



30 May, 2011

Cruise Report

r/v “Oceania”, AREX2009

Ship	r/v “Oceania”
Cruise	AREX2009
Dates	8.06.2009 – 19.07.2009
Port Calls	Gdansk (Poland), Tromsø (Norway), Longyearbyen (Spitsbergen)
Number of Scientist	10
Chief Scientist	dr Waldemar Walczowski
Principal Project	DAMOCLES, EURO-ARGO, ALKEKONGE
Research Area	the Norwegian, Greenland and Barents Seas

Hydrographic conditions in the Atlantic Domain of the Nordic Seas

Waldemar Walczowski, Jan Piechura, Ilona Goszczko, Piotr Wieczorek, Daniel Rak

1. Observations in 2009

AREX2009 cruise of Institute of Oceanology Polish Academy of Sciences (IOPAS) vessel R.V Oceania was performed in period of 8 June 2009 – 19 July, 2009. 204 CTD casts along 11 sections in the Norwegian and Greenland Sea were done (Fig.1, Tab.1). The advection of Atlantic Water (AW), heat content and transport by the West Spitsbergen Current were mainly investigated.

The SBE 9/11 device was used. Measurements of currents were done by means of two (upper and down looking) lowered Acoustic Doppler Current Profiler (LADCP). The self-recording 300 kHz RDI devices were used to profile entire water column during the standard CTD casts. During the whole cruise continuous currents measurements by the vessel-mounted ADCP, RDI 150 kHz were conducted.

Towed CTD sections were performed close to Hornsund, Bellsund, Magdalenefjord and a single section south-west of the Prins Karls Forland island (with towed Seabird FastCAT SBE49 CTD system). Four ARGO floats, two belonging to the IOPAS, two to the Alfred Wegener Institute (AWI) in Bremerhaven were launched under the EURO-ARGO Project. A mooring system (RDCP + CTD) was deployed in the entrance to Hornsund, in connection to the ALKEKONGE Project.

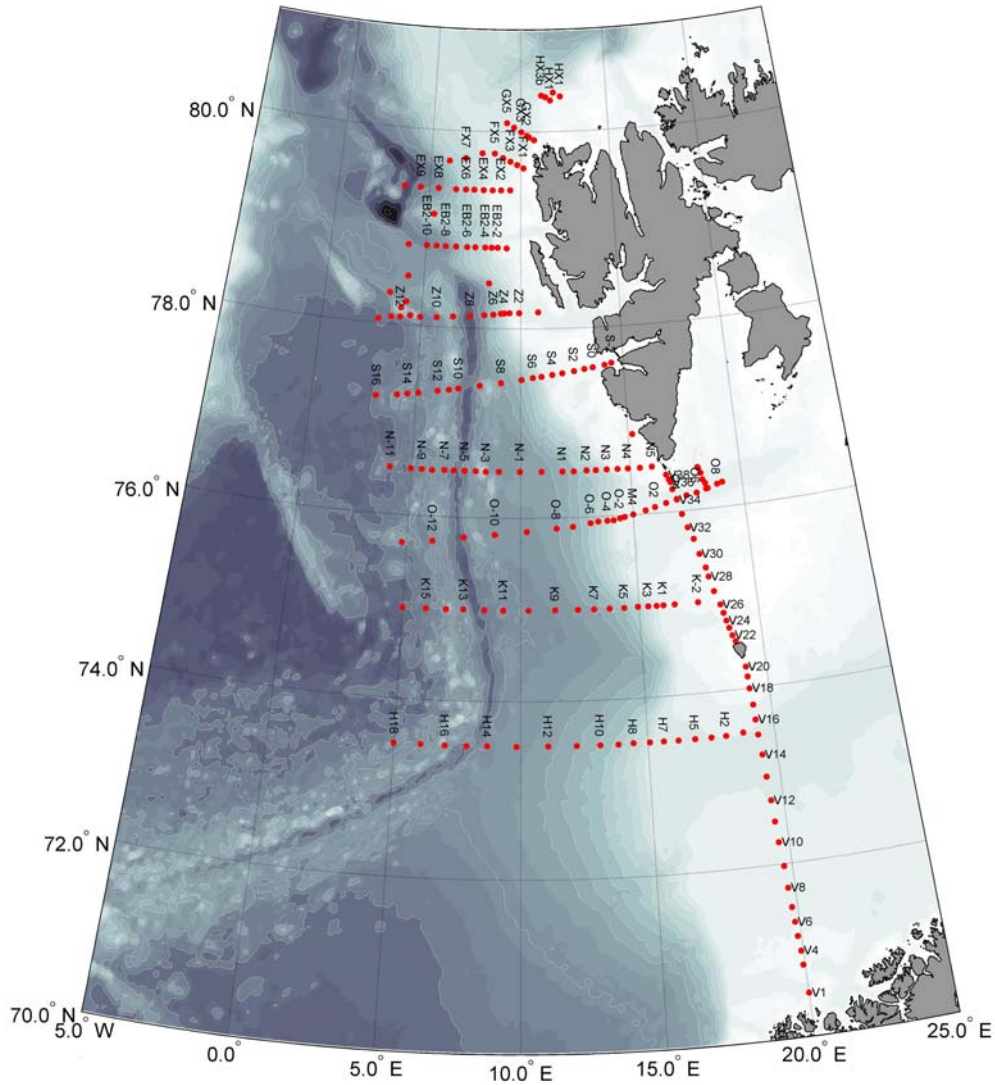


Figure 1: Geographical locations of CTD stations performed during IOPAS Arctic Experiment AREX2010 aboard RV Oceania in summer 2009.

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Tabel 1. CTD stations and some of their main parameters. All in all 11 regular sections were performed during the oceanic part of 2009 cruise.

No	Station	Depth	Latitude	Longitude	Date, Time	File/Cast
Section V1						
1	V1	135	70°30.06'N	020°00.24'E	20-Jun-2009 08:41:48	ar09_001
2	V3	190	70°49.81'N	019°55.80'E	20-Jun-2009 13:01:58	ar09_003
3	V4	190	70°59.54'N	019°54.99'E	20-Jun-2009 15:35:44	ar09_004
4	V5	205	71°09.90'N	019°51.96'E	20-Jun-2009 18:27:31	ar09_005
5	V6	210	71°19.73'N	019°50.31'E	20-Jun-2009 21:11:46	ar09_006
6	V7	240	71°29.98'N	019°47.96'E	21-Jun-2009 00:16:01	ar09_007
7	V8	265	71°43.43'N	019°44.73'E	21-Jun-2009 04:41:33	ar09_008
8	V9	310	71°58.47'N	019°41.90'E	21-Jun-2009 09:03:49	ar09_009
9	V10	320	72°14.99'N	019°37.15'E	21-Jun-2009 14:03:35	ar09_010
10	V11	390	72°29.27'N	019°34.15'E	21-Jun-2009 17:41:42	ar09_011
11	V12	400	72°43.69'N	019°31.47'E	21-Jun-2009 20:42:04	ar09_012
12	V13	415	72°59.89'N	019°27.79'E	21-Jun-2009 23:36:44	ar09_013
13	V14	455	73°15.03'N	019°24.37'E	22-Jun-2009 02:39:20	ar09_014
14	V15	480	73°28.72'N	019°20.43'E	22-Jun-2009 05:50:08	ar09_015
15	V16	350	73°38.82'N	019°18.56'E	22-Jun-2009 08:05:53	ar09_016
16	V17	235	73°48.88'N	019°16.71'E	22-Jun-2009 09:57:46	ar09_017
17	V18	135	74°00.01'N	019°13.18'E	22-Jun-2009 11:47:17	ar09_018
18	V19	70	74°07.93'N	019°11.99'E	22-Jun-2009 13:28:20	ar09_019
19	V20	60	74°14.42'N	019°10.63'E	22-Jun-2009 14:29:55	ar09_020
Section H						
20	H1	430	73°31.05'N	018°45.79'E	22-Jun-2009 21:15:01	ar09_021
21	H2	415	73°30.07'N	018°05.01'E	22-Jun-2009 23:17:50	ar09_022
22	H3	425	73°29.95'N	017°30.13'E	23-Jun-2009 01:14:20	ar09_023
23	H5	445	73°30.01'N	016°51.42'E	23-Jun-2009 03:27:02	ar09_024
24	H6	460	73°30.00'N	016°12.20'E	23-Jun-2009 05:37:34	ar09_025
25	H7	480	73°30.11'N	015°37.84'E	23-Jun-2009 07:21:24	ar09_026
26	H4	700	73°30.18'N	015°04.86'E	23-Jun-2009 09:05:53	ar09_027

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27	H8	1035	73°30.34'N	014°26.14'E	23-Jun-2009 11:10:22	ar09_028
28	H9	1305	73°30.03'N	013°50.03'E	23-Jun-2009 13:55:32	ar09_029
29	H10	1595	73°30.03'N	013°07.43'E	23-Jun-2009 17:38:54	ar09_030
30	H11	1830	73°30.01'N	012°12.08'E	23-Jun-2009 21:21:35	ar09_031
31	H12	2085	73°30.15'N	011°04.83'E	24-Jun-2009 02:11:41	ar09_032
32	H13	2330	73°30.00'N	009°49.93'E	24-Jun-2009 07:08:44	ar09_033
33	H14	2525	73°30.20'N	008°40.62'E	24-Jun-2009 12:20:15	ar09_034
34	H15	3025	73°30.08'N	007°52.13'E	24-Jun-2009 16:26:35	ar09_035
35	H16	2350	73°30.08'N	007°00.38'E	24-Jun-2009 21:44:45	ar09_036
36	H17	1880	73°30.13'N	006°03.42'E	25-Jun-2009 02:22:56	ar09_037
37	H18	2520	73°30.02'N	005°00.02'E	25-Jun-2009 07:48:08	ar09_038
Section K						
38	K16	3070	75°00.03'N	005°00.21'E	26-Jun-2009 09:53:30	ar09_039
39	K15	2885	75°00.14'N	005°59.19'E	26-Jun-2009 13:41:52	ar09_040
40	K14	2015	75°00.06'N	006°50.39'E	26-Jun-2009 17:16:46	ar09_041
41	K13	2235	75°00.38'N	007°34.56'E	26-Jun-2009 20:12:34	ar09_042
42	K12	2840	75°00.05'N	008°27.30'E	26-Jun-2009 23:30:19	ar09_043
43	K11	2585	75°00.03'N	009°15.41'E	27-Jun-2009 03:12:07	ar09_044
44	K10	2540	75°00.06'N	010°19.48'E	27-Jun-2009 06:46:35	ar09_045
45	K9	2415	75°00.09'N	011°27.24'E	27-Jun-2009 10:21:40	ar09_046
46	K8	2180	75°00.07'N	012°24.85'E	27-Jun-2009 13:47:39	ar09_047
47	K7	2010	75°00.03'N	013°06.08'E	27-Jun-2009 16:40:07	ar09_048
48	K6	1810	75°00.02'N	013°44.89'E	27-Jun-2009 19:03:27	ar09_049
49	K5	1535	75°00.01'N	014°21.97'E	27-Jun-2009 21:25:14	ar09_050
50	K4	1110	75°00.21'N	014°57.18'E	27-Jun-2009 23:48:52	ar09_051
51	K3	820	75°00.07'N	015°22.85'E	28-Jun-2009 01:40:06	ar09_052
52	K2	325	75°00.03'N	015°44.46'E	28-Jun-2009 03:13:31	ar09_053
53	K1	220	75°00.02'N	016°01.37'E	28-Jun-2009 04:13:32	ar09_054
54	K0	205	74°59.93'N	016°30.01'E	28-Jun-2009 05:23:51	ar09_055
55	K-2	115	75°00.07'N	017°29.64'E	28-Jun-2009 07:23:42	ar09_056

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Section V2						
56	V21	25	74°32.09'N	018°53.46'E	28-Jun-2009 13:47:09	ar09_057
57	V22	65	74°36.13'N	018°46.59'E	28-Jun-2009 14:40:15	ar09_058
58	V23	100	74°41.15'N	018°41.06'E	28-Jun-2009 15:31:29	ar09_059
59	V24	230	74°46.10'N	018°35.72'E	28-Jun-2009 16:37:39	ar09_060
60	V25	200	74°51.36'N	018°30.90'E	28-Jun-2009 17:43:24	ar09_061
61	V26	70	74°57.00'N	018°25.13'E	28-Jun-2009 18:41:25	ar09_062
62	V27	65	75°06.08'N	018°12.86'E	28-Jun-2009 20:22:25	ar09_063
63	V28	60	75°16.02'N	018°03.22'E	28-Jun-2009 21:51:28	ar09_064
64	V29	105	75°22.03'N	017°58.35'E	28-Jun-2009 23:13:51	ar09_065
65	V30	130	75°31.31'N	017°45.51'E	29-Jun-2009 00:46:34	ar09_066
66	V31	215	75°41.36'N	017°34.79'E	29-Jun-2009 02:21:31	ar09_067
67	V32	295	75°49.08'N	017°21.68'E	29-Jun-2009 04:14:04	ar09_068
68	V33	320	75°58.02'N	017°09.57'E	29-Jun-2009 05:58:03	ar09_069
69	V34	290	76°07.51'N	017°00.06'E	29-Jun-2009 07:23:58	ar09_070
70	V35	220	76°14.48'N	016°50.10'E	29-Jun-2009 08:43:44	ar09_071
71	V36	105	76°18.98'N	016°47.33'E	29-Jun-2009 09:39:11	ar09_072
72	V37	50	76°20.90'N	016°43.59'E	29-Jun-2009 10:12:03	ar09_073
73	V38	30	76°23.99'N	016°36.98'E	29-Jun-2009 10:53:36	ar09_074
Section O						
74	O5	305	76°09.78'N	017°26.69'E	29-Jun-2009 13:17:35	ar09_075
75	O6	280	76°10.89'N	017°54.78'E	29-Jun-2009 14:35:37	ar09_076
76	O7	250	76°12.83'N	018°20.91'E	29-Jun-2009 16:02:49	ar09_077
77	O8	265	76°15.11'N	018°52.23'E	29-Jun-2009 17:56:30	ar09_078
78	O8p	260	76°15.86'N	019°05.99'E	29-Jun-2009 19:01:00	ar09_079
Section O cross						
79	O7_2	255	76°13.01'N	018°25.32'E	29-Jun-2009 21:14:47	ar09_080
80	O7a	245	76°16.38'N	018°20.15'E	29-Jun-2009 22:04:03	ar09_081
81	O7b	230	76°18.82'N	018°13.68'E	29-Jun-2009 22:59:05	ar09_082
82	O7c	240	76°23.10'N	018°10.19'E	29-Jun-2009 23:49:32	ar09_083

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83	O7d	245	76°26.37'N	018°05.30'E	30-Jun-2009 00:41:44	ar09_084
84	O7e	245	76°27.03'N	018°03.95'E	30-Jun-2009 01:10:47	ar09_085
Section O cd						
85	O4	285	76°08.00'N	017°00.16'E	30-Jun-2009 04:52:04	ar09_086
86	O3	345	76°05.98'N	016°29.92'E	30-Jun-2009 06:38:30	ar09_087
87	O2	385	76°04.02'N	015°59.94'E	30-Jun-2009 08:07:50	ar09_088
88	O1	365	76°02.30'N	015°33.76'E	30-Jun-2009 09:41:10	ar09_089
89	M4	340	76°00.23'N	015°00.90'E	30-Jun-2009 11:11:22	ar09_090
90	O-1	320	75°59.02'N	014°37.01'E	30-Jun-2009 12:39:40	ar09_091
91	O-2	335	75°58.29'N	014°24.63'E	30-Jun-2009 13:41:21	ar09_092
92	O-3	605	75°57.19'N	014°07.15'E	30-Jun-2009 14:58:26	ar09_093
93	O-4	905	75°57.08'N	013°50.35'E	30-Jun-2009 16:16:35	ar09_094
94	O-5	1165	75°57.01'N	013°26.18'E	30-Jun-2009 17:50:23	ar09_095
95	O-6	1385	75°56.04'N	013°05.36'E	30-Jun-2009 19:36:05	ar09_096
96	O-7	1795	75°54.11'N	012°18.63'E	30-Jun-2009 23:25:21	ar09_097
97	O-8	2090	75°53.09'N	011°35.20'E	01-Jul-2009 03:39:24	ar09_098
98	O-9	2330	75°51.22'N	010°16.02'E	01-Jul-2009 09:08:31	ar09_099
99	O-10	2395	75°49.17'N	008°51.44'E	01-Jul-2009 13:56:17	ar09_100
100	O-11	2565	75°47.22'N	007°29.92'E	01-Jul-2009 18:34:03	ar09_101
101	O-12	2540	75°44.24'N	006°07.13'E	01-Jul-2009 22:44:10	ar09_102
102	O-13	2930	75°42.19'N	004°47.06'E	02-Jul-2009 02:46:58	ar09_103
Section N						
103	N-11	2550	76°30.13'N	004°00.02'E	02-Jul-2009 10:06:58	ar09_104
104	N-10	2430	76°29.95'N	004°57.62'E	02-Jul-2009 13:35:23	ar09_105
105	N-9	2580	76°29.95'N	005°27.80'E	02-Jul-2009 16:12:13	ar09_106
106	N-8	2600	76°29.65'N	005°56.52'E	02-Jul-2009 18:59:48	ar09_107
107	N-7	2475	76°30.00'N	006°29.87'E	02-Jul-2009 21:33:11	ar09_108
108	N-6	2865	76°30.06'N	006°56.78'E	03-Jul-2009 00:16:36	ar09_109
109	N-5	2525	76°30.06'N	007°25.70'E	03-Jul-2009 02:51:37	ar09_110
110	N-4	2075	76°30.00'N	007°56.06'E	03-Jul-2009 05:27:22	ar09_111

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111	N-3	2295	76°29.71'N	008°23.91'E	03-Jul-2009 07:53:53	ar09_112
112	N-2	2295	76°29.85'N	009°00.29'E	03-Jul-2009 10:13:44	ar09_113
113	N-1	2270	76°29.73'N	009°57.34'E	03-Jul-2009 13:31:34	ar09_114
114	N0	2120	76°29.86'N	010°56.51'E	03-Jul-2009 16:46:21	ar09_115
115	N1	1915	7629.81'N	011°53.78'E	03-Jul-2009 19:41:56	ar09_116
116	N1P	1755	76°29.77'N	012°25.05'E	03-Jul-2009 21:45:27	ar09_117
117	N2	1545	76°29.99'N	013°00.03'E	03-Jul-2009 23:57:08	ar09_118
118	N2P	1260	76°29.93'N	013°25.81'E	04-Jul-2009 02:06:03	ar09_119
119	N3	735	76°30.02'N	013°55.62'E	04-Jul-2009 04:20:21	ar09_120
120	N3p	215	76°29.95'N	014°25.54'E	04-Jul-2009 05:47:50	ar09_121
121	N4	160	76°29.86'N	014°53.39'E	04-Jul-2009 06:54:09	ar09_122
122	N4P	140	76°29.87'N	015°26.64'E	04-Jul-2009 08:17:04	ar09_123
123	N5	40	76°29.97'N	015°59.97'E	04-Jul-2009 09:40:59	ar09_124
Mooring Alkekonge						
124	HM1	85	76°51.61'N	015°11.81'E	04-Jul-2009 12:30:59	ar09_125
Section S						
125	S-2	130	77°37.30'N	014°25.02'E	08-Jul-2009 06:09:09	ar09_126
126	S-1	140	77°36.26'N	014°04.72'E	08-Jul-2009 07:17:12	ar09_127
127	S0	140	77°35.02'N	013°30.18'E	08-Jul-2009 08:40:32	ar09_128
128	S1	135	77°34.27'N	013°05.50'E	08-Jul-2009 09:59:04	ar09_129
129	S2	95	77°33.10'N	012°35.01'E	08-Jul-2009 11:20:38	ar09_130
130	S3	175	77°31.97'N	012°00.21'E	08-Jul-2009 13:05:23	ar09_131
131	S4	280	77°31.09'N	011°31.67'E	08-Jul-2009 15:09:32	ar09_132
132	S5	690	77°30.01'N	011°00.20'E	08-Jul-2009 17:51:22	ar09_133
133	S6	1260	77°29.28'N	010°34.61'E	08-Jul-2009 20:04:41	ar09_134
134	S7	1625	77°28.11'N	010°02.16'E	08-Jul-2009 22:19:08	ar09_135
135	S8	2085	77°26.10'N	009°02.71'E	09-Jul-2009 02:34:44	ar09_136
136	S9	2360	77°24.14'N	008°01.30'E	09-Jul-2009 08:03:27	ar09_137
137	S10	2705	77°22.00'N	006°59.98'E	09-Jul-2009 13:20:03	ar09_138
138	S11	2165	77°21.03'N	006°32.55'E	09-Jul-2009 17:03:55	ar09_139

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139	S12	2610	77°20.05'N	006°00.20'E	09-Jul-2009 19:57:35	ar09_140
140	S13	2470	77°18.11'N	005°05.34'E	09-Jul-2009 23:36:45	ar09_141
141	S14	2360	77°17.11'N	004°33.74'E	10-Jul-2009 02:18:43	ar09_142
142	S15	2530	77°16.09'N	004°04.85'E	10-Jul-2009 04:59:53	ar09_143
143	S16	2930	77°14.61'N	003°04.60'E	10-Jul-2009 08:42:54	ar09_144
Section Z						
144	Z13	3070	78°02.76'N	002°51.24'E	10-Jul-2009 16:28:08	ar09_145
145	Z12	2870	78°04.83'N	003°56.15'E	10-Jul-2009 20:06:32	ar09_146
146	Z11	2455	78°05.46'N	004°55.91'E	10-Jul-2009 23:29:05	ar09_147
147	Z10	2520	78°05.93'N	005°46.08'E	11-Jul-2009 02:23:16	ar09_148
148	Z9	2310	78°06.89'N	006°35.14'E	11-Jul-2009 05:17:56	ar09_149
149	Z8	3495	78°07.57'N	007°25.67'E	11-Jul-2009 07:55:57	ar09_150
150	Z7	2185	78°08.33'N	008°09.51'E	11-Jul-2009 11:25:28	ar09_151
151	Z6	1570	78°08.73'N	008°37.12'E	11-Jul-2009 13:34:26	ar09_152
152	Z5	1120	78°09.44'N	008°59.82'E	11-Jul-2009 15:11:28	ar09_153
153	Z4	710	78°09.55'N	009°09.60'E	11-Jul-2009 16:23:47	ar09_154
154	Z3	265	78°09.70'N	009°25.81'E	11-Jul-2009 17:24:33	ar09_155
155	Z2	265	78°09.80'N	009°55.24'E	11-Jul-2009 18:38:49	ar09_156
156	Z1	260	78°10.27'N	010°52.81'E	11-Jul-2009 20:36:20	ar09_157
Mooring IOPAS						
157	Moor_IOPAS	1610	78°28.07'N	008°22.27'E	12-Jul-2009 03:38:34	ar09_158
Section EB2						
158	EB2-1	200	78°49.60'N	009°15.21'E	12-Jul-2009 10:55:10	ar09_159
159	EB2-2	220	78°49.97'N	008°46.82'E	12-Jul-2009 12:38:01	ar09_160
160	EB2-3	710	78°49.95'N	008°27.67'E	12-Jul-2009 13:35:34	ar09_161
161	EB2-4	985	78°49.96'N	008°07.23'E	12-Jul-2009 15:00:24	ar09_162
162	EB2-5	1140	78°49.95'N	007°36.52'E	12-Jul-2009 16:46:51	ar09_163
163	EB2-6	1405	78°49.89'N	007°09.94'E	12-Jul-2009 18:30:30	ar09_164
164	EB2-7	1985	78°49.98'N	006°35.44'E	12-Jul-2009 20:35:03	ar09_165
165	EB2-8	2455	78°50.00'N	006°02.71'E	12-Jul-2009 22:50:34	ar09_166

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166	EB2-9	2595	78°49.94'N	005°33.40'E	13-Jul-2009 01:31:17	ar09_167
167	EB2-10	2695	78°49.95'N	005°03.06'E	13-Jul-2009 04:13:39	ar09_168
168	EB2-11	2350	78°49.88'N	004°04.97'E	13-Jul-2009 07:36:59	ar09_169
Section EX						
169	EX9	2555	79°25.02'N	004°29.92'E	13-Jul-2009 16:23:46	ar09_170
170	EX10	3000	79°25.07'N	003°37.46'E	13-Jul-2009 19:19:31	ar09_171
171	EX8	2250	79°24.93'N	005°29.56'E	14-Jul-2009 00:06:20	ar09_172
172	EX7	1490	79°24.76'N	006°26.81'E	14-Jul-2009 04:18:14	ar09_173
173	EX6	1215	79°24.95'N	006°59.27'E	14-Jul-2009 07:24:50	ar09_174
174	EX5	925	79°24.96'N	007°27.28'E	14-Jul-2009 10:07:20	ar09_175
175	EX4	445	79°24.87'N	007°57.94'E	14-Jul-2009 12:35:36	ar09_176
176	EX3	195	79°24.83'N	008°27.21'E	14-Jul-2009 14:52:10	ar09_177
177	EX2	130	79°24.83'N	008°55.13'E	14-Jul-2009 19:35:39	ar09_178
178	EX1	130	79°24.92'N	009°25.17'E	14-Jul-2009 20:49:39	ar09_179
Section FX						
179	FX1	60	79°38.19'N	010°08.63'E	15-Jul-2009 00:08:12	ar09_180
180	FX2	290	79°40.20'N	009°48.10'E	15-Jul-2009 01:05:20	ar09_181
181	FX3	380	79°42.23'N	009°25.18'E	15-Jul-2009 02:08:43	ar09_182
182	FX4	440	79°44.35'N	008°59.94'E	15-Jul-2009 03:33:55	ar09_183
183	FX5	525	79°46.99'N	008°31.95'E	15-Jul-2009 04:48:54	ar09_184
Section GX						
184	GX1	75	79°54.97'N	010°45.23'E	15-Jul-2009 09:45:43	ar09_185
185	GX2	430	79°57.67'N	010°20.89'E	15-Jul-2009 11:47:31	ar09_186
186	GX1a	235	79°56.66'N	010°27.75'E	15-Jul-2009 12:55:18	ar09_187
187	GX3	490	79°59.86'N	010°01.46'E	15-Jul-2009 14:33:38	ar09_188
188	GX4	505	80°02.54'N	009°37.13'E	15-Jul-2009 15:44:30	ar09_189
189	GX5	515	80°05.19'N	009°12.59'E	15-Jul-2009 17:07:35	ar09_190
Section HX						
190	HX1a	170	80°20.79'N	012°17.46'E	15-Jul-2009 21:55:05	ar09_191
191	HX2a	210	80°23.17'N	011°53.30'E	15-Jul-2009 23:13:30	ar09_192

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192	HX1	185	80°18.48'N	011°42.53'E	16-Jul-2009 00:42:17	ar09_193
193	HX2b	220	80°20.47'N	011°25.43'E	16-Jul-2009 01:46:08	ar09_194
194	HX3b	405	80°21.45'N	011°11.05'E	16-Jul-2009 02:39:06	ar09_195
Section FX cd						
195	FX6	725	79°46.98'N	007°50.77'E	16-Jul-2009 09:47:56	ar09_196
196	FX7	925	79°43.67'N	006°55.35'E	16-Jul-2009 12:09:50	ar09_197
197	FX8a	1320	79°41.80'N	006°01.11'E	16-Jul-2009 14:24:04	ar09_198
Eddy						
198	Kn1	1350	79°09.16'N	005°19.61'E	16-Jul-2009 20:10:10	ar09_199
199	Kn2	2305	78°30.44'N	004°11.28'E	17-Jul-2009 01:04:45	ar09_200
200	Kn3	2540	78°19.56'N	003°19.28'E	17-Jul-2009 04:34:53	ar09_201
201	Kn4	2370	78°14.54'N	004°11.08'E	17-Jul-2009 08:36:45	ar09_202
202	Kn5	1425	78°10.51'N	003°56.63'E	17-Jul-2009 11:10:56	ar09_203
203	Kn6	2220	78°06.01'N	004°26.07'E	17-Jul-2009 13:40:42	ar09_204
204	Kn7	3025	78°04.53'N	003°29.26'E	17-Jul-2009 17:51:36	ar09_205

2. Hydrographic conditions

After the record high temperature of the Atlantic Water in summer 2006, rapid decreasing of temperature in 2007 and 2008 has occurred. In summer 2009 Atlantic Water temperature has raised again, warm AW tongue shifted northward (Fig 2).

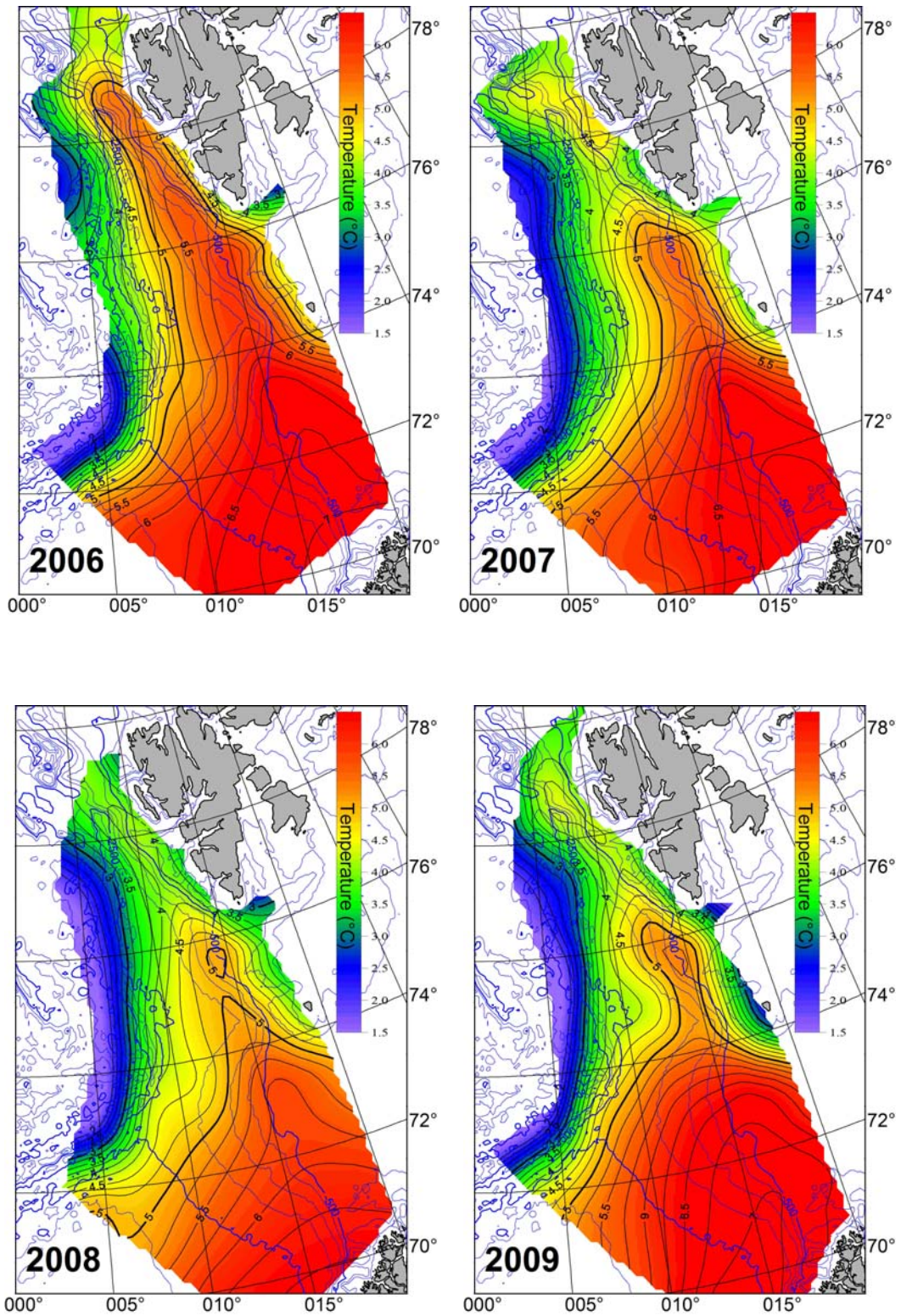


Figure 2: Temperature at 100 dbar in June-July 2006-2009.

At standard section 'N' along the 76°30'N, in July 2009 temperature at 200 dbar was 3.53°C (Fig 3), 0.36 higher than 1996-2009 mean. Salinity at 200 dbar was 35.09, 0.031 higher than 1996-2009 mean. The temperature and salinity trends are positive, 1.06°C/10 years, 0.086/10 years respectively.

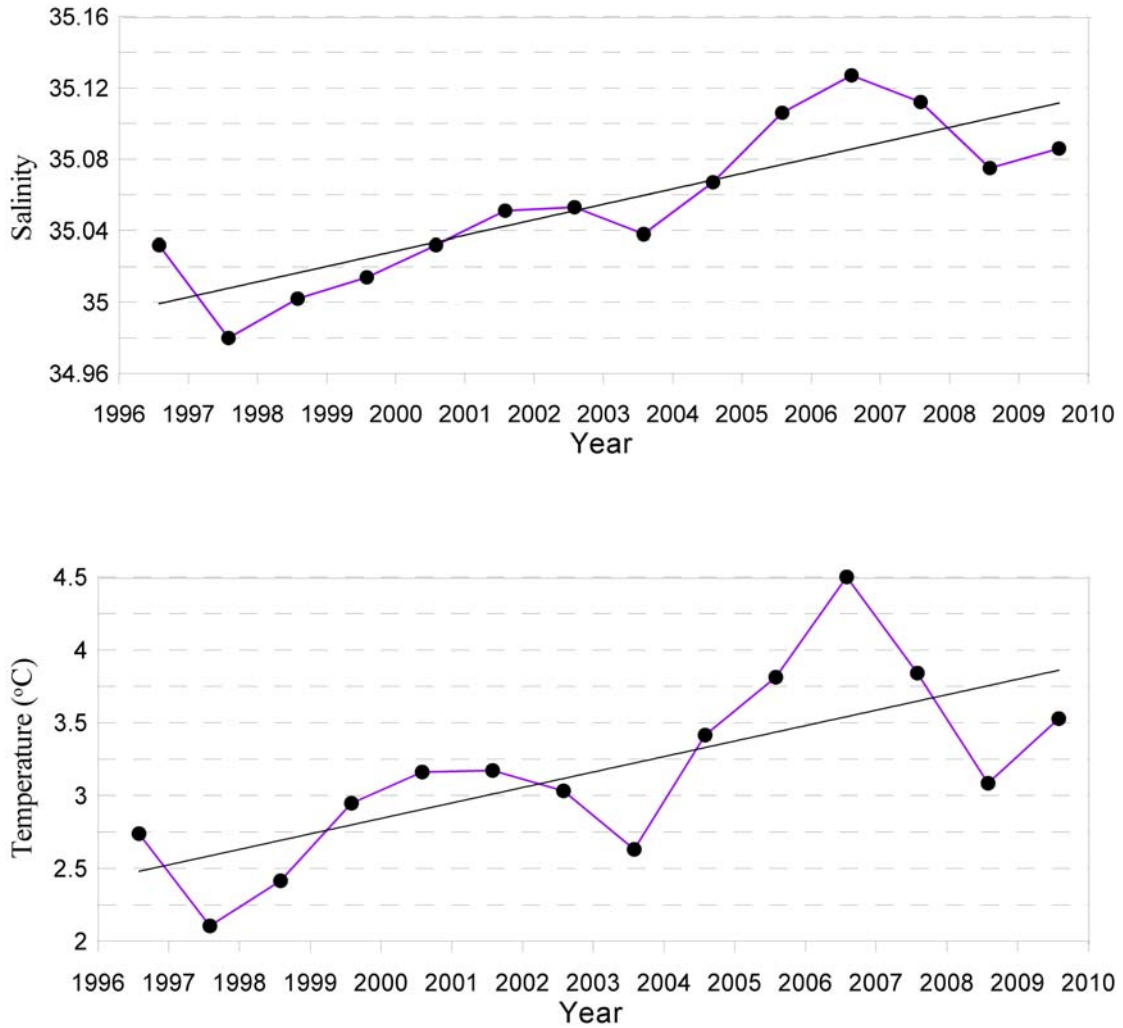


Figure 3: Mean salinity (upper panel) and mean temperature in summer (July) at section 'N' (76°30' N) at 200 m, between longitudes 009°-012° E. Linear trends are marked.

3. Dynamics

Fig.4 presents the distribution of baroclinic currents (arrows) and baroclinic flow kinetic energy at 100 dbar (calculated for the reference level of 1000 m.). Baroclinic flow into the Barents Sea is weak, more intensive inflow into the Fram Strait exists. Both branches of the West Spitsbergen Current are well visible. Convergence of the branch flowing over the Mohna Ridge and WSC core at 78° N is pronounced.

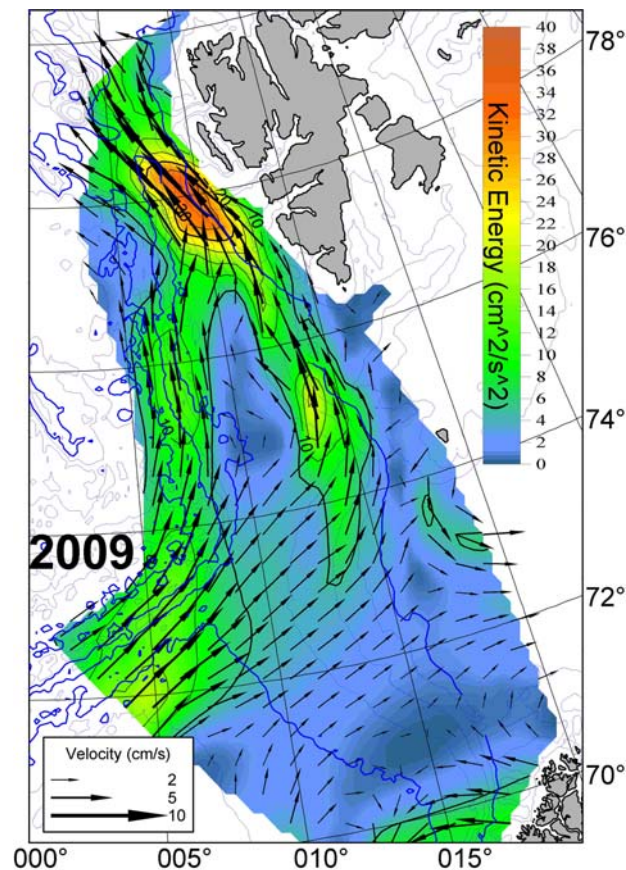


Figure 4: June-July 2009. Baroclinic currents kinetic energy distribution (colour scale), and baroclinic currents at 100 dbar. Reference level 1000 dbar. Data from Gimsøy section provided by the Institute of Marine Research, Bergen were used.