



S/V Yokosuka Cruise Report

YK19-16



3D seismic survey to image plate boundary faults in the
subduction zone

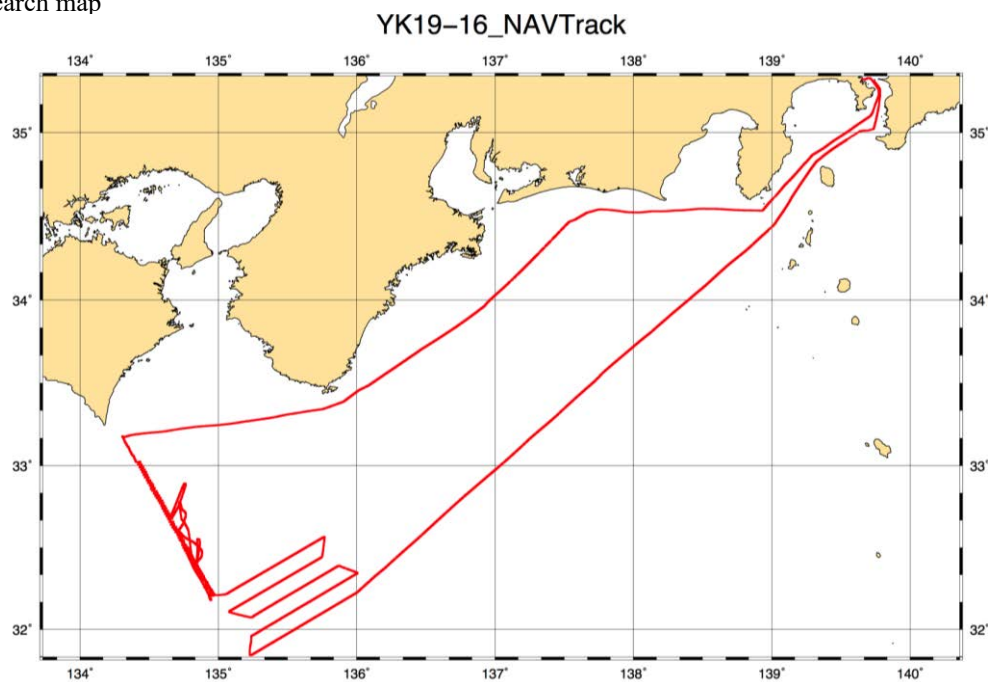
Nankai Trough

Dec. 9, 2019 - Dec. 18, 2019

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

1. Cruise Information

- Cruise ID: YK19-16
- Name of vessel: S/V YOKOSUKA
- Title of cruise: 3D seismic survey to image plate boundary faults in the subduction zone
- Chief Scientist: Yuka Kaiho (JAMSTEC)
- Cruise period: 2019/12/9 - 2019/12/18
- Ports of departure / call / arrival: Yokosuka - Yokosuka
- Research area: Nankai Trough
- Research map



2. Research Proposal and Science Party

- Title of proposal:
P19-09_5 Observation and monitoring of large scale seafloor deformation for national land resilience
- Representative of Science Party: P19-09_5 Shuichi Kodaira (JAMSTEC)
- Science Party (List) [Affiliation, assignment etc.]
 - Shuichi Kodaira [JAMSTEC]
 - Seiichi Miura [JAMSTEC]
 - Yasuyuki Nakamura [JAMSTEC]
 - Gou Fujie [JAMSTEC]
 - Yuka Kaiho [JAMSTEC]
 - Tetsuo No [JAMSTEC]
 - Mikiya Yamashita [JAMSTEC]
 - Toshinori Saijo [JAMSTEC]
 - Ryuta Arai [JAMSTEC]
 - Ayako Nakanishi [JAMSTEC]
 - Yasushi Ishihara [JAMSTEC]
 - Koichiro Obana [JAMSTEC]
 - Tsutomu Takahashi [JAMSTEC]
 - Yojiro Yamamoto [JAMSTEC]
 - Eiichiro Araki [JAMSTEC]
 - Toshinori Kimura [JAMSTEC]
 - Takeshi Iinuma [JAMSTEC]
 - Yusaku Ota [Tohoku Univ.]
 - Ryota Hino [Tohoku Univ.]
 - Yoshihiro Ito [Kyoto Univ.]

Yuichiro Tanioka [Hokkaido Univ.]
Masanao Shinohara [Tokyo Univ.]
Motoyuki Kido [Tohoku Univ.]
Ryusuke Azuma [Tohoku Univ.]
Hiroaki Takahashi [Hokkaido Univ.]
Yoshio Murai [Hokkaido Univ.]
Mako Ozono [Hokkaido Univ.]

3. Research Activities

This research cruise was planned to conduct the “Large-scale and high-resolution mapping of the submarine fault system around the rupture segment boundary in the Nankai Trough”, as a part of the Project “Observation and monitoring of large scale seafloor deformation for national land resilience”. In this, cruise, we deployed the ocean bottom seismographs for the crustal structure survey in Nankai Trough

(1) OBS recovery

We recovered 99 OBSs along the two survey lines, MROBS01 and MROBS02, for structural survey off Muroto. These OBSs were deployed in YK19-15 cruises. Airgun shooting were carried out in KM19-09 cruises.

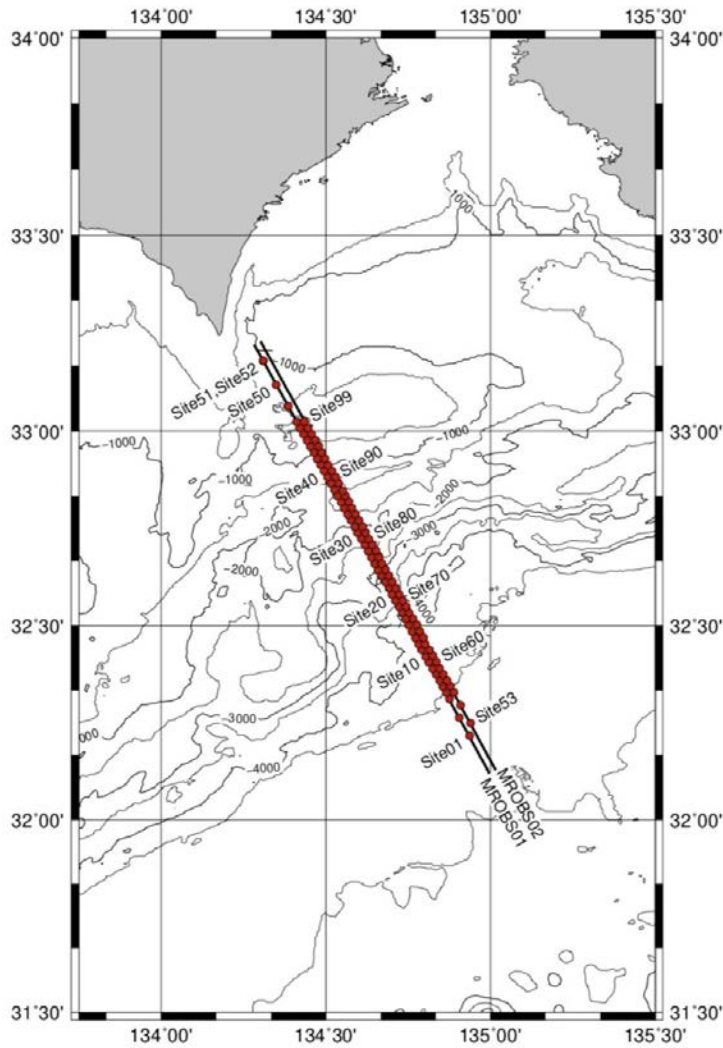


Figure 1. OBS locations.

Table 1: OBS positions

Site	Lat.(N)		Lon.(E)		Depth(m)
	Deg.	Min.	Deg.	Min.	
1	32	12.9746	134	56.1387	4836.9
2	32	15.8117	134	54.3131	4850.6
3	32	18.6971	134	52.4913	4592.9
4	32	19.6572	134	51.8947	4590.5
5	32	20.6186	134	51.2663	4400.7
6	32	21.5399	134	50.6876	4449.9
7	32	22.4951	134	50.0860	4505.9
8	32	23.3802	134	49.4168	4500.8
9	32	24.3766	134	48.7315	4437.1
10	32	25.2504	134	48.1552	4400.0
11	32	26.2620	134	47.4112	4389.5
12	32	27.1664	134	46.8565	4245.1
13	32	28.1386	134	46.2544	4031.2
14	32	29.1107	134	45.6355	4178.5
15	32	30.0784	134	45.0795	4195.1
16	32	31.0337	134	44.5220	4194.6
17	32	32.0613	134	43.9106	4105.4
18	32	32.9531	134	43.2998	3862.4
19	32	33.8887	134	42.6797	3442.8
20	32	34.8396	134	42.0175	3373.6
21	32	35.8004	134	41.4488	3175.9
22	32	36.7231	134	40.7757	3170.7
23	32	37.6583	134	40.1091	2941.6
24	32	38.6041	134	39.4931	3037.2
25	32	39.5919	134	38.8966	2942.9
26	32	40.5400	134	38.2796	2818.1
27	32	41.4835	134	37.6760	2685.6
28	32	42.4384	134	37.0670	2537.7
29	32	43.3685	134	36.4203	2372.9
30	32	44.3327	134	35.7823	2296.8
31	32	45.2656	134	35.2837	2092.1
32	32	46.2806	134	34.5837	1860.0
33	32	47.1748	134	33.9645	1740.4

34	32	48.1187	134	33.3232	1600.3
35	32	49.0430	134	32.7500	1341.1
36	32	50.0149	134	32.1036	1322.2
37	32	50.9825	134	31.4970	1551.0
38	32	51.9377	134	30.8902	1648.1
39	32	52.8948	134	30.2886	1372.3
40	32	53.8369	134	29.6283	1257.0
41	32	54.7854	134	29.0398	1089.8
42	32	55.7198	134	28.4098	871.7
43	32	56.6862	134	27.7781	1005.1
44	32	57.6096	134	27.1256	678.0
45	32	58.5679	134	26.5032	618.8
46	32	59.4915	134	25.9146	648.1
47	33	0.4623	134	25.2819	674.3
48	33	1.3955	134	24.6670	449.2
49	33	3.7652	134	23.1060	506.7
50	33	7.0591	134	20.9302	691.9
51	33	10.7039	134	18.5123	829.7
52	33	10.7856	134	18.6089	861.0
53	32	14.9584	134	56.3369	4848.5
54	32	17.7507	134	54.5304	4805.7
55	32	19.7007	134	53.3268	4621.2
56	32	20.6287	134	52.7083	4553.1
57	32	21.5412	134	52.0614	4396.1
58	32	22.5241	134	51.3830	4494.9
59	32	23.4195	134	50.6918	4503.1
60	32	24.3989	134	50.1524	4436.9
61	32	25.3747	134	49.4945	4425.7
62	32	26.2991	134	48.8821	4395.3
63	32	27.1969	134	48.0542	4303.8
64	32	28.1949	134	47.7877	4283.5
65	32	29.1638	134	47.1197	4184.6
66	32	30.1340	134	46.5899	4208.7
67	32	31.0774	134	45.8559	4197.0
68	32	32.0163	134	45.1969	4210.9
69	32	32.9749	134	44.6633	4179.4
70	32	33.9209	134	43.9556	3979.2

71	32	34.8755	134	43.2959	3557.3
72	32	35.8275	134	42.7363	3428.7
73	32	36.7519	134	42.0495	3308.6
74	32	37.7012	134	41.4390	3173.5
75	32	38.6669	134	40.8095	3120.7
76	32	39.6325	134	40.2283	2898.1
77	32	40.6055	134	39.6488	2729.4
78	32	41.5731	134	39.1070	2582.0
79	32	42.4654	134	38.4534	2601.5
80	32	43.4128	134	37.8262	2461.0
81	32	44.3691	134	37.2258	2309.9
82	32	45.3180	134	36.6363	1980.7
83	32	46.2373	134	36.0057	1932.8
84	32	47.2182	134	35.4115	1757.5
85	32	48.1614	134	34.7501	1509.7
86	32	49.1256	134	34.1729	1416.5
87	32	50.0463	134	33.5512	1321.4
88	32	50.7796	134	33.0813	1375.6
89	32	51.9651	134	32.2984	1540.8
90	32	52.9287	134	31.7231	1405.6
91	32	53.8423	134	31.0657	1216.2
92	32	54.7683	134	30.4160	1063.2
93	32	55.7453	134	29.8043	891.2
94	32	56.6929	134	29.2186	794.5
95	32	57.6861	134	28.6746	720.1
96	32	58.5817	134	27.9965	502.9
97	32	59.5333	134	27.3472	616.2
98	33	0.4598	134	26.7160	621.5
99	33	1.4481	134	26.0902	561.4

(2) Bathymetry and magnetics observation

During the cruise, bathymetry and magnetics data have been recorded continuously.

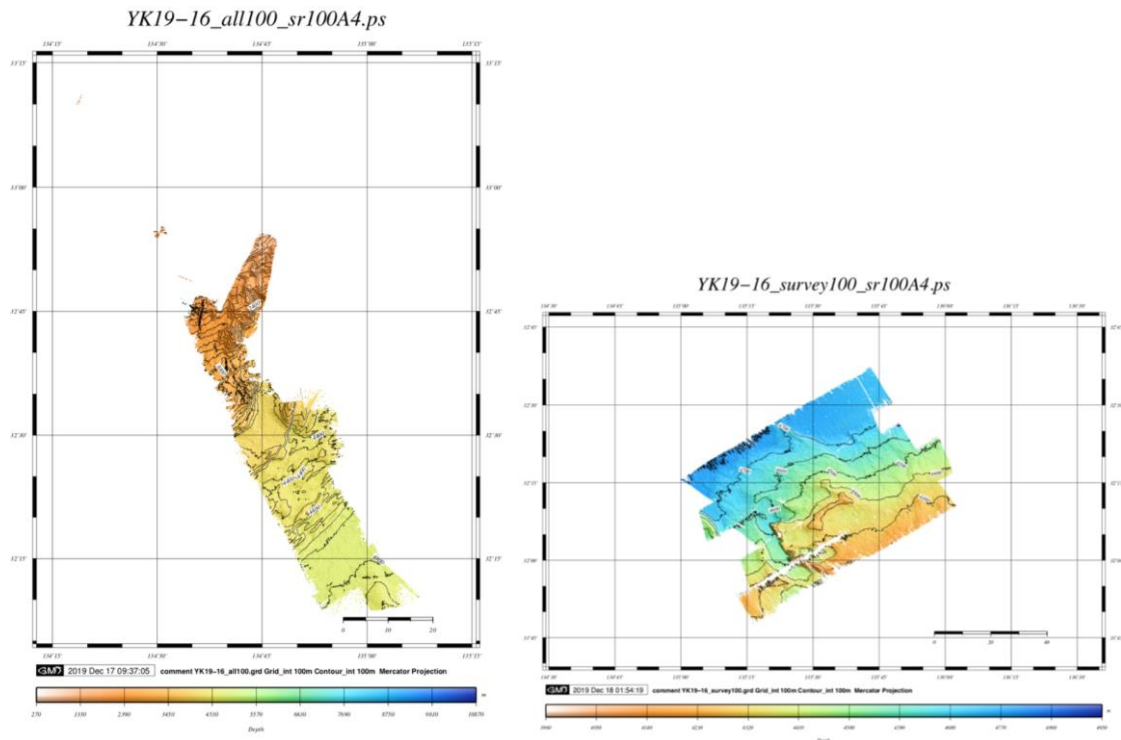


Figure 2. Bathymetry maps.

4. Notice on Using

This cruise report is a preliminary documentation as of the end of cruise.
This report is not necessarily corrected even if there is any inaccurate description (i.e. taxonomic classifications). This report is subject to be revised without notice. Some data on this report may be raw or unprocessed. If you are going to use or refer the data on this report, it is recommended to ask the Chief Scientist for latest status.
Users of information on this report are requested to submit Publication Report to JAMSTEC.

<http://www.godac.jamstec.go.jp/darwin/explain/1/c#report>

E-mail: submit-rv-cruise@jamstec.go.jp