



HOKKAIDO UNIVERSITY

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THE “OSHORU MARU” CRUISE 195
TO WATERS EAST OF HONSHU AND TO THE OGASAWARA ISLANDS

IN NOVEMBER 2008

1. Cruise Itinerary

Cruise 195

Departure from Hakodate	Nov. 13 ,2008
Start hydrographic research (OS08211)	14
Arrival at Futami	20
Departure from Futami	23
Finish hydrographic research (OS08222)	23
Return to Hakodate	28

Total coverage 2324.6miles

2. Vessel Personnel

Captain:	Professor	Toshimi Meguro
Crew :	First Officer	Shogo Takagi
	Second Officer	Yoshihiko Kamei
	Jr. Second Officer	Keiichiro Sakaoka
	Chief Engineer	Junichi Kimura
	And 24 men	
Cruise 195		
Research Staff:	Professor	(Laboratory of Marine Bio-resources Ecology) Kenshi Kuma
	Associate Professor	(Laboratory of Marine Environmental Science) Yutaka Isoda
Guest Scientist:	Affiliated Professor	(Pacific Aquaculture and Coastal Resources Center University of Hawaii) Keiko Sekiguchi
	Scientist	(National Institute for Environmental Studies) Takafumi Aramaki
	Scientist	(Ogasawara Whale Watching Association) Kyouichi Mori
	Post Doctor	(Department of Earth and Planetary Science, University of Tokyo) Maki Nagasawa
Graduate Students:	6 Persons	
Under Graduate Students:	10 Persons	
	Total 51 persons	

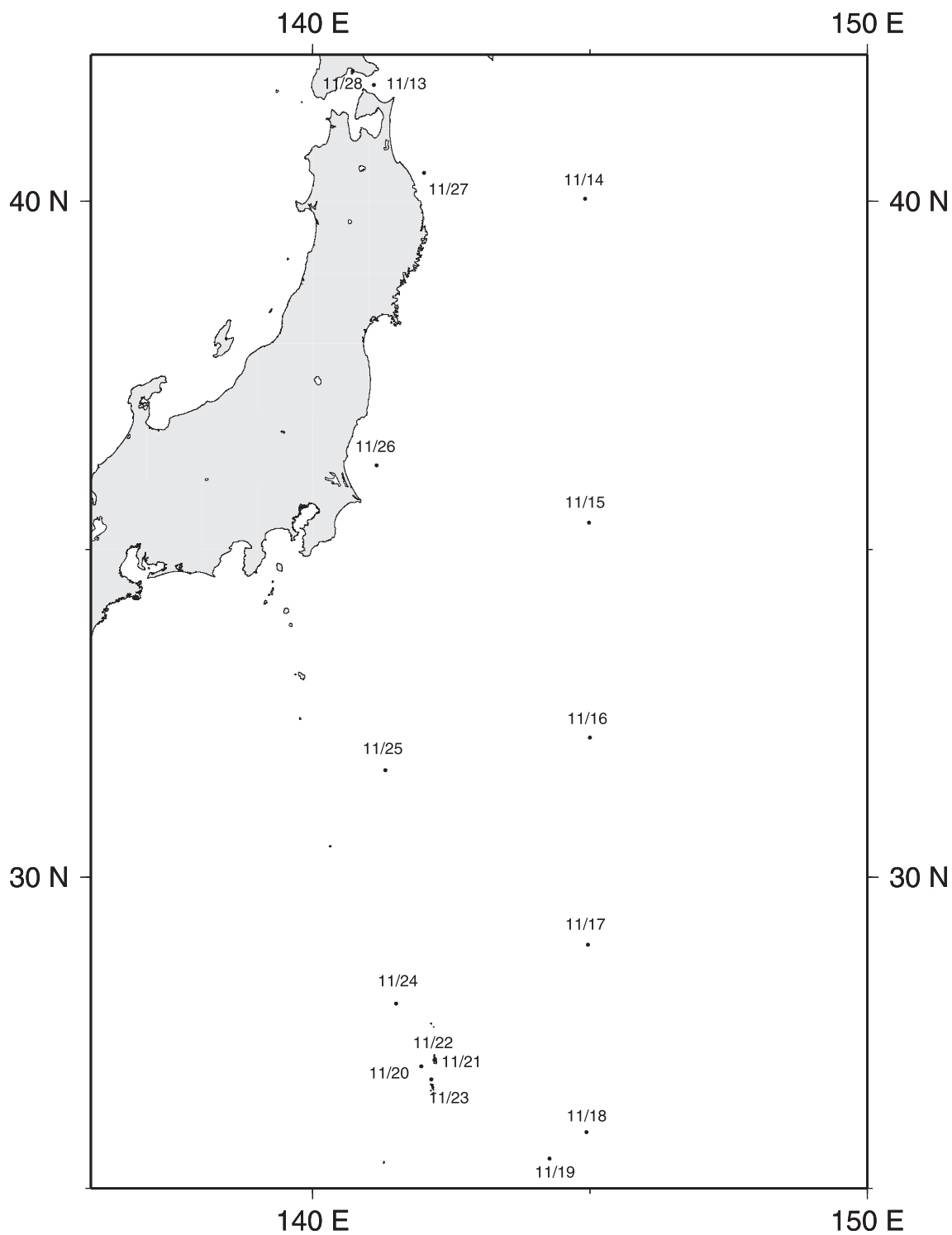


Figure 1: Noon position

3. Items of Research

Hydrographic observations:

Fig. 2 Table 1, 2

Behavior of trace metals in the North Pacific Ocean

Investigation for behavior of aluminum in the North Pacific Ocean

Behavior of dissolved organic radiocarbon in the North Pacific Ocean

Flow and mixing in the intermediate and abyssal layers in the North Pacific Ocean

Dynamics of primary production process in the North Pacific Ocean

The relation between micro-scale and fine scale current shear in deep Ocean, measurements using VMP5500 and XCP

4. Data on Temperature, Salinity, and Computed Dynamic Depth Anomaly

Hydrographic work on deck and the data processing were made by the deck officers, crews, research staff and cadets of the “Oshoro Maru”.

Temperature and salinity were measured by CTD (Seabird SBE9Plus and SBE-19).

Dynamic computations were made using a desk-top computer aboard the “Oshoro Maru”.

Table 1: List of Oceanographic Stations

Station	Lat.(*)	Long.(*)	Date	S.M.T	T.Z.	Depth	COL.	TR.	S.S.T.	WR.	Remark
OS08211	40-00.0N	145-00.0E	11/14	0821	9	5611	7	5.1	-	b	SBE-9plus
OS08212	35-00.0N	145-00.0E	11/15	1646	9	5747	-	-	-	c	SBE-9plus
OS08213	30-00.0N	145-00.0E	11/17	0103	9	5910	-	-	24.6	bc	SBE-9plus
OS08214	25-55.3N	144-56.1E	11/18	0312	9	4931	-	-	-	r	XCTD2
OS08215	25-50.0N	145-00.0E	11/18	2200	9	5016	-	-	-	o	SBE-9plus
OS08216	25-13.1N	144-37.4E	11/19	0612	9		-	-	-	c	XCTD1
OS08217	25-29.3N	144-16.7E	11/19	1220	9		-	-	-	c	XCTD1
OS08218	26-58.5N	141-57.4E	11/20	1155	9		-	-	-	b	XCTD1
OS08219	26-59.9N	141-57.8E	11/20	1251	9		-	-	-	b	XCTD1
OS08220	26-45.0N	142-00.0E	11/23	1105	9	903	-	-	-	b	XCTD1
OS08221	26-51.3N	142-20.3E	11/23	1420	9	1460	-	-	-	b	XCTD1
OS08222	27-10.5N	142-24.6E	11/23	2034	9	960	-	-	-	b	XCTD1

(*):Fixed position by Global Positioning system

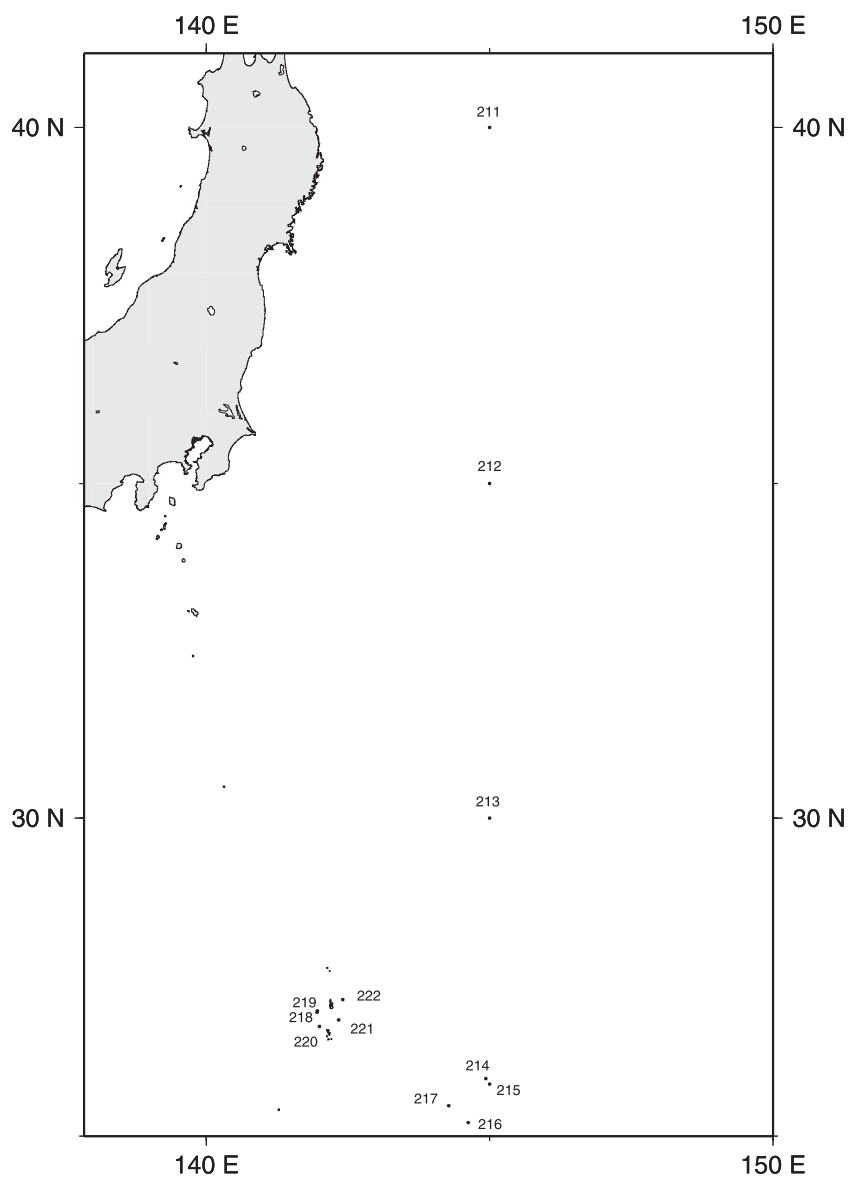


Figure 2: Oceanographic stations

Table 2: Oceanographic data

Station OS08211				Station OS08212				Station OS08213			
Longitude 40-00.0N				Longitude 35-00.0N				Longitude 30-00.0N			
Latitude 145-00.0E				Latitude 145-00.0E				Latitude 145-00.0E			
Depth(m) 5611				Depth(m) 5747				Depth(m) 5910			
Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T	Press.	Temp.	Sal.	SIG-T
5	9.745	33.103	25.514	5	23.399	34.328	23.311	5	24.843	34.389	22.929
10	9.713	33.106	25.521	10	23.405	34.329	23.309	10	24.851	34.389	22.926
20	9.613	33.120	25.549	20	23.407	34.328	23.308	20	24.852	34.389	22.926
30	9.566	33.120	25.556	30	23.409	34.328	23.307	30	24.852	34.389	22.927
40	8.495	33.084	25.696	40	23.413	34.328	23.306	40	24.245	34.487	23.182
50	7.768	33.072	25.794	50	23.414	34.335	23.312	50	22.214	34.725	23.950
75	3.923	33.213	26.372	75	23.417	34.397	23.357	75	19.328	34.786	24.775
100	3.405	33.312	26.501	100	21.863	34.697	24.027	100	18.323	34.787	25.030
125	2.736	33.321	26.567	125	21.093	34.781	24.303	125	17.850	34.777	25.139
150	2.318	33.343	26.620	150	20.116	34.800	24.580	150	17.504	34.766	25.215
200	2.350	33.427	26.684	200	18.854	34.818	24.920	200	16.981	34.742	25.322
250	2.377	33.526	26.761	250	18.320	34.795	25.037	250	16.361	34.701	25.435
300	2.405	33.602	26.820	300	17.783	34.782	25.159	300	15.228	34.614	25.625
400	2.953	33.799	26.931	400	16.252	34.685	25.448	400	12.841	34.448	25.998
500	3.102	33.937	27.028	500	13.397	34.490	25.919	500	9.628	34.215	26.401
600	3.111	34.060	27.125	600	9.679	34.332	26.485	600	6.882	34.008	26.654
700	3.160	34.174	27.211	700	7.308	34.228	26.768	700	5.669	34.070	26.859
800	3.022	34.249	27.284	800	5.779	34.239	26.979	800	4.590	34.168	27.061
900	3.108	34.344	27.352	900	4.588	34.204	27.091	900	4.072	34.250	27.182
1000	3.037	34.395	27.399	1000	3.899	34.263	27.210	1000	3.665	34.321	27.280
1200	2.632	34.437	27.468	1200	3.350	34.371	27.350	1200	3.084	34.425	27.418
1500	2.355	34.509	27.550	1500	2.610	34.476	27.502	1500	2.482	34.517	27.545
2000	1.981	34.590	27.645	2000	2.086	34.575	27.624	2000	1.936	34.601	27.657
2500	1.723	34.635	27.700	2500	1.781	34.629	27.691	2500	1.703	34.639	27.705
3000	1.578	34.660	27.732	3000	1.613	34.657	27.727	3000	1.568	34.660	27.733

Station	OS08214			
Longitude	25-55.3N			
Latitude	144-56.1E			
Depth(m)	4931			
Press.	Temp.	Sal.	SIG-T	
5	26.563	34.287	22.321	
10	26.563	34.304	22.334	
20	26.573	34.318	22.341	
30	26.553	34.331	22.358	
40	26.572	34.374	22.384	
50	23.600	34.627	23.478	
75	20.821	34.752	24.355	
100	19.594	34.752	24.680	
125	18.931	34.753	24.851	
150	18.497	34.749	24.958	
200	17.887	34.740	25.102	
250	17.432	34.719	25.196	
300	16.617	34.668	25.351	
400	13.527	34.440	25.853	
500	11.157	34.267	26.177	
600	8.224	34.092	26.528	
700	5.703	34.045	26.835	
800	4.859	34.110	26.986	
900	4.065	34.234	27.170	
1000	3.686	34.314	27.272	
1200	3.084	34.412	27.408	
1500	2.414	34.512	27.547	

Station	OS08215			
Longitude	25-50.0N			
Latitude	145-00.0E			
Depth(m)	5016			
Press.	Temp.	Sal.	SIG-T	
5	26.590	34.423	22.415	
10	26.596	34.428	22.417	
20	26.562	34.477	22.465	
30	26.329	34.538	22.584	
40	25.546	34.643	22.906	
50	24.034	34.716	23.418	
75	20.726	34.799	24.416	
100	19.147	34.800	24.832	
125	18.843	34.803	24.912	
150	18.255	34.804	25.060	
200	17.621	34.778	25.196	
250	17.019	34.746	25.315	
300	16.044	34.675	25.488	
400	13.291	34.475	25.928	
500	10.941	34.303	26.244	
600	7.960	34.120	26.589	
700	5.708	34.076	26.859	
800	4.797	34.155	27.029	
900	4.270	34.234	27.149	
1000	3.753	34.326	27.275	
1200	3.128	34.428	27.417	
1500	2.451	34.527	27.556	
2000	1.890	34.611	27.669	
2500	1.654	34.649	27.717	
3000	1.554	34.667	27.739	

Station	OS08216			
Longitude	25-13.1N			
Latitude	144-37.4E			
Depth(m)	-			
Press.	Temp.	Sal.	SIG-T	
5	27.361	34.562	22.274	
10	27.361	34.576	22.285	
20	27.351	34.580	22.291	
30	26.863	34.480	22.372	
40	26.512	34.657	22.616	
50	26.051	34.678	22.776	
75	22.891	34.761	23.785	
100	20.511	34.797	24.473	
125	18.916	34.799	24.890	
150	18.245	34.790	25.052	
200	17.637	34.765	25.182	
250	17.022	34.732	25.304	
300	16.141	34.670	25.462	
400	13.569	34.469	25.867	
500	10.343	34.257	26.313	
600	7.608	34.127	26.646	
700	5.631	34.129	26.910	
800	4.635	34.215	27.094	
900	4.019	34.326	27.248	
1000	3.589	34.394	27.346	

Station	OS08217			
Longitude	25-29.3N			
Latitude	144-16.7E			
Depth(m)	-			
Press.	Temp.	Sal.	SIG-T	
5	28.196	34.592	22.026	
10	28.103	34.636	22.089	
20	28.052	34.654	22.120	
30	27.744	34.591	22.173	
40	27.268	34.500	22.258	
50	26.595	34.331	22.344	
75	25.314	34.345	22.753	
100	21.682	34.700	24.080	
125	19.748	34.781	24.662	
150	18.843	34.784	24.897	
200	17.912	34.757	25.109	
250	17.259	34.733	25.249	
300	16.556	34.683	25.376	
400	14.274	34.517	25.757	
500	11.689	34.329	26.127	
600	8.576	34.136	26.508	
700	6.645	34.074	26.738	
800	5.346	34.104	26.925	
900	4.389	34.210	27.117	
1000	3.762	34.318	27.268	

Station	OS08218			
Longitude	26-58.5N			
Latitude	141-57.4E			
Depth(m)	-			
Press.	Temp.	Sal.	SIG-T	
5	25.603	34.434	22.731	
10	25.583	34.453	22.752	
20	25.563	34.464	22.766	
30	25.283	34.441	22.835	
40	24.830	34.442	22.973	
50	24.587	34.476	23.072	
75	23.612	34.572	23.433	
100	22.708	34.636	23.743	
125	21.484	34.677	24.117	
150	20.084	34.721	24.528	
200	18.442	34.771	24.988	
250	17.858	34.755	25.120	
300	16.894	34.730	25.333	
400	15.202	34.604	25.623	
500	11.395	34.358	26.204	
600	7.900	34.169	26.636	
700	5.692	34.168	26.934	
800	4.854	34.212	27.067	
900	4.090	34.286	27.209	
1000	3.680	34.345	27.298	

Station	OS08219			
Longitude	26-59.9N			
Latitude	141-57.8E			
Depth(m)	-			
Press.	Temp.	Sal.	SIG-T	
5	25.684	34.495	22.752	
10	25.655	34.504	22.768	
20	25.197	34.482	22.892	
30	24.908	34.468	22.969	
40	24.841	34.482	23.000	
50	24.684	34.496	23.058	
75	23.245	34.604	23.564	
100	21.785	34.688	24.042	
125	20.990	34.716	24.282	
150	19.752	34.764	24.648	
200	18.504	34.791	24.988	
250	17.582	34.781	25.207	
300	16.929	34.744	25.336	
400	14.511	34.571	25.748	
500	11.199	34.360	26.242	
600	7.568	34.171	26.686	
700	5.844	34.164	26.912	
800	4.694	34.232	27.101	
900	3.999	34.306	27.234	
1000	3.639	34.355	27.310	

Station		OS08220	
Longitude		26-45.0N	
Latitude		142-00.0E	
Depth(m)		903	
Press.	Temp.	Sal.	SIG-T
5	25.002	34.480	22.950
10	24.642	34.492	23.067
20	24.506	34.502	23.116
30	24.328	34.513	23.177
40	24.172	34.532	23.238
50	24.019	34.550	23.297
75	22.521	34.674	23.825
100	20.257	34.763	24.514
125	19.224	34.774	24.792
150	18.653	34.779	24.941
200	17.934	34.772	25.115
250	17.431	34.760	25.228
300	16.837	34.719	25.338
400	14.539	34.565	25.737
500	10.728	34.310	26.287
600	8.190	34.189	26.609
700	5.842	34.164	26.912
800	4.801	34.230	27.088
900	4.266	34.281	27.186

Station		OS08221	
Longitude		26-51.3N	
Latitude		142-20.3E	
Depth(m)		1460	
Press.	Temp.	Sal.	SIG-T
5	25.845	34.539	22.736
10	25.845	34.547	22.742
20	25.806	34.550	22.756
30	25.439	34.521	22.847
40	23.869	34.683	23.442
50	22.036	34.705	23.985
75	20.351	34.755	24.483
100	19.289	34.779	24.779
125	18.714	34.775	24.923
150	18.280	34.768	25.026
200	17.716	34.755	25.155
250	17.294	34.741	25.246
300	16.854	34.709	25.326
400	13.330	34.452	25.902
500	10.626	34.260	26.266
600	7.920	34.112	26.589
700	5.820	34.094	26.859
800	4.651	34.176	27.061
900	4.165	34.250	27.172
1000	3.616	34.324	27.287

Station		OS08222	
Longitude		27-10.5N	
Latitude		142-24.6E	
Depth(m)		960	
Press.	Temp.	Sal.	SIG-T
5	25.636	34.366	22.670
10	25.636	34.395	22.692
20	25.436	34.380	22.742
30	25.048	34.333	22.825
40	24.675	34.317	22.925
50	24.478	34.280	22.956
75	22.693	34.525	23.663
100	21.164	34.687	24.212
125	20.210	34.715	24.490
150	19.191	34.709	24.751
200	18.251	34.728	25.003
250	17.592	34.714	25.154
300	16.705	34.664	25.327
400	15.239	34.564	25.584
500	11.716	34.333	26.125
600	8.250	34.134	26.557
700	6.025	34.087	26.828
800	5.005	34.145	26.997
900	4.292	34.226	27.140