Cruise report FS Lance September 16 to October 11, 2002
Chief scientist: Jürgen Holfort

Purpose of research

There are two main purposes of research on this cruise. The first (A) is related to the scientific project ARKTIEF, the measuring phase will be finished with this cruise. The second purpose is related to the SFB512, the measurement phase had begun last year and will continue at least until next year.

A) To investigate the near bottom currents associated with the East Greenland current and of currents along channels that cut through the East Greenland continental slope. Transports along this channel could be of great importance for the vertical exchange in the Greenland Sea. Suspended sediments probably play an important role in the triggering and the characteristics of such flows. Moorings in the lower part of the water column had recorded now for several years the characteristics of the near bottom flow and the sedimentation properties and CTD surveys on several cruises give a better spatial coverage.

B) The overflows and the export of freshwater represent the outflows of the combined regions Arctic Ocean/Nordic Seas. These represent an important part of the thermohaline circulation of the Atlantic. Our goal is to understand how changes in these outflows correlate with measured changes in the East Greenland Current. To achieve our goal an mooring array across the East Greenland current at about 75°N determines the composition and flow of the different watermasses. For the measurements under mostly ice covered waters on the shelf a new type of mooring is deployed to measure temperature and salinity. All these measurements will be used in conjunction with data from the hydrographic CTD-surveys together with historic data in the Greenland Sea and from Fram Strait to Denmark Strait and the output of numerical models to determine the longer term, large scale variability in the Atlantic/Arctic region.

Participants

The majority of the participants were from the Institut für Meereskunde of the Hamburg university (IfM). Smaller groups were working for the Alfred-Wegner-Institut, Bremerhaven (AWI) and the Oldenburg university (OD)

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Cruise narrative

The scientific crew arrived in Tromsoe an embarked on FS Lance on September 15. The next day Lance first had to be unloaded, and after loading our equipment Lance left Tromsoe in the late afternoon. On the way to the moorings a CTD test station was made. Arriving in the research region, work started with mooring recovery during the day and CTD cast during the night. We had to refurbish the instruments from the recovered moorings so they could be employed in the moorings to be layed out. During the time it took to refurbish the instruments the CTD sections were continued. The CTD sections at 74°N and 74.5N were therefore not done in a continuous fashion. As we did not encounter any ice, apart from some small icebergs, the CTD sections could be done all the way to the Greenland coast. We did send some greetings by radio to the people at Daneborg, but could not follow their invitation to visit them. But also from the ship we had a very nice view of Greenland.

Apart from some minor connection problems, the CTD work was quite successful. All mooring could be recovered, although some floats were broken and we had to dredge for one deep mooring because the releaser did not work. After the mooring work we started working our way back doing a CTD section from the Greenland coast along 75°N. The planned survey of the 75°N 0°W eddy could not be done very extensively, has we encountered bad weather and had to interrupt the CTD work. We left the eddy to steam back to Tromsoe and arrive there in time on October 11. The ship was unloaded on October 11 in the morning and the scientific crew left the next day.

Overall it was a very successful cruise, the atmosphere on board was good (as always on ships, also due to the good food), and the interaction between scientific and ship crew excellent

Hydrography

The CTD used was a Seabird 9 model from RV Lance equipped with primary and secondary temperature and conductivity sensors and an altimeter. The CTD was attached to a 12 bottle rosette sampler. Bottle position 12 was used to attach an additional instrument, described further down. Bottle 3 was equipped with two SIS thermometers and one SIS pressure sensor. Problems with the CTD arose several times due to cable connections. Once it was the power connection directly at the underwater unit, once the cable connection at the winch and several times the sea water cable termination at the CTD. With help from the ship all these problems could be resolved without loosing to much ship time.

The secondary temperature sensor showed a large deviation to the primary sensor and the SIS thermometers. This deviation was corrected using the primary temperature sensor as reference and calculating new calibration coefficient for the conversion of the frequency signal to temperature. The difference between the two conductivity sensors (during the cruise there was a change of position between primary and secondary) was generally small (less then 0.005 ms/cm) and quite

constant with respect to time and pressure. Salinity samples were taken, but not analyzed on board, but shipped to Hamburg after the cruise for shore based analysis. This was done, because the conditions on board were not ideal, changes in room temperature were at the edge and the laboratory was near the bow, therefore moving considerably.

Table 1: CTD Sensor characteristics

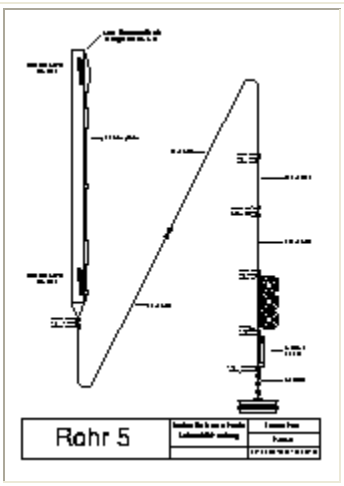
Sensor	Serial	Calibration date	owner
prim. temperature	2400	06.06.2002	Lance
sec. temperature	1581	19.01.2001	IfM HH
prim. conductivity	2520	20.12.2001	Lance
sec. conductivity	1329	08.02.2002	IfM HH
pressure	09p17323-0500,	22.05.2000	Lance
altimeter			IfM HH

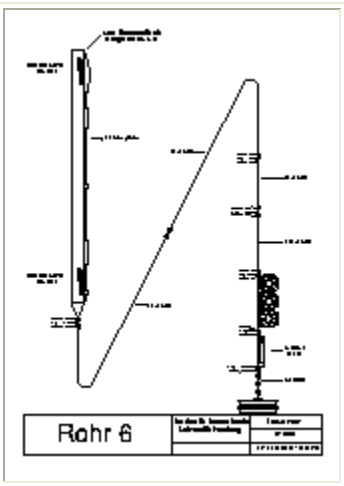
Weather permitting the CTD was first lowered below 10m depth and after the pump started and the conductivity data was stable was heaved up to near the surface to also get reliable data at very shallow depths. The first 100 to 200m the CTD was lowered with a speed of about 0.5m/s, which was later increased to about 1m/s. The winch, specially at the end of the cruise, had some problems, so the lowering and heaving speed was not very constant, but this did not affect the CTD data quality. We made a total of 118 CTD cast (Station list), some in quite heavy weather, and a total of 5 Yoyo-CTD sections (Yoyo station list). For the Yoyo sections we lowered the CTD to the bottom and then, with the ship slowly moving, heaved up the CTD for several hundreds of meters and then lowered it again. This continued until the section end. In this way we could do some quite closely spaced sections of the deeper part of the water column. The sections were done perpendicular to a topographic channel, to describe the hydrographic situation and infer about a possible flow along this channel. One section had to be done twice, as the first attempt had to be ended prematurely, due to a to large drift of the ship, the cable angle got to large, with the possibility of the cable getting under the ship.

Moorings IfM-HH

From the Institut für Meereskunde Hamburg we had to recover two tube moorings and an ADCP on the shelf and three deep sea moorings situated across the continental slope within a topographic channel. Both tube moorings were redeployed on the shelf and three deep sea moorings were deployed across the continental slope. As we were not interested anymore in the flow along the topographic channel, the three deep moorings were deployed in slightly different positions, to hopefully get a better coverage of the East Greenland Current.

Recovery shelf moorings

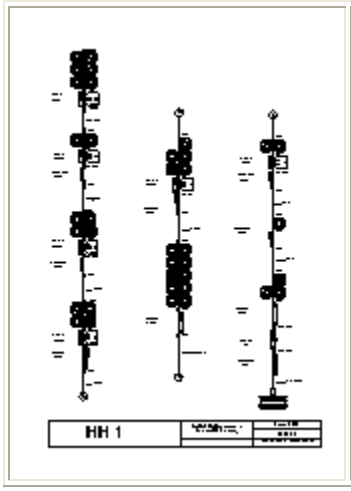


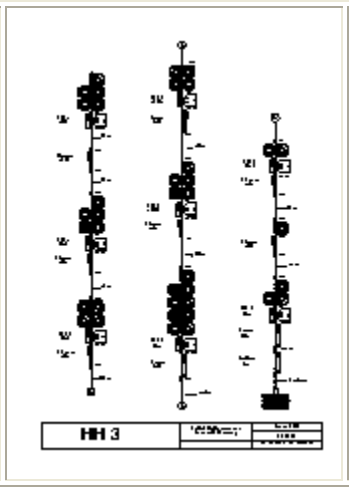


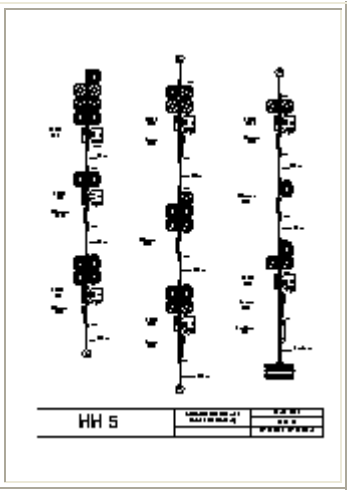
moored ADCP

Like the last year, ice was absent along the shelf transect and therefore the recovery of the moorings was easier as expected. Both tube moorings were recovered on September 21, The first <q>Rohr-6</q> in the morning at 7:30 UTC and the second, <q>Rohr-5</q> at 12:30 UTC. Both tubes were still in very good conditions and could be used in the redeployment after just some minor fixes (screws, etc.). The first redeployment even took place in between the recovery of the two tube moorings, also on September 21. The recovery of the ADCP took place on September 22. As this mooring was deployed not with an acoustic release but with a ground line, the ship had to dredge for the mooring. Dredging started at 10:15, the first attempt was successful at 10:40, the ADCP was secured at 11:00 at the aft of the ship and was on deck at 11:45. The steel structure and screws showed heavy corrosion, but the data seemed to be complete.

Recovery deep sea moorings





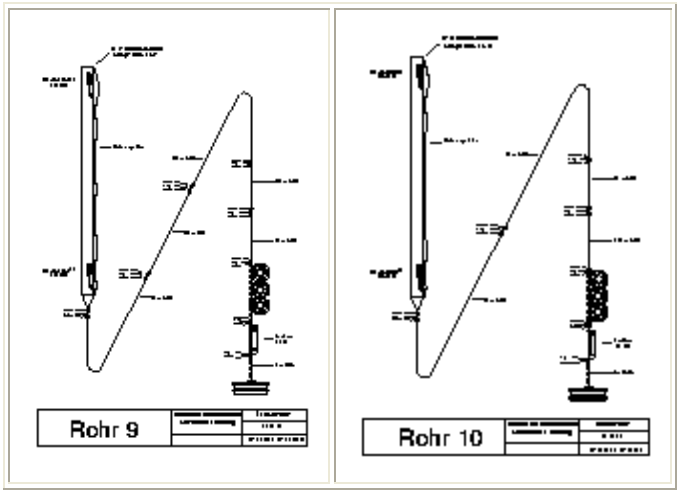


On September 19 we recovered two moorings, HH-3 and HH-5. Both releasers could not be heard, but released without problems. A problem with the releaser was suspected on the first mooring (HH-3), which was released at 6:38 UTC, because the mooring took very long to surface. But the cause for that was not the releaser, but missing flotation, as the two benthos at nominal depth 2600m and the three benthos at nominal depth 2750m imploded. The plastic covers were ragged

and the remainings of the glass spheres looked like fine snow. At recovery the Aanderas on these positions had no rotor and fin. The mayor problem of mooring HH-5, which was recovered at 11:18 UTC was that one Aanderaa was open and therefore filled with water when recovered.

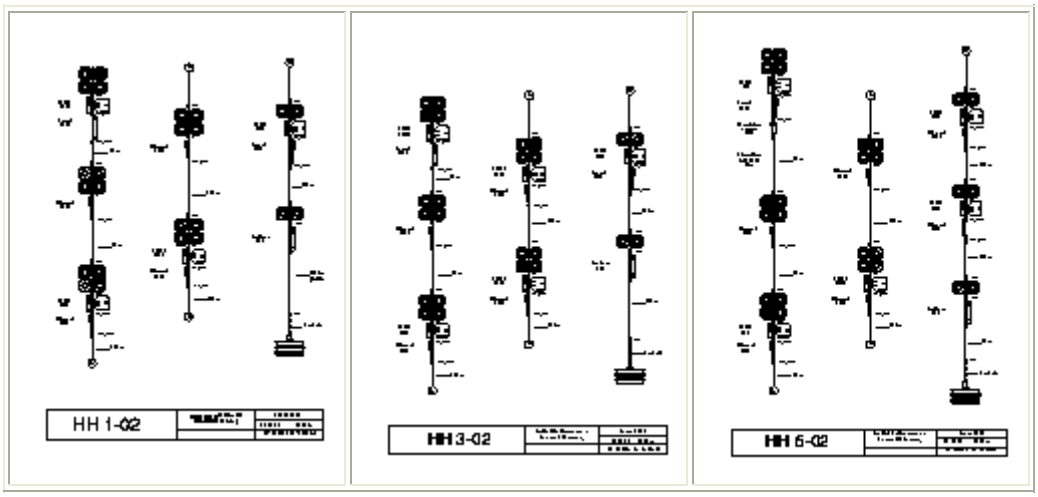
The first attempt to recover mooring HH-1 on September 25 was not successful. As with the two earlier moorings, no response from the releaser could be heard. But also after several release attempts the mooring did not surface and after searching for the mooring for about 4 hours we concluded that the releaser hadn't worked properly. A second attempt was started on September 29, now also with better weather. But also with the machines stopped (to lower the ambient noise), the acoustic releaser could not be be triggered or heard. We therefore started an attempt to dredge for the mooring and got the mooring on the first attempt. The dredging hooked engaged in the third flotation. After recovering the upper two flotation and instrument packs, the steel cable broke. But the mooring was still engaged with the dredging hook, so using the dinghy a cable could be attached to the remaining mooring. After this the mooring could be recovered successfully.

Deployment shelf moorings



As the tubes of the recovered mooring were still usable, only some screws, ropes and the instruments in the tubes had to be exchanged to be ready for redeployment. The deployment of the first tube mooring, Rohr-10 therefore took place on September 21, 10:30 UTC at 74°N03.933 15°W45.052 (water depth 202m), just hours after the successful recovery. As we needed time for the refurbishing of the microcats for the second mooring, this mooring (Rohr-9) was deployed two days later on September 23, 8:30UTC at 74°N01.656, 15°W31.289 (water depth 341m). Both deployments were without problems.

Deployment deep sea moorings



On October 1 we started the deployment of the deep water moorings. For the deployment of mooring HH-5 we searched for a position with a water depth of 1350m. After finding it, we circled around this position (300m radius) to get an idea of the surrounding sea floor topography, maximum differences found were +-20m. The drift at the position was in direction north, northeast. The deployment of the mooring was therefore started about three nautical miles to the southwest of the planned mooring position. But instead of drifting north, the ship drifted southward (probably due to a stronger southward EGC, as the drift due to wind was still northward). So the ship, with he mooring out aft, had to steam slowly for about 40 minutes to reach the planned position. The mooring weight was then dropped at a water depth of 1350m at 74N01.960, 14W39.215.

On the way to mooring position HH-3 we passed a smaller iceberg near 74N01.960, 14W39.215 and a second, larger iceberg at about 74N01,13W55. After determining a position for mooring HH-3 and the drift at this point (about 2 knots to the east) we started the deployment about 3 miles in northwesterly direction. Hydrography was quite well known in this region due to an available hydrosweep survey chart. Due to a misunderstanding between bridge and deck, deployment started to early and the first rope got cut by the ships propeller, but the instrument package could be recovered without damage. Due to this delay, the smaller iceberg was in the way to the planned deployment position. The ship therefore had to go into southeasterly direction into deeper waters, then veered to the west until the desired water depth of 2190m. At 15:46 the mooring weight was dropped at 74N00.79 13W53.52 with a sounding depth of 2190.5m. The upper most flotation was last sighted at 16:00 UTC at 74N01.10, 13W53.08.

On October 2, after determining the position for mooring HH-1/02 and the drift at this position, deployment was started at a point about 3 miles to the west. With just the last 1000m rope (without instruments) missing, the mooring had to be dreged for a while. The releaser together with the last flotation was put to water at 74N04.93, 12W49.63 (water depth 2745m), followed by the 1000m rope. After still a little bit of dredging, the mooring weight was dropped at 10:55 UTC at 74N04.565, 12W46.893. The water depth was 2771m and 500m before this position the water depth was always deeper then 2760m. The upper most flotation was last sighted at 11:15 UTC at 74N04.779, 12W49.285 (in a distance of about 200m to the east)

Meteorological conditions

The conditions were quite windy when leaving port on September 16, so on the next day, now in open waters, some participants took some time to acustumbrate to the conditions. The weather was quite friendly, but the sky was obscured by a a stratos cloud cover. On the 18th the temperature had dropped to 1.8°C, but the winds were down to 2. The next day, being in a high pressure zone (1015.5 hpa), we had ideal conditions for the mooring work, almost no wind and calm seas, although with temperatures below freezing (-1.3°C). On Friday the clouds begin to disappear, it gets warmer (+0.4°C) and in the afternoon, just at the coast of Greenland the sky was totally clear with no wind and the sea was totally calm. The next day, September 22, the winds increases to 6 with fog banks, cold temperature and a closed, thick stratos cloud cover. The next day the wind and sea state decreases with sunshine in the morning, in the afternoon cirrus clouds appear, which later changes to a thin, but closed cloud cover. The temperature is above freezing (+1.5°C) and the pressure increased to 1016.33 hPa. The next day the pressure continues to rise to 1022.2 hPa with light winds (3 Beaufort), there is a closed cloud cover composed of cirrus clouds with some cumulus humili. On September 24 the wind is still very light but with larger swell. The next day there are stronger winds, with some fog banks and bad visibility. The sea is quite rough with wave heights of about 5m. The 26th the weather is just a little better with wind speeds of 4-5 and wave heights of about 4m, the pressure had dropped to 1006.6 hPa and the temperature (3.9°C) is above average. A storm was forecasted and on Friday, September 26, the wind increased from 7 in the morning to 9 in the afternoon. As the waves increased, work had to be suspended at 16:00 o'clock. The closed cloud cover often reached to the water. Although the wind had decreased to 5 on Saturday afternoon, work could not be continued due to the waves, reaching a mean height of about 6m, but occasionally up to 9m.

On sunay the wind and sea are quite calm and this conditions were used to dredge a mooring. The temperature is 0.5°C and decreases to -1.4°C on the next day, while the pressure increased from 1014.2 hPa to 1015.2 hPa. Also the wind had increased to 3-4 on Monday, scattered clouds on the sky with sun during the day and polar lights during the night. On Tuesday the sky is covered with cirrus and altocummulus clouds, the wind increased to 6 and temperature is above freezing. On october 2nd the sky is cloudy again with some fog banks, pressure had decreased to 1011.8 hPa and it is quite warm with +3.4°C with wind around 2-3 and low seas. The next day the wind decreases to 1-2 Beaufort from the southeast and the pressure again decreased (to 1003.7 hPa). It is still foggy, the visibility is about 500m, and colder (1.4°C). Friday is still foggy and colder (0°C). The fog had disappeared on Saturday, the day is warm (3.6°C) and sunny with a high pressure of 1022.6 hPa. Sunday, October 6, the wind rises to 7 Beaufort and also the waves increase, and work had to be again temporarily interrupted from 17:00 o'clock to 10:00 o'clock on Monday, with winds now about 4-5 Beaufort. It is the warmest working day with +4.5°C, pressure is 1017.76 hPa. On Tuesday the last CTD are taken and the two days back home to are quite sunny and calm.

First results

Hydrography

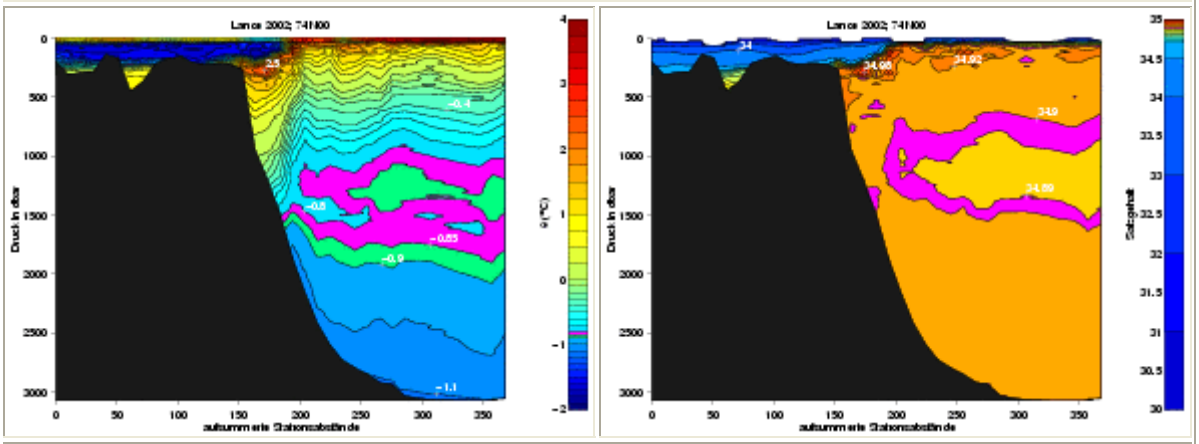
Some preliminary results could be made from the uncorrected CTD data and from some preliminary mooring data (data was available only from some instruments).

The CTD data was taken mainly along three west-east sections along approximately 74°N, 74.5°N and 75°N. All of these sections start at the coast of Greenland and continue into the Greenland Gyre. The 75°N section goes furthest east till about 2°E and captures also the deep eddy at 75N,

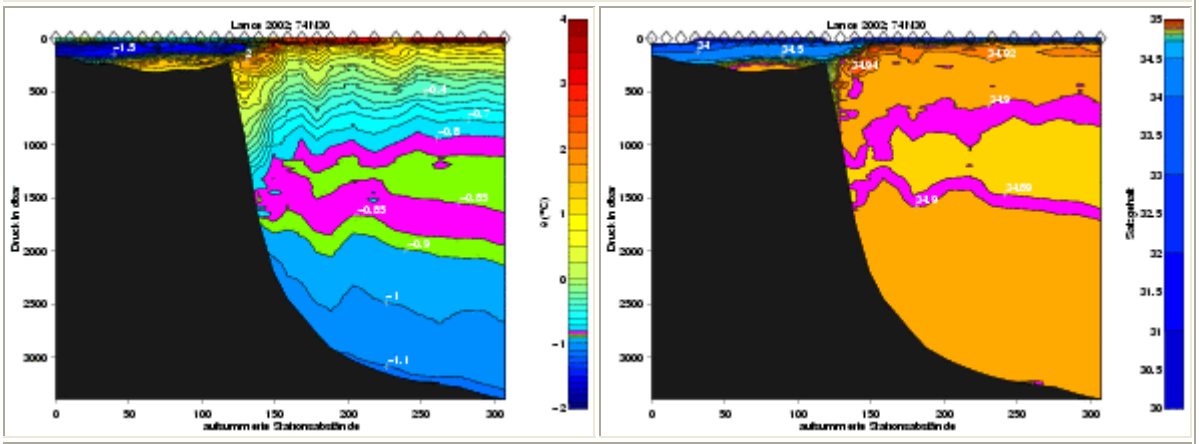
0°W. We will give just a short list of features which can be seen in the sections of potential temperature and salinity.

- The East Greenland current can be nicely seen in the 500m drop of the isotherms towards the east Greenland slope.
- A warm summer surface layer extends along the whole sections until the coast.
- Return Atlantic Water (RAW) with potential temperature above 2°C can be seen along the shelf break in a depth around 250 dbar.
- As expected the low salinity, very cold polar waters are found on the shelf, but below them also warm and saline regions near the bottom on the shelf can be seen, showing that Atlantic Water also influences the shelf waters.
- A relative temperature maximum (Theta>-0.85°C) is found between 1500 and 2000 dbar in the Greenland Sea.
- The region occupied by arctic intermediate water (AIW), which is formed by convection in the Greenland Gyre (about the region delimited by the pink areas), gets thicker going to the north.
- A deep eddy is found at 75°N 0°W with pot. temperatures below -1.0°C and (uncorrected) salinities below 34.88 crossing through the temperature maximum layer. This eddy is probably the same as the one we found in march 2001 on Jan Mayen and also from us and other investigators in subsequent cruises (e.g. Lance in may and September 2001, Aranda in April 2002).

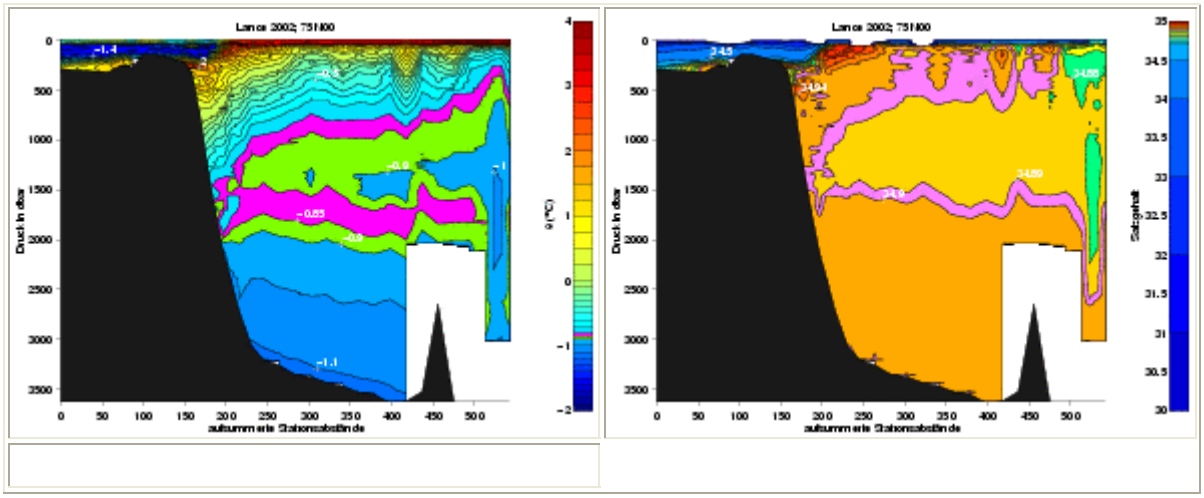
potential temperature and salinity along 74°N00 section



potential temperature and salinity along 74°N30 section



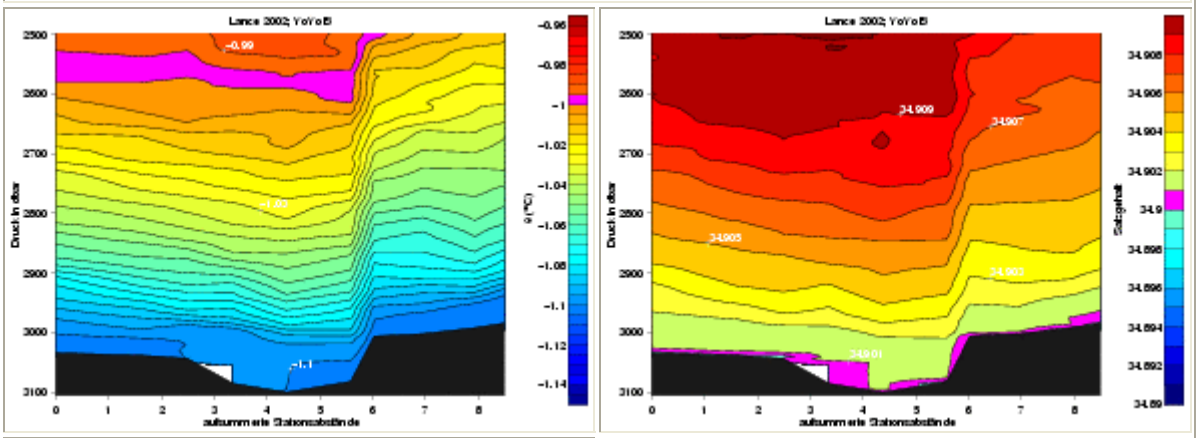
potential temperature and salinity along 75°N00 section



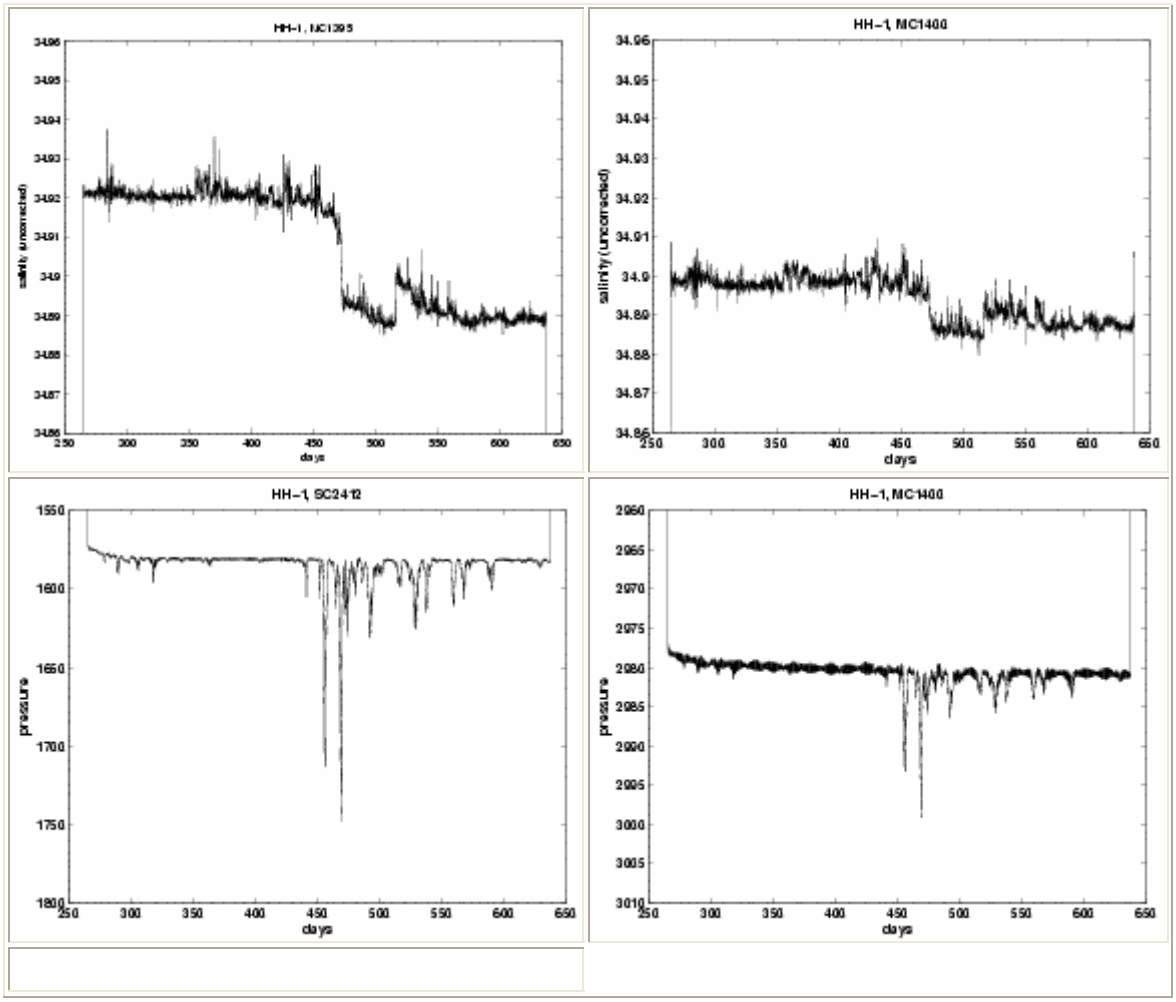
Deep moorings

The current meter data from the deep sea moorings which is necessary to infer the possible flow along the topographic channel is still not available, and some probably will never be available due to misfunctions (the deepest Aanderaa of HH-5 was flooded, the two deepest of HH-3 were affected by the imploding benthos flotation). Not much sign of along channel flow is found in the CTD-Yoyo sections. We find an interesting event in the microcat data of mooring HH-1. The salinity about 50m above the ground (microcat 1395) dropped considerably (> 0.01) around day 450 (starting 1.1.2001), and although showed an jump to slightly higher values after some time, is considerably lower at the end of the record then at the beginning. This signal can also be found in the microcat 100m above ground (1400). As this instrument also included a pressure sensor, we see that the first large drop in salinity is associated with an pressure increase of about 20dbar some days earlier. At the same time we also find a sudden pressure increase at 1580dbar (seacat 2412, increase >100dbar), and at 550 dbar (seacat 2404, increase >150dbar). But this very large pressure increases only lasted for a short time. A first look on the up till now available current measurements also reveals an increase in current speed, so the mooring probable tilted due to an increased current, this also explains why the pressure increase is smaller near the bottom and higher with increasing distance from the bottom. Similar salinity drops, although not so pronounced, can also be found at mooring HH-3 (e.g. seacat 3024).

potential temperature and salinity along Yoyo section B



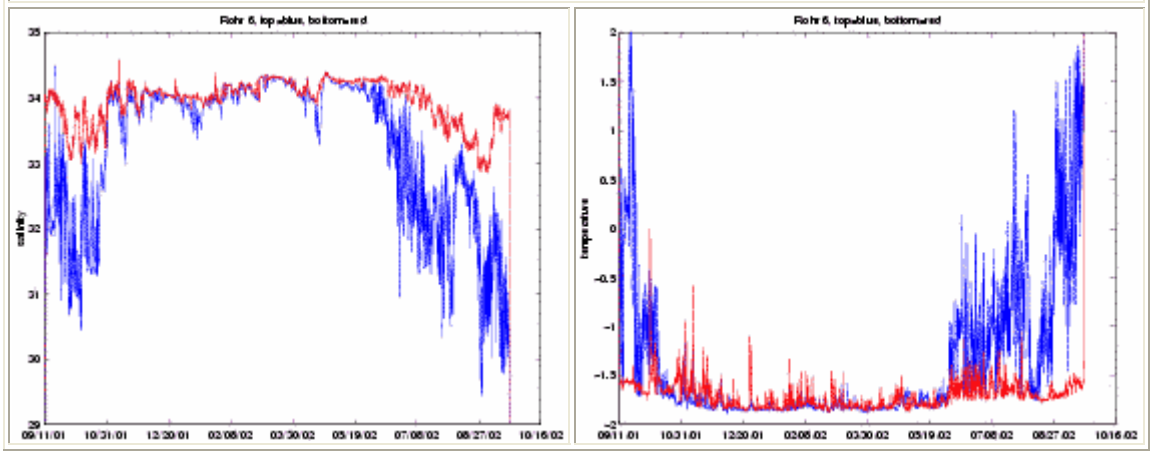
uncorrected salinity and pressure at Mooring HH-1



Shelf moorings

The upper instrument of the mooring Rohr-6 on the shelf was for the most time in about 18m to 25m depth, but also showed some excursion to depths lower then 40m. These are associated or with ice bergs or with strong current events. During winter the strong summer stratification breaks down. Starting in dune the salinity of the upper water column decreases and the temperature increases, such to again arrive at a strong summer stratification.

Salinity and temperature at Mooring Rohr6



Station List

	Station				Start				Bottom					Up				
Station_No.	Lat.	Long.	Filename	Date	Time	Lat.	Long.	Depth	Time	Lat.	Long.	Depth	DAB	Time	Lat.	Long.	Depth	Comment
003	73N54,5	14W16,0	Lan003.dat	19.09.02	13:20	73N54,852	14W15,500	2093	14:11	73N54,538	14W16,084	2090	5	14:55	73N54,339	14W16,261	2095	
004	74N00,0	14W20,0	Lan004.dat	19.09.02	15:55	74N00,00	14W20,00	1826	16:32	73N59,80	14W20,90	1823	7	17:06	73W59,70	14W22,40	1802	
005	74N00,0	14W40,0	Lan005.dat	19.09.02	17:48	73N59,9	14W40,0	1463	18:??	73N59,6	14W41,1	1459		19:00	73N59,5	14W42,5	1453	
006	74N00,0	15W00,0	Lan006.dat	19.09.02	19:48	74N00,0	15W00,2	1180	20:20	74N00,1	15W00,1	1161	6	20:55	74N00,2	15W01,3	1144	
007	74N00,0	15W20,0	Lan007.dat	19.09.02	21:57	74N00,1	15W19,9	931	22:20				6	23:01	74N01	15W20	841	
008	74N00,0	15W40,0	Lan008.dat	20.09.02	02:05	74N00	15W40	265	02:16	74N00	15W40	231	6	02:29	74N00,3	15W39,7	206	
009	74N00,0	16W00,0	Lan009.dat	20.09.02	03:18	74N00	16W00	212	03:24	74N00,05	16W00,02	212	6	03:34	74N00,10	16W00,104	215	
010	74N00,0	16W20,0	Lan010.dat	20.09.02	04:13	74N00,00	16W20,07	207	04:26	74N00,00	16W20,1	203	7	04:33	74N00,00	16W20,1	202	
011	74N00,0	16W40,0	Lan011.dat	20.09.02	05:10	74N00,00	16W40,10	219	05:20	73N59,9	16W40,10	219	6	05:30	74N00,10	16W40,10	218	
012	74N00,0	17W00,0	Lan012.dat	20.09.02	07:00	74N00,00	17W00,30	198	07:10	74N00,1	17W00,5	206	7	07:20	74N00,10	17W00,8	208	
013	74N00,0	17W20,0	Lan013.dat	20.09.02	08:13	74N00,0	17W19,9	146	08:17	74N00,0	17W19,9	143	7	08:27	74N00,4	17W20,7	151	
014	74N00,0	17W40,0	Lan014.dat	20.09.02	09:12	74N00,1	17W40,1	170	09:23	74N00,1	17W40,1		5	09:31	74N00	17w40,1	164	
015	74N00,0	18W00,0	Lan015.dat	20.09.02	10:19	74N00,0	18W00,0	210	10:25				4	10:38	74N00	18W00,1	200	
016	74N00,0	18W20,0	Lan016.dat	20.09.02	11:17	74N00,0	18W20,11	360	11:30	74N00,0	18W20,18	360	7	11:49	74N00,1	18W20,27	358	
017	74N00,0	18W40,0	Lan017.dat	20.09.02	12:23	74N00,0	18W40,0	440	12:45	73N59,91	18W40,17	438	7	13:02	73N59,92	18W40,36	439	
018	74N00,0	19W00,0	Lan018.dat	20.09.02	13:46	74N00,00	19W00,08	162	14:01	73N59,97	19W00,25	159	7	14:10	73N59,96	19W00,41	158	
019	74N00,0	19W20,0	Lan019.dat	20.09.02	14:44	74N00,00	19W19,90	133	14:54	73N59,96	19W20,01	133	8	15:02	74N00,00	19W20,24	130	
020	74N00,0	19W40,0	Lan020.dat	20.09.02	15:35	74N00,00	19W40,11	283	15:48	74N00,06	19W40,42	282	6	15:59	74N00,15	19W42,54	279	
021	74N00,0	20W00,0	Lan021.dat	20.09.02	16:35	74N00,03	20W00,00	282	?	74N00,00	20W00,21	280	6	17:00	74N00,08	20W00,17	278	
022	74N00,0	20W20,0	Lan022.dat	20.09.02	17:50	74N00,00	20W19,90	306	18:05	73N59,9	20W20,00	305	6	18:15	74N00,00	20W20,12	306	
023	74N00,0	20W40,0	Lan023.dat	20.09.02	19:01	73N59,9	20W39,9	191	19:15				5	19:25	74N00,1	20W39,9	193	
024	74N00,0	14W20,0	Lan024.dat	22.09.02	14:06	74N00,03	14W19,96	1832	14:47	73N59,70	14W19,84	1850	9	15:41	73N59,40	14W19,74	1867	
025	74N00,0	14W00,0	Lan025.dat	22.09.02	16:15	74N00,06	14W00,30	2111	17:09	74N59,20	13W59,9	2117	7	17:57	73N59,5	14W00,6	2128	
026	74N00,0	13W40,0	Lan026.dat	22.09.02	18:45	74N00	13W40	2367	19:31	73N59,80	13W39,6	2372	7	20:29	73N59,8	13W39,1	2374	
027	74N00,0	13W20,0	Lan027.dat	22.09.02	21:11	74N00,0	13W20,2	2546	22:10	73N59,9	13W20,0	2550	7	23:13	73N59,81	13W19,43	2553	
028	74N00,0	13W00,0	Lanc28.dat	22.09.02	23:50	74N00,15	13W00,40	2673	00:49	73N59,91	13w00,33	2673	8	01:48	73N59,82	13W00,69	2671	
029	74N00,0	12W40,0	Lanc29.dat	23.09.02	02:27	74N00,08	12W40,00	2739	03:28	73N59,84	12W42,46	2727	6	04:21	73N59,59	12W40,52	2724	
030	74N00,0	12W20,0	Lanc30.dat	23.09.02	04:59	74N00,06	12W19,70	2796	06:03	73N59,3	12W20,7	2792	8	06:58	73N22,4	12W21,6	2793	
031	74N00,0	12W00,0	Lan031.dat	23.09.02	07:58	74N00,1	11W59,6	2863	09:08	73N58,9	12W00,4	2841	8	10:18	73N58,1	12W04,4	2814	
032	74N00,0	11W40,0	Lan032.dat	23.09.02	11:11	74N00,23	11W40,00	2887	12:13	73N59,52	11W40,14	2869	7	13:27	73N58,50	11W40,80	2867	
033	74N00,0	11W20,0	Lan033.dat	23.09.02	14:06	74N00,15	11W19,80	2953	15:17	73N55,43	11W20,44	2944	7	16:15	73N58,82	11W21,67	2907	
034	74N00,0	11W00,0	Lan034.dat	23.09.02	16:55	74N00,30	10w59,80	2992	17:58	73N59,5	11W01,40	2977	7	19:00	73N56,7	11W02,3	2148	

035	74N00,0	10W40,0	Lan035.dat	23.09.02	19:50	74N00,10	10W40,1	3035	21:03	73N58,8	10W42,7	2984	7	22:28	73N57,46	10W46,20	2980	
036	74N00,0	10W20,0	Lan036.dat	23.09.02	23:36	74N00,40	10W20,10	3018	00:45	73N59,87	10W20,30	3023	5	02:14	73N58,15	10W21,22	3014	
037	74N00,0	10W00,0	Lan037.dat	24.09.02	03:04	74N00,37	10W00,00	3059	04:13	73N59,42	10W00,21	3052	8	05:10	73N58,5	10W00,5	3049	
038	74N20,0	10W20,0	Lan031.dat	24.09.02	10:05	74N20,9	10W19,6	3059	11:16	74N22,45	10W20,75	3042	10	12:27	74N21,62	10W21,43	3041	
044	74N30,0	08W00,0	Lan044.dat	26.09.02	22:55	74N29,9	08W00,0	3305	00:06	74N29,91	08W01,76	3302	7	01:22	74N29,37	08W03,98	3255	
045	74N30,0	08W30,0	Lan045.dat	27.09.02	02:11	74N30,05	08W28,96	3271	03:24	74N29,84	08W32,66	3265	10	04:35	74N30,05	08W36,08	3260	
046	74N30,0	09W00,0	Lan046.dat	27.09.02	05:27	74N30,0	09W00,4	3215	06:42	74N29,3	09W04,00	3208	11	08:13	74N28,2	09W08,3	3195	
047	74N30,0	09W30,0	Lan047.dat	27.09.02	09:02	74N31,1	09W29,8	3195	10:16	74N29,4	09W30,3	3133	6	11:52	74N28,21	09W30,88	3140	
048	74N30,0	10W00,0	Lan048.dat	27.09.02		74N30,23	10W00,00	3162	14:05	74N28,57	09W59,76	3128	10	15:44	74N26,40	09W58,54	3090	
049	74N30,0	10W30,0	Lan049.dat	28.09.02	20:49	74N30,4	10W29,8	3104	22:30	74N29,5	10W30,6	3105	7	23:50	74N28,75	10W30,27	3112	
050	74N30,0	11W00,0	Lan050.dat	29.09.02	00:47	74N30,26	11W00,00	3042	01:53	74N29,53	10W59,80	3044	9	03:14	74N29,09	11W00,08	3044	
051	74N30,0	11W30,0	Lan051.dat	29.09.02	04:08	74N29,96	11W30,13	2966	05:09	74N29,78	11W30,44	2966	7	06:12	74N29,4	11W30,9	2966	
052	74N30,0	12W00,0	Lan052.dat	29.09.02	07:04	74N30,1	12W00,1	2848	08:09	74N29,91	11W59,9	2853	6	09:10	74N29,7	11W59,7	2858	
055	74N00,0	12W00,0	Lan055.dat	30.09.02	07:55	74N00	11W59,9	2862	08:31	74N00,3	11W59,3	2867		09:05	74N00,3	11W59,7	2868	
056	74N00,0	12W20,0	Lan056.dat	30.09.02		73N59,9	12W19,9	2783	10:29	74N00,2	12W19,0	2801		11:06	74N00,42	12W18,14	2807	
057	74N00,0	12W40,0	Lan057.dat	30.09.02	11:50	73N59,72	12W40,87	2725						12:03	73N59,95	12W40,55	2725	bei 198 dbar abgebrochen
057	74N00,0	12W40,0	Lan057a.dat	30.09.02	12:04	73N59,94	12W40,55	2725	12:36	74N00,00	12W39,14	2735		13:11	74W00,13	12W38,57	2740	cast 2
058	74N00,0	13W00,0	Lan058.dat	30.09.02	13:50	74N00,00	13W00,61	2672	14:41	74N00,05	12W58,44	2679		15:18	74N00,22	12W57,71	2661	
059	74N00,0	13W20,0	Lan059.dat	30.09.02	16:00	74N00,08	13W20,88	2540	16:32	74N00,05	13W20,17	2545		17:02	74N00,00	13W19,13	2555	
060	74N00,0	13W40,0	Lan060.dat	30.09.02	17:42	74N00,00	13W40,10	2366	18:21	73N59,60	13W39,40	2376		18:55	73N59,2	13W39,4	2377	
061	74N00,0	14W00,0	Lan061.dat	30.09.02	19:36	74N00,1	13W59,7	2140	20:11	73N59,8	13W58,4	2139		20:57	73N59,6	13W57,5	2158	
062	74N00,0	14W20,0	Lan062.dat	30.09.02	21:37	73N59,9	14W20,1	1833	22:16	73N59,3	14W18,2	1887	7	22:56	73N59,0	14W17,3	1918	
063	74N00,0	14W40,0	Lan063.dat	30.09.02	23:45	74N00,34	14W40,58	1423	00:20	74N00,00	14W40,85	1442	7	00:54	73N59,45	14W40,00	1493	
064	74N00,0	15W00,0	Lan064.dat	01.10.02	01:40	74N00,12	15W00,05	1162	02:05	74N00,08	14W59,92	1166	8	02:34	74N00,07	15W00,83	1162	
065	74N00,0	15W20,0	Lan065.dat	01.10.02	03:07	74N00,00	15W19,87	931	03:28	74N00,12	15W20,47	914	9	03:50	74N00,07	15W20,69	905	
066	74N00,0	15W40,0	Lan066.dat	01.10.02	04:22	74N00,00	15W39,92	253	04:37	74N00,15	15W40,35	209	6	04:45	74N00,22	15W40,52	194	
070	74N30,0	12W20,0	Lan070.dat	02.10.02	13:53	74N29,92	12W19,15	2730	14:52	74N30,09	12W21,26	2709	10	15:54	74N30,53	12W21,80	2698	
071	74N30,0	12W40,0	Lan071.dat	02.10.02	16:27	74N29,92	12W41,45	2563										Abbruch; Kabel defeft
071	74N30,0	12W40,0	Lan071a.dat	02.10.02		74N30,0	12W40,1	2562	20:26	74N30,6	12W42,0	2538	7	21:19	74N31,1	12W40,5	2521	cast 2
072	74N30,0	13W00,0	Lan072.dat	02.10.02	21:53	74N30,1	12W59,9	2410	22:45	74N30,5	13W02,8	2364	5	23:49	74N31,17	13W03,12	2341	
073	74N30,0	13W20,0	Lan073.dat	03.10.02	00:24	74N29,73	13W19,46	2156	01:10	74N29,80	13W20,00	2146	8	02:09	74N30,00	13W20,21	2139	
074	74N30,0	13W40,0	Lan074.dat	03.10.02	02:43	74N29,80	13W39,66	1688	06:20	74N29,54	13W41,26	1648	3	04:00	74N29,26	13W43,45	1573	
075	74N30,0	14W00,0	Lan075.dat	03.10.02	04:31	74N30,19	13W59,12	912	04:56	74N30,23	14W00,23	859	5	05:17	74N30,3	14W00,5	846	
076	74N30,0	14W20,0	Lan076.dat	03.10.02	05:56	74N30,00	14W20,10	224	06:05	74N30,00	14W20,60	219	8	06:12	74N30,1	14W20,9	220	
077	74N30,0	14W40,0	Lan077.dat	03.10.02	06:48	74N30,40	14W39,90	257	06:57	74N30,20	14W40,30	259	7	07:11	74N30,4	14W41,0	256	
078	74N30,0	15W00,0	Lan078.dat	03.10.02	07:55	74N30,0	14W59,9	294	08:12	74N30,2	15W00,7	295		08:22	74N30,0	15W01,4	296	
079	74N30,0	15W20,0	Lan079.dat	03.10.02	09:02	74N30,0	15W20,0	289	09:15	74N30,2	15W20,5	289	7	09:26	74N30,4	15W20,7	292	

080	74N30,0	15W40,0	Lan080.dat	03.10.02	10:02	74N30,0	15W39,9	298	10:15	74N30,1	15W41,3	297	6	10:26	74N30,1	15W41,9	297	
081	74N30,0	16W00,0	Lan081.dat	03.10.02	11:02	74N30,0	16W00,0	315	11:12	74N30,10	16W00,68	311	7	11:24	74N30:14	16W01,37	313	
082	74N30,0	16W20,0	Lan082.dat	03.10.02	11:55	74N30,00	16W20,05	302	12:07	74N30,00	16W20,57	304	6	12:20	74N30,12	16W20,75	304	
083	74N30,0	16W40,0	Lan083.dat	03.10.02	12:51	74N30,00	16W39,66	268	13:01	74N30,00	16W42,47	277	7	13:14	74N30,03	16W40,76	280	
084	74N30,0	17W00,0	Lan084.dat	03.10.02	13:44	74N30,00	17W00,00	240	13:57	74N30,11	17W00,98	244	9	14:07	74N30,47	17W01,30	247	
085	74N30,0	17W20,0	Lan085.dat	03.10.02	14:39	74N29,96	17W19,73	247	14:49	74N30,02	17W20,28	214	7	14:58	74N30,09	17W20,65	216	
086	74N30,0	17W40,0	Lan086.dat	03.10.02	15:31	74N29,97	17W39,83	231	15:45	74N30,12	17W40,63	231	6	15:53	74N30,12	17W40,78	231	
087	74N30,0	18W00,0	Lan087.dat	03.10.02	16:27	74N29,96	17W59,74	180	16:36	74N29,98	18W00,35	176	7	16:46	74N30,02	18W00,78	173	
088	74N30,0	18W20,0	Lan088.dat	03.10.02	17:29	74N30,0	18W19,9	166	17:40	74N30,10	18W20,60	159	6	17:49	74N30,0	18W21,2	161	
089	75N00,0	17W00,0	Lan089.dat	03.10.02	23:56	75N00,39	16W59,49	282	00:06	75N00,40	16W59,53	279	8	00:17	75N00,40	16W59,71	277	
090	75N00,0	16W30,0	Lan090.dat	04.10.02	01:42	75N00,22	16W30,36	314	01:52	75N00,22	16W30,80	318	10	02:04	75N00,26	16W31,11	318	
091	75N00,0	16W00,0	Lan091.dat	04.10.02	03:24	75N00,15	15W59,86	250	03:35	75N00,21	16W00,22	250	7	03:43	75N00,29	16W00,48	250	
092	75N00,0	15W30,0	Lan092.dat	04.10.02	05:14	75N00,20	15W30,40	162	05:26	75N00,4	15W31,20	163	2	05:34	75N00,5	15W31,6	166	
093	75N00,0	15W00,0	Lan093.dat	04.10.02	06:37	75N00,10	15W00,00	140	06:44	75N0020	15W00,40	110	8	06:50	75N00,3	15W00,7	110	
094	75N00,0	14W30,0	Lan094.dat	04.10.02	07:46	75N00,1	14W29,9	139	07:56				7	08:00	75N00,3	14W30,4	140	
095	75N00,0	14W00,0	Lan095.dat	04.10.02	08:58	75N00,1	13W59,9	172	09:07				6	09:13	75N00,4	14W00,7	177	
096	75N00,0	13W40,0	Lan096.dat	04.10.02	09:54	75N00,1	13W39,9	192	10:08				5	10:11	75N00,3	13W40,3	188	
097	75N00,0	13W20,0	Lan097.dat	04.10.02	10:51	75N00,0	13W19,8	210	11:01	75N00,16	13W20,26	210	7	11:08	75N00,23	13W20,60	210	
098	75N00,0	13W00,0	Lan098.dat	04.10.02	11:48	75N00,11	13W00,07	318	11:59	75N00,09	13W01,00	303	8	12:10	75N00,23	13W01,33	297	
099	75N00,0	12W40,0	Lan099.dat	04.10.02	12:49	75N00,07	12W39,56	737	13:11	75N00,35	12W40,47	681	8	13:33	75N00,66	12W40,78	687	
100	75N00,0	12W20,0	Lan100.dat	04.10.02	14:12	75N00,00	12W19,89	1255	14:43	75N00,14	12W21,22	1206	10	15:19	75N00,36	12W22,37	1169	
101	75N00,0	12W00,0	Lan101.dat	04.10.02	16:04	74W59,85	11W59,80	1710	16:52	74N59,34	12W04,06	1646	7	17:34	74N58,9	12W06,5	1623	
102	75N00,0	11W40,0	Lan102.dat	04.10.02	18:27	74N59,9	11W40,4	2081	19:18	74N59,4	11W40,8	2110	6	20:04	74N58,5	11W41,5	2124	
103	75N00,0	11W20,0	Lan103.dat	04.10.02	20:49	75N00,0	11W20,4	2375	21:37	74N59,8	11W20,9	2373	6	22:33	74N59,5	11W21,7	2377	
104	75N00,0	11W00,0	Lan104.dat	04.10.02	23:18	75N00,11	10W59,86	2678	00:08	75N00,10	11W01,17	2638	8	01:13	75N00,97	11W02,82	2577	
105	75N00,0	10W30,0	Lan105.dat	05.10.02	02:10	75N00,00	10W29,54	2995	03:14	75N00,56	10W30,12	3009	8	04:15	75N00,87	10W30,61	3023	
106	75N00,0	10W00,0	Lan106.dat	05.10.02	05:05	75N00,0	09W59,8	3128	06:12	75N00,50	09W59,2	3115	6	07:20	75N00,9	09W58,5	3115	
107	75N00,0	09W20,0	Lan107.dat	05.10.02	08:24	75N00,0	09W19,8	3201	09:11	75N00,6	09W19,7	3208		09:49	75N01,0	09W19,2	3212	
108	75N00,0	08W40,0	Lan108.dat	05.10.02	10:54	75N00,0	08W39,9	3276	11:55	75N00,48	08W39,95	3273	8	13:08	75N01,18	08W40,42	3268	
109	75N00,0	08W00,0	Lan109.dat	05.10.02	14:12	75N00,00	07W59,70	3314	14:54	75N00,17	08W00,59	3313		15:36	75N00,30	08W01,91	3312	
110	75N00,0	07W20,0	Lan110.dat	05.10.02	16:42	75N00,00	07W19,97	3353	17:48	75N00,60	07W20,80	3353	8	18:56	75N01,3	07W21,6	3352	
111	75N00,0	06W40,0	Lan111.dat	05.10.02	20:07	75N00,0	06W39,8	3403	20:55	75N00,7	06W40,3	3404		21:39	75N01,3	06w40,5	3402	
112	75N00,0	06W00,0	Lan112.dat	05.10.02	22:51	75N00,0	05W59,9	3442	00:03	75N00,84	06W00,35	3444	7	01:21	75N02,06	06W00,31	3448	
113	75N00,0	05W20,0	Lan113.dat	06.10.02	02:26	74N59,93	05W19,95	3486	03:13	75N00,53	05W20,02	3486		03:55	75N01,04	05W20,54	3485	
114	75N00,0	04W40,0	Lan114.dat	06.10.02	05:01	74N59,94	04W39,91	3527	06:11	75N00,90	04W40,60	3525	8	07:24	75N02,20	04W41,3	3523	
115	75N00,0	04W00,0	Lan115.dat	06.10.02	08:37	74N59,9	03W59,7	3553	09:22	75N01,0	04W00,9	3552		10:14	75N02,3	04W00,3	3550	
116	75N00,0	03W20,0	Lan116.dat	06.10.02	11:30	74N59,85	03W19,84	3460	12:20	75N00,97	03W19,96	3583		13:09	75N01,95	03W20,27	3582	
117	75N00,0	02W40,0	Lan117.dat	06.10.02	14:17	74N59,82	02W39,79	3602		75W00,84	02W40,18	3604		15:53	75N01,32	02W40,04	3602	
118	75N00,0	02W00,0	Lan118.dat	07.10.02	10:08	75N00	02W00,1	3554	10:55	75N00,84	01W59,7	3580		11:33	75N21,48	02W20,16	3603	

119	75N00,0	01W20,0	Lan119.dat	07.10.02	12:38	74N59,91	01W19,94	3624	13:24	75N00,75	01W20,08	3587		14:09	75N01,48	01W20,24	3627	
120	75N00,0	00W40,0	Lan120.dat	07.10.02	15:16	74N59,95	00W39,90	3661	16:01	75N00,79	00W40,43	3659		16:41	75N01,59	00W40,51	3652	
121	75N00,0	00W20,0	Lan121.dat	07.10.02	17:25	75N00,0	00W19,7	3669	18:21	75N01,00	00W20,50	3667		19:14	75N01.8	00W20,9	3668	
122	75N00,0	00W00,0	Lan122.dat	07.10.02		75N00,0	00W00,0	3674	21:02	75N00,4	00W00,00	3605		22:00	75N00,9	00W00,5	3604	
123	75N00,0	00E20,0	Lan123.dat	08.10.02	07:49	75N00,0	00E20,0	3676		75N00,5	00E20,3	3676		09:11	75N00,9	00E20,6	3686	
124			Lan124.dat	08.10.02	10:22	75N02,9	00W19,8	3667	11:25	75N03,64	00W19,06	3668		12:30	75N04,53	00W30,73	3667	
125			Lan125.dat	08.10.02	12:53	75N06,00	00W20,02	3665	13:50	75N07,17	00W19,73	3665		14:51	75N08,24	00W19,98	3664	
126			Lan126.dat	08.10.02	15:13	75N01,97	00W19,84	3664	16:13	75N12,00	00W19,93	3663		17:10	75N13,00	00W20,30	3663	
127			Lan127.dat	08.10.02	19:04	74N57,1	00W19,6	3669	20:02	74N57,9	00W19,2	3669		20:54	74N54,4	00W19,2	3667	
128			Lan128.dat	08.10.02	21:37	74N53,1	00W19,7	3668	22:32	74N53,9	00W20,1	3669		23:26	74N54,66	00W20,11	3671	

Yoyo station list

	Station				Start						Buttom							Up						
Station_No.	Lat.	Long.	Filename	Date	Time	Lat.	Long.	Depth	Pressure	Wire Out	Time	Lat.	Long.	Depth	DAB	Pressure	Wire Out	Time	Lat.	Long.	Depth	Pressure	Wire Out	Comment
YoA001			yoA001.dat	25.09.2002	15:45	74N07,00	11W43,03	2841	0,34	0	16:55	74N08,06	11W43,56	2846	9	2896,0	3070	17:04	74N08,20	11W43,16	2884	1-E30	1-E30	Start ; ab 198 dbar keine Daten mehr; Abbruch??
YoA002			yoA002.dat	25.09.2002	17:05	74N08,20	11W43,16	2884	1-E30	1-E30	17:16	74N08,40	11W43,80	2884	7	2901	3124	17:30	74N08,5	11W44,4	2858	1-E30	1-E30	Neustart??; Bodenmelder-Gewicht verloren
YoA003			yoA003.dat	25.09.2002	17:31	74N08,5	11W44,4	2858	1-E30	1-E30	17:40	74N08,70	11W44,3	2862	10	2894,5	3236	17:52	74N08,90	11W44,70	2877	1-E30	1-E30	
YoA004			yoA004.dat	25.09.2002	17:53	74N08,90	11W44,70	2877	1-E30	1-E30	18:06	74N08,2	11W45,00	2955	8	2912,5	3442	18:18	74N09,4	11W45,3	2967	1-E30	1-E30	
YoA005			yoA005.dat	25.09.2002	18:19	74N09,4	11W45,3	2967	1-E30	1-E30	18:31	74N09,7	11W45,80	2964	8	2933,2	3671	18:43	74N09,90	11W46,40	2955	1-E30	1-E30	
YoA006			yoA006.dat	25.09.2002	18:44	74N09,90	11W46,40	2955	1-E30	1-E30	19:00	74N10,20	11W46,70	2954	9	2975,1	3896	19:21	74N10,5	11W47,4	2933	2113	2912	
YoA007			yoa007.dat	25.09.2002	19:23	74N10,5	11W47,4	2933	2113	2912	19:50	74N11,2	11W48,4	2909	6	3025	4074	20:10	74N11,4	11W49,2	2907	2482	3508	
YoA008			yoa008.dat	25.09.2002	20:11	74N11,4	11W49,2	2907	2482	3508	20:26	74N11,7	11W49,8	2907	7	3003	4162	20:49	74N12,1	11W50,6	2901	2482	3588	Temp-Srung bei 2630 dbar hieven
YoA009			yoa009.dat	25.09.2002	20:51	74N12,1	11W50,6	2901	2482	3588	21:10	74N12,6	11W50,9	2899	6	2971	4106	21:36	74N12,7	11W51,0	2910	2480	3082	
YoA010			yoa010.dat	25.09.2002	21:38	74N12,6	11W51,0	2910	2480	3082	21:56	74:12,9	11W51,0	2900	6	2970	3409	23:14	74N13,03	11W53,30	2855	0,3	0	Ende

Yob001			yob001.dat	26.09.2002	00:23	74N16,58	11W14,97	2972	0,4	0	01:29	74N15,85	11W14,32	2973	9	3033,4	3107	01:42	74N15,75	11W14,00	2970	2508,6	2620	Start
Yob002			yob002.dat	26.09.2002	01:44	74N15,75	11W14,00	2970	2508,6	2620	01:58	74N15,55	11W13,60	2974	10	3036,7	3186	02:11	74N15,35	11W13,07	2990	2506,6	2716	
Yob003			yob003.dat	26.09.2002	02:12	74N15,35	11W13,07	2990	2506,6	2716	02:25	74N15,15	11W12,84	3035	10	3035,8	3291	02:41	74N14,94	11W12,24	3031	2506,6	2809	
Yob004			yob004.dat	26.09.2002	02:42	74N14,94	11W12,24	3031	2506,6	2809	02:59	74N14,68	11W11,47	3008	9	3048,4	3441	03:13	74N14,52	11W10,93	2988	1-E30	1-E30	
Yob005			yob005.dat	26.09.2002	03:14	74N14,52	11W10,93	2988	1-E30	1-E30	03:31	74N14,20	11W10,14	2945	10	3099,8	3598	03:48	74N13,96	11W09,67	2939	1-E30	1-E30	
Yob006			yob006.dat	26.09.2002	03:49	74N13,96	11W09,67	2939	1-E30	1-E30	04:03	74N13,77	11W09,51	2935	8	3074,0	3525	04:26	74N13,80	11W10,32	2933	2500	2608	bei ca. 2950 dbar hieven Schiff gestoppt; erneutes Absinken;Altimeter zeigte Touchdown an
Yob007			yob007.dat	26.09.2002	04:27	74N13,80	11W10,32	2933	2500	2608	04:41	74N13,90	11W10,29	2915	10	3003,7	3200	04:53	74N13,31	11W10,08	2920	1-E30	1-E30	
Yob008			yob008.dat	26.09.2002	04:55	74N13,31	11W10,08	2920	1-E30	1-E30	05:08	74N13,0	11W10,70	2914	9	3001,2	3336	05:20	74N12,80	11W09,50	2915	2496	2865	
Yob009			yob009.dat	26.09.2002	05:21	74N12,80	11W09,50	2915	2496	2865	05:33	74N12,60	11W09,20	2913	9	2990,2	3385	05:44	74N12,50	11W09,40	2908	2464,1	2891	
Yob010			yob010.dat	26.09.2002	05:45	74N12,50	11W09,40	2908	2464,1	2891	05:58	74N12,30	11W08,80	2905	10	2980,6	3412	06:55	74N12,2	11W07,6	2906	0,2	0	Ende
Yoc001			yoc001.dat	26.09.2002	11:16	74N27,32	10W17,36	3104	1-E30	0	12:41	74N26,69	10W18,32	3100	8	3169,6	3114	12:55	74N26,4	10W17,8	3099	2496,5	2514	Start
Yoc002			yoc002.dat	26.09.2002	12:57	74N26,4	10W17,8	3099	2496,5	2514	13:13	74N26,21	10W17,22	3100	8	3168,4	3265	13:27	74N25,99	10W16,91	3101	2510,2	2658	
Yoc003			yoc003.dat	26.09.2002	13:29	74N25,99	10W16,91	3101	2510,2	2658	13:42	74N25,78	10W16,67	3102	10	3164,8	3359	13:57	74N25,57	10W16,33	3123	2486,9	2710	
Yoc004			yoc004.dat	26.09.2002	13:59	74N25,57	10W16,33	3123	2486,9	2710	14:11	74N25,35	10W16,07	3105	8	3168,1	3424	14:26	74N25,18	10W15,85	3110	2510,7	2747	
Yoc005			yoc005.dat	26.09.2002	14:28	74N25,18	10W15,85	3110	2510,7	2747	14:43	74N24,91	10W15,67	3123	10	3168,8	3444	14:56	74N24,72	10W15,41	3127	2511,8	2798	
Yoc006			yoc006.dat	26.09.2002	14:57	74N24,72	10W15,41	3127	2511,8	2798	15:22	74N24,34	10W15,02	3137	9	3180,4	3483	15:39	74N24,13	10W14,74	3126	2484,0	2768	
Yoc007			yoc007.dat	26.09.2002	15:40	74N24,13	10W14,74	3126	2484,0	2768	16:02	74N23,81	10W14,43	3077	9	3198,4	3479	16:16	74N23,65	10W14,39	3060	2494,3	2729	
Yoc008			yoc008.dat	26.09.2002	16:18	74N23,65	10W14,39	3060	2494,3	2729	16:36	74N23,35	10W13,87	3051	9	3194,1	3466	16:50	74N23,12	10W13,37	3055	2485,6	2832	
Yoc009			yoc009.dat	26.09.2002	16:50	74N23,12	10W13,37	3055	2485,6	2832	17:05	74N22,81	10W12,72	3062	6	3136,4	3610	17:23	74N22,50	10W12,30	3060	2489,7	3003	
Yoc010			yoc010.dat	26.09.2002	17:24	74N22,50	10W12,30	3060	2489,7	3003	17:39	74N22,20	10W11,90	3062	9	3116,9	3712	17:55	74N21,9	10W11,7	3064	2488,4	3060	
Yoc011			yoc011.dat	26.09.2002	17:55	74N21,9	10W11,7	3064	2488,4	3060								18:56	74N21,5	10W11,7	3068	0,2	0	Ende; nur Hieven von 2500 dbar

Yod001			yod001.dat	29.09.2002	17:32	74N17,80	10W47,00	2963	0,4	0	18:42	74N18,40	10W48,30	2972	8	3034,7	3016	18:52	74N18,6	10W48,6	2964	2477,5	2499	Start
Yod002			yod002.dat	29.09.2002	18:53	74N18,6	10W48,6	2964	2477,5	2499	19:05	74N18,8	10W49,2	2976	7	3033	1-E30	19:17	74N18,9	10W49,6	2975	2467	1-E30	
Yod003			yod003.dat	29.09.2002	19:19	74N18,9	10W49,6	2975	2467	1-E30	19:31	74N19,2	10W50,1	2979	9	3036	1-E30	19:43	74N19,3	10W50,5	3002	2470	2740	
Yod004			yod004.dat	29.09.2002	19:45	74N19,3	10W50,5	3002	2470	2740	19:57	74N19,5	10W51,0	3026	11	3039	3374	20:08	74N19,7	10W51,2	3041	2470	2816	
Yod005			yod005.dat	29.09.2002	20:09	74N19,7	10W51,2	3041	2470	2816	20:23	74N20,0	10W51,7	3076	6	3046	3498	20:35	74N20,10	10W52,0	3077	2483	2957	
Yod006			yod006.dat	29.09.2002	20:36	74N20,10	10W52,0	3077	2483	2957	20:52	74N20,4	10W52,4	3078	7	3091	3642	21:07	74N20,7	10W52,8	3060	2480	2994	
Yod007			yod007.dat	29.09.2002	21:09	74N20,7	10W52,8	3060	2480	2994	21:24	74N20,9	10W53,2	3034	7	3145	3707	21:40	74N21,2	10W53,5	3021	2480	3000	
Yod008			yod008.dat	29.09.2002	21:42	74N21,2	10W53,5	3021	2480	3000	21:55	74N21,3	10W53,8	3080	7	3149,5	3691	22:09	74N21,6	10W54,1	3021	2480	2977	
Yod009			yod009.dat	29.09.2002	22:10	74N21,6	10W54,1	3021	2480	2977	22:24	74N21,8	10W54,7	3023	7	3112	3659	22:38	74N21,9	10W55,2	3025	2477	3013	
Yod010			yod010.dat	29.09.2002	22:39	74N21,9	10W55,2	3025	2477	3013	22:53	74N22,2	10W55,8	3028	6	3083	3665	23:05	74N22,38	10W56,28	3027	2492	3066	
Yod011			yod011.dat	29.09.2002	23:08	74N22,38	10W56,28	3027	2492	3066	23:21	74N22,62	10W56,57	3027	8	3086,2	3731	00:30	74N23,66	10W59,80	3032	0,4	0	Ende
Yoe001			yoe001.dat	30.09.2002	03:54	74N07,84	12W50,79	2726	0,4	0	04:50	74N07,61	12W49,81	2697	9	2778,3	2723	04:59	74N07,64	12W49,61	2704	2446,8	2398	Start
Yoe002			yoe002.dat	30.09.2002	05:01	74N07,64	12W49,61	2704	2446,8	2398	05:08	74N07,16	12W49.4	2710	9	2766,1	2713	05:18	74N07,70	12W49,50	2706	2195,3	2153	Kurs kann nicht gehalten werden
Yoe003			yoe003.dat	30.09.2002	05:18	74N07,70	12W49,50	2706	2195,3	2153								06:11	74N07,5	12W47,9	2705	0,3	0	Abbruch; nur Hievprofil
Yof001			yof001.dat	01.10.2002	18:46	74N04,60	12W25,80	2779	0,8	0	19:47	74N05,4	12W26,3	2767	7	2834	3020	19:59	74N05,5	12W26,7	2763	2283	2507	Start
Yof002			yof002.dat	01.10.2002	20:01	74N05,5	12W26,7	2763	2283	2507	20:16	74N05,6	12W27,2	2762	7	2834	3092	20:29	74N05,7	12W27,7	2764	2286	2562	
Yof003			yof003.dat	01.10.2002	20:30	74N05,7	12W27,7	2764	2286	2562	20:41	74N05,7	12W28,2	2764	10	2824	1-E30	20:55	74N05,9	12W28,6	2761	2284	2588	
Yof004			yof004.dat	01.10.2002	20:57	74N05,9	12W28,6	2761	2284	2588	21:09	74N06,0	12W29,1	2754	7	2818	3177	21:27	74N06,4	12W28,7	2756	2287	2481	
Yof005			yof005.dat	01.10.2002	21:27	74N06,4	12W28,7	2756	2287	2481	21:39	74N06,2	12W29,3	2750	9	2817	3048	21:49	74N06,3	12W29,7	2745	2271	2536	
Yof006			yof006.dat	01.10.2002	21:51	74N06,3	12W29,7	2745	2271	2536	22:04	74N06,4	12W30,6	2740	7	2816	3161	22:17	74N06,5	12W31,3	2734	2274	2690	
Yof007			yof007.dat	01.10.2002	22:18	74N06,5	12W31,3	2734	2274	2690	22:34	74N06,7	12W32,4	2724	7	2803	3400	22:50	74N06,7	12W33,2	2728	2296	2893	
Yof008			yof008.dat	01.10.2002	22:51	74N06,7	12W33,2	2728	2296	2893	23:04	74N06,75	12W33,93	2743	8	2793,0	3372	23:17	74N06,60	12W34,66	2743	2285,5	2780	
Yof009			yof009.dat	01.10.2002	23:18	74N06,60	12W34,66	2743	2285,5	2780	23:35	74N06,60	12W36,51	2805	8	2780,3	3587	00:02	74N06,75	12W37,57	2815	2294,4	2959	

Yof010			yof010.dat	02.10.2002	00:04	74N06,75	12W37,57	2815	2294,4	2959	00:15	74N06,81	12W38,17	2813	8	2795,3	3423	00:30	74N06,86	12W38,98	2795	2291,8	2861	
Yof011			yof011.dat	02.10.2002	00:32	74N06,86	12W38,98	2795	2291,8	2861	00:42	74N06,91	12W39,65	2780	7	2850,3	3434	00:57	74N06,95	12W40,54	2771	2291,8	2858	
Yof012			yof012.dat	02.10.2002	01:00	74N06,95	12W40,54	2771	2291,8	2858	01:10	74N06,95	12W41,53	2763	8	2867,4	3506	01:24	74N06,99	12W42,45	2769	2291,1	2936	
Yof013			yof013.dat	02.10.2002	01:26	74N06,99	12W42,45	2769	2291,1	2936	01:41	74N07,02	12W43,90	2775	8	2833,7	3629	01:54	74N07,09	12W45,01	2728	2291,1	3161	
Yof014			yof014.dat	02.10.2002	01:56	74N07,09	12W45,01	2728	2291,1	3161	02:15	74N07,25	12W47,01	2693	8	2813,5	3956	03:32	74N07,70	12W52,87	2715	0,4	0	Ende