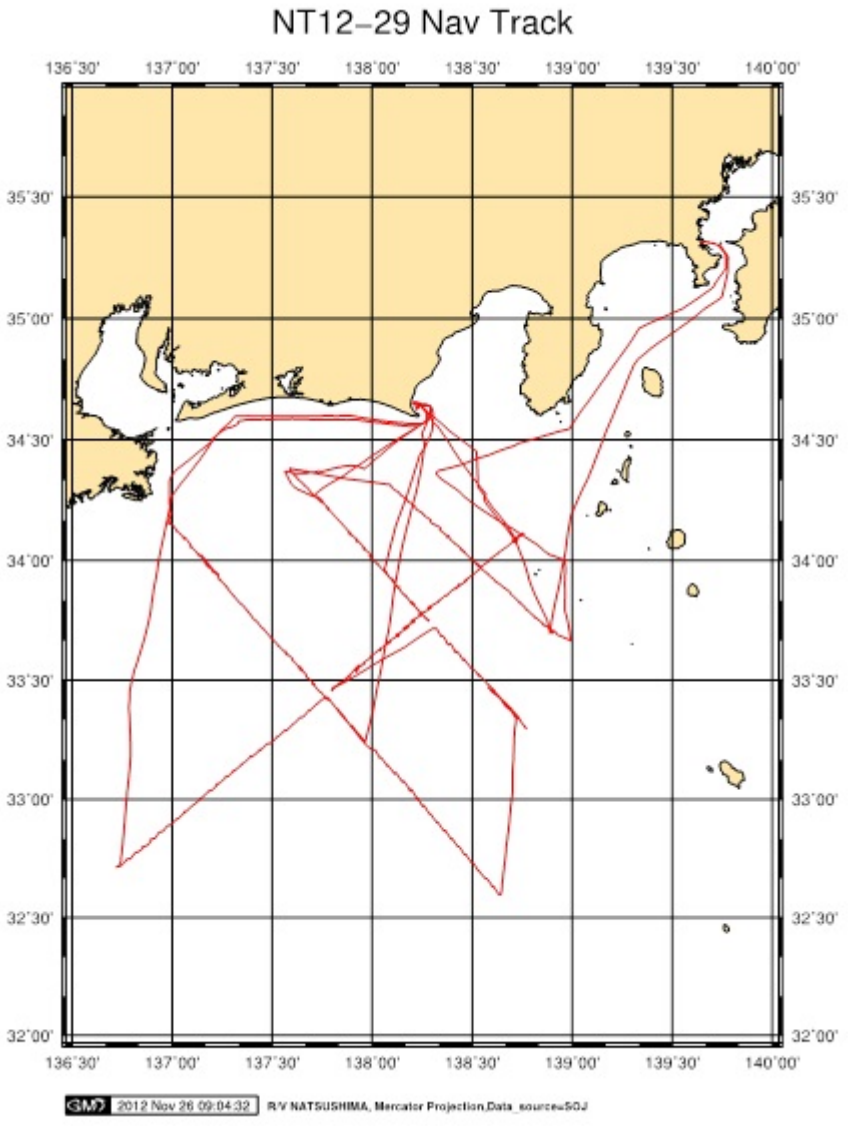
（3）Title of proposal: Seismic study and observation of evaluation for large earthquake synchronization in the Nankai Trough

（4）Cruise period, Port call:

2012/11/09-11/19, JAMSTEC (Yokosuka) to JAMSTEC (Yokosuka)

（5）Research Area: between off Kii Peninsula and off Tokai

（6）Research Map:



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３．Overview of Observation：

（１）Objectives：

The objectives of this cruise are to reveal the crustal structure and earthquake observation in the area between off Kii Peinsula and off tokai 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 subduction zone which have a number of major earthquakes in the last ca. 1300 years, historical seismicity reveals that the segmented pattern which were coupled occasionally. The areas between Off Kii and off Tokai cover the part of two segments, Tonankai and Tokai rupture area. To understand the structure factors controlling the segmentation and coupling, it is necessary to reveal the detailed structure variations and seismic activities in this subduction zone. The objectives of this cruise are to reveal seismic structure and seismic activity in the area between off Kii and off Tokai.

（２）List of observations：

１）Retrieve of ocean bottom seismometers (OBSs)

145 OBSs (deployed in KR12-12) were recovered.

2 OBSs were not recovered.

（３） Cruise log:

Date		Remarks
2012/11/09	Fri..	Departure from JAMSTEC (Yokosuka), and transit to survey area Standby due to weather condition
2012/11/10	Sat..	Recovery and calling of OBSs
2012/11/11	Sun.	Recovery of OBSs, transit to off Omaezaki due to weather condition
2012/11/12	Mon.	Standby due to weather condition
2012/11/13	Tue.	Recovery of OBSs
2012/11/14	Wed.	Standby due to weather condition
2012/11/15	Thu.	Standby due to weather condition, transit to survey area
2012/11/16	Fri.	Recovery of OBSs
2012/11/17	Sat.	Recovery of OBSs, standby due to weather condition
2012/11/18	Sun.	Transit to survey area
2012/11/19	Mon.	Recovery of OBSs
2012/11/20	Tue.	Recovery of OBSs
2012/11/21	Wed.	Standby due to weather condition, recovery of OBSs
2012/11/22	Thu.	Recovery of OBSs
2012/11/23	Fri.	Recovery and calling of OBSs, standby due to weather condition
2012/11/24	Sat.	Recovery and calling of OBSs
2012/11/25	Sun.	Transit to Yokosuka
2012/11/26	Mon.	Arrival at Yokosuka HQ

（4）Seismic lines

1）Locations of　recovered OBS

(i) OBS list

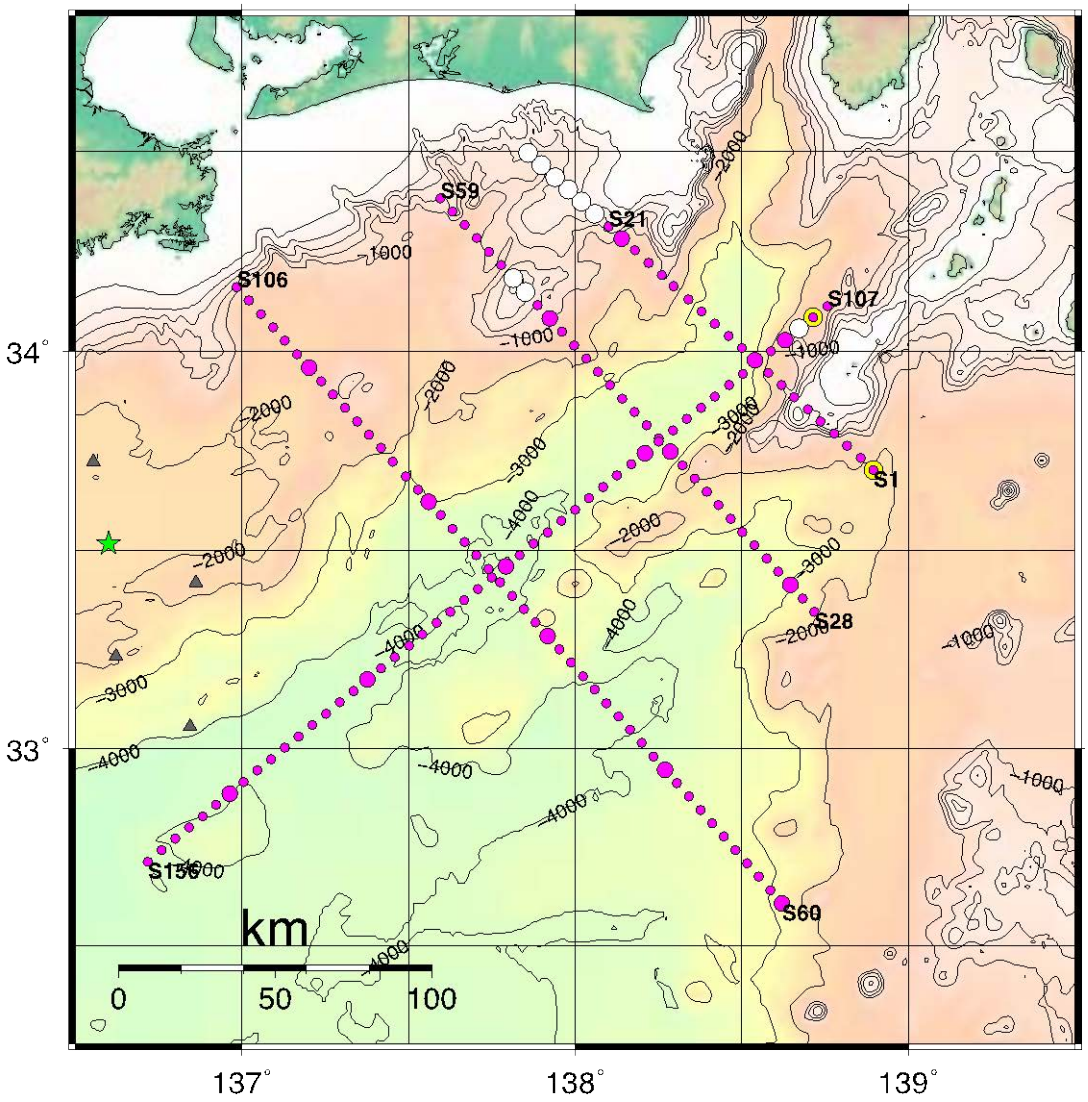
Site	OBS Calibration position					Remarks
	Latitude(N)		Longitude(E)		Depth(m)	
S1	33	42.10	138	53.74	2115.0	Not recovered
S2	33	43.91	138	51.41	1848.0	recovered
S3	33	45.76	138	49.00	1530.0	recovered
S4	33	47.59	138	46.64	593.0	recovered
S5	33	49.41	138	44.25	287.0	recovered
S6	33	51.27	138	41.92	426.0	recovered
S7	33	53.10	138	39.49	629.0	recovered
S8	33	54.94	138	37.15	1561.0	recovered
S9	33	56.77	138	34.75	1794.0	recovered
S10	33	58.60	138	32.38	3184.0	recovered
S11	34	00.43	138	29.99	3560.0	recovered
S12	34	02.27	138	27.59	3688.0	recovered
S13	34	04.09	138	25.19	3561.0	recovered
S14	34	05.92	138	22.80	3418.0	recovered
S15	34	07.74	138	20.40	2518.0	recovered
S16	34	09.75	138	17.75	1290.0	recovered
S17	34	11.40	138	15.62	937.0	recovered
S18	34	13.23	138	13.20	1401.0	recovered
S19	34	15.08	138	10.80	1635.0	recovered
S20	34	16.89	138	08.40	1099.0	recovered
S21	34	18.71	138	05.99	665.0	recovered
S22	34	20.54	138	03.58	522.0	recovered (KR12-12)
S23	34	22.35	138	01.17	387.0	recovered (KR12-12)
S24	34	24.18	137	58.77	484.0	recovered (KR12-12)
S25	34	26.00	137	56.36	630.0	recovered (KR12-12)
S26	34	27.82	137	53.95	796.0	recovered (KR12-12)
S27	34	29.64	137	51.53	549.0	recovered (KR12-12)
S28	33	20.70	138	43.06	2364.0	recovered
S29	33	22.73	138	40.92	2830.0	recovered
S30	33	24.76	138	38.76	3063.0	recovered
S31	33	26.76	138	36.63	3276.0	recovered
S32	33	28.77	138	34.48	3360.0	recovered
S33	33	30.78	138	32.32	3391.0	recovered
S34	33	32.80	138	30.15	3410.0	recovered
S35	33	34.80	138	28.01	2556.0	no reply
S36	33	36.82	138	25.84	2500.0	recovered
S37	33	38.82	138	23.68	2314.0	recovered
S38	33	40.83	138	21.51	1826.0	no reply

S39	33	42.84	138	19.34	2602.0	recovered
S40	33	44.85	138	17.18	3552.0	recovered
S41	33	46.85	138	15.02	3695.0	recovered
S42	33	48.86	138	12.83	3794.0	recovered
S43	33	50.87	138	10.67	3663.0	recovered
S44	33	52.88	138	08.49	3572.0	recovered
S45	33	54.88	138	06.32	2950.0	recovered
S46	33	56.89	138	04.14	2598.0	recovered
S47	33	58.89	138	01.96	1809.0	recovered
S48	34	00.88	137	59.80	1595.0	recovered
S49	34	02.89	137	57.61	1355.0	recovered
S50	34	04.89	137	55.42	905.0	recovered
S51	34	06.89	137	53.24	805.0	recovered
S52	34	08.89	137	51.05	495.0	recovered (KR12-12)
S53	34	10.90	137	48.86	438.0	recovered (KR12-12)
S54	34	12.89	137	46.67	1099.0	recovered
S55	34	14.87	137	44.46	968.0	recovered
S56	34	16.90	137	42.28	1061.0	recovered
S57	34	18.89	137	40.09	1370.0	recovered
S58	34	20.88	137	37.88	791.0	recovered
S59	34	22.88	137	35.69	785.0	recovered
S60	32	36.41	138	37.29	2708.0	recovered
S61	32	38.45	138	35.17	3000.0	recovered
S62	32	40.49	138	33.09	3121.0	recovered
S63	32	42.53	138	30.99	3145.0	recovered
S64	32	44.57	138	28.89	3280.0	recovered
S65	32	46.60	138	26.80	3399.0	recovered
S66	32	48.63	138	24.67	3493.0	recovered
S67	32	50.67	138	22.57	3517.0	recovered
S68	32	52.72	138	20.46	3504.0	recovered
S69	32	54.73	138	18.33	3638.0	recovered
S70	32	56.77	138	16.21	3864.0	recovered
S71	32	58.81	138	14.11	3970.0	recovered
S72	33	00.84	138	12.00	3953.0	recovered
S73	33	02.86	138	09.89	3993.0	recovered
S74	33	04.90	138	07.78	4022.0	recovered
S75	33	06.91	138	05.67	4070.0	recovered
S76	33	08.98	138	03.50	4082.0	recovered
S77	33	11.00	138	01.39	3926.0	recovered
S78	33	13.03	137	59.27	3531.0	recovered
S79	33	15.05	137	57.15	3128.0	recovered
S80	33	17.08	137	55.02	3539.0	recovered
S81	33	19.11	137	52.90	3232.0	recovered
S82	33	21.13	137	50.77	3999.0	recovered
S83	33	23.16	137	48.63	4004.0	recovered
S84	33	25.18	137	46.50	4027.0	recovered
S85	33	27.21	137	44.36	3997.0	recovered
S86	33	29.25	137	42.23	3994.0	recovered

S87	33	31.27	137	40.08	3954.0	recovered
S88	33	33.28	137	37.94	3897.0	recovered
S89	33	35.30	137	35.81	3853.0	recovered
S90	33	37.34	137	33.67	2907.0	recovered
S91	33	39.15	137	31.70	3437.0	recovered
S92	33	41.17	137	29.56	2971.0	recovered
S93	33	43.39	137	27.18	2240.0	recovered
S94	33	45.41	137	25.04	1770.0	recovered
S95	33	47.42	137	22.90	1486.0	recovered
S96	33	49.44	137	20.73	1279.0	recovered
S97	33	51.46	137	18.58	1223.0	recovered
S98	33	53.48	137	16.40	1223.0	recovered
S99	33	55.49	137	14.25	1558.0	recovered
S100	33	57.51	137	12.11	1817.0	recovered
S101	33	59.53	137	09.93	1844.0	recovered
S102	34	01.54	137	07.76	1646.0	recovered
S103	34	03.55	137	05.61	1626.0	recovered
S104	34	05.57	137	03.43	1692.0	recovered
S105	34	07.57	137	01.27	1346.0	recovered
S106	34	09.60	136	59.09	891.0	recovered
S107	34	06.76	138	45.41	1314.0	recovered
S108	34	05.07	138	42.88	1413.0	no reply
S109	34	03.38	138	40.34	1447.0	recovered at Ibaraki
S110	34	01.68	138	37.81	1636.0	recovered
S111	33	59.99	138	35.29	1954.0	recovered
S112	33	58.28	138	32.75	3069.0	recovered
S113	33	56.59	138	30.22	3518.0	recovered
S114	33	54.89	138	27.69	3654.0	recovered
S115	33	53.19	138	25.17	3678.0	recovered
S116	33	51.49	138	22.64	3729.0	recovered
S117	33	49.79	138	20.12	3716.0	recovered
S118	33	48.09	138	17.60	3690.0	recovered
S119	33	46.39	138	15.08	3697.0	recovered
S120	33	44.68	138	12.56	3683.0	recovered
S121	33	42.98	138	10.07	3687.0	recovered
S122	33	41.28	138	07.53	3720.0	recovered
S123	33	39.57	138	05.02	3845.0	recovered
S124	33	37.86	138	02.53	3892.0	recovered
S125	33	36.15	138	00.01	3962.0	recovered
S126	33	34.44	137	57.51	3960.0	recovered
S127	33	32.72	137	55.01	4015.0	recovered
S128	33	31.02	137	52.52	4026.0	recovered
S129	33	29.31	137	49.99	4056.0	recovered
S130	33	27.59	137	47.51	3992.0	recovered
S131	33	25.89	137	45.01	4007.0	recovered
S132	33	24.18	137	42.50	4053.0	recovered
S133	33	22.46	137	40.00	4050.0	recovered
S134	33	20.75	137	37.51	3990.0	recovered
S135	33	19.03	137	35.02	4043.0	recovered

S136	33	17.32	137	32.53	4047.0	recovered
S137	33	15.61	137	30.06	3952.0	recovered
S138	33	13.87	137	27.55	4038.0	recovered
S139	33	12.16	137	25.07	4080.0	recovered
S140	33	10.46	137	22.58	4086.0	recovered
S141	33	08.73	137	20.09	4155.0	recovered
S142	33	07.00	137	17.63	4182.0	recovered
S143	33	05.28	137	15.16	4159.0	recovered
S144	33	03.55	137	12.68	4213.0	recovered
S145	33	01.83	137	10.20	4218.0	recovered
S146	33	00.10	137	07.72	4235.0	recovered
S147	32	58.38	137	05.25	4242.0	recovered
S148	32	56.65	137	02.80	4198.0	recovered
S149	32	54.92	137	00.30	4030.0	recovered
S150	32	53.19	136	57.83	4087.0	recovered
S151	32	51.47	136	55.38	4098.0	recovered
S152	32	49.73	136	52.91	4027.0	recovered
S153	32	48.01	136	50.45	3816.0	recovered
S154	32	46.28	136	48.00	3998.0	recovered
S155	32	44.54	136	45.53	4120.0	recovered
S156	32	42.80	136	43.08	4109.0	recovered

(iii)Location map of OBSs



Magenda circles show the recovered OBS positions. Yellow hemming circles are not retreaved sites. White circles are already recovered.

4． Notice on using:

This cruise report is a preliminary documentation as of the end of the cruise.

This report may not be corrected even if changes on contents (i.e. taxonomic classifications) may be found after its publication. This report may also be changed without notice. Data on this cruise report may be raw or unprocessed. If you are going to use or refer to the data written on this report, please ask the Chief Scientist for latest information. Users of data or results on this cruise report are requested to submit their results to the Data Management Group of JAMSTEC.