

**Oceanographic Data in Lützow-Holm Bay of Antarctic Climate Research
Programme from March 1990 to January 1991 (JARE-31)**

Shuki USHIO

*National Institute of Polar Research, 9-10, Kaga 1-chome,
Itabashi-ku, Tokyo 173*

and

Takatoshi TAKIZAWA

*Japan Marine Science and Technology Center,
2-15, Natsushima-cho, Yokosuka 237*

As part of the Antarctic Climate Research Programme, the Japanese Antarctic Research Expedition (JARE) conducted a two-year programme of atmosphere/sea-ice/ocean interaction study in Lützow-Holm Bay and in its surrounding sea: Breid Bay and Cosmonaut Sea, from 1989 to 1992 (JARE-31 and -32). The purpose of this study is to understand a geophysical role of ice-covered ocean in the processes of the Antarctic and/or global climate change. We carried out extensive field observations on fast ice and in open water area between March 1990 and January 1991.

In this report, we present oceanographic data under the fast ice and within the open water (commonly called "Ôtone Suiro") in Lützow-Holm Bay.

Oceanographic stations on the fast ice were selected in three areas: the Ongul Strait, the Hovdebukta (Hovde Bay) and the eastern half of Lützow-Holm Bay. Locations of the observation stations are shown in Table 1, Figs. 1 and 2. In the first area, observations were made almost monthly, in the second area, only twice in spring. In the third area,

expeditions were carried out in three periods: fall, late winter and spring. The expedition party consisting of some snow vehicles and sledges achieved oceanographic observations on the fast ice. At each station, we measured water temperature and salinity profiles using a conductivity-temperature-depth profiling system (CTD, model SBE-19, Sea-Bird Electronics Inc., USA). Digital data of temperatures and salinities were recorded at about one meter depth intervals to the depth near each seabed. The raw data of standard-observed layers are shown in Table 2.

Water samples were collected with Nansen bottles. To determine the amount of dissolved oxygen in the sea-water samples, we used the Winkler's method with a titrator (model E645/E552, Metrohm, Switzerland). The dissolved oxygen data are shown in Table 3. For the depth below 100 m, the thermometric depth was calculated from the reading of the unprotected reversing thermometer.

In the open water area, or coastal polynya, aircraft-deployed expendable bathythermograph (AXBT, Tsurumi Seiki Co., Japan) observations were carried out from a Cessna plane to make clear thermal structure and its seasonal variation. Positions of the cast AXBT probes are shown in Fig. 3. The AXBT gave us water temperature data down to 460 m in depth and the analogue data of temperature-depth profile was continuously recorded on a chart paper for each cast. Temperature accuracy of the AXBT is $\pm 0.1^{\circ}\text{C}$ and it is also considered that reading error of the chart records has $\pm 0.1^{\circ}\text{C}$ differences. The temperature data of ten meters intervals are shown in Table 4. We have eliminated the data below a water depth which was estimated from a chart.

We express our gratitude to Prof. Y. Naito, the leader of JARE-31, and his members for their encouragement and willing cooperation in the field work on ice and the flight operation. Thanks are also extended to Prof. S. Kawaguchi and Prof. N. Ono for their much efforts to start this study.

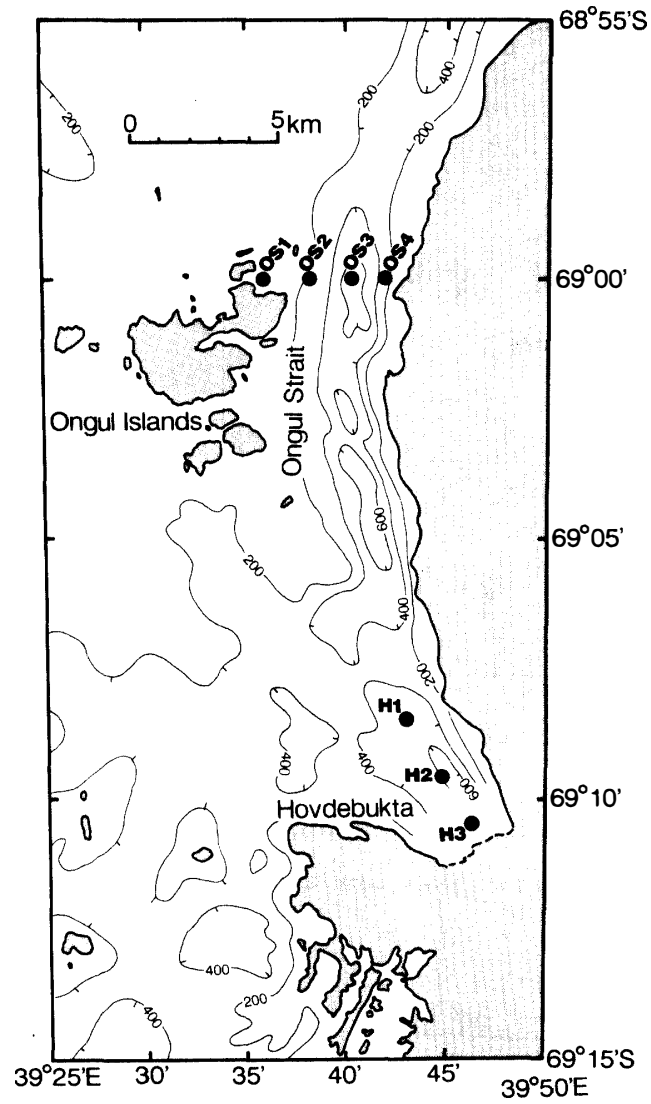


Fig. 1. Locations of oceanographic stations in the Ongul Strait and in the Hovdebukta (Hovde Bay). Isobathymetric lines are drawn in meter.

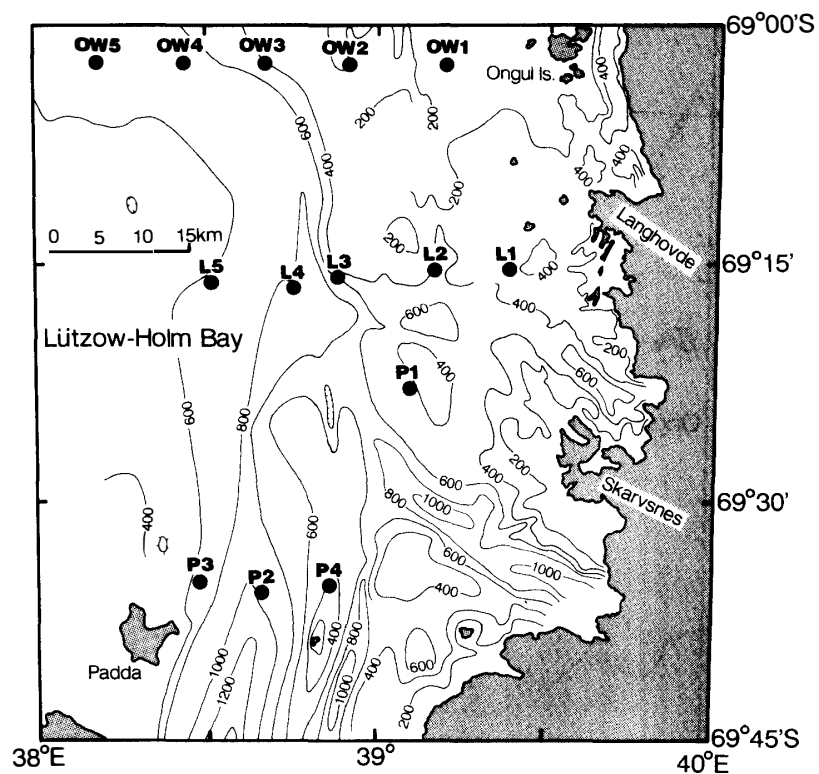


Fig. 2. Locations of oceanographic stations in Lützow-Holm Bay. Isobathymetric lines are drawn in meter.

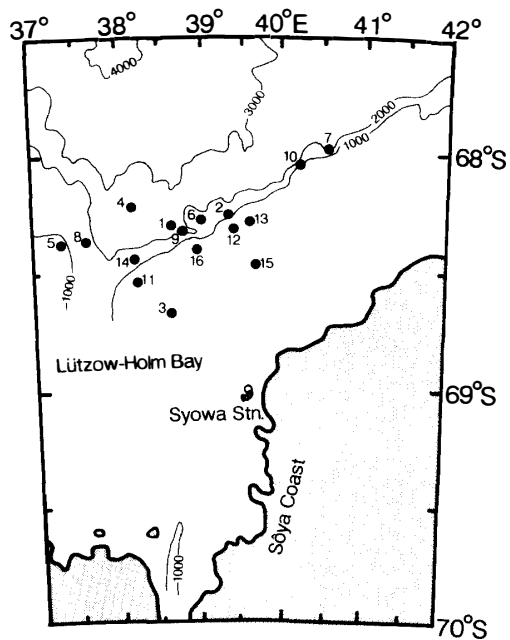


Fig. 3. Locations of AXBT-observation stations in open water between pack ice and fast ice areas. Isobathymetric lines are drawn in meter.

Table 1. Locations of oceanographic stations.

Station	Position		Depth (m)
	Latitude(S)	Longitude(E)	
[Ongul Strait]			
O S 1	69°00.0'	39°36.1'	36
O S 2	69°00.0'	39°38.3'	178
O S 3	69°00.0'	39°40.4'	667
O S 4	69°00.0'	39°42.0'	300

[Hovdebukta]			
H 1	69°08.6'	39°42.9'	425
H 2	69°09.6'	39°44.8'	460
H 3	69°10.4'	39°46.4'	639

[Lützow-Holm Bay]			
OW 1	69°02.8'	39°12.4'	158
OW 2	69°02.7'	38°56.4'	183
OW 3	69°02.7'	38°40.0'	430
OW 4	69°02.7'	38°25.0'	735
OW 5	69°02.2'	38°11.1'	758
L 1	69°15.5'	39°24.2'	320
L 2	69°15.6'	39°09.4'	225
L 3	69°16.4'	38°53.2'	510
L 4	69°17.3'	38°46.0'	965
L 5	69°16.8'	38°30.4'	645
P 1	69°23.0'	39°06.0'	483
P 2	69°35.9'	38°39.0'	1110
P 3	69°35.3'	38°29.0'	600
P 4	69°35.4'	38°51.7'	465

Table 2. CTD observation data.

Station : OS1
 Date : April 3, 1990
 Time (UT) : 12:32
 Ice Thickness (cm) : 144
 Snow Depth (cm) : 12

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.9	-1.798	33.352	26.841
9.3	-1.804	33.543	26.997
19.9	-1.811	33.532	26.988
29.9	-1.811	33.514	26.973
33.4	-1.812	33.571	27.019

Station : OS1
 Date : May 17, 1990
 Time (UT) : 09:48
 Ice Thickness (cm) : 135
 Snow Depth (cm) : 11

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.9	-1.820	33.606	27.048
9.6	-1.820	33.602	27.044
20.1	-1.819	33.603	27.045
29.9	-1.796	33.612	27.053
32.8	-1.788	33.619	27.058

Station : OS1
 Date : June 11, 1990
 Time (UT) : 10:35
 Ice Thickness (cm) : 156
 Snow Depth (cm) : 13

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.3	-1.831	33.689	27.115
10.0	-1.828	33.670	27.101
19.9	-1.830	33.664	27.096
30.1	-1.829	33.658	27.091
32.8	-1.829	33.663	27.095

Station : OS1
 Date : July 20, 1990
 Time (UT) : 09:35
 Ice Thickness (cm) : 151
 Snow Depth (cm) : 50

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.1	-1.822	33.658	27.091
9.7	-1.825	33.635	27.072
19.7	-1.816	33.640	27.076
29.9	-1.809	33.659	27.091
33.4	-1.804	33.670	27.100

Station : OS1
 Date : September 13, 1990
 Time (UT) : 10:33
 Ice Thickness (cm) : 174
 Snow Depth (cm) : 39

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.832	33.867	27.260
10.1	-1.834	33.837	27.236
19.9	-1.833	33.823	27.225
30.1	-1.825	33.825	27.226

Station : OS1
 Date : November 13, 1990
 Time (UT) : 07:38
 Ice Thickness (cm) : 173
 Snow Depth (cm) : 40

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.1	-1.824	33.966	27.341
9.8	-1.828	33.951	27.329
20.1	-1.828	33.941	27.321
30.1	-1.824	33.939	27.319
31.3	-1.821	33.941	27.320

Station : OS1
 Date : December 19, 1990
 Time (UT) : 07:46
 Ice Thickness (cm) : 219
 Snow Depth (cm) : 40

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.2	-1.791	33.959	27.335
9.9	-1.787	33.953	27.330
19.7	-1.783	33.938	27.317
29.7	-1.777	33.937	27.316
32.1	-1.778	33.940	27.319

Station : OS2
 Date : April 4, 1990
 Time (UT) : 10:35
 Ice Thickness (cm) : 135
 Snow Depth (cm) : 13

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.9	-1.814	33.487	26.951
9.6	-1.815	33.472	26.939
20.1	-1.818	33.471	26.938
30.3	-1.820	33.466	26.934
49.7	-1.820	33.480	26.946
74.7	-1.819	33.529	26.985
100.0	-1.784	33.864	27.257
124.8	-1.773	33.931	27.311
150.1	-1.751	33.988	27.357
171.4	-1.705	34.090	27.439

Station : OS2
 Date : May 16, 1990
 Time (UT) : 13:34
 Ice Thickness (cm) : 127
 Snow Depth (cm) : 22

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.9	-1.821	33.609	27.051
10.2	-1.823	33.609	27.051
20.0	-1.825	33.610	27.052
29.7	-1.824	33.612	27.053
49.9	-1.777	33.650	27.083
75.1	-1.762	33.717	27.137
100.2	-1.761	33.845	27.241
125.4	-1.752	33.924	27.305
150.5	-1.741	33.976	27.347
160.9	-1.743	33.988	27.357

Station : OS2
 Date : June 12, 1990
 Time (UT) : 07:10
 Ice Thickness (cm) : 128
 Snow Depth (cm) : 54

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.9	-1.810	33.723	27.143
9.8	-1.825	33.683	27.111
19.9	-1.828	33.656	27.089
30.1	-1.818	33.662	27.093
49.9	-1.801	33.681	27.108
74.9	-1.771	33.744	27.159
99.8	-1.758	33.819	27.219
125.0	-1.756	33.840	27.237
149.8	-1.744	33.906	27.290
167.6	-1.717	34.003	27.368

Station : OS2
 Date : July 21, 1990
 Time (UT) : 06:59
 Ice Thickness (cm) : 130
 Snow Depth (cm) : 65

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.823	33.669	27.100
10.1	-1.816	33.660	27.092
19.7	-1.792	33.696	27.120
30.1	-1.767	33.751	27.165
50.2	-1.738	33.830	27.228
75.1	-1.716	33.925	27.305
100.1	-1.713	33.958	27.331
124.8	-1.667	34.102	27.447
150.0	-1.650	34.122	27.463
171.6	-1.647	34.132	27.471

Station : OS2
 Date : September 14, 1990
 Time (UT) : 05:58
 Ice Thickness (cm) : 143
 Snow Depth (cm) : 75

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.843	33.884	27.274
9.5	-1.846	33.850	27.247
19.9	-1.842	33.827	27.228
29.7	-1.829	33.833	27.233
50.0	-1.751	33.904	27.288
74.9	-1.654	34.019	27.379
99.9	-1.613	34.079	27.427
124.8	-1.582	34.147	27.482
149.8	-1.581	34.161	27.493
161.4	-1.578	34.167	27.498

Station : OS2
 Date : November 14, 1990
 Time (UT) : 05:28
 Ice Thickness (cm) : 163
 Snow Depth (cm) : 92

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.7	-1.834	33.971	27.345
10.0	-1.833	33.948	27.326
20.3	-1.807	33.938	27.318
29.5	-1.790	33.950	27.327
49.7	-1.692	34.015	27.377
74.7	-1.545	34.100	27.443
100.2	-1.493	34.155	27.485
124.6	-1.492	34.187	27.511
150.4	-1.497	34.200	27.522
166.5	-1.499	34.208	27.528

Station : OS2
 Date : December 18, 1990
 Time (UT) : 12:06
 Ice Thickness (cm) : 189
 Snow Depth (cm) : 71

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.1	-1.578	30.909	24.852
10.2	-1.705	33.906	27.289
19.9	-1.748	33.929	27.309
29.7	-1.752	33.928	27.308
49.9	-1.723	33.959	27.333
75.1	-1.652	34.028	27.387
99.8	-1.554	34.096	27.439
124.6	-1.518	34.132	27.467
149.6	-1.483	34.154	27.484
155.5	-1.470	34.155	27.485

Station : OS3
 Date : April 5, 1990
 Time (UT) : 08:37
 Ice Thickness (cm) : 80
 Snow Depth (cm) : 17

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.1	-1.814	33.481	26.946
9.8	-1.811	33.469	26.936
20.2	-1.811	33.451	26.922
30.1	-1.809	33.458	26.927
49.9	-1.807	33.465	26.933
75.5	-1.808	33.509	26.969
100.0	-1.804	33.776	27.186
124.8	-1.803	33.916	27.299
149.7	-1.776	33.955	27.331
200.2	-1.660	34.135	27.474
250.0	-1.542	34.213	27.534
299.9	-1.417	34.277	27.582
400.1	-1.355	34.306	27.604
499.9	-1.223	34.324	27.614
599.8	-1.195	34.334	27.620
611.9	-1.189	34.335	27.621

Station : OS3
 Date : May 16, 1990
 Time (UT) : 07:41
 Ice Thickness (cm) : 101
 Snow Depth (cm) : 0.5

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.9	-1.808	33.626	27.064
9.9	-1.808	33.604	27.046
20.1	-1.810	33.596	27.040
30.1	-1.797	33.590	27.035
50.1	-1.768	33.633	27.069
75.1	-1.757	33.687	27.112
100.4	-1.749	33.759	27.171
125.2	-1.750	33.860	27.253
149.6	-1.730	33.989	27.357
200.5	-1.709	34.053	27.409
249.8	-1.687	34.086	27.435
299.7	-1.651	34.131	27.471
399.9	-1.471	34.239	27.553
500.0	-1.339	34.290	27.590
600.2	-1.256	34.312	27.605
658.2	-1.233	34.318	27.609

Station : OS3
 Date : June 12, 1990
 Time (UT) : 11:41
 Ice Thickness (cm) : 112
 Snow Depth (cm) : 20

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.829	33.744	27.160
10.1	-1.826	33.782	27.191
20.1	-1.831	33.668	27.098
29.9	-1.831	33.664	27.095
49.8	-1.813	33.678	27.106
74.9	-1.772	33.754	27.167
99.9	-1.758	33.822	27.222
124.8	-1.754	33.849	27.244
149.8	-1.758	33.933	27.312
199.9	-1.682	34.086	27.435
249.8	-1.652	34.132	27.472
300.1	-1.599	34.170	27.501
399.6	-1.511	34.223	27.541
500.0	-1.374	34.279	27.582
599.8	-1.277	34.309	27.603
656.0	-1.263	34.312	27.605

Station : OS3
 Date : July 21, 1990
 Time (UT) : 10:59
 Ice Thickness (cm) : 108
 Snow Depth (cm) : 20

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.823	33.664	27.095
9.7	-1.834	33.645	27.080
19.9	-1.835	33.621	27.061
29.9	-1.815	33.648	27.082
50.0	-1.748	33.808	27.211
75.1	-1.716	33.943	27.320
99.9	-1.718	34.001	27.366
125.2	-1.698	34.072	27.423
149.8	-1.656	34.115	27.457
199.9	-1.639	34.137	27.475
250.0	-1.601	34.176	27.506
299.7	-1.583	34.195	27.521
400.1	-1.561	34.209	27.531
500.0	-1.433	34.256	27.565
599.8	-1.329	34.291	27.591
655.4	-1.308	34.299	27.597

Station : OS3
 Date : September 14, 1990
 Time (UT) : 10:39
 Ice Thickness (cm) : 152
 Snow Depth (cm) : 10

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.9	-1.848	33.878	27.270
10.2	-1.849	33.855	27.251
20.2	-1.849	33.828	27.229
29.5	-1.850	33.823	27.226
50.1	-1.819	33.829	27.229
74.9	-1.634	34.025	27.384
99.8	-1.593	34.114	27.455
125.0	-1.583	34.150	27.484
149.9	-1.581	34.159	27.491
200.3	-1.565	34.200	27.524
250.0	-1.558	34.222	27.542
300.1	-1.551	34.226	27.544
399.5	-1.535	34.244	27.559
499.7	-1.515	34.247	27.561
599.6	-1.469	34.255	27.566
635.9	-1.443	34.260	27.569

Station : OS3
 Date : November 14, 1990
 Time (UT) : 10:54
 Ice Thickness (cm) : 169
 Snow Depth (cm) : 7

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.7	-1.834	33.943	27.322
10.2	-1.835	33.925	27.308
19.9	-1.816	33.916	27.300
30.3	-1.768	33.941	27.319
49.9	-1.715	34.000	27.366
74.9	-1.557	34.094	27.438
100.1	-1.484	34.146	27.478
125.2	-1.423	34.192	27.513
149.6	-1.494	34.204	27.525
200.3	-1.504	34.228	27.545
250.0	-1.501	34.243	27.557
300.1	-1.496	34.248	27.561
399.9	-1.506	34.262	27.573
499.8	-1.497	34.268	27.577
599.8	-1.491	34.270	27.579
636.9	-1.490	34.271	27.580

Station : OS3
 Date : December 17, 1990
 Time (UT) : 10:19
 Ice Thickness (cm) : 164
 Snow Depth (cm) : 0

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.518	33.598	27.034
9.9	-1.688	33.894	27.279
19.7	-1.742	33.940	27.318
29.9	-1.739	33.962	27.336
50.0	-1.692	34.001	27.365
74.7	-1.631	34.063	27.415
99.9	-1.545	34.126	27.463
124.8	-1.481	34.179	27.505
149.8	-1.470	34.206	27.526
199.7	-1.451	34.231	27.545
249.8	-1.455	34.243	27.555
299.7	-1.434	34.256	27.565
399.8	-1.452	34.272	27.579
499.8	-1.444	34.277	27.583
599.6	-1.444	34.280	27.585
645.8	-1.445	34.281	27.586

Station : OS4
 Date : May 15, 1990
 Time (UT) : 08:50
 Ice Thickness (cm) : 90
 Snow Depth (cm) : 0.5

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.819	33.631	27.069
9.7	-1.823	33.607	27.049
19.5	-1.822	33.594	27.038
30.1	-1.822	33.590	27.035
50.4	-1.774	33.634	27.069
75.7	-1.760	33.692	27.117
100.3	-1.754	33.761	27.172
124.6	-1.751	33.874	27.264
150.0	-1.744	33.965	27.338
199.7	-1.709	34.069	27.422
249.8	-1.680	34.108	27.452
292.3	-1.649	34.140	27.478

Station : OS4
 Date : April 2, 1990
 Time (UT) : 11:00
 Ice Thickness (cm) : 65
 Snow Depth (cm) : 10

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.9	-1.818	33.559	27.010
10.2	-1.817	33.485	26.950
20.3	-1.820	33.487	26.951
30.1	-1.820	33.489	26.953
50.1	-1.820	33.498	26.961
74.7	-1.816	33.542	26.996
99.8	-1.804	33.754	27.168
124.4	-1.776	33.951	27.328
150.3	-1.757	33.997	27.365
199.9	-1.673	34.137	27.476
249.8	-1.599	34.187	27.514
293.6	-1.454	34.270	27.578

Station : OS4
 Date : June 13, 1990
 Time (UT) : 08:22
 Ice Thickness (cm) : 98
 Snow Depth (cm) : 10

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.829	33.703	27.127
9.7	-1.829	33.680	27.109
19.9	-1.831	33.673	27.103
29.9	-1.815	33.681	27.109
50.2	-1.783	33.743	27.158
75.1	-1.771	33.799	27.203
99.9	-1.764	33.860	27.253
125.0	-1.759	33.892	27.279
150.0	-1.751	33.946	27.323
200.1	-1.697	34.084	27.434
249.8	-1.637	34.143	27.480
291.3	-1.597	34.173	27.503

Station : OS4
 Date : July 22, 1990
 Time (UT) : 08:14
 Ice Thickness (cm) : 115
 Snow Depth (cm) : 25

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.830	33.685	27.112
10.1	-1.840	33.633	27.070
19.9	-1.844	33.608	27.051
30.1	-1.842	33.605	27.048
50.2	-1.776	33.770	27.181
75.1	-1.711	34.012	27.375
99.7	-1.701	34.045	27.402
124.8	-1.682	34.086	27.434
150.0	-1.663	34.110	27.454
199.9	-1.598	34.173	27.503
249.8	-1.585	34.187	27.514
290.1	-1.566	34.195	27.520

Station : OS4
 Date : September 15, 1990
 Time (UT) : 07:40
 Ice Thickness (cm) : 146
 Snow Depth (cm) : 14

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.1	-1.846	33.854	27.250
10.2	-1.847	33.832	27.233
19.7	-1.847	33.825	27.227
29.7	-1.846	33.820	27.223
50.3	-1.839	33.821	27.223
75.3	-1.659	34.004	27.367
99.6	-1.587	34.130	27.468
124.8	-1.580	34.162	27.494
149.7	-1.577	34.176	27.504
199.7	-1.567	34.198	27.522
250.0	-1.552	34.221	27.541
282.2	-1.544	34.226	27.544

Station : OS4
 Date : November 15, 1990
 Time (UT) : 07:07
 Ice Thickness (cm) : 158
 Snow Depth (cm) : 9

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.783	33.955	27.331
9.7	-1.792	33.931	27.312
19.7	-1.805	33.908	27.293
29.9	-1.814	33.917	27.301
49.6	-1.668	34.028	27.387
74.7	-1.505	34.122	27.459
99.3	-1.495	34.162	27.491
125.0	-1.498	34.198	27.520
150.2	-1.504	34.215	27.534
200.1	-1.505	34.238	27.553
250.4	-1.515	34.254	27.566
282.0	-1.512	34.259	27.570

Station : OS4
 Date : December 17, 1990
 Time (UT) : 06:32
 Ice Thickness (cm) : 154
 Snow Depth (cm) : 0

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.626	33.396	26.872
9.9	-1.726	33.934	27.312
19.9	-1.764	33.927	27.308
29.9	-1.762	33.933	27.312
50.3	-1.651	34.022	27.382
74.7	-1.546	34.120	27.459
100.3	-1.526	34.143	27.477
124.6	-1.501	34.180	27.506
150.2	-1.500	34.200	27.522
199.9	-1.470	34.215	27.533
249.8	-1.457	34.221	27.538
281.6	-1.442	34.237	27.550

Station : H1
Date : September 17, 1990
Time (UT) : 10:32
Ice Thickness (cm) : 176
Snow Depth (cm) : 0

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.1	-1.843	33.870	27.263
9.8	-1.843	33.853	27.250
19.7	-1.843	33.836	27.235
30.5	-1.843	33.829	27.230
50.3	-1.775	33.869	27.261
75.1	-1.628	34.062	27.414
99.8	-1.640	34.124	27.464
125.4	-1.583	34.144	27.479
149.8	-1.590	34.174	27.504
199.9	-1.571	34.197	27.522
250.4	-1.545	34.231	27.549
300.3	-1.532	34.242	27.557
399.5	-1.515	34.258	27.569
405.2	-1.516	34.260	27.571

Station : H1
Date : November 22, 1990
Time (UT) : 10:05
Ice Thickness (cm) : 198
Snow Depth (cm) : 0

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.2	-1.764	33.931	27.311
9.5	-1.801	33.915	27.299
19.9	-1.814	33.900	27.287
29.7	-1.810	33.907	27.292
50.0	-1.687	33.989	27.356
74.9	-1.594	34.065	27.415
99.7	-1.537	34.124	27.461
124.8	-1.497	34.174	27.501
149.6	-1.491	34.185	27.510
199.9	-1.490	34.211	27.530
250.0	-1.480	34.221	27.539
300.3	-1.520	34.252	27.565
400.1	-1.466	34.273	27.580
403.1	-1.465	34.276	27.582

Station : H2
Date : September 19, 1990
Time (UT) : 12:11
Ice Thickness (cm) : 180
Snow Depth (cm) : 0

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.1	-1.835	33.885	27.275
9.6	-1.837	33.863	27.258
19.9	-1.839	33.844	27.242
29.7	-1.840	33.840	27.239
49.7	-1.751	33.827	27.226
74.5	-1.620	34.053	27.406
99.6	-1.593	34.125	27.464
124.8	-1.593	34.154	27.488
149.9	-1.576	34.179	27.507
200.1	-1.578	34.204	27.528
250.4	-1.552	34.224	27.543
299.9	-1.535	34.241	27.557
400.3	-1.512	34.260	27.571
433.3	-1.484	34.265	27.574

Station : H2
Date : November 23, 1990
Time (UT) : 10:42
Ice Thickness (cm) : 196
Snow Depth (cm) : 0

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.793	33.965	27.339
9.9	-1.808	33.937	27.317
20.3	-1.808	33.918	27.302
30.1	-1.803	33.919	27.302
50.0	-1.685	33.996	27.362
75.3	-1.586	34.083	27.430
99.7	-1.513	34.141	27.475
124.8	-1.508	34.174	27.501
150.0	-1.488	34.180	27.506
199.7	-1.533	34.199	27.523
250.2	-1.484	34.217	27.536
300.3	-1.506	34.239	27.554
400.0	-1.480	34.268	27.577
432.8	-1.450	34.270	27.578

Station : H3
 Date : September 18, 1990
 Time (UT) : 08:48
 Ice Thickness (cm) : 179
 Snow Depth (cm) : 0

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.842	33.874	27.267
10.1	-1.843	33.852	27.248
20.3	-1.846	33.844	27.242
30.3	-1.844	33.835	27.235
50.0	-1.762	33.842	27.238
74.7	-1.657	34.042	27.398
99.9	-1.664	34.111	27.455
125.2	-1.603	34.157	27.490
149.6	-1.573	34.171	27.501
200.1	-1.617	34.206	27.531
250.2	-1.552	34.224	27.543
299.5	-1.539	34.236	27.552
399.8	-1.392	34.274	27.579
499.8	-1.164	34.328	27.615
600.0	-1.123	34.339	27.622
605.5	-1.123	34.339	27.623

Station : OW1
 Date : May 9, 1990
 Time (UT) : 14:23
 Ice Thickness (cm) : —
 Snow Depth (cm) : 33

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.804	33.343	26.833
10.3	-1.810	33.603	27.045
20.5	-1.802	33.618	27.057
30.1	-1.794	33.628	27.065
50.2	-1.752	33.748	27.162
75.1	-1.760	33.795	27.200
100.1	-1.769	33.826	27.225
125.0	-1.760	33.882	27.271
150.0	-1.748	33.913	27.296
151.4	-1.745	33.919	27.301

Station : H3
 Date : November 22, 1990
 Time (UT) : 14:51
 Ice Thickness (cm) : 180
 Snow Depth (cm) : 0

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.793	33.948	27.325
9.9	-1.802	33.951	27.329
20.5	-1.812	33.931	27.312
29.9	-1.794	33.936	27.316
49.8	-1.678	34.011	27.374
74.9	-1.530	34.098	27.440
99.9	-1.519	34.134	27.469
125.0	-1.430	34.153	27.482
150.0	-1.407	34.180	27.503
200.3	-1.532	34.210	27.531
250.2	-1.558	34.228	27.547
300.1	-1.516	34.248	27.561
399.8	-1.479	34.275	27.582
499.6	-1.231	34.319	27.610
600.2	-1.125	34.331	27.616
606.9	-1.123	34.335	27.619

Station : OW1
 Date : September 3, 1990
 Time (UT) : 11:41
 Ice Thickness (cm) : 200
 Snow Depth (cm) : 53

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.855	33.765	27.178
10.3	-1.856	33.762	27.176
20.1	-1.855	33.754	27.169
29.9	-1.855	33.752	27.168
49.8	-1.804	33.803	27.208
74.9	-1.698	33.966	27.337
100.5	-1.655	34.039	27.395
125.2	-1.621	34.117	27.458
146.1	-1.623	34.129	27.468

Station : OW1
 Date : November 1, 1990
 Time (UT) : 08:25
 Ice Thickness (cm) : 201
 Snow Depth (cm) : 55

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.2	-1.856	33.944	27.324
10.1	-1.858	33.928	27.310
20.1	-1.857	33.912	27.297
29.9	-1.855	33.914	27.299
50.0	-1.757	33.971	27.343
74.7	-1.648	34.051	27.405
99.5	-1.515	34.145	27.477
124.6	-1.495	34.185	27.509
143.7	-1.505	34.195	27.518

Station : OW2
 Date : May 10, 1990
 Time (UT) : 14:20
 Ice Thickness (cm) : 190
 Snow Depth (cm) : 47

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.7	-1.823	33.669	27.099
9.8	-1.807	33.710	27.132
20.1	-1.798	33.763	27.175
29.7	-1.798	33.782	27.191
50.1	-1.795	33.811	27.214
75.1	-1.786	33.844	27.241
100.0	-1.775	33.879	27.269
125.2	-1.731	33.930	27.309
150.2	-1.692	33.990	27.357
172.6	-1.688	34.014	27.376

Station : OW2
 Date : September 2, 1990
 Time (UT) : 12:20
 Ice Thickness (cm) : 211
 Snow Depth (cm) : 98

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.857	33.741	27.159
10.1	-1.857	33.738	27.156
20.1	-1.854	33.736	27.154
30.3	-1.837	33.747	27.163
50.0	-1.784	33.834	27.232
75.1	-1.757	33.946	27.323
100.3	-1.756	34.029	27.391
124.8	-1.610	34.092	27.437
150.2	-1.612	34.147	27.483
151.2	-1.613	34.151	27.486

Station : OW2
 Date : October 31, 1990
 Time (UT) : 11:58
 Ice Thickness (cm) : 219
 Snow Depth (cm) : 117

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.856	33.963	27.339
9.7	-1.856	33.934	27.316
20.3	-1.856	33.910	27.296
29.9	-1.823	33.916	27.300
49.8	-1.796	33.964	27.338
75.3	-1.785	34.022	27.386
100.1	-1.711	34.073	27.425
124.6	-1.605	34.117	27.458
150.2	-1.512	34.185	27.510
164.3	-1.471	34.199	27.520

Station : OW3
 Date : May 11, 1990
 Time (UT) : 11:41
 Ice Thickness (cm) : 128
 Snow Depth (cm) : 46

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.3	-1.851	33.848	27.245
9.9	-1.850	33.824	27.226
20.3	-1.844	33.842	27.241
29.9	-1.838	33.845	27.243
49.9	-1.850	33.855	27.251
74.7	-1.852	33.862	27.257
99.7	-1.832	33.878	27.269
124.8	-1.787	33.918	27.301
150.2	-1.757	33.952	27.328
199.7	-1.659	34.046	27.401
249.8	-1.728	34.132	27.473
300.1	-1.655	34.180	27.510
400.1	-1.653	34.243	27.561
400.3	-1.654	34.244	27.562

Station : OW3
 Date : August 29, 1990
 Time (UT) : 09:12
 Ice Thickness (cm) : 170
 Snow Depth (cm) : 72

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.855	33.759	27.173
10.3	-1.854	33.749	27.165
20.3	-1.816	33.800	27.205
29.7	-1.813	33.832	27.232
50.4	-1.818	33.874	27.266
74.9	-1.823	33.893	27.281
100.3	-1.812	33.912	27.296
125.2	-1.793	33.960	27.335
150.0	-1.714	34.007	27.371
199.9	-1.644	34.128	27.468
249.4	-1.609	34.165	27.497
299.9	-1.650	34.232	27.552
400.0	-1.683	34.272	27.586
400.3	-1.684	34.273	27.587

Station : OW3
 Date : October 28, 1990
 Time (UT) : 09:14
 Ice Thickness (cm) : 226
 Snow Depth (cm) : 102

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.856	33.963	27.339
9.7	-1.858	33.932	27.314
20.1	-1.855	33.916	27.301
29.7	-1.831	33.912	27.297
50.0	-1.819	33.953	27.330
74.9	-1.815	33.992	27.362
100.3	-1.735	34.039	27.398
125.2	-1.669	34.080	27.430
150.0	-1.484	34.131	27.466
199.7	-1.725	34.182	27.514
250.4	-1.626	34.224	27.546
300.3	-1.759	34.259	27.578
399.8	-1.243	34.347	27.633
403.1	-1.240	34.340	27.627

Station : OW4
 Date : August 30, 1990
 Time (UT) : 14:44
 Ice Thickness (cm) : 231
 Snow Depth (cm) : 130

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.2	-1.855	33.803	27.209
9.5	-1.814	33.801	27.207
20.3	-1.805	33.856	27.251
30.1	-1.804	33.874	27.265
50.9	-1.821	33.912	27.296
74.7	-1.789	33.943	27.321
99.7	-1.785	33.965	27.339
125.2	-1.800	34.002	27.370
150.0	-1.828	34.030	27.393
199.7	-1.804	34.080	27.433
249.4	-1.817	34.162	27.500
300.1	-1.791	34.204	27.534
399.6	-1.826	34.241	27.564
499.6	-1.378	34.323	27.618
599.4	-0.758	34.449	27.697
700.2	-0.511	34.509	27.735
706.7	-0.515	34.498	27.726

Station : OW4
 Date : October 29, 1990
 Time (UT) : 10:45
 Ice Thickness (cm) : 285
 Snow Depth (cm) : 121

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.858	33.956	27.334
10.1	-1.859	33.933	27.315
19.7	-1.859	33.919	27.304
29.9	-1.839	33.918	27.302
49.8	-1.818	33.942	27.321
75.1	-1.819	33.978	27.351
100.1	-1.811	34.014	27.380
125.0	-1.799	34.050	27.409
149.8	-1.797	34.088	27.439
199.9	-1.767	34.150	27.489
250.2	-1.704	34.188	27.518
299.7	-1.804	34.218	27.545
400.5	-1.749	34.267	27.584
499.8	-0.905	34.386	27.652
600.2	-0.299	34.531	27.742
699.8	-0.218	34.549	27.754
706.1	-0.217	34.549	27.753

Station : OW5
 Date : October 30, 1990
 Time (UT) : 10:15
 Ice Thickness (cm) : 277
 Snow Depth (cm) : 164

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.844	33.969	27.344
10.1	-1.843	33.943	27.323
19.7	-1.842	33.934	27.315
29.7	-1.835	33.927	27.310
49.8	-1.819	33.943	27.322
74.9	-1.813	33.980	27.352
99.7	-1.785	34.018	27.382
125.0	-1.784	34.057	27.414
149.6	-1.782	34.098	27.447
200.3	-1.779	34.162	27.499
250.2	-1.783	34.200	27.530
299.9	-1.820	34.217	27.545
399.8	-1.799	34.251	27.572
499.8	-1.474	34.321	27.620
600.0	-0.452	34.495	27.720
699.8	-0.072	34.582	27.772
726.6	-0.062	34.586	27.775

Station : OW5
 Date : August 31, 1990
 Time (UT) : 16:06
 Ice Thickness (cm) : 302
 Snow Depth (cm) : 113

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.843	33.797	27.204
10.3	-1.842	33.790	27.198
19.5	-1.840	33.788	27.197
49.6	-1.797	33.879	27.270
75.1	-1.789	33.927	27.308
99.7	-1.775	33.968	27.341
125.0	-1.765	34.018	27.381
149.8	-1.805	34.046	27.405
199.7	-1.810	34.100	27.450
250.4	-1.799	34.159	27.497
300.3	-1.809	34.212	27.540
400.2	-1.651	34.260	27.576
500.2	-1.181	34.354	27.637
600.2	-0.678	34.451	27.695
700.0	-0.413	34.505	27.727
706.5	-0.416	34.510	27.731

Station : L1
 Date : May 3, 1990
 Time (UT) : 16:08
 Ice Thickness (cm) : 144
 Snow Depth (cm) : 11

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.1	-1.812	33.634	27.071
9.8	-1.813	33.584	27.030
20.1	-1.808	33.574	27.021
30.1	-1.797	33.570	27.018
49.9	-1.786	33.580	27.026
75.1	-1.769	33.641	27.075
100.2	-1.745	33.704	27.126
125.0	-1.742	33.814	27.215
150.1	-1.752	33.925	27.306
199.7	-1.729	34.045	27.403
249.8	-1.693	34.112	27.456
299.7	-1.612	34.176	27.506
302.8	-1.613	34.177	27.507

Station : L1
 Date : August 27, 1990
 Time (UT) : 12:05
 Ice Thickness (cm) : 170
 Snow Depth (cm) : 15

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.843	33.780	27.190
9.7	-1.847	33.749	27.165
19.7	-1.847	33.729	27.149
30.1	-1.838	33.730	27.149
49.8	-1.773	33.804	27.207
75.3	-1.772	33.876	27.267
99.9	-1.653	33.979	27.347
124.6	-1.533	34.125	27.462
150.0	-1.543	34.163	27.494
200.1	-1.544	34.216	27.536
250.2	-1.524	34.237	27.553
299.9	-1.531	34.248	27.562
302.3	-1.529	34.249	27.563

Station : L2
 Date : May 8, 1990
 Time (UT) : 12:24
 Ice Thickness (cm) : 220
 Snow Depth (cm) : 39

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.1	-1.784	33.648	27.081
9.8	-1.802	33.609	27.050
19.7	-1.806	33.574	27.021
29.7	-1.803	33.584	27.029
50.7	-1.773	33.684	27.111
74.9	-1.763	33.753	27.166
100.0	-1.760	33.807	27.210
125.0	-1.740	33.887	27.274
149.9	-1.746	33.949	27.325
200.1	-1.714	34.046	27.403
213.4	-1.711	34.065	27.418

Station : L1
 Date : October 26, 1990
 Time (UT) : 11:16
 Ice Thickness (cm) : 196
 Snow Depth (cm) : 29

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.855	33.946	27.325
10.7	-1.859	33.923	27.307
19.7	-1.851	33.904	27.291
29.7	-1.820	33.918	27.302
49.8	-1.793	33.968	27.342
74.7	-1.754	33.997	27.365
99.9	-1.564	34.102	27.444
125.2	-1.430	34.151	27.480
149.8	-1.432	34.177	27.501
200.1	-1.499	34.223	27.541
250.2	-1.513	34.244	27.558
299.9	-1.513	34.268	27.578
302.9	-1.513	34.270	27.579

Station : L2
 Date : August 23, 1990
 Time (UT) : 18:26
 Ice Thickness (cm) : 250
 Snow Depth (cm) : 70

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.844	33.745	27.162
10.1	-1.827	33.751	27.166
19.9	-1.812	33.785	27.193
29.7	-1.817	33.820	27.222
50.2	-1.819	33.859	27.254
74.9	-1.819	33.886	27.276
99.9	-1.807	33.935	27.316
125.2	-1.807	33.977	27.349
150.0	-1.733	34.024	27.386
200.1	-1.647	34.121	27.462

Station : L2
 Date : October 22, 1990
 Time (UT) : 09:17
 Ice Thickness (cm) : 222
 Snow Depth (cm) : 105

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.2	-1.852	33.953	27.331
9.7	-1.853	33.921	27.305
19.5	-1.842	33.893	27.282
29.9	-1.816	33.904	27.291
49.8	-1.813	33.938	27.318
74.7	-1.809	33.996	27.365
99.5	-1.793	34.030	27.393
125.0	-1.768	34.074	27.427
150.2	-1.732	34.106	27.452
199.7	-1.466	34.173	27.499
203.6	-1.474	34.182	27.506

Station : L3
 Date : May 5, 1990
 Time (UT) : 14:52
 Ice Thickness (cm) : 210
 Snow Depth (cm) : 63

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.833	33.582	27.029
9.7	-1.832	33.587	27.033
19.3	-1.773	33.724	27.143
30.1	-1.761	33.755	27.168
49.6	-1.765	33.785	27.192
74.7	-1.758	33.830	27.229
99.7	-1.840	33.866	27.260
124.6	-1.813	33.883	27.273
150.2	-1.737	33.910	27.294
199.9	-1.697	33.977	27.347
249.8	-1.771	34.118	27.463
299.7	-1.687	34.172	27.505
399.6	-1.690	34.278	27.591
494.7	-1.301	34.337	27.627

Station : L3
 Date : August 26, 1990
 Time (UT) : 14:02
 Ice Thickness (cm) : 213
 Snow Depth (cm) : 97

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.2	-1.846	33.772	27.183
9.7	-1.852	33.758	27.172
20.1	-1.850	33.763	27.177
29.7	-1.824	33.806	27.211
50.2	-1.824	33.859	27.254
74.9	-1.827	33.884	27.274
99.7	-1.819	33.916	27.300
124.8	-1.816	33.975	27.348
150.0	-1.796	34.033	27.395
199.7	-1.756	34.103	27.450
250.4	-1.678	34.170	27.503
300.1	-1.596	34.218	27.539
400.5	-1.549	34.286	27.593
473.5	-1.437	34.308	27.608

Station : L3
 Date : October 25, 1990
 Time (UT) : 11:26
 Ice Thickness (cm) : 224
 Snow Depth (cm) : 139

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.852	33.977	27.351
10.1	-1.855	33.929	27.312
20.1	-1.856	33.910	27.296
29.7	-1.855	33.903	27.290
49.8	-1.817	33.939	27.319
75.1	-1.818	33.983	27.355
100.3	-1.804	34.018	27.383
125.0	-1.778	34.060	27.416
150.0	-1.688	34.104	27.450
200.3	-1.432	34.186	27.508
250.0	-1.520	34.234	27.551
299.7	-1.672	34.255	27.572
399.8	-1.300	34.314	27.608
493.1	-1.090	34.364	27.641

Station : L4
Date : May 6, 1990
Time (UT) : 09:55
Ice Thickness (cm) : 220
Snow Depth (cm) : 72

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.1	-1.816	33.641	27.076
10.2	-1.811	33.619	27.058
20.1	-1.785	33.665	27.095
30.1	-1.751	33.712	27.132
49.7	-1.755	33.779	27.187
75.3	-1.804	33.849	27.245
100.2	-1.813	33.877	27.268
125.2	-1.779	33.880	27.270
149.9	-1.773	33.899	27.285
200.1	-1.722	33.984	27.353
250.2	-1.693	34.077	27.428
299.9	-1.723	34.166	27.501
399.9	-1.690	34.258	27.575
500.1	-1.522	34.290	27.596
599.8	-0.677	34.378	27.636
700.8	0.031	34.583	27.768
800.0	0.171	34.621	27.791
900.0	0.204	34.626	27.793
901.2	0.206	34.625	27.792

Station : L4
Date : August 24, 1990
Time (UT) : 15:33
Ice Thickness (cm) : 213
Snow Depth (cm) : 120

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.852	33.713	27.136
10.5	-1.838	33.720	27.141
19.9	-1.810	33.769	27.181
30.1	-1.803	33.814	27.217
50.0	-1.817	33.861	27.255
74.7	-1.818	33.885	27.275
100.3	-1.803	33.915	27.299
124.8	-1.755	33.963	27.337
149.8	-1.754	34.020	27.383
200.1	-1.766	34.083	27.435
249.6	-1.711	34.157	27.493
299.7	-1.582	34.206	27.529
400.3	-1.359	34.265	27.571
500.0	-1.273	34.322	27.614
599.8	-0.858	34.409	27.669
700.0	-0.450	34.481	27.709
799.9	-0.200	34.529	27.736
899.7	-0.107	34.545	27.744
942.3	-0.088	34.548	27.746

Station : L4
Date : October 23, 1990
Time (UT) : 08:34
Ice Thickness (cm) : 232
Snow Depth (cm) : 159

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.851	33.944	27.324
9.9	-1.852	33.919	27.303
19.7	-1.850	33.906	27.293
29.9	-1.850	33.904	27.291
49.8	-1.815	33.928	27.310
75.1	-1.819	33.959	27.335
99.9	-1.810	33.995	27.364
125.0	-1.781	34.042	27.402
149.8	-1.768	34.082	27.434
200.1	-1.664	34.152	27.488
250.4	-1.577	34.202	27.526
300.3	-1.499	34.227	27.544
399.8	-1.467	34.283	27.589
500.2	-0.945	34.372	27.642
599.8	-0.755	34.441	27.691
700.0	-0.341	34.522	27.738
800.3	-0.164	34.560	27.760
899.9	-0.129	34.567	27.764
940.6	-0.113	34.572	27.766

Station : L5
Date : August 25, 1990
Time (UT) : 13:33
Ice Thickness (cm) : 213
Snow Depth (cm) : 140

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.9	-1.856	33.720	27.142
9.8	-1.857	33.727	27.147
19.7	-1.851	33.775	27.186
29.5	-1.830	33.828	27.229
49.9	-1.830	33.881	27.272
75.1	-1.827	33.920	27.304
99.8	-1.830	33.956	27.333
125.2	-1.831	33.998	27.367
150.1	-1.825	34.037	27.399
200.1	-1.759	34.097	27.446
250.0	-1.737	34.152	27.490
299.7	-1.614	34.207	27.531
399.5	-1.442	34.269	27.577
499.9	-1.139	34.336	27.620
599.6	-0.683	34.422	27.672
605.7	-0.645	34.422	27.670

Station : L5
 Date : October 24, 1990
 Time (UT) : 12:10
 Ice Thickness (cm) : 212
 Snow Depth (cm) : 165

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.845	33.957	27.334
9.7	-1.846	33.919	27.303
19.5	-1.839	33.901	27.288
29.7	-1.832	33.903	27.290
50.3	-1.817	33.925	27.307
75.1	-1.809	33.976	27.349
99.5	-1.801	34.008	27.374
125.0	-1.797	34.054	27.411
149.6	-1.798	34.095	27.445
199.7	-1.781	34.151	27.490
250.2	-1.673	34.204	27.531
300.1	-1.735	34.204	27.532
399.8	-1.451	34.284	27.589
499.6	-1.001	34.349	27.626
600.0	-0.552	34.465	27.701
614.9	-0.502	34.479	27.710

Station : P1
 Date : August 22, 1990
 Time (UT) : 13:18
 Ice Thickness (cm) : 208
 Snow Depth (cm) : 72

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.9	-1.849	33.749	27.165
9.8	-1.805	33.756	27.170
19.7	-1.785	33.775	27.185
29.9	-1.802	33.821	27.222
50.1	-1.813	33.853	27.248
74.7	-1.820	33.876	27.267
100.0	-1.807	33.897	27.284
125.2	-1.793	33.944	27.322
149.9	-1.764	33.988	27.357
200.3	-1.679	34.104	27.449
250.2	-1.639	34.182	27.511
299.7	-1.609	34.225	27.546
399.7	-1.529	34.280	27.588
446.9	-1.423	34.304	27.604

Station : P1
 Date : May 1, 1990
 Time (UT) : 09:29
 Ice Thickness (cm) : 189
 Snow Depth (cm) : 27

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.824	33.569	27.018
10.1	-1.815	33.577	27.024
19.9	-1.811	33.574	27.022
30.1	-1.767	33.612	27.052
49.8	-1.748	33.762	27.173
74.7	-1.807	33.826	27.227
99.9	-1.791	33.870	27.262
125.2	-1.757	33.893	27.280
150.0	-1.677	33.934	27.311
199.7	-1.700	34.080	27.430
249.8	-1.646	34.160	27.494
299.9	-1.670	34.186	27.515
400.0	-1.626	34.240	27.558
467.6	-1.638	34.275	27.587

Station : P1
 Date : October 21, 1990
 Time (UT) : 08:13
 Ice Thickness (cm) : 190
 Snow Depth (cm) : 86

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.2	-1.854	33.951	27.329
9.7	-1.857	33.921	27.305
19.7	-1.856	33.901	27.289
30.1	-1.820	33.917	27.301
49.8	-1.818	33.944	27.323
75.3	-1.812	33.989	27.359
99.7	-1.799	34.027	27.390
124.8	-1.719	34.074	27.426
149.6	-1.605	34.115	27.456
199.7	-1.552	34.205	27.528
250.0	-1.675	34.209	27.534
299.9	-1.622	34.235	27.554
399.6	-1.505	34.306	27.608
453.0	-1.268	34.337	27.626

Station : P2
 Date : April 27, 1990
 Time (UT) : 02:02
 Ice Thickness (cm) : 235
 Snow Depth (cm) : 65

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.813	33.368	26.854
10.3	-1.819	33.463	26.932
19.9	-1.821	33.482	26.947
30.1	-1.819	33.490	26.954
50.0	-1.809	33.524	26.981
74.5	-1.787	33.604	27.046
100.1	-1.728	33.784	27.191
125.0	-1.751	33.916	27.298
150.0	-1.741	33.995	27.362
200.1	-1.730	34.096	27.444
250.0	-1.614	34.158	27.491
299.9	-1.623	34.186	27.515
400.0	-1.575	34.243	27.559
500.2	-1.454	34.290	27.594
599.6	-0.760	34.401	27.658
700.0	-0.136	34.537	27.739
800.1	0.189	34.615	27.785
900.1	0.273	34.633	27.795
910.9	0.275	34.634	27.795

Station : P2
 Date : October 17, 1990
 Time (UT) : 10:37
 Ice Thickness (cm) : 240
 Snow Depth (cm) : 152

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.861	33.904	27.292
10.1	-1.858	33.896	27.285
20.1	-1.858	33.876	27.268
29.7	-1.832	33.894	27.283
49.8	-1.824	33.955	27.332
74.5	-1.815	34.001	27.369
99.9	-1.793	34.047	27.406
125.0	-1.779	34.090	27.440
149.8	-1.750	34.123	27.467
199.7	-1.699	34.172	27.505
250.0	-1.675	34.213	27.538
299.9	-1.467	34.247	27.559
400.3	-1.301	34.305	27.601
499.8	-0.939	34.373	27.643
599.8	-0.739	34.423	27.675
699.6	-0.517	34.473	27.706
800.3	-0.421	34.499	27.723
899.7	-0.319	34.519	27.734
1000.1	0.131	34.582	27.761
1005.0	0.139	34.582	27.762

Station : P2
 Date : August 18, 1990
 Time (UT) : 14:40
 Ice Thickness (cm) : 225
 Snow Depth (cm) : 135

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.9	-1.853	33.663	27.095
10.2	-1.852	33.661	27.094
19.7	-1.837	33.719	27.141
30.1	-1.826	33.820	27.222
50.3	-1.808	33.890	27.279
75.3	-1.798	33.954	27.330
99.8	-1.807	33.987	27.358
125.0	-1.791	34.038	27.398
149.9	-1.718	34.069	27.422
200.4	-1.315	34.107	27.441
250.0	-1.306	34.171	27.492
299.7	-1.371	34.220	27.534
399.9	-1.478	34.270	27.578
500.1	-1.122	34.349	27.630
599.8	-0.726	34.406	27.661
699.8	-0.450	34.465	27.696
799.8	-0.226	34.523	27.733
899.8	0.055	34.573	27.758
999.9	0.249	34.617	27.784
1003.0	0.254	34.616	27.782

Station : P3
 Date : April 28, 1990
 Time (UT) : 12:59
 Ice Thickness (cm) : 205
 Snow Depth (cm) : 60

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.0	-1.799	33.532	26.987
10.3	-1.805	33.516	26.975
20.1	-1.801	33.500	26.961
30.1	-1.800	33.513	26.972
50.0	-1.790	33.537	26.991
74.9	-1.762	33.619	27.057
99.9	-1.738	33.773	27.182
125.0	-1.729	33.858	27.251
149.8	-1.638	33.919	27.297
200.3	-1.594	34.060	27.411
250.0	-1.670	34.162	27.496
300.1	-1.526	34.201	27.524
400.3	-1.574	34.231	27.549
500.2	-1.344	34.303	27.601
585.7	-0.487	34.394	27.641

Station : P3
 Date : August 20, 1990
 Time (UT) : 10:37
 Ice Thickness (cm) : 210
 Snow Depth (cm) : 135

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.7	-1.853	33.670	27.101
9.6	-1.854	33.678	27.107
20.1	-1.848	33.697	27.123
29.9	-1.829	33.799	27.205
49.7	-1.814	33.914	27.298
74.9	-1.784	33.958	27.333
100.0	-1.762	34.008	27.373
124.8	-1.721	34.062	27.416
150.1	-1.728	34.109	27.455
200.3	-1.645	34.165	27.498
250.2	-1.258	34.205	27.519
299.9	-1.101	34.256	27.554
400.1	-1.253	34.314	27.606
500.1	-0.873	34.341	27.614
585.2	-0.776	34.403	27.660

Station : P3
 Date : October 18, 1990
 Time (UT) : 11:21
 Ice Thickness (cm) : 215
 Snow Depth (cm) : 145

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.856	33.914	27.299
10.1	-1.857	33.884	27.275
19.9	-1.856	33.872	27.265
29.7	-1.846	33.887	27.277
49.8	-1.822	33.982	27.354
75.1	-1.801	34.026	27.389
100.1	-1.782	34.061	27.417
124.6	-1.766	34.100	27.448
150.0	-1.739	34.142	27.482
199.7	-1.711	34.193	27.522
249.8	-1.663	34.224	27.546
300.3	-1.412	34.259	27.568
400.0	-1.092	34.330	27.614
499.6	-0.937	34.361	27.633
564.2	-0.832	34.390	27.652

Station : P4
 Date : April 29, 1990
 Time (UT) : 19:59
 Ice Thickness (cm) : 208
 Snow Depth (cm) : 56

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
4.8	-1.805	33.168	26.692
10.3	-1.813	33.481	26.946
20.1	-1.807	33.513	26.972
30.1	-1.798	33.570	27.018
50.0	-1.749	33.699	27.122
74.9	-1.744	33.766	27.176
100.1	-1.732	33.789	27.195
124.6	-1.710	33.876	27.265
150.0	-1.725	33.980	27.350
199.9	-1.738	34.097	27.445
249.8	-1.697	34.140	27.479
300.1	-1.648	34.185	27.514
400.2	-1.587	34.225	27.545
454.2	-1.455	34.261	27.571

Station : P4
 Date : August 21, 1990
 Time (UT) : 11:11
 Ice Thickness (cm) : 208
 Snow Depth (cm) : 104

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.1	-1.849	33.746	27.162
9.8	-1.851	33.693	27.119
19.9	-1.840	33.693	27.119
29.9	-1.830	33.729	27.148
49.7	-1.819	33.856	27.251
74.9	-1.790	33.933	27.313
100.2	-1.749	33.962	27.336
125.0	-1.732	34.010	27.374
150.1	-1.732	34.070	27.423
200.1	-1.484	34.140	27.473
249.6	-1.548	34.200	27.524
300.1	-1.590	34.221	27.542
399.7	-1.509	34.281	27.588
402.9	-1.509	34.285	27.591

Station : P4
 Date : October 16, 1990
 Time (UT) : 10:16
 Ice Thickness (cm) : 210
 Snow Depth (cm) : 125

DEPTH (dB)	TEMP. (°C)	SAL. (PSS)	SIGMA-t
5.2	-1.858	33.894	27.283
9.5	-1.855	33.879	27.271
19.7	-1.852	33.874	27.267
29.9	-1.827	33.903	27.290
50.2	-1.820	33.956	27.332
75.1	-1.813	34.001	27.369
100.1	-1.792	34.042	27.402
125.0	-1.762	34.083	27.434
150.0	-1.748	34.123	27.467
199.7	-1.364	34.194	27.513
249.8	-1.323	34.228	27.539
299.9	-1.247	34.258	27.561
399.6	-1.140	34.307	27.597
427.9	-1.121	34.318	27.605

Table 3. Dissolved oxygen data.

Station : OS1
Date : Apr. 3, 1990
Time (UT) : 13:30

Depth (m)	DO ₂ (ml/l)
10	7.92
30	7.89

Station : OS1
Date : May 17, 1990
Time (UT) : 11:00

Depth (m)	DO ₂ (ml/l)
0	7.86
10	7.88
30	7.85

Station : OS1
Date : June 11, 1990
Time (UT) : 11:00

Depth (m)	DO ₂ (ml/l)
0	7.94
10	7.86
30	7.85

Station : OS1
Date : July 20, 1990
Time (UT) : 10:00

Depth (m)	DO ₂ (ml/l)
0	7.77
10	7.81
30	7.81

Station : OS1
Date : Sep. 13, 1990
Time (UT) : 11:05

Depth (m)	DO ₂ (ml/l)
0	7.63
10	7.63
30	7.54

Station : OS1
Date : Nov. 13, 1990
Time (UT) : 08:05

Depth (m)	DO ₂ (ml/l)
0	7.38
10	7.36
30	7.32

Station : OS1
Date : Dec. 19, 1990
Time (UT) : 08:00

Depth (m)	DO ₂ (ml/l)
0	7.68
10	7.55
30	7.54

Station : OS2
Date : Apr. 4, 1990
Time (UT) : 11:50

Depth (m)	DO ₂ (ml/l)
0	7.96
10	7.92
30	7.89
50	7.89
96	7.47
150	7.16

Station : OS2
Date : May 16, 1990
Time (UT) : 14:20

Depth (m)	DO ₂ (ml/l)
0	7.92
10	7.90
50	7.88
101	7.68
150	7.50

Station : OS2
Date : June 12, 1990
Time (UT) : 08:00

Depth (m)	DO ₂ (ml/l)
0	7.89
10	7.87
50	7.83
101	7.68
150	7.60

Station : OS2
Date : July 21, 1990
Time (UT) : 08:10

Depth (m)	DO ₂ (ml/l)
0	7.85
10	7.84
50	7.53
100	7.34
149	7.05

Station : OS2
Date : Sep. 14, 1990
Time (UT) : 07:00

Depth (m)	DO ₂ (ml/l)
0	7.74
10	7.76
47	7.49
98	7.04
147	7.00

Station : OS2
Date : Nov. 14, 1990
Time (UT) : 06:30

Depth (m)	DO ₂ (ml/l)
0	7.47
10	7.42
50	6.85
99	6.54
149	6.68

Station : OS2
Date : Dec. 18, 1990
Time (UT) : 12:55

Depth (m)	DO ₂ (ml/l)
0	9.85
10	7.61
50	7.10
99	6.60
149	6.59

Station : OS3
Date : Apr. 5, 1990
Time (UT) : 10:35

Depth (m)	DO ₂ (ml/l)
0	7.93
10	7.90
30	7.96
50	7.88
95	7.63
184	7.12
236	6.69

Station : OS3
Date : May 16, 1990
Time (UT) : 09:00

Depth (m)	DO ₂ (ml/l)
0	7.91
10	7.91
50	7.90
100	7.78
199	7.26
301	7.12
503	6.79

Station : OS3
Date : June 12, 1990
Time (UT) : 12:45

Depth (m)	DO ₂ (ml/l)
0	7.89
10	7.82
50	7.84
100	7.67
199	7.21
302	6.98
504	6.62

Station : OS3
Date : July 21, 1990
Time (UT) : 14:00

Depth (m)	DO ₂ (ml/l)
0	7.89
10	7.86
50	7.62
100	7.30
200	7.02
301	6.99
503	6.78

Station : OS3
Date : Sep. 14, 1990
Time (UT) : 13:05

Depth (m)	DO ₂ (ml/l)
0	7.76
10	7.71
50	7.69
100	6.86
199	6.98
300	6.92
501	6.88

Station : OS3
Date : Nov. 14, 1990
Time (UT) : 12:45

Depth (m)	DO ₂ (ml/l)
0	7.53
10	7.50
50	7.06
98	6.33
199	6.74
299	6.76
502	6.80

Station : OS3
Date : Dec. 17, 1990
Time (UT) : 12:55

Depth (m)	DO ₂ (ml/l)
0	10.37
10	8.12
50	6.99
100	6.64
149	6.53
199	6.61
300	6.67
501	6.69

Station : OS4
Date : Apr. 2, 1990
Time (UT) : 11:00

Depth (m)	DO ₂ (ml/l)
0	7.97
10	7.94
30	7.94
50	7.96
100	7.62
150	7.26
199	6.94
248	6.78

Station : OS4
Date : May 15, 1990
Time (UT) : 10:00

Depth (m)	DO ₂ (ml/l)
0	7.99
10	7.92
50	7.92
100	7.78
150	7.41
200	7.27
251	7.15

Station : OS4
Date : June 13, 1990
Time (UT) : 09:30

Depth (m)	DO ₂ (ml/l)
0	7.93
10	7.92
50	7.81
100	7.71
149	7.51
198	7.25
252	7.02

Station : OS4
Date : July 22, 1990
Time (UT) : 10:15

Depth (m)	DO ₂ (ml/l)
0	7.90
10	7.88
50	7.68
100	7.21
149	7.02
200	6.99
252	6.94

Station : OS4
Date : Sep. 15, 1990
Time (UT) : 09:10

Depth (m)	DO ₂ (ml/l)
0	7.83
10	7.77
50	7.74
100	6.89
148	6.99
198	6.94
250	6.98

Station : OS4
Date : Nov. 15, 1990
Time (UT) : 08:30

Depth (m)	DO ₂ (ml/l)
0	8.06
10	7.79
50	7.28
99	6.54
148	6.74
200	6.77
250	6.75

Station : OS4
Date : Dec. 17, 1990
Time (UT) : 07:55

Depth (m)	DO ₂ (ml/l)
0	11.35
10	7.72
50	6.96
97	6.65
149	6.67
198	6.68
250	6.67

Station : H1
Date : Sep. 17, 1990
Time (UT) : 12:15

Depth (m)	DO ₂ (ml/l)
0	7.73
10	7.70
50	7.35
100	6.93
199	6.99
300	6.97
399	6.95

Station : H1
Date : Nov. 22, 1990
Time (UT) : 11:45

Depth (m)	DO ₂ (ml/l)
0	9.75
10	7.69
50	7.04
98	6.66
199	6.72
299	6.87
399	6.81

Station : H2
Date : Sep. 19, 1990
Time (UT) : 13:50

Depth (m)	DO ₂ (ml/l)
0	7.72
10	7.71
50	7.56
100	6.85
198	6.95
300	6.93
401	6.91

Station : H2
Date : Nov. 23, 1990
Time (UT) : 12:40

Depth (m)	DO ₂ (ml/l)
0	8.11
10	7.55
50	7.00
96	6.59
198	6.79
299	6.82
401	6.79

Station : H3
Date : Sep. 18, 1990
Time (UT) : 10:50

Depth (m)	DO ₂ (ml/l)
0	7.71
10	7.68
50	7.50
100	6.91
199	6.93
302	6.97
400	6.72
600	6.30

Station : H3
Date : Nov. 22, 1990
Time (UT) : 16:50

Depth (m)	DO ₂ (ml/l)
0	8.55
10	7.61
50	6.94
100	6.60
198	6.73
299	6.87
402	6.83
599	6.16

Station : OW1
Date : May 9, 1990
Time (UT) : 15:15

Depth (m)	DO ₂ (ml/l)
0	7.59
10	7.85
50	7.84
100	7.91
151	7.61

Station : OW1
Date : Sep. 3, 1990
Time (UT) : 13:00

Depth (m)	DO ₂ (ml/l)
0	7.84
10	7.86
50	7.67
98	7.10
138	7.00

Station : OW1
Date : Nov. 1, 1990
Time (UT) : 09:25

Depth (m)	DO ₂ (ml/l)
0	7.90
10	7.81
50	7.52
97	6.91
139	6.90

Station : OW2
Date : May 10, 1990
Time (UT) : 14:55

Depth (m)	DO ₂ (ml/l)
0	7.99
10	7.90
50	7.86
100	7.87
150	7.74

Station : OW2
Date : Sep. 2, 1990
Time (UT) : 13:25

Depth (m)	DO ₂ (ml/l)
0	7.91
10	7.89
50	7.61
100	7.46
148	7.03

Station : OW2
Date : Oct. 31, 1990
Time (UT) : 12:55

Depth (m)	DO ₂ (ml/l)
0	7.88
10	7.89
50	7.71
100	7.25
149	6.96

Station : OW3
Date : May 11, 1990
Time (UT) : 13:35

Depth (m)	DO ₂ (ml/l)
0	8.04
10	8.04
50	7.97
100	7.95
199	7.42
301	7.26
403	7.11

Station : OW3
Date : Aug. 29, 1990
Time (UT) : 11:30

Depth (m)	DO ₂ (ml/l)
0	7.86
10	7.84
50	7.77
100	7.73
201	7.08
297	7.44
400	7.50

Station : OW3
Date : Oct. 28, 1990
Time (UT) : 11:00

Depth (m)	DO ₂ (ml/l)
0	7.89
10	7.91
50	7.83
99	7.50
200	7.55
300	7.61

Station : OW4
Date : Aug. 30, 1990
Time (UT) : 16:55

Depth (m)	DO ₂ (ml/l)
0	7.89
10	7.83
50	7.78
100	7.72
199	7.56
399	7.59
600	6.39

Station : OW4
Date : Oct. 29, 1990
Time (UT) : 12:55

Depth (m)	DO ₂ (ml/l)
0	7.90
10	7.88
50	7.84
100	7.75
199	7.55
301	7.70
399	7.63
602	6.03

Station : OW5
Date : Aug. 31, 1990
Time (UT) : 17:55

Depth (m)	DO ₂ (ml/l)
0	8.07
10	8.72
50	7.68
100	7.57
200	7.52
400	7.24
600	6.15

Station : OW5
Date : Oct. 30, 1990
Time (UT) : 12:55

Depth (m)	DO ₂ (ml/l)
0	7.85
10	7.79
50	7.74
100	7.69
199	7.59
301	7.66
400	7.63
600	6.16

Station : L1
Date : May 3, 1990
Time (UT) : 17:13

Depth (m)	DO ₂ (ml/l)
0	7.94
10	7.90
50	7.91
100	7.89
151	7.46
198	7.25

Station : L1
Date : Aug. 27, 1990
Time (UT) : 13:20

Depth (m)	DO ₂ (ml/l)
0	7.81
10	7.70
50	7.60
100	7.10
149	6.83
199	6.90
299	6.88

Station : L1
Date : Oct. 26, 1990
Time (UT) : 12:50

Depth (m)	DO ₂ (ml/l)
0	7.88
10	7.85
50	7.64
99	7.05
149	6.68
199	6.97
302	7.17

Station : L2
Date : May 8, 1990
Time (UT) : 13:20

Depth (m)	DO ₂ (ml/l)
0	8.13
10	7.87
50	7.85
99	8.25
151	7.52
202	7.30

Station : L2
Date : Aug. 23, 1990
Time (UT) : 19:25

Depth (m)	DO ₂ (ml/l)
0	7.85
10	7.76
50	7.69
100	7.60
150	7.34
180	7.04

Station : L2
Date : Oct. 22, 1990
Time (UT) : 11:05

Depth (m)	DO ₂ (ml/l)
0	7.87
10	7.85
50	7.77
100	7.61
148	7.41
198	6.85

Station : L3
Date : May 5, 1990
Time (UT) : 16:00

Depth (m)	DO ₂ (ml/l)
0	7.99
10	7.91
50	7.84
100	7.92
196	7.83
281	7.31
434	7.00

Station : L3
Date : Aug. 26, 1990
Time (UT) : 15:30

Depth (m)	DO ₂ (ml/l)
0	7.88
10	7.79
50	7.77
100	7.55
201	7.33
300	6.98
451	6.99

Station : L3
Date : Oct. 25, 1990
Time (UT) : 13:15

Depth (m)	DO ₂ (ml/l)
0	7.89
10	7.83
50	7.83
100	7.69
199	6.86
300	7.42
450	6.87

Station : L4
Date : May 6, 1990
Time (UT) : 12:50

Depth (m)	DO ₂ (ml/l)
0	8.23
10	7.97
50	7.84
100	7.96
201	7.67
302	7.27
504	7.03
704	5.55

Station : L4
Date : Aug. 24, 1990
Time (UT) : 17:15

Depth (m)	DO ₂ (ml/l)
0	7.88
10	7.82
50	7.75
100	7.67
200	7.34
302	7.01
501	6.96
697	5.91
897	5.66

Station : L4
Date : Oct. 23, 1990
Time (UT) : 14:05

Depth (m)	DO ₂ (ml/l)
0	7.84
10	7.81
50	7.79
100	7.67
200	7.07
299	6.97
499	6.44
599	6.45
698	6.00
899	5.80

Station : L5
Date : Aug. 25, 1990
Time (UT) : 15:10

Depth (m)	DO ₂ (ml/l)
0	8.02
10	7.83
50	7.71
198	7.35
399	6.78
600	6.04

Station : L5
Date : Oct. 24, 1990
Time (UT) : 14:15

Depth (m)	DO ₂ (ml/l)
0	7.82
10	7.81
50	7.78
100	7.67
199	7.46
400	7.03
501	6.60
600	6.16

Station : P1
Date : May 1, 1990
Time (UT) : 12:07

Depth (m)	DO ₂ (ml/l)
0	7.93
10	7.88
50	7.81
100	7.92
198	7.34
299	7.18
404	7.13

Station : P1
Date : Aug. 22, 1990
Time (UT) : 14:50

Depth (m)	DO ₂ (ml/l)
0	7.84
10	7.76
50	7.75
100	7.67
200	7.07
300	7.10
401	6.93

Station : P1
Date : Oct. 21, 1990
Time (UT) : 11:10

Depth (m)	DO ₂ (ml/l)
0	7.86
10	7.85
50	7.75
99	7.63
199	6.70
300	7.22
402	7.22

Station : P2
Date : Apr. 27, 1990
Time (UT) : 06:30

Depth (m)	DO ₂ (ml/l)
0	8.76
10	7.90
50	7.86
100	7.87
303	6.92
504	6.89

Station : P2
Date : Aug. 18, 1990
Time (UT) : 20:50

Depth (m)	DO ₂ (ml/l)
0	7.79
10	7.99
50	7.56
100	7.52
201	7.05
301	6.86
501	6.02
609	6.18
804	5.75
991	5.38

Station : P2
Date : Oct. 17, 1990
Time (UT) : 16:35

Depth (m)	DO ₂ (ml/l)
0	7.76
10	7.82
50	7.73
100	7.54
201	7.35
301	7.04
500	6.42
596	6.26
798	6.02
989	6.29

Station : P3
Date : Apr. 28, 1990
Time (UT) : 15:00

Depth (m)	DO ₂ (ml/l)
0	8.09
10	7.97
50	7.89
100	7.90
194	6.75
302	6.39

Station : P3
Date : Aug. 20, 1990
Time (UT) : 12:20

Depth (m)	DO ₂ (ml/l)
0	7.87
10	7.84
50	7.66
100	7.42
199	7.07
298	6.30
549	6.28

Station : P3
Date : Oct. 18, 1990
Time (UT) : 13:20

Depth (m)	DO ₂ (ml/l)
0	7.82
10	7.83
50	7.64
100	7.49
199	7.41
300	6.86
401	6.53
550	6.42

Station : P4
Date : Apr. 29, 1990
Time (UT) : 20:44

Depth (m)	DO ₂ (ml/l)
0	11.60
10	8.10
50	7.81
100	7.81
198	7.20
301	7.09
403	6.93

Station : P4
Date : Aug. 21, 1990
Time (UT) : 12:40

Depth (m)	DO ₂ (ml/l)
0	7.87
10	7.92
50	7.66
100	7.47
201	6.66
298	6.96
400	6.96

Station : P4
Date : Oct. 16, 1990
Time (UT) : 12:05

Depth (m)	DO ₂ (ml/l)
0	7.83
10	7.82
50	7.79
100	7.58
200	6.58
301	6.64
401	6.75

Table 4. AXBT observation data.

STATION	1	2	3	4	5	6
DATE	Mar. 6, 1990	Mar. 6, 1990	Apr. 12, 1990	Apr. 20, 1990	Apr. 20, 1990	Sep. 29, 1990
TIME(UT)	11:10	11:34	08:20	08:27	08:47	08:54
LATITUDE	68°18' S	68°14' S	68°38' S	68°12' S	68°22' S	68°17' S
LONGITUDE	38°40' E	39°20' E	38°41' E	38°12' E	37°20' E	39°00' E
DEPTH(m) 0	-2.0	....	-2.0	-1.9	-1.8	-2.0
10	-2.0	-1.9	-2.0	-1.9	-1.8	-2.0
20	-2.0	....	-2.0	-1.9	-1.8	-2.0
30	-2.0	-1.8	-2.0	-2.0	-1.8	-2.0
40	-2.0	-1.9	-2.0	-2.0	-1.8	-2.0
50	-2.0	-2.0	-2.0	-2.0	-1.8	-2.0
60	-2.0	-2.0	-2.0	-2.0	-1.8	-2.0
70	-2.0	-2.0	-2.0	-1.7	-1.8	-2.0
80	-2.0	-2.0	-1.9	-1.6	-1.8	-2.0
90	-2.0	-2.0	-1.8	-1.6	-1.7	-2.0
100	-2.0	-2.0	-1.8	-1.5	-1.7	-2.0
110	-2.0	-2.0	-1.8	-1.5	-1.6	-2.0
120	-2.0	-2.0	-1.8	-1.5	-1.6	-2.0
130	-2.0	-2.0	-1.8	-1.5	-1.6	-2.0
140	-2.0	-2.0	-1.9	-1.5	-1.6	-2.0
150	-2.0	-2.0	-1.9	-1.5	-1.6	-2.0
160	-2.0	-2.0	-1.9	-1.5	-1.6	-2.0
170	-2.0	-2.0	-1.9	-1.5	-1.6	-2.0
180	-2.0	-2.0	-1.9	-1.5	-1.6	-2.0
190	-2.0	-2.0	-1.9	-1.5	-1.6	-2.0
200	-2.0	-2.0	-1.9	-1.5	-1.6	-2.0
210	-2.0	-2.0	-1.9	-1.5	-1.6	-2.0
220	-2.0	-2.0	-1.9	-1.5	-1.6	-2.0
230	-2.0	-2.0	-1.9	-1.5	-1.7	-2.0
240	-2.0	-2.0	-1.9	-1.5	-1.7	-2.0
250	-2.0	-2.0	-1.9	-1.5	-1.7	-2.0
260	-2.0	-2.0	—	-1.5	-1.7	-1.9
270	-2.0	-2.0	—	-1.5	-1.7	-1.8
280	-2.0	-2.0	—	-1.4	-1.7	-1.8
290	-2.0	-2.0	—	-1.4	-1.7	-1.8
300	-2.0	-1.9	—	-1.3	-1.7	-1.8
310	-2.0	-1.8	—	-1.3	-1.7	-1.8
320	-2.0	-1.8	—	-1.2	-1.7	-1.8
330	-2.0	-1.8	—	-1.2	-1.7	-1.8
340	-2.0	-1.8	—	-1.1	-1.7	-1.8
350	-2.0	-1.8	—	-1.0	-1.7	-1.8
360	-2.0	-1.7	—	-0.9	-1.7	-1.7
370	-2.0	-1.7	—	-0.9	-1.7	-1.7
380	-2.0	-1.6	—	-0.9	-1.7	-1.7
390	-2.0	-1.6	—	-0.9	-1.7	-1.7
400	-2.0	-1.6	—	-0.8	-1.7	-1.7
410	-2.0	-1.6	—	-0.7	-1.7	-1.7
420	-2.0	-1.6	—	-0.7	-1.7	-1.7
430	-2.0	-1.6	—	-0.5	-1.7	-1.7
440	-1.9	-1.6	—	-0.4	-1.7	-1.7
450	-1.8	-1.6	—	-0.3	-1.7	-1.7
460	-1.6	-1.6	—	0.0	-1.7	-1.7

STATION	7	8	9	10	11	12
DATE	Sep. 29, 1990	Nov. 14, 1990	Nov. 14, 1990	Nov. 29, 1990	Dec. 11, 1990	Dec. 11, 1990
TIME(UT)	09:26	08:10	08:58	08:53	10:08	10:30
LATITUDE	67°58' S	68°21' S	68°19' S	68°02' S	68°32' S	68°19' S
LONGITUDE	40°31' E	37°38' E	38°48' E	40°11' E	38°15' E	39°26' E
DEPTH(m) 0	-1.8	-1.9	-1.8	-1.8	-1.8	-1.6
10	-1.8	-1.9	-1.8	-1.8	-1.9	-1.6
20	-1.8	-1.9	-1.8	-1.8	-1.9	-1.7
30	-1.8	-2.0	-1.8	-1.9	-1.9	-1.7
40	-1.8	-2.0	-1.8	-1.9	-1.9	-1.8
50	-1.8	-2.0	-1.8	-1.9	-1.9	-1.8
60	-1.8	-2.0	-1.8	-1.9	-1.9	-1.8
70	-1.8	-2.0	-1.8	-1.9	-1.9	-1.8
80	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
90	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
100	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
110	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
120	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
130	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
140	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
150	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
160	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
170	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
180	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
190	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
200	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
210	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
220	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
230	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
240	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
250	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
260	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
270	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
280	-1.8	-2.0	-1.8	-1.9	-1.9	-1.9
290	-1.8	-1.9	-1.8	-1.9	-1.9	-1.9
300	-1.8	-1.9	-1.8	-1.9	-1.9	-1.9
310	-1.8	-1.9	-1.8	-1.8	-1.9	-1.9
320	-1.7	-1.9	-1.8	-1.8	-1.9	-1.9
330	-1.7	-1.9	-1.7	-1.7	-1.9	-1.9
340	-1.7	-1.9	-1.6	-1.5	-1.9	-1.9
350	-1.7	-1.9	-1.5	-1.5	-1.6	-1.9
360	-1.6	-1.9	-1.5	-1.4	-1.4	—
370	-1.6	-1.9	-1.5	-1.1	-1.1	—
380	-1.5	-1.9	-1.5	-1.0	-0.8	—
390	-1.5	-1.9	-1.5	-1.0	-0.7	—
400	-1.5	-1.9	-1.5	-0.9	-0.5	—
410	-1.5	-1.9	-1.5	-0.8	-0.5	—
420	-1.5	-1.9	-1.4	-0.7	-0.5	—
430	-1.5	-1.9	-1.4	-0.6	-0.5	—
440	-1.5	-1.9	-1.4	-0.5	-0.5	—
450	-1.5	-1.9	-1.4	-0.4	—	—
460	-1.5	-1.8	-1.3	-0.3	—	—

STATION	13	14	15	16
DATE	Dec. 26, 1990	Dec. 26, 1990	Jan. 14, 1991	Jan. 14, 1991
TIME(UT)	17:41	18:12	17:40	18:10
LATITUDE	68°18' S	68°26' S	68°27' S	68°23' S
LONGITUDE	39°39' E	38°11' E	39°40' E	38°57' E
DEPTH(■) 0	-1.2	....	-1.9	-1.8
10	-1.5	-1.8	-2.0	-1.8
20	-1.5	-1.9	-2.0	-1.8
30	-1.6	-1.9	-2.0	-1.8
40	-1.9	-1.8	-2.0	-1.8
50	-1.9	-1.8	-2.0	-1.8
60	-1.9	-1.9	-2.0	-1.8
70	-1.9	-1.9	-2.0	-1.8
80	-1.9	-1.9	-2.0	-1.8
90	-1.9	-1.9	-2.0	-1.8
100	-1.9	-1.9	-2.0	-1.9
110	-1.9	-1.9	-2.0	-1.9
120	-1.9	-1.9	-2.0	-1.9
130	-1.9	-1.9	-2.0	-1.9
140	-1.9	-1.9	-2.0	-1.9
150	-1.9	-1.9	-2.0	-1.9
160	-1.9	-1.9	-2.0	-1.9
170	-1.9	-1.9	-2.0	-1.9
180	-1.9	-1.9	-2.0	-1.9
190	-1.9	-1.9	-2.0	-1.9
200	-1.9	-1.9	-2.0	-1.9
210	-1.9	-1.9	-2.0	-1.9
220	-1.9	-1.9	-2.0	-1.9
230	-1.9	-1.9	-2.0	-1.9
240	-1.9	-1.9	-2.0	-1.9
250	-1.9	-1.9	-2.0	-1.9
260	-1.9	-1.9	-2.0	-1.9
270	-1.9	-1.9	-2.0	-1.9
280	-1.9	-1.9	-2.0	—
290	-1.9	-1.9	-1.9	—
300	-1.9	-1.9	—	—
310	-1.8	-1.9	—	—
320	-1.8	-1.9	—	—
330	-1.7	-1.9	—	—
340	-1.6	-1.8	—	—
350	-1.5	-1.6	—	—
360	—	-1.2	—	—
370	—	-1.1	—	—
380	—	-1.1	—	—
390	—	-1.0	—	—
400	—	-0.9	—	—
410	—	-0.9	—	—
420	—	-0.8	—	—
430	—	-0.8	—	—
440	—	-0.7	—	—
450	—	-0.5	—	—
460	—	-0.5	—	—