

ADCP Deployments in Faroese Waters 2016 - 2017

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Introduction

This report documents five current meter deployments in Faroese waters in 2016 – 2017. Each deployment is identified by an 8-character label where the first four characters indicate the site (Fig. 1) while the last characters show year and month of deployment. Three of the moorings were located at standard (Nordic WOCE) sites. The five deployments are listed in Tables 1 and 2. In addition to these deployments in Faroese Waters one ADCP mooring (deployment IFWV1606) was deployed in the Western Valley on the Iceland-Faroe Ridge and it is documented separately in Technical Report 17-03.

At sites NWFB, NWFC and NWNB RDI ADCPs were placed in the top of single-point moorings. For each deployment, the ADCP measures the velocity averaged over a number of depth layers (“bins”). At 20 minute intervals, the ADCP records the data from all bins into “ensembles”. Deployment NWFC had a Sea-Bird SBE39 temperature recorder on the mooring, while NWFB had a Sea-Bird SBE37 that recorded temperature, salinity, oxygen and pressure. This SBE37 instrument is funded by the H2020 project AtlantOS (Grant agreement No 633211).

At sites PLDA and PLDB an Aanderaa RCM9, a Sea-Bird MicroCat and other temperature recorders were on the moorings. The Aanderaa current meters recorded speed, direction and temperature at 60 minutes intervals, the MicroCats recorded temperature, salinity and pressure, while the Starmons and the SBE56 instruments recorded temperature only. For more details see Table 2.

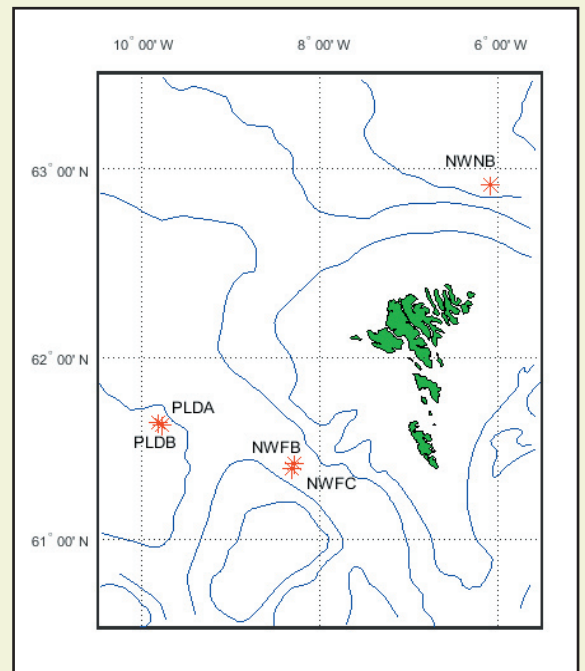


Figure 1. ADCP mooring sites in Faroese waters 2016-2017 superposed on a map with the bottom topography. Each site is indicated by a four-letter label.

Table 1. List of deployments with information on ADCP number, type and settings.

Deployment	Instr. No	ADCP type	Freq. kHz	Pings per ens	Binlng. m
NWFB1606	1577	Broadband	75	1	25
NWFC1606	1285	Broadband	75	1	25
NWNB1606	1644	Broadband	75	1	25
PLDA1606		No ADCP			
PLDB1606		No ADCP			

Table 2. List of deployments with information on duration and range of valid data. All depths are in meters. The last column indicates whether other instruments were on the mooring.

Deployment	Bottom depth	Int. min.	Valid data period	Dur. days	No bins	Depth range	Comments
NWFB1606	811	20	2016 06 10-2017 05 18	342	22	244- 769	Microcat
NWFC1606	832	20	2016 06 10-2017 05 18	342	26	165- 790	SBE39
NWNB1606	968	20	2016 06 08-2017 05 22	347	24	103- 678	
PLDA1606	1101		2016 06 10-2017 05 19	343			Microcat, Starmon
"							Aanderaa, SBE56
PLDB1606	1086		2016 06 10-2017 05 19	343			Microcat, Starmon
"							Aanderaa, SBE56

Quality control

The ADCP data have been quality controlled using an automatic routine. The data have been processed such that threshold values for e.g. maximum error velocity, minimum mean correlation and others were set. Also, error velocities deviating more than a selected number times the standard deviation from the mean error velocity were error flagged. Speed spikes are calculated in a similar manner selecting a number of standard deviations and then error flagging those values where u or v deviated more than the threshold from a 3 point median filtered u and v series. For specific values used, see the error statistics for the individual series.

Generally, the series have been edited up to the level where about 50% of the observations were found to be valid. Bins above this level have not been included.

The velocity direction has been corrected for magnetic deviation, by adding a constant as indicated in the header of the data file.

The instrument depth at site NWNB is found using the data from the surface echo. The instrument depth at deployment NWFC is found from the echo sounding depth (corrected for change in sound velocity). The instrument depths at sites NWFB, PLDA and PLDB are found from the MicroCat pressure measurements.

The Aanderaa data have been calibrated using calibration coefficients from the manufacturer. In the Aanderaa current meter, several speed and compass readings are taken during a sampling interval, while the temperature and conductivity readings are taken once at the end of the interval only. At the end of the interval, the instrument stores a vector average of the velocity for the whole sampling interval, as well as the temperature and conductivity readings. In the data file, the time of each record is the middle of the speed-averaging interval. In the calibration procedure the velocity direction has been corrected for magnetic deviation, by adding a constant. The actual correction for each deployment is stored in the header of the data file. The data have been quality controlled by a standard procedure based upon data variation with time in relation to neighbouring values (spikes). The editing has been done manually using an interactive

graphical software package developed by FAMRI, based upon MATLAB.

The temperature and pressure from two (of three) MicroCats have been calibrated by being attached to a CTD one day prior to deployment. The pressure, temperature, salinity and oxygen data from the MicroCat instruments have been quality controlled by a standard procedure based upon data variation with time in relation to neighboring values (spikes). The editing has been done manually using an interactive graphical software package developed by FAMRI, based upon MATLAB.

The Starmon, SBE39 and SBE56 data have been quality controlled by a standard procedure based upon data variation with time in relation to neighbouring values (spikes). The editing has been done manually using an interactive graphical software package developed by FAMRI, based upon MATLAB.

Report format

For each deployment, the report contains several pages, beginning with a page that has a drawing of the mooring and details of the deployment. After that, there are some pages describing the ADCP data, beginning with a page with detailed error statistics and threshold settings for the deployment, and it indicates also how many »long« (i.e. several consecutive ensembles) error gaps are for each bin. On the next page there is for each bin listed the average speed (scalar average) and velocity magnitude and direction (vectorial average) as well as the fraction of »good« ensembles (in parts per thousand). This is followed by a frequency distribution of speeds for each bin, which lists the frequency (in parts per thousand) of speeds (scalar) exceeding specified values. Then there are some pages listing tidal constituents. These pages contain five tables with data for the constituents M2, S2, N2, O1, and K1. Each table lists for each bin the amplitude and Greenwich phase lag for the east and north velocity components and lists also major and minor semi-axes of the tidal ellipse for the constituent as well as its inclination (Fig. 2) and sense of rotation (cyclonic = C, anticyclonic = A). The tidal constants were computed by an adapted version of the Foreman FORTRAN package.

The description of the Aanderaa current meter data includes first a text page listing metadata information in the header and showing the list of parameters in the data file with a tally of the number of records flagged and not flagged for error in each parameter. Any comments to the data are then listed. The rest of the text page describes features of the velocity observations in the series. First is shown the residual current, defined as the vectorial average of all non-flagged records. Next are shown the results of tidal analysis on the series. The number of records interpolated before the analysis is listed as well as the number that could not be interpolated (too large gap). Since the deployment has 60 minutes intervals, all analyses are performed on unfiltered data. 15 of the dominant constituents are listed and for each constituent, amplitude and Greenwich phase lag are shown for the east (E-ampl and E-gpl) and the north (N-ampl and N-gpl) velocity components respectively, followed by the characteristics of the tidal ellipse, its major and minor semi-axes, the inclination (Incl) of the ellipse, its Greenwich phase lag (Grphl), and whether it rotates cyclonically (C) or anticyclonically (A). The definitions of the tidal ellipse parameters are shown in Figure 2. The tidal constants were computed by an adapted version of the Foreman FORTRAN package. Finally, on the Aanderaa text page is a table listing the directional current distribution as relative numbers of observations in parts per thousand. The table also lists for each direction interval, the relative flux, the average speed and the maximum speed. Then one page shows plots of the listed parameters as a function of time and one page shows the progressive vector diagram.

The MicroCat data are presented on two pages, the first page showing plots of temperature, salinity, depth and possible oxygen time series, while the second is a T-S diagram of the recorded data.

The Starmon, SBE39 and SBE56 temperature data is presented on one page.

On the following pages, the data descriptions from each deployment are presented in the same sequence as Tables 1 and 2. For each deployment, the ADCP data are presented first, followed by possible MicroCat, Aanderaa or temperature recorder data.

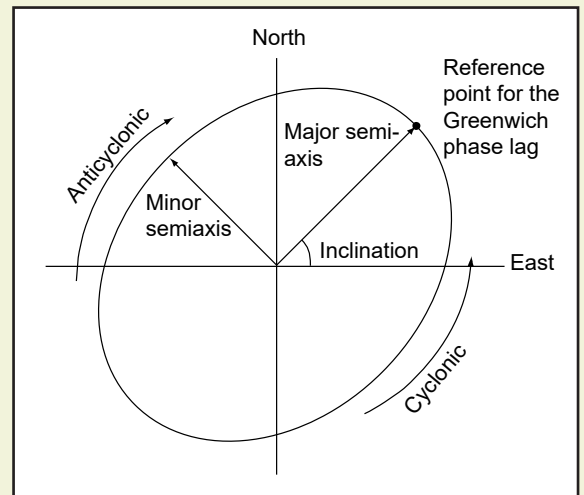


Figure 2. Parameters of the tidal ellipse for a given constituent. The reference point for the Greenwich phase lag is always chosen to be above the east-west axis.

NWFB1606

Latitude: 61°25.044'N
Longitude: 008°16.937'W
Echo sounding depth: 822 m
Bottom depth corr.: 811 m
Time of deployment: 10/6 - 2016 1014 UTC
Time of recovery: 18/5 - 2017 1546 UTC

ADCP:

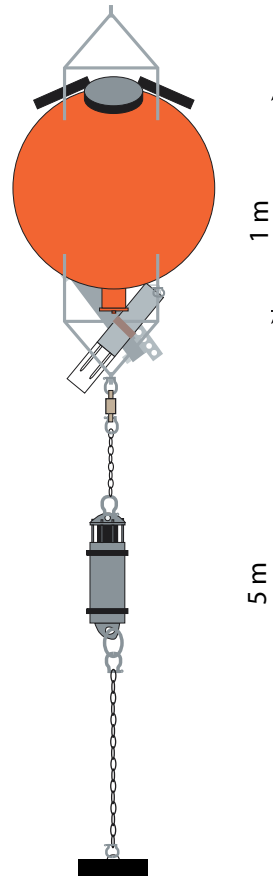
Instrument no.: RDI ADCP 1577
Instrument frequency: 75 kHz
Height above bottom: 6 m
Depth: 805 m
Time of first data: 10/6 - 2016 1040 UTC
Time of last data: 18/5 - 2017 1520 UTC
Sample interval: 20 min
No. of ensembles: 24639
Pings per ens.: 1
Binlength: 25 m
Depth of first bin: 769 m
No. of bins: 22

MicroCat

Instrument no.: 14007
Height above bottom: 5 m
Instrument depth: 806 m
Time of first data: 10/6 - 2016 1201 UTC
Time of last data: 18/5 - 2017 1501 UTC
Sample interval: 10 min
No. of ensembles: 8212

Data:

The MicroCat data have not been calibrated.



NWFB1606 ADCP 1577

Error statistics for deployment: NWFB1606 updated 2017/07/14

 Temperature edited
 Surface distance not edited
 Heading, pitch and roll not edited
 Intensity not edited

Velocity edited using these data filters:

Minimum Mean Correlation: 40.0
 Maximum Speed, number of std dev for each bin: 4.0
 Maximum Error Velocity (erv_tr+0.1*spd): 100.0
 Speed Spikes, u and v deviated from 3 point median by number of std dev (bin 1): 5.00
 Speed Spikes, u and v deviated from 3 point median by number of std dev (bin 22): 3.44
 Speed Spikes, u and v deviated from 3 point median by number of std dev (bin 32): 2.00
 Maximum absolute Pitch and Roll: 20.0

Total number of ensembles: 24639
 Interval between ensembles: 20 min
 Original number of bins: 32
 Number of acceptable velocity bins: 22

Flagged values have been replaced by error codes: -999.99 for temperature and depth, -999 for velocity and intensity. For observations where velocity is flagged, error codes have been inserted into speed, direction and vertical velocity files

Number of temperature ens. flagged: 0

Below are for each bin listed ensembles flagged for intensity in number and for velocity in number and % of total ens.number. For velocity is also shown the number of gaps of various lengths (gap length = number of consecutive flagged ens.)

Bin	Int. ens. flgd	Velocity ens. flgd	% flgd	Number of velocity gaps of length										
				1	2	3	4	5	6-10	11-20	21-30	31-50	>50	
1	0	33	0	33	0	0	0	0	0	0	0	0	0	0
2	0	27	0	27	0	0	0	0	0	0	0	0	0	0
3	0	29	0	29	0	0	0	0	0	0	0	0	0	0
4	0	24	0	24	0	0	0	0	0	0	0	0	0	0
5	0	33	0	33	0	0	0	0	0	0	0	0	0	0
6	0	53	0	51	1	0	0	0	0	0	0	0	0	0
7	0	143	1	109	15	0	1	0	0	0	0	0	0	0
8	0	324	1	266	27	0	1	0	0	0	0	0	0	0
9	0	425	2	344	30	2	1	1	1	0	0	0	0	0
10	0	453	2	341	39	7	2	1	0	0	0	0	0	0
11	0	309	1	243	24	6	0	0	0	0	0	0	0	0
12	0	213	1	167	16	3	1	0	0	0	0	0	0	0
13	0	208	1	166	12	6	0	0	0	0	0	0	0	0
14	0	176	1	158	9	0	0	0	0	0	0	0	0	0
15	0	184	1	159	8	3	0	0	0	0	0	0	0	0
16	0	206	1	169	16	0	1	0	0	0	0	0	0	0
17	0	336	1	230	22	8	3	2	0	1	0	0	0	0
18	0	1278	5	413	78	30	28	18	32	8	3	0	0	0
19	0	3676	15	485	144	65	42	20	50	52	25	14	1	1
20	0	6815	28	587	162	100	45	40	86	66	55	38	9	9
21	0	10306	42	538	219	106	70	40	120	118	67	57	23	23
22	0	12661	51	487	149	103	64	37	100	109	91	77	40	40

NWFB1606 ADCP 1577

Deployment: NWFB1606 updated 2017/07/14
 Instrument no.: 1577
 Instrument freq.: 75
 Latitude: 61 25.044 N
 Longitude: 08 16.937 W
 Bottom depth: 811
 Instrument depth: 805
 Center depth of first bin: 769
 Bin length: 25
 Number of bins: 22
 Number of first ensemble: 141
 Time of first ensemble: 2016 06 10 10 40
 Number of last ensemble: 24779
 Time of last ensemble: 2017 05 18 15 20
 Time between ensembles (min.): 20
 All directions have been corrected by adding: -6.0

Below is listed for each bin the average speed (scalar average) and the average velocity magnitude and direction formed as a vectorial average of non-flagged (Good) observations. The last column shows the number of good values used in parts per thousand

Bin no.	Depth m	Height m	Speed mm/s	Vel mm/s	Dir deg	Good ppt
1	769	42	962	955	306	999
2	744	67	1023	1017	309	999
3	719	92	1045	1039	311	999
4	694	117	1051	1045	312	999
5	669	142	1045	1040	313	999
6	644	167	1016	1009	314	998
7	619	192	934	924	315	994
8	594	217	783	766	318	987
9	569	242	590	556	321	983
10	544	267	425	360	323	982
11	519	292	322	217	323	987
12	494	317	266	125	324	991
13	469	342	234	69	327	992
14	444	367	216	34	334	993
15	419	392	206	12	358	993
16	394	417	199	11	100	992
17	369	442	195	22	124	986
18	344	467	191	28	125	948
19	319	492	188	32	123	851
20	294	517	187	35	122	723
21	269	542	190	38	121	582
22	244	567	193	43	125	486

NWFB1606 ADCP 1577

Deployment: NWFB1606

Frequency of high speeds.

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Frequency (in parts per thousand) of speeds equal to or exceeding specified vales.

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Bin Depth	Speed (cm/s)																	
no. m	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1 769	999	999	999	999	997	992	973	894	698	395	140	28	3	0	0	0	0	0
2 744	999	999	999	999	998	995	984	946	837	597	285	76	10	1	0	0	0	0
3 719	999	999	999	999	998	996	987	955	866	668	359	106	15	1	0	0	0	0
4 694	999	999	999	999	999	997	987	955	873	686	379	114	16	1	0	0	0	0
5 669	999	999	999	999	998	996	985	950	865	675	363	104	13	1	0	0	0	0
6 644	998	998	998	997	995	989	972	924	809	585	289	75	8	1	0	0	0	0
7 619	994	993	991	986	974	947	892	790	619	391	171	38	5	1	0	0	0	0
8 594	983	971	948	904	847	773	668	520	347	192	70	13	1	0	0	0	0	0
9 569	958	895	806	707	602	489	366	247	150	70	23	3	0	0	0	0	0	0
10 544	920	774	606	456	338	243	164	100	56	24	5	1	0	0	0	0	0	0
11 519	884	670	443	276	177	113	69	38	18	6	2	0	0	0	0	0	0	0
12 494	856	585	334	178	94	52	26	12	5	1	0	0	0	0	0	0	0	0
13 469	829	528	268	121	53	22	8	3	0	0	0	0	0	0	0	0	0	0
14 444	815	484	225	90	30	9	2	0	0	0	0	0	0	0	0	0	0	0
15 419	804	455	198	69	19	4	0	0	0	0	0	0	0	0	0	0	0	0
16 394	793	436	180	57	13	2	0	0	0	0	0	0	0	0	0	0	0	0
17 369	783	415	167	52	12	2	0	0	0	0	0	0	0	0	0	0	0	0
18 344	741	384	153	47	10	2	0	0	0	0	0	0	0	0	0	0	0	0
19 319	659	334	133	43	10	2	0	0	0	0	0	0	0	0	0	0	0	0
20 294	556	279	113	36	9	1	0	0	0	0	0	0	0	0	0	0	0	0
21 269	452	228	94	32	8	2	0	0	0	0	0	0	0	0	0	0	0	0
22 244	380	196	82	30	8	2	0	0	0	0	0	0	0	0	0	0	0	0

NWFB1606 ADCP 1577

Harmonic constants for constituent M2 for deployment NWFB1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	769	30	56	25	312	31	23	154	256	A
02	744	33	62	25	311	35	22	155	258	A
03	719	34	70	23	311	37	19	155	264	A
04	694	32	78	21	311	35	15	153	271	A
05	669	29	87	19	298	33	8	148	276	A
06	644	28	109	19	278	33	3	147	285	C
07	619	37	139	18	272	39	12	159	312	C
08	594	47	162	16	264	47	16	175	341	C
09	569	51	189	17	211	54	6	17	191	C
10	544	58	213	42	173	68	23	34	200	A
11	519	69	230	71	168	84	51	47	197	A
12	494	74	239	89	168	96	65	59	190	A
13	469	76	245	97	170	101	70	68	186	A
14	444	74	251	99	172	101	71	75	183	A
15	419	72	257	100	174	100	71	80	181	A
16	394	70	263	100	178	100	70	83	182	A
17	369	69	269	100	181	100	68	87	184	A
18	344	68	274	98	184	98	68	89	185	A
19	319	68	278	101	187	101	68	91	187	A
20	294	69	282	98	189	98	69	94	185	A
21	269	71	285	97	188	98	69	102	179	A
22	244	68	288	99	190	100	67	100	183	A

Harmonic constants for constituent S2 for deployment NWFB1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	769	11	99	6	2	11	6	175	282	A
02	744	12	103	7	349	12	6	163	291	A
03	719	12	104	7	342	13	5	160	293	A
04	694	11	105	6	337	12	5	159	293	A
05	669	8	102	7	321	10	4	141	298	A
06	644	7	124	6	317	9	1	138	310	A
07	619	12	172	5	350	13	0	157	351	C
08	594	17	199	3	22	17	0	170	19	A
09	569	17	222	2	177	17	2	6	222	A
10	544	18	252	13	218	21	6	36	240	A
11	519	21	277	26	219	29	15	56	239	A
12	494	22	288	34	217	35	20	71	229	A
13	469	25	293	37	216	38	24	75	226	A
14	444	27	296	39	216	39	26	78	225	A
15	419	27	300	39	216	39	27	83	221	A
16	394	27	306	40	218	40	27	87	220	A
17	369	28	312	40	221	40	28	91	221	A
18	344	28	316	38	223	38	28	95	220	A
19	319	28	313	36	226	36	28	85	229	A
20	294	28	316	36	226	36	28	91	225	A
21	269	29	316	36	237	37	28	71	251	A
22	244	31	316	34	239	36	28	55	268	A

NWFB1606 ADCP 1577

Harmonic constants for constituent N2 for deployment NWFB1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	769	9	55	4	313	9	4	172	239	A
02	744	10	56	5	290	11	4	164	242	A
03	719	10	60	6	293	11	4	157	249	A
04	694	9	57	7	283	11	4	148	251	A
05	669	9	57	7	279	11	4	145	252	A
06	644	8	52	9	268	11	4	134	251	A
07	619	7	67	10	261	12	1	124	257	A
08	594	9	108	9	253	12	4	134	270	C
09	569	8	116	9	231	11	7	128	257	C
10	544	5	152	11	194	12	3	71	188	C
11	519	6	195	14	173	15	2	68	176	A
12	494	10	209	17	155	18	7	67	165	A
13	469	13	219	20	149	20	12	71	160	A
14	444	14	230	22	149	22	14	81	155	A
15	419	14	237	23	150	23	14	87	152	A
16	394	14	233	24	148	24	13	86	150	A
17	369	13	230	24	147	24	13	84	151	A
18	344	14	231	23	151	23	13	82	156	A
19	319	13	239	23	155	23	13	85	158	A
20	294	11	248	23	155	23	11	92	154	A
21	269	14	257	26	151	26	13	101	145	A
22	244	17	251	29	161	29	17	90	161	A

Harmonic constants for constituent O1 for deployment NWFB1606.

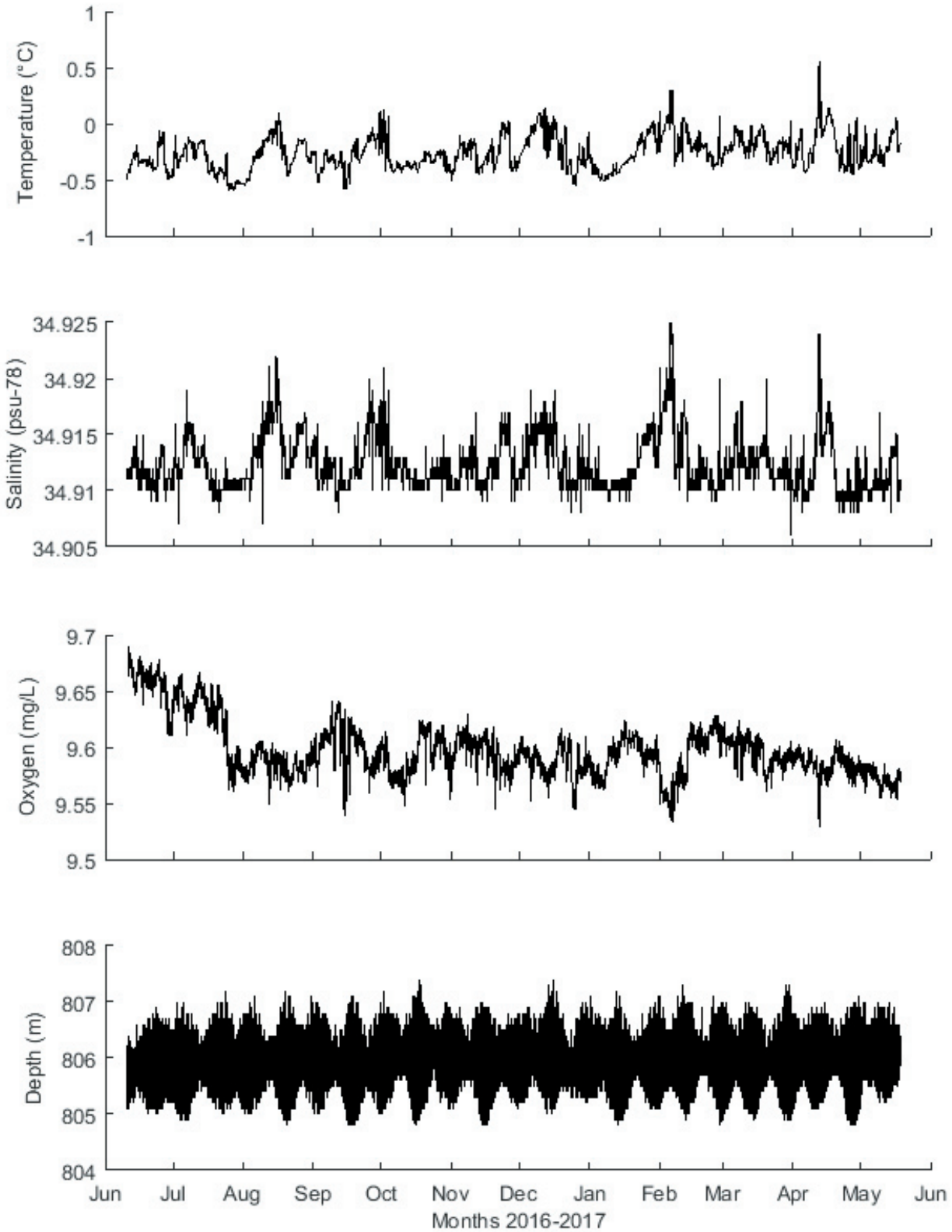
Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	769	17	327	13	145	21	0	143	146	C
02	744	18	326	14	145	23	0	142	145	C
03	719	20	325	15	143	25	0	144	145	C
04	694	20	326	16	145	25	0	141	146	C
05	669	21	332	16	145	26	2	143	149	C
06	644	25	338	19	148	31	3	144	154	C
07	619	33	340	26	155	42	2	141	158	C
08	594	36	345	33	158	49	3	137	162	C
09	569	30	351	35	165	46	2	131	168	C
10	544	22	356	29	169	36	2	127	171	C
11	519	18	2	24	175	29	2	127	177	C
12	494	13	15	18	181	22	3	126	186	C
13	469	11	25	13	189	17	2	128	195	C
14	444	11	30	13	191	16	3	130	199	C
15	419	13	32	12	194	18	3	137	204	C
16	394	14	33	13	200	19	2	138	207	C
17	369	14	30	14	200	20	2	136	205	C
18	344	13	24	13	204	19	0	134	204	A
19	319	10	22	11	210	15	1	133	206	A
20	294	9	12	8	201	12	1	139	196	A
21	269	8	4	6	142	10	3	150	173	C
22	244	10	27	11	129	12	9	128	161	C

NWFB1606 ADCP 1577

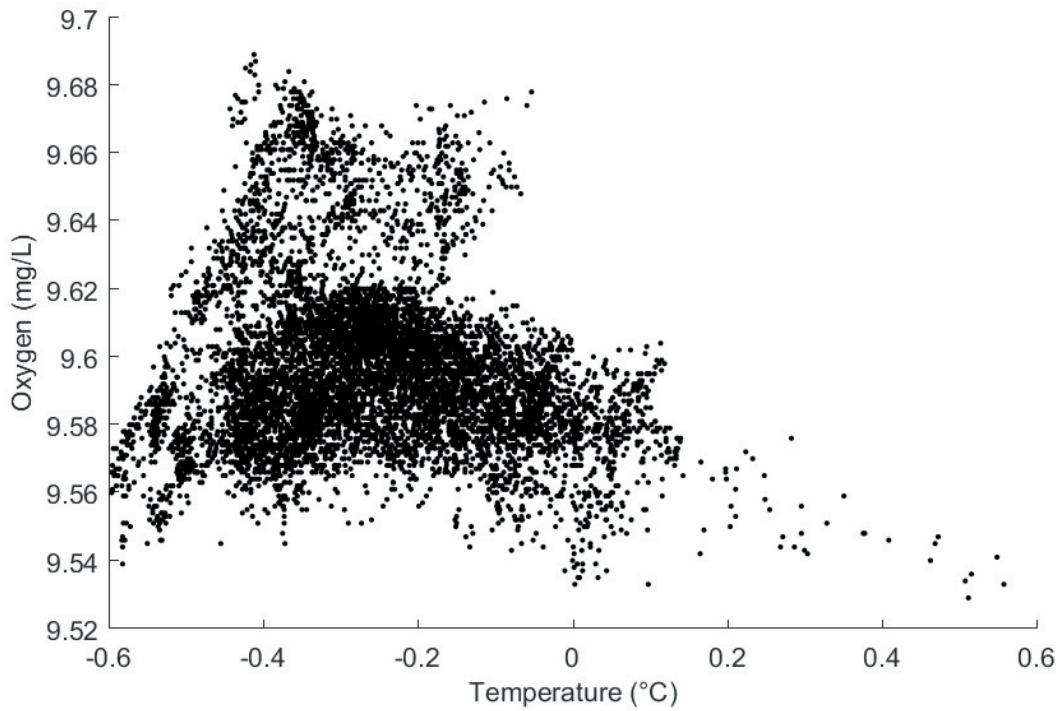
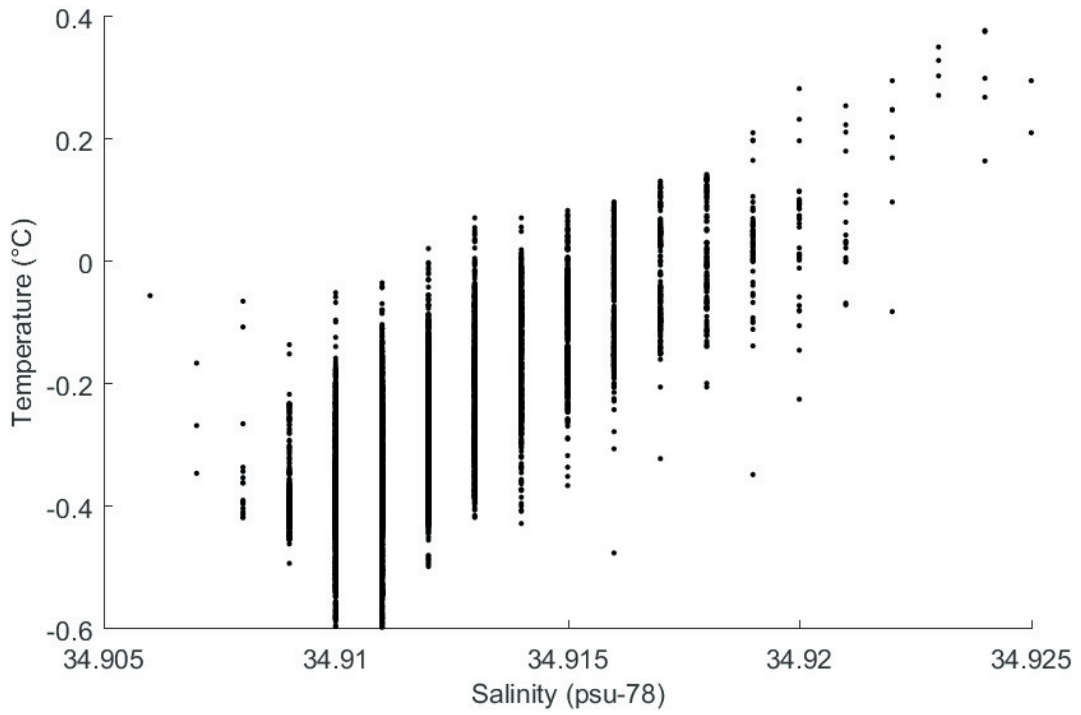
Harmonic constants for constituent K1 for deployment NWFB1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	769	17	211	11	40	20	2	147	34	A
02	744	19	211	13	39	23	1	146	34	A
03	719	19	213	14	40	24	1	145	35	A
04	694	19	216	15	38	24	0	142	37	A
05	669	20	222	13	40	24	1	147	41	C
06	644	22	225	15	43	27	1	146	45	C
07	619	26	233	21	49	33	1	142	51	C
08	594	31	243	27	58	41	2	139	61	C
09	569	31	249	32	59	45	4	134	64	C
10	544	27	252	30	64	40	3	132	67	C
11	519	21	252	26	68	34	1	129	70	C
12	494	16	247	22	67	27	0	127	67	C
13	469	14	256	19	65	23	2	127	69	C
14	444	16	263	17	72	23	2	133	77	C
15	419	17	265	19	73	25	3	132	79	C
16	394	16	264	20	75	25	2	128	78	C
17	369	14	260	21	74	25	1	123	76	C
18	344	13	253	20	73	23	0	123	73	A
19	319	11	255	19	76	22	0	121	76	A
20	294	14	261	21	82	26	0	124	82	A
21	269	17	261	25	81	31	0	124	81	A
22	244	14	254	21	74	26	0	123	74	C

NWFB1606 MicroCat 14007



NWFB1606 MicroCat 14007

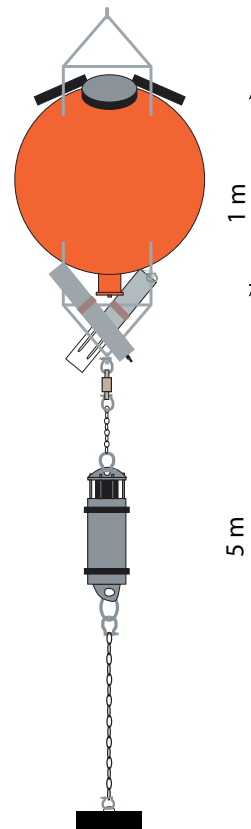


NWFC1606

Latitude: 61°23.407'N
Longitude: 008°18.941'W
Echo sounding depth: 838 m
Bottom depth corr.: 832 m
Time of deployment: 10/6 - 2016 1035 UTC
Time of recovery: 18/5 - 2017 1507 UTC

ADCP:

Instrument no.: RDI ADCP 1285
Instrument frequency: 75 kHz
Height above bottom: 6 m
Depth: 826 m
Time of first data: 10/6 - 2016 1100 UTC
Time of last data: 18/5 - 2017 1500 UTC
Sample interval: 20 min
No. of ensembles: 24637
Pings per ens.: 1
Binlength: 25 m
Depth of first bin: 790 m
No. of bins: 26



SBE39plus

Instrument no.: 7752
Height above bottom: 5 m
Instrument depth: 827 m
Time of first data: 10/6 - 2016 1041 UTC
Time of last data: 18/5 - 2017 1506 UTC
Sample interval: 1 min
No. of ensembles: 492746

Data:

All data ok.

NWFC1606 ADCP 1285

Error statistics for deployment: NWFC1606 updated 2017/10/23

 Temperature edited
 Surface distance not edited
 Heading, pitch and roll not edited
 Intensity not edited

Velocity edited using these data filters:

Maximum Speed, number of std dev for each bin: 5.0
 Maximum Vertical Velocity: 150.0
 Maximum Error Velocity (erv_tr+0.1*spd): 100.0
 Speed Spikes, u and v deviated from 3 point median by number of std dev (bin 1): 5.00
 Speed Spikes, u and v deviated from 3 point median by number of std dev (bin 26): 2.94
 Speed Spikes, u and v deviated from 3 point median by number of std dev (bin 32): 2.00

Total number of ensembles: 24637
 Interval between ensembles: 20 min
 Original number of bins: 32
 Number of acceptable velocity bins: 26

Flagged values have been replaced by error codes: -999.99 for temperature and depth, -999 for velocity and intensity. For observations where velocity is flagged, error codes have been inserted into speed, direction and vertical velocity files

Number of temperature ens. flagged: 0

Below are for each bin listed ensembles flagged for intensity in number and for velocity in number and % of total ens.number. For velocity is also shown the number of gaps of various lengths (gap length = number of consecutive flagged ens.)

Bin	Int. Velocity			Number of velocity gaps of length									
	ens. flgd	ens. flgd	% flgd	1	2	3	4	5	6-10	11-20	21-30	31-50	>50
1	0	110	0	94	6	0	1	0	0	0	0	0	0
2	0	120	0	103	7	1	0	0	0	0	0	0	0
3	0	195	1	159	18	0	0	0	0	0	0	0	0
4	0	524	2	407	50	3	2	0	0	0	0	0	0
5	0	794	3	583	76	15	2	1	0	0	0	0	0
6	0	1119	5	821	100	22	4	3	0	0	0	0	0
7	0	1568	6	1073	178	32	8	2	0	0	0	0	0
8	0	1644	7	1135	165	43	11	1	0	0	0	0	0
9	0	1181	5	803	112	28	12	3	1	0	0	0	0
10	0	669	3	468	64	18	3	0	1	0	0	0	0
11	0	369	1	270	31	8	0	0	2	0	0	0	0
12	0	286	1	218	23	1	3	0	1	0	0	0	0
13	0	258	1	187	18	10	1	0	0	0	0	0	0
14	0	250	1	197	17	3	1	1	0	0	0	0	0
15	0	272	1	200	16	3	2	2	2	0	0	0	0
16	0	279	1	199	27	7	1	0	0	0	0	0	0
17	0	241	1	191	18	3	1	0	0	0	0	0	0
18	0	305	1	246	23	4	0	0	0	0	0	0	0
19	0	716	3	329	56	20	6	5	9	5	1	0	0
20	0	2027	8	426	93	26	20	10	31	33	17	1	0
21	0	3861	16	537	138	57	39	18	54	47	38	16	0
22	0	5884	24	776	207	100	49	43	118	88	36	20	3
23	0	7476	30	880	241	121	85	53	173	107	45	27	0
24	0	8759	36	909	279	141	87	77	164	149	61	25	4
25	0	10157	41	928	308	132	104	79	175	138	79	36	10
26	0	12617	51	1208	403	197	109	83	173	136	79	54	24

NWFC1606 ADCP 1285

Deployment: NWFC1606 updated 2017/10/23
 Instrument no.: 1285
 Instrument freq.: 75
 Latitude: 61 23.407 N
 Longitude: 08 18.941 W
 Bottom depth: 832
 Instrument depth: 826
 Center depth of first bin: 790
 Bin length: 25
 Number of bins: 26
 Number of first ensemble: 292
 Time of first ensemble: 2016 06 10 11 00
 Number of last ensemble: 24928
 Time of last ensemble: 2017 05 18 15 00
 Time between ensembles (min.): 20
 All directions have been corrected by adding: -6.0

Below is listed for each bin the average speed (scalar average) and the average velocity magnitude and direction formed as a vectorial average of non-flagged (Good) observations. The last column shows the number of good values used in parts per thousand

Bin no.	Depth m	Height m	Speed mm/s	Vel mm/s	Dir deg	Good ppt
1	790	42	995	988	302	996
2	765	67	1052	1046	305	995
3	740	92	1055	1050	307	992
4	715	117	1029	1023	309	979
5	690	142	966	959	309	968
6	665	167	823	811	310	955
7	640	192	608	563	311	936
8	615	217	412	293	316	933
9	590	242	296	99	330	952
10	565	267	243	32	63	973
11	540	292	219	68	109	985
12	515	317	209	92	117	988
13	490	342	206	107	120	990
14	465	367	204	115	122	990
15	440	392	204	119	123	989
16	415	417	205	121	125	989
17	390	442	205	122	126	990
18	365	467	206	123	127	988
19	340	492	207	124	128	971
20	315	517	209	122	129	918
21	290	542	211	121	129	843
22	265	567	213	121	129	761
23	240	592	215	123	129	697
24	215	617	217	123	129	644
25	190	642	216	121	129	588
26	165	667	218	122	131	488

NWFC1606 ADCP 1285

Frequency of high speeds.

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Frequency (in parts per thousand) of speeds equal to or exceeding specified vales.

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Bin Depth	Speed (cm/s)																	
no. m	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180
1 790	995	995	995	995	993	986	963	898	746	507	243	75	15	2	0	0	0	0
2 765	995	995	995	994	993	988	975	939	848	663	394	151	36	5	0	0	0	0
3 740	992	992	992	991	990	985	973	936	850	675	407	157	35	4	0	0	0	0
4 715	979	978	978	977	975	969	952	902	793	600	336	119	24	3	0	0	0	0
5 690	967	966	963	956	943	919	874	790	656	465	254	92	22	3	0	0	0	0
6 665	946	924	897	863	822	758	675	560	427	286	155	60	14	3	0	0	0	0
7 640	897	812	719	640	563	481	390	294	206	130	69	26	5	0	0	0	0	0
8 615	847	670	511	388	301	229	168	116	78	44	21	8	1	0	0	0	0	0
9 590	821	570	357	221	142	95	62	38	22	12	7	2	0	0	0	0	0	0
10 565	818	516	280	131	64	36	20	12	6	3	1	0	0	0	0	0	0	0
11 540	814	489	229	85	31	14	6	2	0	0	0	0	0	0	0	0	0	0
12 515	811	472	205	66	16	4	2	0	0	0	0	0	0	0	0	0	0	0
13 490	813	464	194	60	12	2	1	0	0	0	0	0	0	0	0	0	0	0
14 465	813	462	188	58	12	2	0	0	0	0	0	0	0	0	0	0	0	0
15 440	808	455	189	58	14	2	0	0	0	0	0	0	0	0	0	0	0	0
16 415	805	460	191	61	15	2	0	0	0	0	0	0	0	0	0	0	0	0
17 390	806	457	194	64	16	3	0	0	0	0	0	0	0	0	0	0	0	0
18 365	806	456	193	66	17	3	1	0	0	0	0	0	0	0	0	0	0	0
19 340	790	451	197	70	20	4	1	0	0	0	0	0	0	0	0	0	0	0
20 315	749	429	192	68	21	6	1	0	0	0	0	0	0	0	0	0	0	0
21 290	688	393	182	68	21	5	1	0	0	0	0	0	0	0	0	0	0	0
22 265	619	358	168	66	22	6	1	0	0	0	0	0	0	0	0	0	0	0
23 240	570	332	158	65	22	6	1	0	0	0	0	0	0	0	0	0	0	0
24 215	527	311	151	62	21	6	1	0	0	0	0	0	0	0	0	0	0	0
25 190	482	280	136	57	18	5	1	0	0	0	0	0	0	0	0	0	0	0
26 165	397	235	114	50	17	5	1	0	0	0	0	0	0	0	0	0	0	0

NWFC1606 ADCP 1285

Harmonic constants for constituent M2 for deployment NWFC1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	790	15	102	14	289	20	1	137	285	A
02	765	18	96	16	283	24	2	139	279	A
03	740	20	95	19	285	28	2	136	279	A
04	715	20	95	24	292	31	5	129	285	A
05	690	25	102	37	305	44	8	124	298	A
06	665	48	116	48	314	67	11	135	305	A
07	640	71	129	47	320	85	8	147	312	A
08	615	67	144	20	343	70	6	164	326	A
09	590	56	174	25	122	58	19	17	169	A
10	565	56	206	55	137	65	45	44	173	A
11	540	61	225	71	145	74	58	67	164	A
12	515	63	238	78	153	79	63	77	163	A
13	490	63	248	81	162	82	63	84	166	A
14	465	63	257	83	170	84	63	84	174	A
15	440	63	265	86	178	86	63	85	181	A
16	415	64	272	88	184	88	64	87	186	A
17	390	66	278	91	189	91	66	89	190	A
18	365	67	282	92	192	92	67	90	192	A
19	340	68	286	95	196	95	68	91	195	A
20	315	70	289	99	198	99	70	91	197	A
21	290	72	291	100	200	100	72	92	199	A
22	265	75	293	100	202	100	75	93	200	A
23	240	75	294	98	203	98	74	92	201	A
24	215	77	298	100	203	100	76	99	196	A
25	190	77	297	102	207	102	77	90	207	A
26	165	78	303	109	210	109	78	94	207	A

Harmonic constants for constituent S2 for deployment NWFC1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	790	5	111	3	321	5	1	150	299	A
02	765	6	105	4	305	7	1	148	291	A
03	740	6	104	5	303	8	1	143	291	A
04	715	9	102	5	326	10	3	154	292	A
05	690	12	124	7	0	13	5	158	314	A
06	665	19	159	12	13	22	6	150	348	A
07	640	29	172	13	18	31	5	157	356	A
08	615	27	190	5	60	27	4	173	11	A
09	590	22	229	12	169	23	10	20	220	A
10	565	24	266	23	187	26	21	35	237	A
11	540	25	280	27	197	28	24	67	217	A
12	515	23	288	30	204	30	23	78	214	A
13	490	22	293	30	210	31	22	80	217	A
14	465	21	299	29	216	29	20	81	222	A
15	440	20	307	28	223	28	20	83	228	A
16	415	21	316	29	228	29	21	88	229	A
17	390	21	322	31	230	31	21	91	230	A
18	365	22	328	33	232	33	22	97	227	A
19	340	24	330	33	236	33	24	95	233	A
20	315	25	330	33	241	33	24	88	243	A
21	290	26	329	32	250	33	25	70	265	A
22	265	25	331	31	249	32	24	74	261	A
23	240	27	328	31	247	32	26	68	265	A
24	215	28	332	31	250	32	27	63	274	A
25	190	24	335	32	255	33	23	75	266	A
26	165	27	338	35	246	35	27	93	244	A

NWFC1606 ADCP 1285

Harmonic constants for constituent N2 for deployment NWFC1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	790	5	34	4	253	6	2	137	232	A
02	765	5	38	3	252	6	2	146	229	A
03	740	6	48	5	251	8	2	138	238	A
04	715	7	51	7	261	10	3	134	246	A
05	690	12	65	11	270	15	3	137	257	A
06	665	16	69	14	268	21	4	139	257	A
07	640	21	77	16	275	26	4	143	263	A
08	615	19	88	13	293	23	4	148	275	A
09	590	16	107	9	322	18	5	154	294	A
10	565	13	122	4	21	13	4	176	303	A
11	540	9	148	7	105	11	4	36	133	A
12	515	8	184	11	125	12	6	62	140	A
13	490	9	200	15	127	15	8	75	135	A
14	465	11	211	17	133	18	11	78	141	A
15	440	13	223	19	138	19	13	85	141	A
16	415	13	228	20	142	20	13	85	145	A
17	390	15	236	20	146	20	15	89	146	A
18	365	15	241	21	153	21	15	86	156	A
19	340	15	245	21	159	21	15	84	163	A
20	315	15	249	21	162	21	15	84	166	A
21	290	15	252	22	162	22	15	90	162	A
22	265	14	255	21	163	21	14	93	161	A
23	240	15	262	21	171	21	15	92	170	A
24	215	16	267	23	174	23	16	94	171	A
25	190	19	265	23	174	23	19	93	172	A
26	165	20	266	24	175	24	20	91	175	A

Harmonic constants for constituent O1 for deployment NWFC1606.

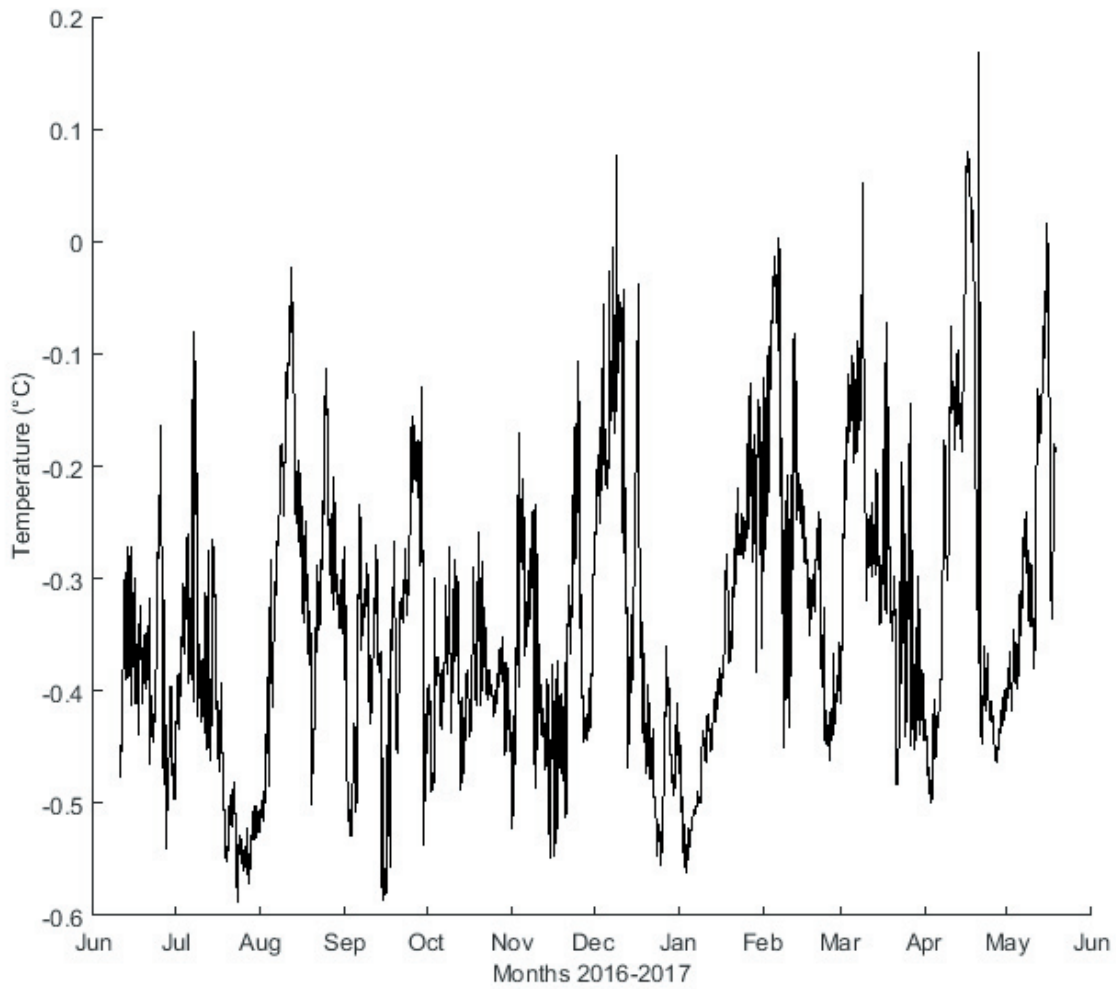
Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	790	13	345	16	150	20	3	129	156	C
02	765	14	347	16	151	21	3	130	157	C
03	740	14	345	17	157	22	2	130	161	C
04	715	15	354	20	163	25	2	127	167	C
05	690	23	2	25	170	34	4	132	176	C
06	665	37	1	34	178	51	1	137	179	C
07	640	44	0	37	181	57	0	140	181	A
08	615	38	4	32	187	50	1	140	185	A
09	590	29	12	26	188	39	1	138	190	C
10	565	20	17	20	188	29	2	135	192	C
11	540	16	18	16	196	23	0	135	197	C
12	515	16	18	14	194	22	1	138	196	C
13	490	16	19	14	193	21	1	140	197	C
14	465	16	22	13	194	21	1	141	199	C
15	440	16	25	14	197	21	2	139	202	C
16	415	16	25	15	194	22	2	136	200	C
17	390	15	22	15	193	22	2	135	198	C
18	365	15	18	15	193	21	1	134	195	C
19	340	15	12	15	190	21	0	135	191	C
20	315	14	9	13	195	19	1	135	192	A
21	290	14	360	11	192	17	2	142	184	A
22	265	15	6	11	187	19	0	143	186	A
23	240	17	359	12	171	21	1	145	176	C
24	215	17	351	11	164	20	1	146	168	C
25	190	16	353	10	164	18	1	149	170	C
26	165	13	3	7	194	15	1	150	186	A

NWFC1606 ADCP 1285

Harmonic constants for constituent K1 for deployment NWFC1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	790	12	230	12	41	17	1	135	45	C
02	765	11	223	13	36	17	1	130	39	C
03	740	13	223	13	37	19	1	134	40	C
04	715	13	222	17	43	21	0	127	43	A
05	690	17	234	22	53	28	0	128	53	C
06	665	32	249	32	64	45	2	135	66	C
07	640	44	251	40	68	59	1	138	69	C
08	615	42	254	39	71	57	1	137	72	C
09	590	32	254	29	75	43	1	137	74	A
10	565	21	253	20	71	29	1	136	72	C
11	540	18	251	18	66	25	1	135	69	C
12	515	16	253	16	68	23	1	134	70	C
13	490	15	261	16	74	22	1	133	77	C
14	465	14	264	16	73	21	2	132	78	C
15	440	14	261	17	73	22	2	129	76	C
16	415	13	257	19	69	23	1	125	72	C
17	390	12	258	20	67	23	2	121	70	C
18	365	12	260	19	67	22	2	122	70	C
19	340	13	260	21	69	24	2	121	72	C
20	315	13	261	18	70	22	2	127	74	C
21	290	15	252	18	76	23	1	130	74	A
22	265	14	250	18	82	23	2	128	78	A
23	240	12	228	16	72	20	4	127	64	A
24	215	11	227	10	57	15	1	137	51	A
25	190	10	255	10	58	14	2	133	66	C
26	165	13	286	13	77	18	5	134	91	C

NWFC1606 SBE39plus 07752



NWNB1606

Latitude: 62°55.070'N

Longitude: 006°04.975'W

Echo sound depth: 982 m

Bottom depth corr.: 968 m

Time of deployment: 8/6 - 2016 2318 UTC

Time of recovery: 22/5 - 2017 0304 UTC

ADCP:

Instrument no.: RDI ADCP 1644

Instrument frequency: 75 kHz

Height above bottom: 254 m

Depth: 714 m

Time of first data: 8/6 - 2016 2340 UTC

Time of last data: 22/5 - 2017 0240 UTC

Sample interval: 20 min

No. of ensembles: 24994

Pings per ens.: 1

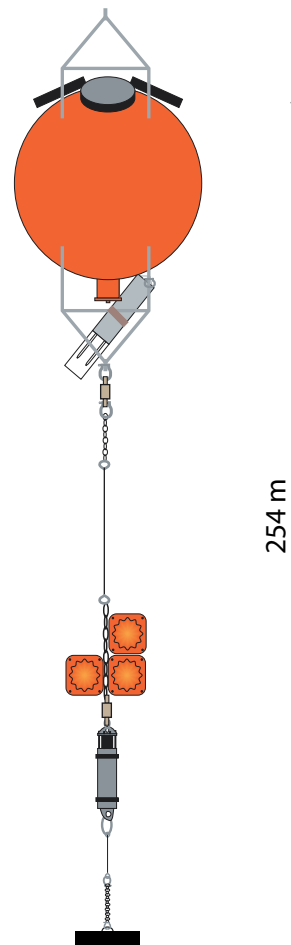
Binlength: 25 m

Depth of first bin: 678 m

No. of bins: 24

Data:

All data ok.



NWNB1606 ADCP 1644

Error statistics for deployment: NWNB1606 updated 2017/07/14

 Temperature edited
 Surface distance not edited
 Heading, pitch and roll not edited
 Intensity not edited

Velocity edited using these data filters:

Maximum Speed, number of std dev for each bin: 5.0
 Maximum Error Velocity (erv_tr+0.1*spd): 100.0
 Speed Spikes, u and v deviated from 3 point median by number of std dev (bin 1): 6.00
 Speed Spikes, u and v deviated from 3 point median by number of std dev (bin 24): 3.22
 Speed Spikes, u and v deviated from 3 point median by number of std dev (bin 32): 1.00
 Vertical Speed Spikes, u and v deviated from 3 point median by number of std dev: 4.0

Total number of ensembles: 24994
 Interval between ensembles: 20 min
 Original number of bins: 32
 Number of acceptable velocity bins: 24

Flagged values have been replaced by error codes: -999.99 for temperature and depth, -999 for velocity and intensity. For observations where velocity is flagged, error codes have been inserted into speed, direction and vertical velocity files

Number of temperature ens. flagged: 0

Below are for each bin listed ensembles flagged for intensity in number and for velocity in number and % of total ens.number. For velocity is also shown the number of gaps of various lengths (gap length = number of consecutive flagged ens.)

Bin	Int. Velocity			Number of velocity gaps of length									
	ens. flgd	ens. flgd	% flgd	1	2	3	4	5	6-10	11-20	21-30	31-50	>50
1	0	18	0	18	0	0	0	0	0	0	0	0	0
2	0	42	0	42	0	0	0	0	0	0	0	0	0
3	0	55	0	52	0	1	0	0	0	0	0	0	0
4	0	60	0	58	1	0	0	0	0	0	0	0	0
5	0	74	0	66	4	0	0	0	0	0	0	0	0
6	0	62	0	53	3	1	0	0	0	0	0	0	0
7	0	104	0	89	6	1	0	0	0	0	0	0	0
8	0	82	0	72	3	0	1	0	0	0	0	0	0
9	0	94	0	87	2	1	0	0	0	0	0	0	0
10	0	99	0	87	6	0	0	0	0	0	0	0	0
11	0	136	1	110	11	0	1	0	0	0	0	0	0
12	0	159	1	127	13	2	0	0	0	0	0	0	0
13	0	179	1	158	9	1	0	0	0	0	0	0	0
14	0	244	1	201	14	5	0	0	0	0	0	0	0
15	0	267	1	215	20	4	0	0	0	0	0	0	0
16	0	322	1	247	29	3	2	0	0	0	0	0	0
17	0	376	2	266	31	7	3	0	2	0	0	0	0
18	0	798	3	364	52	25	7	6	16	3	1	0	0
19	0	1715	7	396	78	48	31	8	26	20	7	5	0
20	0	2695	11	394	111	40	34	15	28	14	16	24	0
21	0	3901	16	391	124	58	23	22	31	31	23	34	4
22	0	5509	22	414	120	57	28	21	36	56	37	44	12
23	0	7136	29	462	103	56	34	15	54	61	40	58	26
24	0	8988	36	575	147	65	43	23	51	48	38	81	40

NWNB1606 ADCP 1644

Deployment: NWNB1606 updated 2017/07/14
 Instrument no.: 1644
 Instrument freq.: 75
 Latitude: 62 55.070 N
 Longitude: 06 04.975 W
 Bottom depth: 968
 Instrument depth: 714
 Center depth of first bin: 678
 Bin length: 25
 Number of bins: 24
 Number of first ensemble: 186
 Time of first ensemble: 2016 06 08 23 40
 Number of last ensemble: 25179
 Time of last ensemble: 2017 05 22 02 40
 Time between ensembles (min.): 20
 All directions have been corrected by adding: -5.0

Below is listed for each bin the average speed (scalar average) and the average velocity magnitude and direction formed as a vectorial average of non-flagged (Good) observations. The last column shows the number of good values used in parts per thousand

Bin no.	Depth m	Height m	Speed mm/s	Vel mm/s	Dir deg	Good ppt
1	678	290	129	25	80	999
2	653	315	127	21	77	998
3	628	340	126	17	72	998
4	603	365	126	14	65	998
5	578	390	128	10	55	997
6	553	415	130	7	35	998
7	528	440	132	4	18	996
8	503	465	134	2	25	997
9	478	490	138	4	108	996
10	453	515	144	12	118	996
11	428	540	150	22	119	995
12	403	565	157	35	120	994
13	378	590	166	50	119	993
14	353	615	177	65	117	990
15	328	640	188	78	119	989
16	303	665	201	93	119	987
17	278	690	215	107	118	985
18	253	715	230	119	118	968
19	228	740	243	127	117	931
20	203	765	252	131	117	892
21	178	790	259	132	118	844
22	153	815	265	130	121	780
23	128	840	272	127	123	714
24	103	865	282	125	125	640

NWNB1606 ADCP 1644

Frequency of high speeds.

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Frequency (in parts per thousand) of speeds equal to or exceeding specified vales.

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Bin Depth	Speed (cm/s)																		
no. m	10	20	30	40	50	60	70	80	90	100	110	120	130	140	150	160	170	180	
1 678	583	167	38	9	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2 653	574	161	36	8	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
3 628	572	157	34	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
4 603	574	159	32	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
5 578	581	167	29	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
6 553	597	173	31	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
7 528	610	181	34	4	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
8 503	619	186	37	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
9 478	633	202	39	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
10 453	662	224	47	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
11 428	686	254	56	8	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
12 403	708	281	70	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
13 378	735	318	88	18	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0
14 353	757	361	116	26	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
15 328	775	405	145	36	6	0	0	0	0	0	0	0	0	0	0	0	0	0	0
16 303	799	452	182	53	11	1	0	0	0	0	0	0	0	0	0	0	0	0	0
17 278	818	491	227	77	18	3	0	0	0	0	0	0	0	0	0	0	0	0	0
18 253	823	518	264	108	32	7	1	0	0	0	0	0	0	0	0	0	0	0	0
19 228	800	523	282	133	51	14	2	0	0	0	0	0	0	0	0	0	0	0	0
20 203	772	509	287	151	66	21	4	0	0	0	0	0	0	0	0	0	0	0	0
21 178	733	492	279	152	75	29	7	1	0	0	0	0	0	0	0	0	0	0	0
22 153	676	455	266	149	81	38	11	2	0	0	0	0	0	0	0	0	0	0	0
23 128	623	423	254	146	82	42	15	3	0	0	0	0	0	0	0	0	0	0	0
24 103	561	388	241	145	84	46	21	5	0	0	0	0	0	0	0	0	0	0	0

NWNB1606 ADCP 1644

Harmonic constants for constituent M2 for deployment NWNB1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	678	71	268	40	127	78	22	154	96	A
02	653	72	270	39	129	79	23	155	97	A
03	628	75	271	39	134	80	25	157	98	A
04	603	78	272	40	141	83	28	159	99	A
05	578	84	273	43	147	88	33	160	100	A
06	553	89	274	46	153	93	38	162	101	A
07	528	94	276	47	159	97	41	164	103	A
08	503	100	280	49	170	101	45	168	105	A
09	478	107	285	51	184	107	50	174	108	A
10	453	114	291	55	199	114	55	179	111	A
11	428	116	297	58	213	116	57	4	295	A
12	403	118	301	61	223	119	60	8	297	A
13	378	121	304	65	230	122	61	11	298	A
14	353	122	308	68	236	124	63	13	301	A
15	328	120	311	71	242	124	64	17	302	A
16	303	119	314	71	249	124	62	19	305	A
17	278	116	319	73	256	123	62	22	307	A
18	253	118	322	78	259	125	65	24	309	A
19	228	120	324	83	261	129	68	25	310	A
20	203	120	323	85	262	130	69	27	308	A
21	178	122	325	84	263	131	69	26	311	A
22	153	121	326	81	266	130	65	26	313	A
23	128	118	329	79	270	128	63	26	315	A
24	103	113	332	78	274	123	61	27	318	A

Harmonic constants for constituent S2 for deployment NWNB1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	678	24	309	13	164	27	7	155	135	A
02	653	25	310	13	167	27	7	155	137	A
03	628	26	311	13	172	28	8	156	139	A
04	603	28	311	14	182	30	10	160	138	A
05	578	31	313	15	192	32	13	163	139	A
06	553	34	316	17	204	35	16	166	142	A
07	528	36	320	19	214	37	18	169	145	A
08	503	38	319	20	218	38	19	172	143	A
09	478	38	320	21	219	39	20	172	144	A
10	453	38	326	19	226	38	19	174	149	A
11	428	38	332	18	240	38	18	179	153	A
12	403	39	339	20	253	39	20	3	338	A
13	378	40	342	21	265	41	20	9	338	A
14	353	39	347	20	274	39	19	11	341	A
15	328	37	353	21	284	38	19	16	345	A
16	303	34	357	23	296	36	19	25	343	A
17	278	32	1	22	303	35	17	28	346	A
18	253	31	4	23	309	35	17	30	349	A
19	228	33	9	26	315	38	18	35	350	A
20	203	36	10	29	311	41	22	33	351	A
21	178	39	6	28	300	42	24	25	351	A
22	153	37	3	28	295	39	24	27	345	A
23	128	40	6	25	297	42	23	18	355	A
24	103	41	11	25	299	42	23	15	3	A

NWNB1606 ADCP 1644

Harmonic constants for constituent N2 for deployment NWNB1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	678	17	248	9	112	18	6	157	76	A
02	653	18	251	10	122	19	7	158	79	A
03	628	20	253	10	129	21	8	161	80	A
04	603	21	256	11	139	21	9	164	83	A
05	578	21	257	11	141	21	9	164	84	A
06	553	21	261	10	145	21	9	166	86	A
07	528	21	265	9	152	21	8	169	89	A
08	503	21	263	9	159	21	9	172	87	A
09	478	22	269	10	174	22	10	177	91	A
10	453	24	273	11	187	24	11	2	271	A
11	428	28	277	15	196	28	15	6	274	A
12	403	27	280	15	199	28	14	7	277	A
13	378	23	283	11	200	23	11	4	281	A
14	353	23	290	12	213	23	11	9	286	A
15	328	21	300	13	228	22	12	15	292	A
16	303	19	304	11	243	20	9	19	295	A
17	278	18	303	10	260	20	6	25	295	A
18	253	20	301	12	256	22	7	26	291	A
19	228	20	300	12	244	22	10	24	289	A
20	203	22	303	12	247	23	9	20	295	A
21	178	20	306	17	261	24	10	38	288	A
22	153	24	302	19	257	28	11	36	286	A
23	128	23	298	19	261	29	9	39	283	A
24	103	22	303	21	262	29	11	42	284	A

Harmonic constants for constituent O1 for deployment NWNB1606.

Bin	Depth m	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	678	6	75	2	226	6	1	164	252	C
02	653	6	67	2	235	6	0	158	245	C
03	628	5	69	4	242	7	0	146	247	C
04	603	5	54	5	237	7	0	139	235	A
05	578	6	43	5	246	8	2	135	234	A
06	553	5	45	5	241	7	1	135	233	A
07	528	6	50	5	244	8	1	145	235	A
08	503	7	46	5	248	9	2	147	233	A
09	478	8	50	4	275	9	3	158	237	A
10	453	8	44	4	286	8	3	166	229	A
11	428	9	39	5	269	10	4	156	228	A
12	403	12	44	7	287	12	6	160	234	A
13	378	12	49	5	302	12	5	171	233	A
14	353	13	35	5	283	13	5	170	219	A
15	328	14	26	7	280	14	7	170	211	A
16	303	14	32	6	286	14	6	172	216	A
17	278	15	43	7	300	15	7	173	226	A
18	253	15	38	6	297	15	6	174	221	A
19	228	14	27	6	270	15	5	168	211	A
20	203	13	15	8	284	13	8	178	196	A
21	178	10	29	5	251	11	3	160	215	A
22	153	16	22	7	229	17	3	159	206	A
23	128	18	35	7	206	19	1	158	214	C
24	103	14	31	8	210	16	0	150	211	C

NWNB1606 ADCP 1644

Harmonic constants for constituent K1 for deployment NWNB1606.

Bin	Depth m	E-ampl mm/sec	E-gphl deg	N-ampl mm/sec	N-gphl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
01	678	6	312	4	186	7	3	152	146	A
02	653	6	308	4	183	6	3	154	141	A
03	628	5	306	4	174	6	3	147	141	A
04	603	4	313	4	179	6	2	135	156	A
05	578	5	297	4	169	6	3	144	135	A
06	553	4	298	5	157	6	2	131	140	A
07	528	5	288	4	158	6	3	140	129	A
08	503	6	288	3	153	6	2	154	118	A
09	478	6	281	5	150	7	3	141	121	A
10	453	7	281	5	165	8	5	150	119	A
11	428	9	278	5	151	9	4	158	107	A
12	403	8	258	6	123	10	4	148	91	A
13	378	10	251	8	127	11	6	148	88	A
14	353	11	251	9	143	12	8	153	90	A
15	328	11	263	11	148	14	9	135	116	A
16	303	13	280	10	150	15	7	146	117	A
17	278	14	285	9	157	15	7	152	118	A
18	253	12	287	9	163	14	7	151	122	A
19	228	7	291	7	185	8	6	134	149	A
20	203	5	163	6	247	6	5	82	241	C
21	178	14	123	3	291	14	1	169	303	C
22	153	27	101	1	305	27	0	178	281	A
23	128	36	97	3	253	36	1	176	277	C
24	103	35	99	3	345	35	3	178	280	A

PLDA16o6

Latitude: 61°38.632'N
Longitude: 009°48.925'W
Echo sounding depth: 1100 m
Bottom depth corr.: 1101 m
Time of deployment: 10/6 - 2016 0502 UTC
Time of recovery: 19/5 - 2017 0611 UTC

MicroCat

Instrument no.: 6094
Height above bottom: 44 m
Instrument depth: 1057 m
Time of first data: 10/6 - 2016 0520 UTC
Time of last data: 19/5 - 2017 0610 UTC
Sample interval: 10 min
No. of ensembles: 49398

Aanderaa

Instrument no.: RCM9 721
Height above bottom: 24 m
Instrument depth: 1077 m
Time of first data: 10/6 - 2016 0600 UTC
Time of last data: 19/5 - 2017 0500 UTC
Sample interval: 60 min
No. of ensembles: 8232

SBE56's

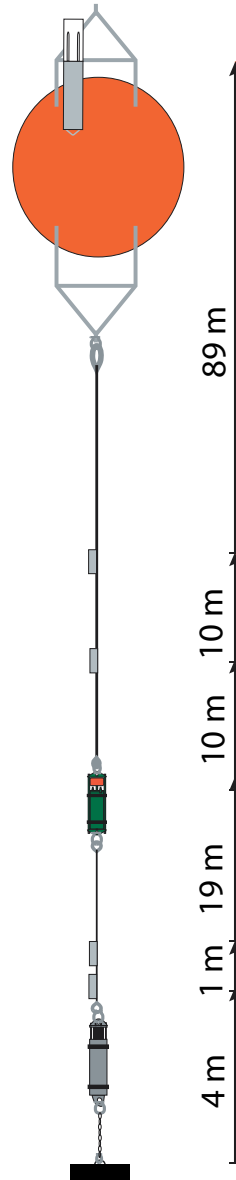
Instrument no.: 6503, 6505
Height above bottom: 4 m, 34 m
Instrument depth: 1097 m, 1067 m
Time of first data: 10/6 - 2016 0549 UTC
Time of last data: 19/5 - 2017 0559 UTC
Sample interval: 10 min
No. of ensembles: 49394

Starmon

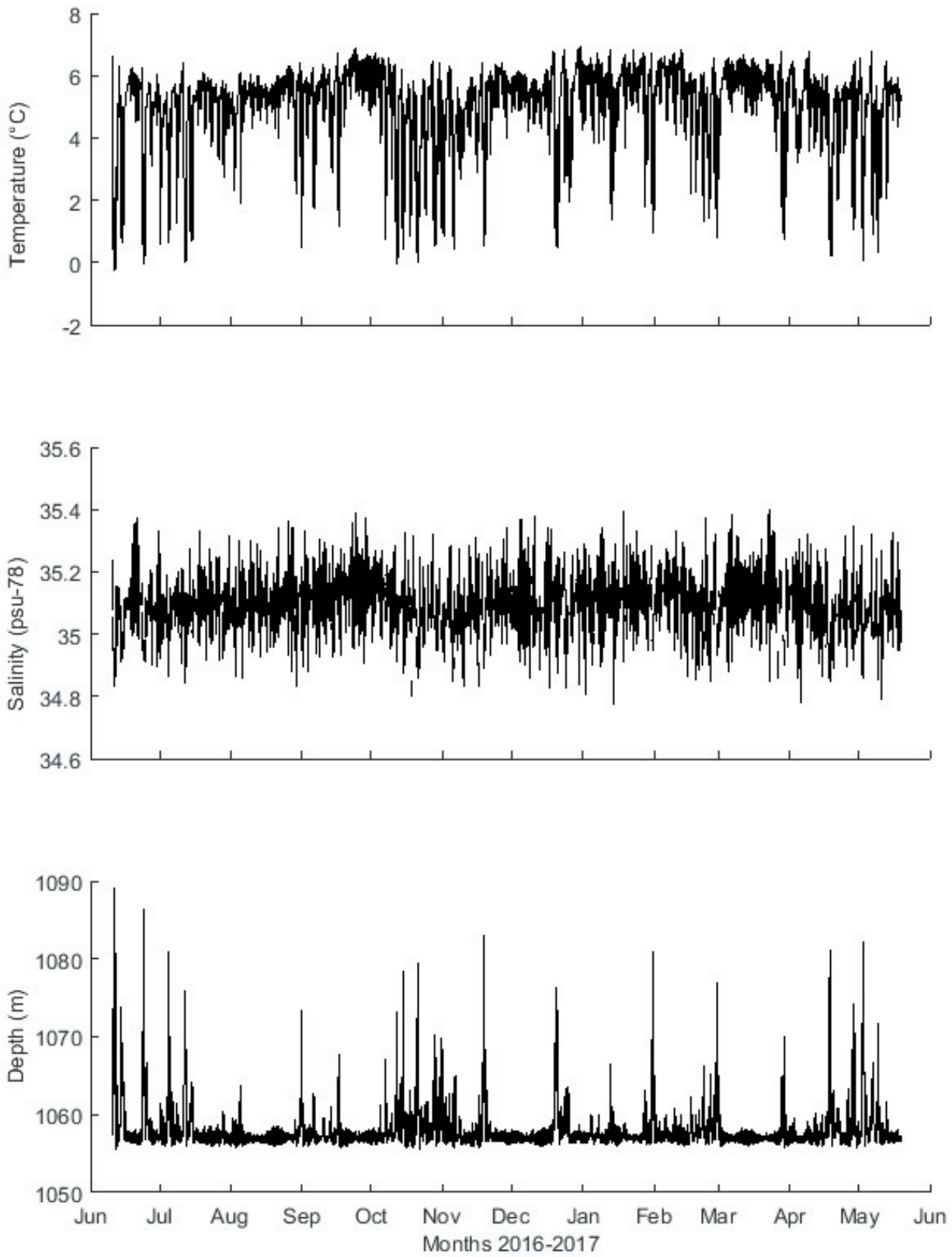
Instrument no.: 0689
Height above bottom: 5 m
Instrument depth: 1096 m
Time of first data: 10/6 - 2016 0620 UTC
Time of last data: 19/5 - 2017 0600 UTC
Sample interval: 10 min
No. of ensembles: 49391

Data:

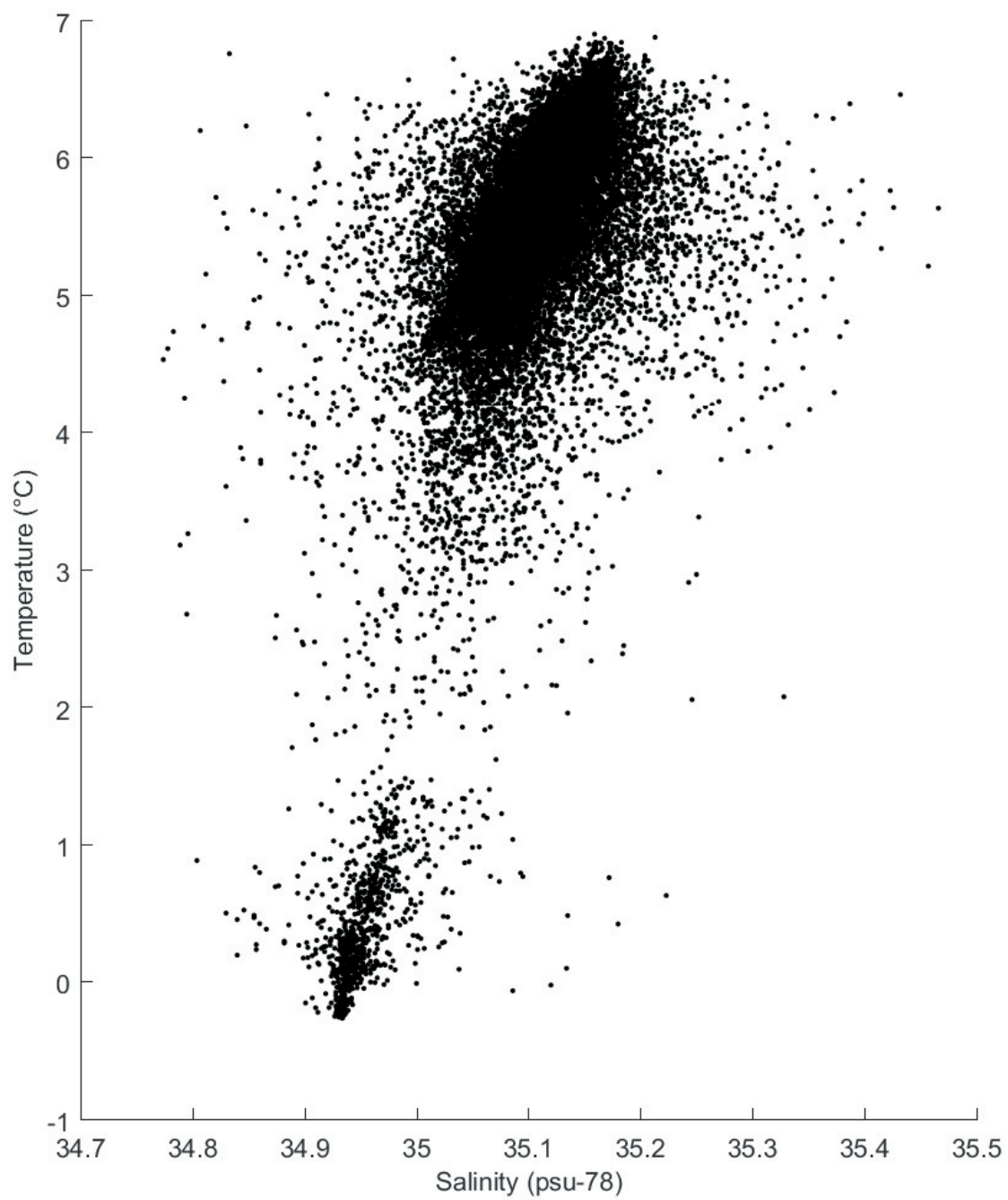
The Aanderaa temperature exceeded maximum temperature interval settings.



PLDA1606 MicroCat 6094



PLDA1606 MicroCat 6094



PLDA1606 Aanderaa 721

Deployment: PLDA1606 analyzed from beginning to end
 Instrument no.: 721
 Instrument type: Aanderaa
 Latitude: 61 38.632 N
 Longitude: 09 48.925 W
 Bottom depth: 1101
 Instrument depth: 1077
 Number of records: 8232
 Time of first record: 2016 06 10 06 00
 Time of last record : 2017 05 19 05 00
 Time between records (min.): 60.000

Parameters	Records OK	Records flagged
Column 1 : Recno		
Column 2- 4: Date		
Column 5- 6: Time		
Column 7 : Temp	7980	252
Column 8 : Speed	8232	0
Column 9 : Direct	8232	0

Comments

Residual current: 412 mm/sec towards: 301 degrees

TIDAL ANALYSIS

Error flagged records interpolated for velocity: 0, records not int.: 0
 Tidal analysis performed on unfiltered data

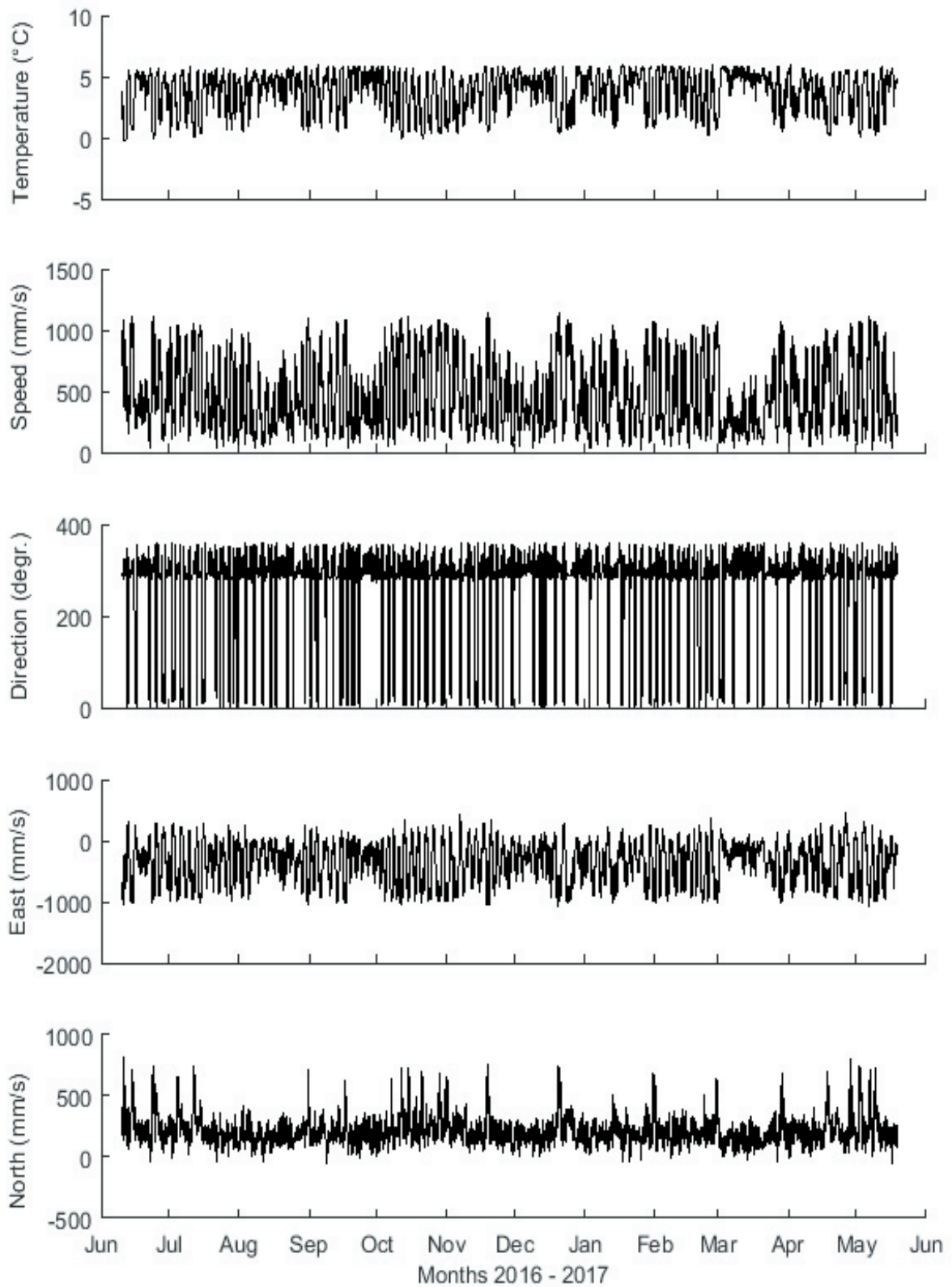
Const	Freq c/hr	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
MM	.00151215	21	351	11	118	22	8	159	163	C
MSF	.00282193	9	28	7	128	10	7	164	196	C
Q1	.03721850	12	226	4	217	12	1	20	225	A
O1	.03873065	19	360	5	244	20	4	173	181	A
NO1	.04026859	23	281	1	45	23	0	179	101	C
P1	.04155259	9	190	3	135	10	3	12	187	A
K1	.04178075	23	227	9	108	24	8	168	50	A
N2	.07899925	17	231	8	177	18	6	17	225	A
M2	.08051140	86	240	33	167	87	31	7	237	A
L2	.08202355	7	300	3	203	7	3	175	123	A
S2	.08333334	42	260	19	172	42	19	1	260	A
K2	.08356149	16	255	10	156	16	10	172	80	A
MK3	.12229210	1	305	0	272	1	0	38	292	A
M4	.16102280	6	69	2	134	6	2	9	72	C
MS4	.16384470	5	121	3	135	6	1	26	124	C

DIRECTIONAL CURRENT DISTRIBUTION (for all nonflagged observations in series)

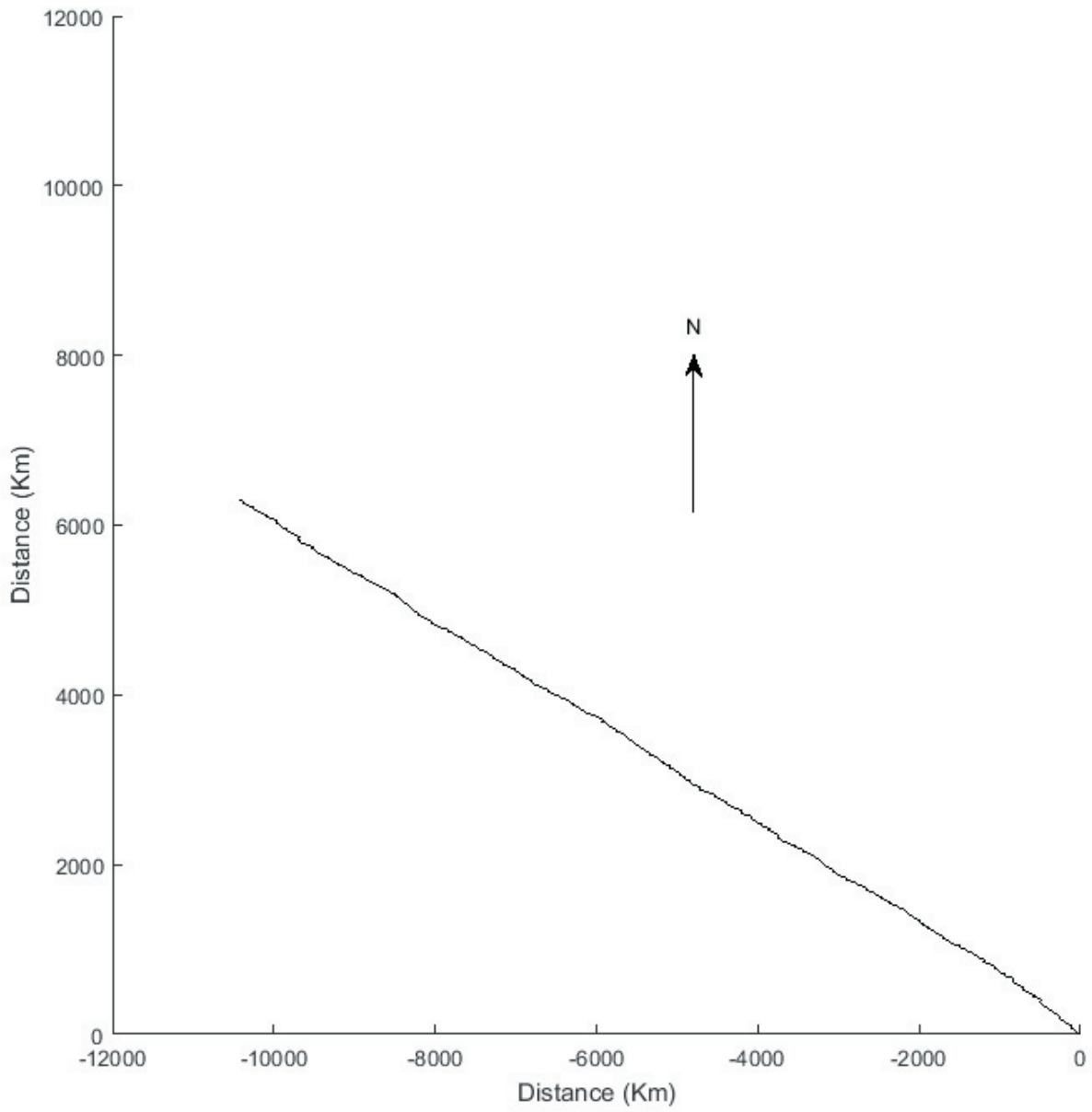
Relative number of observations in parts per thousand (ppt) grouped into speed and direction intervals (of 30 degree width centred around the directions shown)

Speed intervals (mm/s)	Direction intervals												All dir.	
	15	45	75	105	135	165	195	225	255	285	315	345	Tot	Acc
0 - 50	0.24	1	1	0.12	0.49	0	0	0.12	0.12	0.12	0.36	1	4	4
50 - 100	9	4	1	0.24	0.12	0.12	0	0.24	0.12	3	5	6	28	31
100 - 150	21	12	1	0	0	0	0	0	1	6	13	19	74	106
150 - 200	22	15	2	0	0	0	0	0	0.36	8	19	28	96	202
200 - 300	21	22	5	0.12	0	0	0	0	0.12	25	66	43	182	384
300 - 400	7	10	2	0	0	0	0	0	0	43	66	8	135	519
400 - 500	2	4	1	0	0	0	0	0	0	56	37	1	101	620
500 - 600	0.49	0.12	0.12	0	0	0	0	0	0	55	18	0	74	694
600 - 700	0	0	0	0	0	0	0	0	0	53	8	0	61	755
700 - 800	0	0	0	0	0	0	0	0	0	56	4	0	60	815
800 - 900	0	0	0	0	0	0	0	0	0	66	7	0	73	888
900 - 1000	0	0	0	0	0	0	0	0	0	60	12	0	73	961
1000 - 1100	0	0	0	0	0	0	0	0	0	29	9	0	38	998
1100 - 1200	0	0	0	0	0	0	0	0	0	1	0.49	0	2	1000
Total (ppt)	83	67	13	0.49	1	0.12	0	0.36	2	461	267	105		
Rel.flux (ppt)	34	32	6	0.11	0.07	0.01	0	0.05	1	648	232	46		
Avg.spd (mm/s)	193	223	224	107	53	53	0	60	129	652	404	202		
Max.spd (mm/s)	546	507	502	261	94	53	0	76	205	1117	1138	490		

PLDA1606 Aanderaa 721

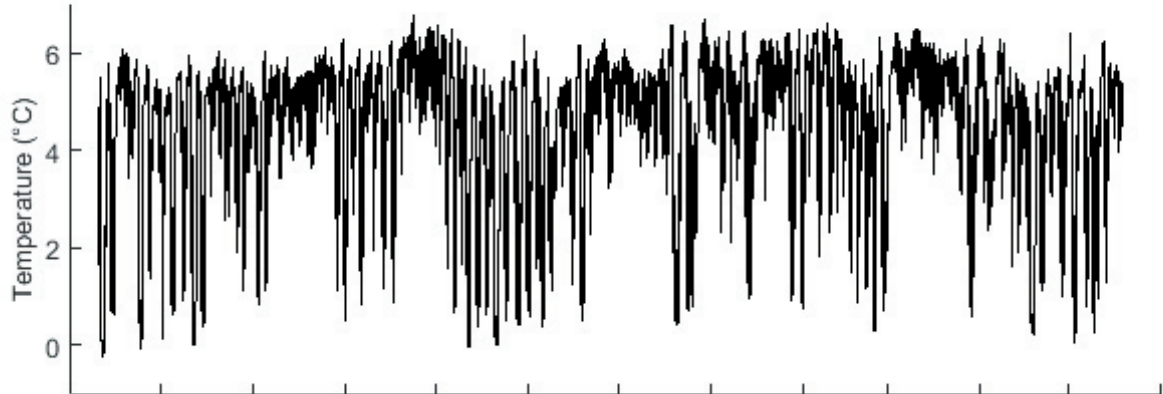


PLDA1606 Aanderaa 721

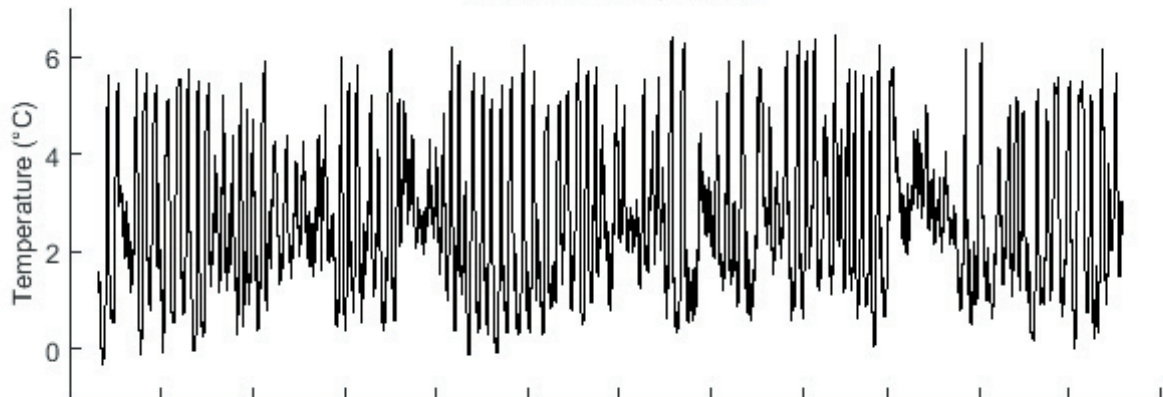


PLDA1606 Temperature recorders

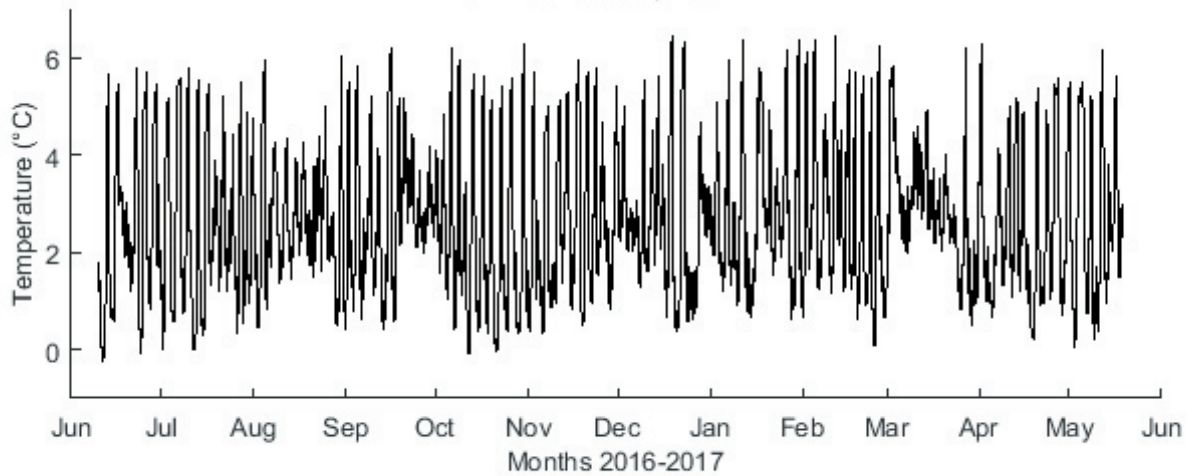
SBE56 06505, 1067m



Starmon 0689, 1096m



SBE56 06503, 1097m



PLDB1606

Latitude: 61°37.851'N
Longitude: 009°46.780'W
Echo sounding depth: 1089 m
Bottom depth corr.: 1086 m
Time of deployment: 10/6 - 2016 0429 UTC
Time of recovery: 19/5 - 2017 0701 UTC

MicroCat

Instrument no.: 5184
Height above bottom: 43 m
Instrument depth: 1043 m
Time of first data: 10/6 - 2016 0450 UTC
Time of last data: 19/5 - 2017 0700 UTC
Sample interval: 10 min
No. of ensembles: 49406

Aanderaa

Instrument no.: RCM9 718
Height above bottom: 23 m
Instrument depth: 1063 m
Time of first data: 10/6 - 2016 1100 UTC
Time of last data: 29/6 - 2016 0900 UTC
Sample interval: 60 min
No. of ensembles: 455

SBE56's

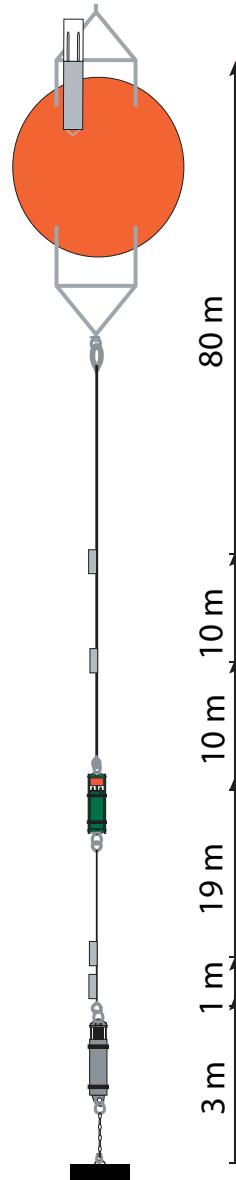
Instrument no.: 6506, 6504
Height above bottom: 3 m, 33 m
Instrument depth: 1083 m, 1053 m
Time of first data: 10/6 - 2016 0519 UTC
Time of last data: 19/5 - 2017 0659 UTC
Sample interval: 10 min
No. of ensembles: 49403

Starmon

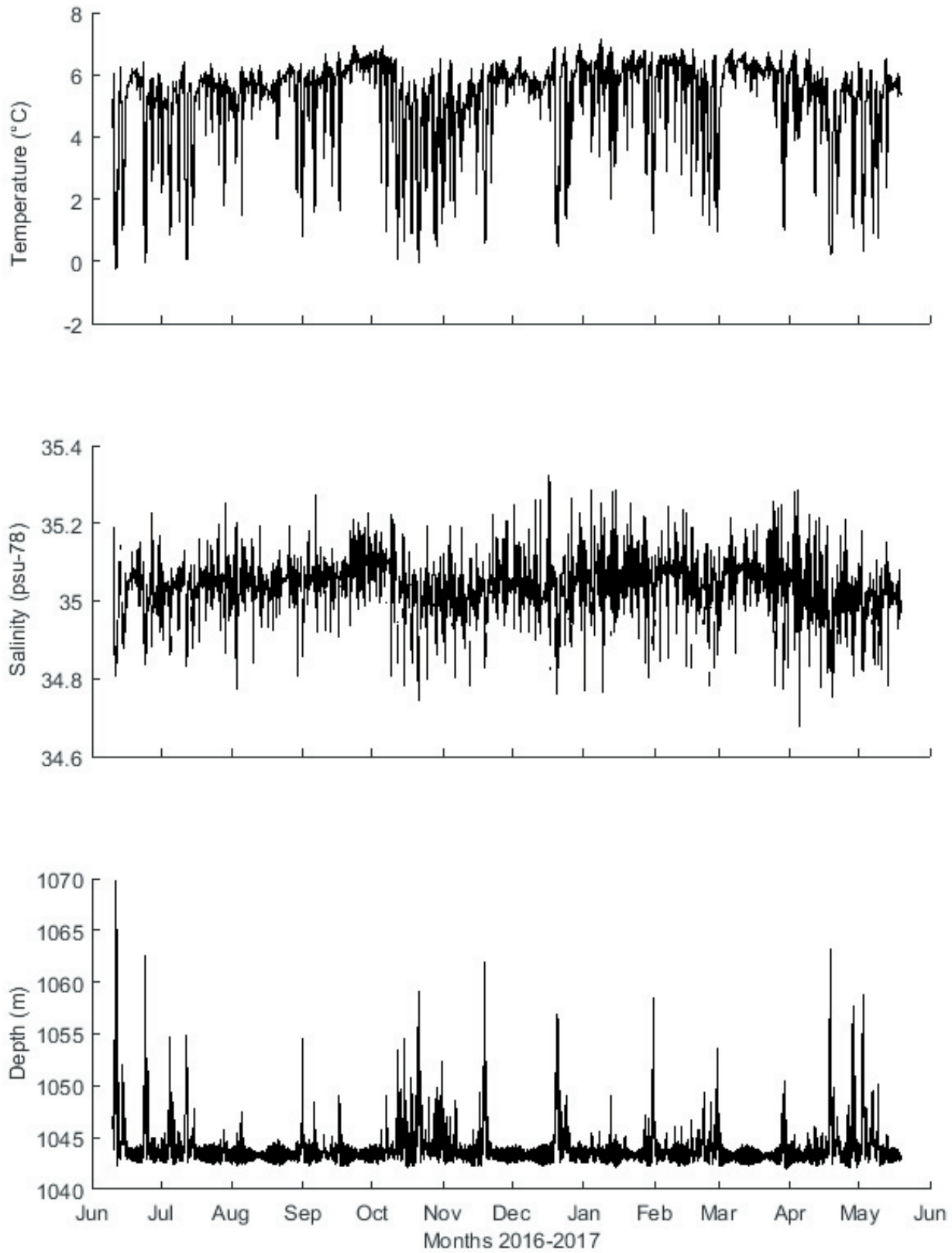
Instrument no.: 1672
Height above bottom: 4 m
Instrument depth: 1082 m
Time of first data: 10/6 - 2016 0530 UTC
Time of last data: 19/5 - 2017 0650 UTC
Sample interval: 10 min
No. of ensembles: 49401

Data:

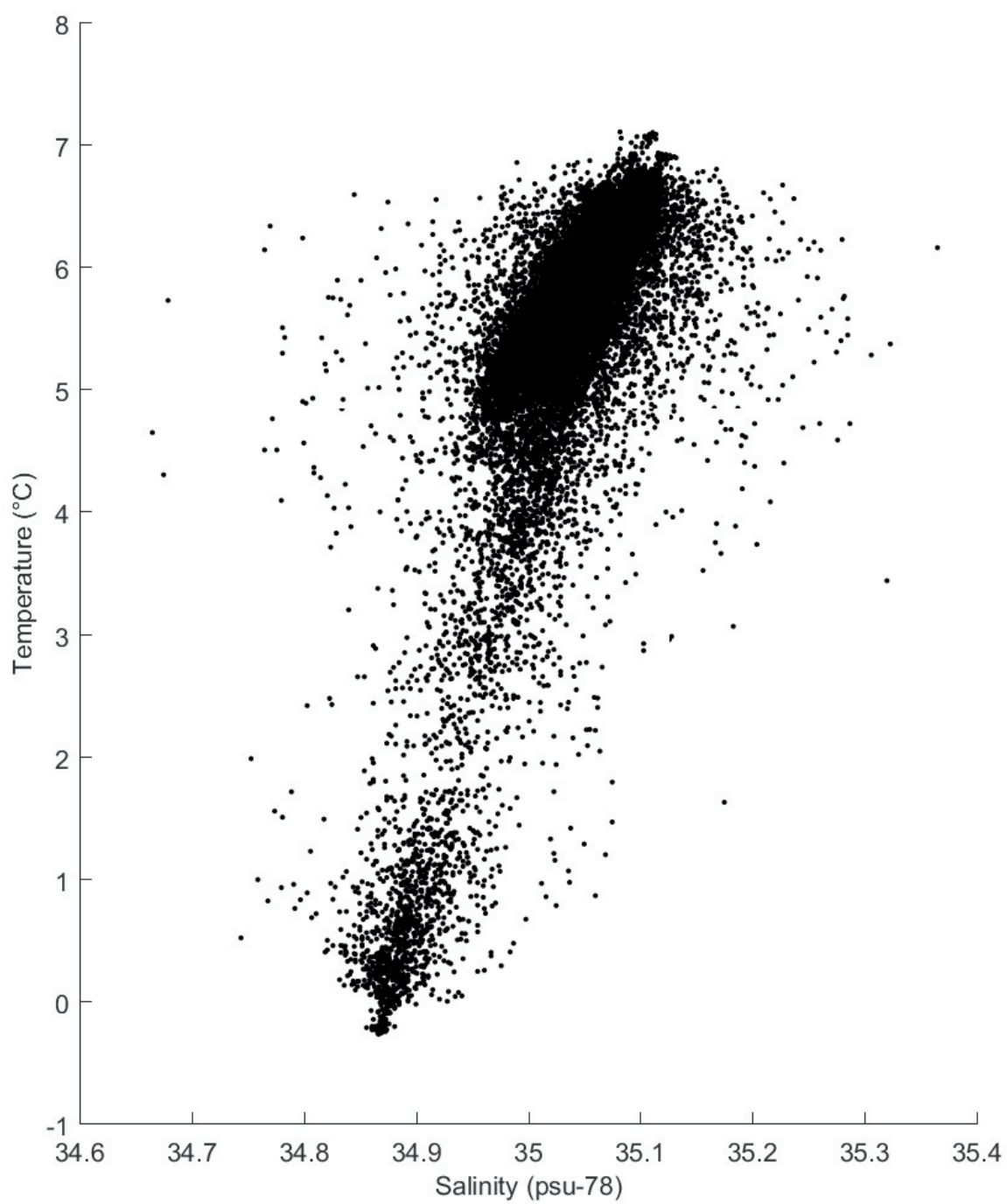
The Aanderaa had a leakage and stopped after 19 days.
The Aanderaa temperature exceeded maximum temperature interval settings.



PLDB1606 MicroCat 5184



PLDB1606 MicroCat 5184



PLDB1606 Aanderaa 718

Deployment: Pldb1606 analyzed from beginning to end
 Instrument no.: 718
 Instrument type: Aanderaa
 Latitude: 61 37.851 N
 Longitude: 09 46.780 W
 Bottom depth: 1086
 Instrument depth: 1063
 Number of records: 455
 Time of first record: 2016 06 10 11 00
 Time of last record: 2016 06 29 09 00
 Time between records (min.): 60.000

Parameters	Records OK	Records flagged
Column 1 : Recno		
Column 2- 4: Date		
Column 5- 6: Time		
Column 7 : Temp	191	264
Column 8 : Speed	455	0
Column 9 : Direct	455	0

Comments

Residual current: 303 mm/sec towards: 304 degrees

TIDAL ANALYSIS

Error flagged records interpolated for velocity: 0, records not int.: 0
 Tidal analysis performed on unfiltered data

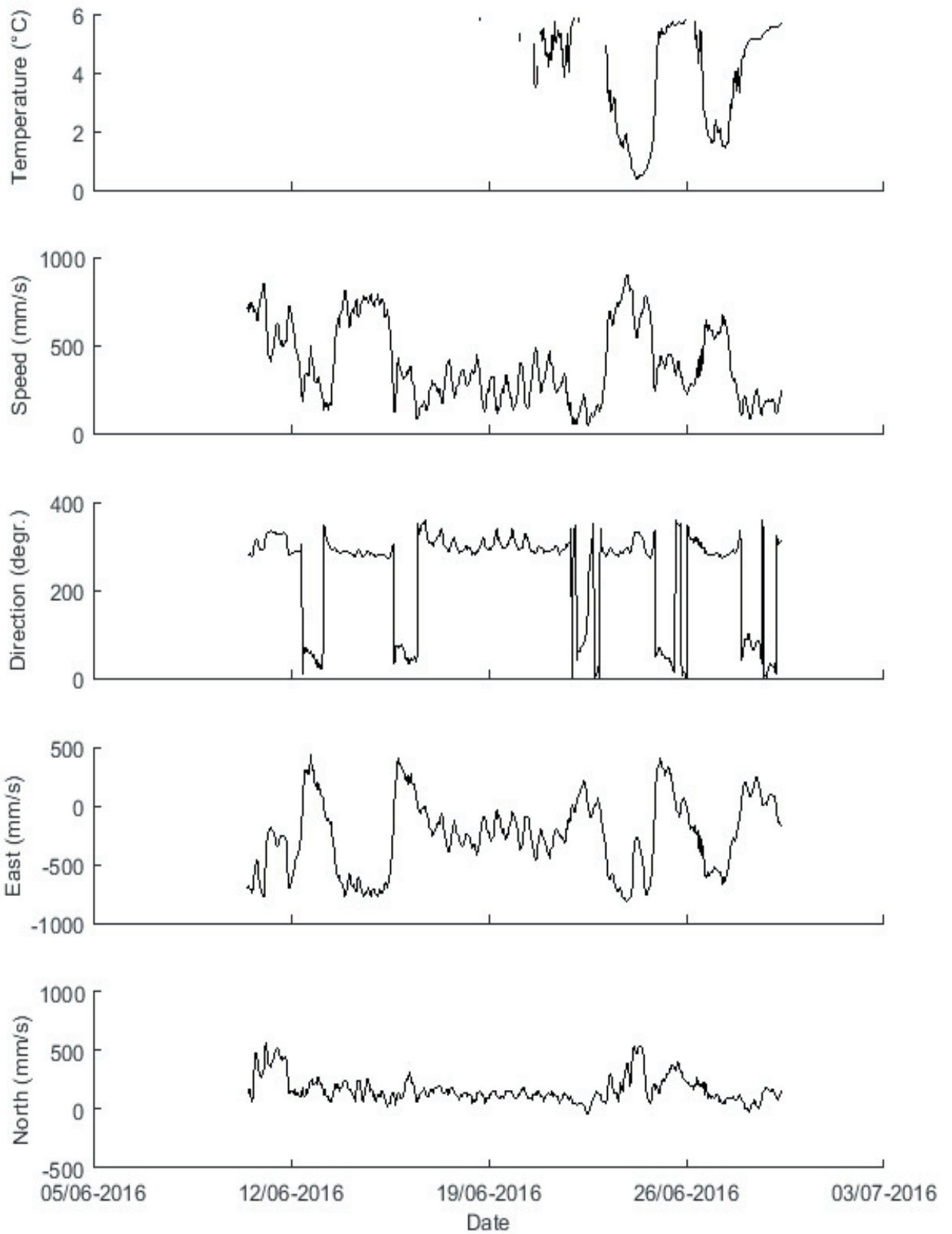
Const	Freq c/hr	E-ampl mm/sec	E-gpl deg	N-ampl mm/sec	N-gpl deg	Major mm/sec	Minor mm/sec	Incl deg	Grphl deg	R
MSF	.00282193	51	303	67	128	84	4	128	126	A
O1	.03873065	56	194	23	236	58	15	18	199	C
P1	.04155259	12	217	1	166	12	1	3	216	A I
K1	.04178075	35	231	5	204	35	2	8	231	A
N2	.07899925	8	221	4	135	8	4	3	219	A I
M2	.08051140	44	247	22	164	44	22	5	244	A
S2	.08333334	45	248	21	188	46	18	15	242	A
M4	.16102280	10	59	2	83	10	1	11	60	C
MS4	.16384470	9	83	2	41	9	2	12	81	A

DIRECTIONAL CURRENT DISTRIBUTION (for all nonflagged observations in series)

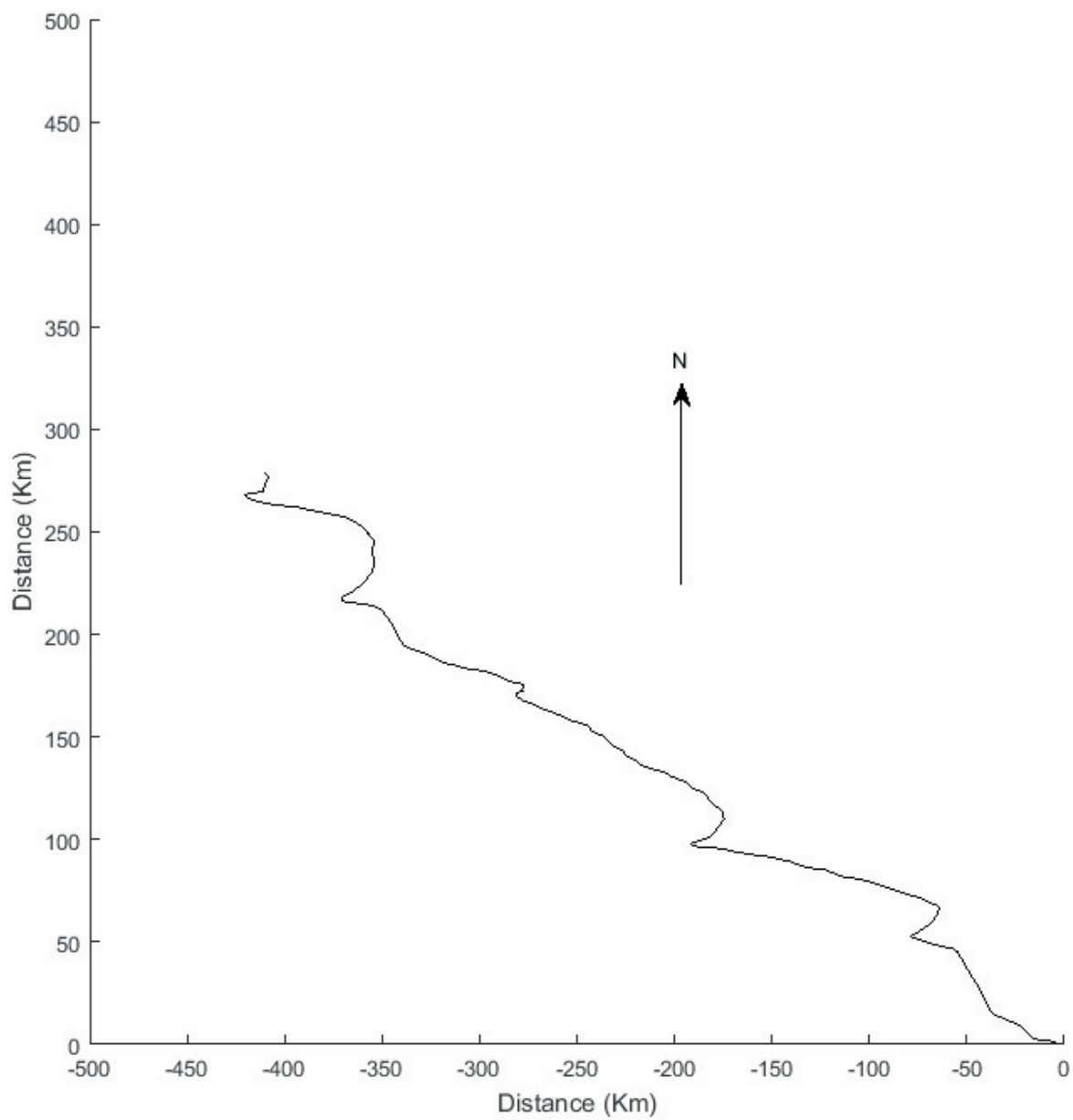
Relative number of observations in parts per thousand (ppt) grouped into speed and direction intervals (of 30 degree width centred around the directions shown)

Speed intervals (mm/s)	Direction intervals												All dir.	
	15	45	75	105	135	165	195	225	255	285	315	345	Tot	Acc
0 - 50	0	0	0	0	2	0	0	2	0	0	0	2	7	7
50 - 100	2	9	4	2	0	0	0	0	0	2	4	7	31	37
100 - 150	9	7	9	4	0	0	0	0	0	4	20	20	73	110
150 - 200	22	9	15	0	0	0	0	0	0	11	35	18	110	220
200 - 300	15	15	15	2	0	0	0	0	0	79	68	9	204	424
300 - 400	9	31	22	0	0	0	0	0	0	79	18	9	167	591
400 - 500	2	18	7	0	0	0	0	0	0	51	7	11	95	686
500 - 600	0	0	0	0	0	0	0	0	0	46	18	7	70	756
600 - 700	0	0	0	0	0	0	0	0	0	77	26	2	105	862
700 - 800	0	0	0	0	0	0	0	0	0	108	4	0	112	974
800 - 900	0	0	0	0	0	0	0	0	0	20	4	0	24	998
900 - 1000	0	0	0	0	0	0	0	0	0	2	0	0	2	1000
Total (ppt)	59	88	73	9	2	0	0	2	0	479	204	84		
Rel. flux (ppt)	32	65	47	3	0.26	0	0	0.24	0	626	173	53		
Avg. spd (mm/s)	217	292	254	130	47	0	0	44	0	517	335	252		
Max. spd (mm/s)	428	455	493	205	47	0	0	44	0	903	815	610		

PLDB1606 Aanderaa 718

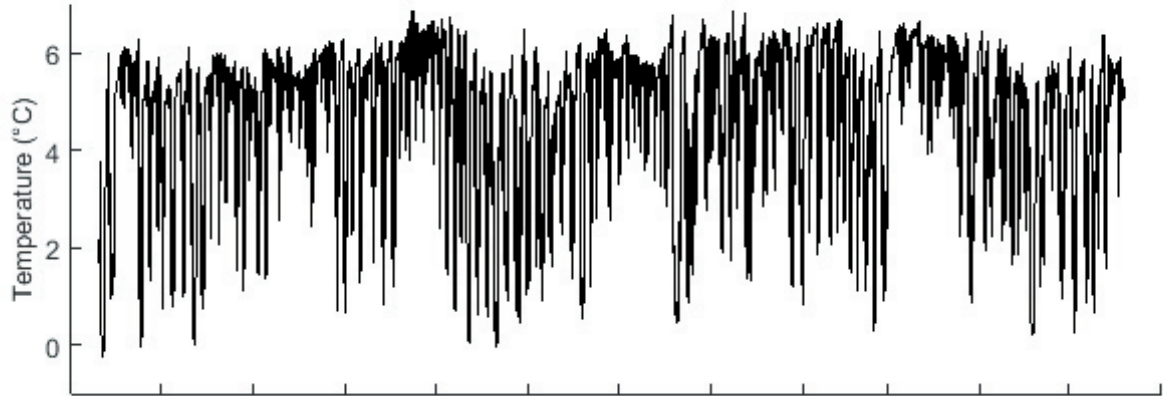


PLDB1606 Aanderaa 718

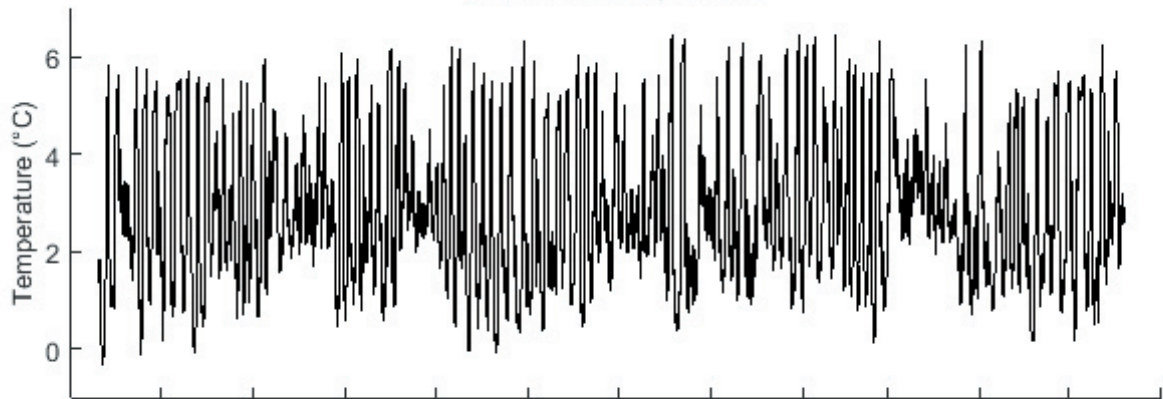


PLDB1606 Temperature recorders

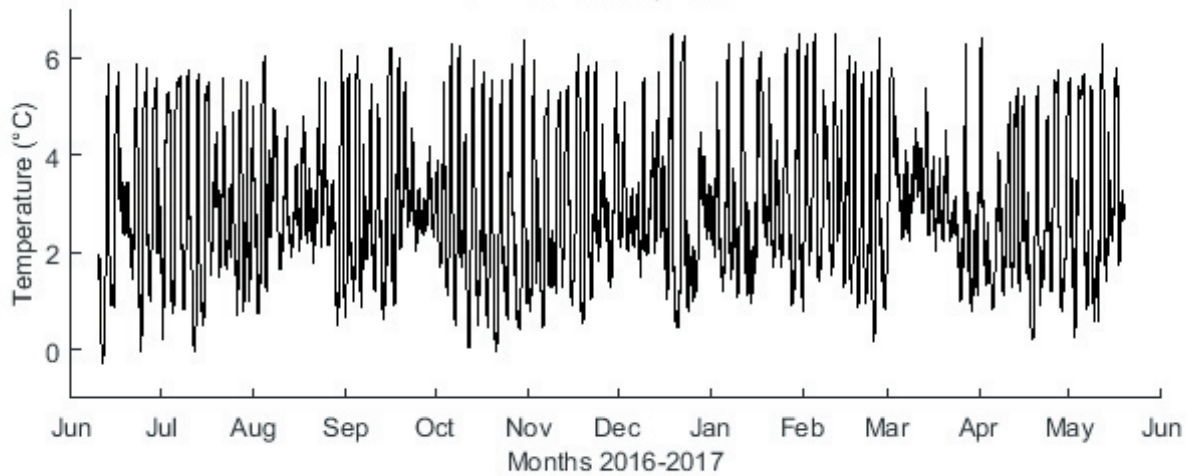
SBE56 06504, 1053m



Starmon 1672, 1082m



SBE56 06506, 1083m





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