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CURRENT METER OBSERVATIONS FROM HAMILTON BANK AND NE NEWFOUNDLAND SHELF, 1990 TO 1993

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Current meter observations from Hamilton Bank and NE Newfoundland Shelf, 1990 to 1993

by

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Abstract

Narayanan, S. 1994. Current meter observations from Hamilton Bank and NE Newfoundland Shelf 1990 to 1993. Canadian Technical Report of Hydrography and Ocean Sciences No. 157: v + 184 p.

Between 1990 and 1993, a comprehensive oceanographic mooring program was conducted on the Labrador and Newfoundland shelves, with funding from the Northern Cod Science Program (NCSP). The program was coordinated with researchers at Bedford Institute of Oceanography who were involved in oceanography projects off Newfoundland with funding from the Panel on Energy Research and Development (PERD). This report presents a description of this comprehensive data set, the statistical summaries of the data and the time series plots, selected tidal constituents and some preliminary results.

Résumé

Narayanan, S. 1994. Observations au courantomètre sur le banc Hamilton et le plateau continental du NE de Terre-Neuve entre 1990 et 1993. Canadian Technical Report of Hydrography and Oceans Sciences. No. 157: v + 184 p.

Entre 1990 et 1993, un programme détaillé de mouillages océanographiques a été réalisé sur les plateux continentaux du Labrador et de Terre-Neuve, grâce au financement du Programme scientifique de la morue du nord (PSMN)). L'étude a été coordonnée aux travaux des chercheurs de l'Institut Océanographique de Bedford engagés dans des recherches océanographiques au large de Terre-Neuve avec le soutien financier du Groupe de recherche et d'exploitation énergétique (GREE). Le présent rapport offre une description de cet ensemble détaillé de données, les résumés statistiques des données et des tracés des séries temporelles, les composantes choisies de la marée et quelques résultats préliminaires.

Introduction

Driven primarily by the offshore energy research and development initiatives, the ocean current monitoring programs on Canada's eastern continental shelf during the 1970s and 1980s, focused mostly on the Labrador Shelf and on the Grand Bank (Fig. 1). Recent dramatic decline in the northern cod stock, one of the major commercial species in the northwest Atlantic, re-emphasized the need for a coordinated effort to extend the coverage to the entire shelf off Newfoundland and Labrador. The Harris Panel, appointed by the Dept. of Fisheries and Oceans to provide an independent review of the science underlying the management of the northern cod also recommended enhanced effort to understand the ocean environment in the northern cod region. The Northern Cod Science Program (NCSP), an intensive five year program established in 1990 in response to the Harris Panel recommendations, provided the necessary funding to launch a comprehensive physical oceanographic study on the Labrador and Newfoundland Shelves. This study involved current meter moorings, CTD surveys, surface current monitoring using satellite-tracked drifters, vessel-mounted acoustic doppler current profiler surveys, and data analysis and numerical modelling. This report focuses on the data collected from the moored instruments from 1990 to 1993.

A review of the existing ocean current data base for the northern cod region revealed that the NE Newfoundland Shelf, sandwiched between the Labrador Shelf and Grand Bank, had not been well monitored. Considering that the NE Newfoundland Shelf has been a highly productive area for the cod fishery, and that the cross-shelf saddles on this section of the shelf have been identified as preferred routes during the spring cod migration, monitoring of the ocean currents on the NE Newfoundland Shelf was given a high priority. Moreover, these saddles also provide a venue for cross shelf exchanges of mass, heat and salt, as well as other materials floating or dissolved, and consequently may play an important role in determining the cod eggs and larvae retention in the coastal region and thus influence recruitment.

The mooring sites were selected based primarily on the discussions which took place prior to and during an oceanography workshop that was held in 1990. The workshop objectives were to:

- review existing ideas on how ocean climate influences fisheries;
- review the physical oceanographic initiatives in the northern cod region, of relevance to cod ecosystem dynamics, and identify omissions and duplications;
- identify, or plan specific projects to derive oceanographic indices of relevance to fisheries; and
- provide a forum for exchanging ideas and information, and improving collaboration, among scientists from different regions and organizations.

In the following sections, the time series data set collected under the NCSP during the 1990 - 1993 period is described, selected plots and statistical summaries are presented, and some of the preliminary results are discussed.

Description of Data Set

The NCSP-funded moored observation program on the Newfoundland Shelf was started in the summer of 1990 and continues through 1994. On the southern Labrador Shelf, the monitoring program initiated by Dr. John Lazier of the Bedford Institute of Oceanography in 1970s and transferred to the Oceanography Section at the Northwest Atlantic Fisheries Centre (NAFC) in St. John's, was also continued under NCSP. The instruments used for the moorings were primarily Aanderaa current meters and thermistor chains with the exception of two S-4 current meters manufactured by InterOcean Ltd. Whenever possible the current meters were equipped with temperature, conductivity and pressure sensors; a listing of mooring particulars are given in Table 1.

The intention was to service each mooring at least every 6 to 8 months to reduce data loss resulting from instrument malfunction. However, availability of ship time and weather conditions during the cruises necessitated longer-term deployments for some of the moorings. For older Aanderaa current meters, the data quality was found to deteriorate with time after about 8 months.

All data recorded by Aanderaa RCM4 and RCM5 current meters and the thermistor chain dataloggers were processed by Seaconsult Ltd. The direction data were corrected by applying the calibration data from the compass swing and also corrected for the local magnetic variation as given on navigational charts for the area. The instrument cycle time was taken as the sample time; no attempt was made to time-stamp the readings at the mid-point of the cycle. Data from the digital instruments (RCM7 and S-4 current meters) were downloaded to the Oceanography Section's computer using the manufacturer's software. The velocity data were decomposed into the east-component (u) and the north-component (v). All calibrated data were transferred to the in-house SUN Workstation and analyzed using BIO's data processing software, PIPE, adapted to UNIX by the Oceanography Section at NAFC. All invalid records were replaced with 9999.99. The instrument performance and data return are shown schematically in Fig. 2.

Data Presentation

Tides

Hourly current velocity time series were analyzed using Foreman's harmonic analysis software (Foreman, 1978) to compute the tidal constituents. The results from these analyses indicate that

M_2 is the dominant constituent with amplitudes in the range of 1.5-7 cm/s (Table 2). Other components, S_2, N_2, K_1 and O_1 were smaller, between 0.5 and 2 cm/s.

Time Series

Since the number of time series collected during the three-year period is large, it is impractical to present all the raw plots. Hence, data from instruments deployed at approximately the same depth and location were combined, filtered using Godin's tide removal filter $A_{25}*A_{24}*A_{24}$ (Godin, 1972) and subsampled at 6 hourly intervals; these filtered files were used for the time series plots given in Appendices 1 to 16.

Summary Statistics

The filtered concatenated time series were analyzed to produce a table of statistics consisting of the mean over the entire sampling period, standard deviation, minimum and maximum (Table 3). The mean currents computed from the filtered time series and the standard deviations along the principal axes are given in Figs. 3 and 4 respectively. It is evident from these data products that the current meter array has been able to capture the key characteristics of the circulation on the shelf. The stronger flows in the offshore and inshore branches of the Labrador Current, and the weaker mean currents on the banks are noticeable (Fig. 3). The standard deviations are also larger on the banks and in the saddles, compared to those within the Labrador Current (Fig. 4).

Seasonal Variability

Significant seasonal variability in the oceanographic conditions is known to be present on the shelf. Petrie et al. (1991) estimated an amplitude of 6.88°C (0.66) at the surface, and 0.21°C (0.09) at the bottom, for temperature (salinity) at Station 27. The monthly temperature and salinity data from the mooring sites (data from the inshore and shelf edge locations on the Bonavista saddle are shown in Figs. 5 and 6) also indicate considerable month-to-month variability.

Weather-band Variability

The time series plots presented in Appendices 1-16 also indicate variability at 5 - 10 day periods. Narayanan et al. (1991) have shown that such oscillations effect shifts in the position of the shelf edge front that separate the colder and fresher coastal waters from the saltier and warmer Labrador Sea, and provide a mechanism for exchanges through the cross-shelf saddles on the shelf.

A progressive vector diagram (PVD) representation of the velocity (Fig. 7 shows PVDs from BB1 and WB1 for each season in 1991) clearly demonstrates several such oscillations (characterized by short-term displacements in the cross-shelf direction) occurring during any given year. Certain characteristics of the shelf circulation during these "events" may be described based on a cursory examination of one, which occurred between mid May and mid June of 1991 (this period was chosen for the analysis because several biological surveys were also conducted at this time). In particular, the PVDs show the occurrence of onshore flow followed by offshore movement during this period at all shelf edge locations on the NE Newfoundland Shelf (Fig. 8). Furthermore, there appears to be a phase lag between the time of flow reversal at successive mooring sites; at WB1 onshore flow was between day of the year 149 and 167 resulting in a total onshore displacement of approximately 175 km, whereas at FI3, the corresponding period was 154 to 176, and the displacement was approximately 100 km. A comparison of the times of occurrences of onshore flow at the Bonavista sites suggest that, even though onshore flow and flow reversals occurred in the Bonavista saddle as evidenced at all four sites BB1 to BB4 (only BB1 is shown), the "event" that caused the Bonavista oscillation may not be due to the propagation of the oscillation which appeared at FI3 on day 154.

During the event under consideration, the currents at WB1 not only rotated a full circle but decreased in amplitude by a factor of ten (Fig. 9). These flow reversals and reduction of current strength were also found to occur at depth, as evidenced in the data from the current meter deployed at 325 m at the same site.

Current variability on the outer shelf is expected to be accompanied by variability in the temperature and salinity. Houghton et al. (1988) has shown that, though these shelf edge oscillations may not effect a net exchange of shelf and slope water properties, they do generate significant fluctuations in the cross-shelf fluxes of heat and salt. Fluctuations in the cross-shelf fluxes were observed at all shelf edge locations on the NE Newfoundland Shelf. In particular, at WB1 (75 m), the onshore flux of heat ($T'.u'$, where the prime denotes deviation from the mean and the onshore direction is defined as perpendicular to the local 1000 m isobath), which lasted for approximately 8 days, was followed by an offshore flux for half as many days and then reversed to onshore again for another 10 days (Fig. 9). Following this, the onshore flux decreased partially due to a reduction in the current strength. It is clear from this diagram that there was a net onshore eddy heat flux during this event. Salt flux variability was similar.

Data from a thermistor chain deployed between 100 and 200 meters at WB1 indicate large vertical excursions of isotherms in response to the current fluctuations (Fig. 10). Furthermore, temperature data collected by the bottom current meter at this site

show that these temperature fluctuations extended all the way to the bottom.

That the oscillations generated at the shelf edge can penetrate to the nearshore region through the saddles, is clearly demonstrated in Fig. 11. A phase lag of approximately 5 days was found to exist between the oscillations at BB1 and BB3.

Conclusion

The current meter data collected during the first three years of the NCSP provide an excellent set of time series for the southern Labrador and NE Newfoundland Shelves to delineate the major characteristics of the shelf circulation. The data set facilitated the computation of tidal current amplitudes at a number of locations and depths for comparison with tidal model predictions for the region. The observations have also enhanced our understanding of the mean circulation on the shelf and will facilitate the analysis of cross-shelf fluxes of mass, heat, and salt.

Acknowledgements

The data set presented in this report is the result of personal dedication and technical expertise of the oceanography staff at the Northwest Atlantic Fisheries Centre. The cooperation from all those who participated in the instrument preparation, and the numerous cruises under all possible weather conditions, is greatly appreciated. In particular, the technical support from Charlie Fitzpatrick and John Walpert, who were responsible for the moorings and the instrumentation, was invaluable. I would also like to express my gratitude to the technical staff at Bedford Institute of Oceanography for providing instrumentation, advice, and on occasion field support (Bert Hartling, Bruce Pinsent, Murry Scotney and Paul D'Entremont have participated in the cruises at one time or other), to assist us during the cruises. The analyses of the time series data presented in this report were carried out by Chris Rendell and Jeff Pinhorn from Seaconsult Ltd. The comments from Gordon Mertz and John Walpert, who reviewed the report, have been most helpful.

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Table 1. Summary of current meter moorings deployed from 1990 to 1993. Water depth (WD) and instrument depth (ID) are nominal depths. * indicates thermistor chains.

STN	LATITUDE	LONGITUDE	WD (m)	ID (m)	START	END
BB1	49° 35.60′	50° 14.58′	330	40	26-MAY-1992	17-OCT-1992
	49° 35.80′	50° 15.29′	330	75	14-JUL-1990	11-MAY-1991
	49° 35.70′	50° 15.35′	330	75	12-MAY-1991	2-NOV-1991
	49° 35.66′	50° 15.15′	330	75	2-NOV-1991	26-MAY-1992
	49° 35.60′	50° 14.58′	330	150	26-MAY-1992	17-OCT-1992
	49° 35.80′	50° 15.29′	330	315	14-JUL-1990	11-MAY-1991
	49° 35.70′	50° 15.35′	330	315	12-MAY-1991	2-NOV-1991
	49° 35.66′	50° 15.15′	330	315	2-NOV-1991	22-NOV-1991
	49° 35.60′	50° 14.58′	330	315	26-MAY-1992	17-OCT-1992
	49° 35.70′	50° 15.35′	330	100-200	12-MAY-1991	2-NOV-1991*
BB2	49° 17.06′	51° 15.47′	325	40	27-MAY-1992	17-OCT-1992
	49° 17.20′	51° 15.30′	325	75	14-JUL-1990	8-AUG-1990
	49° 17.16′	51° 15.14′	325	75	2-AUG-1991	4-OCT-1991
	49° 17.06′	51° 15.47′	325	150	27-MAY-1992	17-OCT-1992
	49° 16.77′	51° 15.61′	325	215	6-JUN-1993	25-JUL-1993
	49° 17.16′	51° 15.14′	325	310	2-AUG-1991	2-NOV-1991
	49° 17.24′	51° 15.77′	325	310	2-NOV-1991	26-MAY-1992
	49° 17.06′	51° 15.47′	325	310	27-MAY-1992	19-JUL-1992
	49° 16.77′	51° 15.61′	325	310	6-JUN-1993	25-JUL-1993
BB3	48° 49.60′	52° 41.60′	230	40	1-JUN-1992	18-OCT-1992
	48° 49.46′	52° 40.90′	230	75	18-MAY-1991	1-NOV-1991
	48° 49.47′	52° 40.81′	230	75	2-NOV-1991	1-JUN-1992
	48° 49.60′	52° 41.60′	230	150	1-JUN-1992	18-OCT-1992
	48° 49.60′	52° 41.50′	230	215	13-JUL-1990	18-MAY-1991
	48° 49.46′	52° 40.90′	230	215	19-MAY-1991	9-JUN-1991
	48° 49.47′	52° 40.81′	230	215	2-NOV-1991	1-JUN-1992
	48° 49.60′	52° 41.60′	230	215	1-JUN-1992	18-OCT-1992
BB4	49° 44.91′	49° 44.79′	1000	200	11-MAY-1991	3-NOV-1991
	49° 44.91′	49° 44.79′	1000	400	11-MAY-1991	3-NOV-1991
	49° 44.80′	49° 44.33′	1000	400	3-NOV-1991	25-MAY-1992
	49° 44.91′	49° 44.79′	1000	900	11-MAY-1991	3-NOV-1991
	49° 44.80′	49° 44.33′	1000	900	3-NOV-1991	25-MAY-1992
BB5	49° 14.66′	52° 49.71′	330	40	3-JUN-1992	18-OCT-1992
	49° 14.66′	52° 49.71′	330	150	3-JUN-1992	18-OCT-1992
	49° 14.66′	52° 49.71′	330	315	3-JUN-1992	18-OCT-1992

Table 1. (continued)

STN	LATITUDE	LONGITUDE	WD (m)	ID (m)	START	END
CB1	48° 16.36′	52° 25.63′	200	40	2-JUN-1992	18-OCT-1992
	48° 16.36′	52° 25.63′	200	150	2-JUN-1992	18-OCT-1992
FI1	49° 57.06′	52° 46.36′	480	40	10-JUL-1992	28-OCT-1992
	49° 57.06′	52° 46.36′	480	150	10-JUL-1992	28-OCT-1992
	49° 57.26′	52° 46.47′	480	335	24-JUL-1991	5-NOV-1991
	49° 57.22′	52° 47.02′	480	335	5-NOV-1991	10-MAY-1992
	49° 57.26′	52° 46.47′	480	465	24-JUL-1991	1-NOV-1991
	49° 57.22′	52° 47.02′	480	465	5-NOV-1991	10-JUL-1992
	49° 57.06′	52° 46.36′	480	465	10-JUL-1992	28-OCT-1992
FI2	50° 14.82′	51° 58.22′	260	40	9-JUL-1992	28-OCT-1992
	50° 14.90′	51° 58.30′	260	75	23-JUL-1991	4-NOV-1991
	50° 14.91′	51° 58.27′	260	75	4-NOV-1991	9-JUL-1992
	50° 14.82′	51° 58.22′	260	150	9-JUL-1992	28-OCT-1992
	50° 14.90′	51° 58.30′	260	245	23-JUL-1991	4-NOV-1991
	50° 14.91′	51° 58.28′	260	245	4-NOV-1991	9-JUL-1992
	50° 14.82′	51° 58.22′	260	245	9-JUL-1992	28-OCT-1992
FI3	50° 31.70′	51° 3.85′	300	75	12-MAY-1991	4-NOV-1991
	50° 31.61′	51° 3.54′	300	75	4-NOV-1991	28-MAY-1992
	50° 31.65′	51° 4.05′	300	150	28-MAY-1992	29-OCT-1992
	50° 31.70′	51° 3.85′	300	275	12-MAY-1991	4-NOV-1991
	50° 31.60′	51° 3.53′	300	275	4-NOV-1991	28-MAY-1992
	50° 31.65′	51° 4.05′	300	275	28-MAY-1992	29-OCT-1992
	50° 31.70′	51° 3.85′	300	100-200	12-MAY-1991	4-NOV-1991*
	50° 31.70′	51° 3.85′	300	100-200	4-NOV-1991	28-MAY-1992*
SP1	52° 29.57′	51° 19.05′	1000	200	17-NOV-1991	13-JUL-1992
	52° 29.57′	51° 19.05′	1000	300	17-NOV-1991	13-JUL-1992
	52° 29.57′	51° 19.05′	1000	500	17-NOV-1991	13-JUL-1992
SP2	51° 54.24′	50° 33.66′	1000	200	17-NOV-1991	30-MAY-1992
	51° 54.24′	50° 33.66′	1000	300	17-NOV-1991	30-MAY-1992
	51° 54.24′	50° 33.66′	1000	500	17-NOV-1991	29-MAR-1992

Table 1. (continued)

STN	LATITUDE	LONGITUDE	WD (m)	ID (m)	START	END
WB1	51° 53.92′	51° 6.90′	340	40	12-JUL-1992	9-SEP-1992
	51° 54.27′	51° 8.35′	340	75	18-JUL-1990	13-MAY-1991
	51° 54.20′	51° 7.15′	340	75	13-MAY-1991	7-NOV-1991
	51° 54.16′	51° 7.15′	340	75	7-NOV-1991	31-JAN-1992
	51° 53.92′	51° 6.90′	340	150	12-JUL-1992	25-OCT-1992
	51° 54.27′	51° 8.35′	340	325	18-JUL-1990	15-DEC-1990
	51° 54.20′	51° 7.15′	340	325	13-MAY-1991	7-NOV-1991
	51° 54.16′	51° 7.15′	340	325	7-NOV-1991	12-JUL-1992
	51° 53.92′	51° 6.90′	340	325	12-JUL-1992	25-OCT-1992
	51° 54.27′	51° 8.35′	340	100-200	18-JUL-1990	13-MAY-1991*
	51° 54.27′	51° 8.35′	340	100-200	13-MAY-1991	29-JUL-1991*
	51° 54.27′	51° 8.35′	340	100-200	7-NOV-1991	12-JUL-1992*
WB2	50° 51.51′	54° 18.50′	245	235	17-JUL-1990	29-JAN-1991
	50° 51.70′	54° 18.57′	245	235	24-JUL-1991	6-NOV-1991
	50° 51.70′	54° 18.45′	245	235	6-NOV-1991	11-JUL-1992
WB3	51° 23.25′	52° 43.50′	400	40	12-JUL-1992	19-OCT-1992
	51° 23.40′	52° 43.91′	400	75	31-JUL-1991	7-NOV-1991
	51° 23.41′	52° 44.01′	400	75	7-NOV-1991	19-MAY-1992
	51° 23.25′	52° 43.50′	400	150	12-JUL-1992	19-OCT-1992
	51° 23.40′	52° 43.91′	400	385	31-JUL-1991	7-NOV-1991
	51° 23.41′	52° 44.01′	400	385	7-NOV-1991	12-JUL-1992
	51° 23.25′	52° 43.50′	400	385	12-JUL-1992	19-OCT-1992
H1	55° 3.64′	53° 58.69′	1000	200	19-JUL-1990	27-JUL-1991
	55° 2.86′	53° 56.54′	1000	200	8-NOV-1991	26-FEB-1992
	55° 3.64′	53° 58.69′	1000	400	19-JUL-1990	14-MAR-1991
	55° 3.09′	53° 57.09′	1000	400	27-JUL-1991	27-OCT-1991
	55° 2.86′	53° 56.54′	1000	400	8-NOV-1991	14-JUL-1992
	55° 3.64′	53° 58.69′	1000	985	19-JUL-1990	27-JUL-1991
	55° 3.09′	53° 57.09′	1000	985	27-JUL-1991	8-NOV-1991
	55° 2.86′	53° 56.54′	1000	985	8-NOV-1991	14-JUL-1992
H2	53° 44.52′	55° 26.86′	200	190	20-JUL-1990	8-JUN-1991
	53° 44.91′	55° 28.62′	200	190	25-JUL-1991	9-NOV-1991
	53° 44.83′	55° 28.58′	200	190	9-NOV-1991	15-JUL-1992
	53° 44.21′	55° 28.61′	200	190	23-OCT-1992	13-AUG-1993

Table 2. Tidal constituents in current ellipse form; Values represented by A and B refer to amplitudes (cm/s) of the semi-major and semi-minor axes of the current ellipse; A negative value of B indicates a clockwise rotation of the tidal current. Inclination of the ellipse (INC) and phases (G, G+, G-) in degrees. Time zone, UTC. Notations as in Foreman (1978).

BB1 (49° 36'N, 51° 53'W), 75 M, 12/ 5/91 TO 2/11/91

	NAME	SPEED	A	B	INC	G	G+	G-
3	MSF	0.00282193	1.952	0.440	76.7	336.1	259.3	52.8
7	O1	0.03873065	0.395	-0.320	120.6	177.8	57.2	298.5
10	K1	0.04178075	1.127	-1.014	105.9	168.5	62.6	274.4
16	N2	0.07899925	1.501	-1.009	166.6	218.3	51.7	24.9
17	M2	0.08051140	5.428	-2.662	1.1	46.3	45.2	47.5
19	S2	0.08333334	2.096	-0.849	178.5	272.4	93.9	90.9

BB1 (49° 36'N, 51° 53'W), 315 M, 12/ 5/91 TO 2/11/91

	NAME	SPEED	A	B	INC	G	G+	G-
3	MSF	0.00282193	2.625	1.190	119.1	348.4	229.3	107.5
7	O1	0.03873065	0.376	-0.242	124.6	206.4	81.9	331.0
10	K1	0.04178075	1.622	-1.402	145.8	152.3	6.6	298.1
16	N2	0.07899925	0.961	-0.497	3.4	35.4	31.9	38.8
17	M2	0.08051140	4.343	-1.977	0.3	56.8	56.4	57.1
19	S2	0.08333334	1.794	-0.787	176.4	267.9	91.4	84.3

BB2 (47° 17'N, 51° 15'W), 75 M, 2/ 8/91 TO 4/10/91

	NAME	SPEED	A	B	INC	G	G+	G-
3	MSF	0.00282193	5.173	2.555	167.8	140.8	333.0	308.6
7	O1	0.03873065	0.606	-0.236	121.9	152.0	30.1	273.8
10	K1	0.04178075	1.347	-0.687	131.1	139.6	8.5	270.7
16	N2	0.07899925	1.597	-0.747	33.9	19.1	345.2	53.0
17	M2	0.08051140	3.967	-1.729	17.2	52.6	35.4	69.7
19	S2	0.08333334	1.408	-0.666	5.5	94.6	89.0	100.1

BB2 (49° 17'N, 51° 15W), 315 M, 2/ 8/91 TO 2/11/91

	NAME	SPEED	A	B	INC	G	G+	G-
3	MSF	0.00282193	2.124	1.109	47.5	8.2	320.7	55.7
7	O1	0.03873065	0.360	-0.194	86.4	234.0	147.6	320.5
10	K1	0.04178075	0.975	-0.700	127.5	160.3	32.7	287.8
16	N2	0.07899925	0.486	-0.134	0.7	356.3	355.5	357.0
17	M2	0.08051140	4.953	-2.651	6.2	46.8	40.6	53.1
19	S2	0.08333334	1.999	-0.857	0.7	85.8	85.1	86.5

BB4 (49° 45'N, 49° 45'W), 200 M, 11/ 5/91 TO 3/11/91

	NAME	SPEED	A	B	INC	G	G+	G-
3	MSF	0.00282193	0.935	-0.013	110.5	301.8	191.3	52.3
7	O1	0.03873065	0.136	0.028	160.7	174.4	13.6	335.1
10	K1	0.04178075	0.553	-0.364	170.1	107.3	297.2	277.3
16	N2	0.07899925	0.565	-0.263	175.4	203.0	27.6	18.3
17	M2	0.08051140	1.838	-0.336	171.4	225.5	54.1	36.9
19	S2	0.08333334	0.677	0.044	153.9	248.3	94.4	42.2

BB4 (49° 45'N, 49° 45'W), 400 M, 11/ 5/91 TO 3/11/91

	NAME	SPEED	A	B	INC	G	G+	G-
3	MSF	0.00282193	0.724	-0.176	102.6	332.0	229.5	74.6
7	O1	0.03873065	0.161	0.035	159.0	178.0	19.1	337.0
10	K1	0.04178075	0.509	-0.154	173.0	98.9	285.9	271.9
16	N2	0.07899925	0.279	-0.005	163.9	229.0	65.0	32.9
17	M2	0.08051140	1.837	-0.410	176.3	232.7	56.3	49.0
19	S2	0.08333334	0.655	0.108	177.3	269.4	92.1	86.7

BB4 (49° 45'N, 49° 45'W), 900 M, 11/ 5/91 TO 3/11/91

	NAME	SPEED	A	B	INC	G	G+	G-
3	MSF	0.00282193	0.932	-0.181	86.9	323.8	236.9	50.6
7	O1	0.03873065	0.144	-0.003	129.4	220.8	91.4	350.2
10	K1	0.04178075	0.572	-0.248	3.0	270.4	267.4	273.5
16	N2	0.07899925	0.358	-0.053	162.4	214.8	52.4	17.2
17	M2	0.08051140	1.972	-0.470	178.9	238.3	59.4	57.2
19	S2	0.08333334	0.767	-0.059	174.5	266.7	92.2	81.2

FI3 (50° 32'N, 51° 4'W), 75 M, 12/ 5/91 TO 4/11/91

	NAME	SPEED	A	B	INC	G	G+	G-
3	MSF	0.00282193	0.981	-0.288	107.5	176.9	69.4	284.4
7	O1	0.03873065	0.761	-0.550	156.2	148.9	352.7	305.2
10	K1	0.04178075	1.717	-1.182	94.7	143.4	48.7	238.1
16	N2	0.07899925	1.523	-1.054	167.5	212.5	45.0	20.0
17	M2	0.08051140	6.587	-4.130	4.6	55.6	50.9	60.2
19	S2	0.08333334	2.033	-1.026	6.5	88.7	82.2	95.3

FI3 (50° 32'N, 51° 4'W), 275 M, 12/ 5/91 TO 4/11/91

	NAME	SPEED	A	B	INC	G	G+	G-
3	MSF	0.00282193	1.180	0.294	49.3	144.6	95.3	193.9
7	O1	0.03873065	0.659	-0.448	124.1	190.1	66.0	314.2
10	K1	0.04178075	1.722	-1.418	110.8	144.1	33.2	254.9
16	N2	0.07899925	0.732	-0.238	175.9	233.5	57.6	49.5
17	M2	0.08051140	4.316	-2.349	171.6	233.2	61.6	44.8
19	S2	0.08333334	2.039	-0.971	169.4	270.3	100.9	79.7

WB1 (51° 54'N, 51° 7'W), 75 M, 13/ 5/91 TO 7/11/91

	NAME	SPEED	A	B	INC	G	G+	G-
3	MSF	0.00282193	2.108	-1.451	114.2	282.8	168.5	37.0
7	O1	0.03873065	0.409	-0.223	98.1	145.6	47.5	243.8
10	K1	0.04178075	0.527	-0.009	73.5	106.0	32.5	179.6
16	N2	0.07899925	1.483	-0.940	25.1	23.2	358.1	48.3
17	M2	0.08051140	5.957	-3.244	4.8	54.7	49.9	59.5
19	S2	0.08333334	2.373	-1.271	10.3	86.7	76.4	97.1

WB1 (51° 54'N, 51° 7'W), 325 M, 13/ 5/91 TO 7/11/91

	NAME	SPEED	A	B	INC	G	G+	G-
3	MSF	0.00282193	0.811	0.342	125.1	231.5	106.4	356.6
7	O1	0.03873065	0.478	-0.303	142.2	147.1	4.9	289.3
10	K1	0.04178075	0.220	0.014	113.0	112.6	359.6	225.6
16	N2	0.07899925	0.722	-0.111	172.6	242.7	70.1	55.3
17	M2	0.08051140	3.401	-1.230	161.8	238.0	76.3	39.8
19	S2	0.08333334	1.532	-0.580	176.4	271.9	95.5	88.3

Table 3. Summary statistics, based on current meter and thermistor chain data collected from 1990 to 1993. The time series data files were filtered using the tide removing filter A_{24} A_{24} A_{25} (Godin, 1978) and subsampled at 6 hr intervels prior to computing the statistics. Channels (CH) listed are: pressure (decibars), P; Salinity (psu), S; temperature (°C), T; east velocity (cm/s), U; north velocity (cm/s), V. * indicates thermistor chain data.

STN	ID (m)	CH	START TIME	END TIME	NPTS	MIN	MAX	MEAN	SD
BB1	40	P	28-MAY-1992	15-OCT-1992	564	64.7	67.0	64.8	0.31
		S	28-MAY-1992	15-OCT-1992	564	33.25	34.28	33.81	0.19
		T	28-MAY-1992	15-OCT-1992	564	-1.22	2.43	-0.26	0.79
		U	28-MAY-1992	15-OCT-1992	564	-8.6	18.5	5.1	4.4
		V	28-MAY-1992	15-OCT-1992	564	-34.6	8.7	-13.6	7.7
BB1	75	P	16-JUL-1990	24-MAY-1992	2692	77.2	89.4	80.8	3.86
		S	16-JUL-1990	24-MAY-1992	2692	33.36	34.43	33.87	0.21
		T	16-JUL-1990	24-MAY-1992	2692	-1.85	2.43	-0.44	0.87
		U	16-JUL-1990	24-MAY-1992	2692	-21.6	26.4	3.2	5.87
		V	16-JUL-1990	24-MAY-1992	2692	-49.0	8.7	-12.6	7.7
BB1	150	S	28-MAY-1992	14-OCT-1992	559	34.3	34.9	34.6	0.12
		T	28-MAY-1992	14-OCT-1992	559	0.46	2.92	1.65	0.57
		U	28-MAY-1992	15-OCT-1992	564	-12.0	11.4	2.4	3.8
		V	28-MAY-1992	15-OCT-1992	564	-23.9	6.6	-8.2	6.4
BB1	315	P	16-JUL-1990	1-NOV-1991	1881	320.0	329.8	323.6	4.70
		S	16-JUL-1990	15-OCT-1992	2445	34.54	35.17	34.89	0.10
		T	16-JUL-1990	15-OCT-1992	2511	2.08	4.07	3.33	0.36
		U	13-MAY-1991	15-OCT-1992	1317	-17.5	16.1	3.0	5.0
		V	13-MAY-1991	15-OCT-1992	1317	-18.1	15.7	-4.3	5.8
BB2	40	P	28-MAY-1992	16-OCT-1992	564	54.9	59.4	56.4	1.19
		T	28-MAY-1992	16-OCT-1992	564	-1.66	3.75	-0.48	1.09
		U	28-MAY-1992	16-OCT-1992	564	-4.6	39.2	13.2	7.6
		V	28-MAY-1992	16-OCT-1992	564	-20.0	11.2	-5.0	6.1
BB2	75	P	15-JUL-1990	3-OCT-1991	329	71.8	78.9	74.3	2.68
		S	4-AUG-1991	3-OCT-1991	240	33.02	33.58	33.34	0.14
		T	15-JUL-1990	3-OCT-1991	329	-1.62	-0.84	-1.30	0.16
		U	15-JUL-1990	3-OCT-1991	329	-7.8	27.1	7.0	7.2
		V	15-JUL-1990	3-OCT-1991	329	-30.8	12.8	-6.3	8.9
BB2	150	S	28-MAY-1992	16-OCT-1992	564	33.71	34.63	34.27	0.20
		T	28-MAY-1992	16-OCT-1992	564	-1.31	1.29	0.03	0.60
		U	28-MAY-1992	16-OCT-1992	564	-5.1	19.4	6.7	4.5
		V	28-MAY-1992	16-OCT-1992	564	-16.2	6.7	-4.4	4.4
BB2	215	P	8-JUN-1993	24-JUL-1993	185	219.9	220.0	220.0	0.00
		S	8-JUN-1993	24-JUL-1993	185	33.89	34.30	34.10	0.11
		T	8-JUN-1993	24-JUL-1993	185	-0.08	1.51	0.80	0.37
		U	8-JUN-1993	24-JUL-1993	185	-3.1	15.4	4.7	3.5
		V	8-JUN-1993	24-JUL-1993	185	-15.0	2.1	-4.5	3.8

Table 3. (Continued)

STN	ID (m)	CH	START TIME	END TIME	NPTS	MIN	MAX	MEAN	SD
BB2	310	P	4-AUG-1991	17-JUL-1992	557	303.5	317.8	308.4	4.58
		S	4-AUG-1991	17-JUL-1992	557	34.45	34.91	34.74	0.10
		T	4-AUG-1991	17-JUL-1992	1371	0.99	3.51	2.54	0.48
		U	4-AUG-1991	17-JUL-1992	1371	-21.8	32.8	2.2	7.4
		V	4-AUG-1991	17-JUL-1992	1371	-20.2	22.4	-2.5	5.8
BB3	40	P	3-JUN-1992	17-OCT-1992	544	41.2	45.6	43.1	0.88
		S	3-JUN-1992	17-OCT-1992	544	31.68	32.81	32.47	0.25
		T	3-JUN-1992	17-OCT-1992	544	-1.44	4.23	-0.19	1.48
		U	3-JUN-1992	17-OCT-1992	544	-17.5	33.7	6.5	8.3
		V	3-JUN-1992	17-OCT-1992	544	-39.1	5.4	-11.4	7.5
BB3	75	P	20-MAY-1991	31-MAY-1992	1497	51.9	66.0	63.1	1.64
		S	20-MAY-1991	31-MAY-1992	1497	32.33	33.14	32.90	0.17
		T	20-MAY-1991	31-MAY-1992	1497	-1.80	0.66	-1.43	0.51
		U	20-MAY-1991	31-OCT-1991	657	-10.0	17.6	6.4	5.4
		V	20-MAY-1991	31-OCT-1991	657	-22.1	9.0	-9.7	6.6
BB3	150	S	3-JUN-1992	17-OCT-1992	544	32.87	33.49	33.11	0.16
		T	3-JUN-1992	17-OCT-1992	544	-1.66	-1.13	-1.49	0.14
		U	3-JUN-1992	17-OCT-1992	544	-7.6	12.6	3.1	4.1
		V	3-JUN-1992	17-OCT-1992	544	-22.1	13.8	-6.2	6.9
BB3	215	P	15-JUL-1990	17-OCT-1992	2610	203.9	215.3	209.4	3.90
		S	15-JUL-1990	17-OCT-1992	1770	32.61	33.99	33.37	0.29
		T	15-JUL-1990	17-OCT-1992	1845	-1.66	-0.10	-1.29	0.29
		U	20-MAY-1991	17-OCT-1992	1459	-4.3	20.0	0.5	2.3
		V	20-MAY-1991	17-OCT-1992	1459	-27.0	12.8	-1.5	4.5
BB4	200	P	13-MAY-1991	1-NOV-1991	691	203.6	205.9	204.7	1.08
		S	13-MAY-1991	1-NOV-1991	691	34.82	35.08	34.99	0.06
		T	13-MAY-1991	1-NOV-1991	691	2.60	4.24	3.77	0.38
		U	13-MAY-1991	1-NOV-1991	691	-2.5	5.7	1.8	1.6
		V	13-MAY-1991	1-NOV-1991	691	-22.3	3.1	-11.0	4.7
BB4	400	P	13-MAY-1991	24-MAY-1992	691	399.5	402.3	402.2	0.36
		S	13-MAY-1991	24-NOV-1991	1496	34.58	35.07	34.86	0.15
		T	13-MAY-1991	24-MAY-1992	1496	2.81	4.13	3.69	0.29
		U	13-MAY-1991	24-MAY-1992	1496	-10.1	8.8	0.9	2.2
		V	13-MAY-1991	24-MAY-1992	1496	-16.8	11.0	-6.0	5.2
BB4	900	P	13-MAY-1991	1-NOV-1991	691	907.2	907.4	907.2	0.01
		S	13-MAY-1991	1-NOV-1991	691	35.01	35.05	35.04	0.01
		T	13-MAY-1991	24-MAY-1992	1496	2.99	3.47	3.18	0.11
		U	13-MAY-1991	24-MAY-1992	1496	-6.5	15.9	0.8	2.1
		V	13-MAY-1991	24-MAY-1992	1496	-16.2	10.2	-5.5	4.9
BB5	40	P	4-JUN-1992	17-OCT-1992	540	28.9	33.5	32.8	1.08
		S	4-JUN-1992	17-OCT-1992	540	31.78	32.86	32.48	0.24
		T	4-JUN-1992	17-OCT-1992	540	-1.61	5.22	0.00	1.73
		U	4-JUN-1992	17-OCT-1992	540	-24.4	18.8	0.5	8.0
		V	4-JUN-1992	17-OCT-1992	540	-29.4	4.3	-10.7	6.8
BB5	150	P	4-JUN-1992	17-OCT-1992	540	138.9	140.0	139.1	0.15
		U	4-JUN-1992	17-OCT-1992	540	-16.2	21.9	0.1	7.3
		V	4-JUN-1992	17-OCT-1992	540	-34.7	8.5	-7.4	7.7

Table 3. (Continued)

STN	ID (m)	CH	START TIME	END TIME	NPTS	MIN	MAX	MEAN	SD
BB5	315	P	4-JUN-1992	17-OCT-1992	540	310.4	313.9	312.1	0.72
		S	4-JUN-1992	17-OCT-1992	540	33.59	34.40	34.16	0.20
		T	4-JUN-1992	17-OCT-1992	540	-0.86	2.15	1.27	0.77
CB1	40	S	4-JUN-1992	16-OCT-1992	540	31.48	32.41	32.14	0.19
		T	4-JUN-1992	16-OCT-1992	540	-1.31	4.82	-0.00	1.23
		U	4-JUN-1992	16-OCT-1992	540	-17.8	25.0	-0.7	7.6
		V	4-JUN-1992	16-OCT-1992	540	-24.4	10.1	-3.7	5.8
CB1	150	P	4-JUN-1992	16-OCT-1992	540	154.3	154.3	154.3	0.00
		S	4-JUN-1992	16-OCT-1992	540	32.97	33.53	33.17	0.14
		T	4-JUN-1992	16-OCT-1992	540	-1.74	-1.11	-1.56	0.14
		U	4-JUN-1992	16-OCT-1992	540	-11.4	13.6	-0.2	4.9
		V	4-JUN-1992	16-OCT-1992	540	-14.5	14.0	-0.8	4.6
FI1	40	P	12-JUL-1992	26-OCT-1992	428	38.1	38.9	38.7	0.29
		S	12-JUL-1992	26-OCT-1992	428	32.65	33.42	32.99	0.19
		T	12-JUL-1992	26-OCT-1992	428	-1.45	5.30	0.52	1.99
		U	12-JUL-1992	26-OCT-1992	424	-2.5	22.6	10.1	5.8
		V	12-JUL-1992	26-OCT-1992	424	-26.2	2.1	-8.7	5.6
FI1	150	S	12-JUL-1992	26-OCT-1992	428	33.71	34.12	33.91	0.09
		T	12-JUL-1992	26-OCT-1992	428	-1.30	-0.31	-0.90	0.22
		U	12-JUL-1992	26-OCT-1992	428	-9.7	20.2	7.0	5.0
		V	12-JUL-1992	26-OCT-1992	428	-16.7	10.0	-6.4	4.3
FI1	325	P	25-JUL-1991	8-MAY-1992	1140	335.7	343.5	340.7	2.54
		S	25-JUL-1991	3-NOV-1991	406	34.41	34.69	34.60	0.06
		T	25-JUL-1991	8-MAY-1992	1140	0.77	2.33	1.70	0.28
		U	25-JUL-1991	8-MAY-1992	1139	-14.0	21.3	4.1	4.2
		V	25-JUL-1991	8-MAY-1992	1139	-23.0	14.3	-2.6	5.9
FI1	455	T	7-NOV-1991	26-OCT-1992	1408	1.65	2.87	2.57	0.19
		U	25-JUL-1991	26-OCT-1992	1777	-11.2	14.0	1.8	3.5
		V	25-JUL-1991	26-OCT-1992	1777	-31.2	21.0	-1.0	7.0
FI2	40	P	11-JUL-1992	27-OCT-1992	432	53.7	56.0	54.6	0.81
		S	11-JUL-1992	27-OCT-1992	432	32.56	33.77	33.16	0.28
		T	11-JUL-1992	27-OCT-1992	432	-1.38	5.26	0.54	1.64
		U	11-JUL-1992	27-OCT-1992	432	-13.2	5.3	-4.1	4.0
		V	11-JUL-1992	27-OCT-1992	432	-22.6	3.2	-9.9	4.8
FI2	75	P	25-JUL-1991	8-JUL-1992	1385	64.6	78.1	72.1	3.27
		S	25-JUL-1991	8-JUL-1992	1385	32.76	33.83	33.35	0.19
		T	25-JUL-1991	8-JUL-1992	1385	-1.86	1.42	-1.13	0.70
		U	25-JUL-1991	8-JUL-1992	1385	-29.2	17.0	-3.2	6.1
		V	25-JUL-1991	8-JUL-1992	1385	-22.5	5.6	-7.0	5.1
FI2	150	T	11-JUL-1992	27-OCT-1992	432	-0.62	1.18	0.32	0.44
		U	11-JUL-1992	27-OCT-1992	432	-10.2	5.6	-2.8	2.5
		V	11-JUL-1992	27-OCT-1992	432	-11.8	4.3	-4.6	2.7
FI2	245	P	25-JUL-1991	3-NOV-1991	405	253.0	259.8	255.8	1.77
		S	25-JUL-1991	3-NOV-1991	405	34.29	34.80	34.58	0.12
		T	25-JUL-1991	8-JUL-1992	1385	0.62	2.79	1.70	0.43
		U	25-JUL-1991	27-OCT-1992	1817	-16.9	20.0	-0.6	4.6
		V	25-JUL-1991	27-OCT-1992	1817	-20.8	11.2	-4.1	3.9

Table 3. (Continued)

STN	ID (m)	CH	START TIME	END TIME	NPTS	MIN	MAX	MEAN	SD
FI3	75	P	14-MAY-1991	27-MAY-1992	1412	76.5	83.0	80.0	2.34
		S	14-MAY-1991	27-MAY-1992	1412	32.71	34.20	33.44	0.29
		T	14-MAY-1991	27-MAY-1992	1412	-1.78	2.81	-0.70	0.75
		U	14-MAY-1991	27-MAY-1992	1412	-19.5	21.1	1.3	5.8
		V	14-MAY-1991	27-MAY-1992	1412	-28.9	15.8	-8.1	7.4
FI3	150	P	30-MAY-1992	28-OCT-1992	604	154.3	154.3	154.3	0.01
		S	30-MAY-1992	28-OCT-1992	604	34.33	34.97	34.61	0.15
		T	30-MAY-1992	28-OCT-1992	604	-0.07	2.59	1.08	0.56
		U	30-MAY-1992	28-OCT-1992	604	-7.3	11.2	0.6	2.9
		V	30-MAY-1992	28-OCT-1992	604	-16.4	10.6	-5.1	4.8
FI3	275	P	14-MAY-1991	28-OCT-1992	1295	286.5	289.0	288.8	0.33
		S	14-MAY-1991	28-OCT-1992	2108	34.45	34.94	34.71	0.12
		T	14-MAY-1991	28-OCT-1992	2108	1.87	3.91	2.81	0.39
		U	14-MAY-1991	28-OCT-1992	2108	-12.3	14.7	2.1	3.9
		V	14-MAY-1991	28-OCT-1992	2108	-25.5	11.6	-4.3	4.8
SP1	200	P	19-NOV-1991	12-JUL-1992	945	195.5	219.9	201.8	3.01
		S	19-NOV-1991	12-JUL-1992	945	34.32	34.93	34.72	0.13
		T	19-NOV-1991	12-JUL-1992	945	1.12	3.92	2.70	0.44
		U	19-NOV-1991	12-JUL-1992	945	-4.9	29.7	14.7	6.4
		V	19-NOV-1991	12-JUL-1992	945	-34.6	0.4	-17.5	7.2
SP1	300	T	19-NOV-1991	11-JUL-1992	944	2.04	4.05	3.11	0.40
		U	19-NOV-1991	10-MAY-1992	695	-4.8	27.9	11.3	6.4
		V	19-NOV-1991	10-MAY-1992	695	-31.0	2.4	-13.6	7.3
SP1	500	T	19-NOV-1991	11-JUL-1992	944	2.56	4.04	3.35	0.40
		U	19-NOV-1991	30-JUN-1992	897	-13.0	19.6	8.2	5.0
		V	19-NOV-1991	30-JUN-1992	897	-26.6	11.2	-10.2	6.7
SP2	205	P	19-NOV-1991	28-MAY-1992	767	228.4	254.1	233.1	4.25
		S	19-NOV-1991	28-MAY-1992	767	34.44	34.93	34.73	0.11
		T	19-NOV-1991	28-MAY-1992	767	1.43	3.99	2.85	0.47
		U	19-NOV-1991	28-MAY-1992	767	-2.3	27.5	14.2	5.8
		V	19-NOV-1991	28-MAY-1992	767	-34.5	-3.4	-18.4	7.6
SP2	305	T	19-NOV-1991	28-MAY-1992	767	2.31	4.08	3.28	0.44
		U	19-NOV-1991	28-MAY-1992	767	-1.7	25.3	12.1	6.3
		V	19-NOV-1991	28-MAY-1992	767	-31.1	2.5	-14.8	7.8
SP2	505	T	19-NOV-1991	28-MAR-1992	514	2.80	4.02	3.66	0.33
		U	19-NOV-1991	28-MAR-1992	522	-5.6	30.5	11.8	8.1
		V	19-NOV-1991	28-MAR-1992	522	-29.2	12.1	-11.9	8.5
WB1	40	P	14-JUL-1992	8-SEP-1992	225	32.1	37.0	33.7	1.98
		U	14-JUL-1992	8-SEP-1992	225	-26.9	31.2	8.6	10.3
		V	14-JUL-1992	8-SEP-1992	225	-19.6	16.9	-9.1	6.8
WB1	75	P	19-JUL-1990	29-JAN-1992	2213	57.4	76.1	63.7	6.04
		S	15-MAY-1991	29-JAN-1992	1026	33.18	34.47	33.62	0.21
		T	19-JUL-1990	29-JAN-1992	2213	-1.75	2.88	-0.48	0.92
		U	19-JUL-1990	29-JAN-1992	2166	-30.8	41.9	6.3	10.4
		V	19-JUL-1990	29-JAN-1992	2166	-35.2	29.7	-6.7	8.1

Table 3. (Continued)

STN	ID (m)	CH	START TIME	END TIME	NPTS	MIN	MAX	MEAN	SD
WB1	150	S	14-JUL-1992	24-OCT-1992	408	33.73	34.48	34.05	0.16
		T	14-JUL-1992	24-OCT-1992	408	-0.54	2.51	0.71	0.66
		U	14-JUL-1992	24-OCT-1992	408	-12.0	17.9	6.3	5.3
		V	14-JUL-1992	24-OCT-1992	408	-13.9	15.1	-4.6	5.2
WB1	325	P	19-JUL-1990	24-OCT-1992	1700	316.8	344.5	329.3	5.6
		S	19-JUL-1990	24-OCT-1992	1700	34.62	35.18	34.83	0.11
		T	19-JUL-1990	24-OCT-1992	2681	2.05	3.93	3.21	0.33
		U	19-JUL-1990	24-OCT-1992	2410	-19.1	31.8	7.2	7.6
		V	19-JUL-1990	24-OCT-1992	2410	-18.2	18.1	-1.2	4.6
WB2	235	P	19-JUL-1990	10-JUL-1992	2163	233.0	235.2	233.8	0.7
		S	19-JUL-1990	5-NOV-1991	1182	33.44	34.33	33.81	0.18
		T	19-JUL-1990	5-NOV-1991	1182	-1.16	1.11	-0.31	0.58
		U	19-JUL-1990	10-JUL-1992	2161	-7.9	10.9	0.8	2.4
		V	19-JUL-1990	10-JUL-1992	2161	-35.9	14.5	-5.7	6.3
WB3	40	P	14-JUL-1992	18-OCT-1992	385	61.3	64.9	62.9	0.89
		S	14-JUL-1992	18-OCT-1992	385	32.14	33.03	32.75	0.18
		T	14-JUL-1992	18-OCT-1992	385	-1.58	4.40	0.04	1.51
		U	14-JUL-1992	18-OCT-1992	385	-9.8	9.8	1.1	3.5
		V	14-JUL-1992	18-OCT-1992	385	-7.1	8.2	0.7	3.1
WB3	75	P	9-NOV-1991	17-MAY-1992	762	70.1	73.4	71.9	1.04
		S	9-NOV-1991	17-MAY-1992	762	32.96	33.71	33.35	0.15
		T	2-AUG-1991	17-MAY-1992	1147	-1.85	0.87	-0.74	0.93
		U	9-NOV-1991	17-MAY-1992	762	-12.1	13.7	1.4	4.5
		V	9-NOV-1991	17-MAY-1992	762	-22.4	9.2	-2.9	5.2
WB3	150	P	14-JUL-1992	18-OCT-1992	385	144.8	145.5	144.9	0.13
		S	14-JUL-1992	18-OCT-1992	385	34.08	34.26	34.14	0.03
		T	14-JUL-1992	18-OCT-1992	385	-0.01	0.73	0.24	0.13
		U	14-JUL-1992	18-OCT-1992	385	-6.7	6.1	-0.1	2.7
		V	14-JUL-1992	18-OCT-1992	385	-8.6	5.8	-0.8	2.6
WB3	385	P	2-AUG-1991	6-NOV-1991	385	386.3	386.3	386.3	0.00
		S	2-AUG-1991	18-OCT-1992	761	34.67	34.84	34.75	0.04
		T	2-AUG-1991	18-OCT-1992	1749	2.41	3.32	2.89	0.21
		U	2-AUG-1991	6-NOV-1991	306	-11.1	5.4	-0.6	3.2
		V	2-AUG-1991	6-NOV-1991	306	-6.0	2.3	-1.0	1.4
H1	200	P	21-JUL-1990	24-FEB-1992	1907	170.0	223.8	184.0	19.4
		S	21-JUL-1990	24-FEB-1992	1907	33.78	35.40	34.71	0.22
		T	21-JUL-1990	24-FEB-1992	1907	-0.84	4.14	2.52	0.78
		U	10-NOV-1991	24-FEB-1992	427	-7.3	35.3	14.8	8.9
		V	10-NOV-1991	24-FEB-1992	427	-24.9	8.3	-8.7	5.6
H1	400	P	29-JUL-1991	26-OCT-1991	357	337.7	351.9	345.1	4.01
		S	29-JUL-1991	26-OCT-1991	357	35.01	35.15	35.11	0.30
		T	21-JUL-1990	12-JUL-1992	2279	2.42	4.20	3.66	0.42
		U	21-JUL-1990	12-JUL-1992	2279	-7.4	49.5	13.1	6.7
		V	21-JUL-1990	12-JUL-1992	2279	-36.4	9.5	-6.8	4.3
H1	985	P	29-JUL-1991	7-NOV-1991	404	1018	1018	1018	0.00
		S	29-JUL-1991	7-NOV-1991	404	35.30	35.34	35.32	0.01
		T	21-JUL-1990	12-JUL-1992	1387	2.93	3.78	3.37	0.20
		U	21-JUL-1990	12-JUL-1992	1387	-10.8	31.4	5.0	4.1
		V	21-JUL-1990	12-JUL-1992	1387	-13.7	6.3	-1.7	2.1

Table 3. (Continued)

STN	ID (m)	CH	START TIME	END TIME	NPTS	MIN	MAX	MEAN	SD
H2	195	P	27-JUL-1991	8-NOV-1991	417	200.8	203.0	202.1	0.90
		S	27-JUL-1991	11-AUG-1993	1376	32.76	34.04	33.48	0.20
		T	22-JUL-1990	11-AUG-1993	3843	-1.78	1.25	-0.81	0.56
		U	22-JUL-1990	11-AUG-1993	3843	-12.7	23.2	3.9	5.6
		V	22-JUL-1990	11-AUG-1993	3843	-36.2	15.4	-3.6	5.8
BB1*	200	T	13-MAY-1991	1-NOV-1991	688	1.03	3.84	2.40	0.48
	190	T	13-MAY-1991	1-NOV-1991	688	0.77	3.7	2.16	0.51
	180	T	13-MAY-1991	1-NOV-1991	688	0.57	3.58	1.95	0.53
	170	T	13-MAY-1991	1-NOV-1991	688	0.32	3.31	1.68	0.55
	160	T	13-MAY-1991	1-NOV-1991	688	0.11	3.03	1.43	0.57
	150	T	13-MAY-1991	1-NOV-1991	688	0.11	3.06	1.33	0.60
	140	T	13-MAY-1991	1-NOV-1991	688	-0.3	2.56	0.89	0.58
	130	T	13-MAY-1991	1-NOV-1991	688	-0.46	2.28	0.65	0.57
	120	T	13-MAY-1991	1-NOV-1991	688	-0.64	2.03	0.38	0.57
	110	T	13-MAY-1991	1-NOV-1991	688	-0.76	1.8	0.13	0.55
	100	T	13-MAY-1991	1-NOV-1991	688	-0.91	1.64	-0.09	0.52
FI3*	200	T	14-MAY-1991	27-MAY-1992	1504	-0.06	3.48	1.72	0.54
	190	T	14-MAY-1991	27-MAY-1992	1504	-0.29	3.46	1.53	0.57
	180	T	14-MAY-1991	27-MAY-1992	1504	-0.47	3.38	1.31	0.60
	170	T	14-MAY-1991	27-MAY-1992	1504	-0.59	3.24	1.09	0.61
	160	T	14-MAY-1991	27-MAY-1992	1504	-0.73	2.99	0.87	0.62
	150	T	14-MAY-1991	27-MAY-1992	1504	-0.84	2.7	0.66	0.63
	140	T	14-MAY-1991	27-MAY-1992	1504	-0.98	2.34	0.46	0.63
	130	T	14-MAY-1991	27-MAY-1992	1504	-1.08	2.21	0.28	0.62
	120	T	14-MAY-1991	27-MAY-1992	1504	-1.21	2.11	0.10	0.64
	110	T	14-MAY-1991	27-MAY-1992	1504	-1.26	2.0	-0.06	0.64
	100	T	14-MAY-1991	27-MAY-1992	1504	-1.6	1.93	-0.24	0.68
WB1*	200	T	19-JUL-1990	11-JUL-1992	2465	-0.69	3.33	1.43	0.68
	190	T	19-JUL-1990	11-JUL-1992	2465	-0.89	3.24	1.24	0.71
	180	T	19-JUL-1990	11-JUL-1992	2465	-1.08	3.12	1.03	0.76
	170	T	19-JUL-1990	11-JUL-1992	2465	-1.09	2.96	0.86	0.77
	160	T	19-JUL-1990	11-JUL-1992	2465	-1.19	2.82	0.69	0.80
	150	T	19-JUL-1990	11-JUL-1992	2465	-1.45	2.71	0.51	0.83
	140	T	19-JUL-1990	11-JUL-1992	2465	-1.54	2.59	0.35	0.85
	130	T	19-JUL-1990	11-JUL-1992	2465	-1.55	2.45	0.19	0.86
	120	T	19-JUL-1990	11-JUL-1992	2465	-1.55	2.42	0.02	0.87
	110	T	19-JUL-1990	11-JUL-1992	2465	-1.64	2.36	-0.11	0.87
	100	T	19-JUL-1990	11-JUL-1992	2465	-1.63	2.32	-0.24	0.87

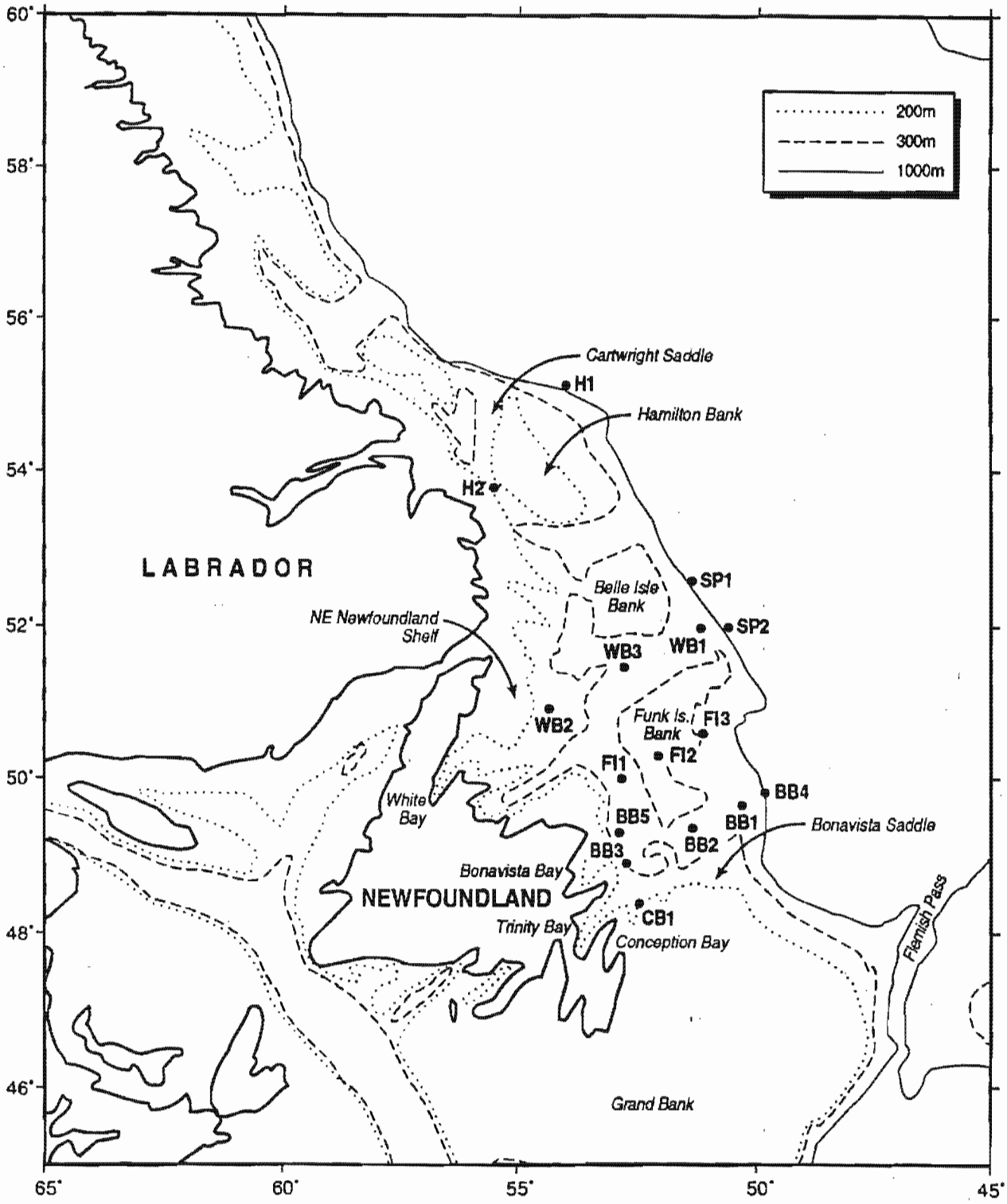


Fig. 1. Area Map showing the locations of moorings deployed under the NCSP.

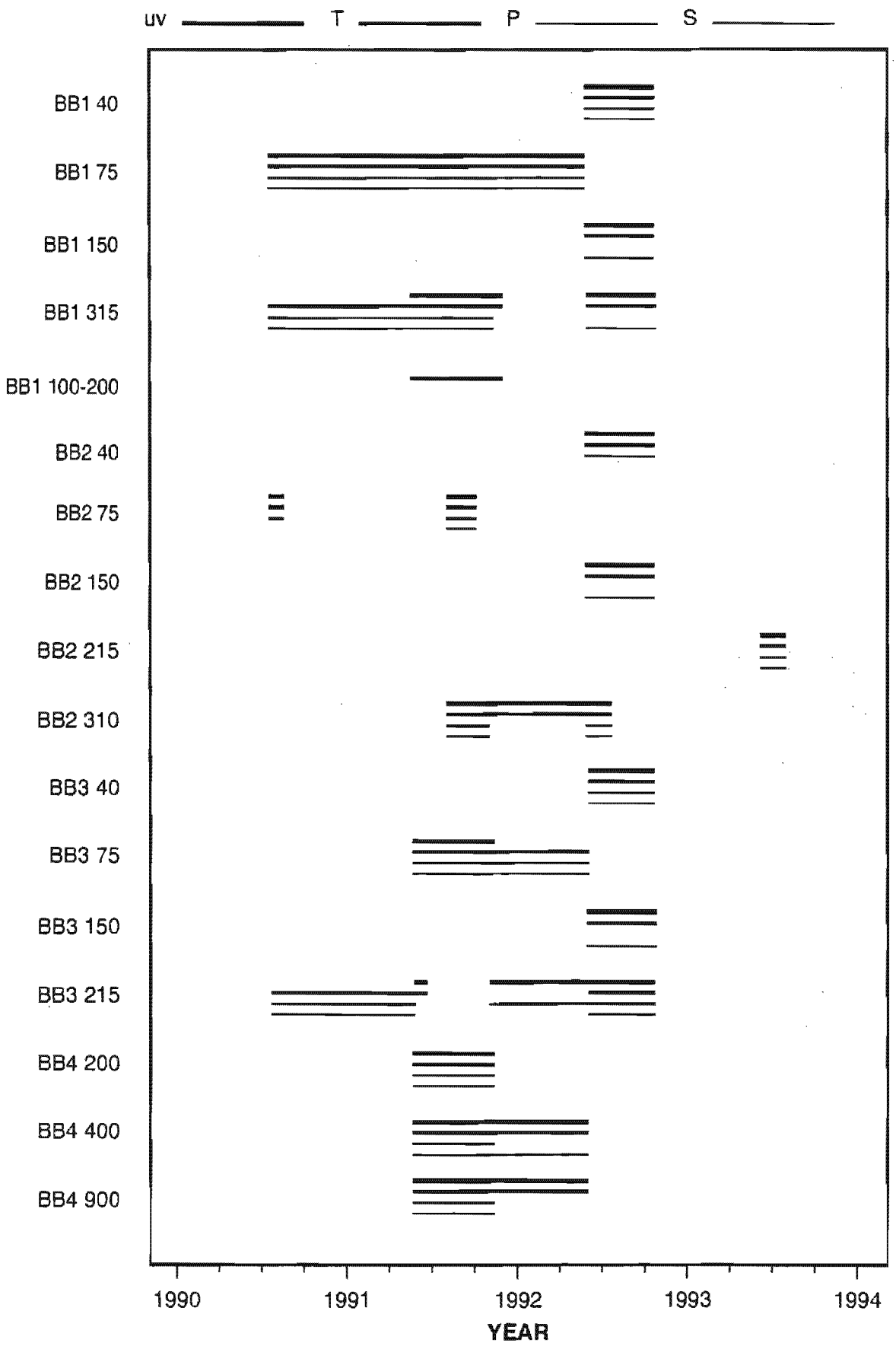


Fig. 2. Instrument performance and data return.

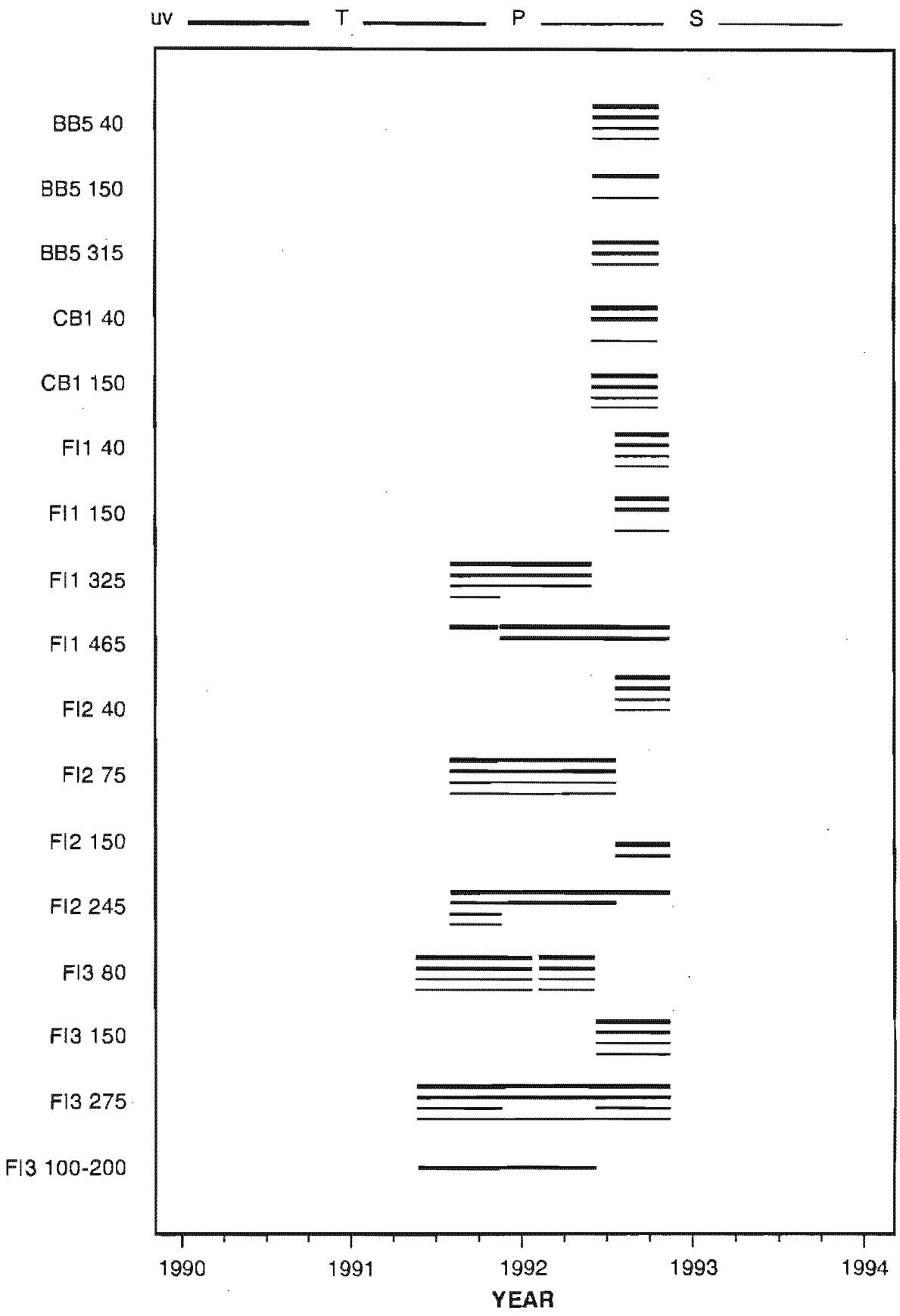

uv
T
P
S
BB5 40
BB5 150
BB5 315
CB1 40
CB1 150
FI1 40
FI1 150
FI1 325
FI1 465
FI2 40
FI2 75
FI2 150
FI2 245
FI3 80
FI3 150
FI3 275
FI3 100-200
1990
1991
1992
1993
1994
YEAR

Fig. 2. (Cont'd.).

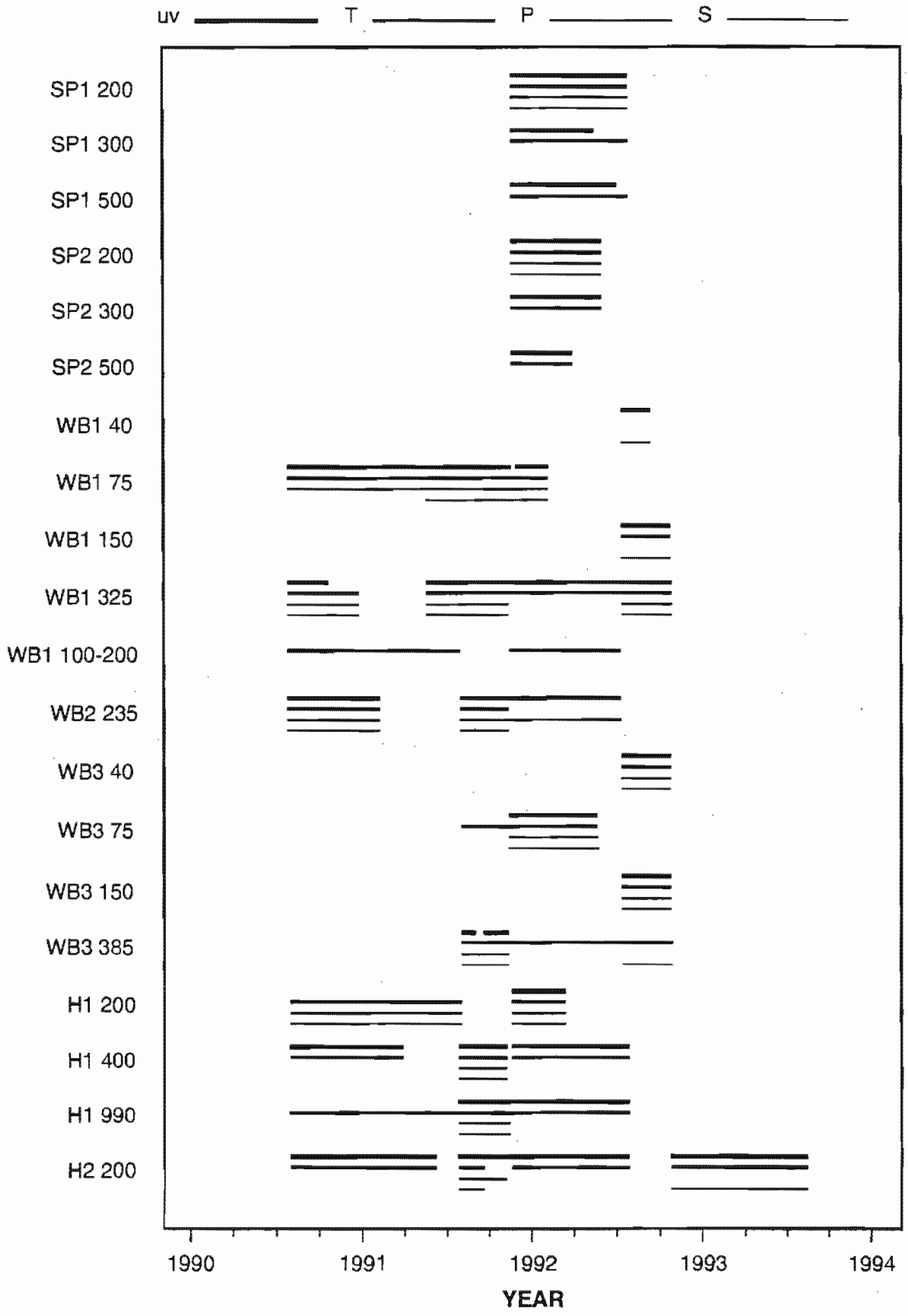

uv
T
P
S
SP1 200
SP1 300
SP1 500
SP2 200
SP2 300
SP2 500
WB1 40
WB1 75
WB1 150
WB1 325
WB1 100-200
WB2 235
WB3 40
WB3 75
WB3 150
WB3 385
H1 200
H1 400
H1 990
H2 200
1990
1991
1992
1993
1994
YEAR

Fig. 2. (Cont'd.).

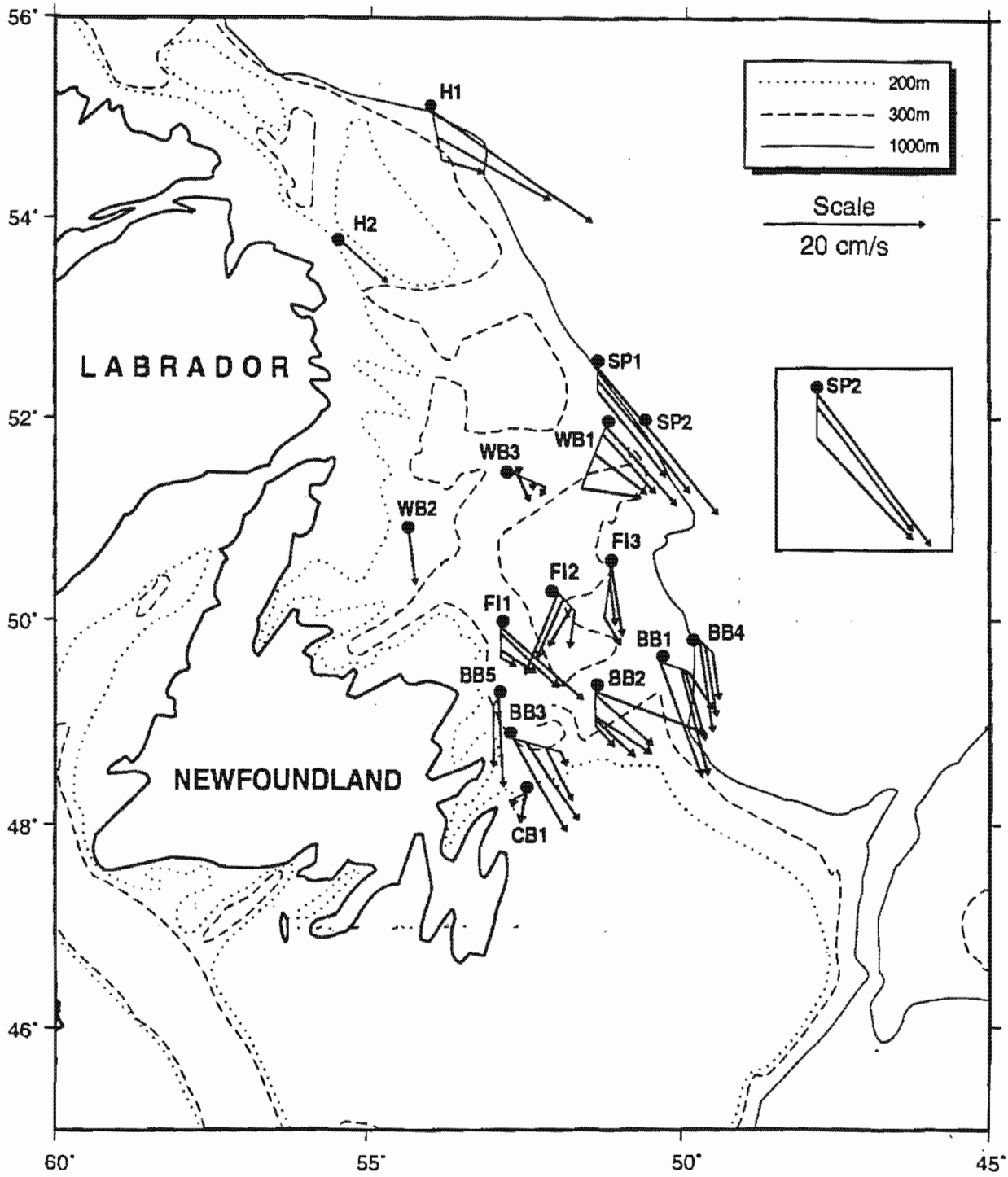


Fig. 3. Mean currents. Vectors are offset along an axis through the site in order of increasing measurement depth.

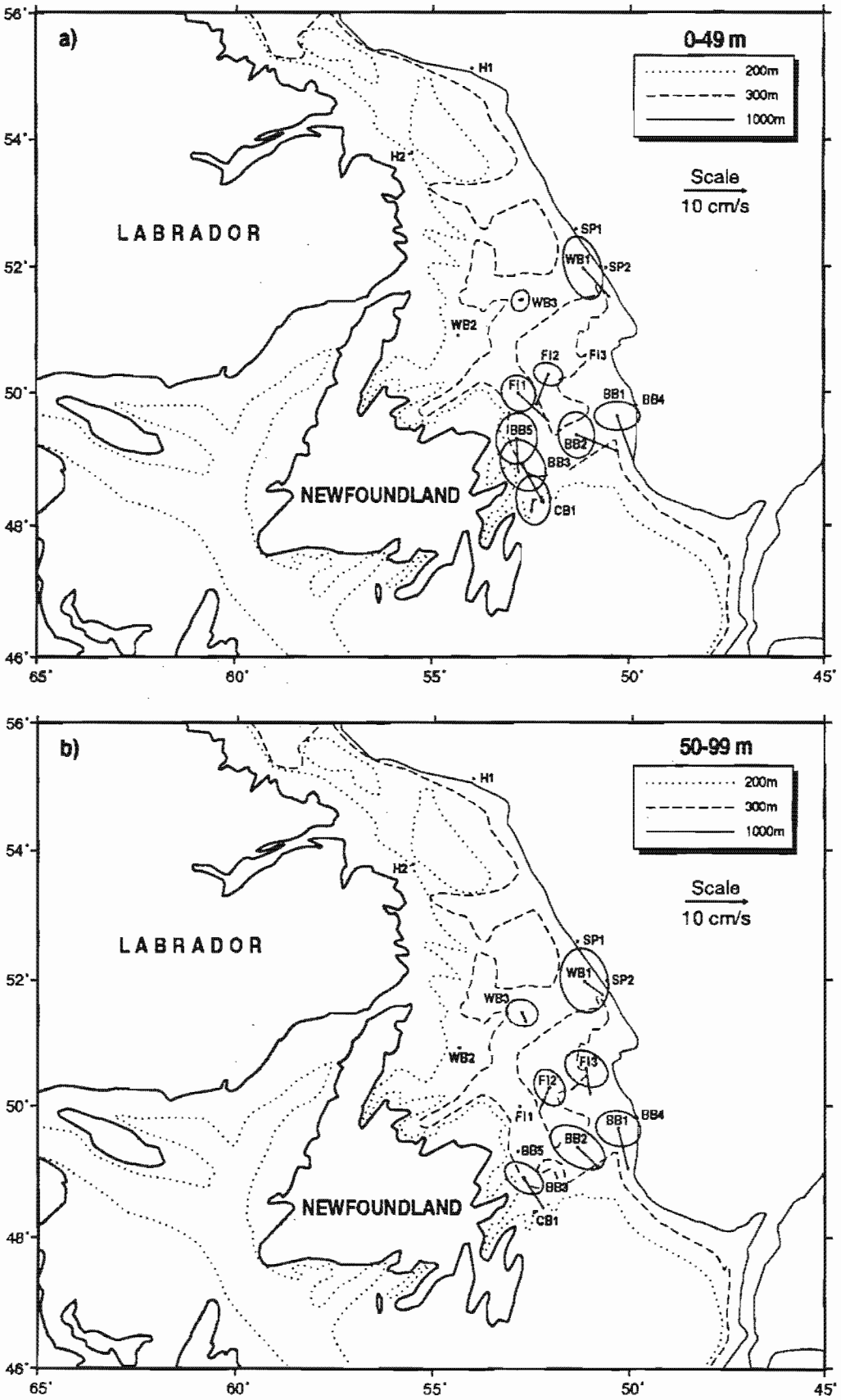


Fig. 4. Standard deviations along the principal axes with mean velocity superimposed: a) 0 - 49 m, b) 50 - 99 m, c) 100 - 199 m, d) 200 - 399 m, e) 400 - 600 m, > 600 m.

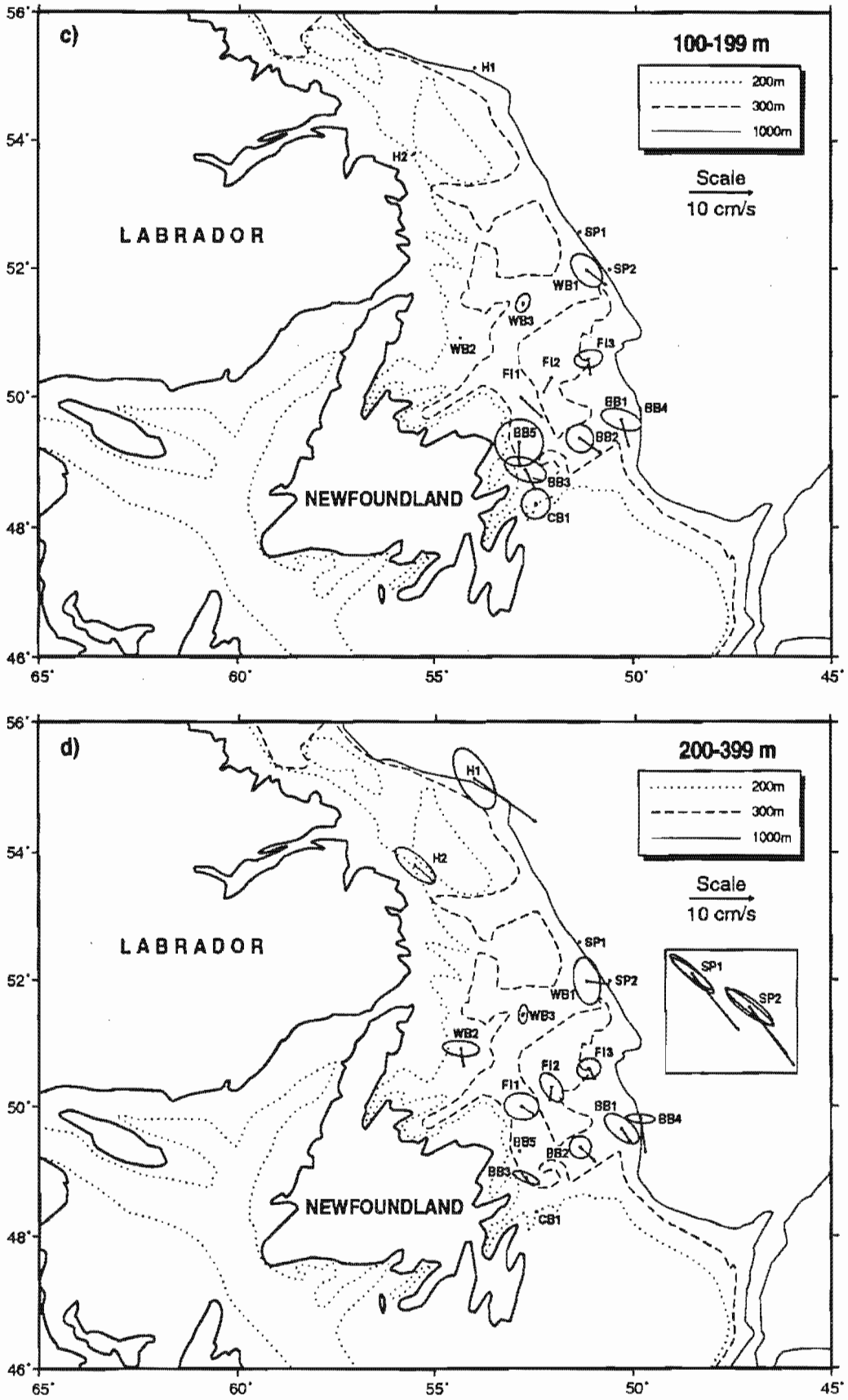

c)
100-199 m
200m
300m
1000m
Scale
10 cm/s
LABRADOR
NEWFOUNDLAND
H1
H2
SP1
SP2
WB1
WB3
WB2
FI3
FI2
FI1
BB1
BB4
BB2
BB5
BB3
CB1
56°
54°
52°
50°
48°
46°
65°
60°
55°
50°
45°
d)
200-399 m
200m
300m
1000m
Scale
10 cm/s
LABRADOR
NEWFOUNDLAND
H1
H2
SP1
SP2
WB1
WB3
WB2
FI3
FI2
FI1
BB1
BB4
BB5
BB2
BB3
CB1
56°
54°
52°
50°
48°
46°
65°
60°
55°
50°
45°

Fig. 4. (Cont'd.).

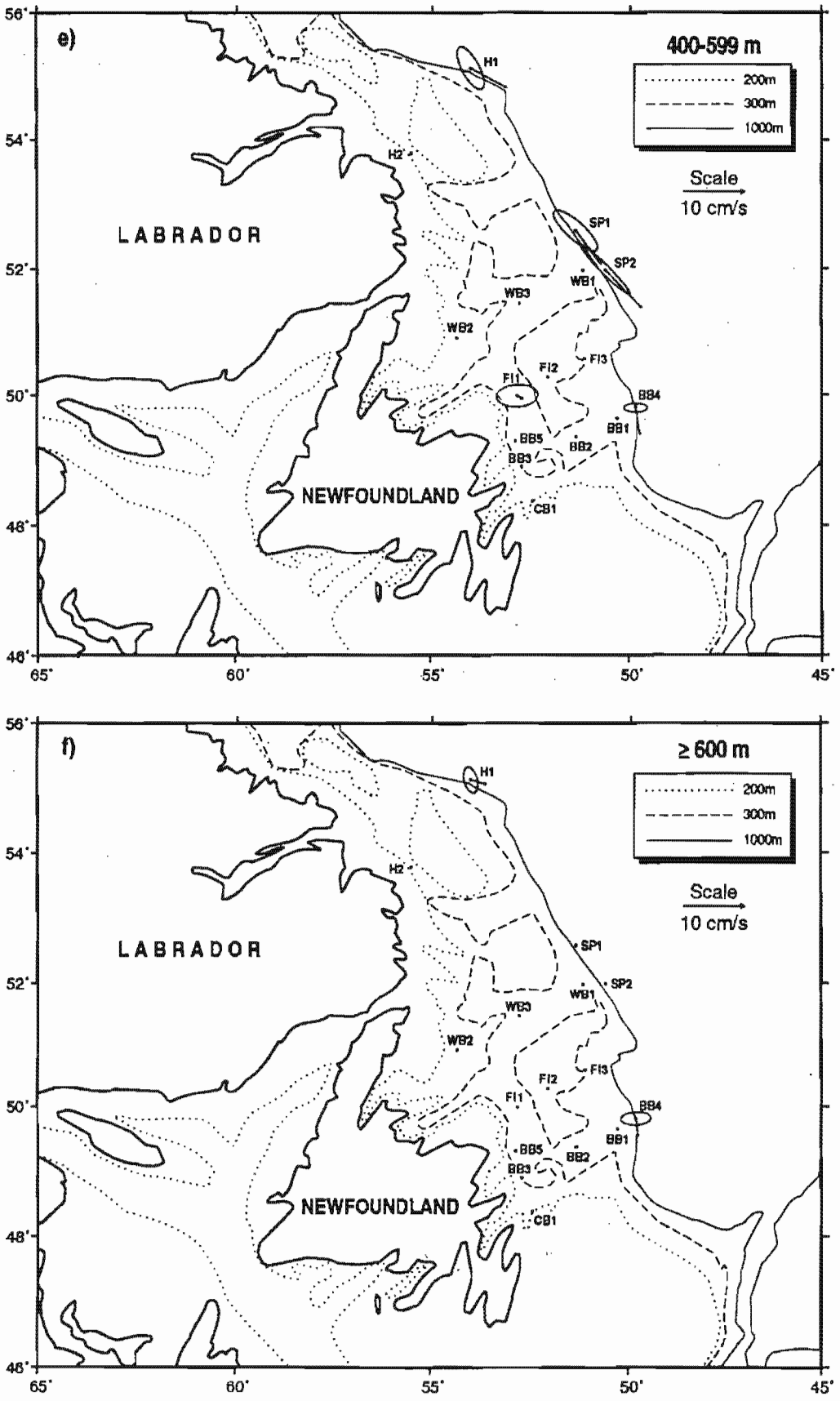

e)
400-599 m
200m
300m
1000m
Scale
10 cm/s
LABRADOR
NEWFOUNDLAND
H1
H2
SP1
SP2
WB1
WB3
WB2
FI1
FI2
FI3
BB4
BB1
BB5
BB2
BB3
CB1
56°
54°
52°
50°
48°
46°
65°
60°
55°
50°
45°
f)
≥ 600 m
200m
300m
1000m
Scale
10 cm/s
LABRADOR
NEWFOUNDLAND
H1
H2
SP1
SP2
WB1
WB3
WB2
FI1
FI2
FI3
BB4
BB1
BB5
BB2
BB3
CB1
56°
54°
52°
50°
48°
46°
65°
60°
55°
50°
45°

Fig. 4. (Cont'd.).

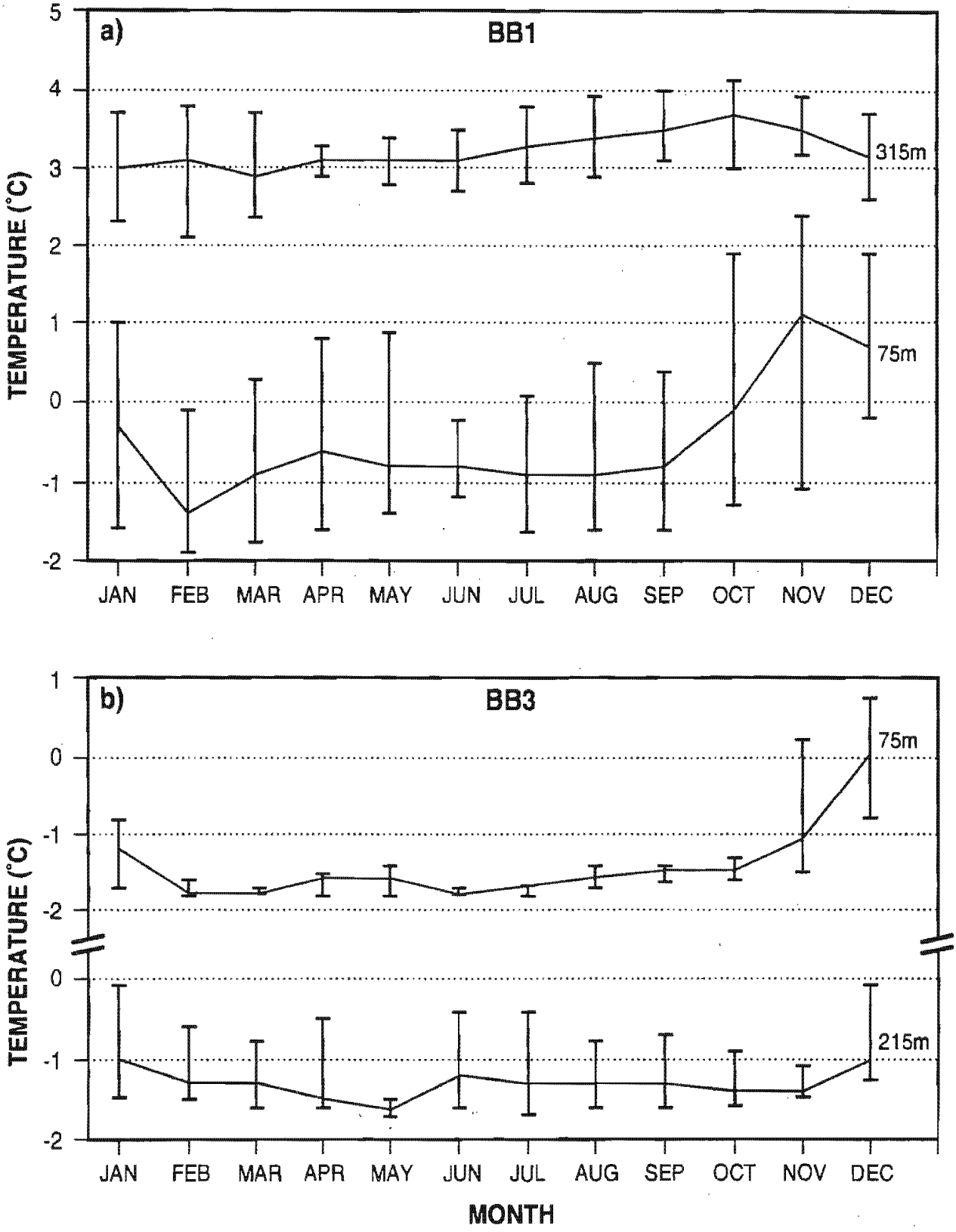


Fig. 5. Monthly means and ranges for temperature, a) BB1 at 75 m and 315 m, b) BB3 at 75 m and 215 m.

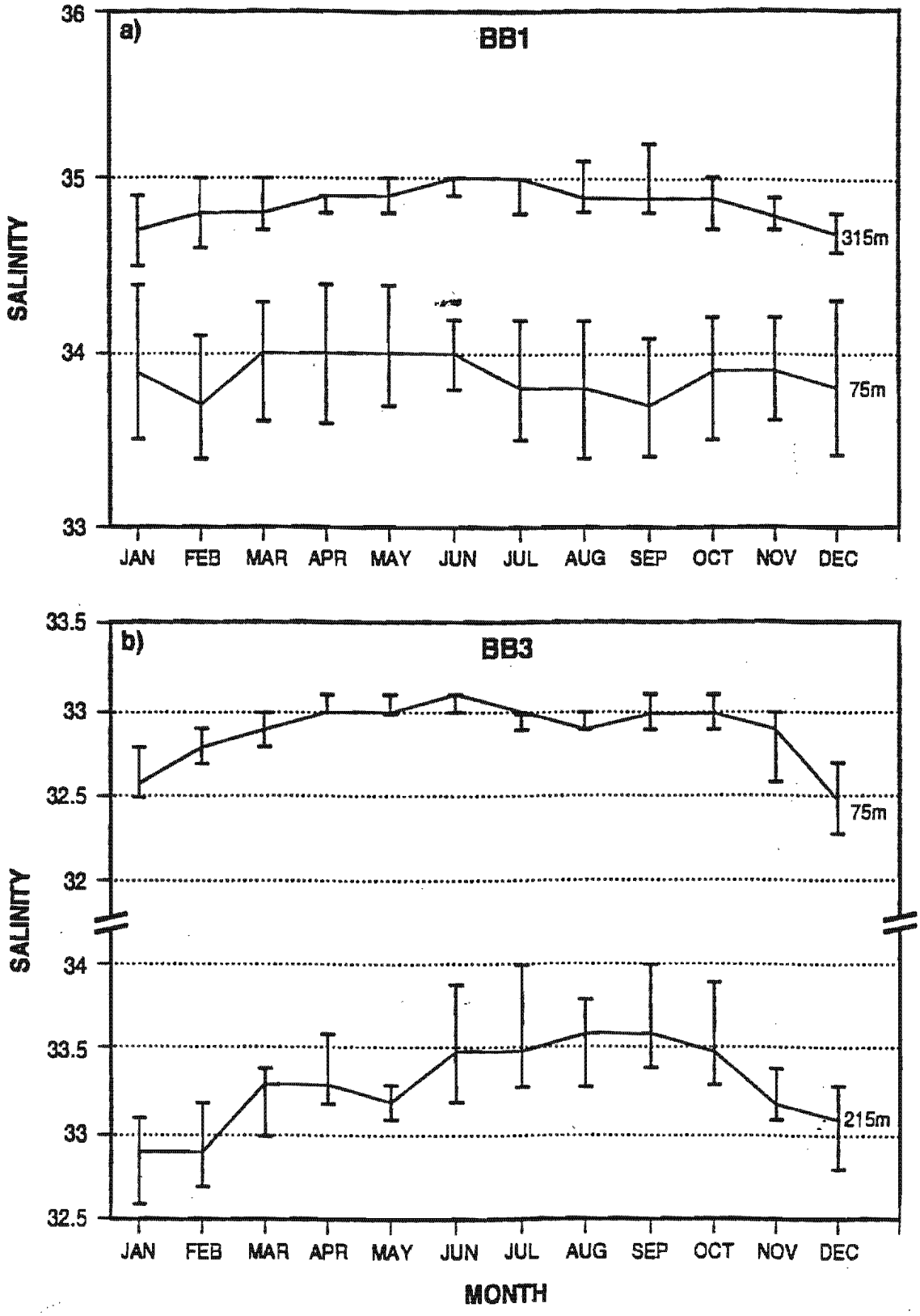


Fig. 6. Monthly means and ranges for salinity, a) BB1 at 75 m and 315 m, b) BB3 at 75 m and 215 m.

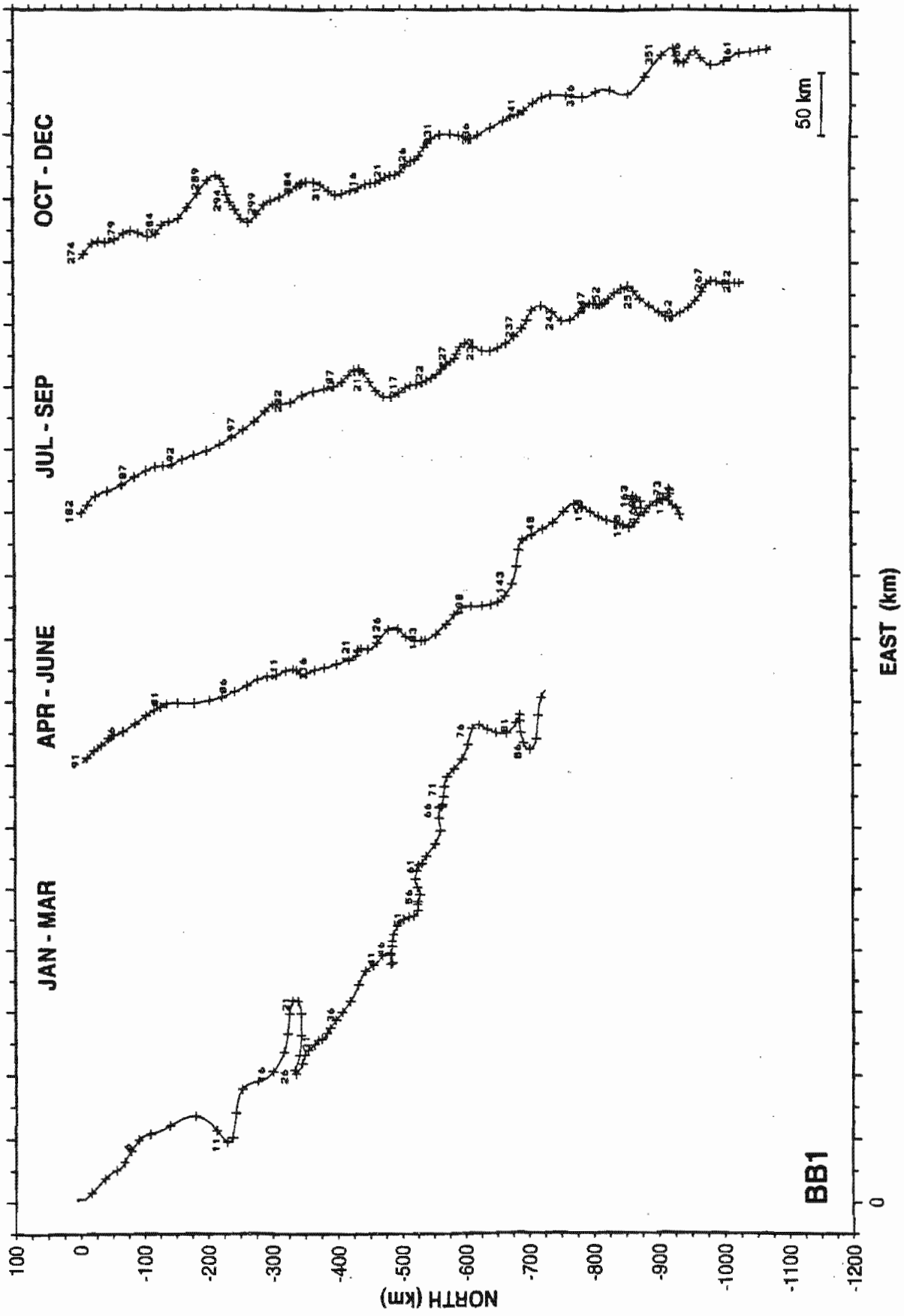


Fig. 7a. Progressive vector diagram for each season at 75m: BB1.

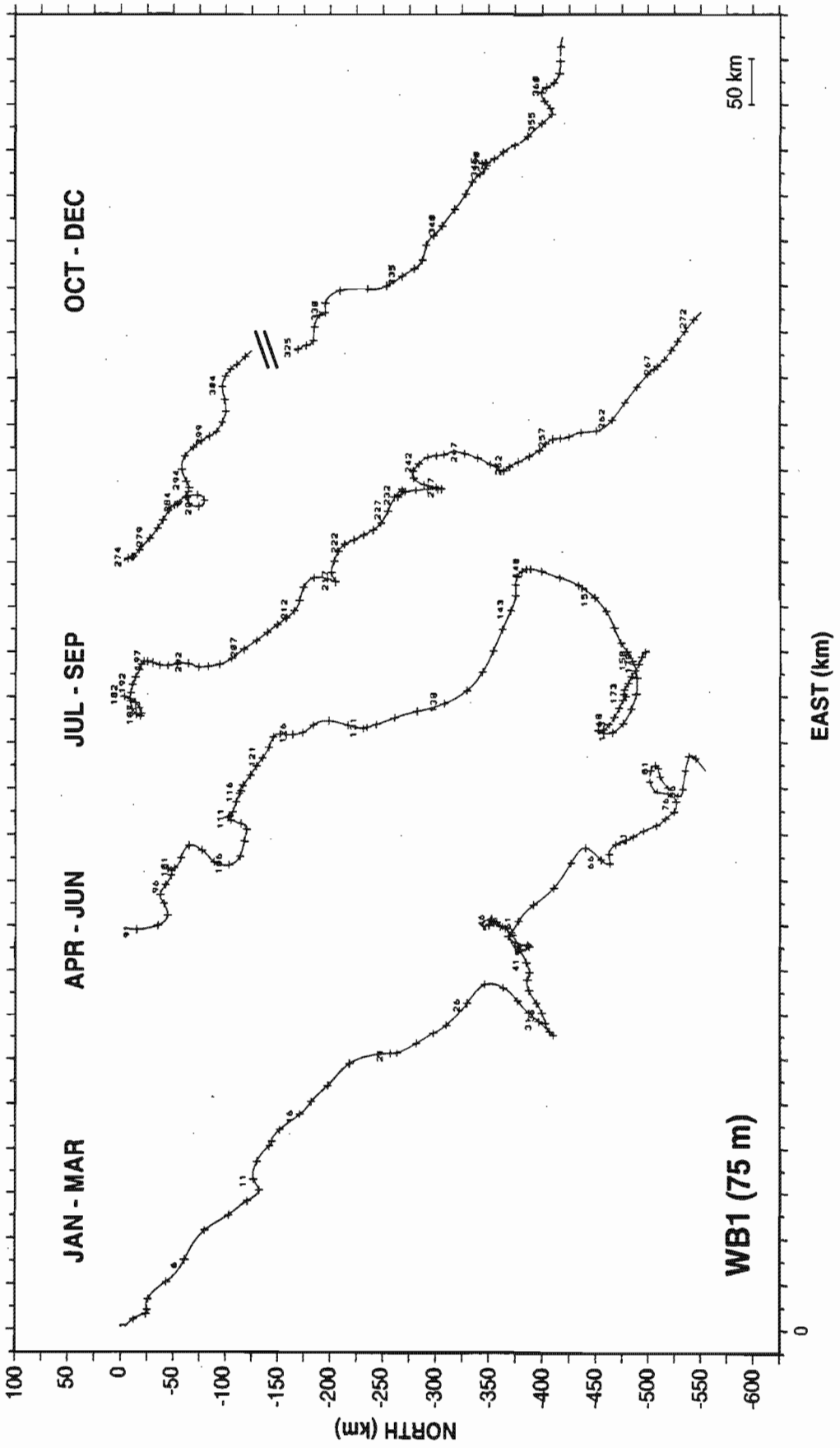


Fig. 7b. Progressive vector diagram for each season at 75 m: WB1.

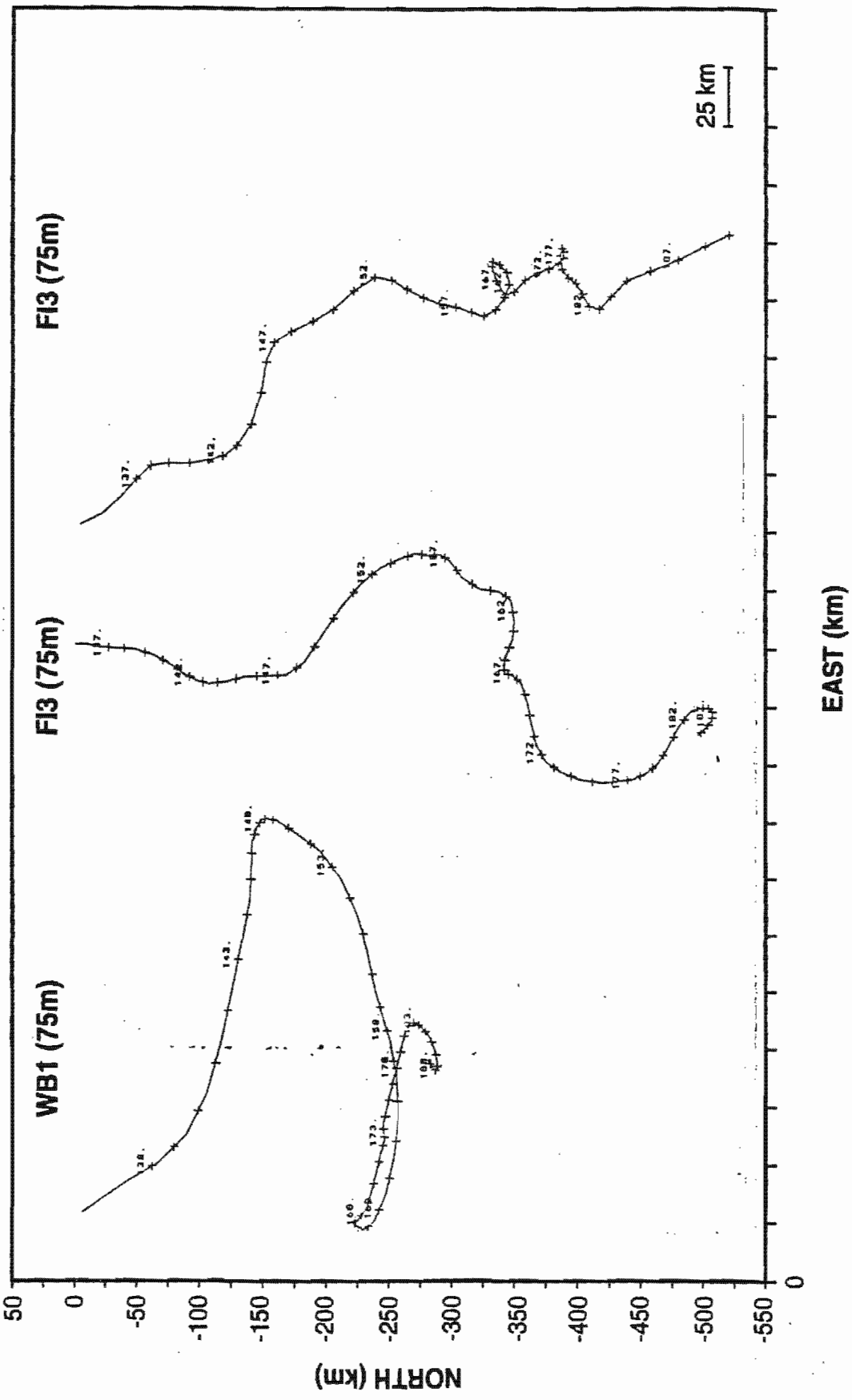


Fig. 8. Progressive vector diagrams of currents at 75 m at the shelf edge locations WB1, FI3 and BB1 for day of the year 137 to 190, 1991.

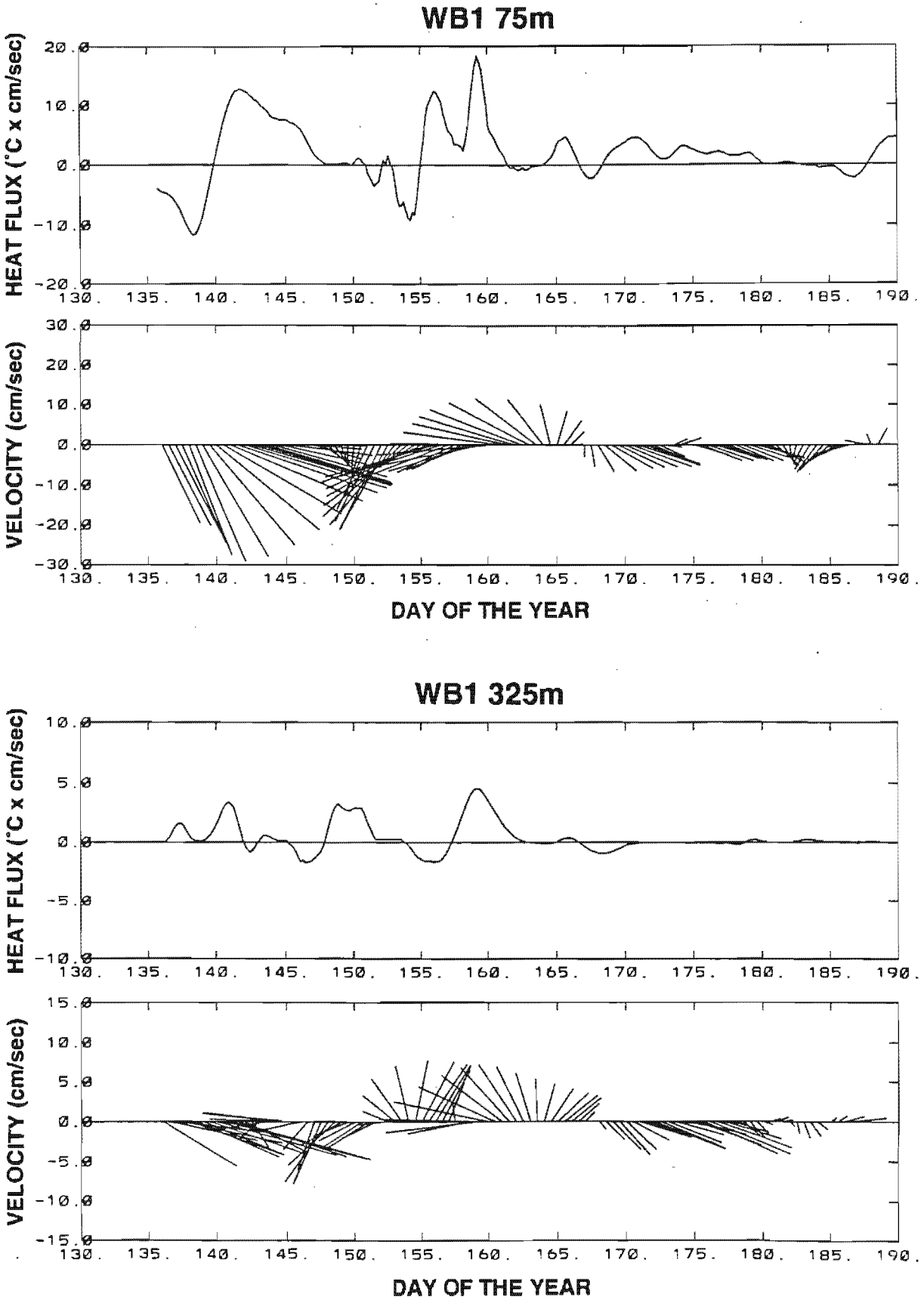


Fig. 9. Time series plots of filtered velocities and onshore (232°True) heat flux at WB1.

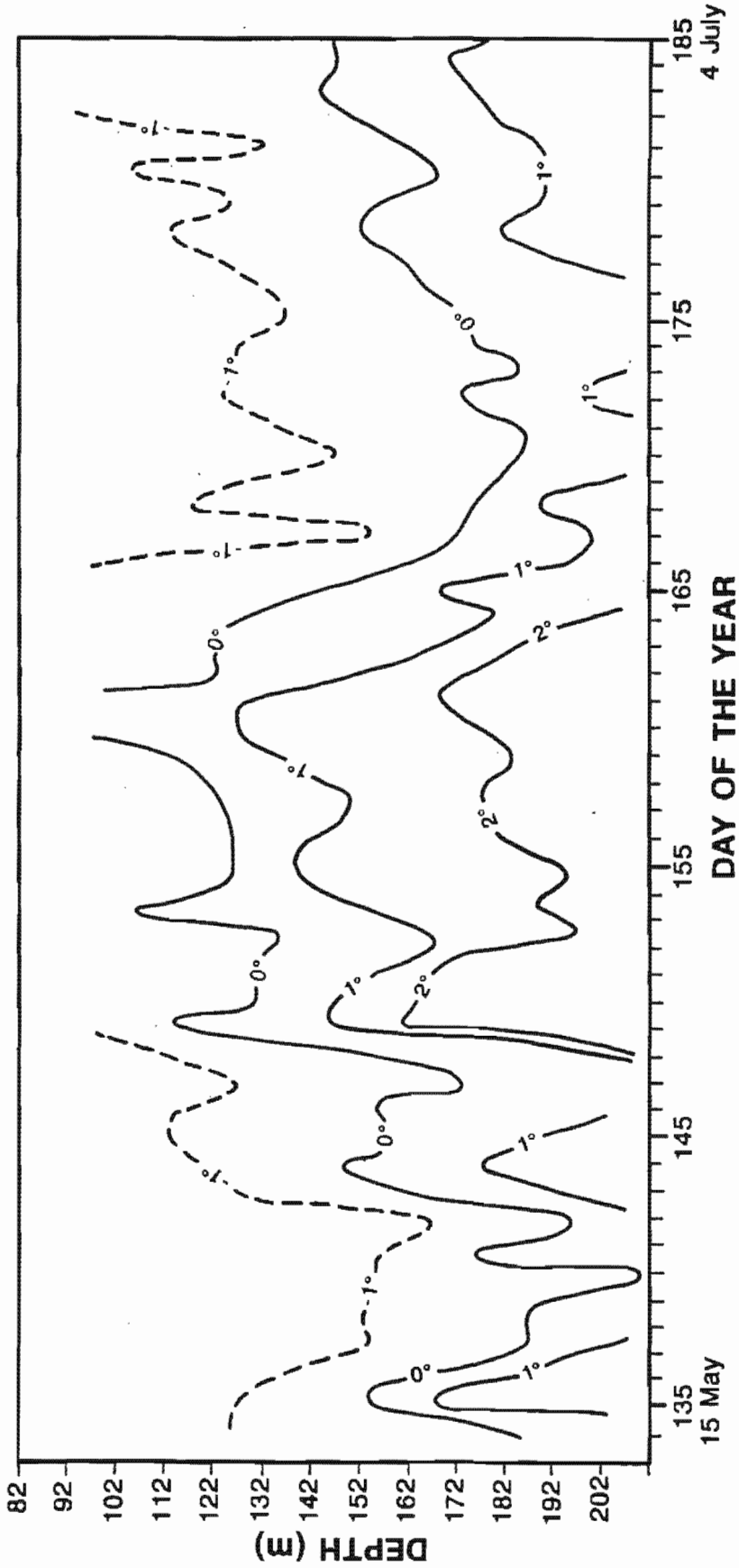


Fig. 10. Contours of daily temperature values at WB1, 1991.

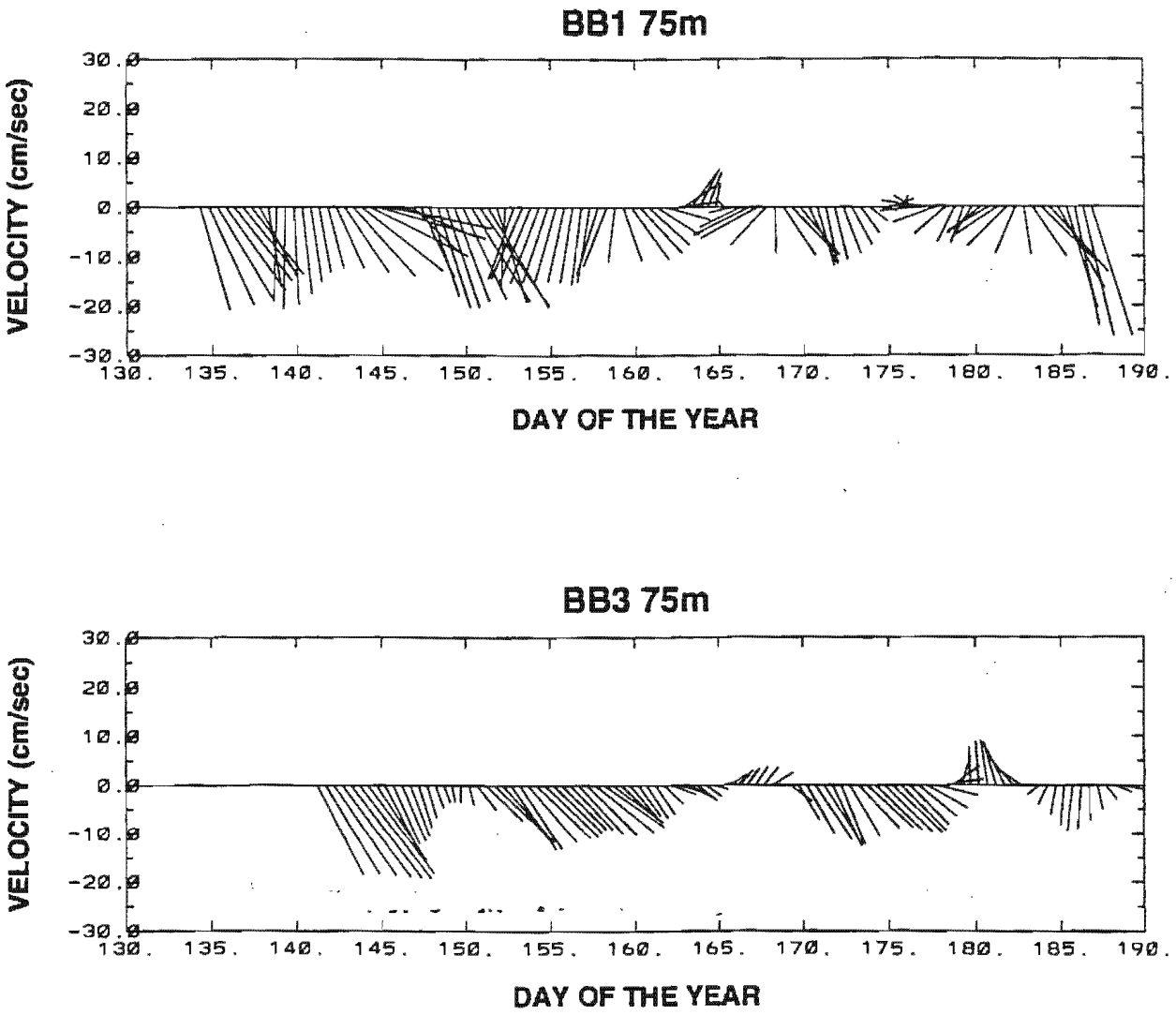
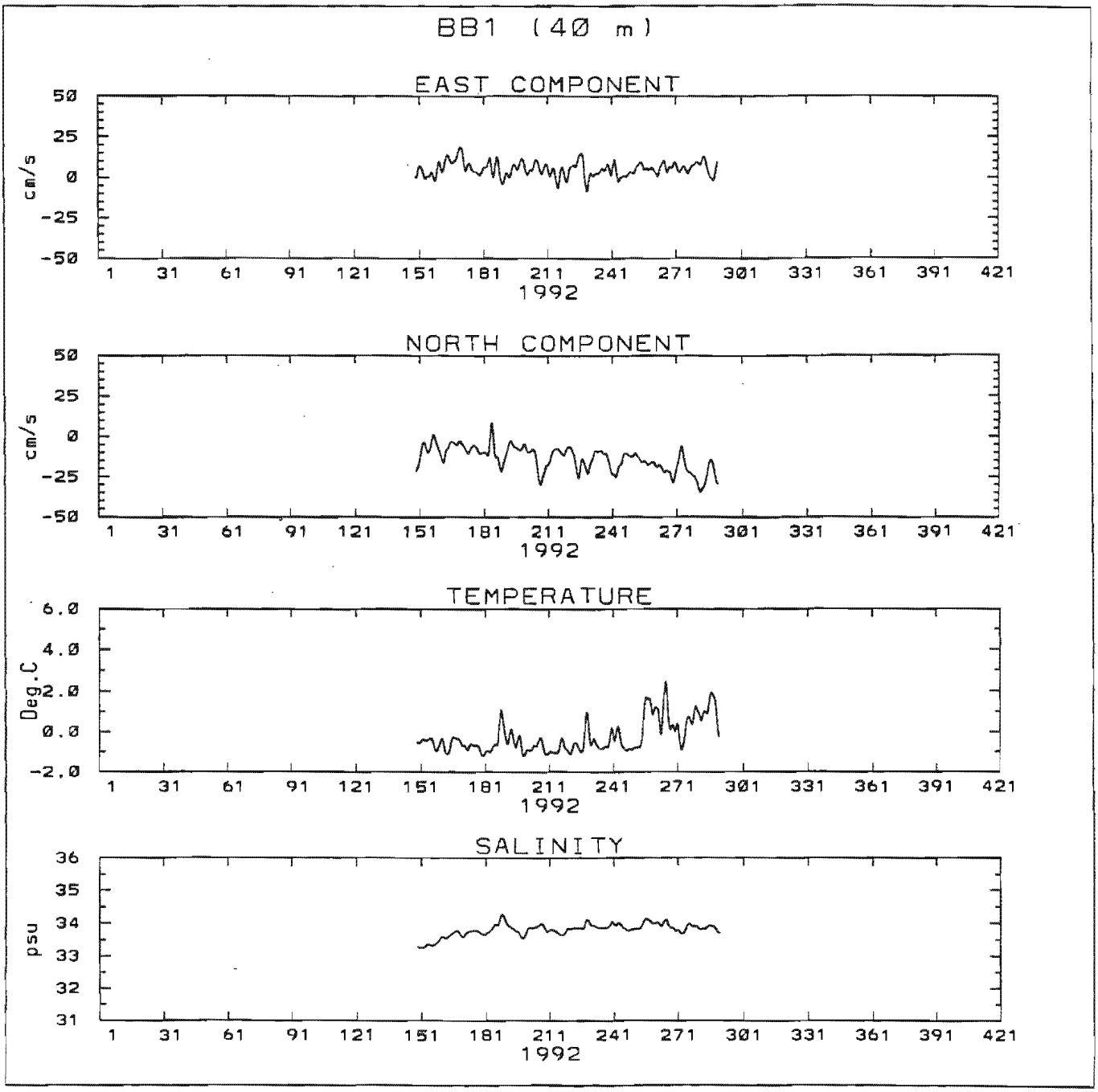
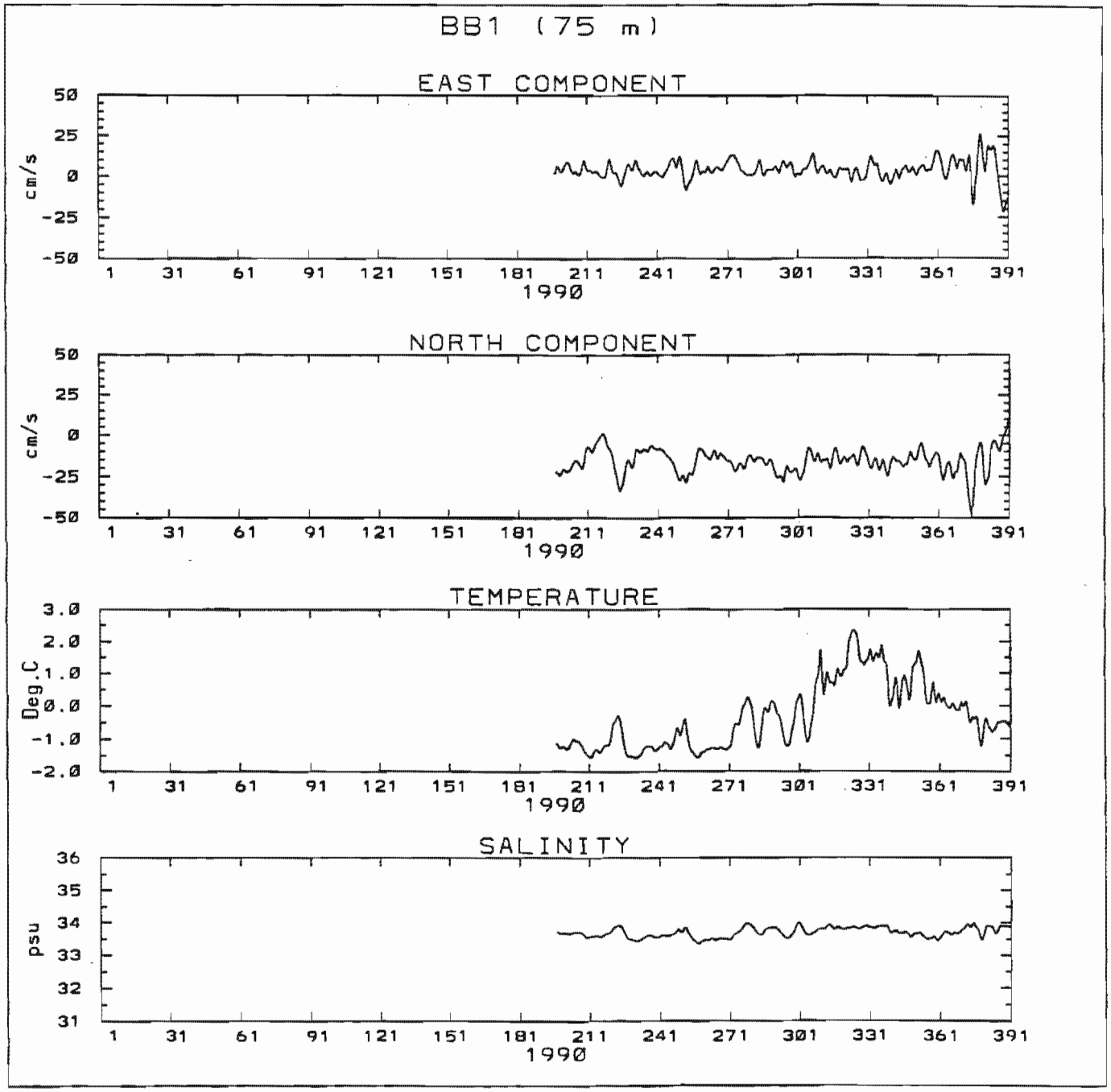


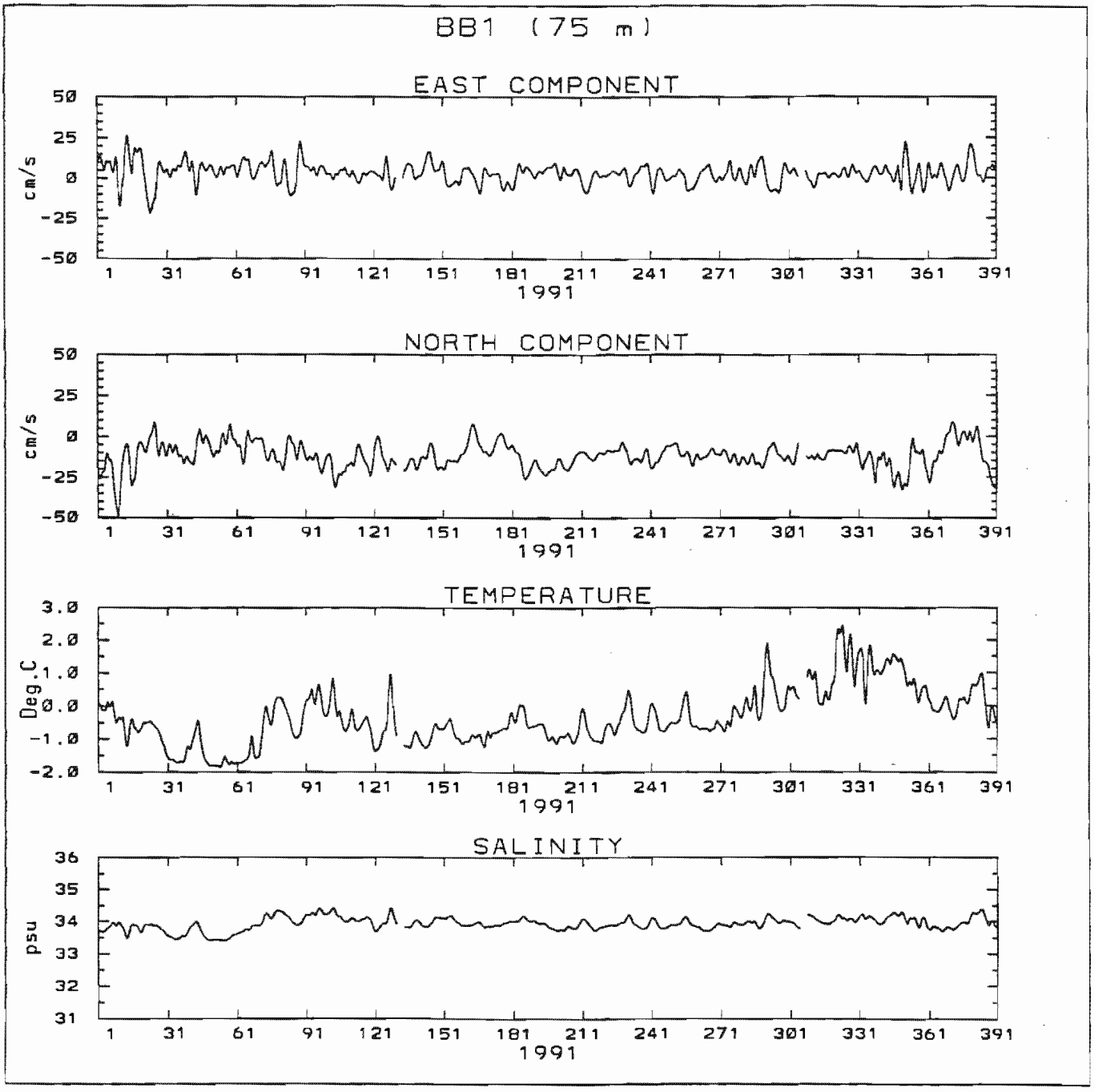
Fig. 11. Time series plots of filtered time series at BB1 and BB3, 1991

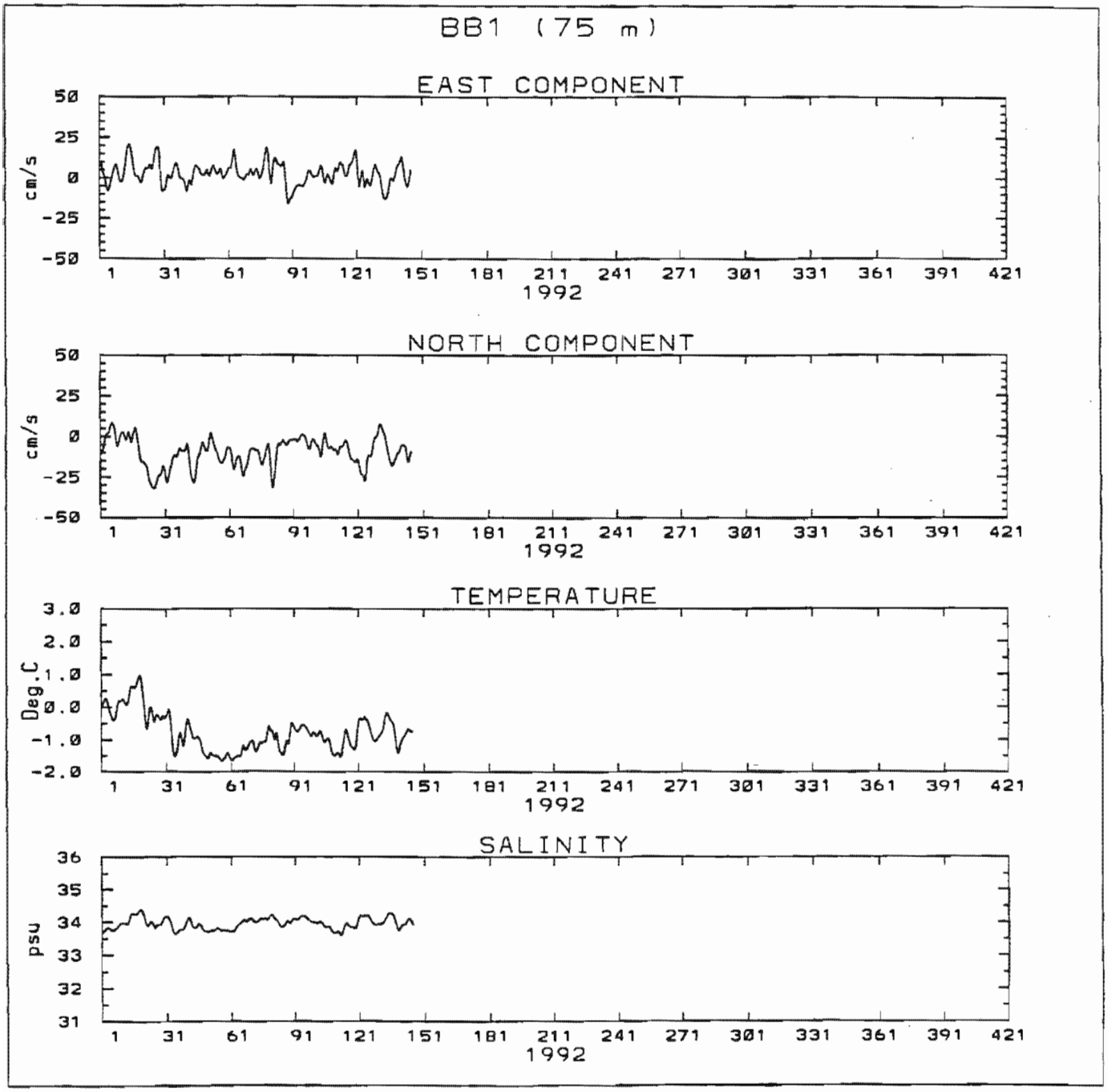
Appendix 1

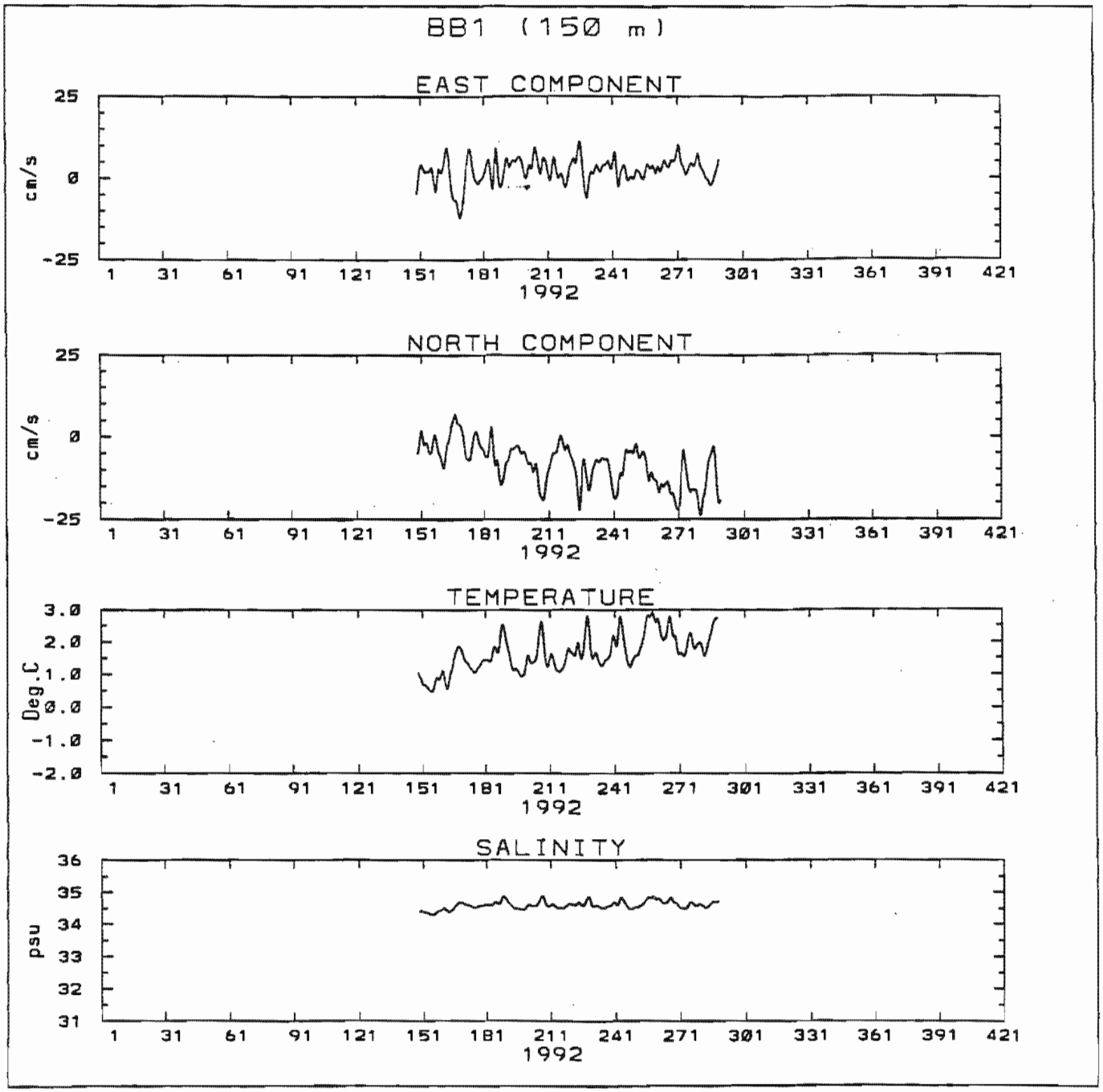
Time series plots of filtered data: BB1

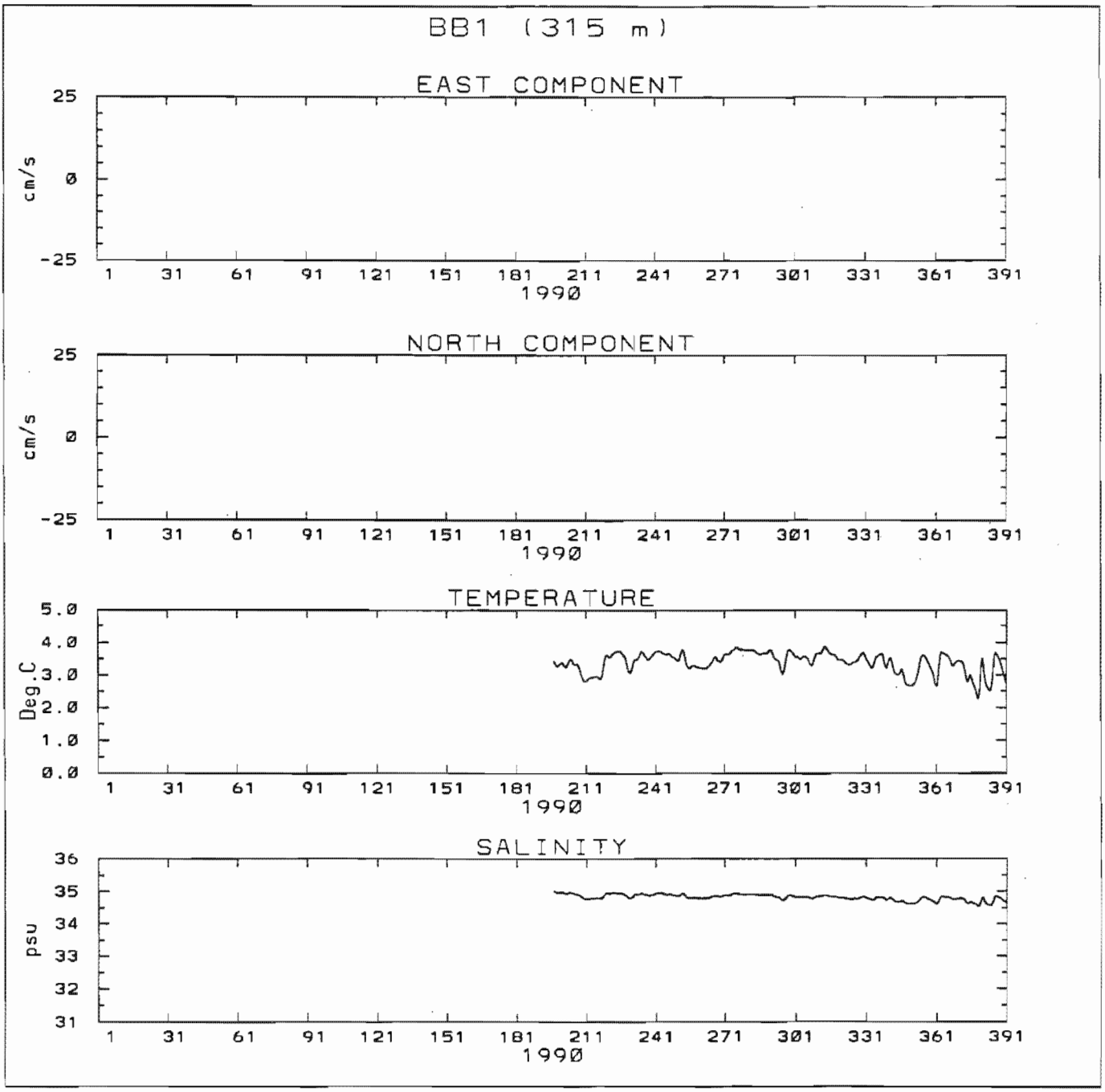

BB1 (40 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
6.0
4.0
2.0
0.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

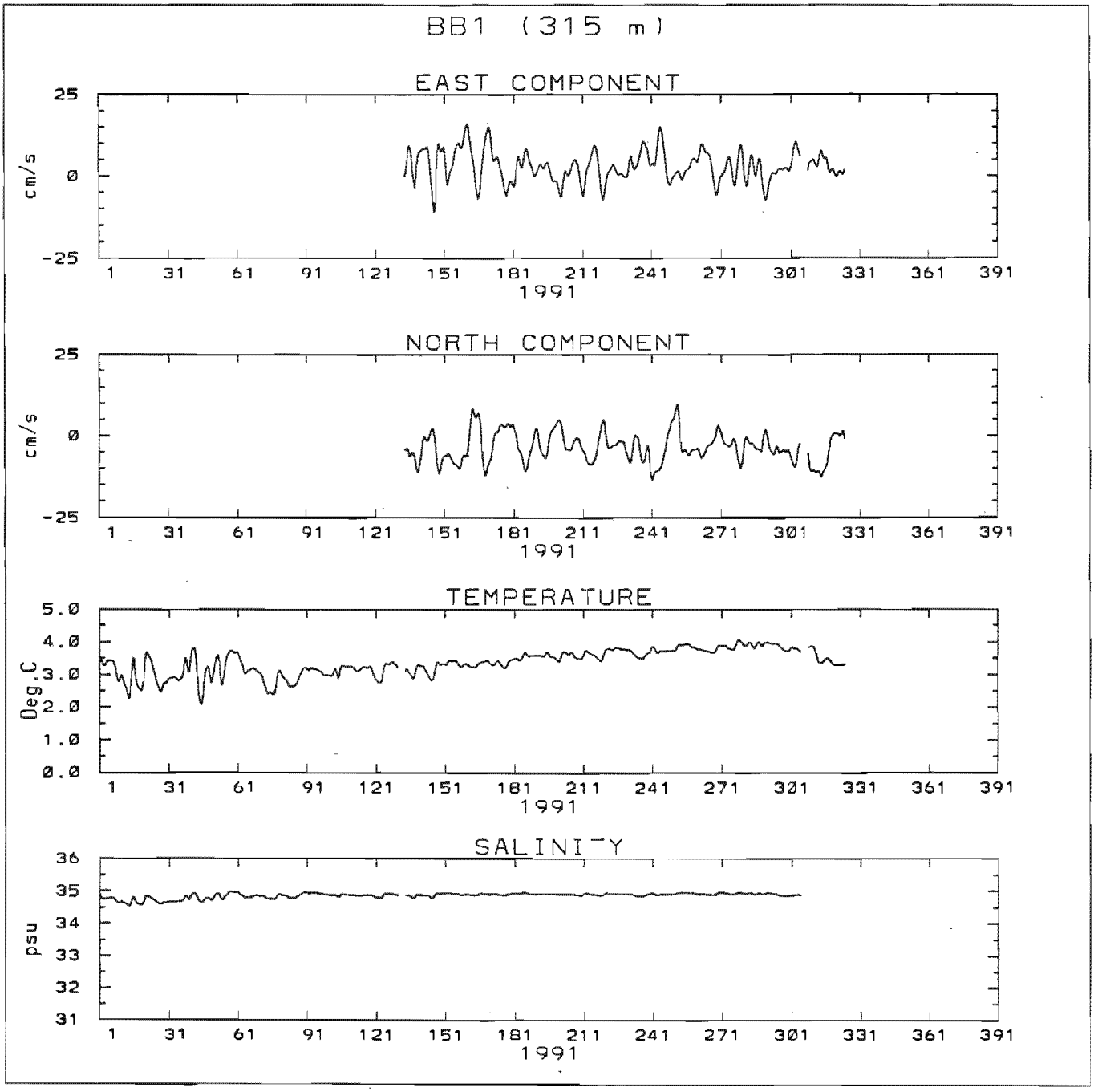

BB1 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990

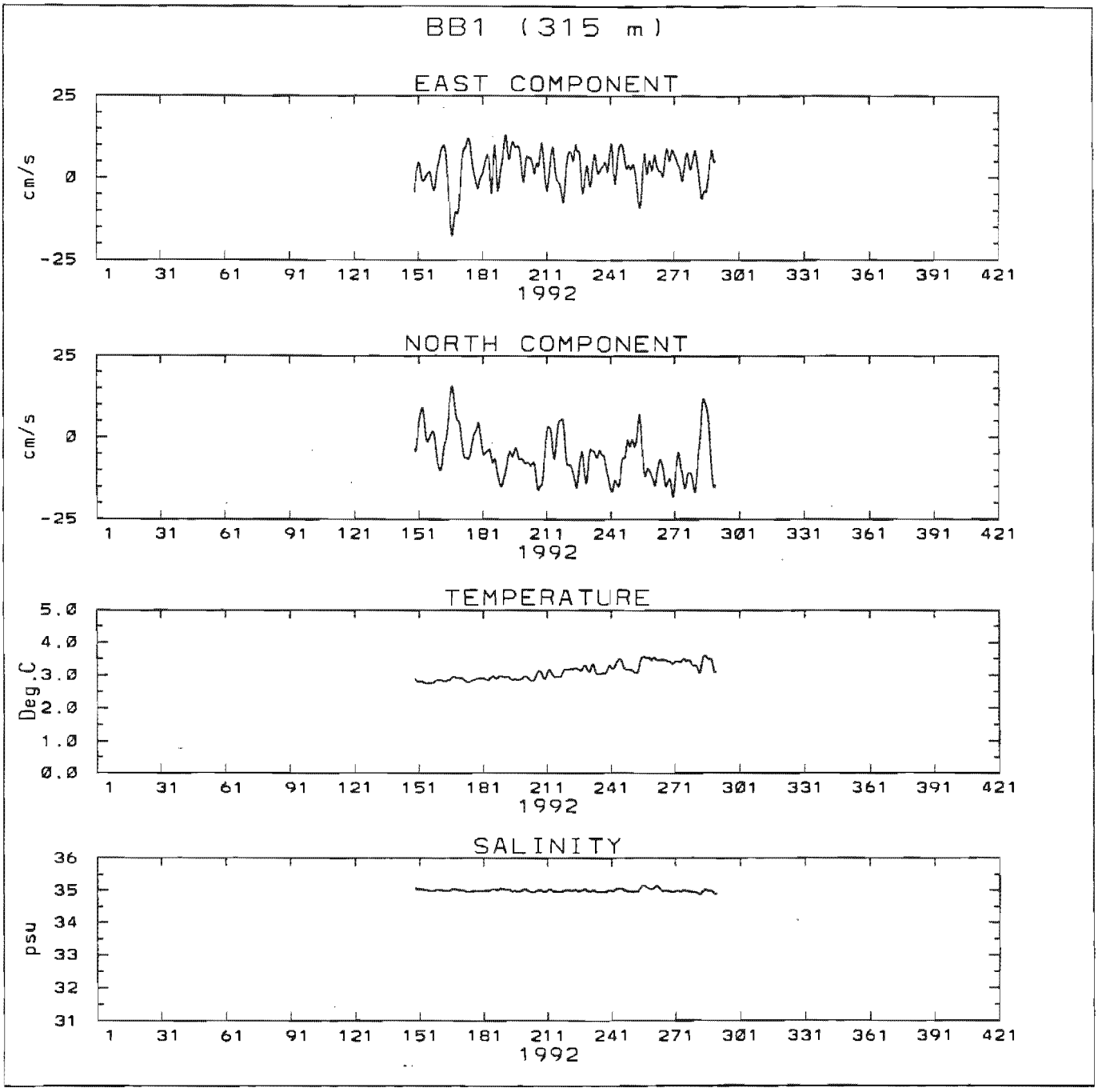

BB1 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

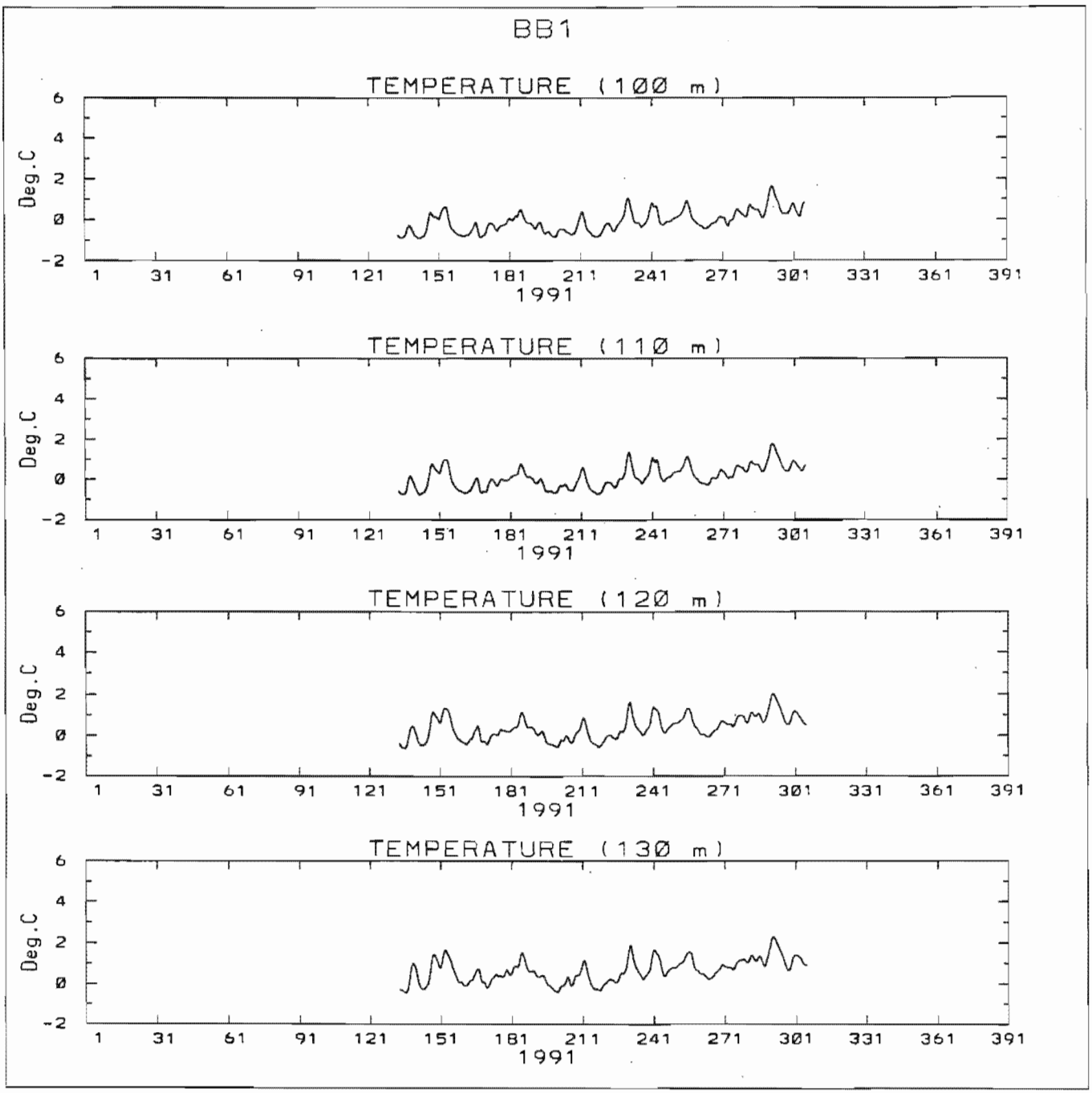

BB1 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

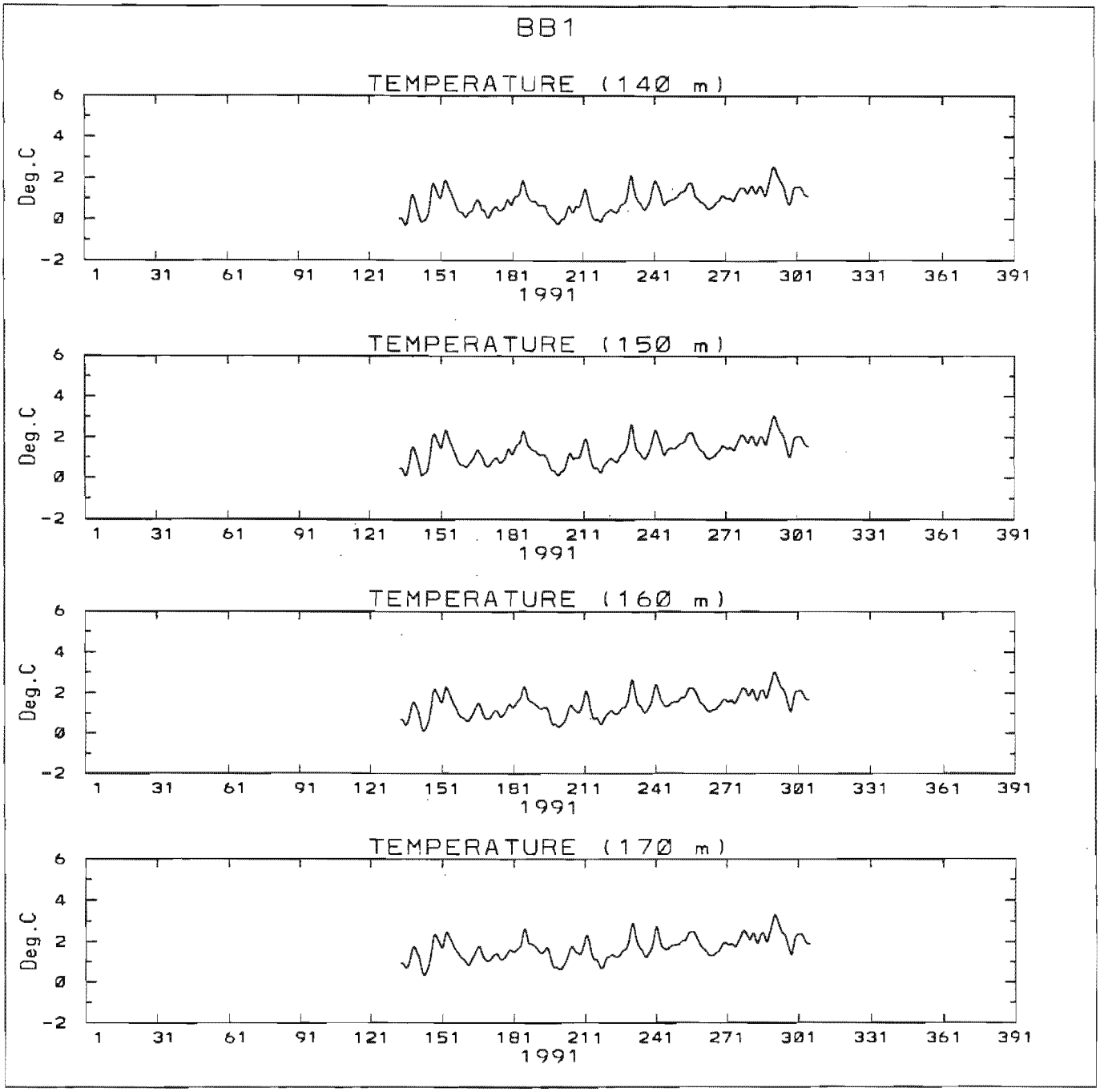

BB1 (150 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

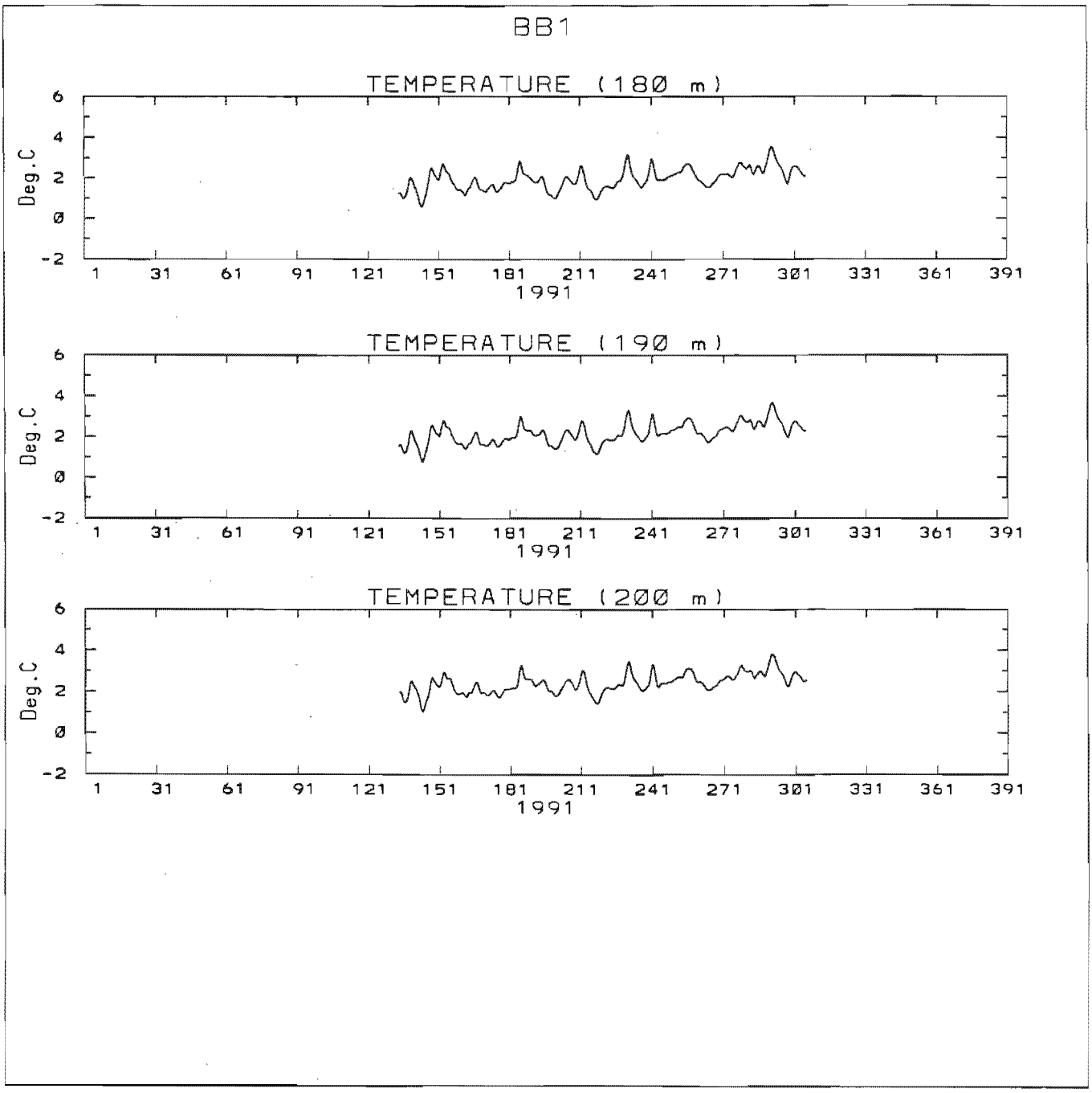

BB1 (315 m)
EAST COMPONENT
cm/s
25
0
-25
NORTH COMPONENT
cm/s
25
0
-25
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990


BB1 (315 m)
EAST COMPONENT
cm/s
25
0
-25
NORTH COMPONENT
cm/s
25
0
-25
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


BB1 (315 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

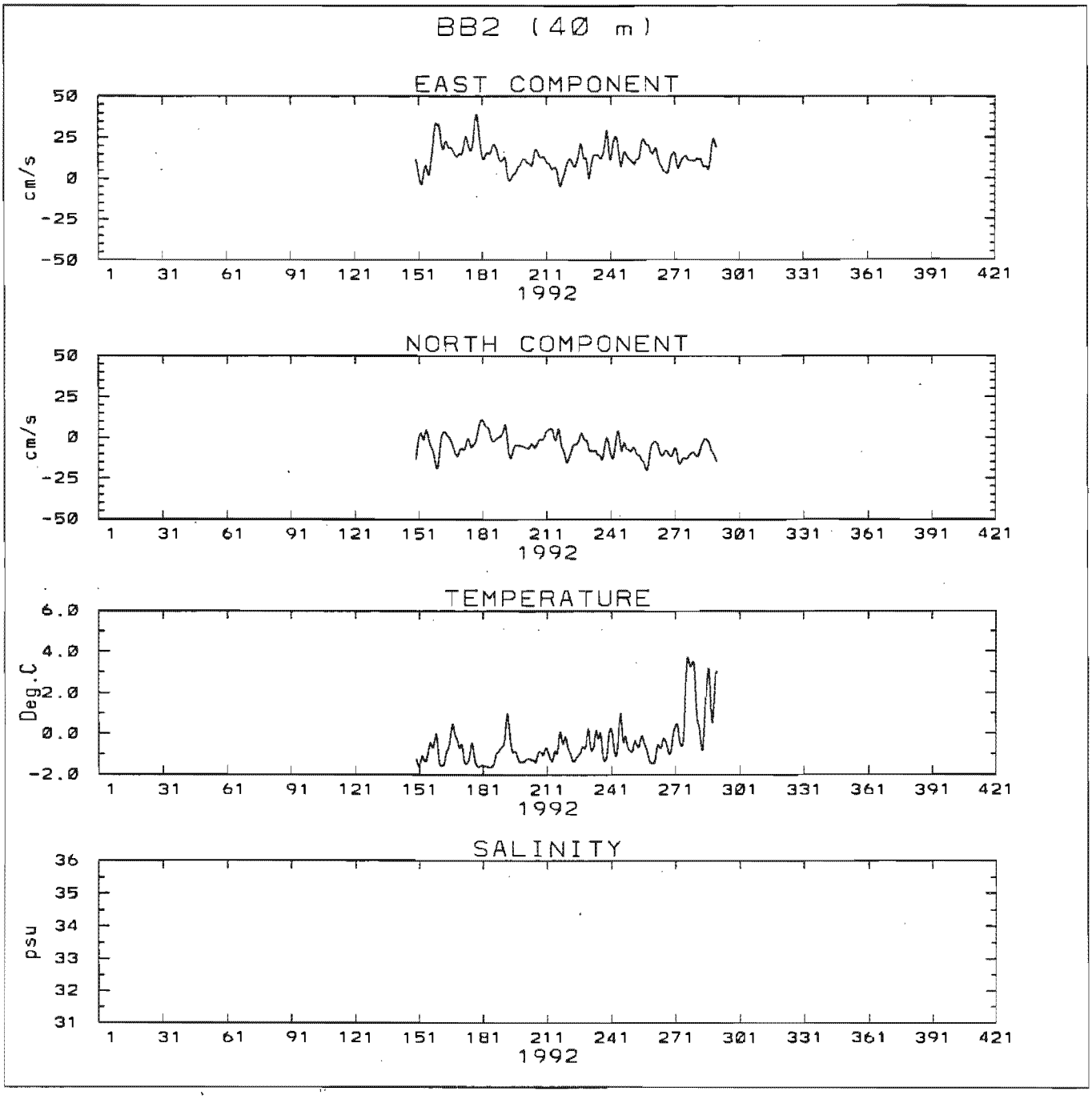

BB1
TEMPERATURE (100 m)
TEMPERATURE (110 m)
TEMPERATURE (120 m)
TEMPERATURE (130 m)
Deg.C
6
4
2
0
-2
1
31
61
91
121
151
181
211
241
271
301
331
361
391
1991

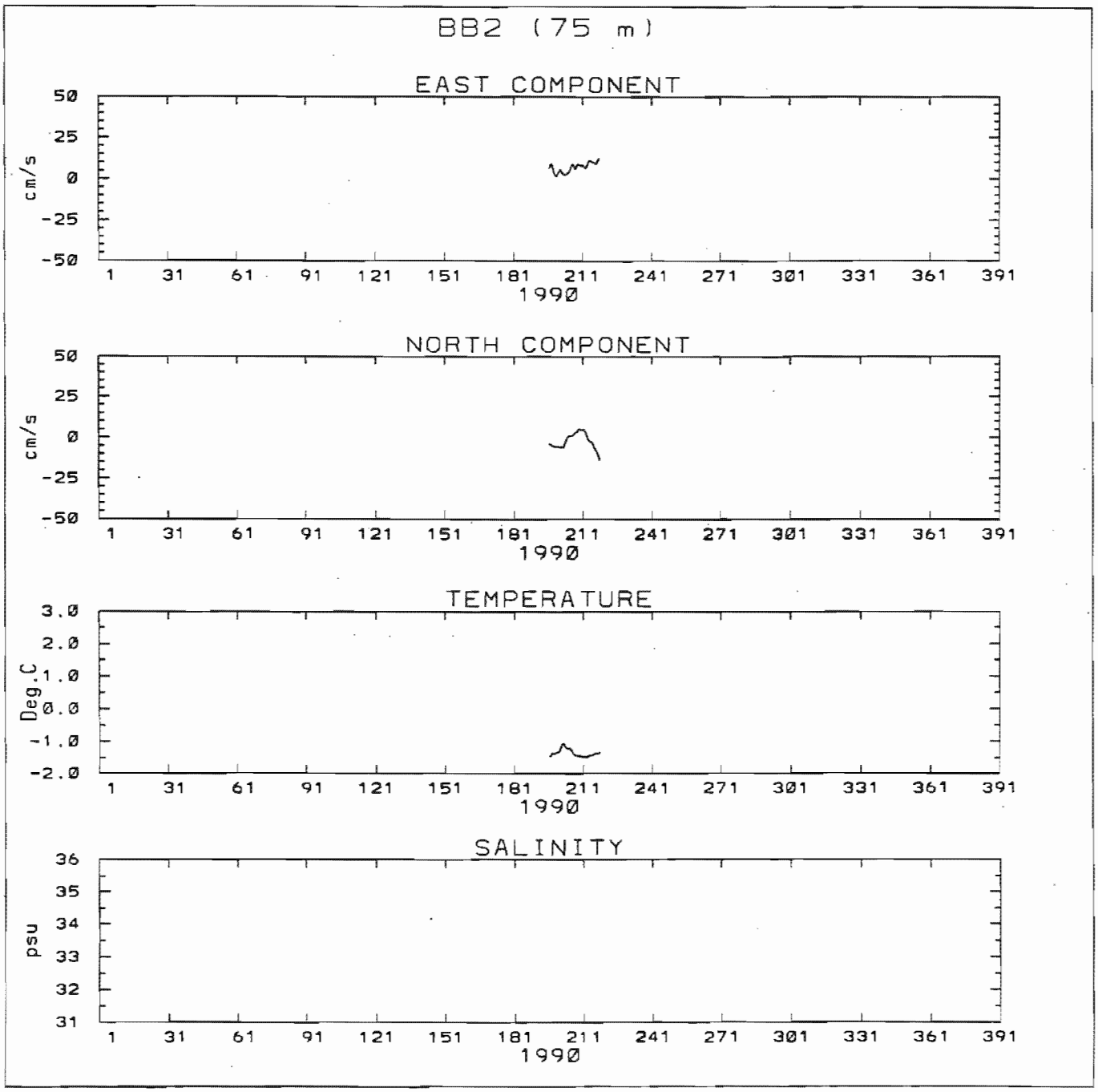

BB1
TEMPERATURE (140 m)
TEMPERATURE (150 m)
TEMPERATURE (160 m)
TEMPERATURE (170 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

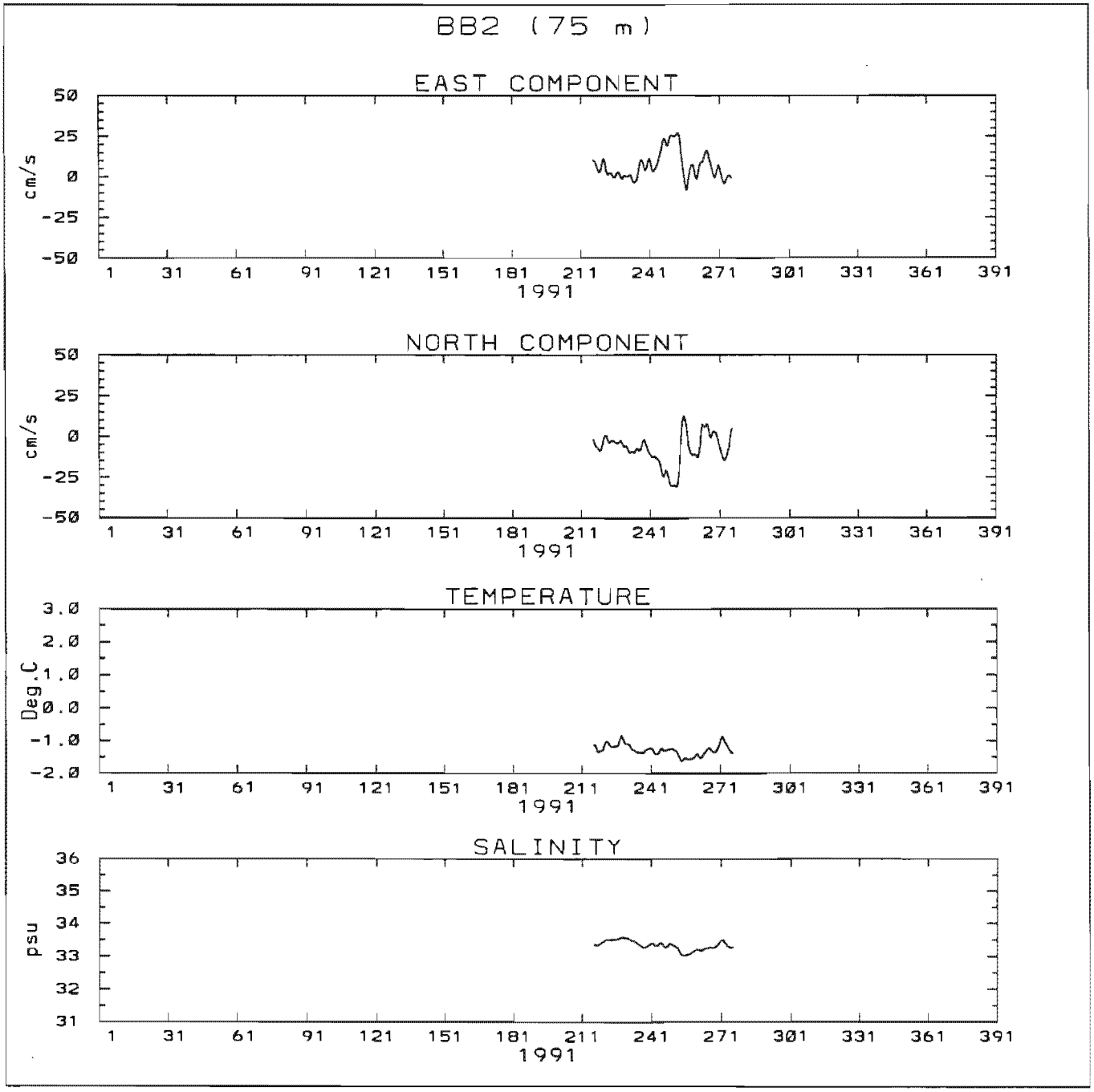

BB1
TEMPERATURE (180 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE (190 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE (200 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

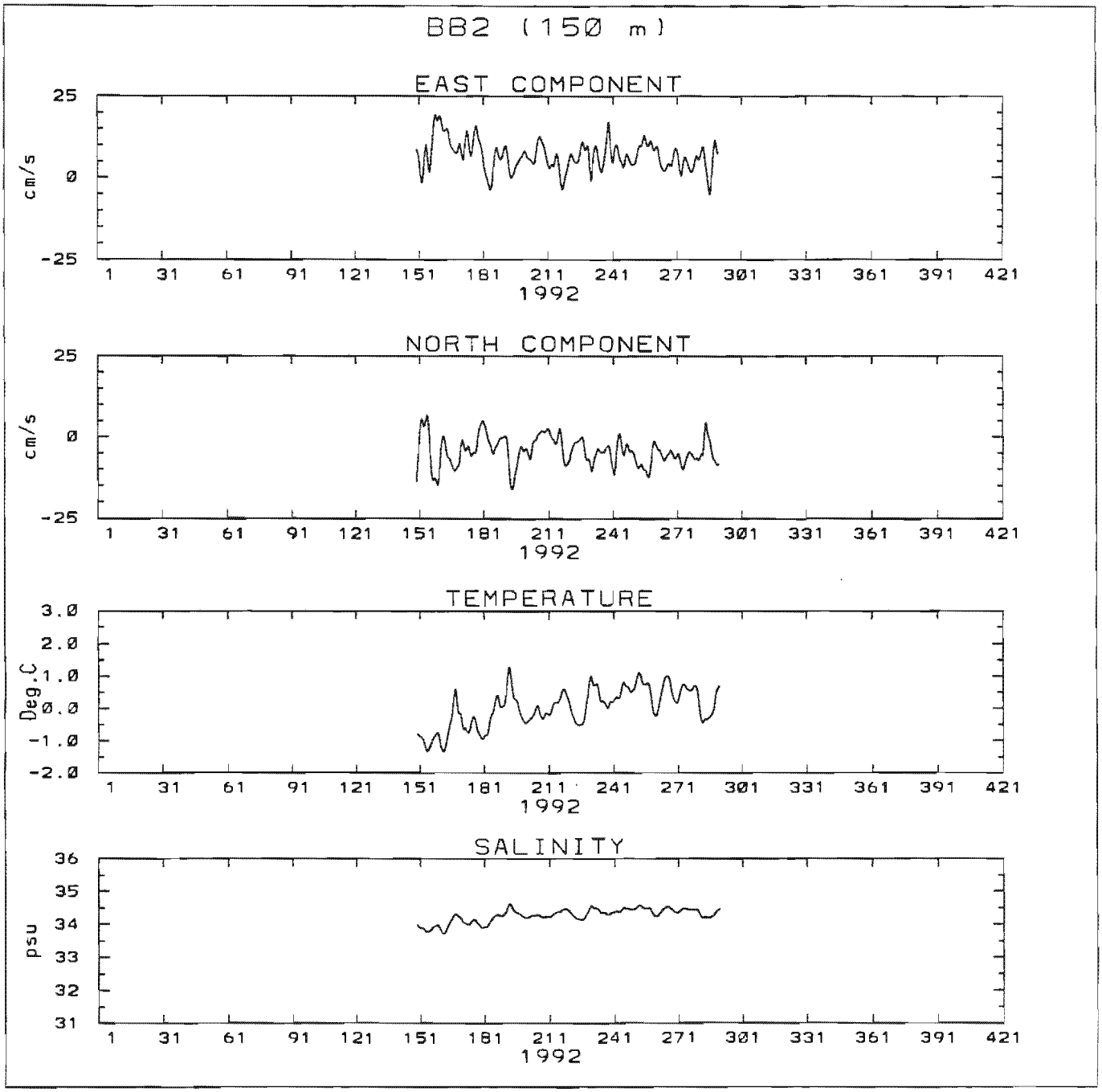
Appendix 2

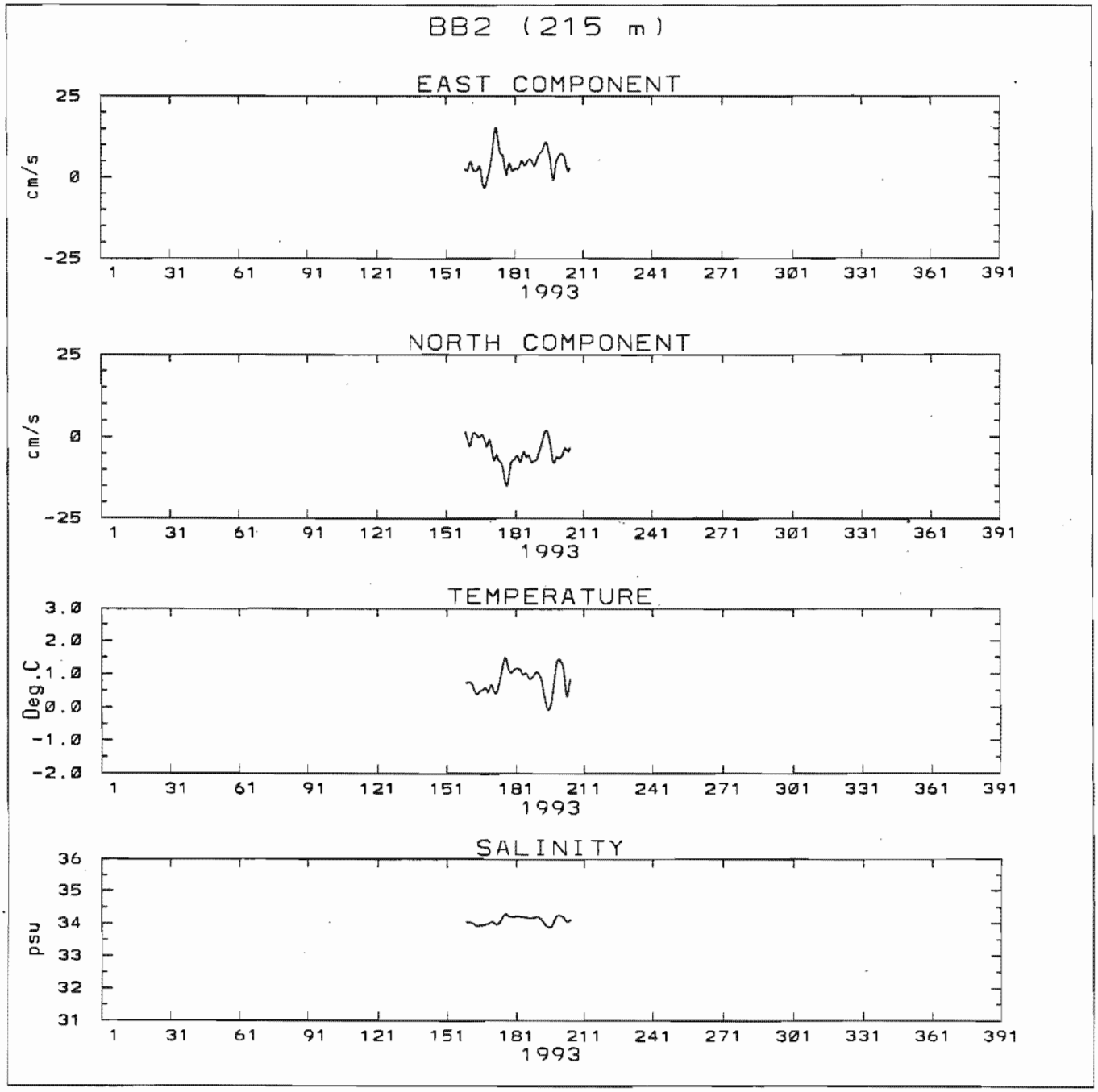
Time series plots of filtered data: BB2

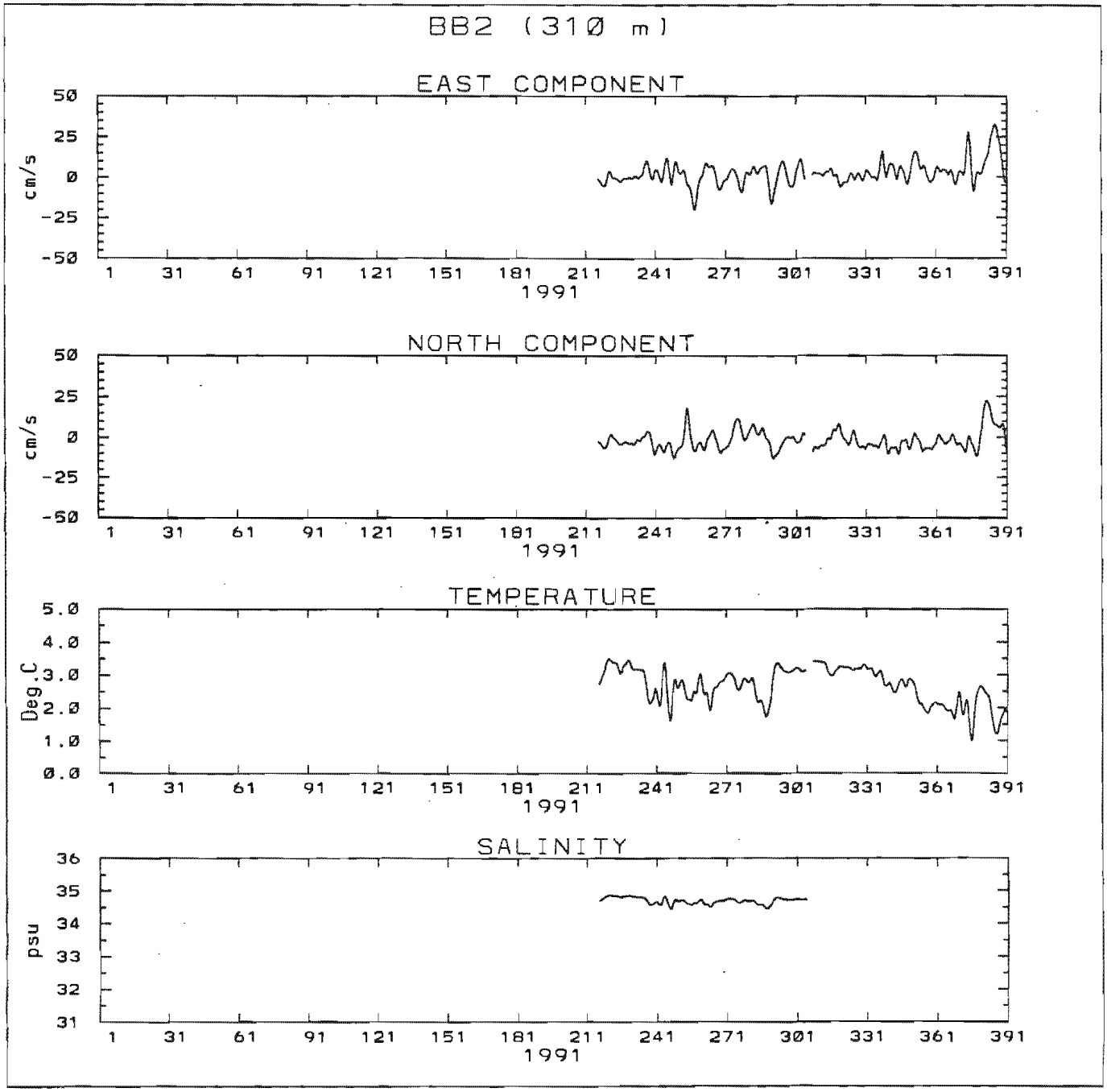

BB2 (40 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
6.0
4.0
2.0
0.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

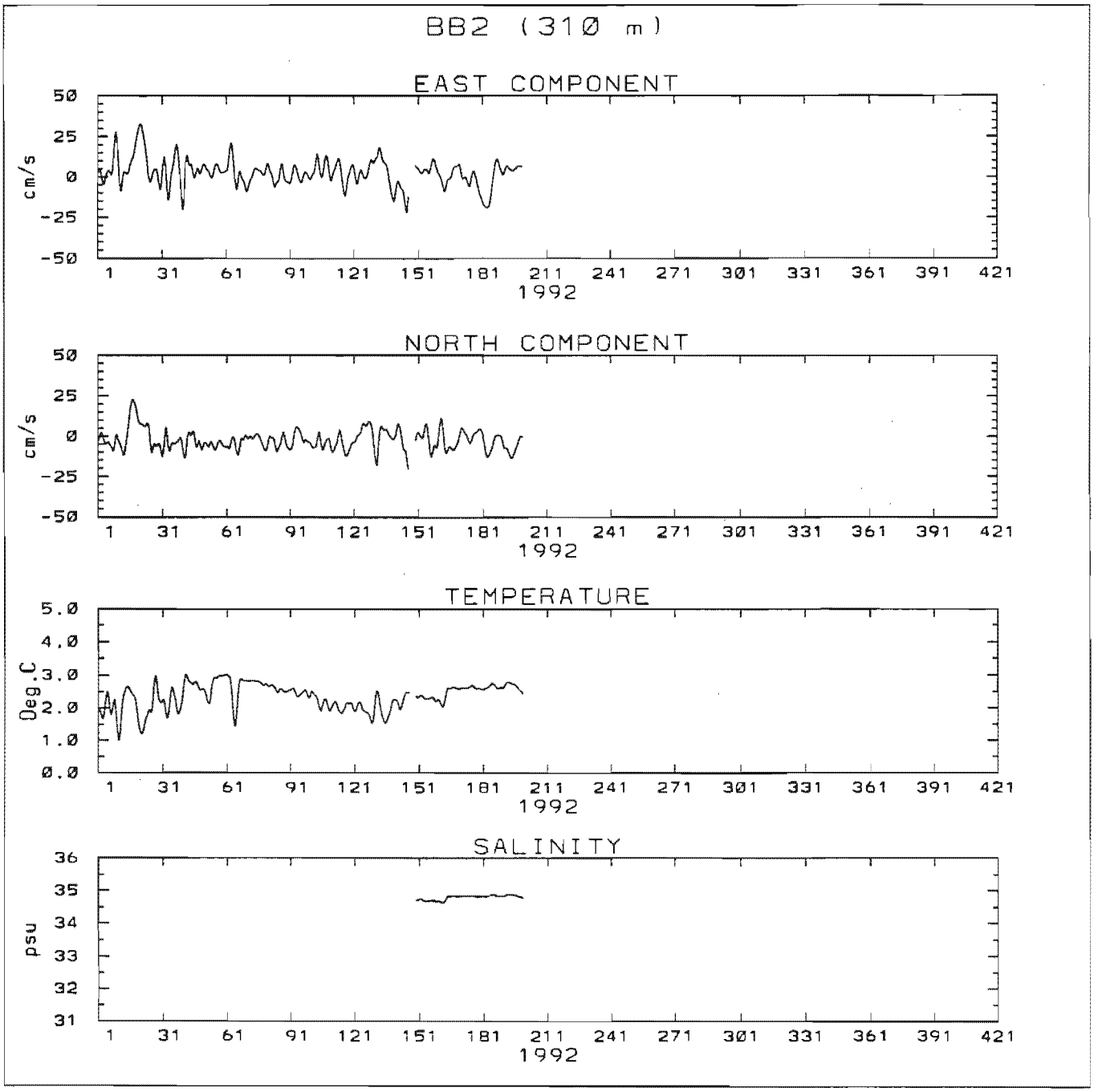

BB2 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990

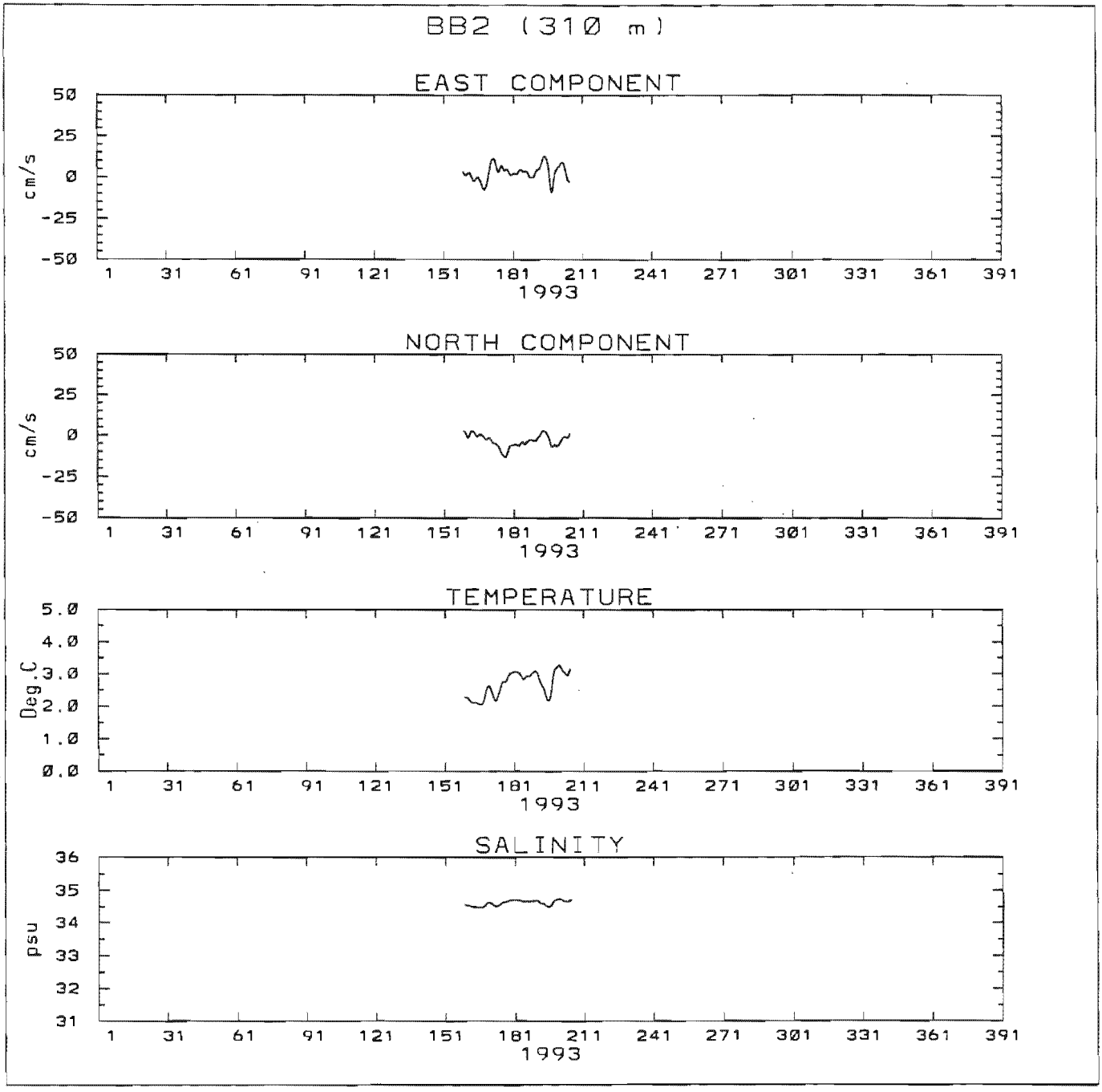

BB2 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


BB2 (150 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992


BB2 (215 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993

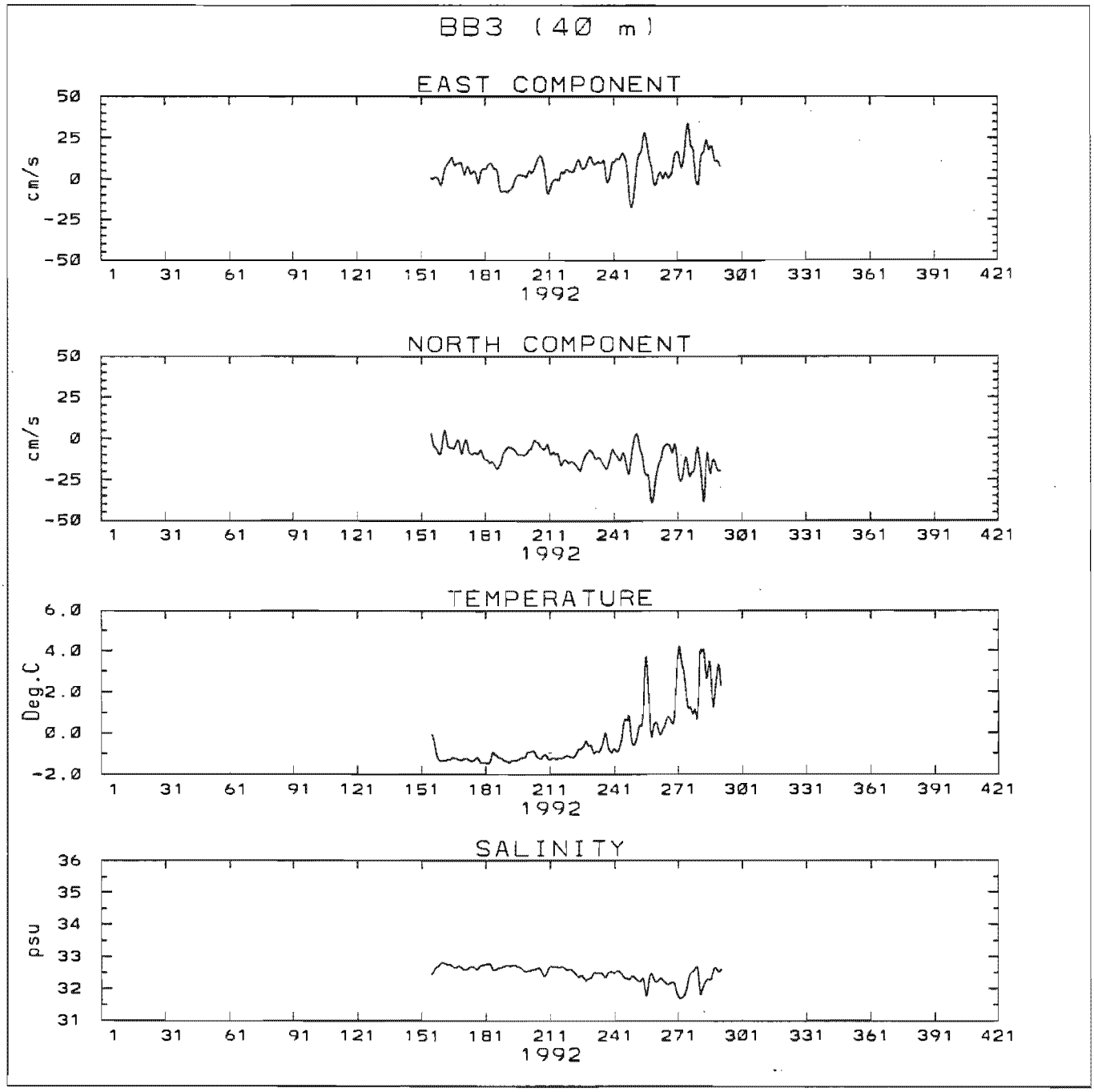

BB2 (310 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

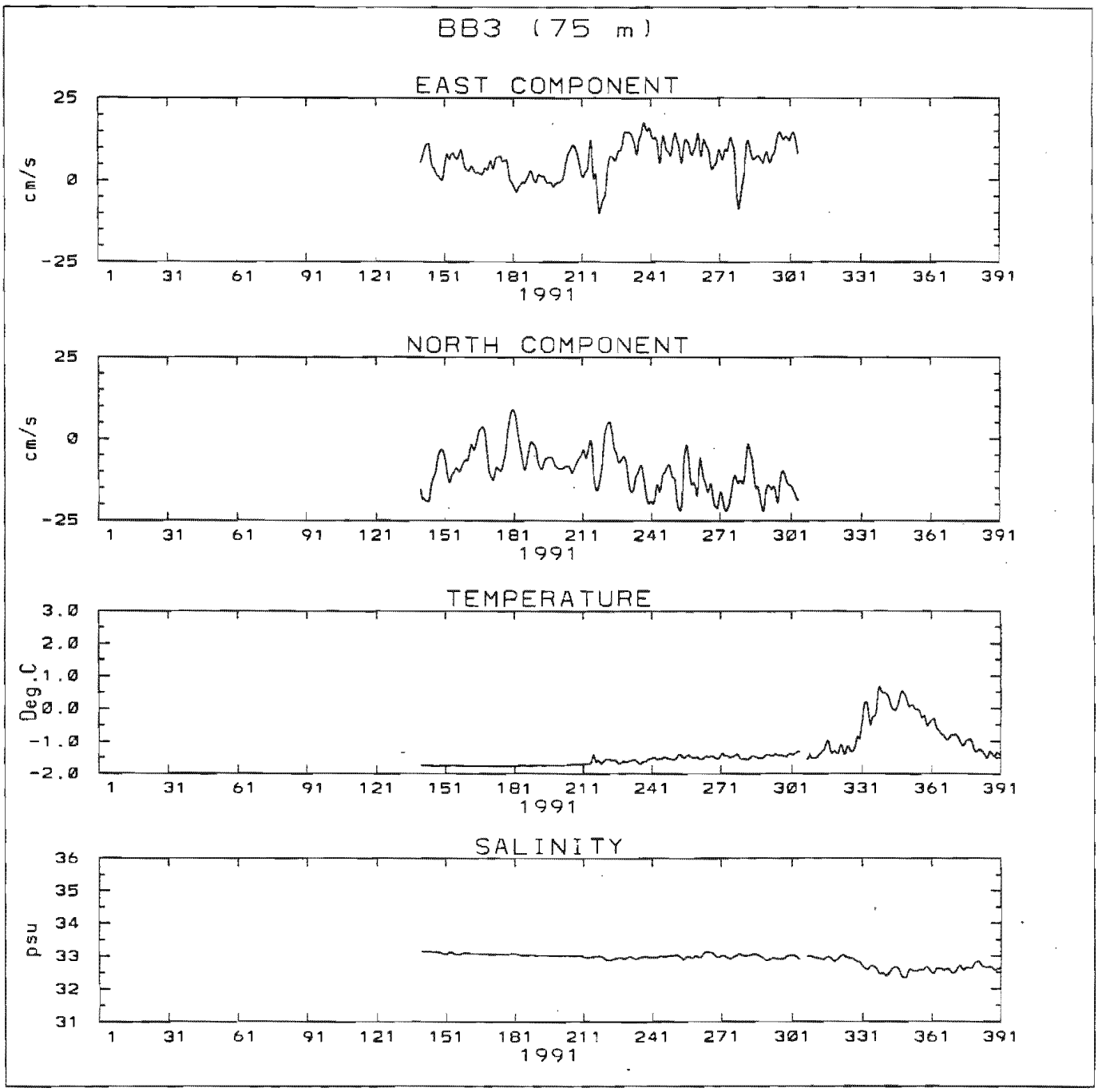

BB2 (310 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

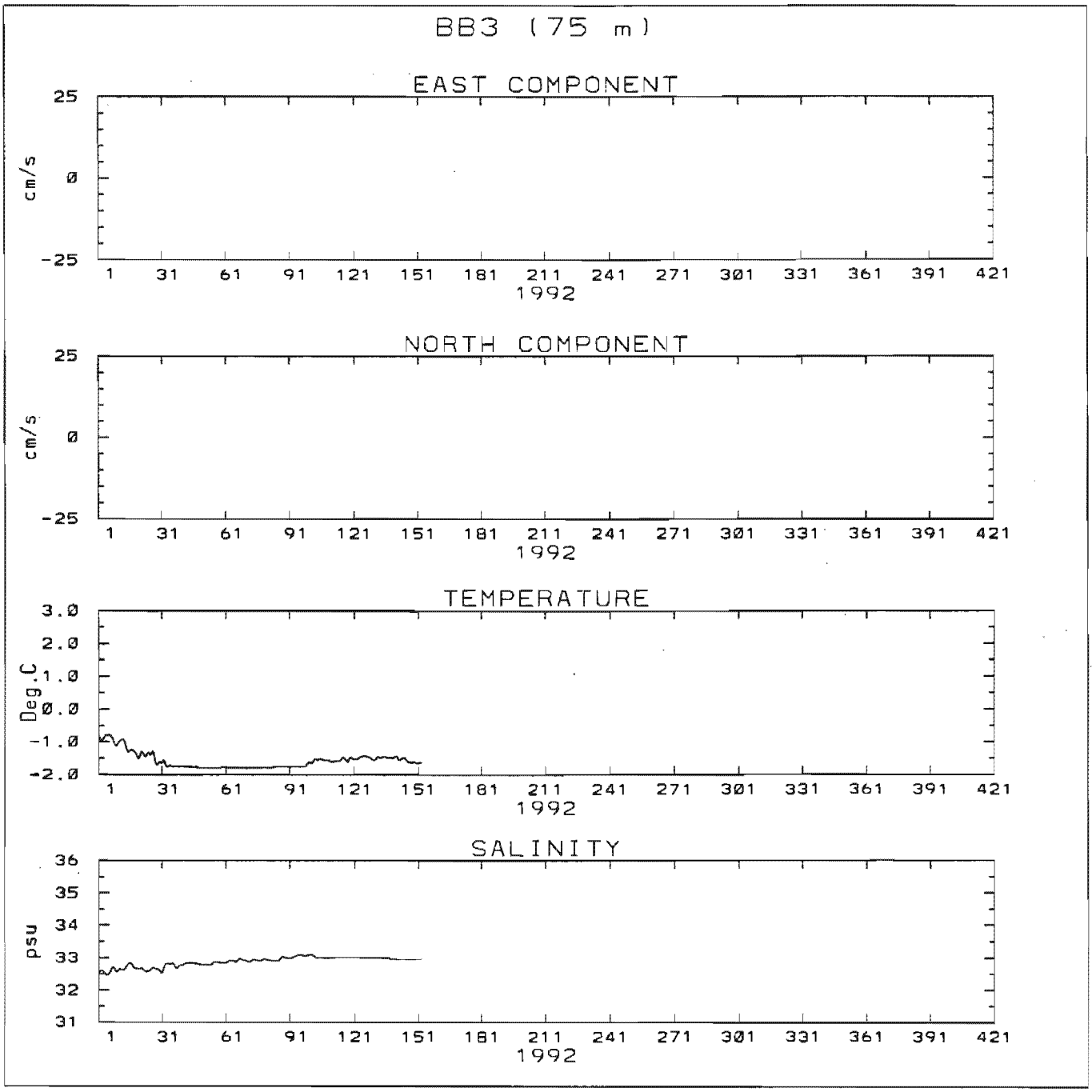

BB2 (310 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993

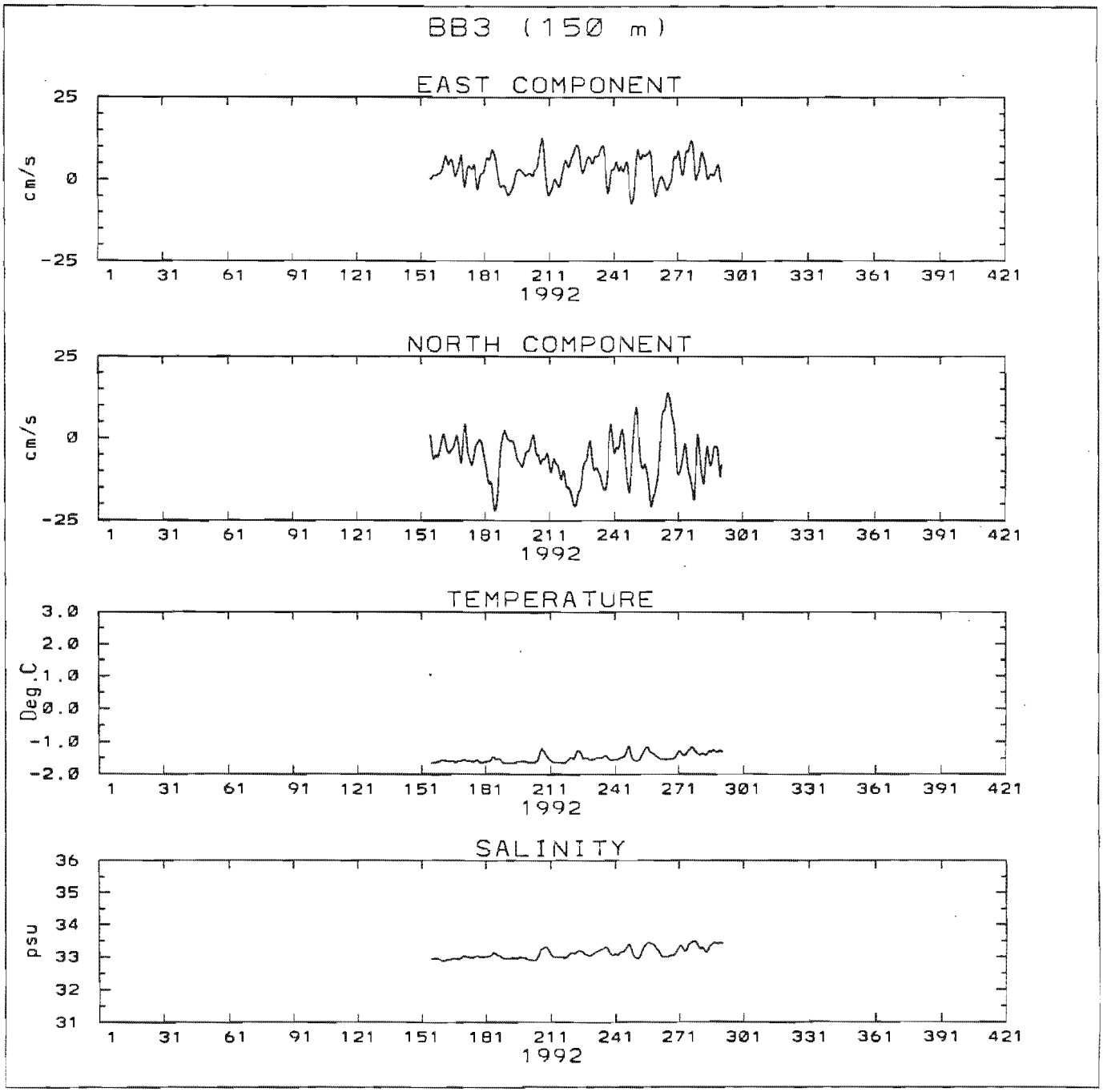
Appendix 3

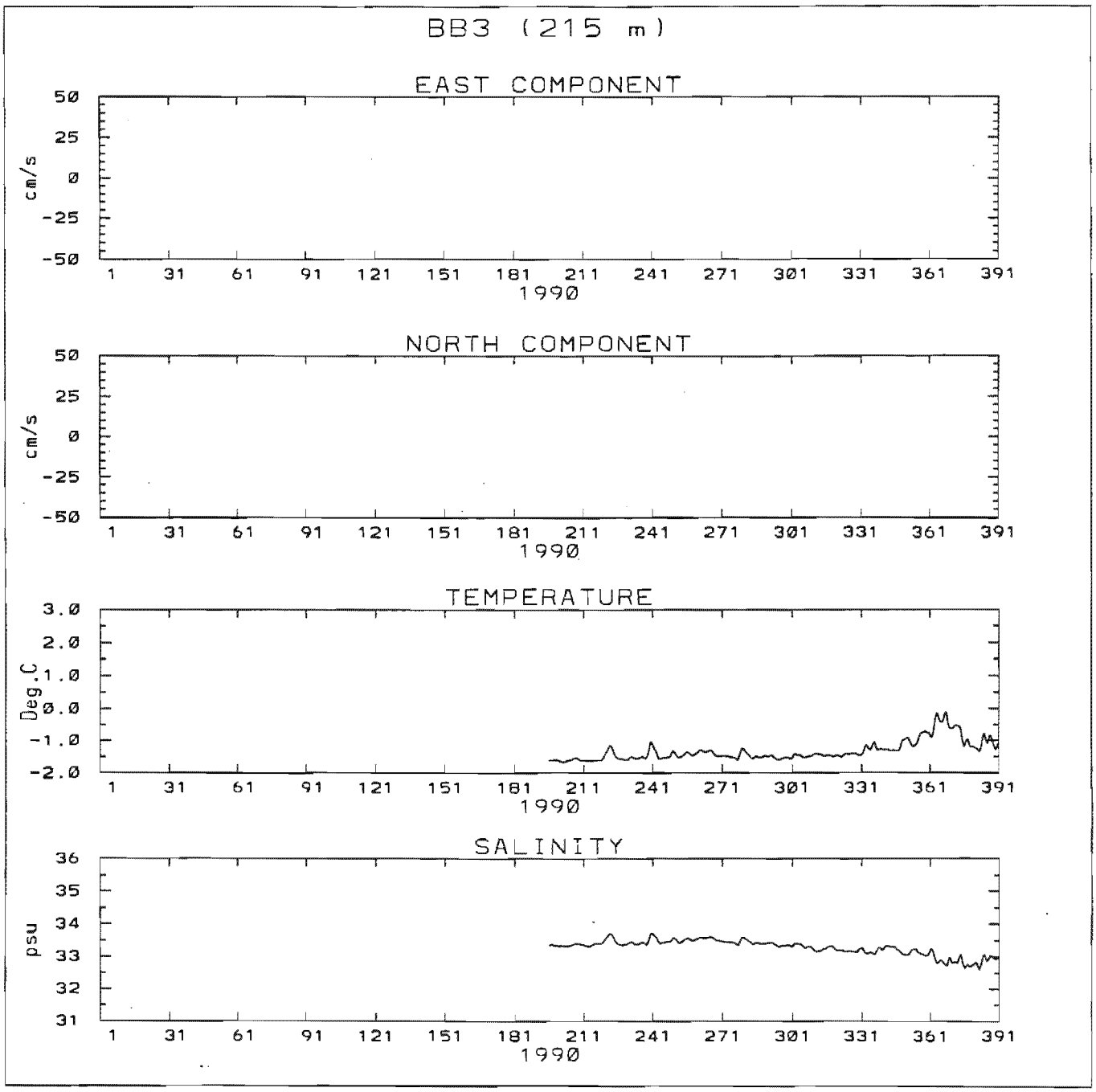
Time series plots of filtered data: BB3

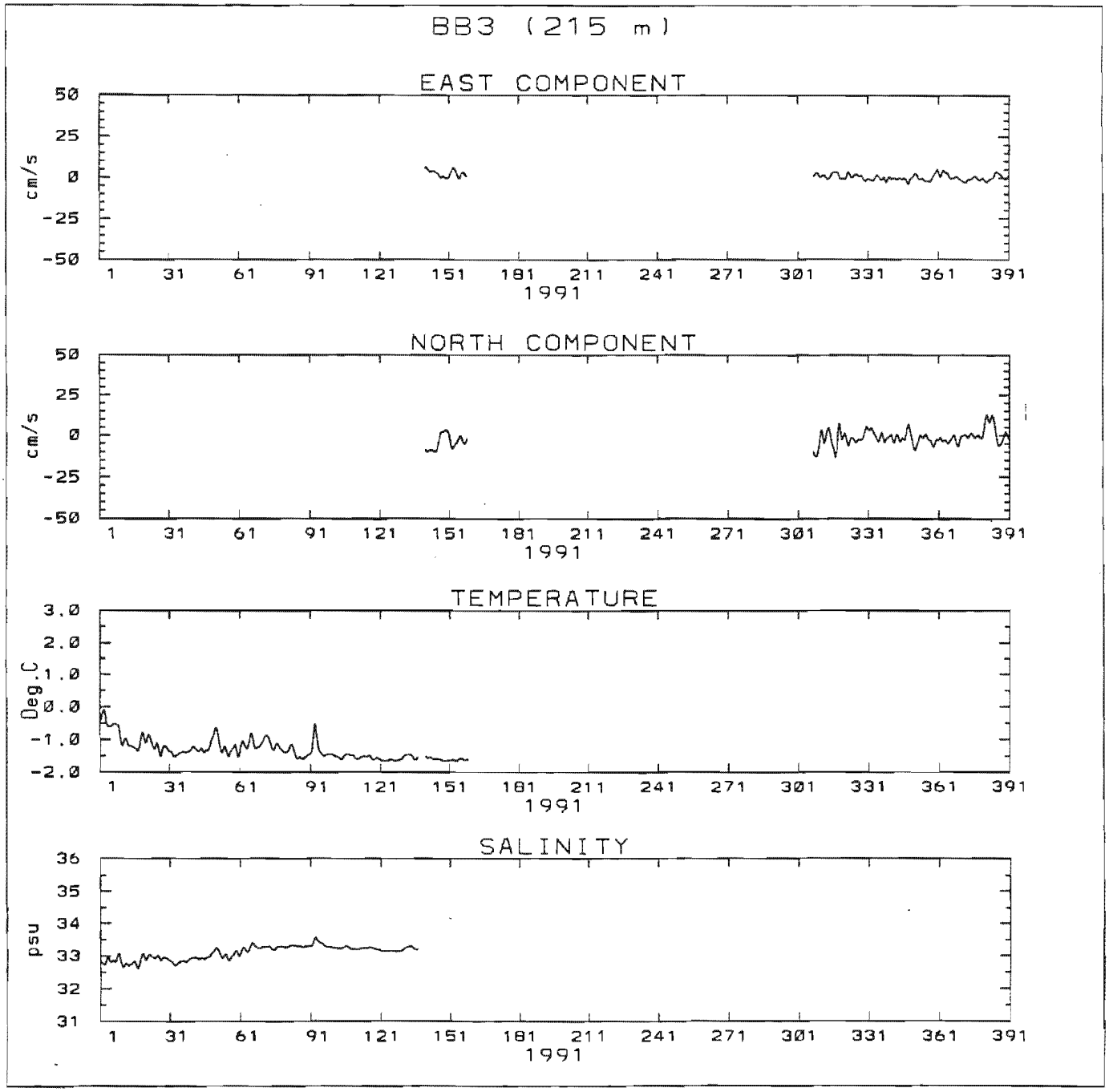

BB3 (40 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
6.0
4.0
2.0
0.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

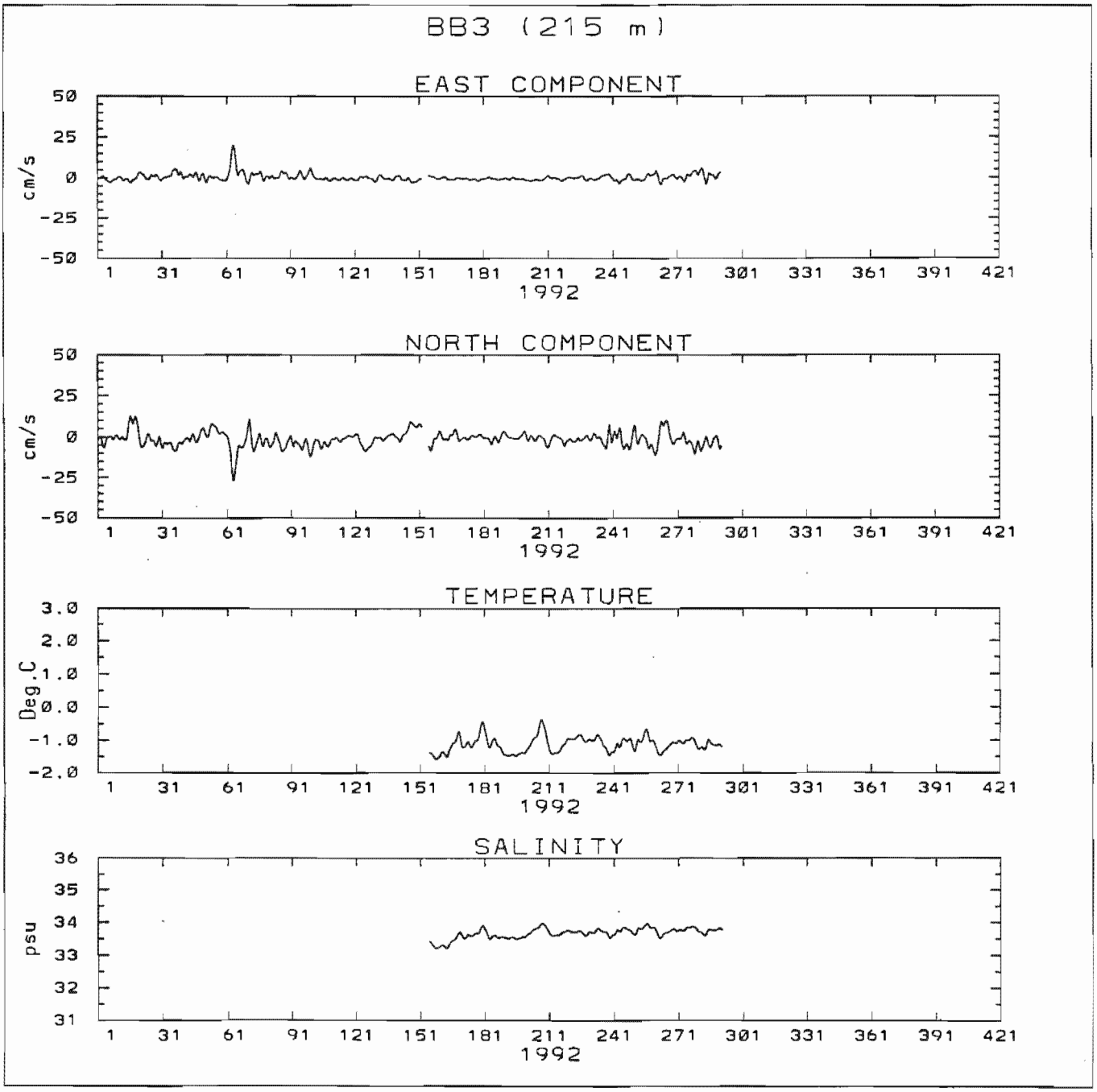

BB3 (75 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


BB3 (75 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992


BB3 (150 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

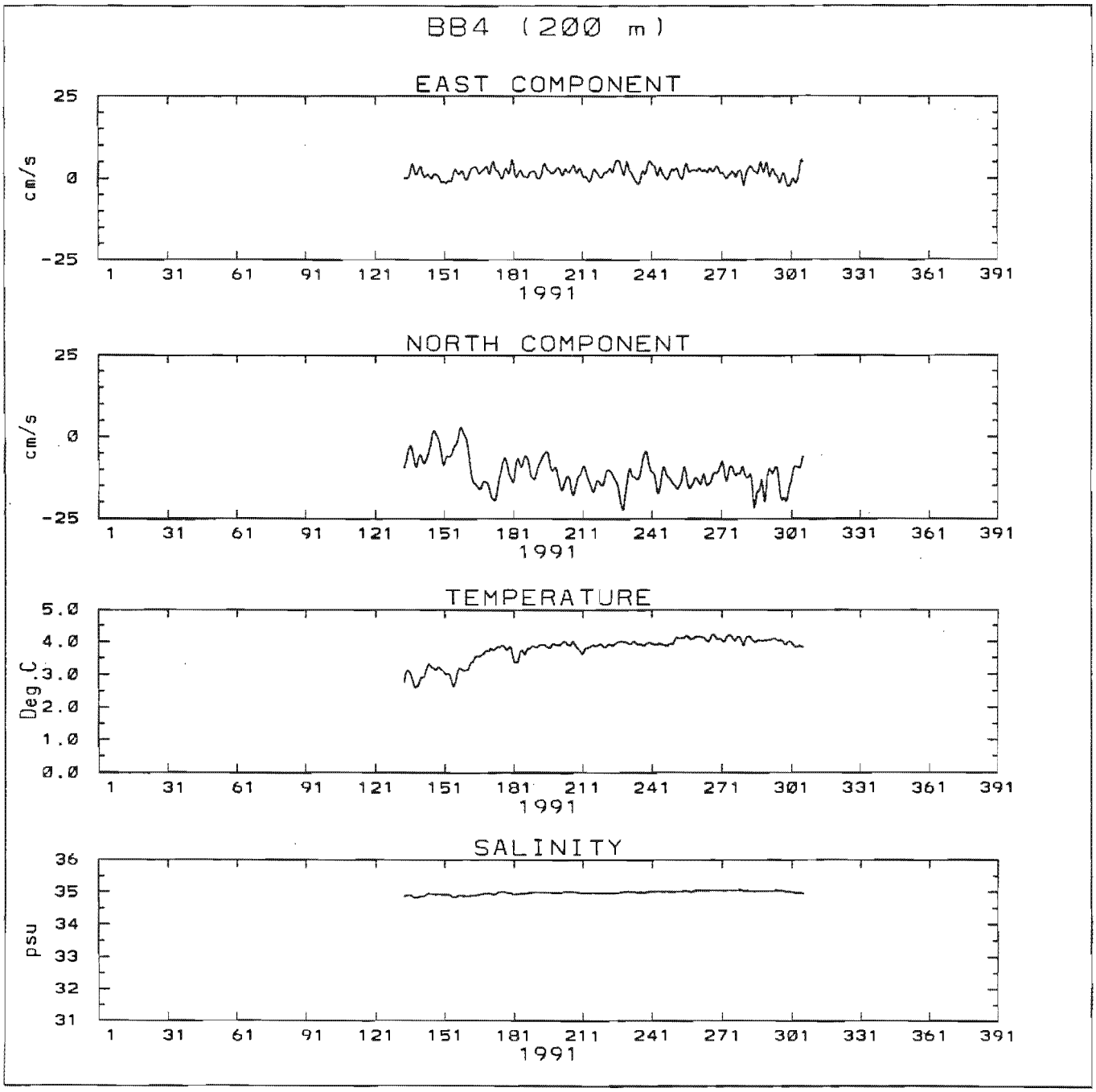

BB3 (215 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990

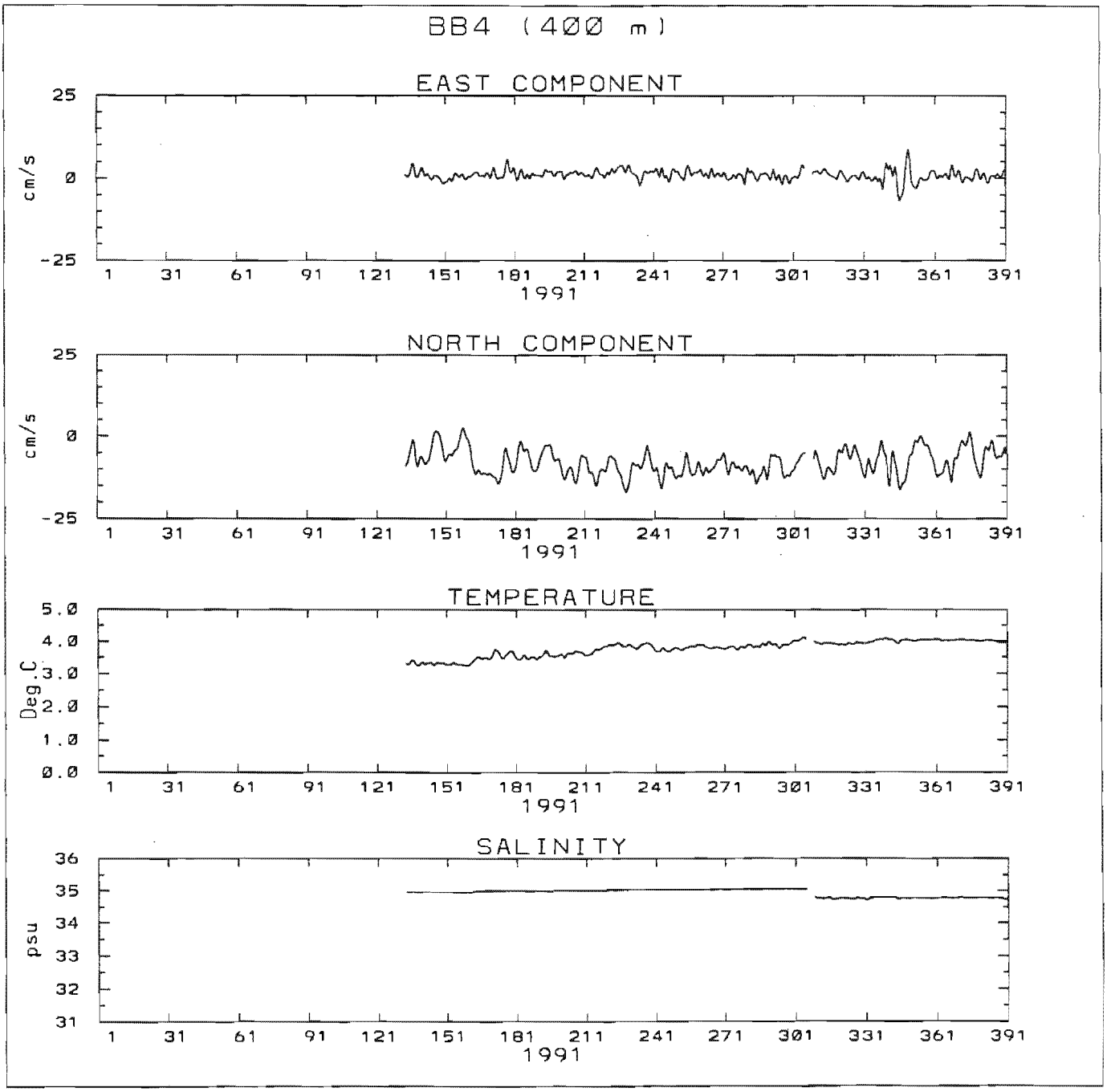

BB3 (215 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

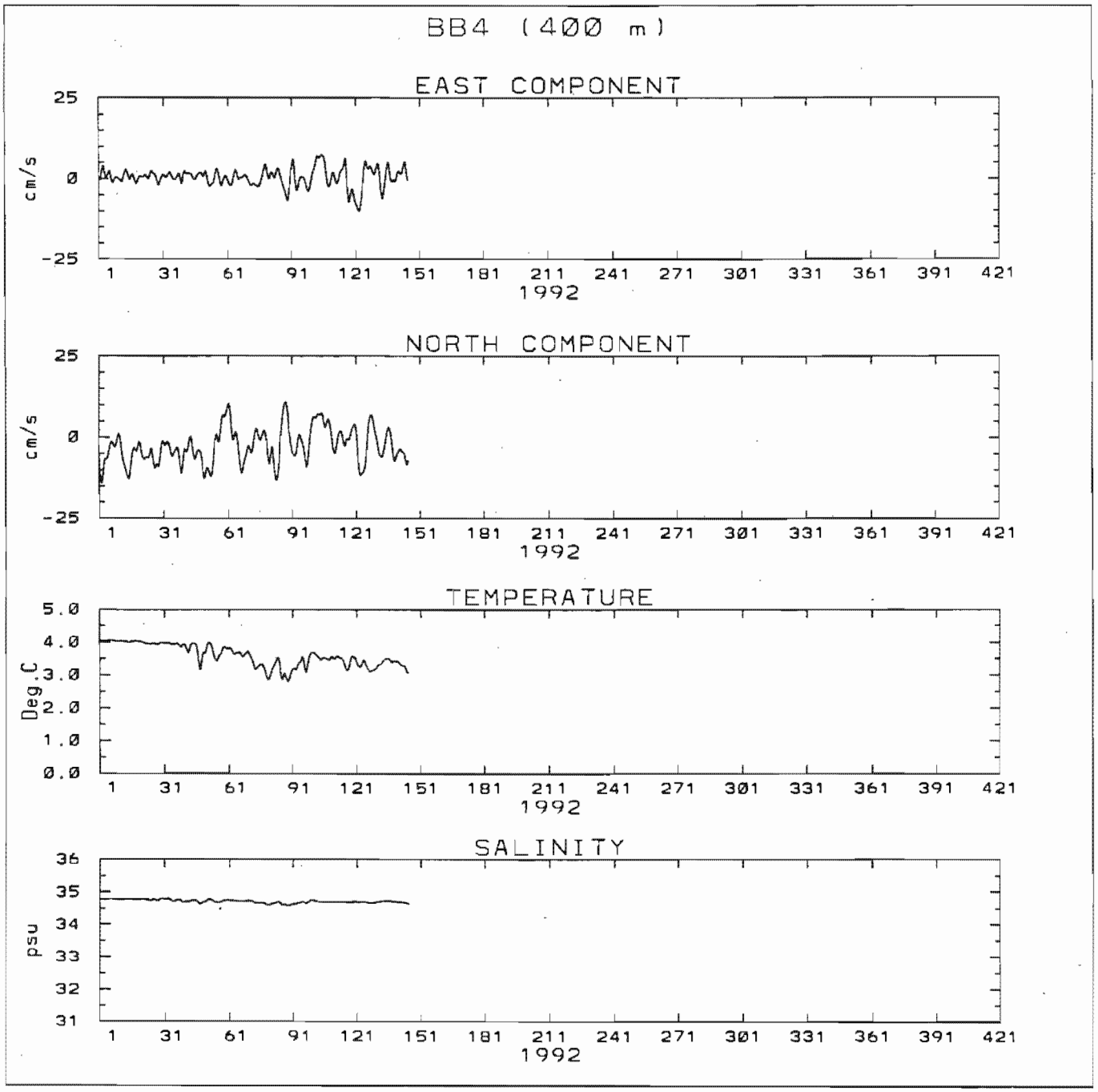

BB3 (215 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

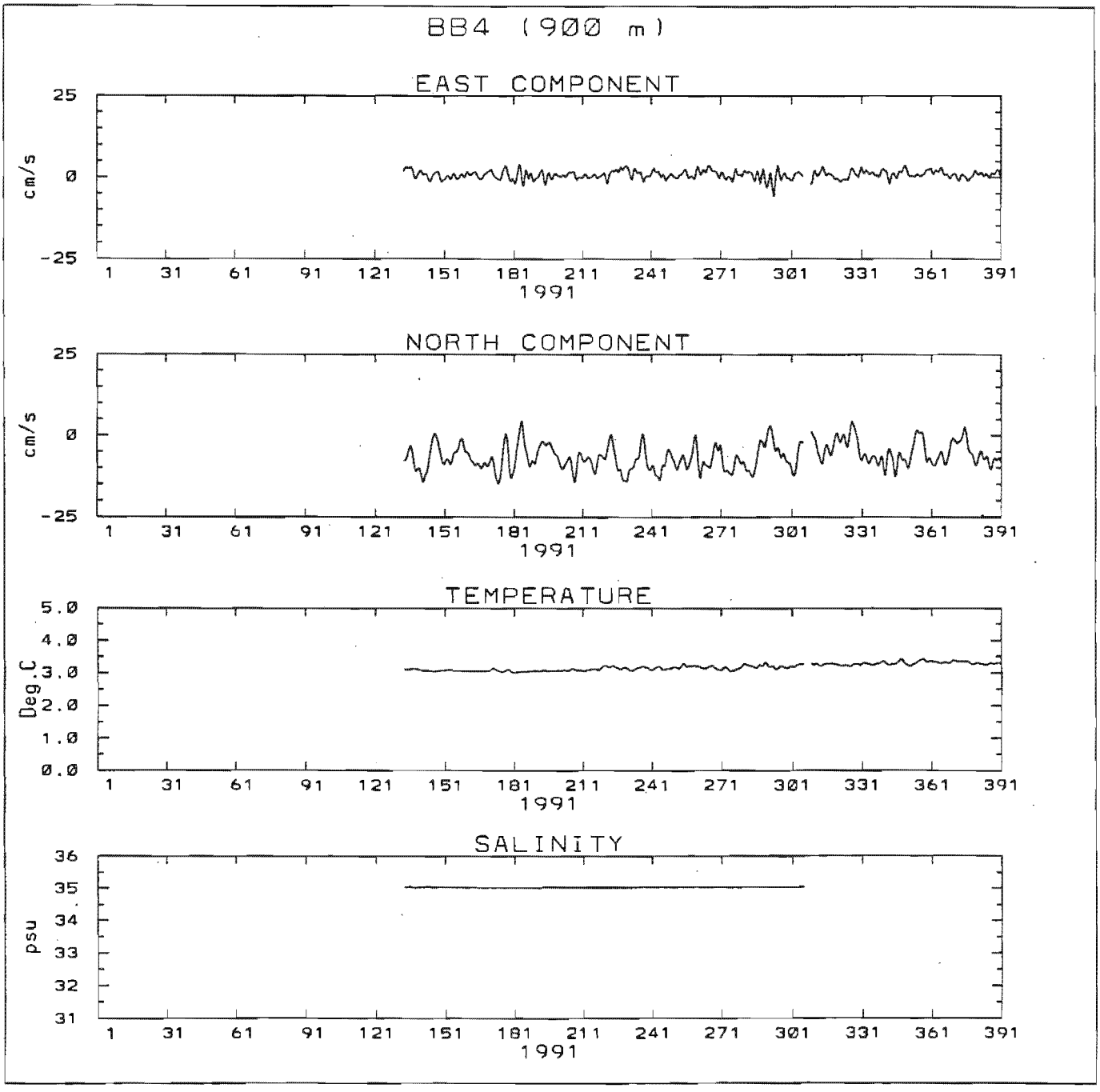
Appendix 4

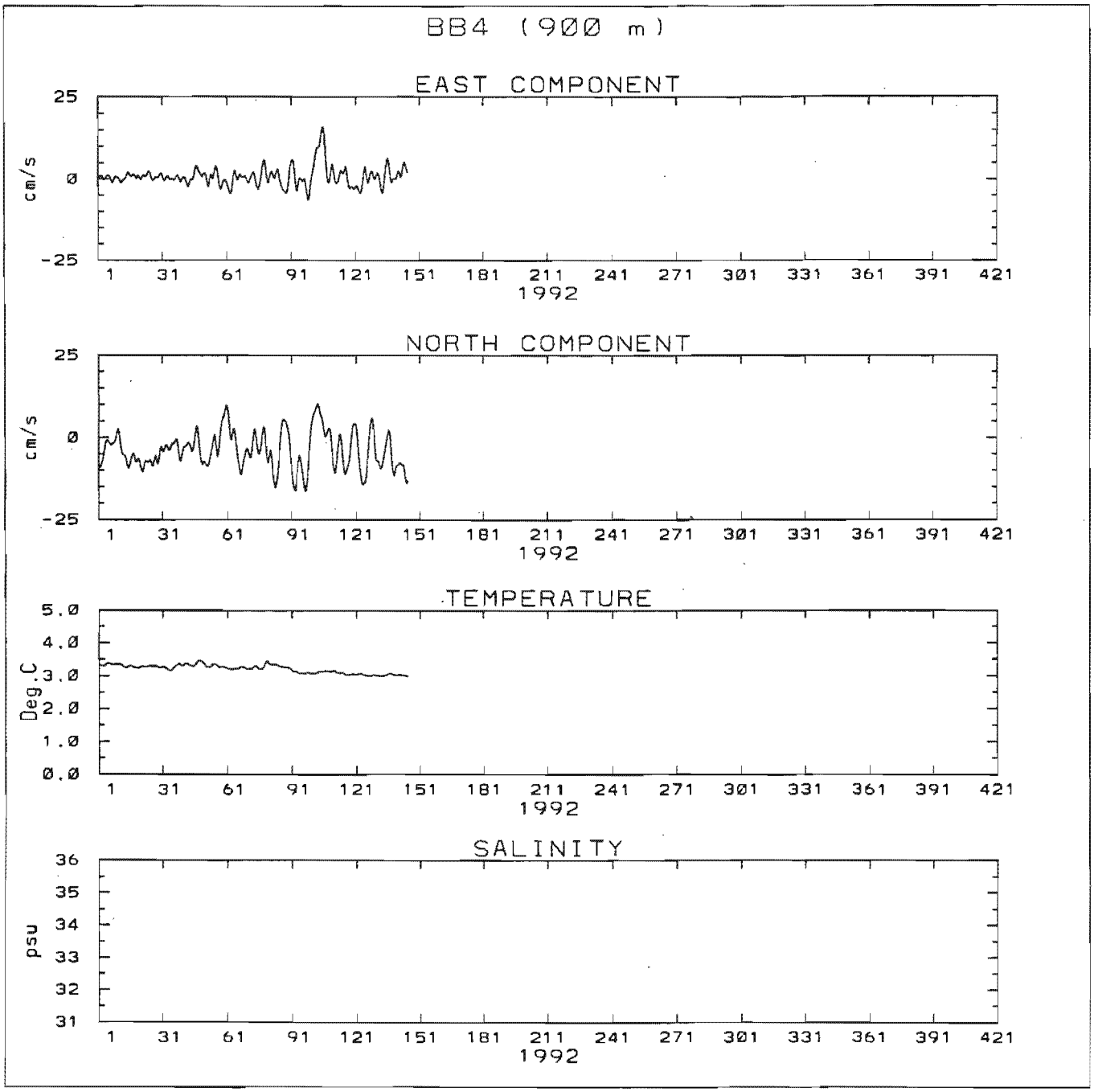
Time series plots of filtered data: BB4


BB4 (200 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


BB4 (400 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

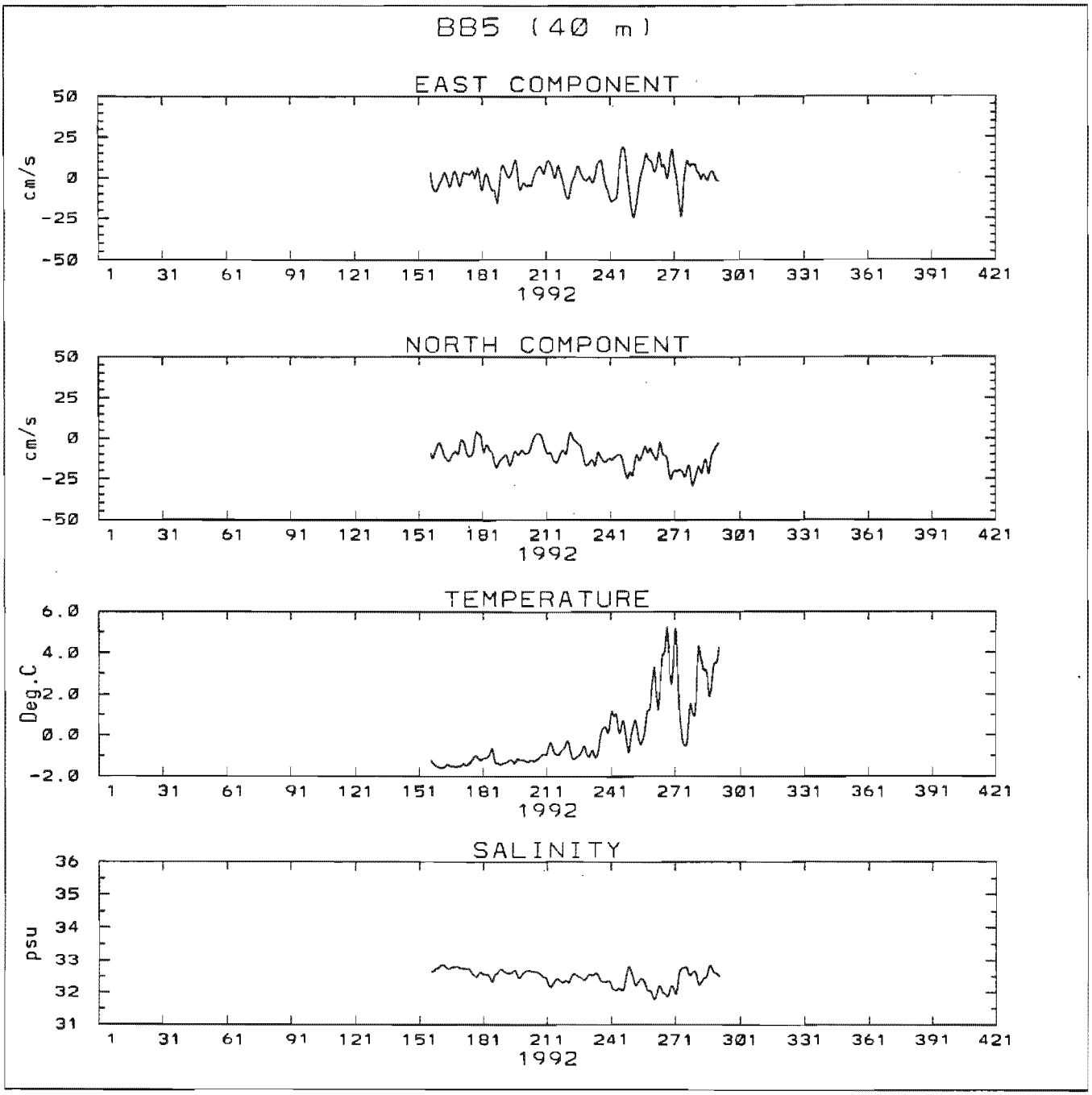

BB4 (400 m)
EAST COMPONENT
cm/s
25
0
-25
NORTH COMPONENT
cm/s
25
0
-25
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

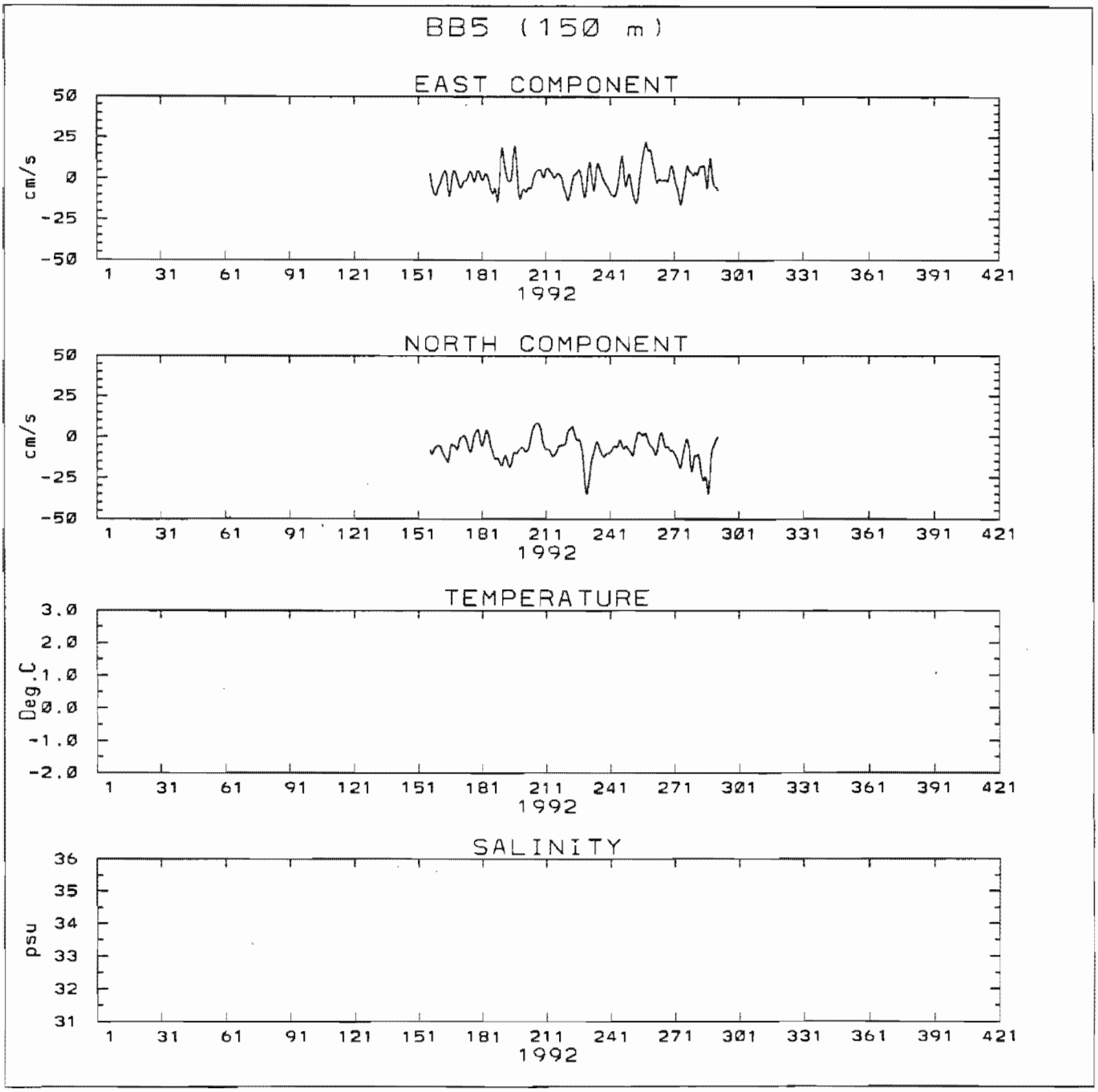

BB4 (900 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

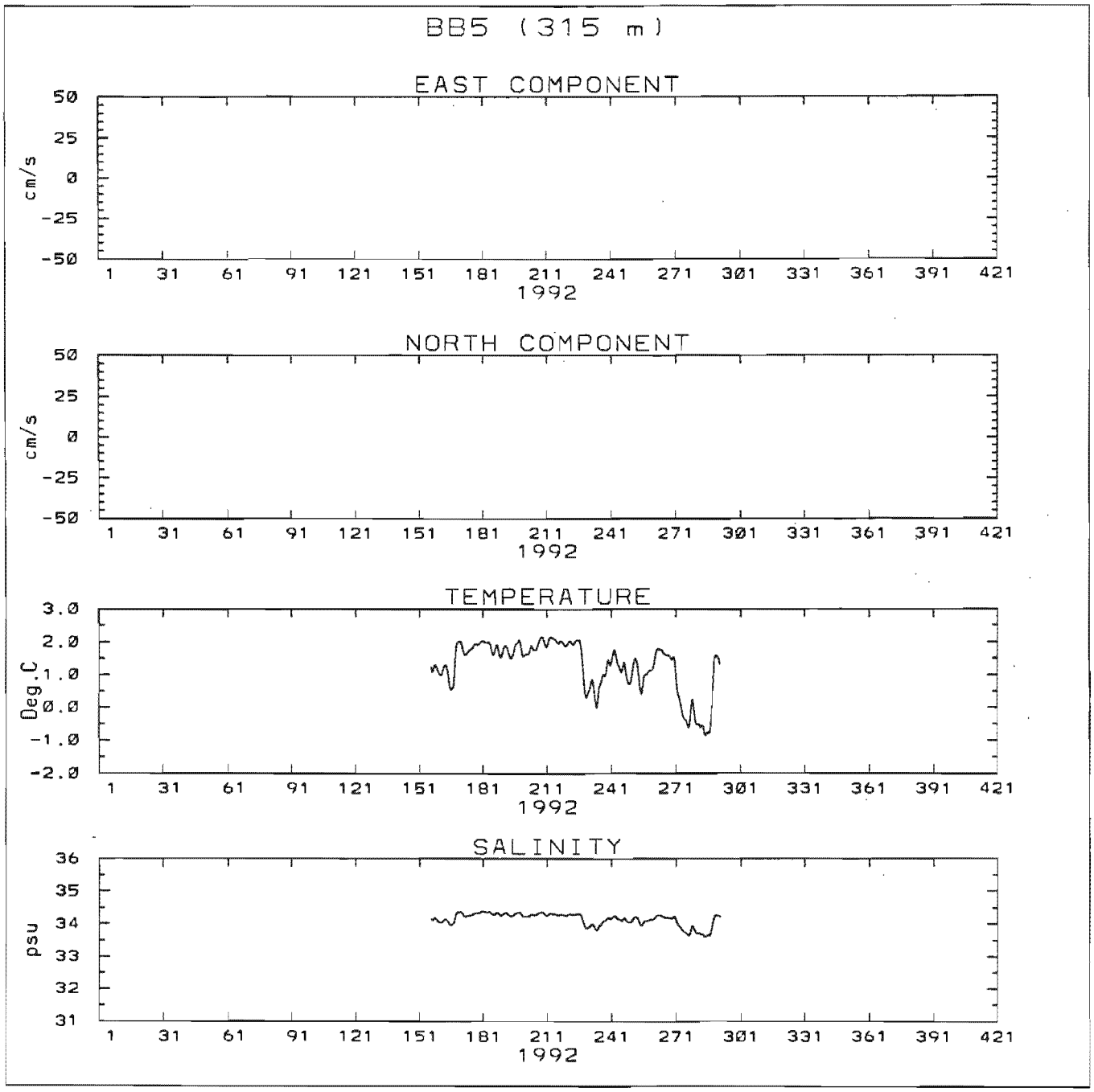

BB4 (900 m)
EAST COMPONENT
25
0
-25
cm/s
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
25
0
-25
cm/s
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
5.0
4.0
3.0
2.0
1.0
0.0
Deg.C
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
36
35
34
33
32
31
psu
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

Appendix 5

Time series plots of filtered data: BB5

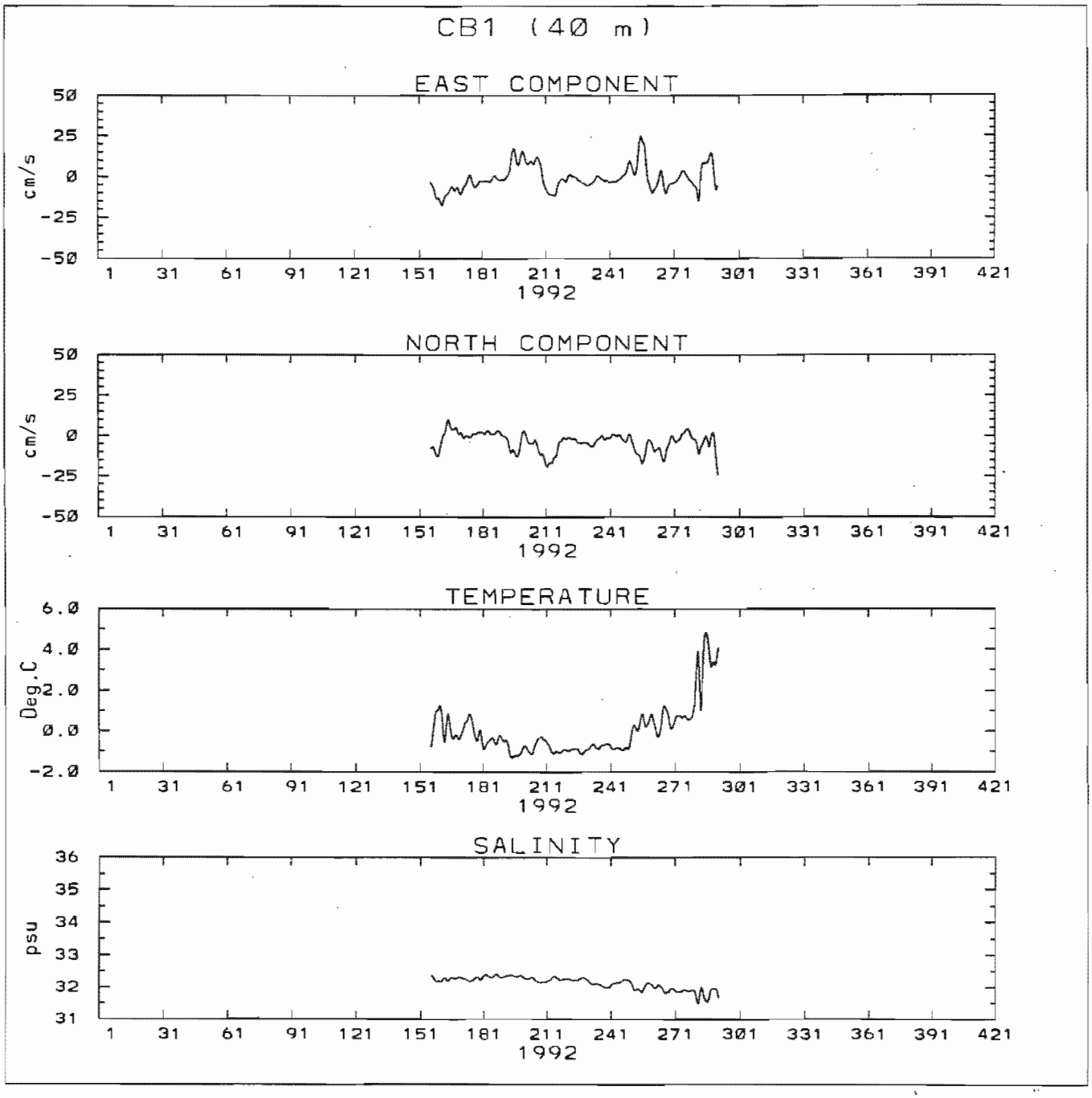

BB5 (40 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
6.0
4.0
2.0
0.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

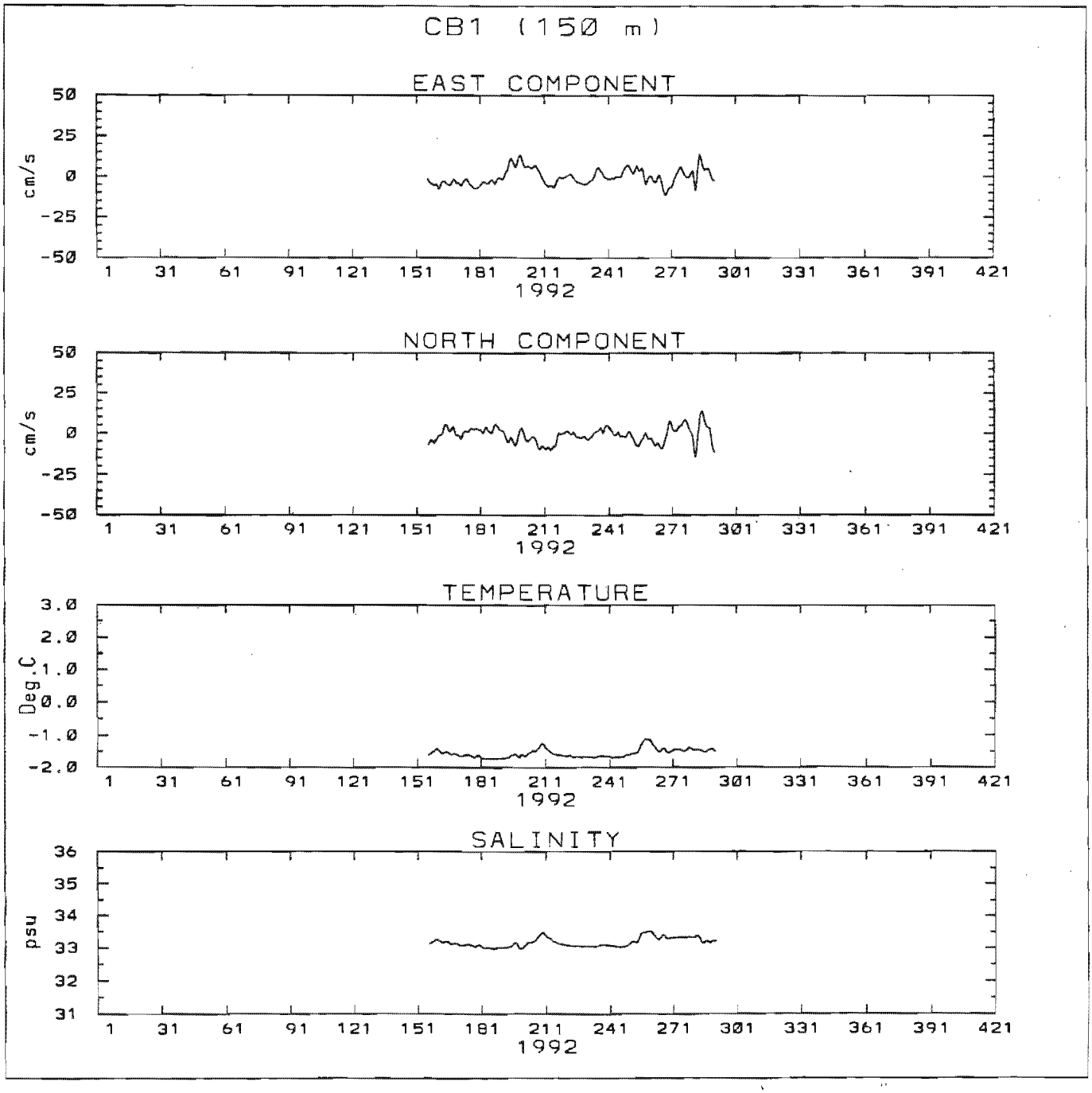

BB5 (150 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992


BB5 (315 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

Appendix 6

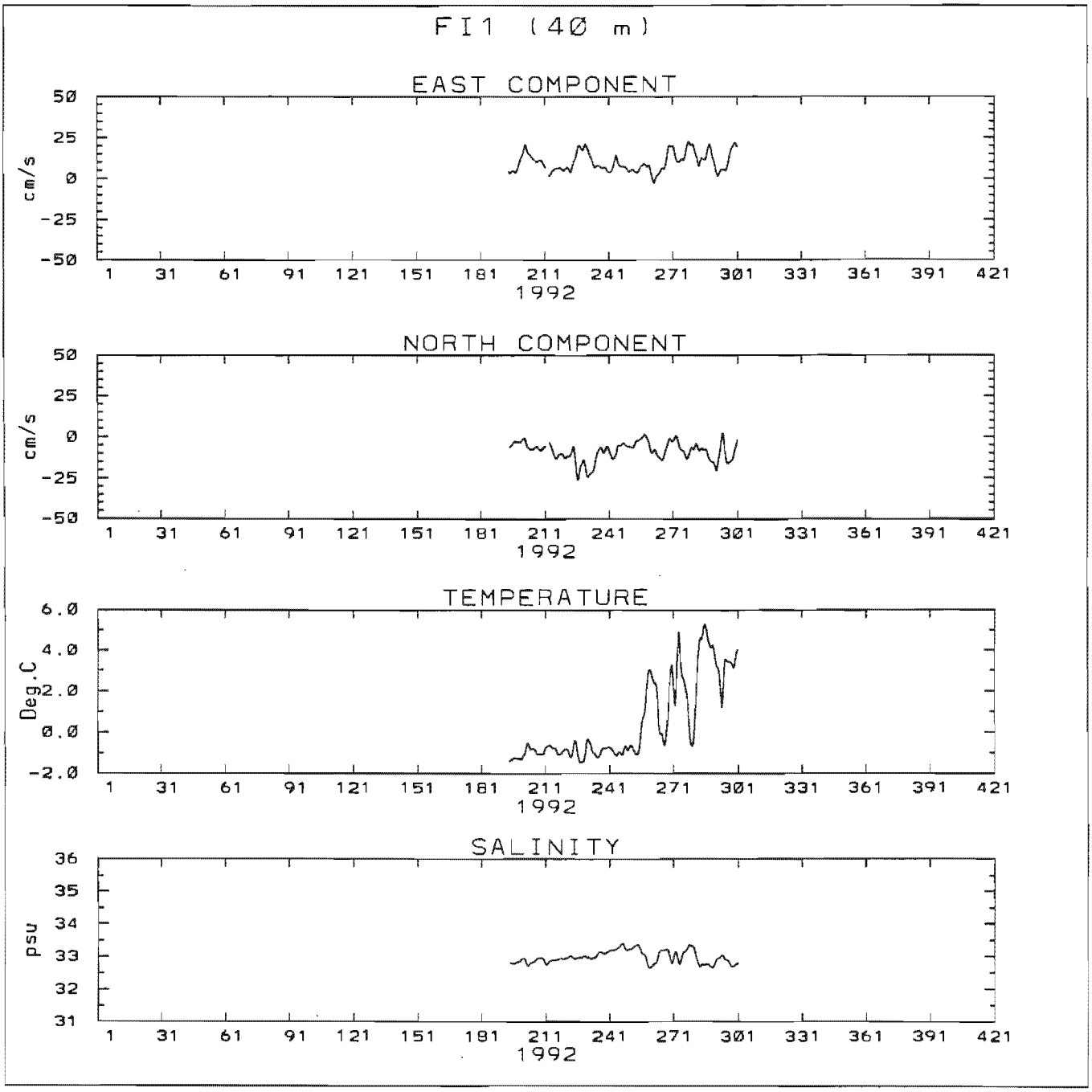
Time series plots of filtered data: CB1

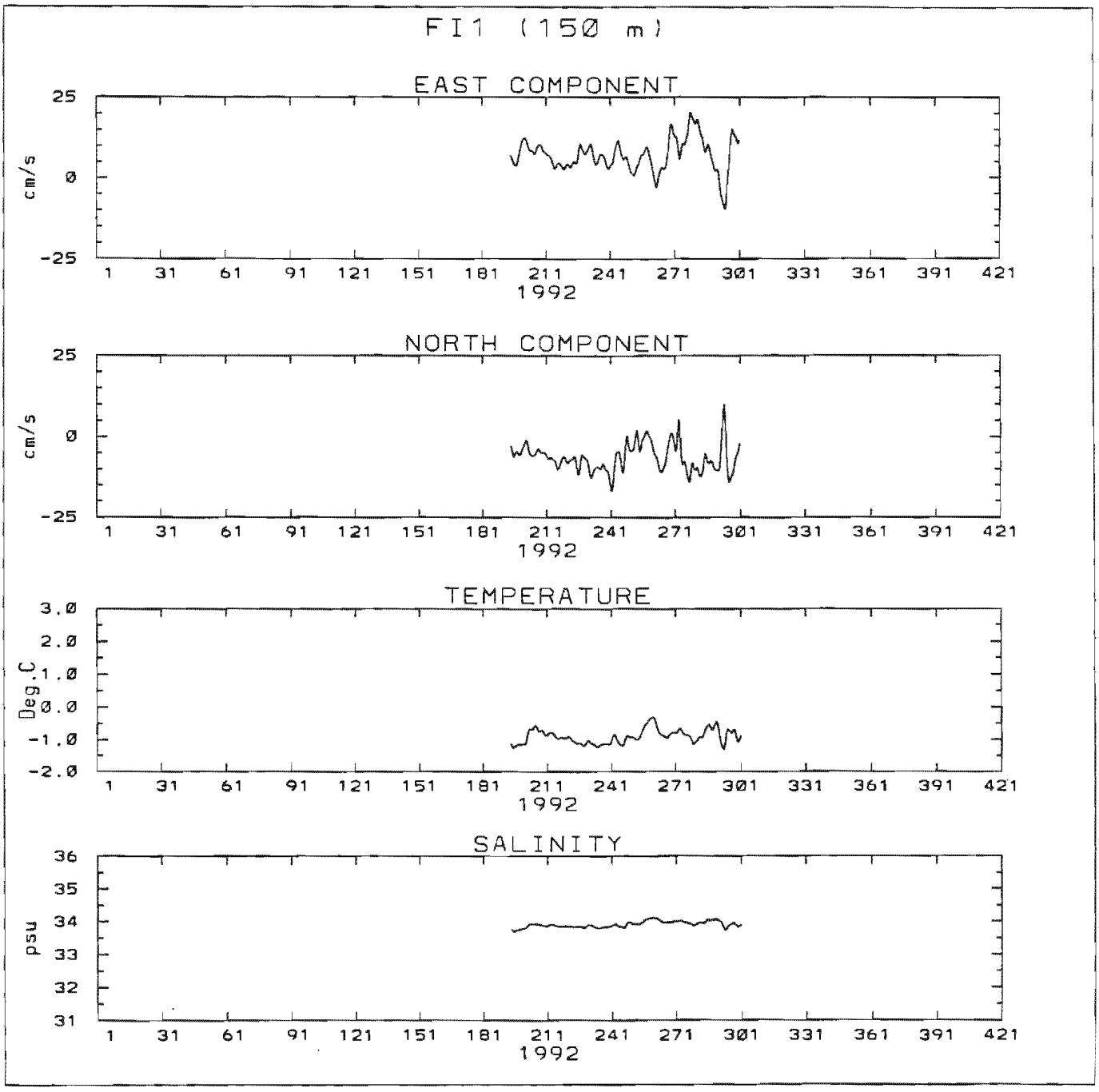

CB1 (40 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
6.0
4.0
2.0
0.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

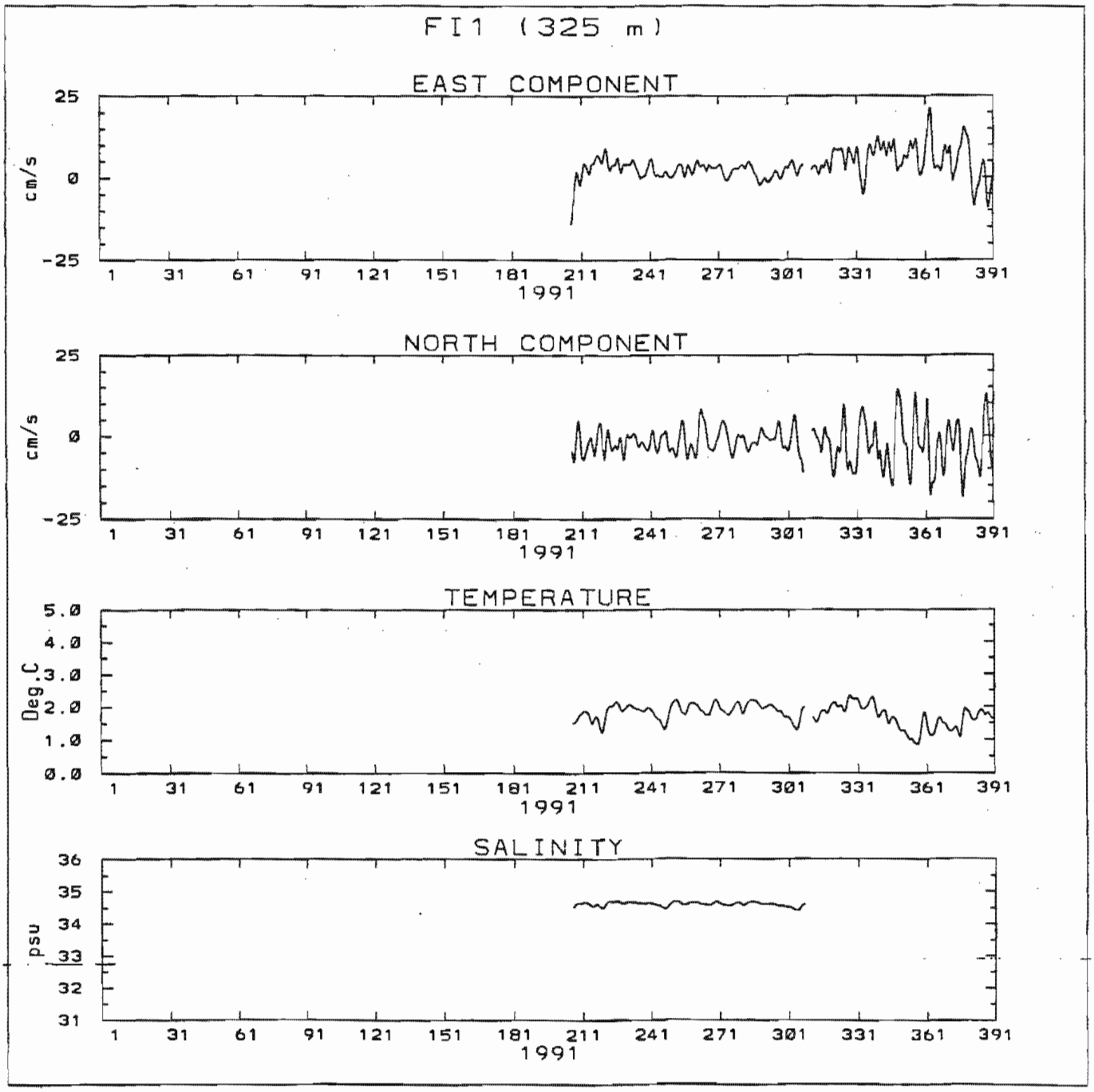

CB1 (150 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

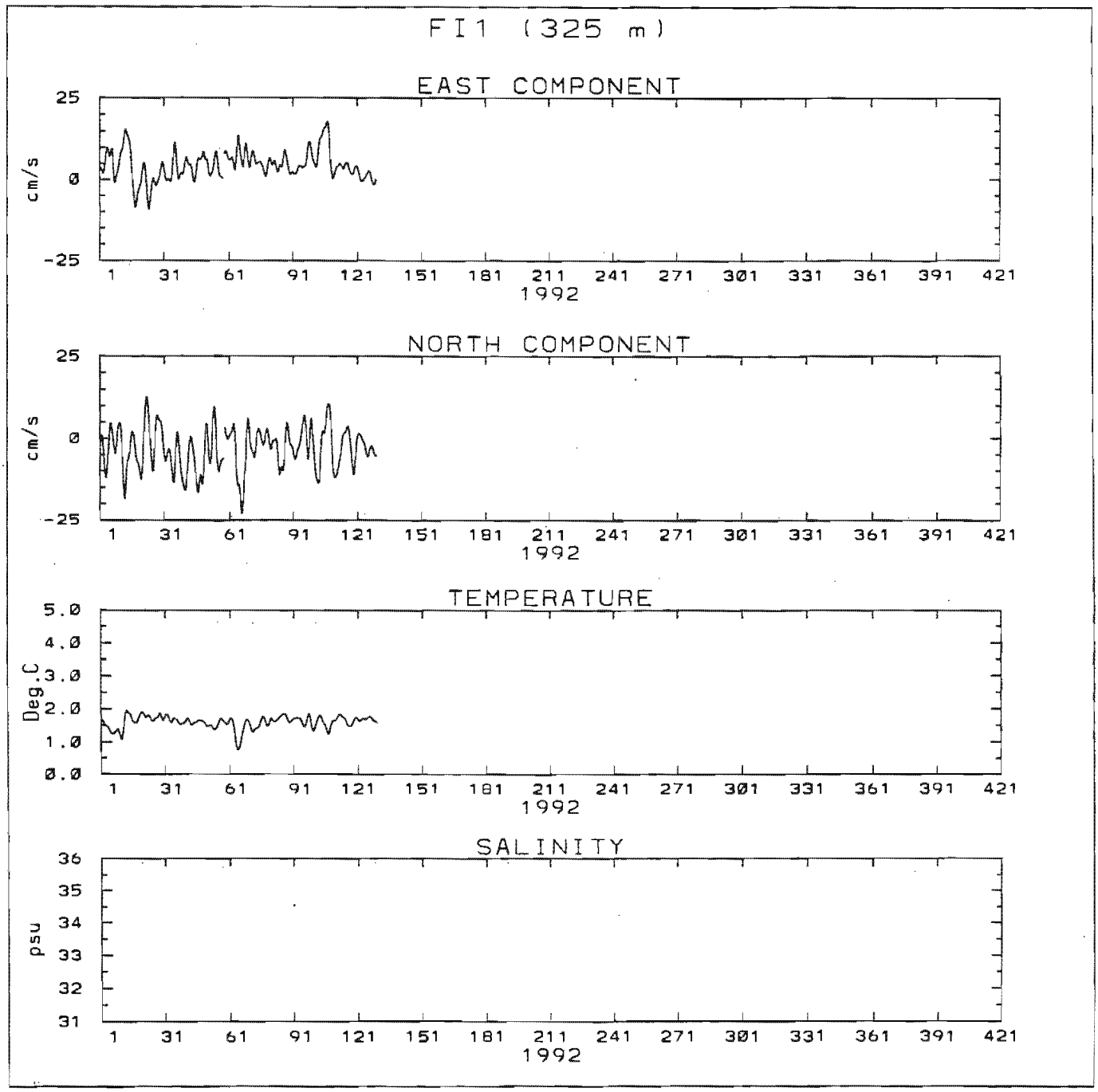
Appendix 7

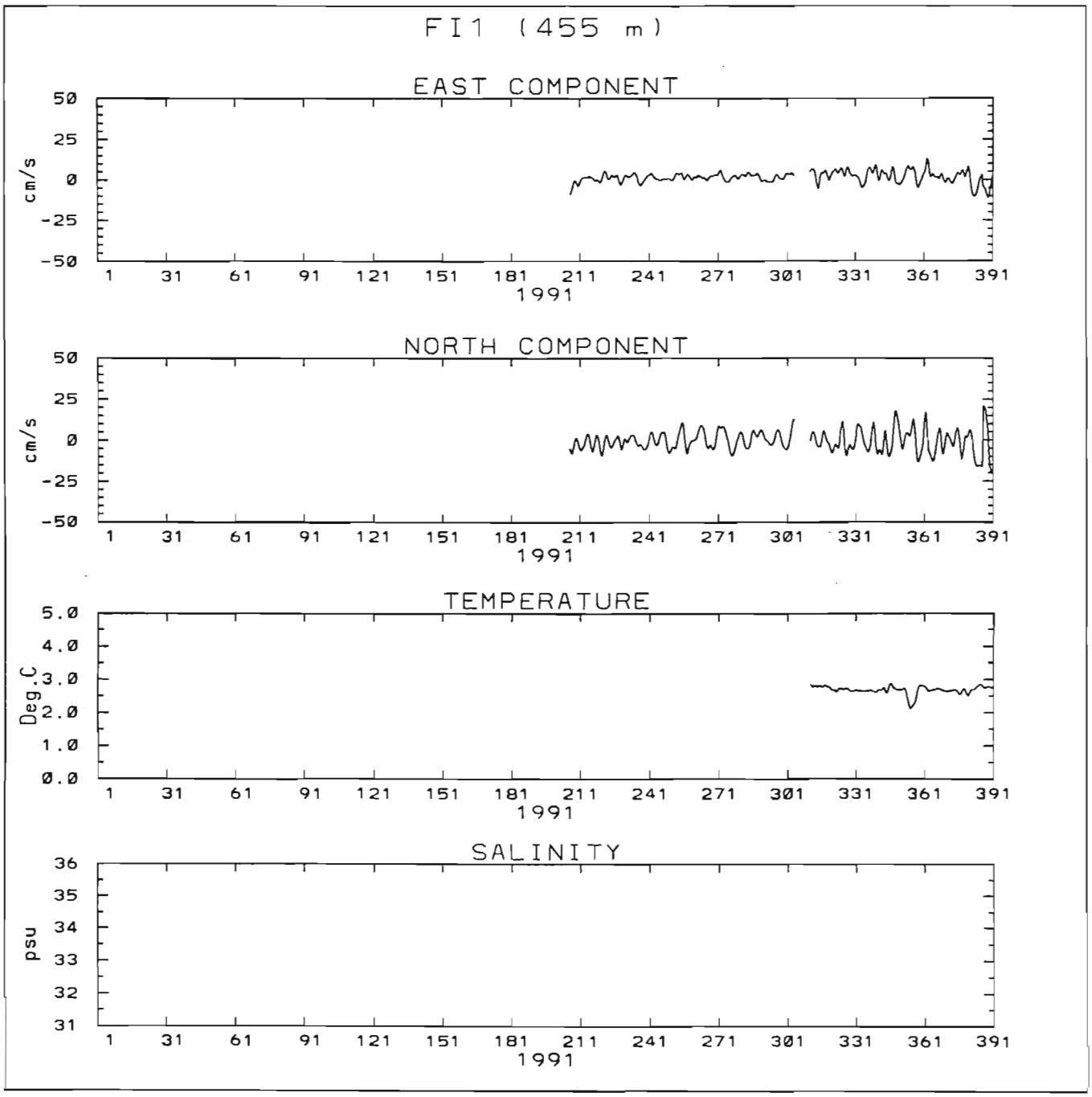
Time series plots of filtered data: FI1

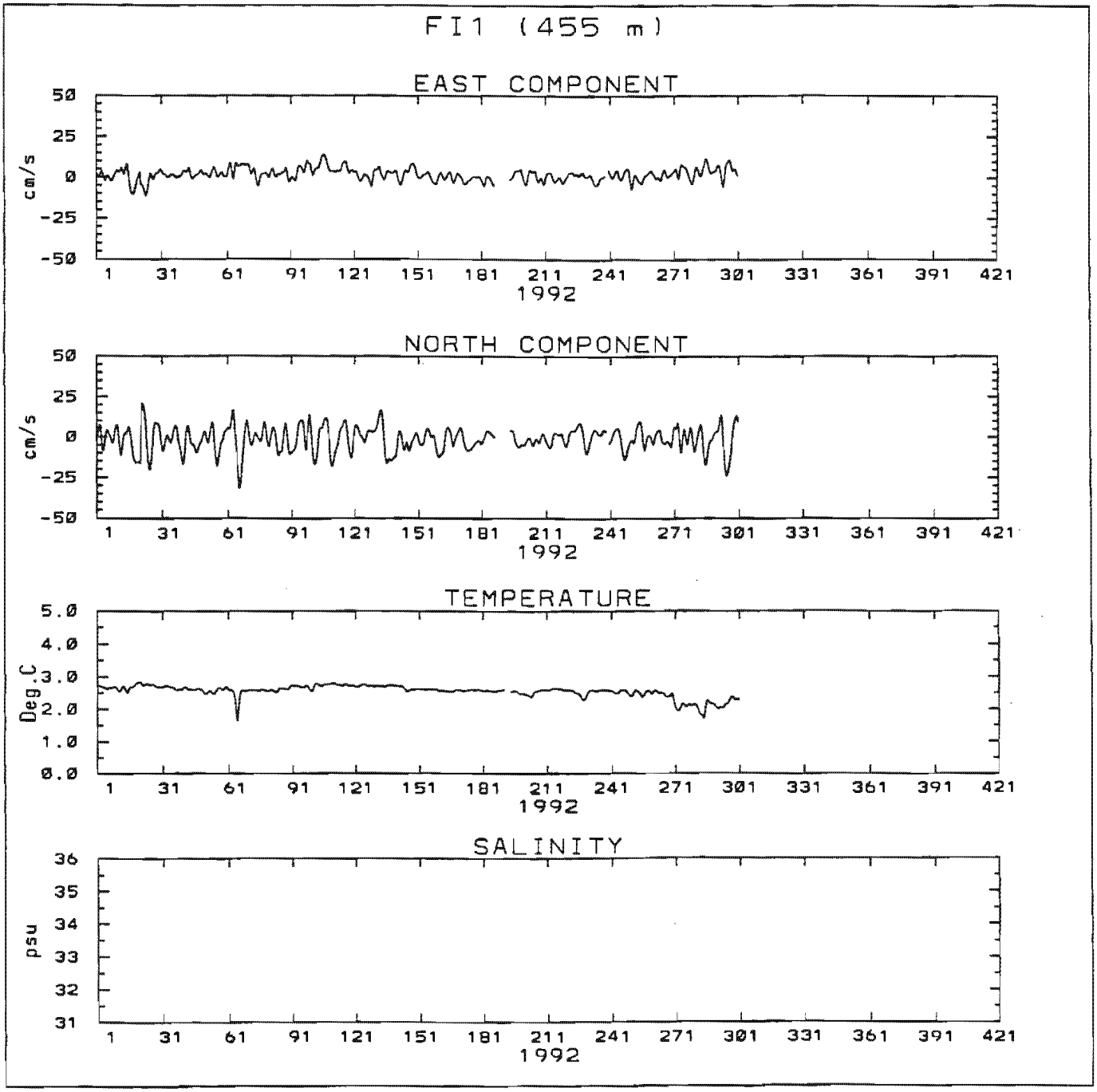

FI1 (40 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
6.0
4.0
2.0
0.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992


FI1 (150 m)
EAST COMPONENT
25
0
-25
cm/s
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
25
0
-25
cm/s
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
3.0
2.0
1.0
0.0
-1.0
-2.0
Deg.C
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
36
35
34
33
32
31
psu
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992


FI1 (325 m)
EAST COMPONENT
cm/s
25
0
-25
NORTH COMPONENT
cm/s
25
0
-25
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

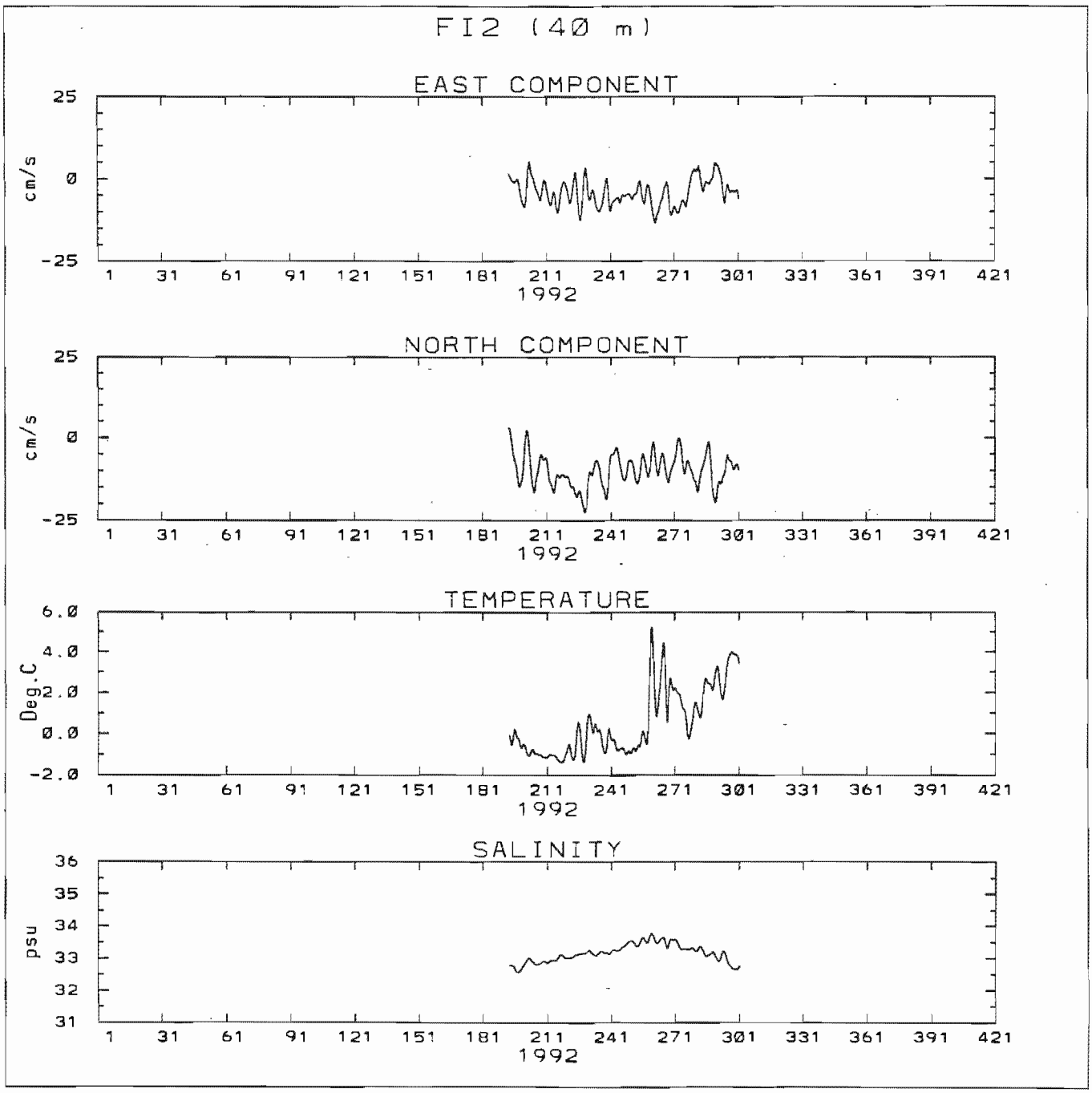

FI1 (325 m)
EAST COMPONENT
25
0
-25
cm/s
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
25
0
-25
cm/s
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
5.0
4.0
3.0
2.0
1.0
0.0
Deg.C
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
36
35
34
33
32
31
psu
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

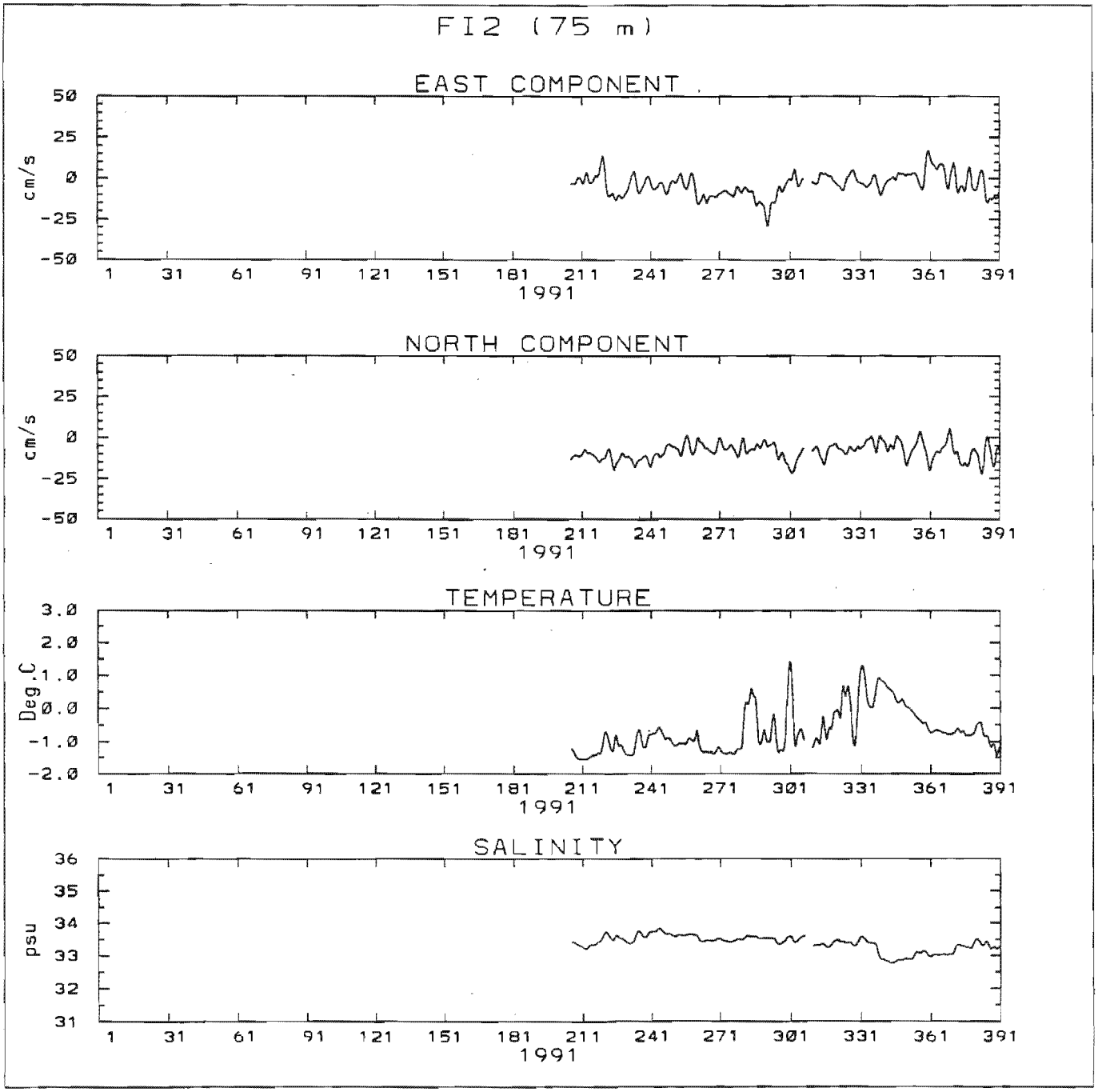

FI1 (455 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

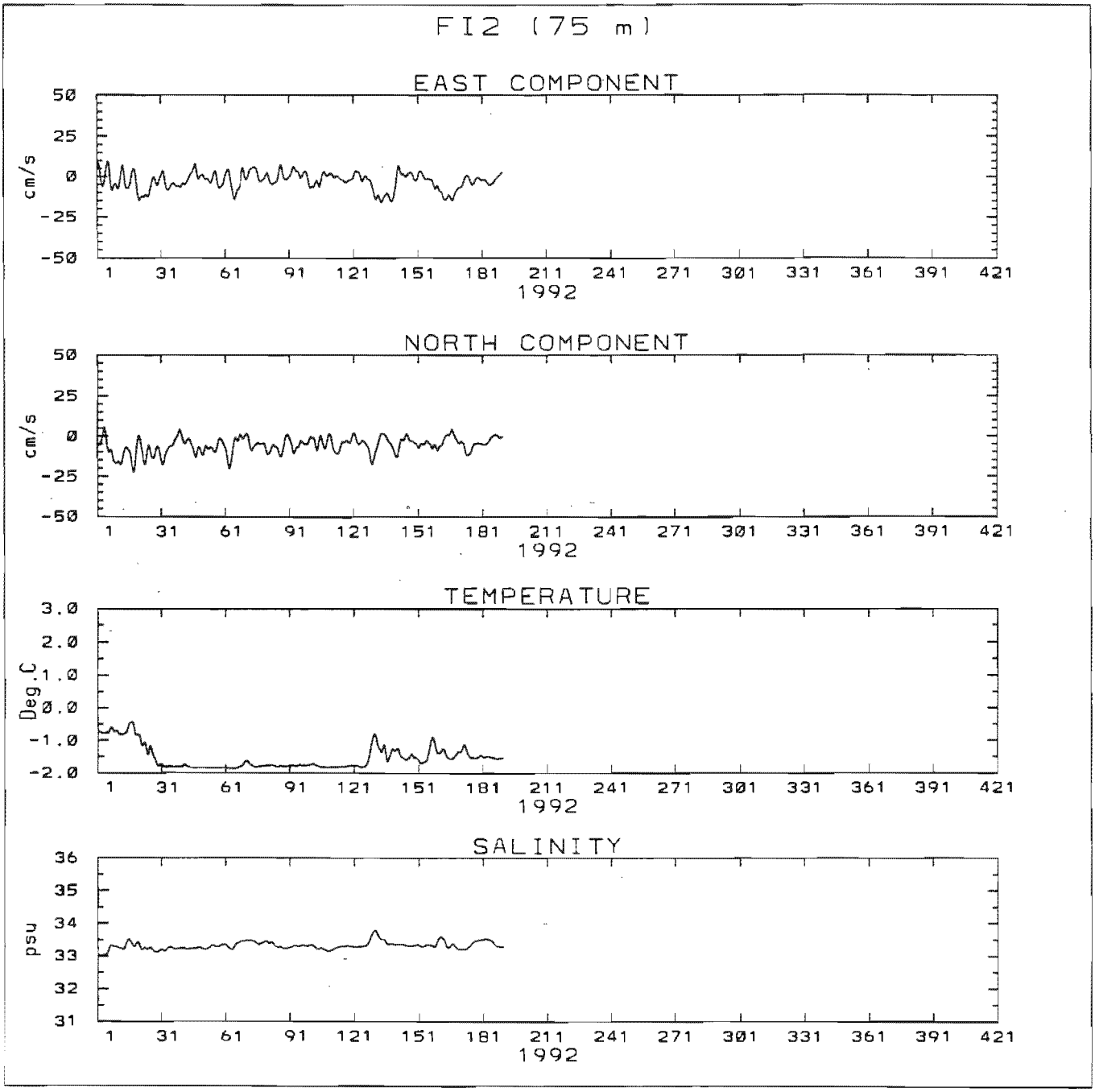

FI1 (455 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

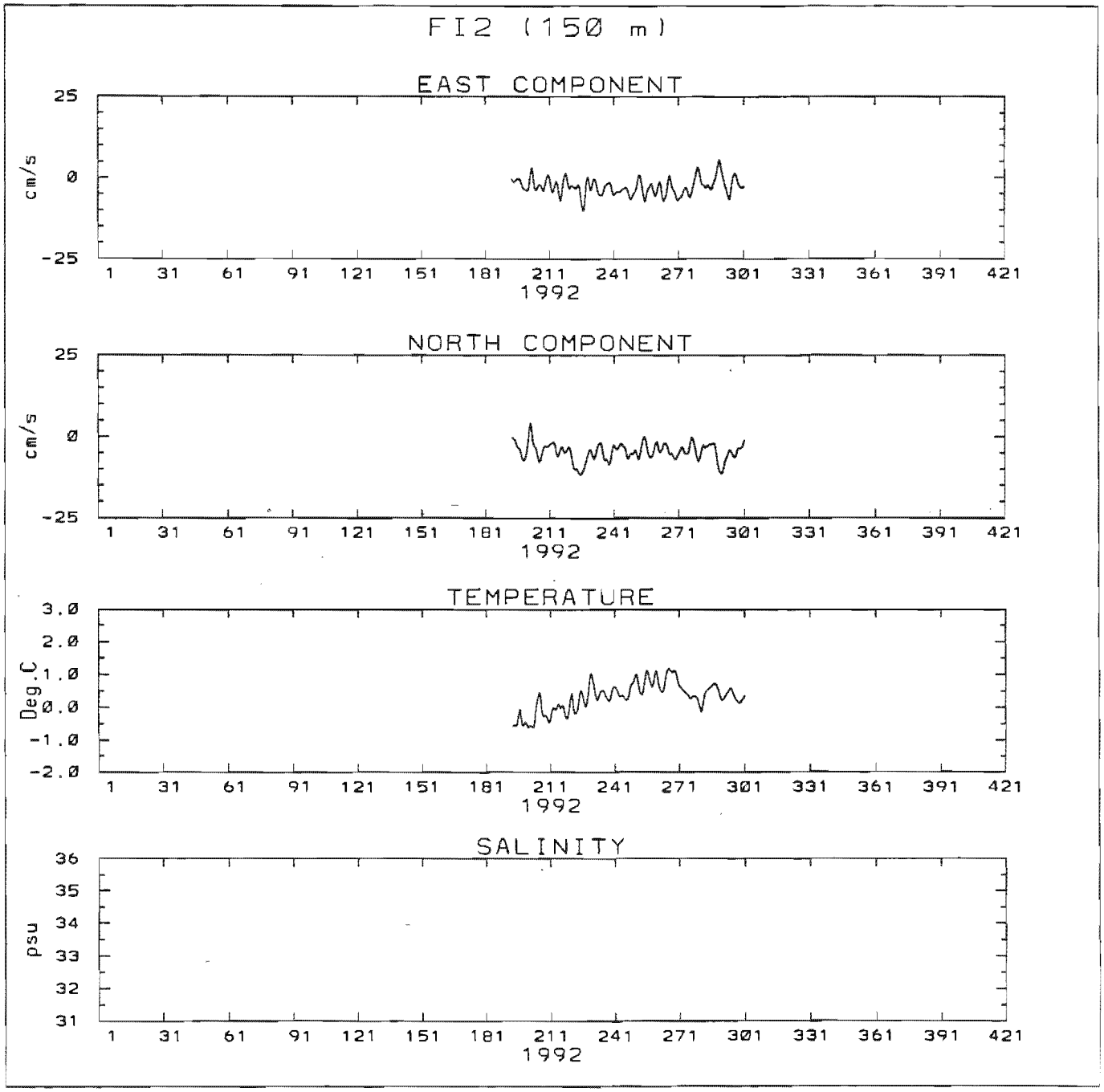
Appendix 8

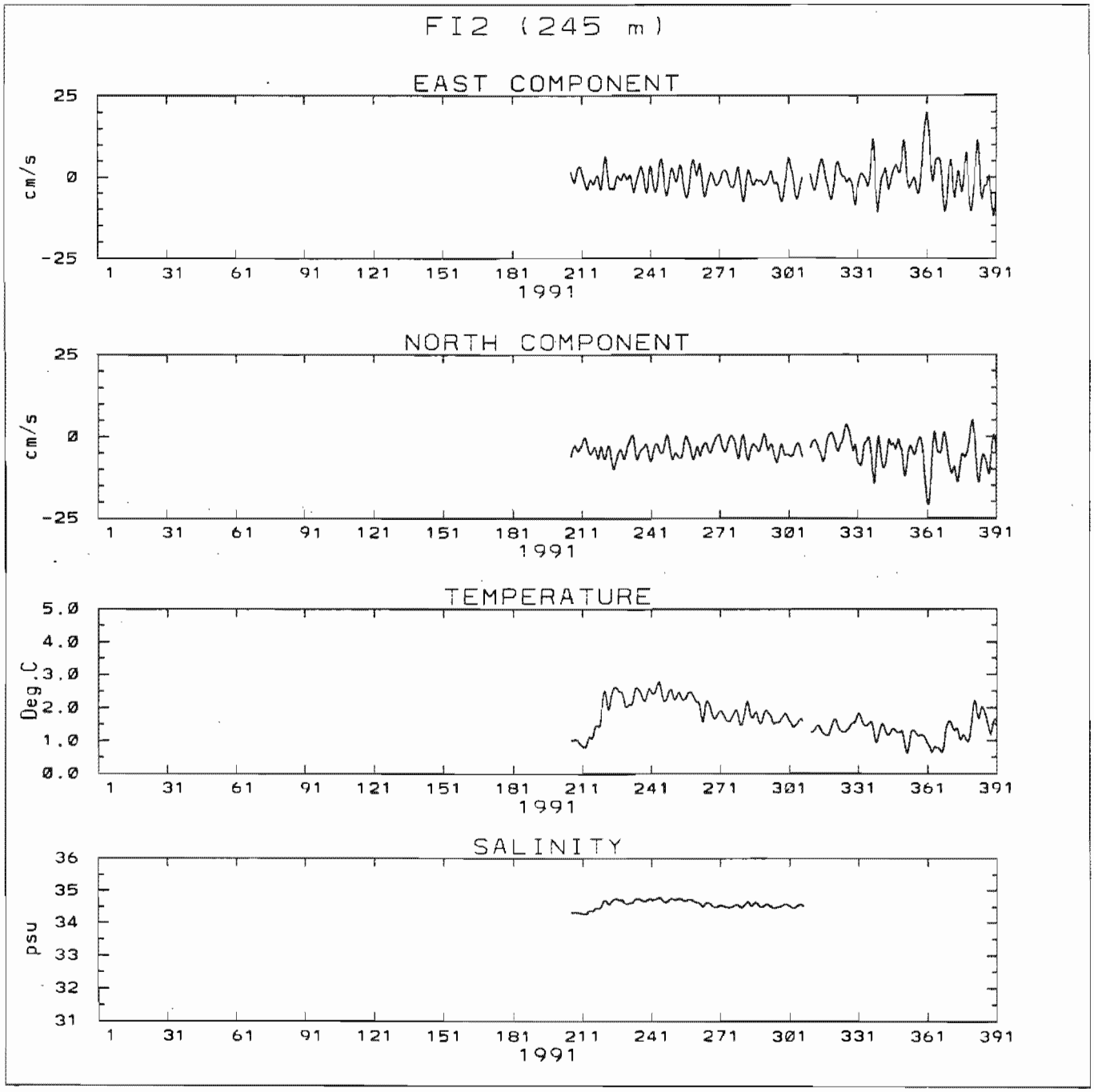
Time series plots of filtered data: FI2

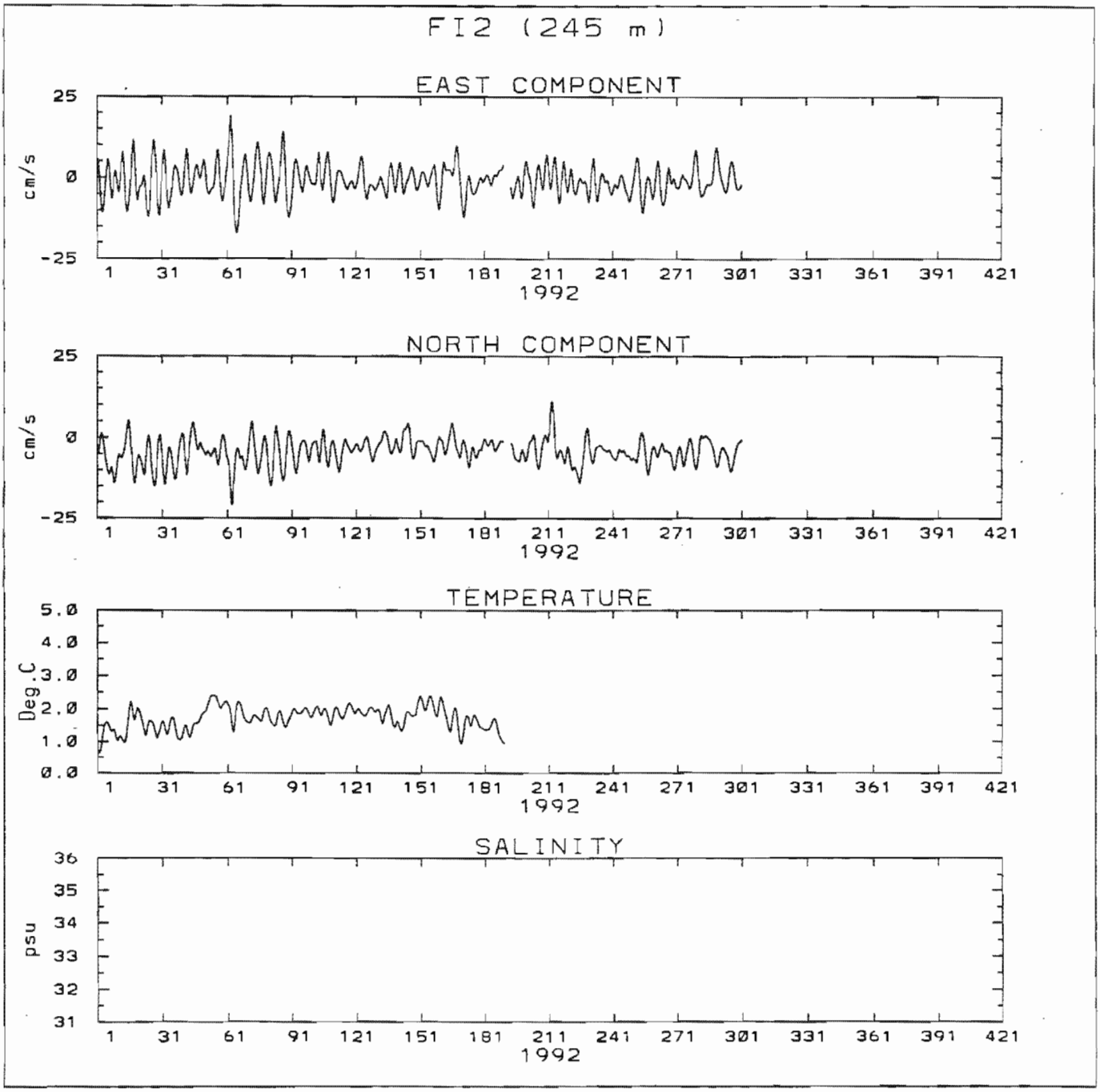

FI2 (40 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
6.0
4.0
2.0
0.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992


FI2 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


FI2 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

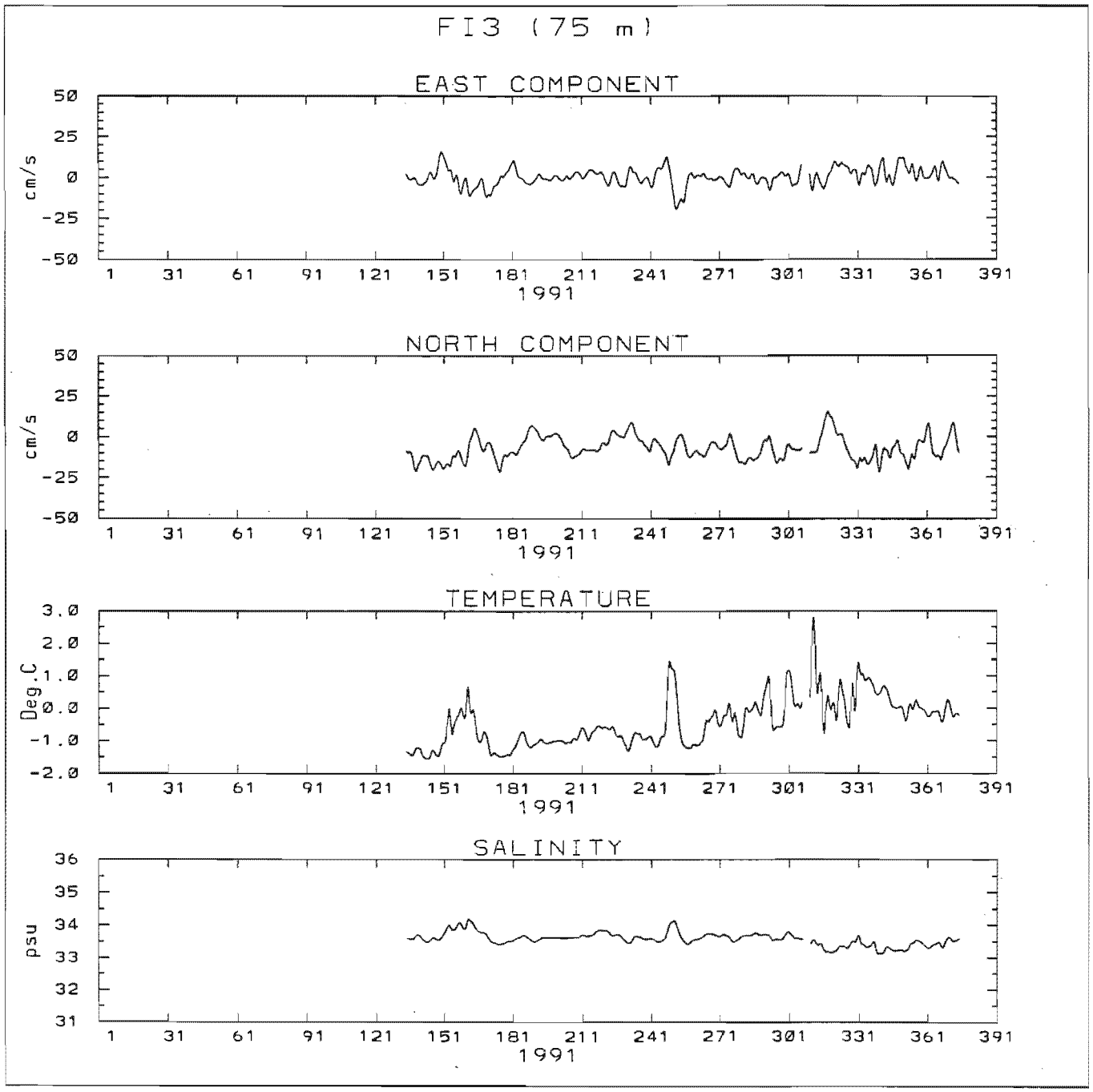

FI2 (150 m)
EAST COMPONENT
25
0
-25
cm/s
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
25
0
-25
cm/s
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
3.0
2.0
1.0
0.0
-1.0
-2.0
Deg.C
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
36
35
34
33
32
31
psu
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

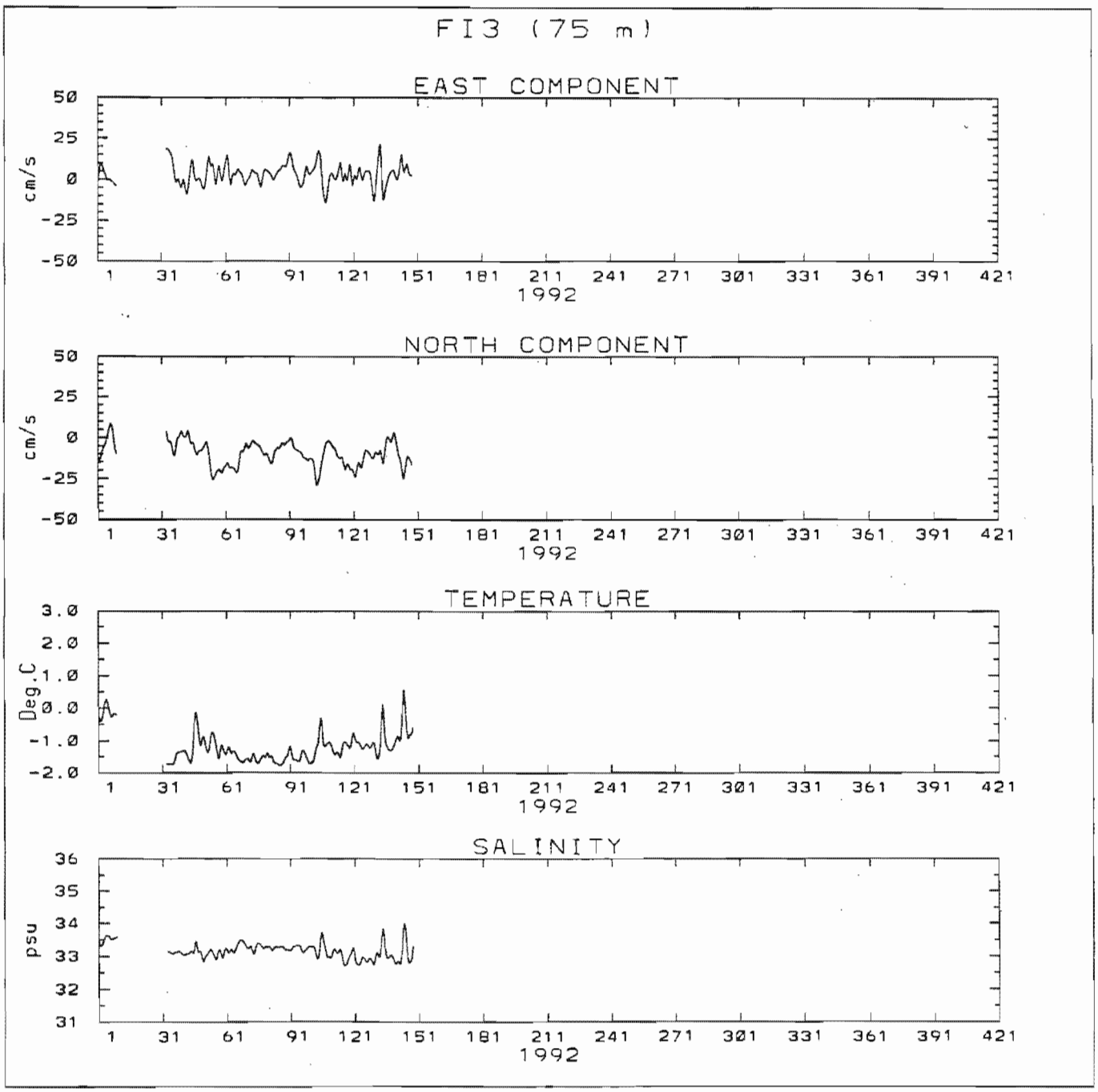

FI2 (245 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

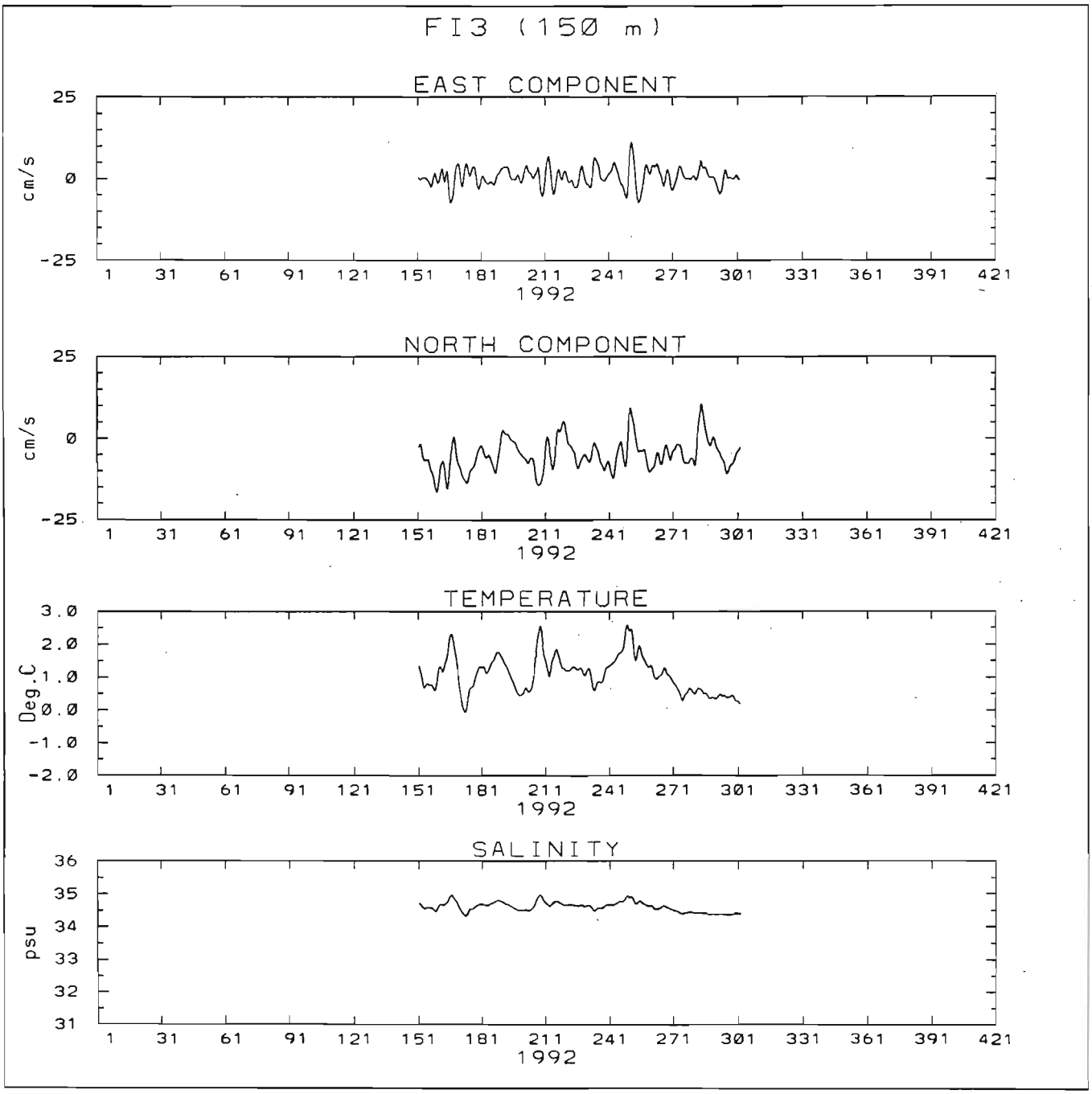

FI2 (245 m)
EAST COMPONENT
cm/s
25
0
-25
NORTH COMPONENT
cm/s
25
0
-25
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

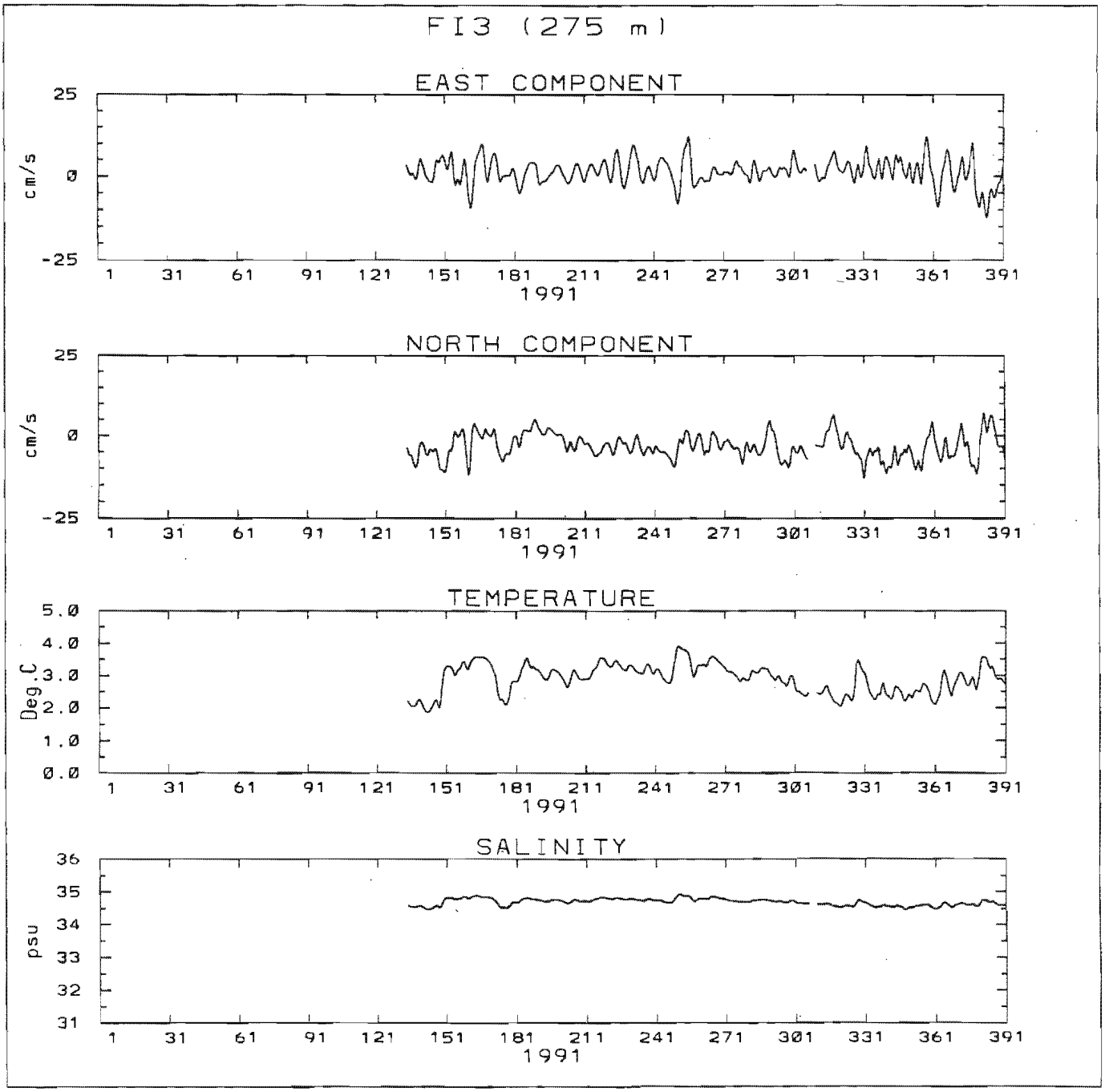
Appendix 9

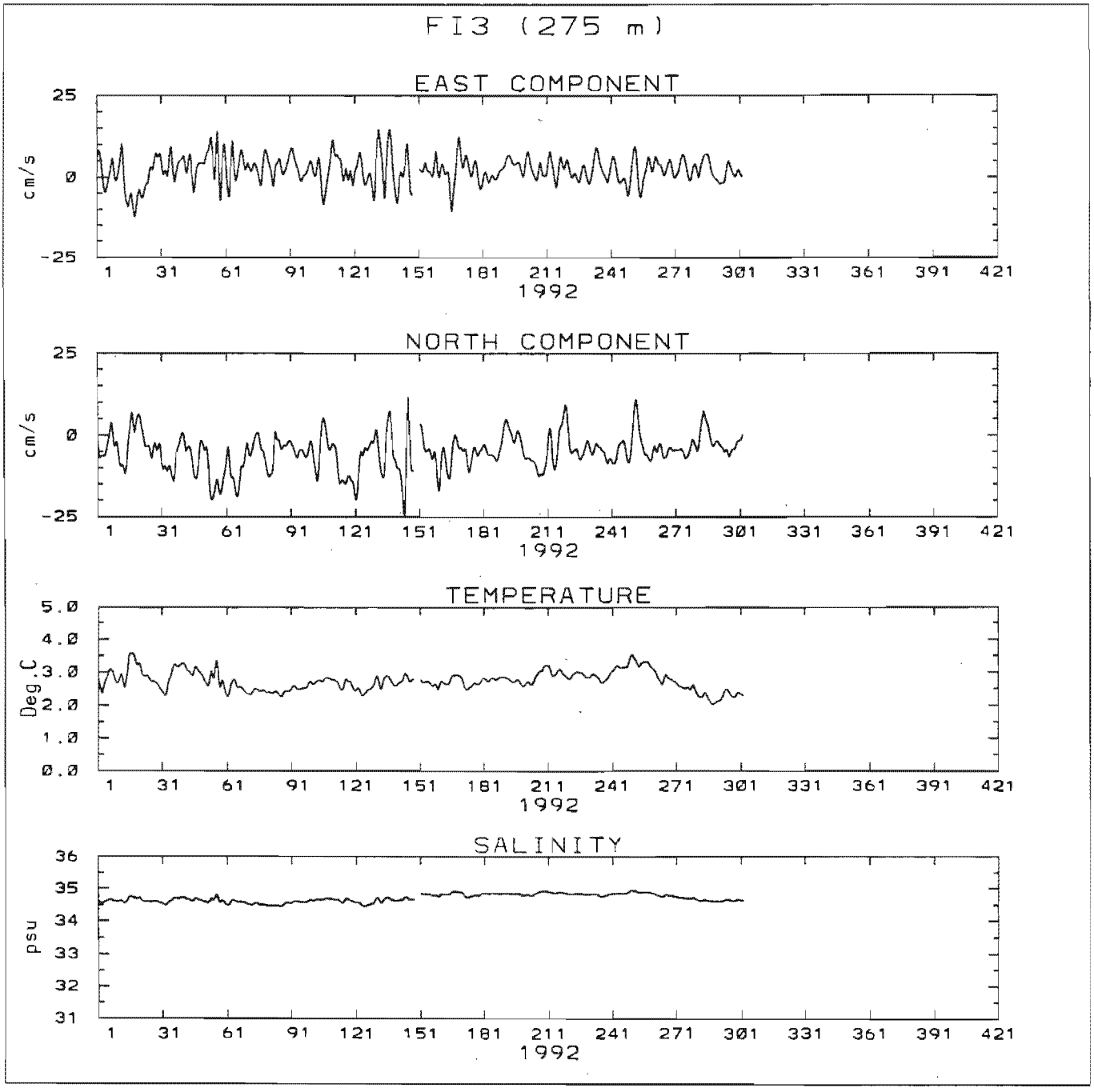
Time series plots of filtered data: FI3

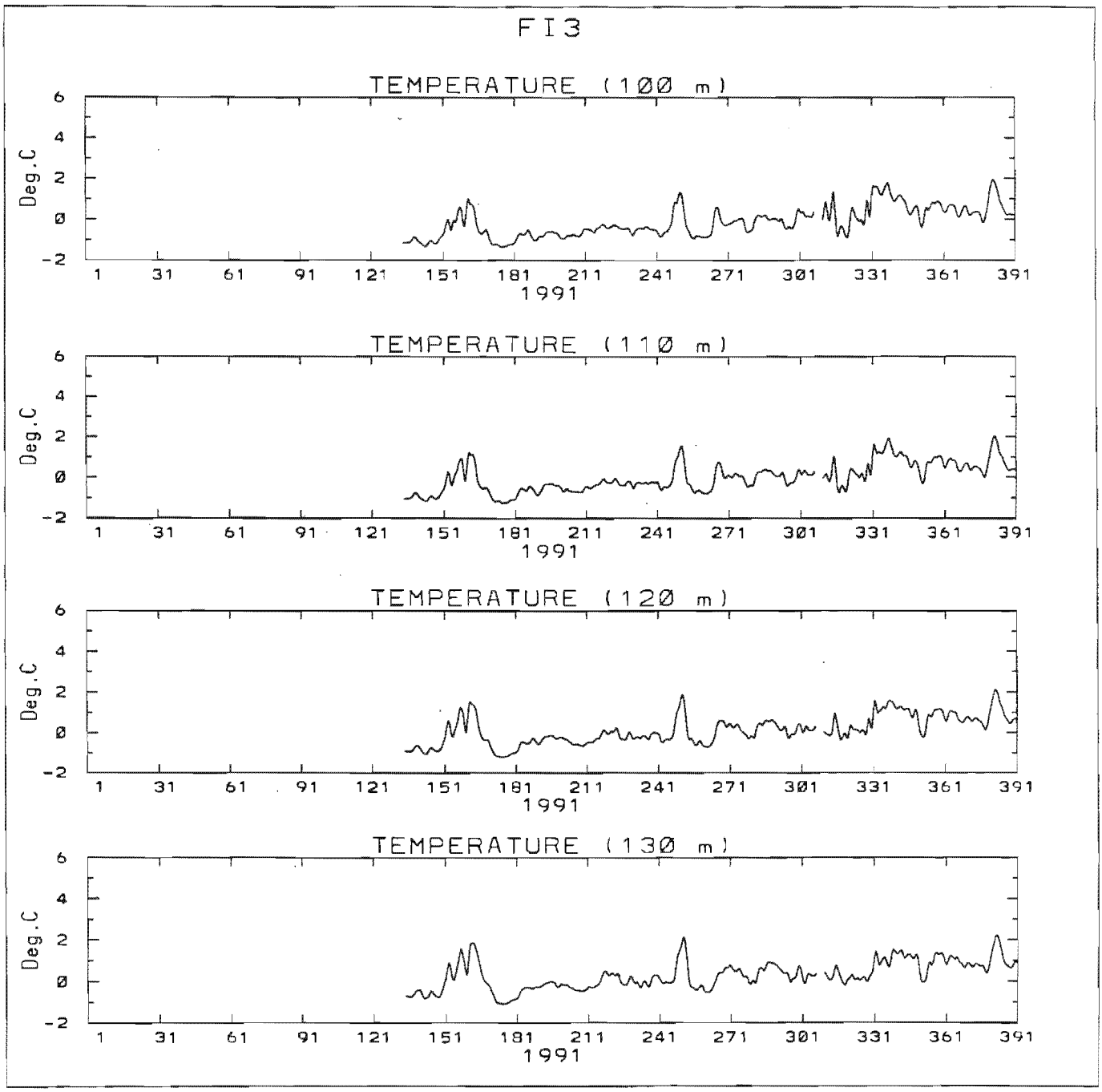

FI3 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

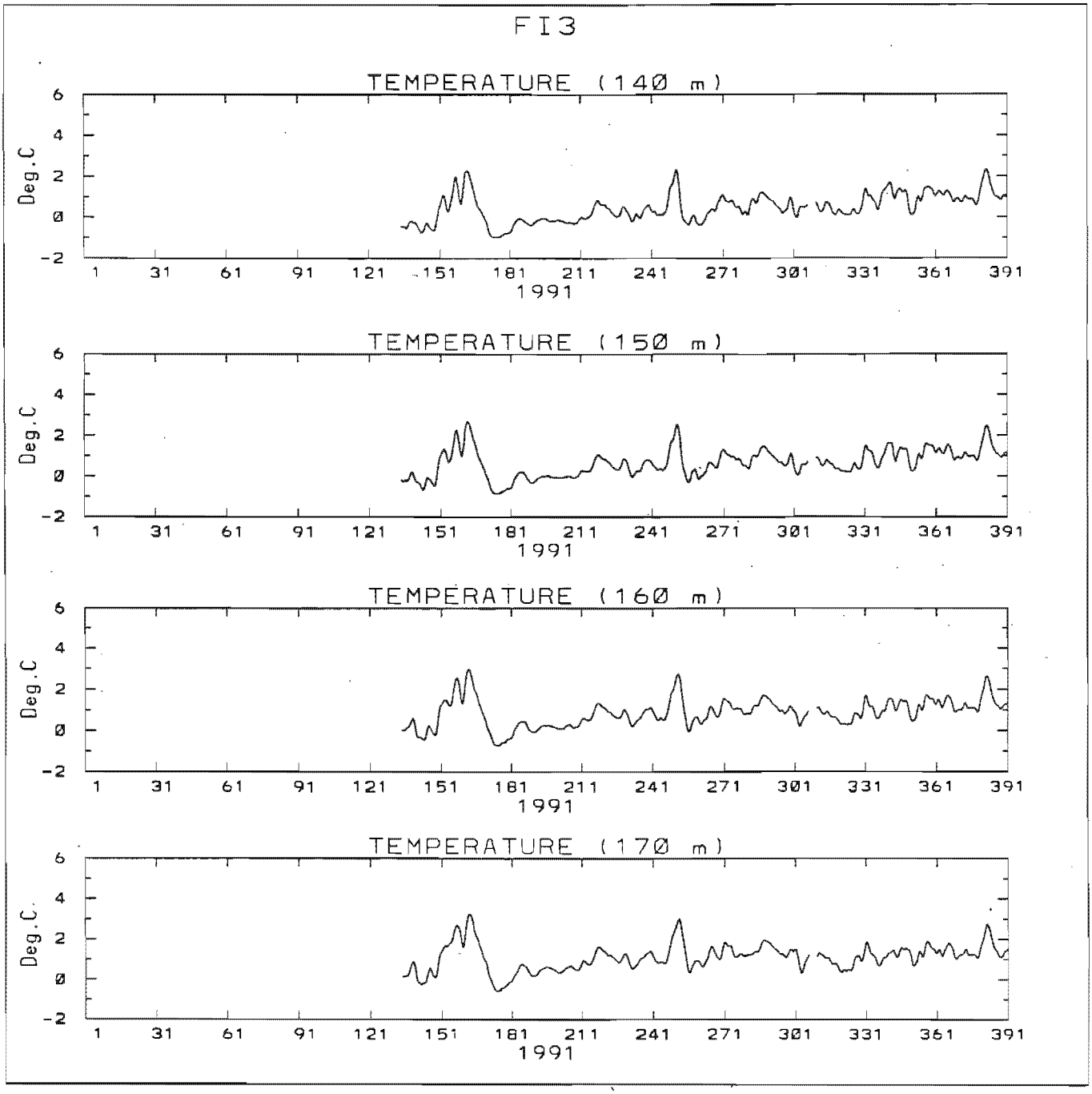

FI3 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992


FI3 (150 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

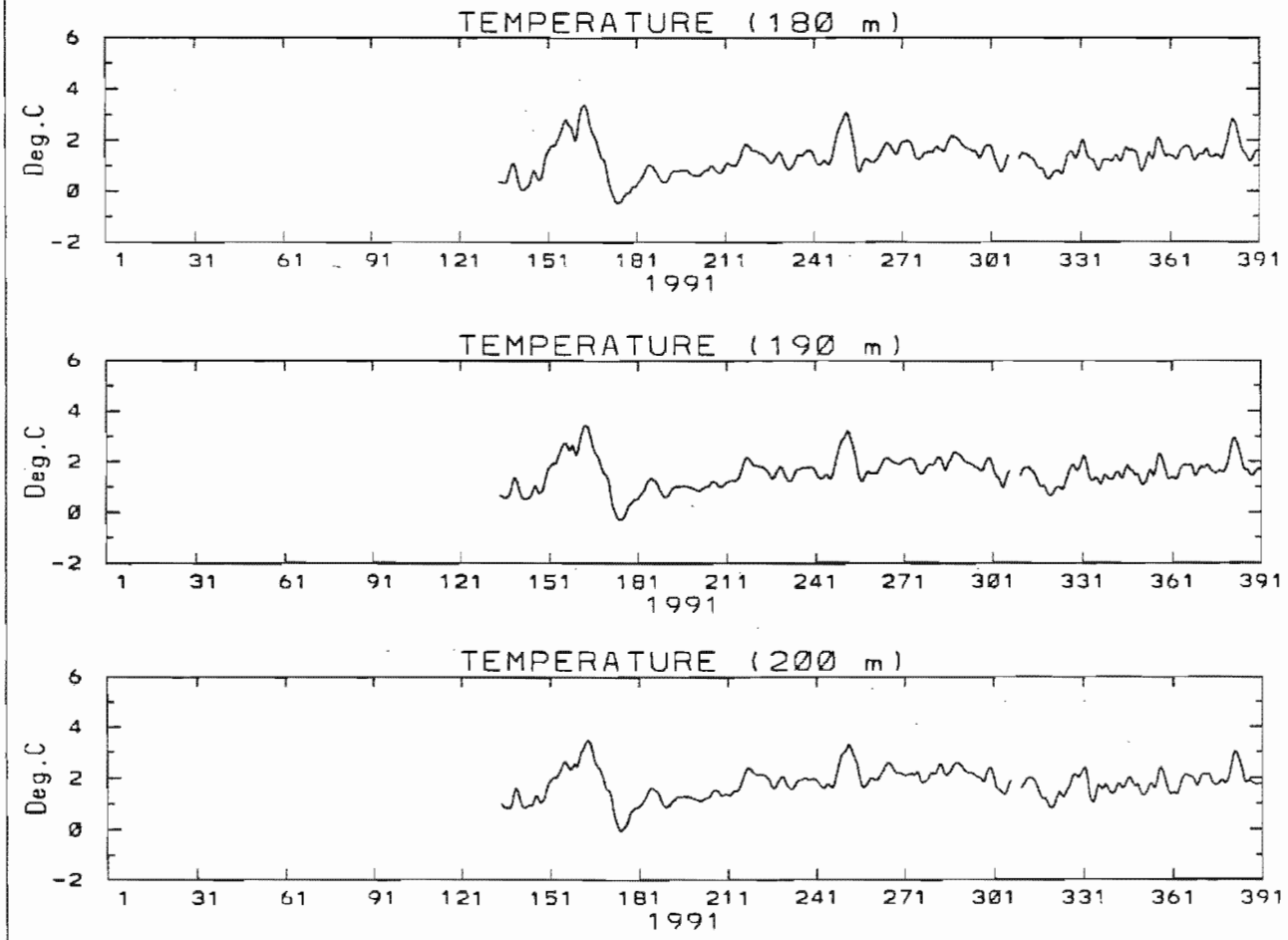

FI3 (275 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

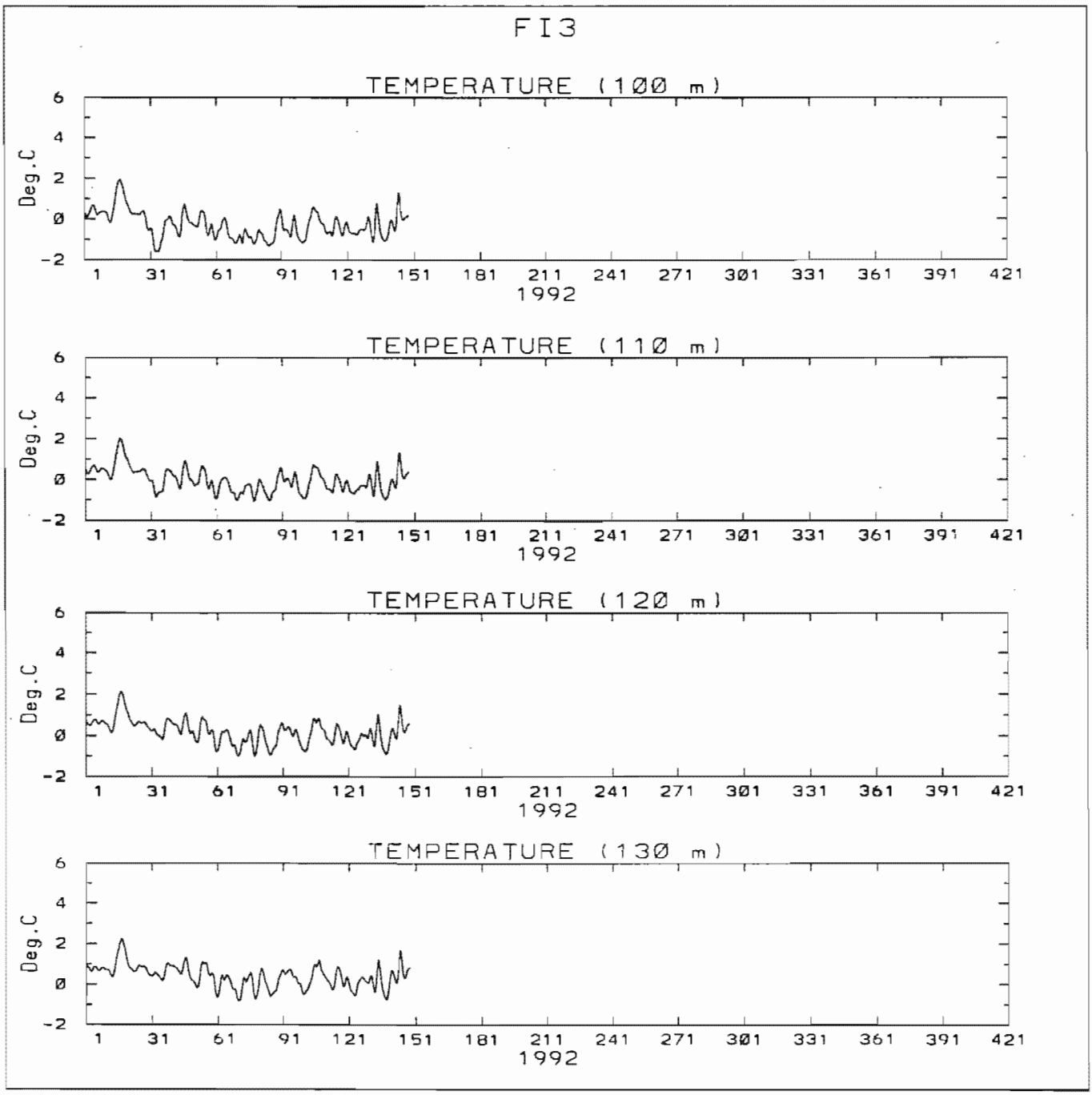

FI3 (275 m)
EAST COMPONENT
25
0
-25
cm/s
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
25
0
-25
cm/s
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
5.0
4.0
3.0
2.0
1.0
0.0
Deg.C
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
36
35
34
33
32
31
psu
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

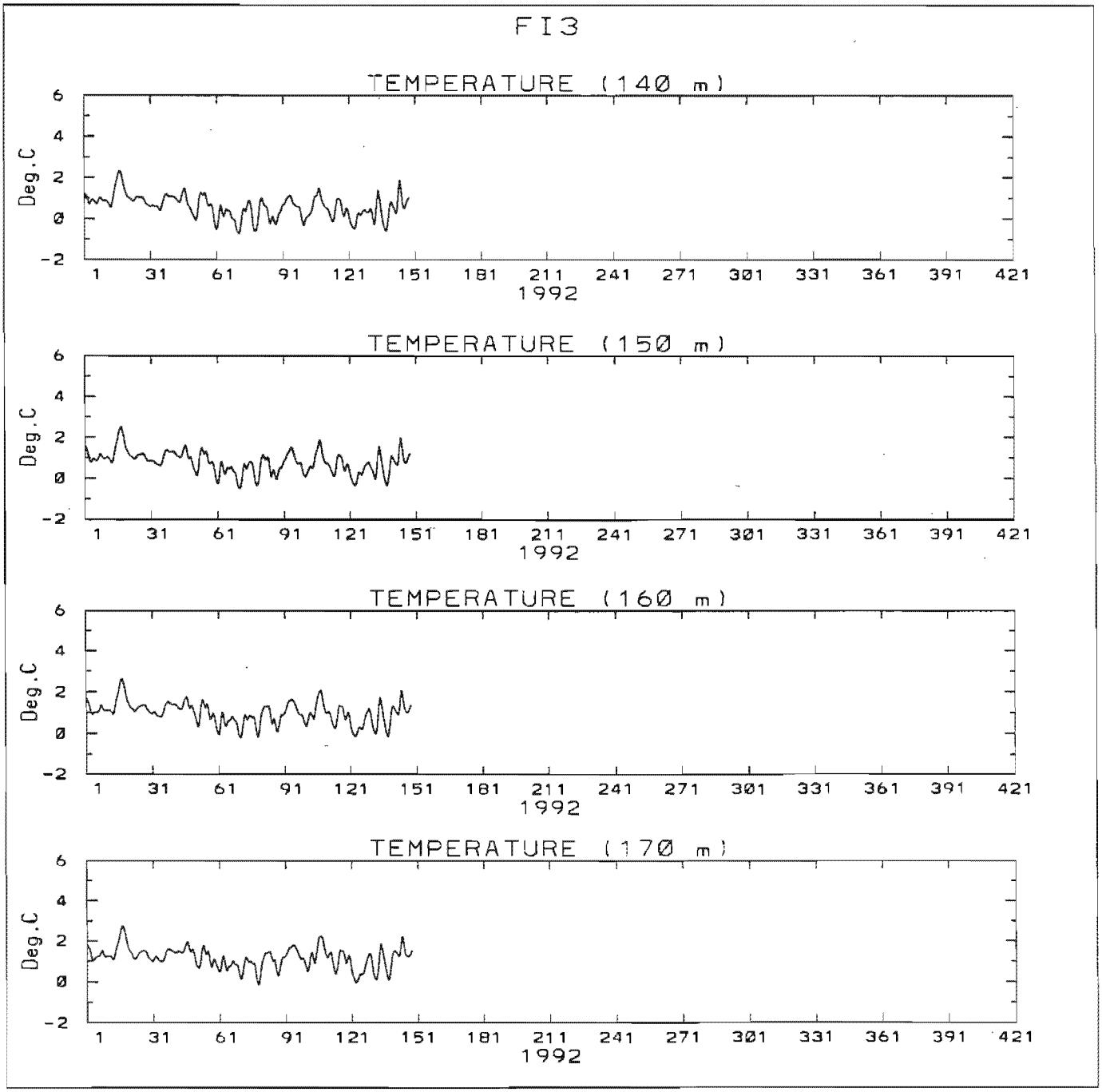

FI3
TEMPERATURE (100 m)
TEMPERATURE (110 m)
TEMPERATURE (120 m)
TEMPERATURE (130 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

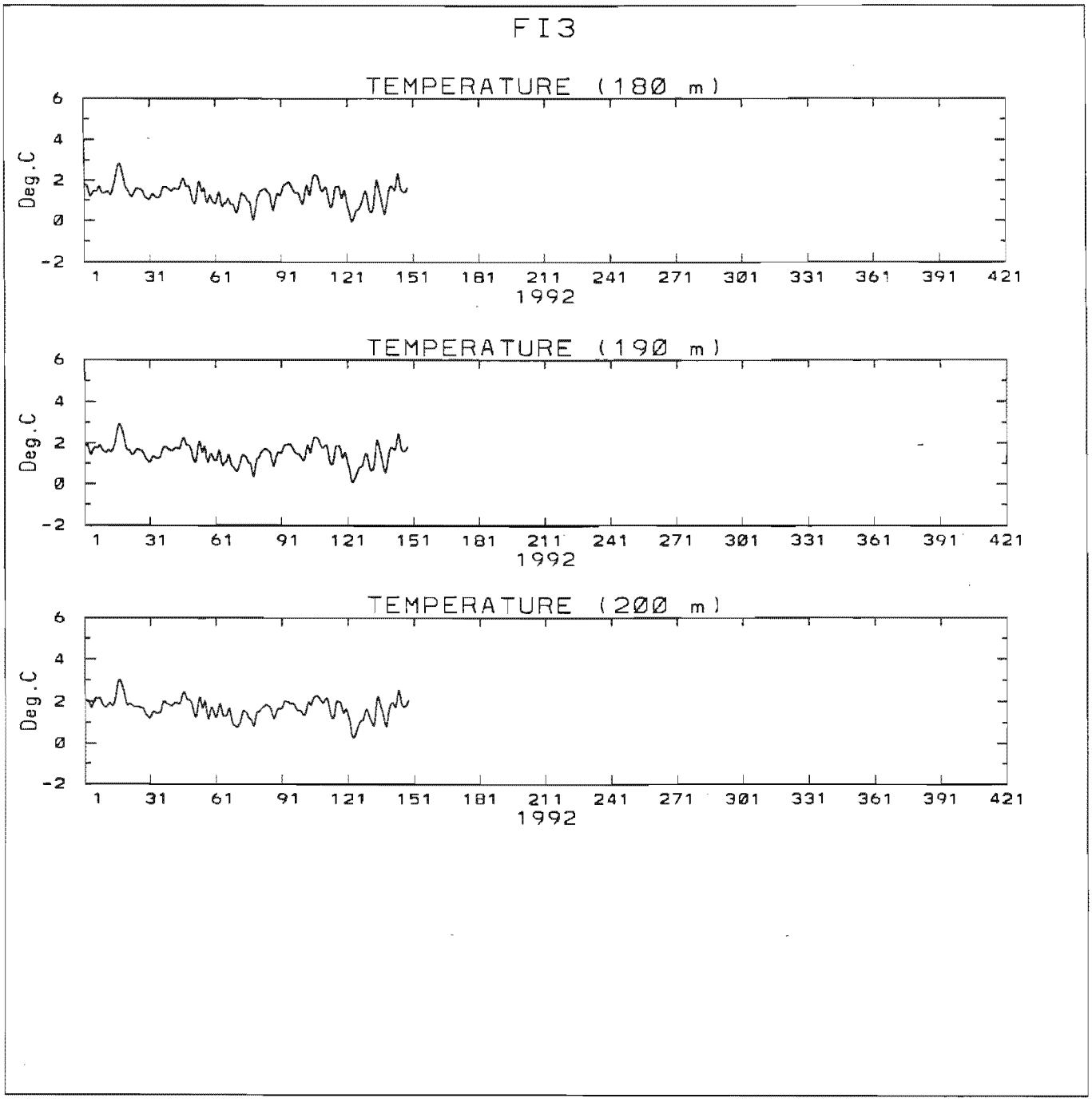

FI3
TEMPERATURE (140 m)
TEMPERATURE (150 m)
TEMPERATURE (160 m)
TEMPERATURE (170 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

FI3


TEMPERATURE (180 m)
Deg.C
6
4
2
0
-2
1
31
61
91
121
151
181
211
241
271
301
331
361
391
1991
TEMPERATURE (190 m)
Deg.C
1991
TEMPERATURE (200 m)
Deg.C
1991

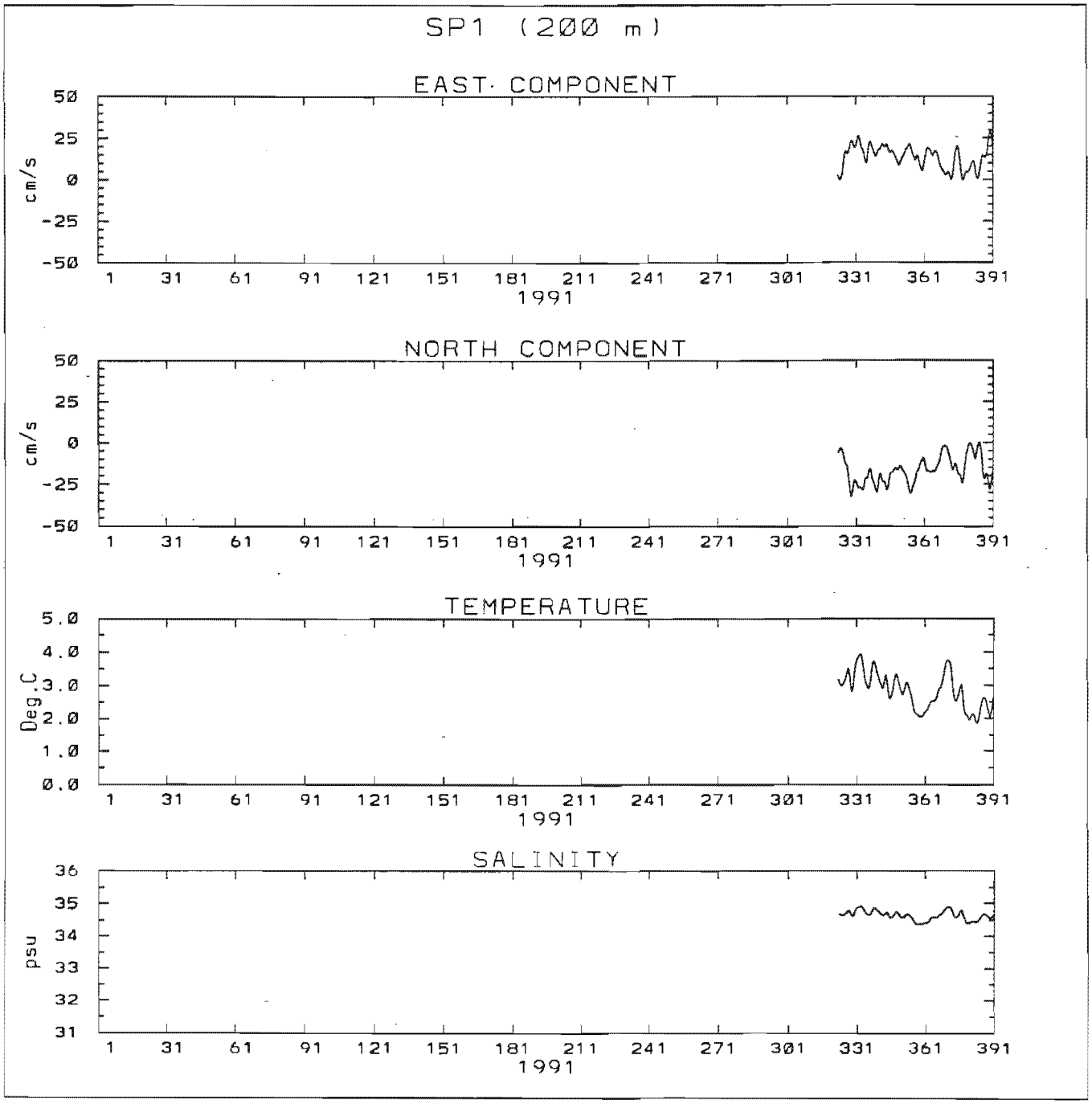

FI3
TEMPERATURE (100 m)
TEMPERATURE (110 m)
TEMPERATURE (120 m)
TEMPERATURE (130 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

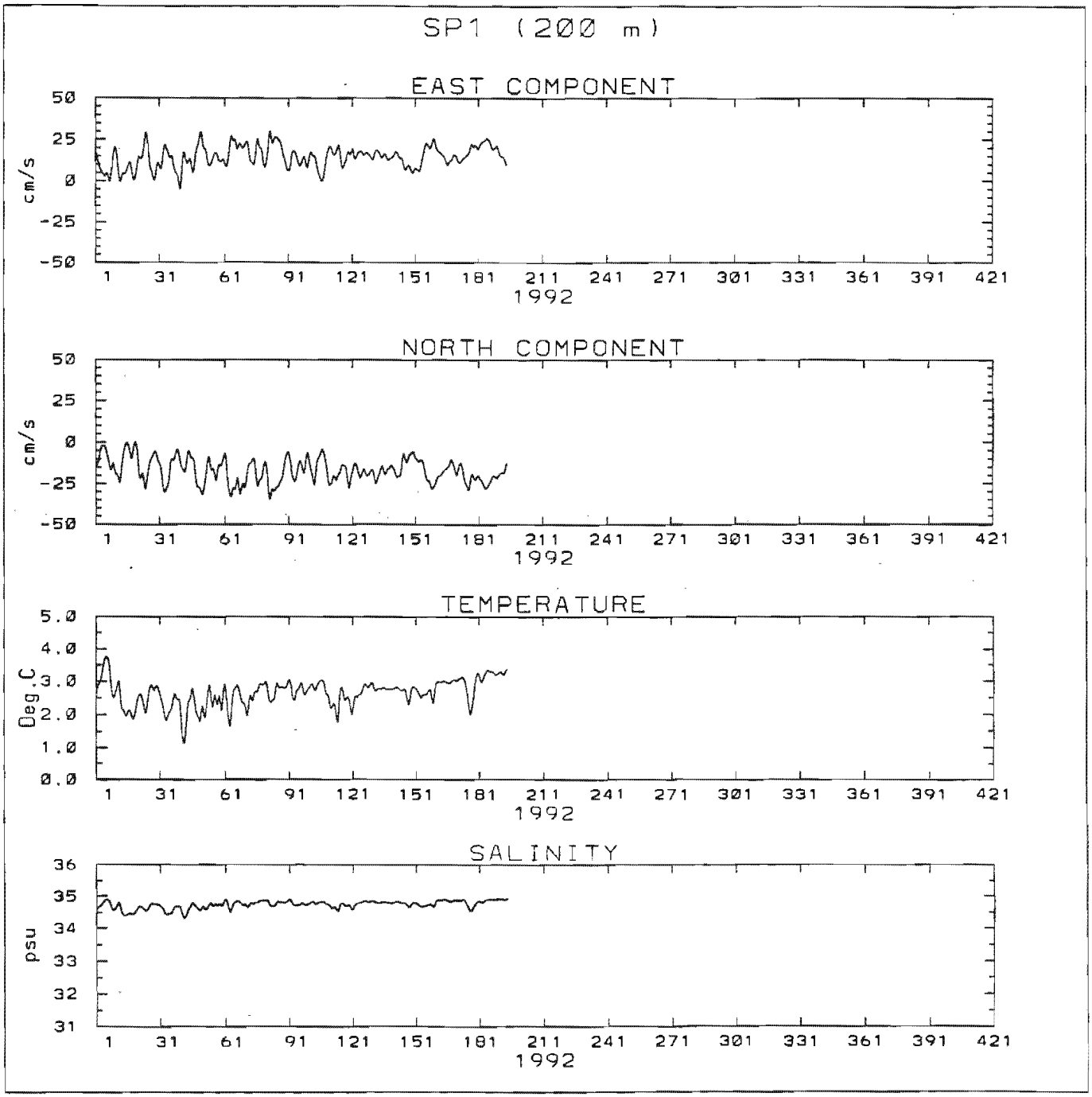

FI3
TEMPERATURE (140 m)
TEMPERATURE (150 m)
TEMPERATURE (160 m)
TEMPERATURE (170 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

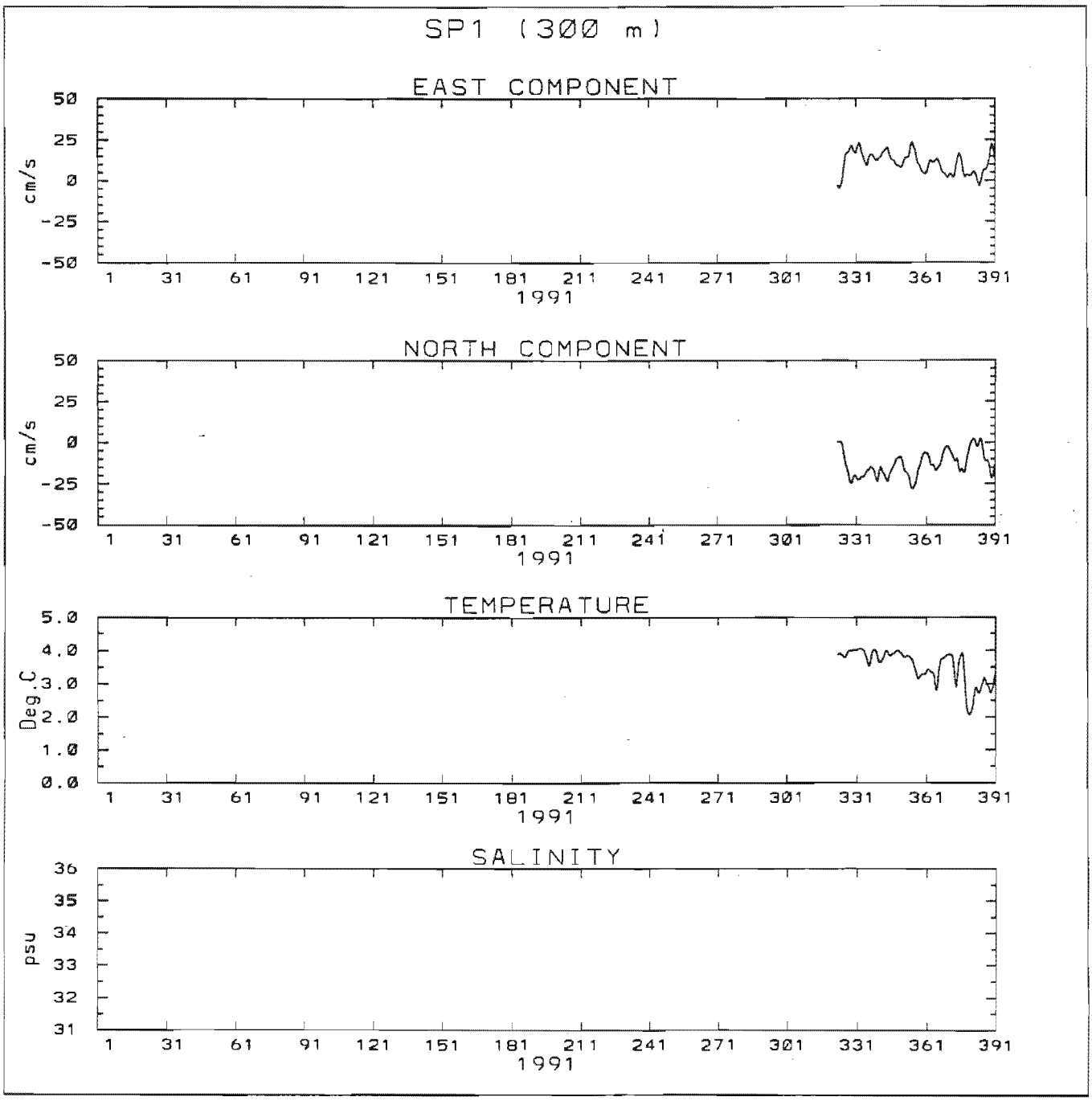

FI3
TEMPERATURE (180 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE (190 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE (200 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

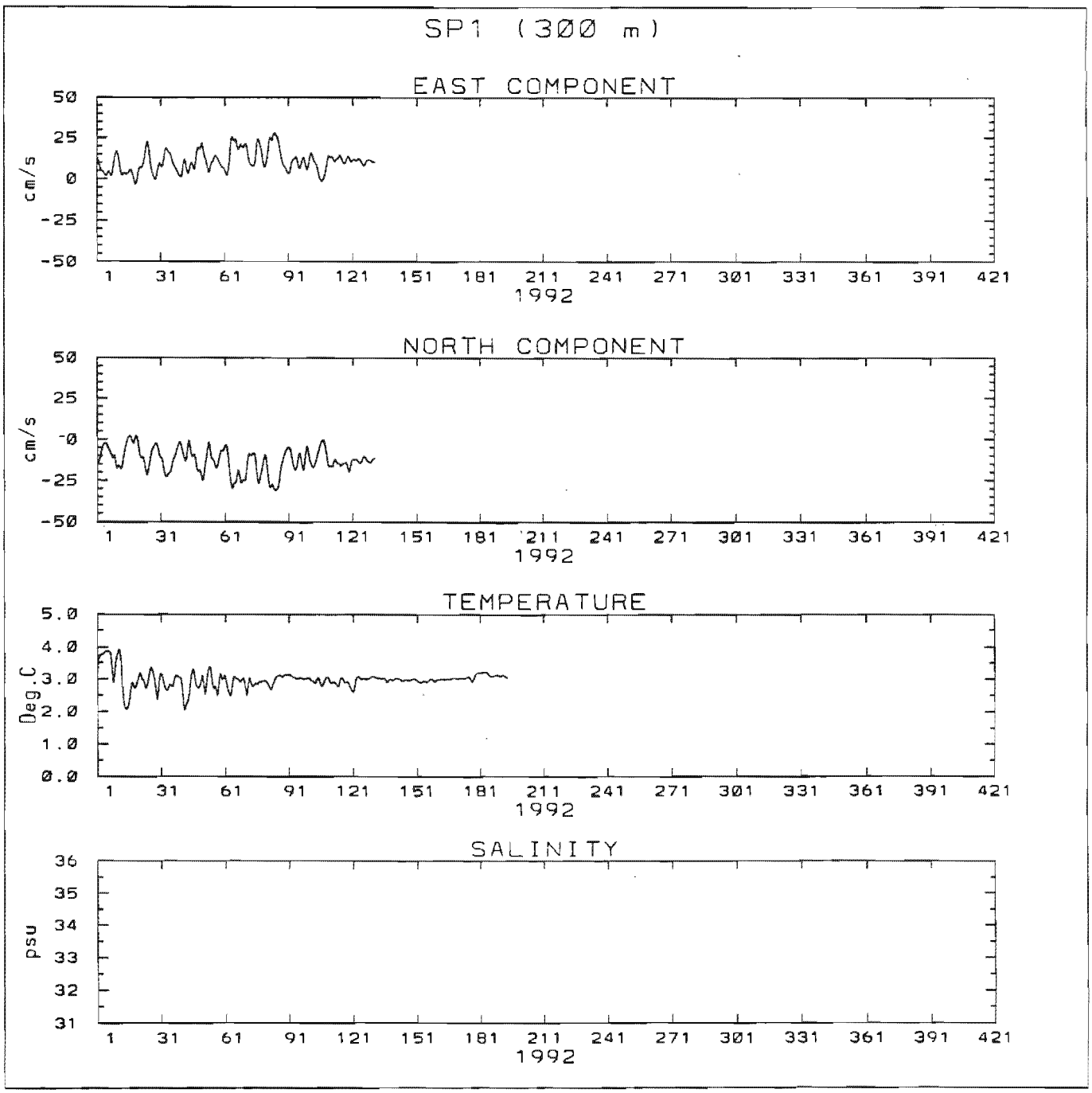
Appendix 10

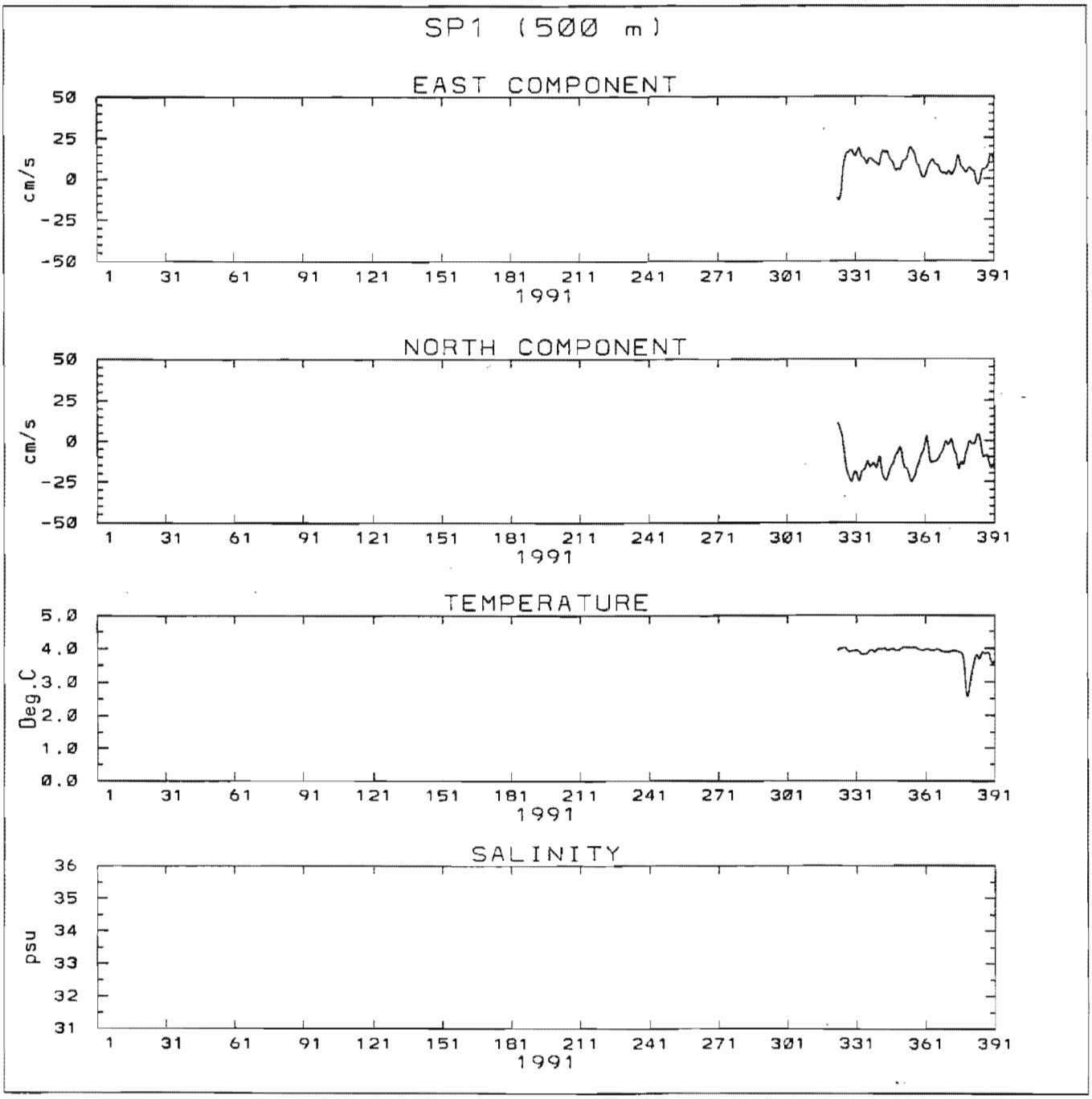
Time series plots of filtered data: SP1

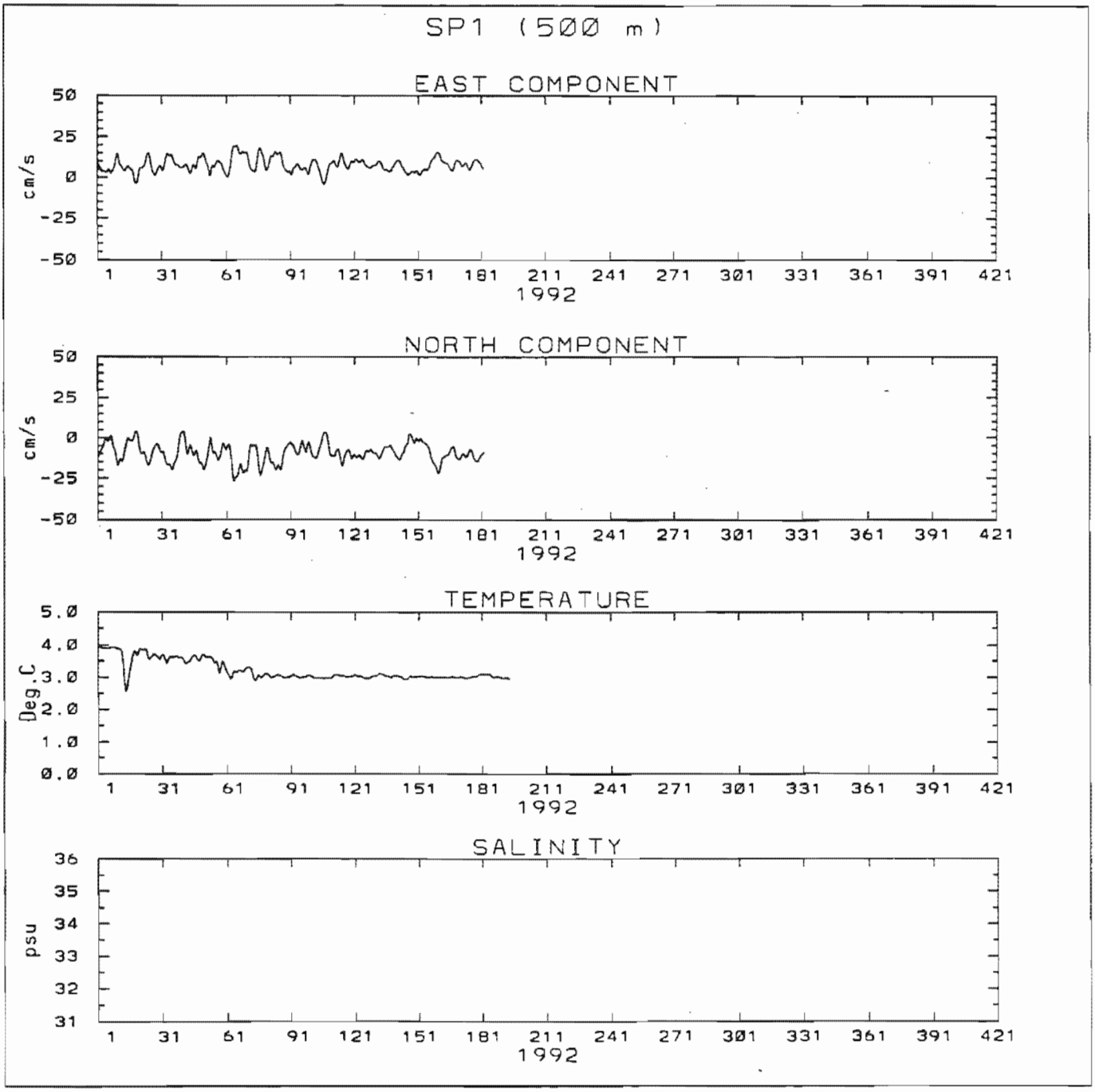

SP1 (200 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


SP1 (200 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992


SP1 (300 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

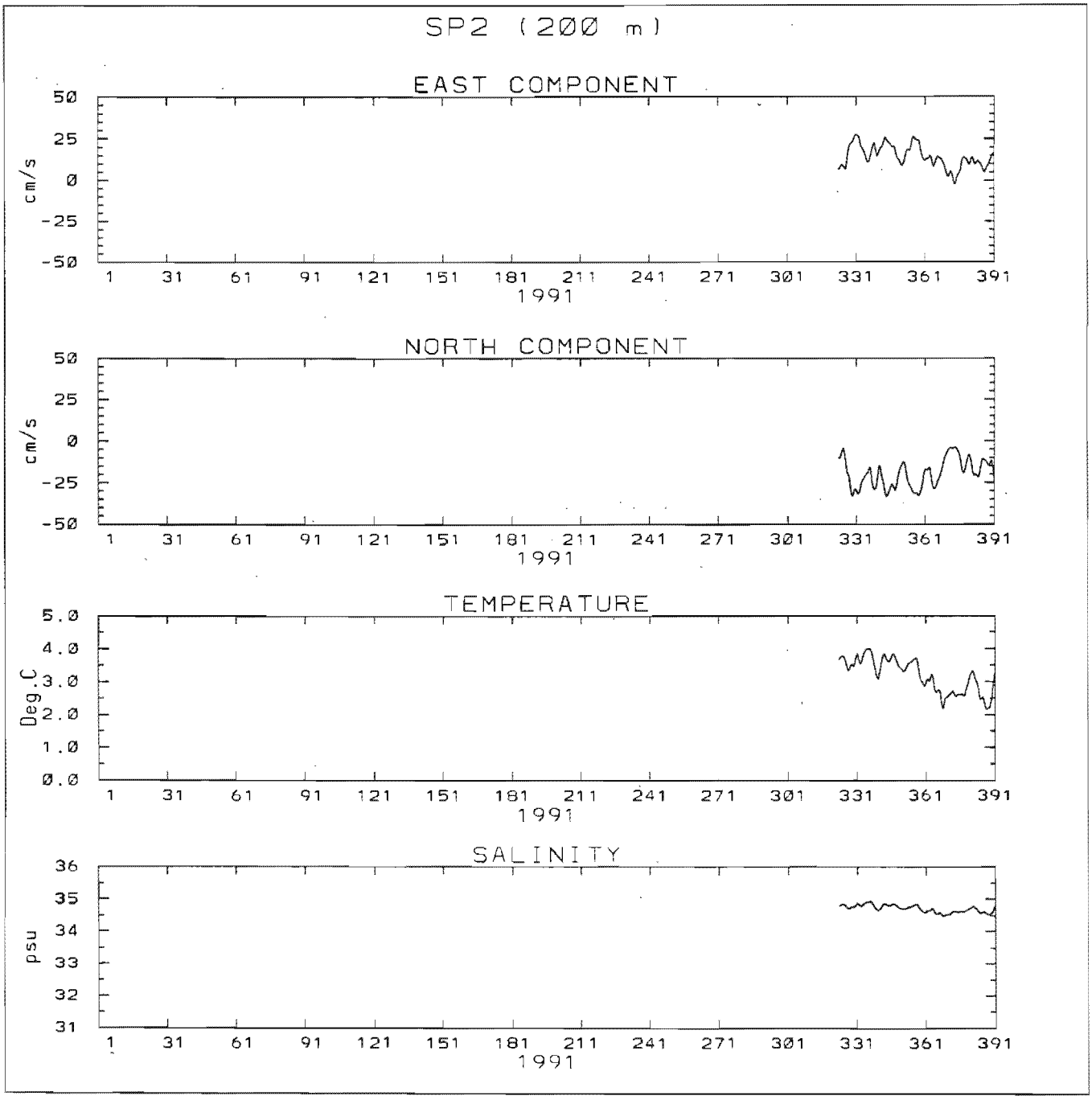

SP1 (300 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

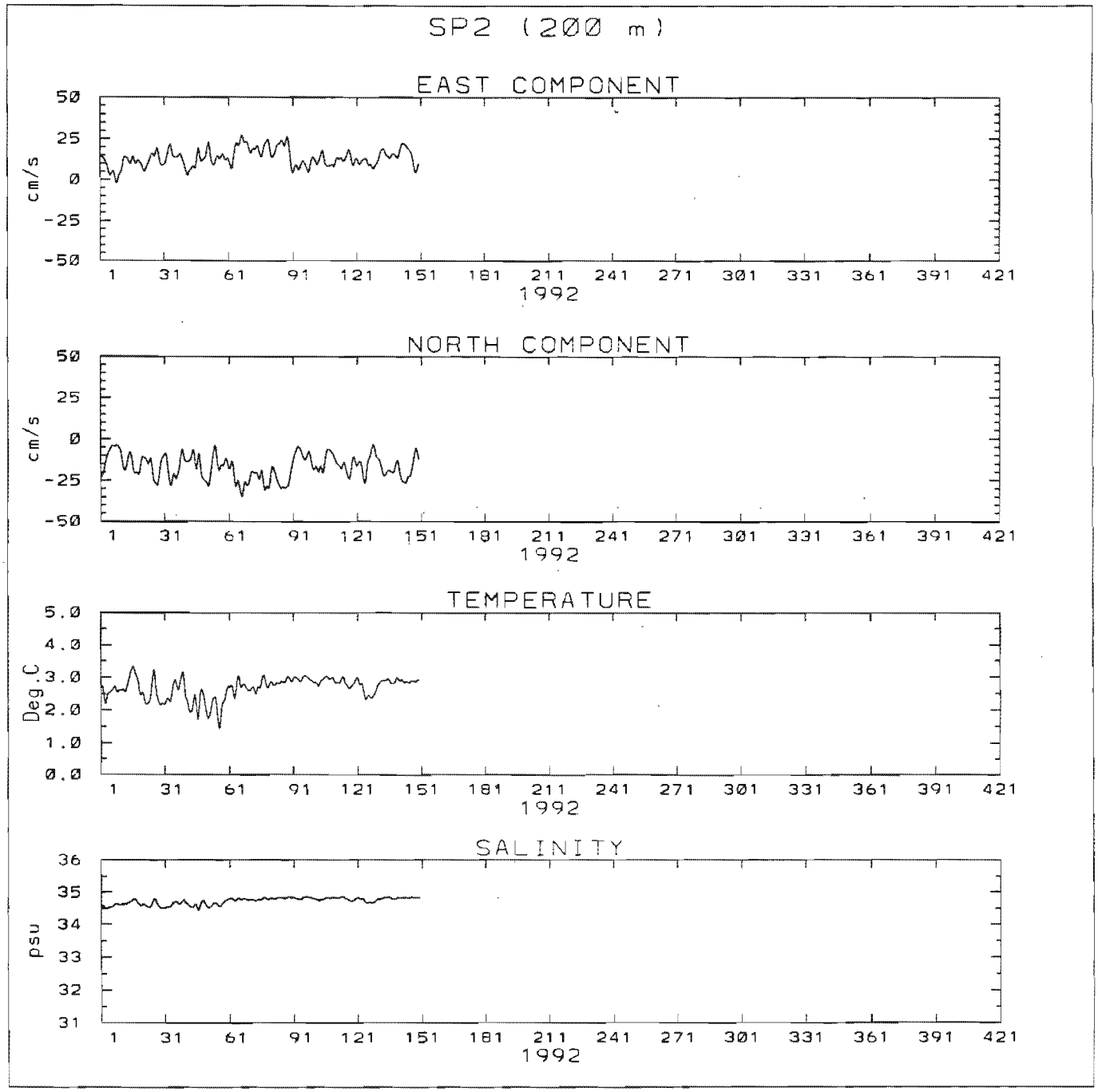

SP1 (500 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

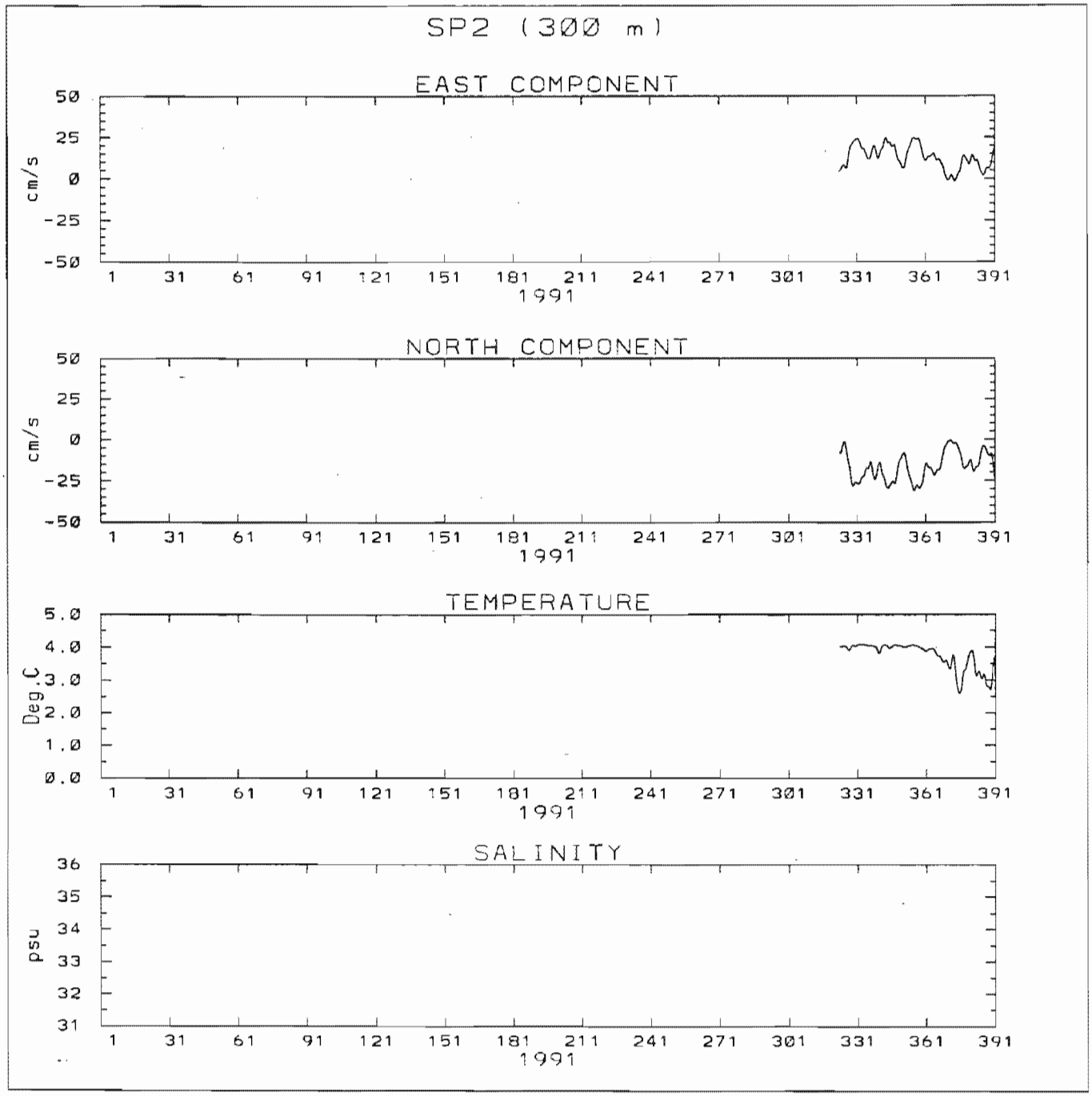

SP1 (500 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

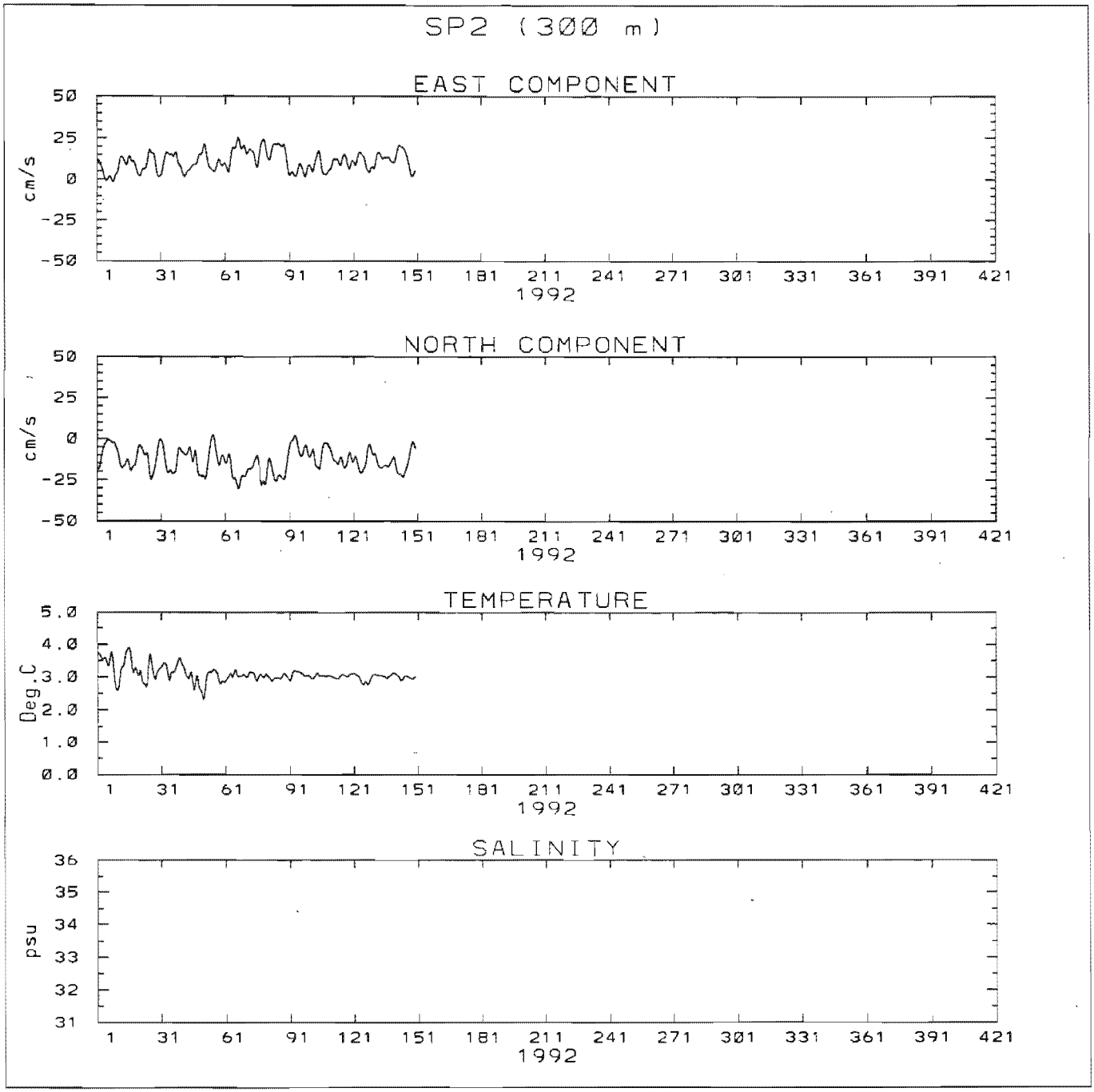
Appendix 11

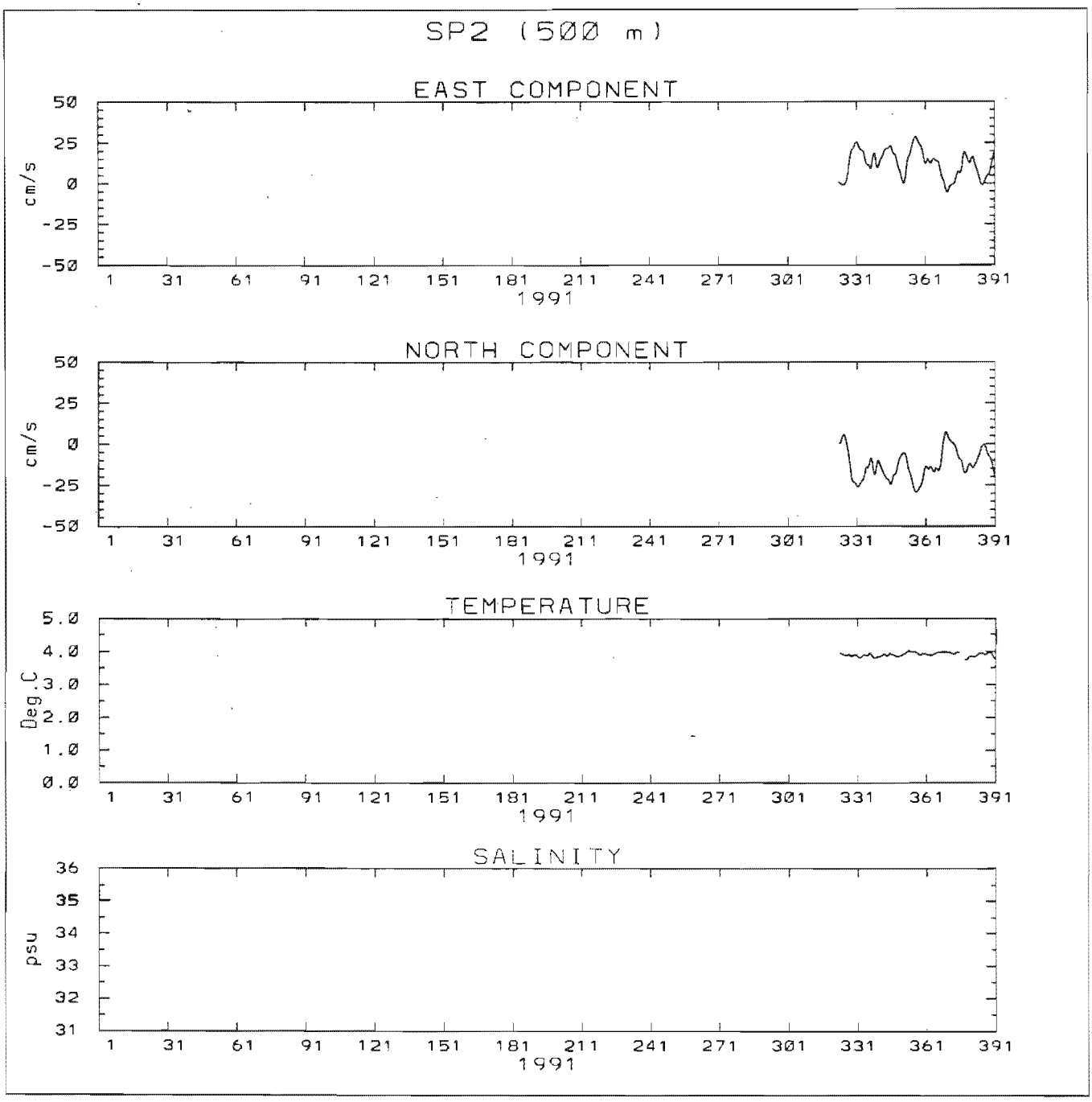
Time series plots of filtered data: SP2

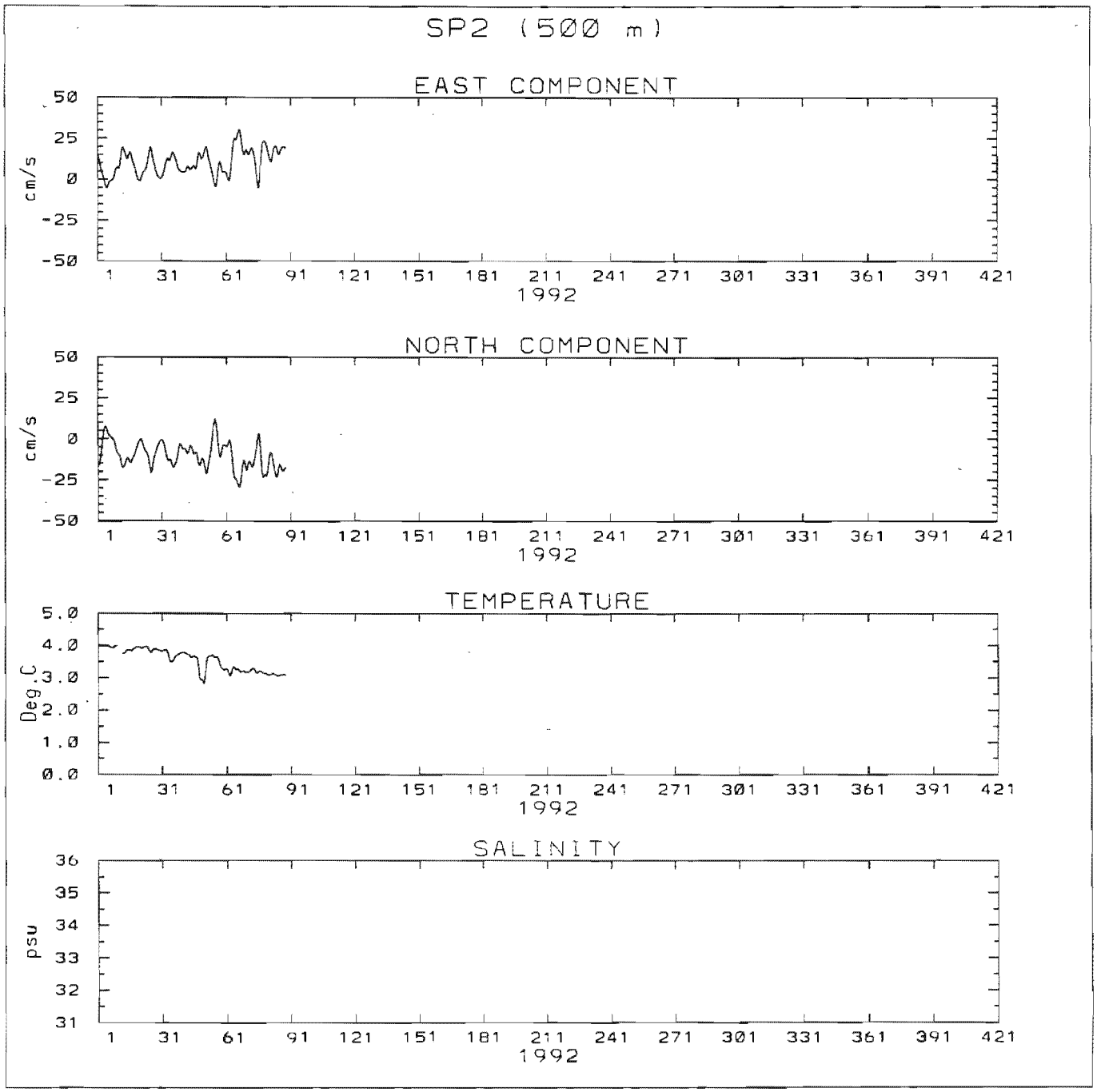

SP2 (200 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


SP2 (200 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992


SP2 (300 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

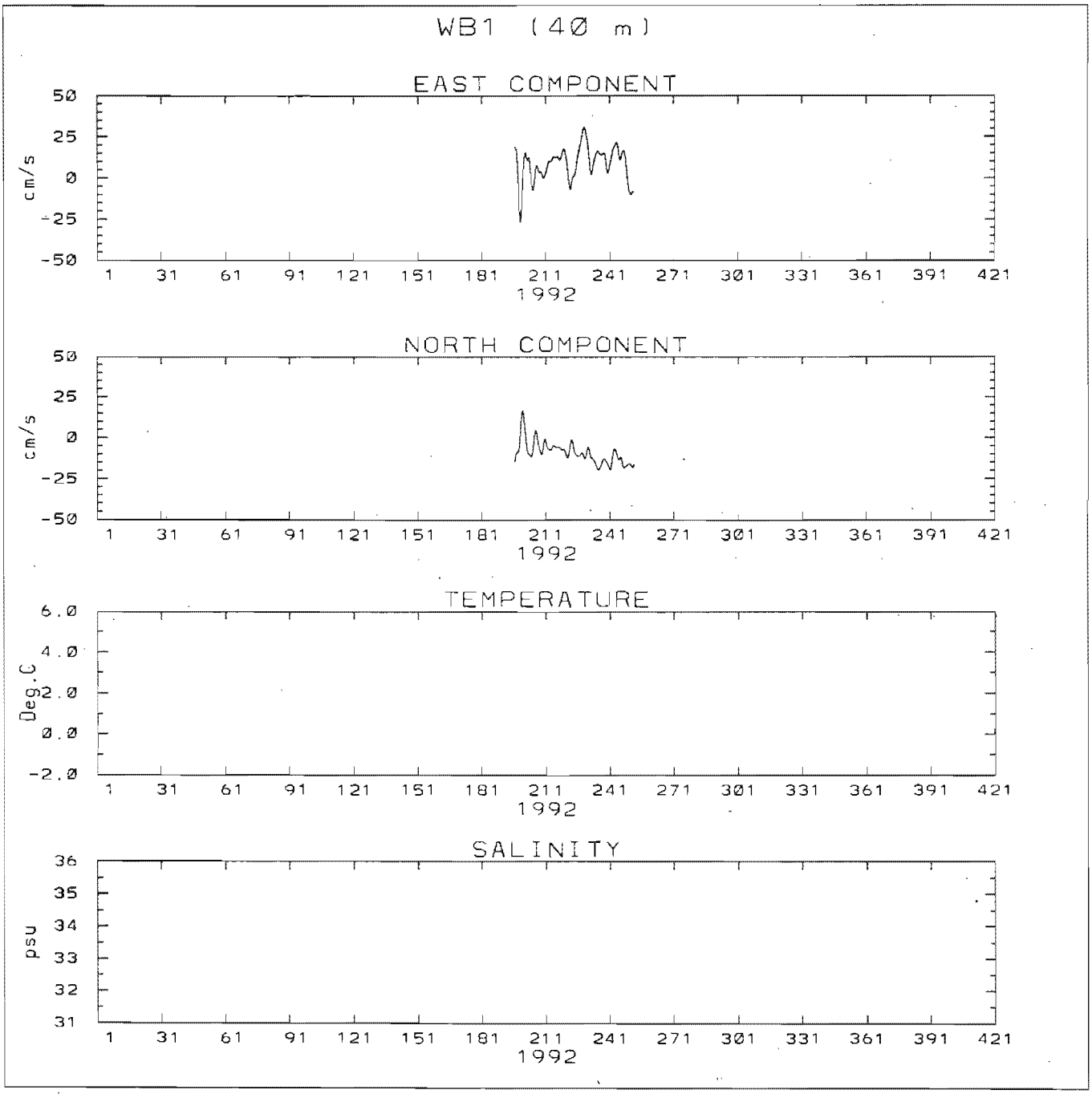

SP2 (300 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

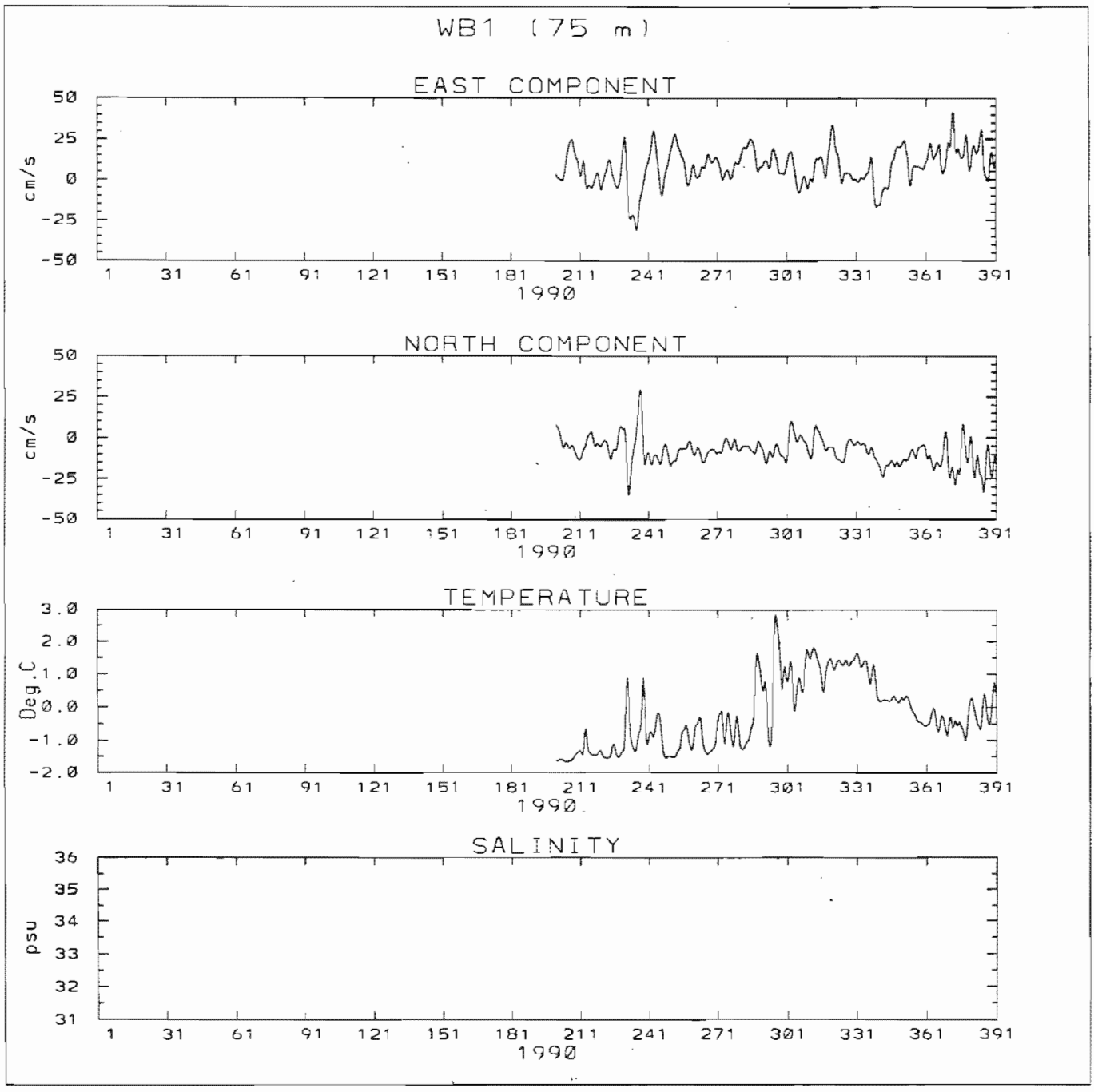

SP2 (500 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

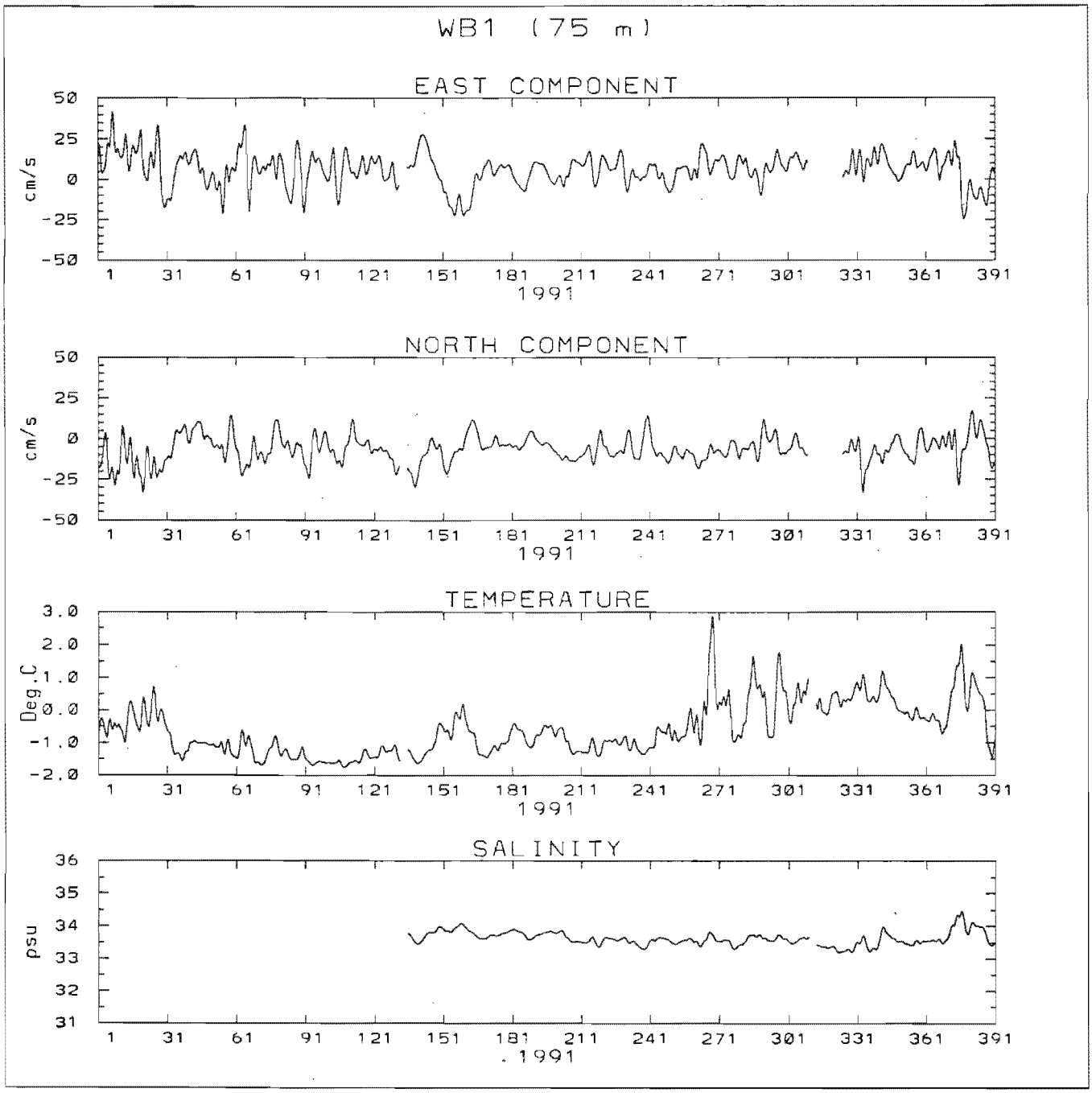

SP2 (500 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

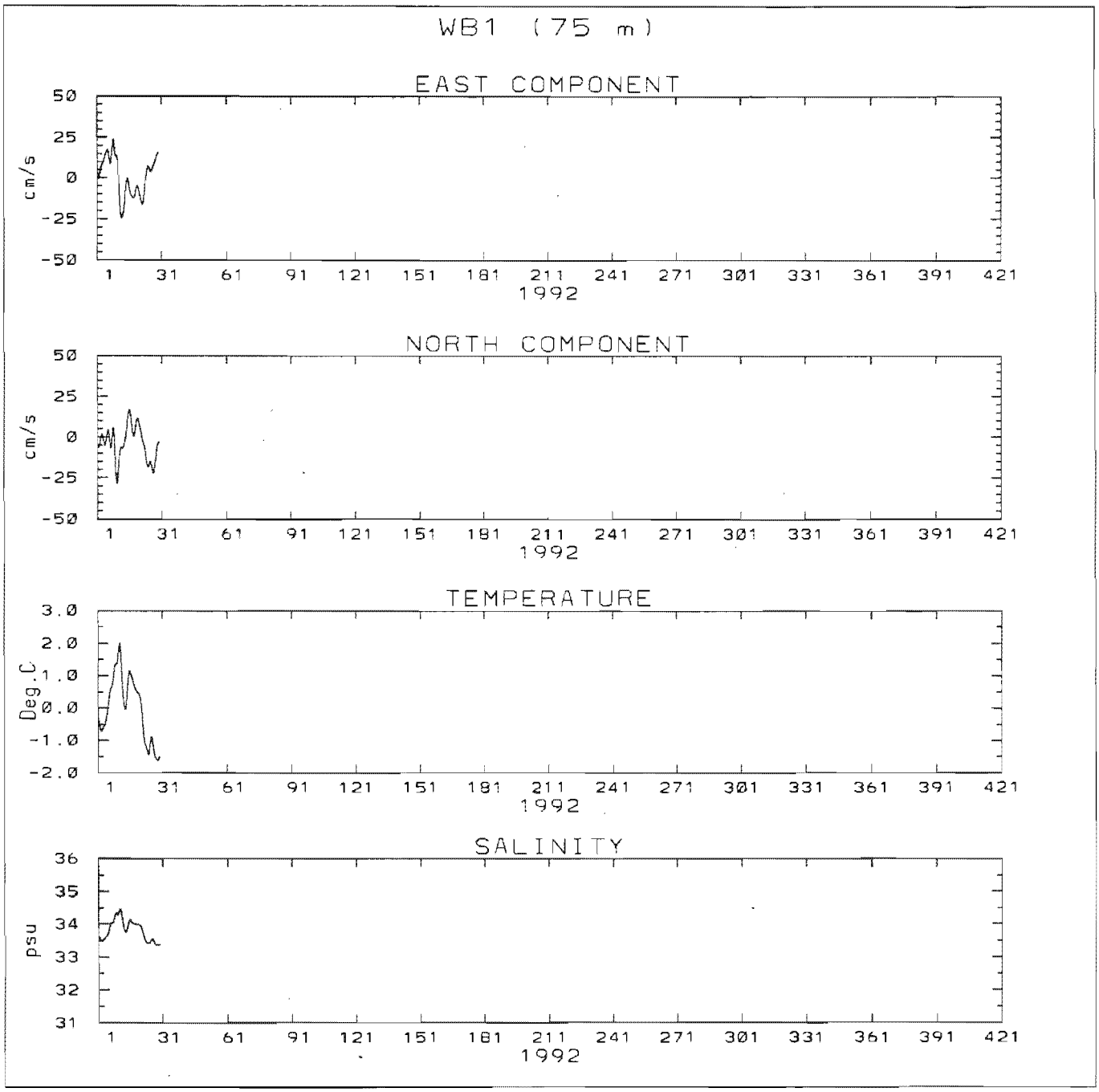
Appendix 12

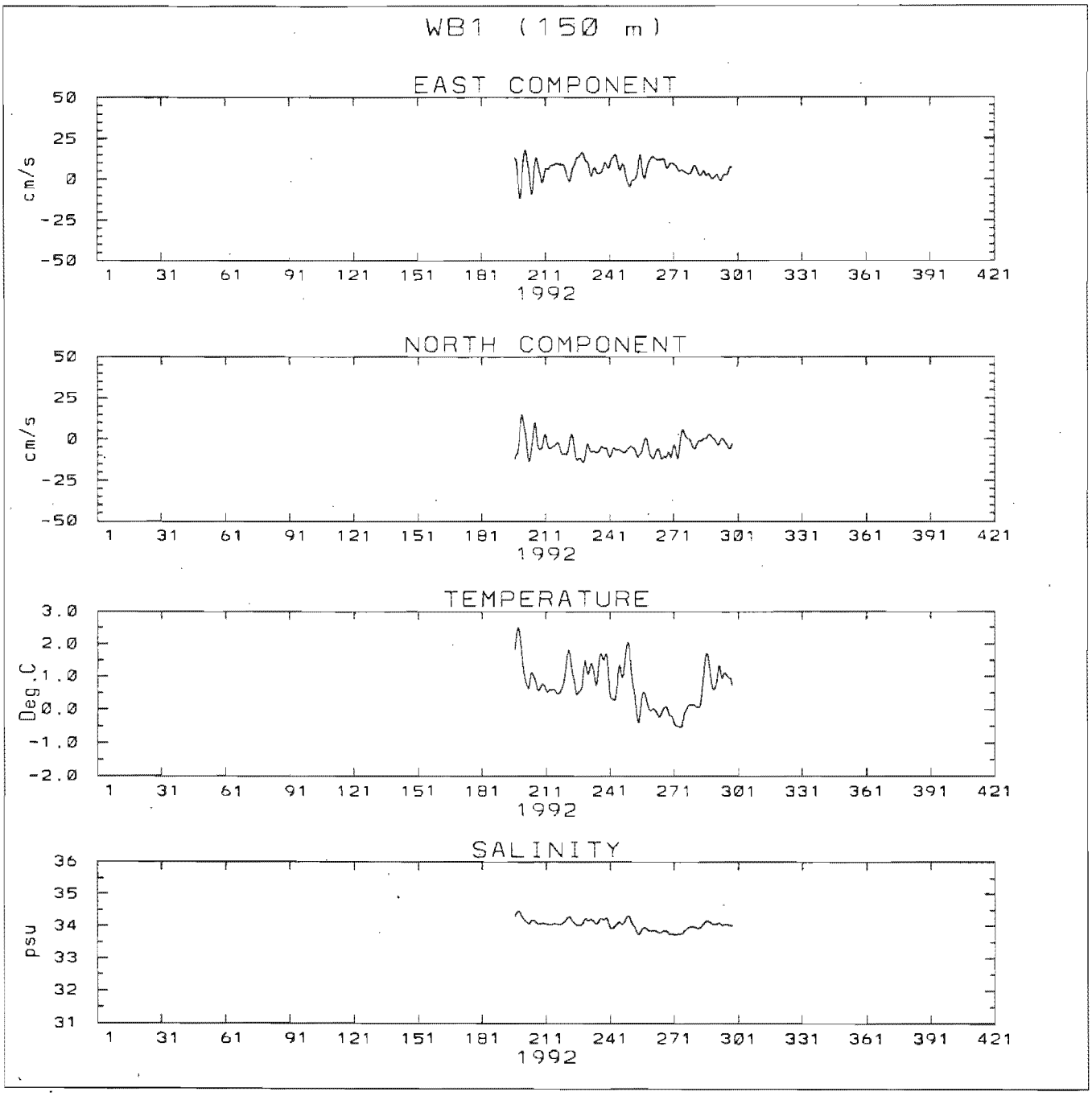
Time series plots of filtered data: WB1

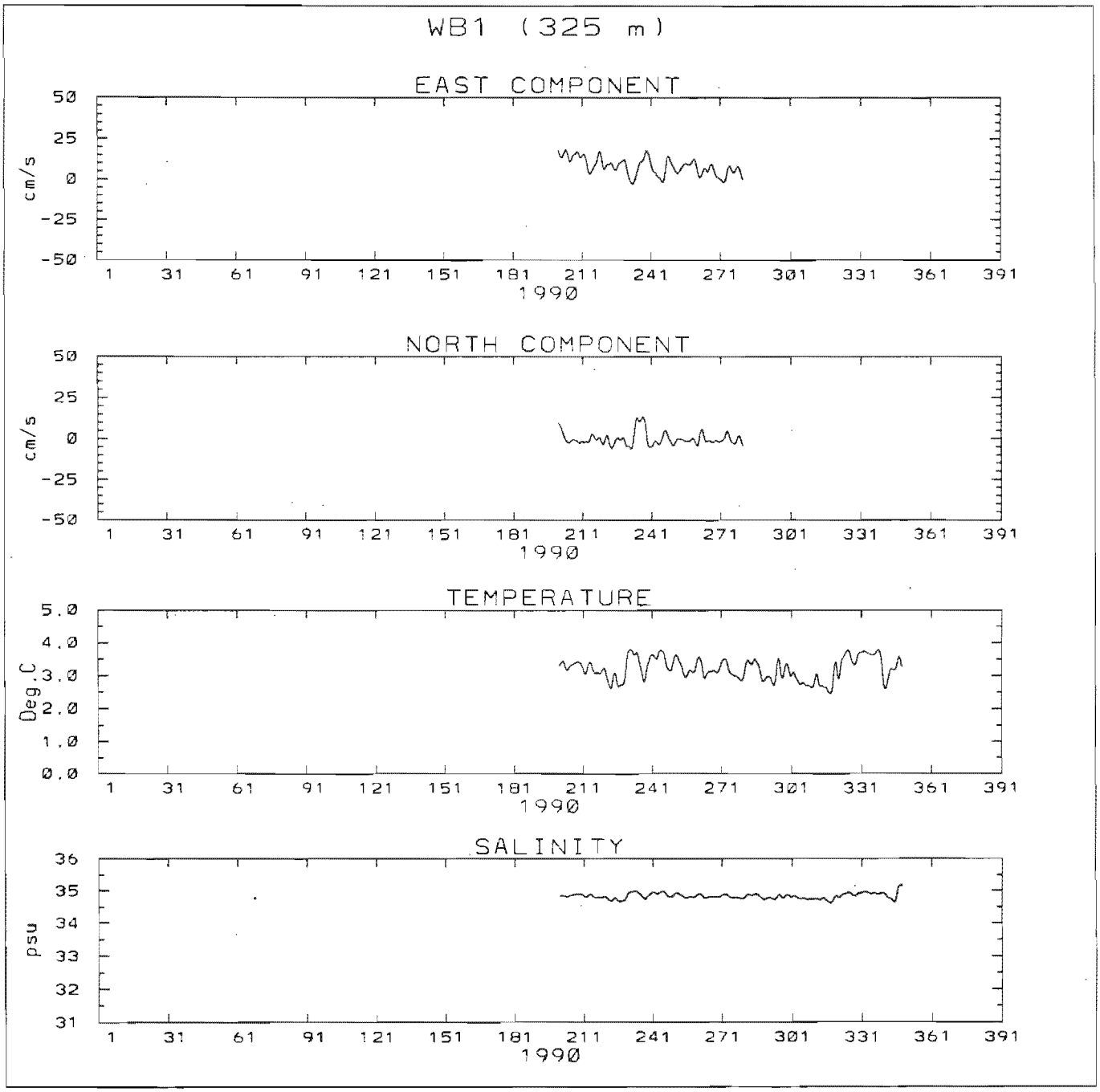

WB1 (40 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
6.0
4.0
2.0
0.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

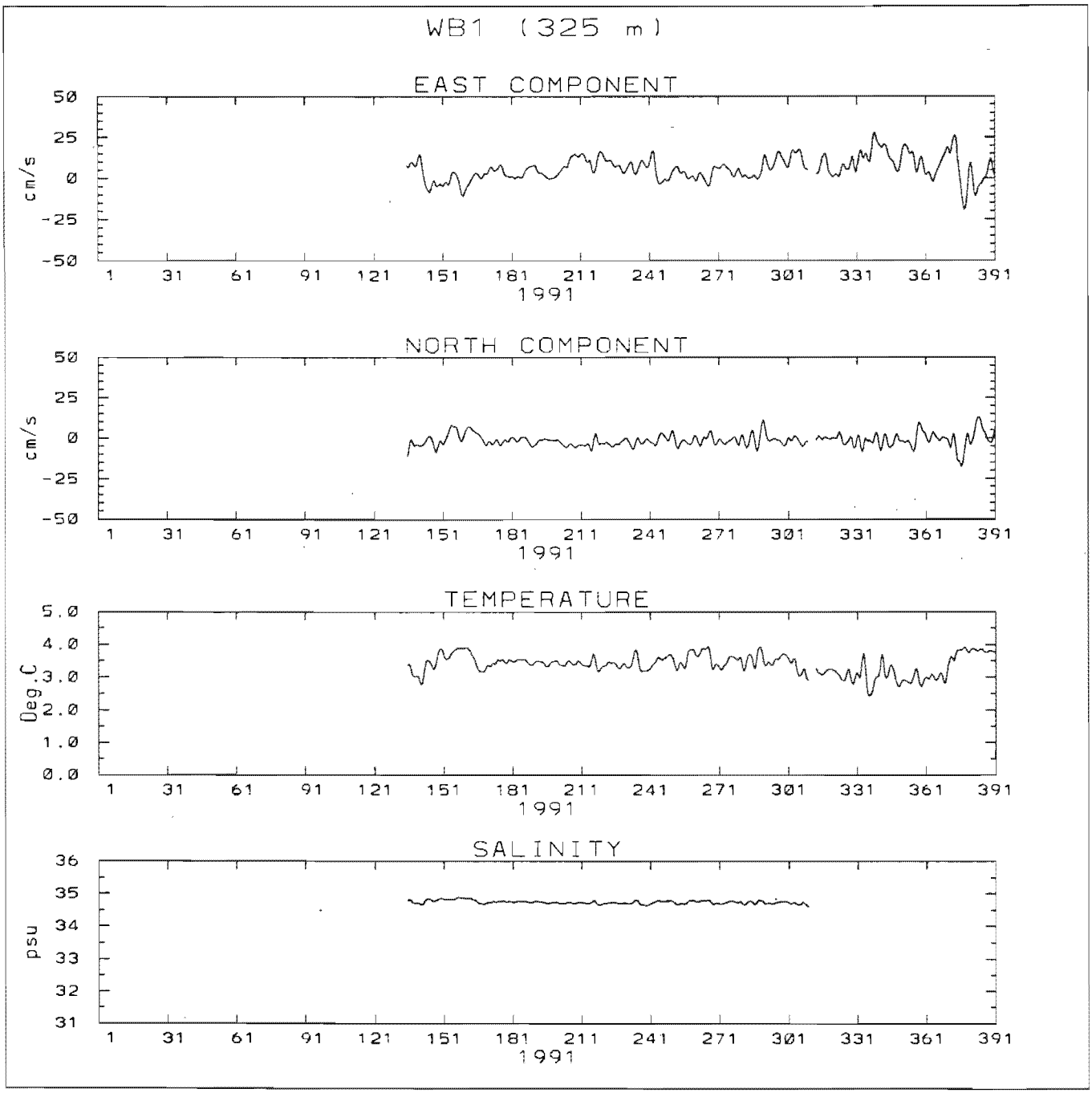

WB1 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990

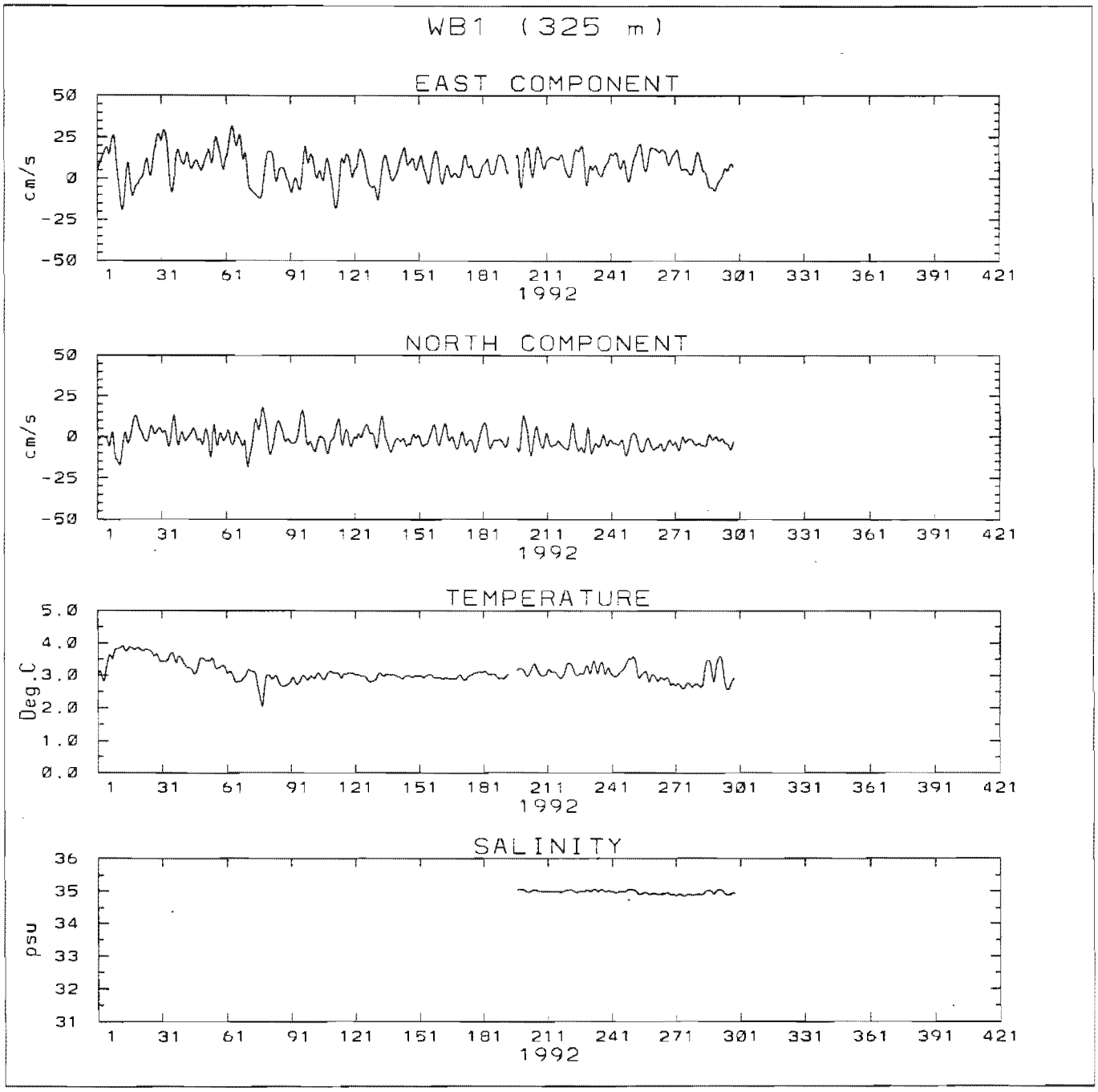

WB1 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

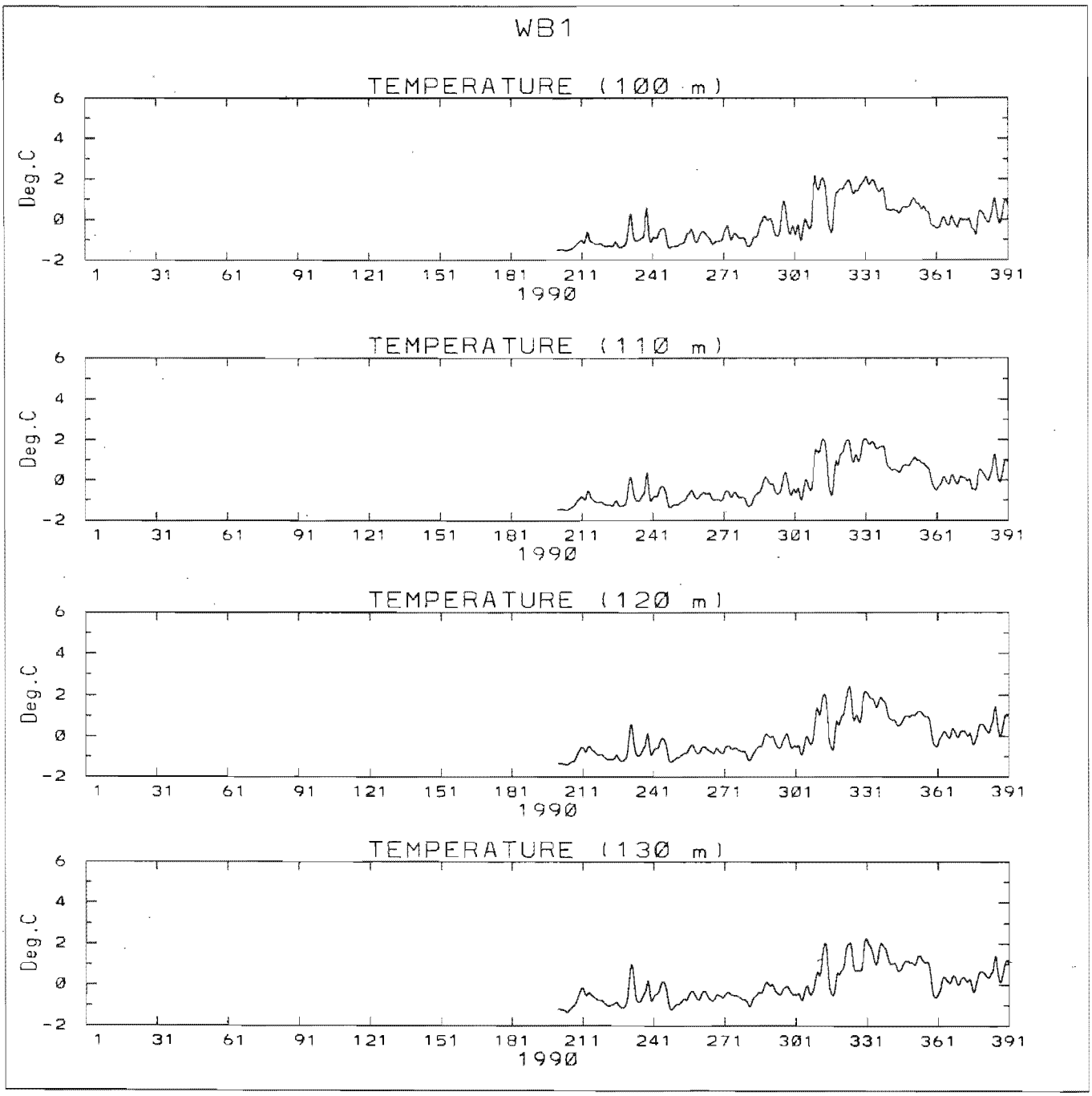

WB1 (75 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

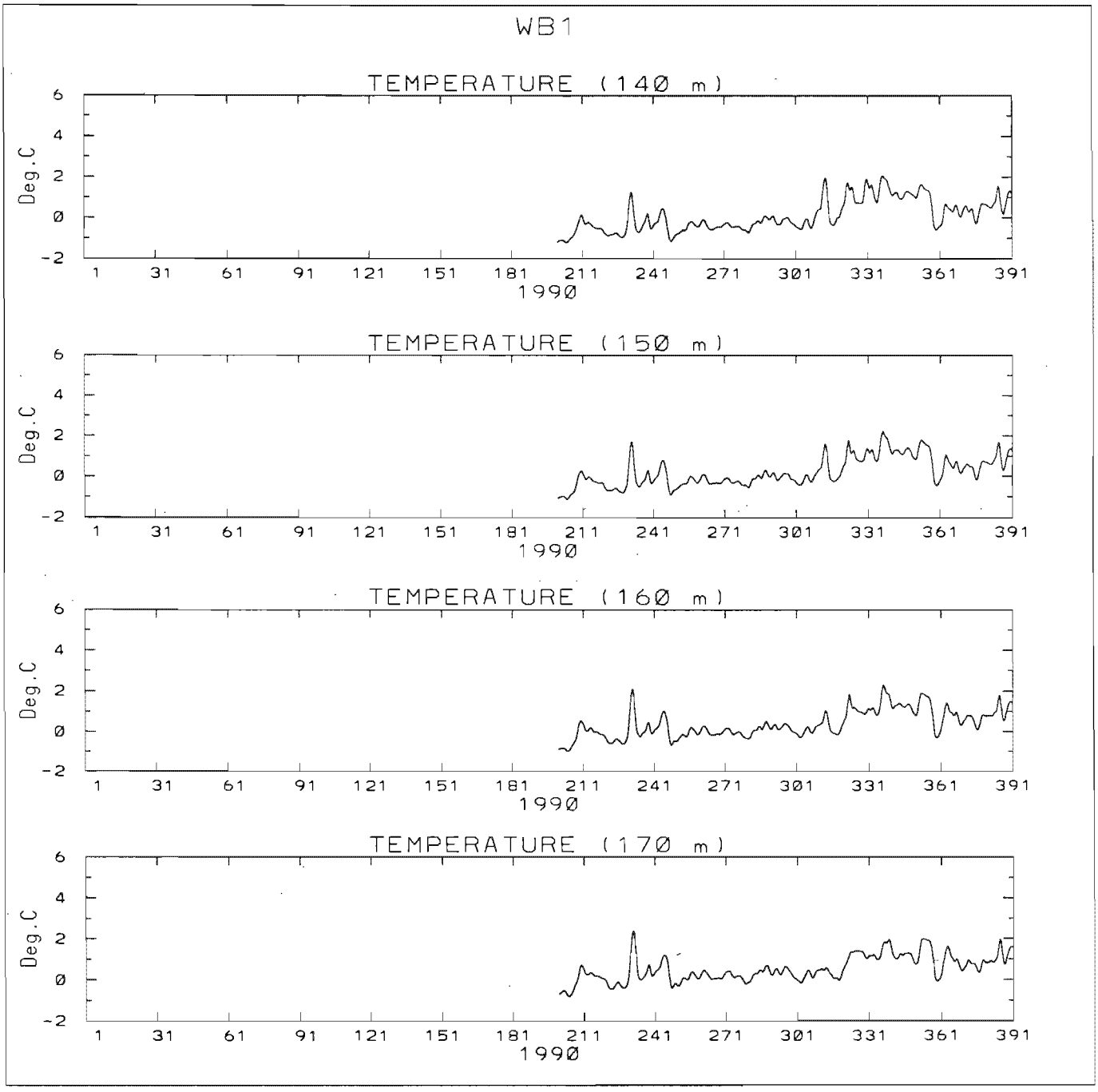

WB1 (150 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

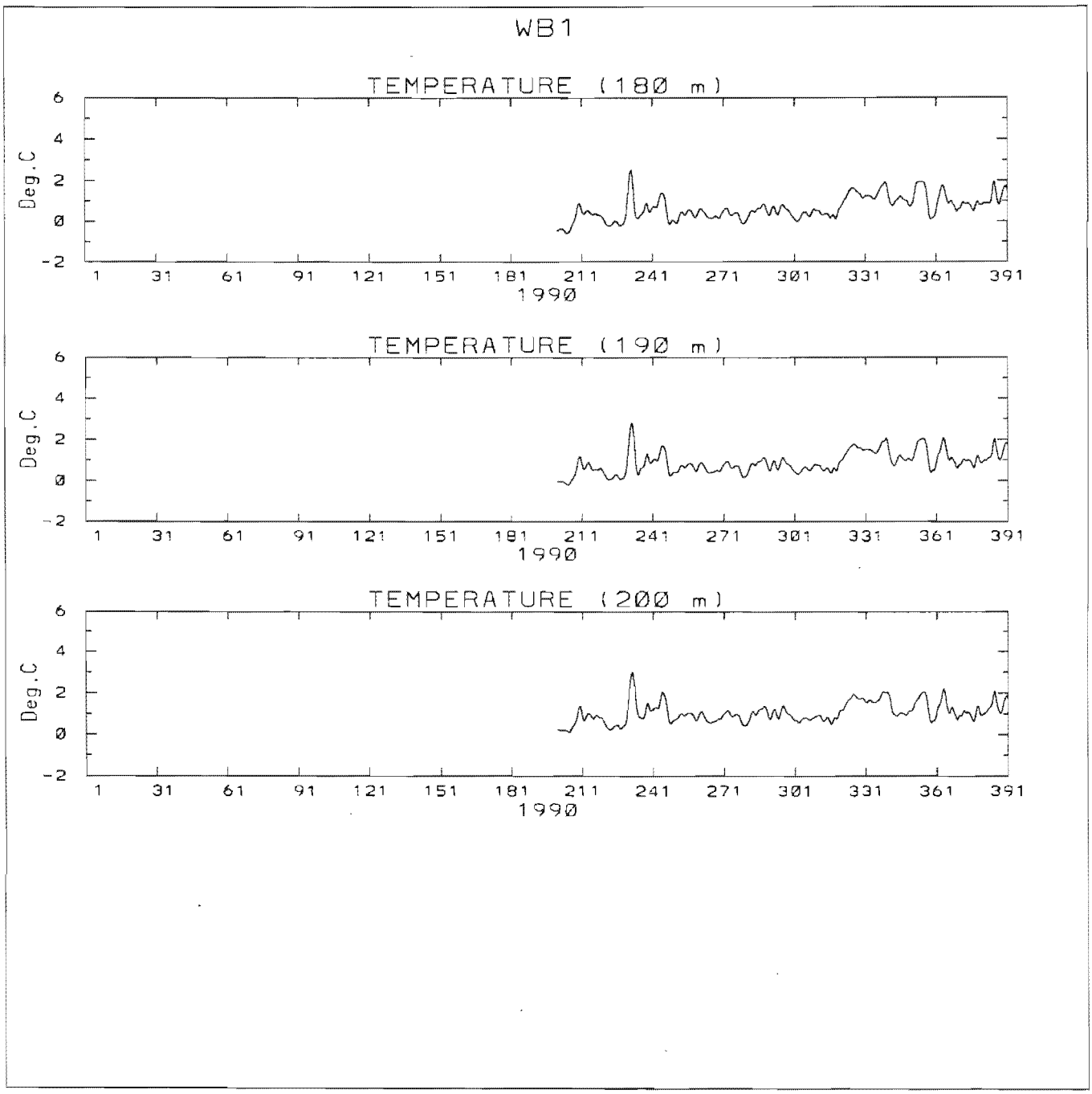

WB1 (325 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990

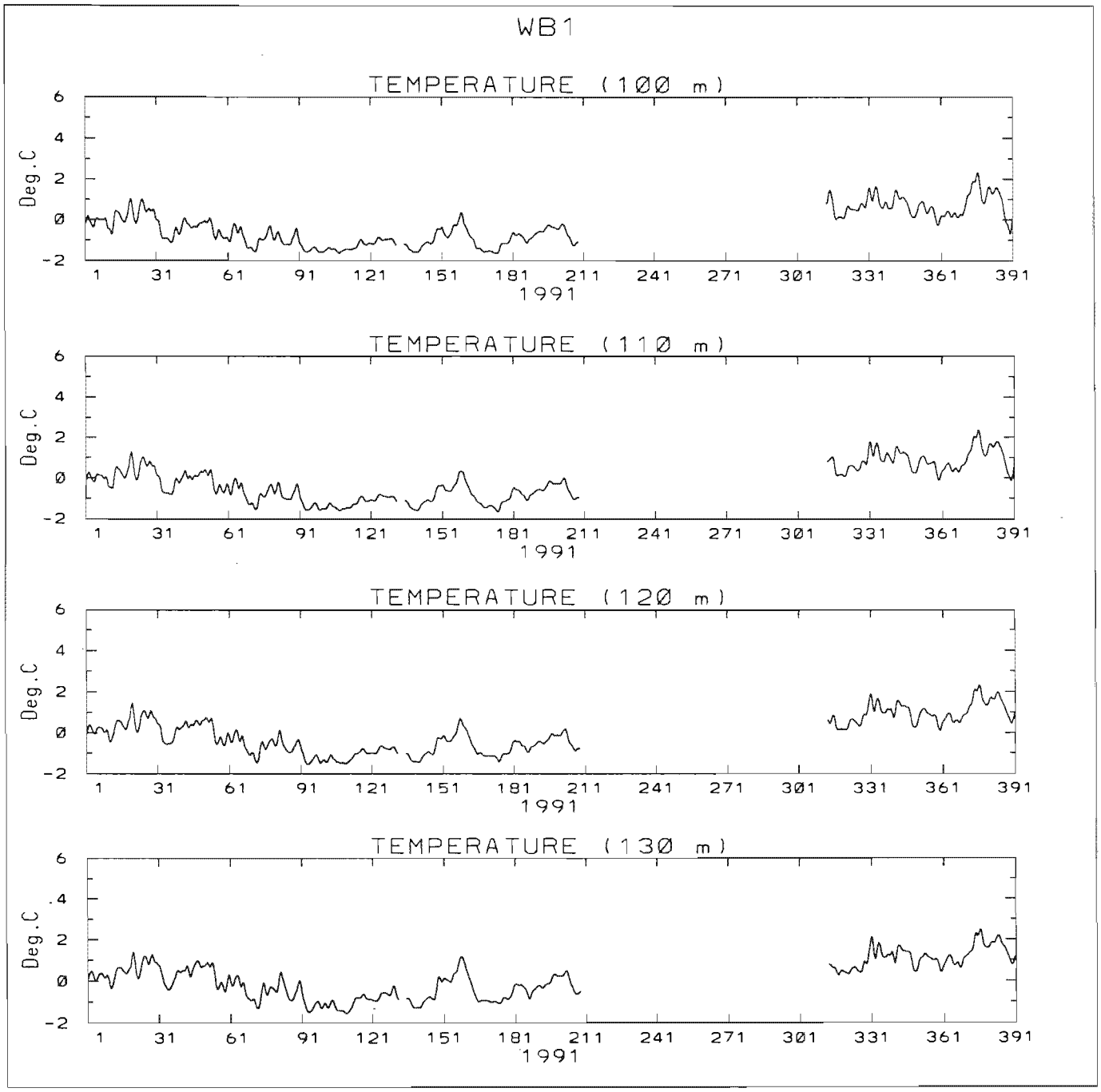

WB1 (325 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
NORTH COMPONENT
cm/s
50
25
0
-25
-50
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

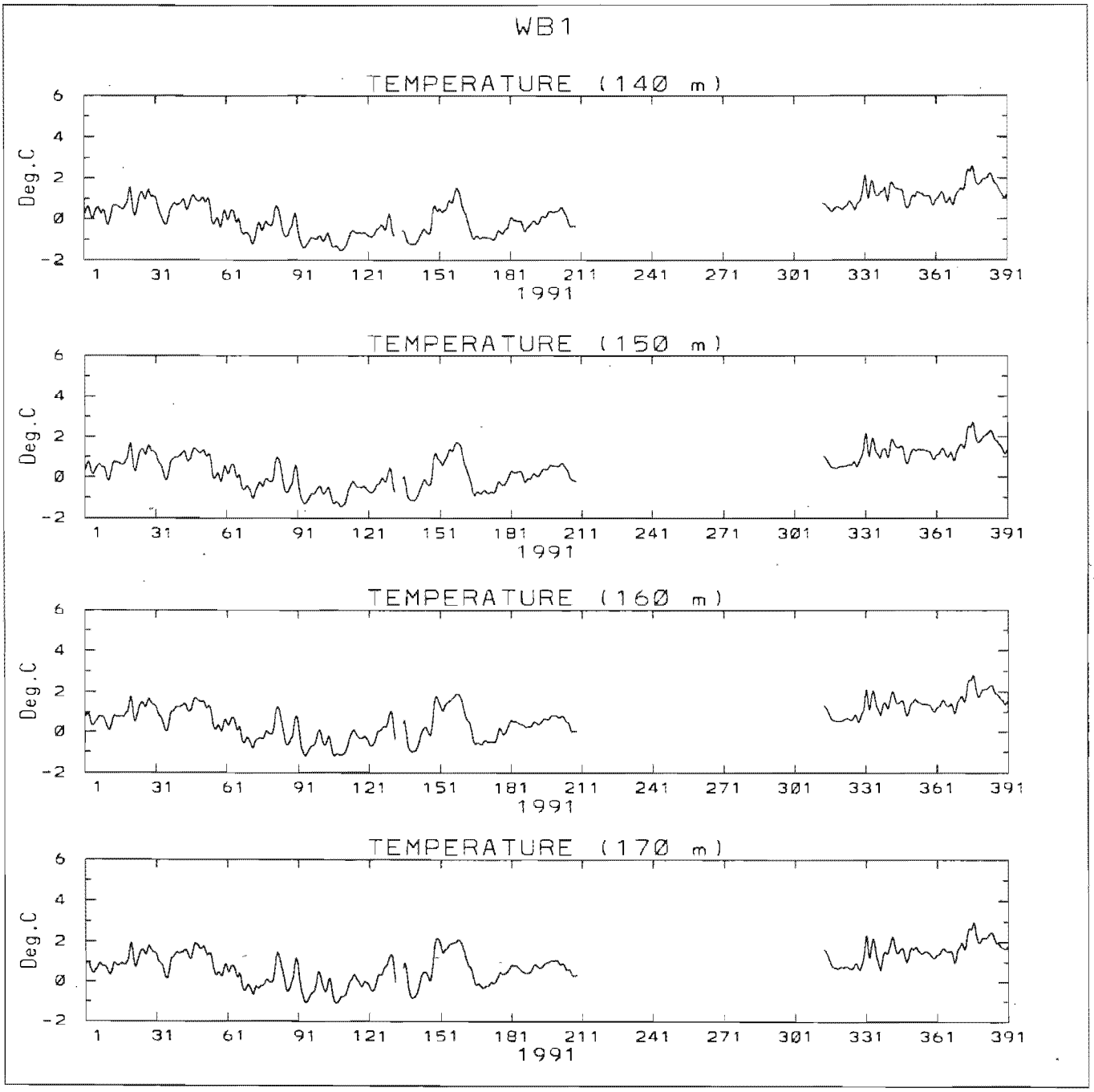

WB1 (325 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

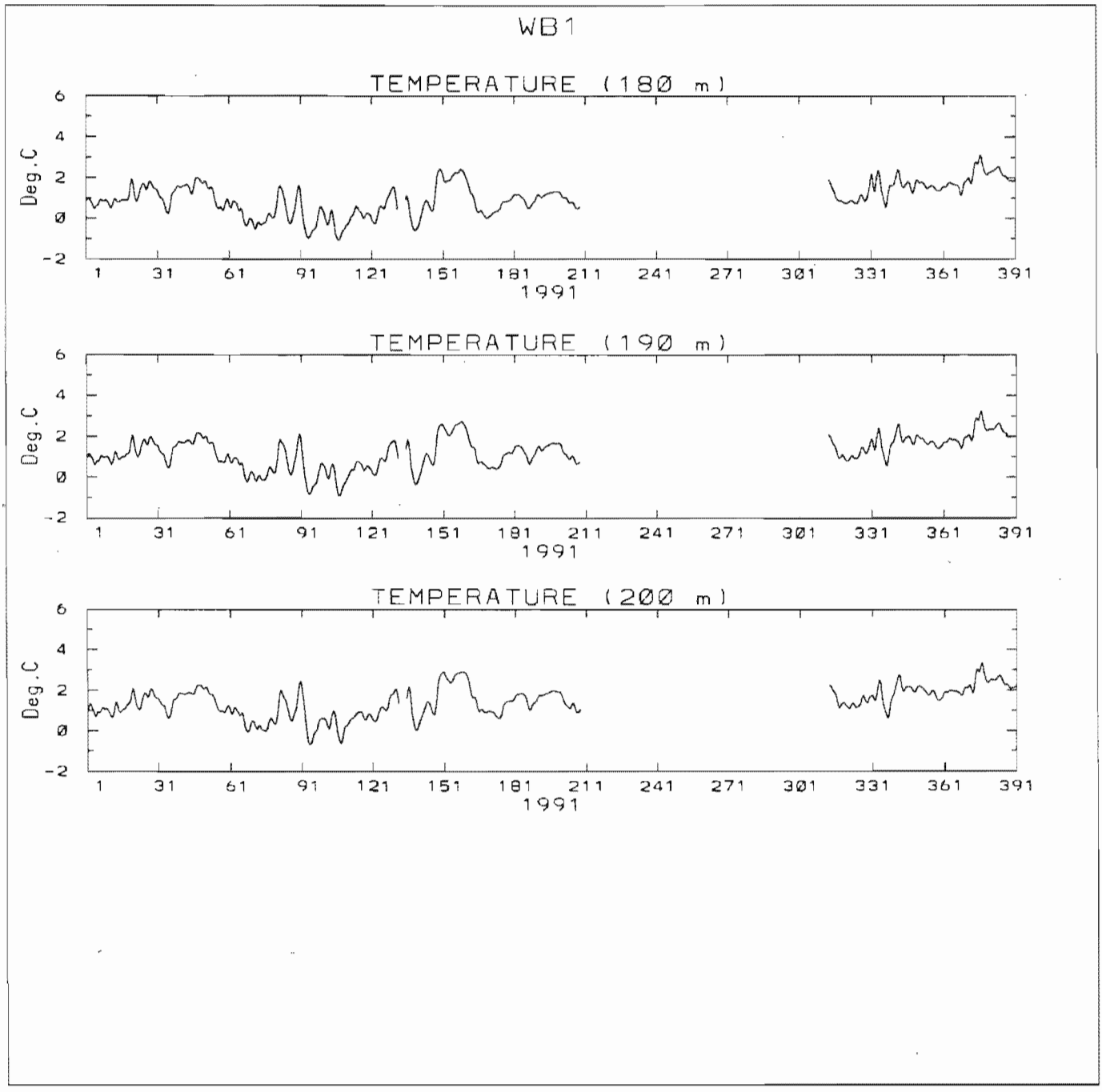

WB1
TEMPERATURE (100 m)
TEMPERATURE (110 m)
TEMPERATURE (120 m)
TEMPERATURE (130 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990

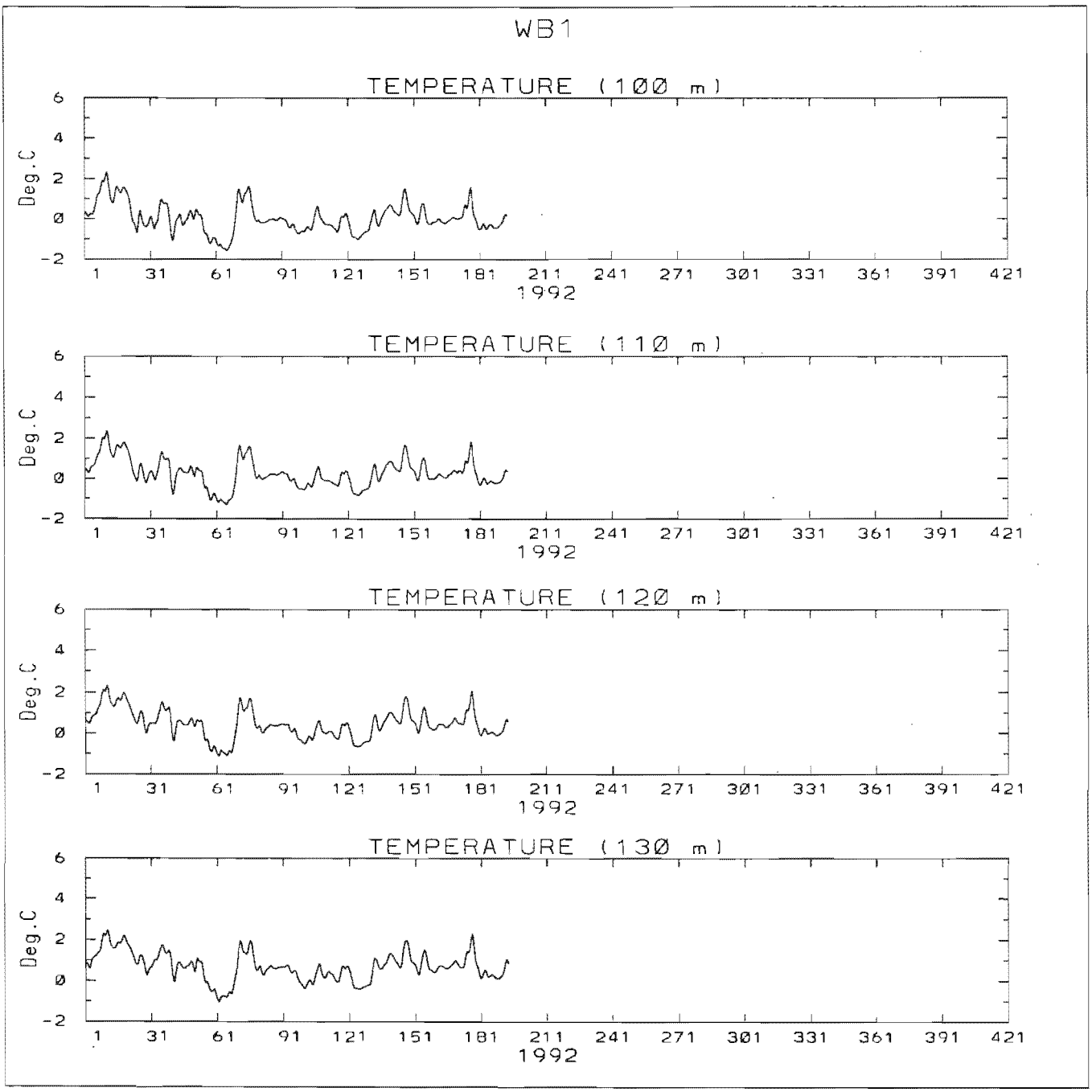

WB1
TEMPERATURE (140 m)
TEMPERATURE (150 m)
TEMPERATURE (160 m)
TEMPERATURE (170 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990

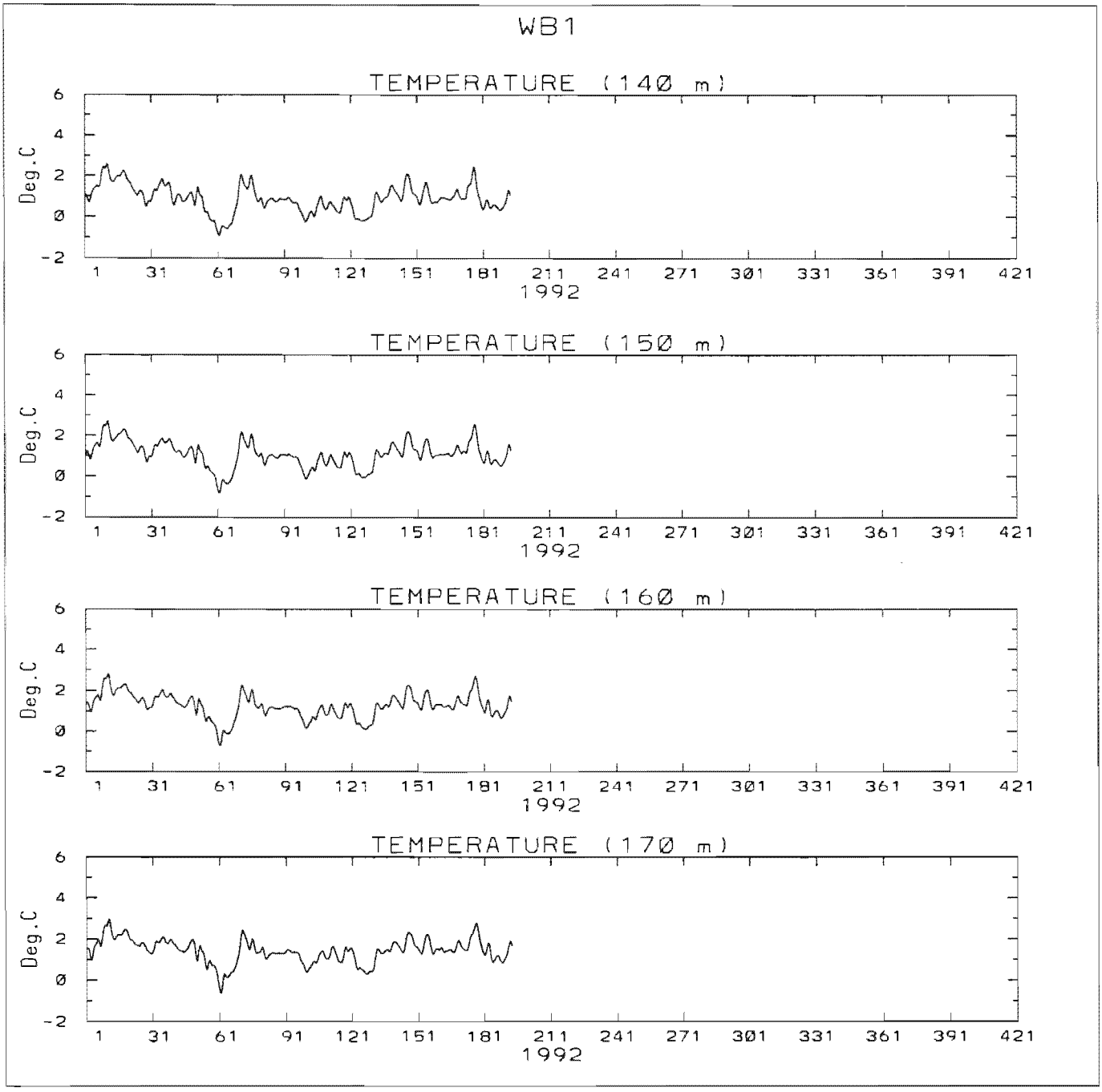

WB1
TEMPERATURE (180 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
TEMPERATURE (190 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
TEMPERATURE (200 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990

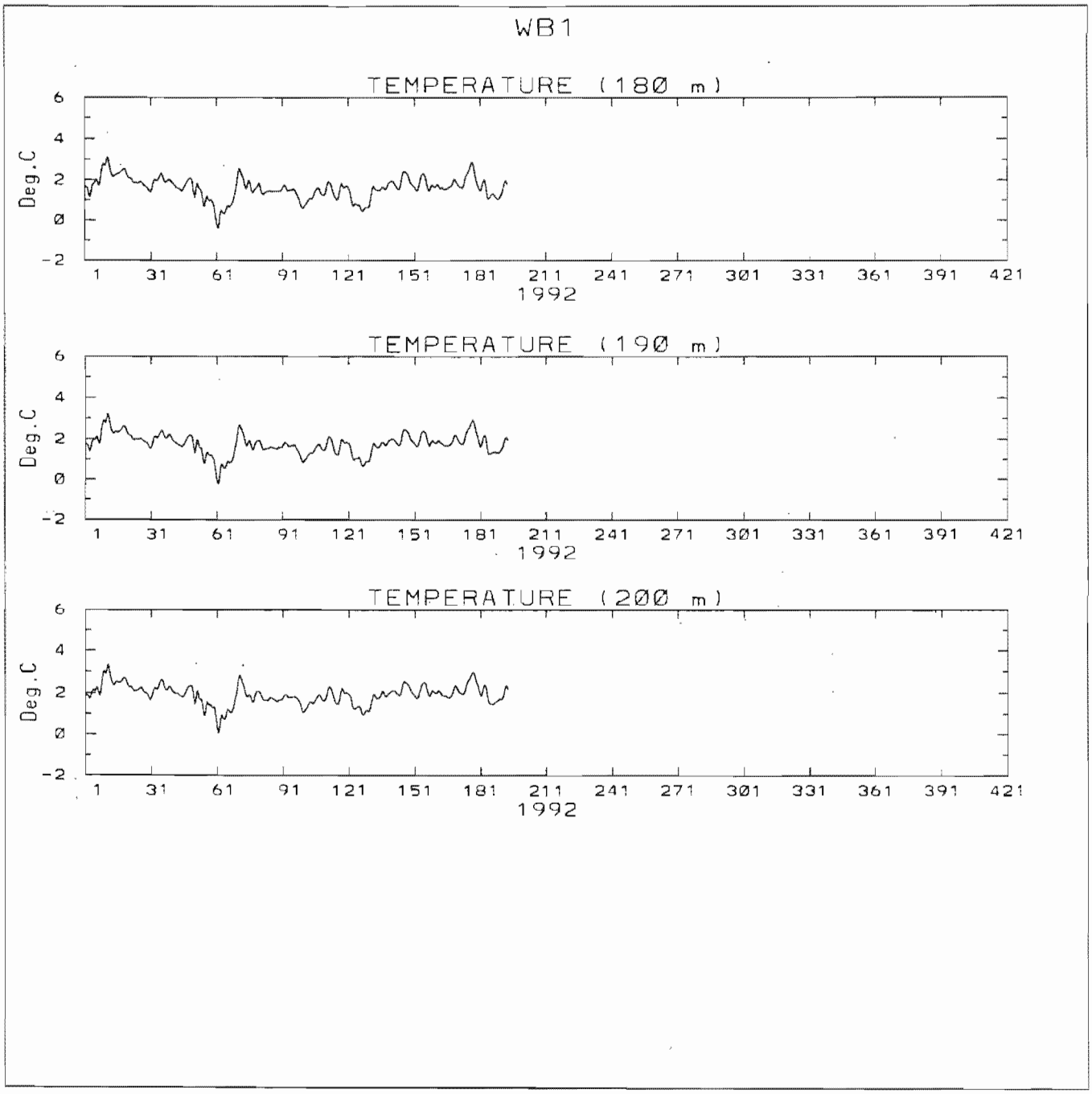

WB1
TEMPERATURE (100 m)
TEMPERATURE (110 m)
TEMPERATURE (120 m)
TEMPERATURE (130 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


WB1
TEMPERATURE (140 m)
TEMPERATURE (150 m)
TEMPERATURE (160 m)
TEMPERATURE (170 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


WB1
TEMPERATURE (180 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE (190 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE (200 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

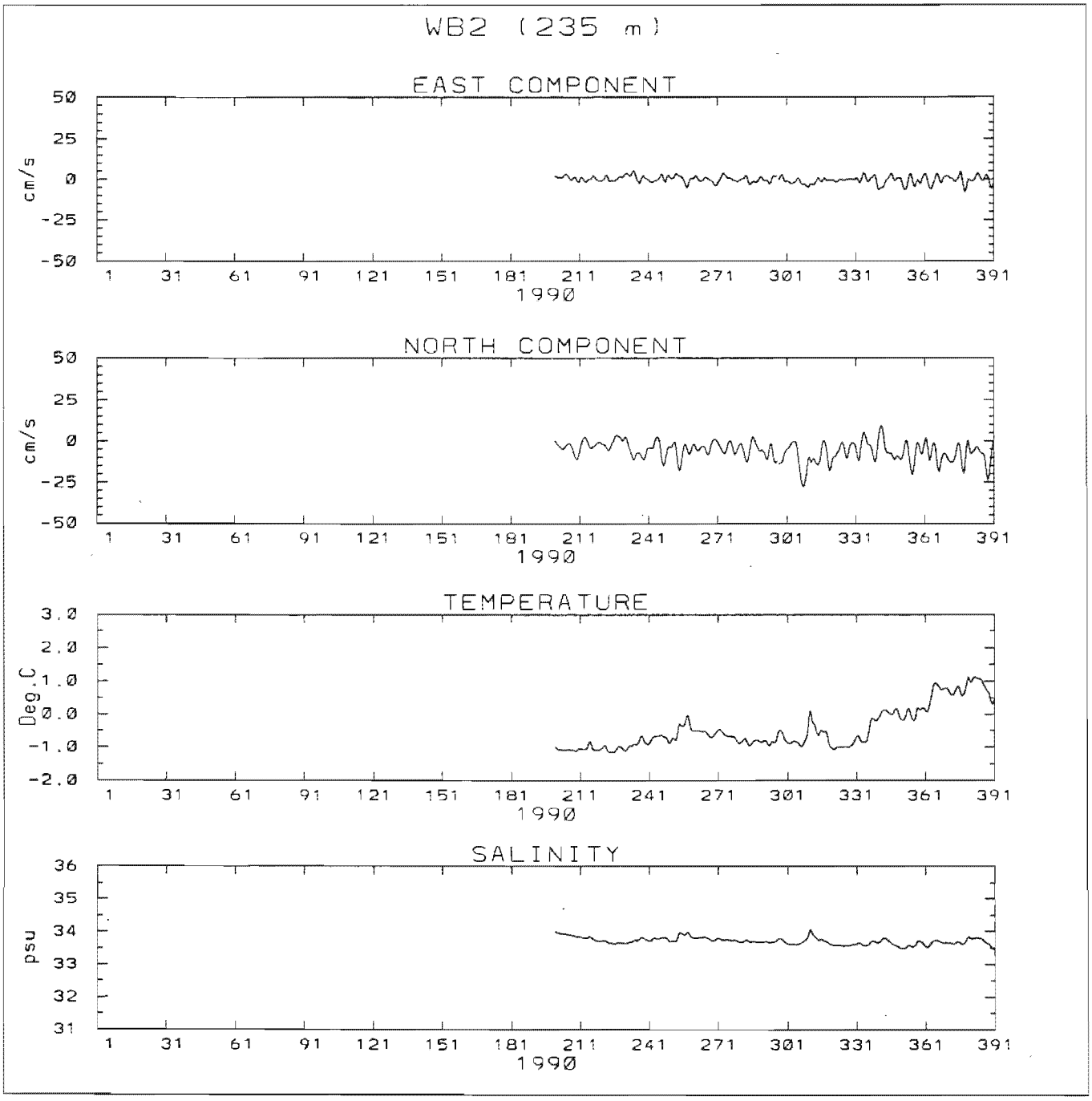

WB1
TEMPERATURE (100 m)
TEMPERATURE (110 m)
TEMPERATURE (120 m)
TEMPERATURE (130 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

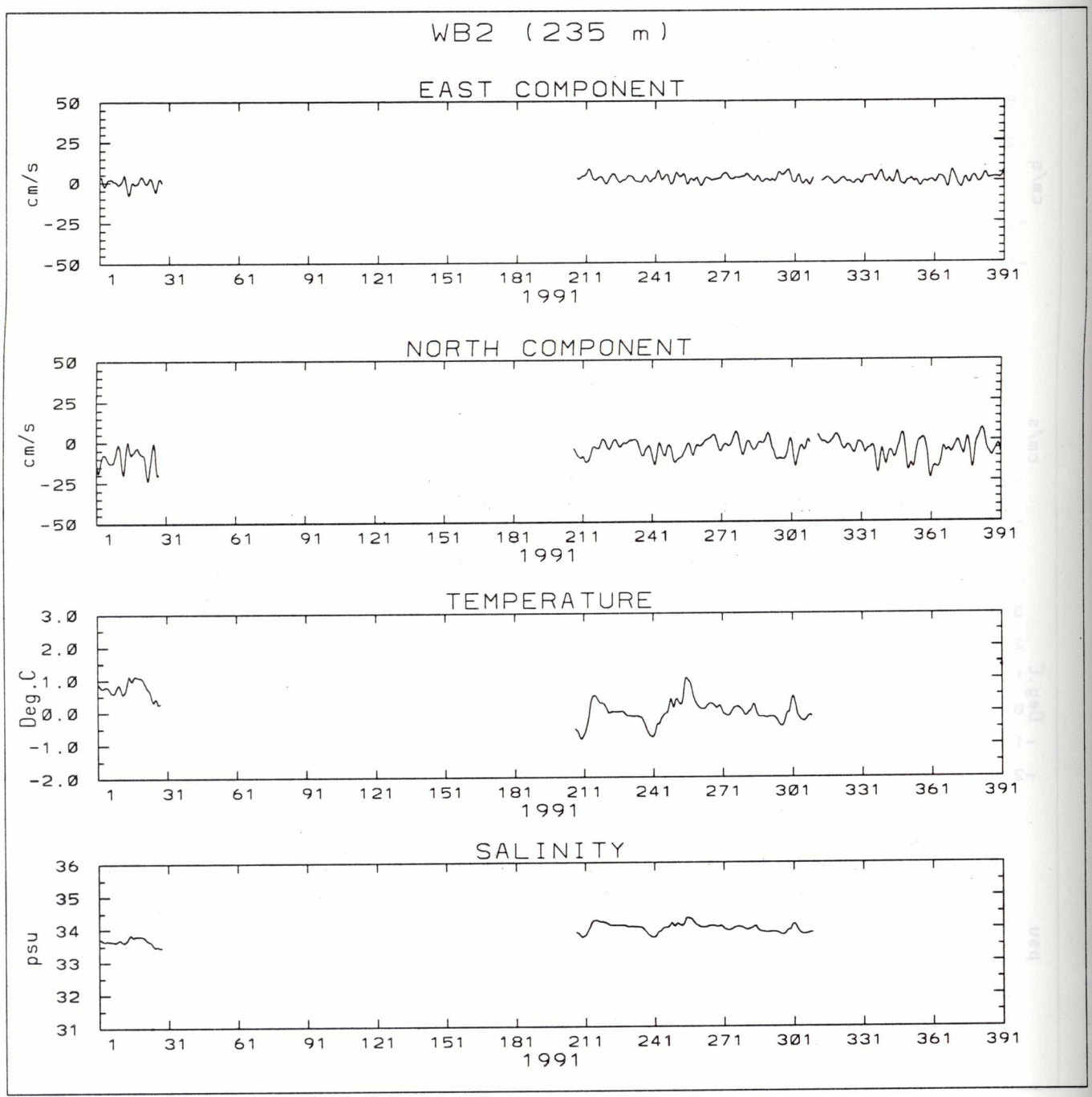

WB1
TEMPERATURE (140 m)
TEMPERATURE (150 m)
TEMPERATURE (160 m)
TEMPERATURE (170 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

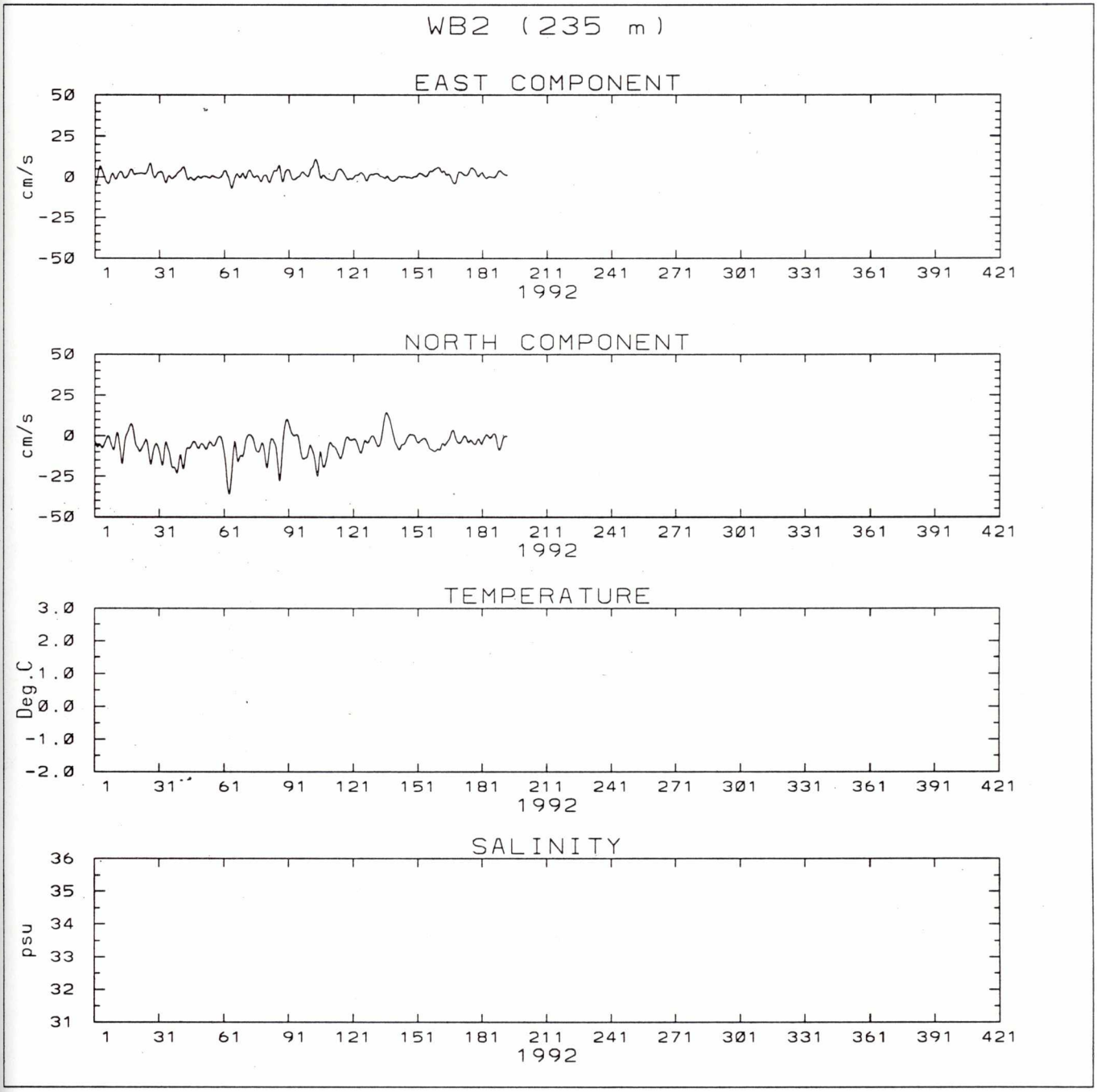

WB1
TEMPERATURE (180 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE (190 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE (200 m)
Deg.C
6
4
2
0
-2
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

Appendix 13

Time series plots of filtered data: WB2

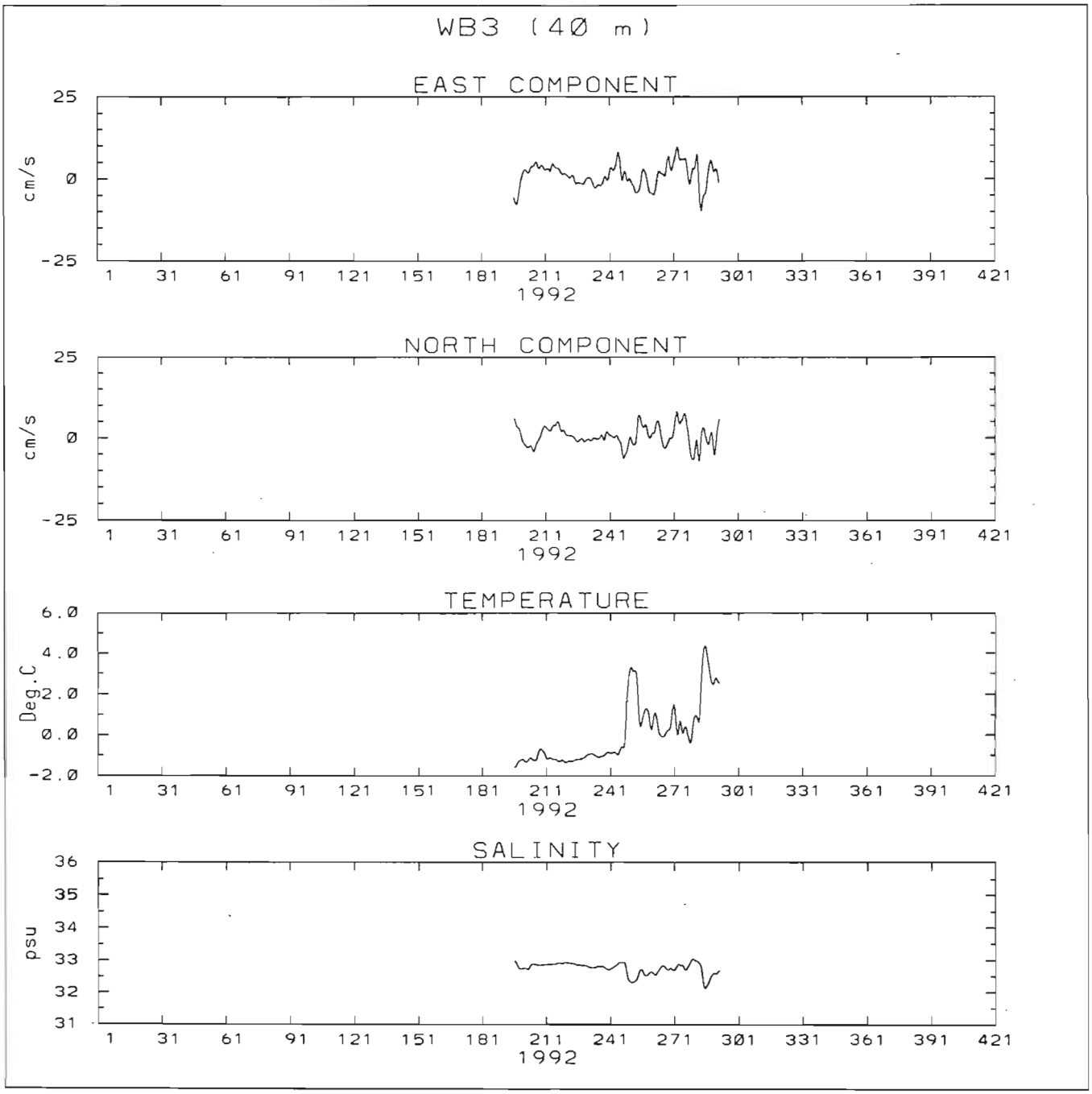

WB2 (235 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990

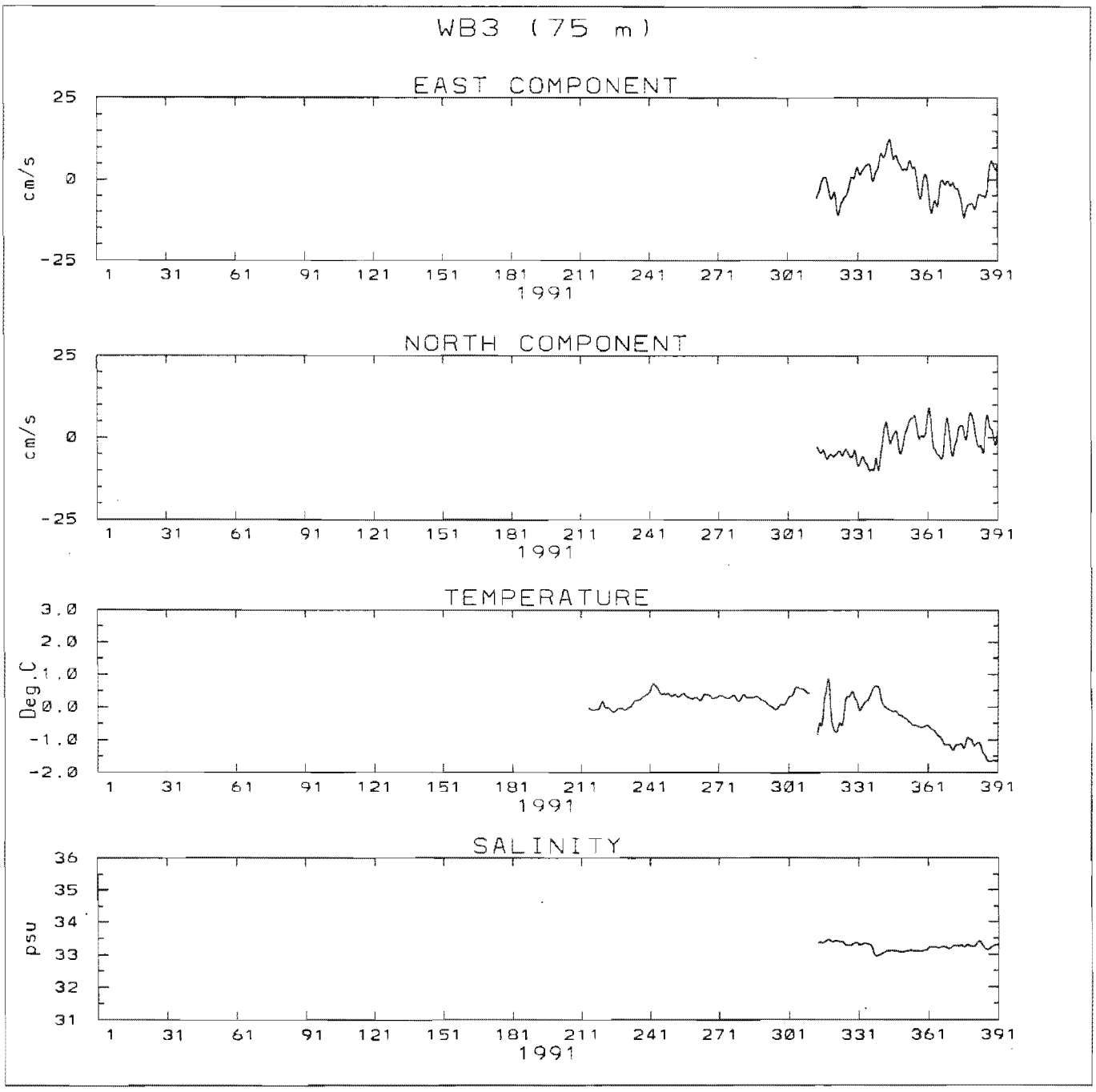

WB2 (235 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

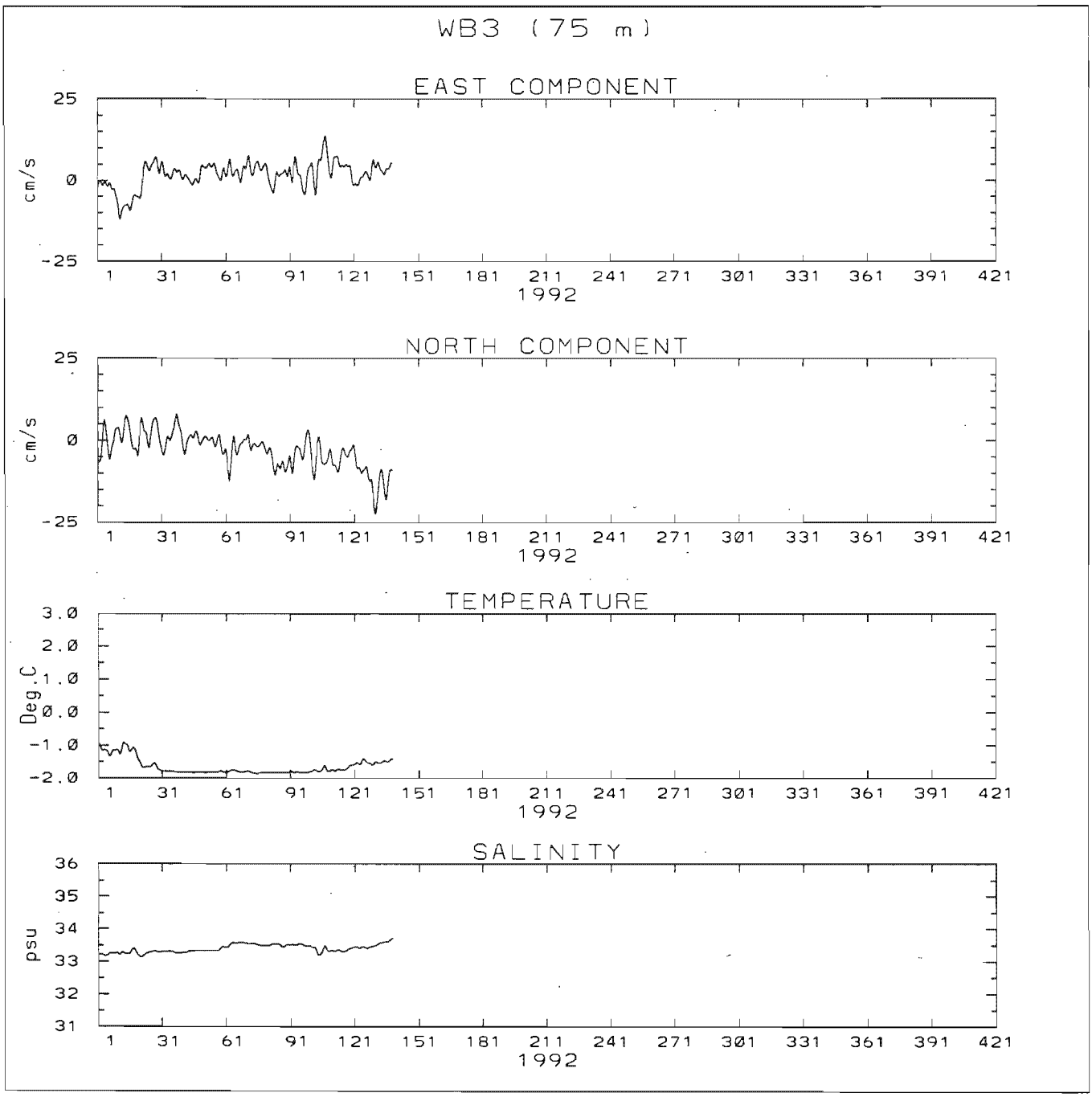

WB2 (235 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

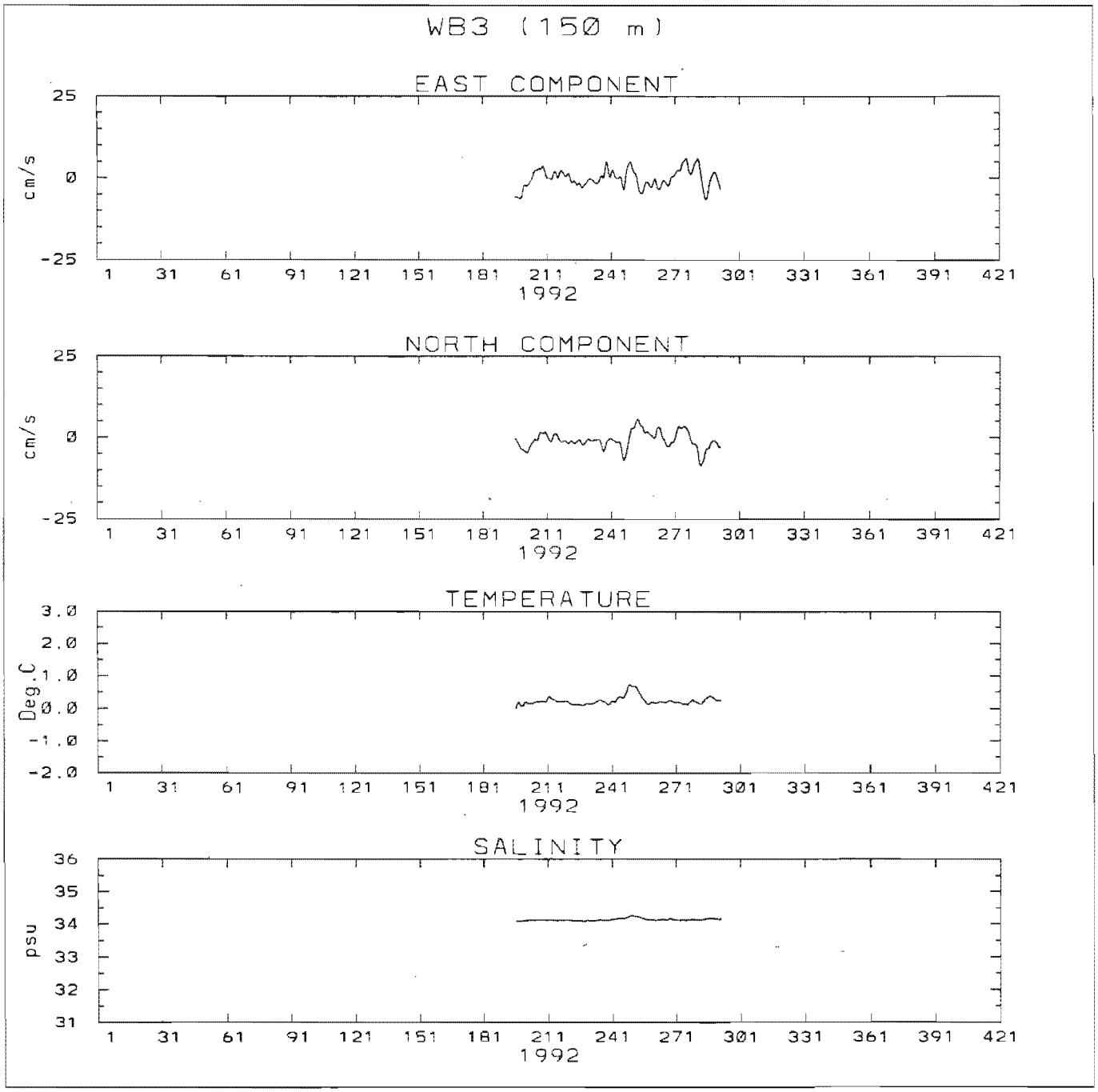
Appendix 14

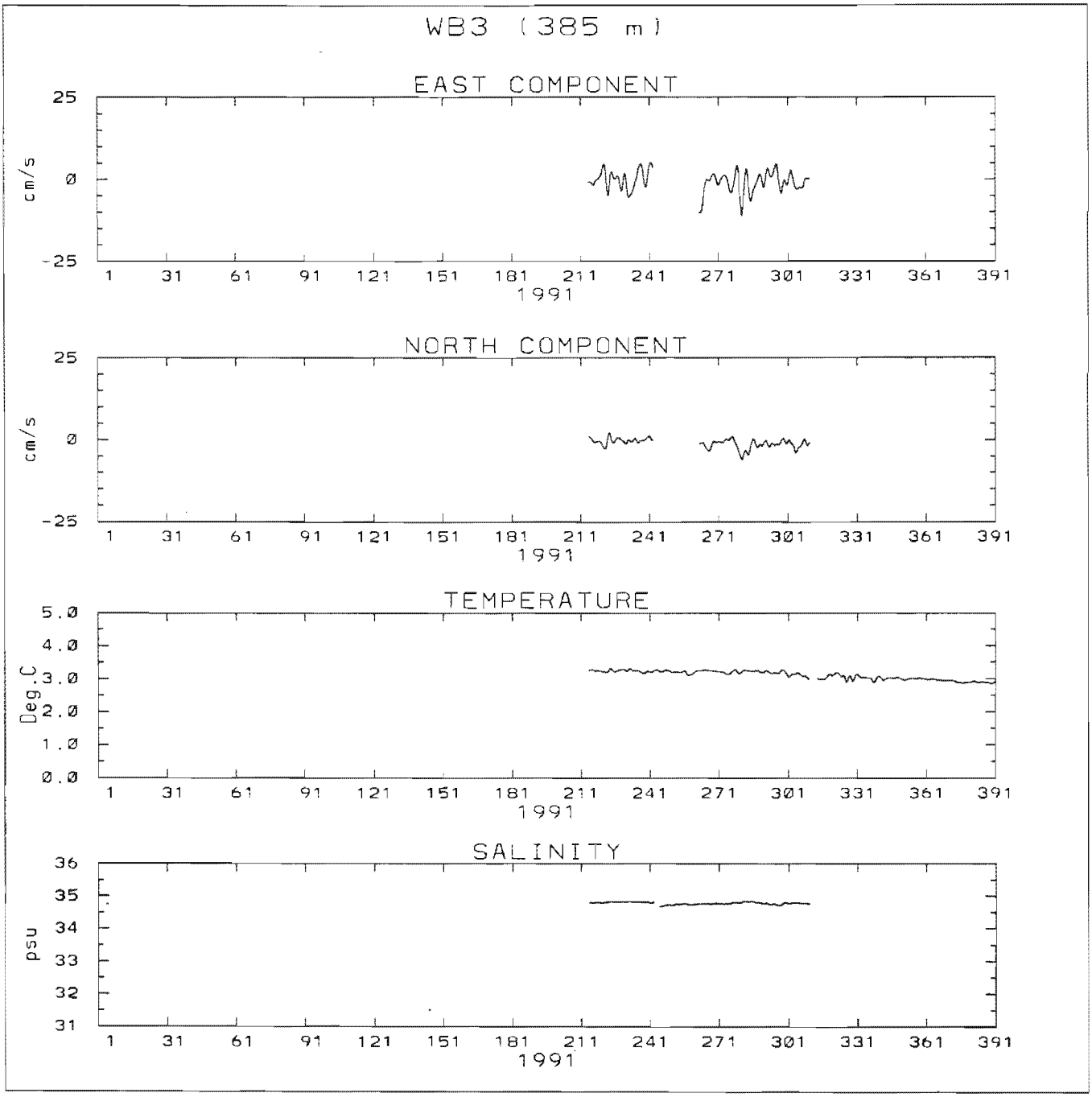
Time series plots of filtered data: WB3

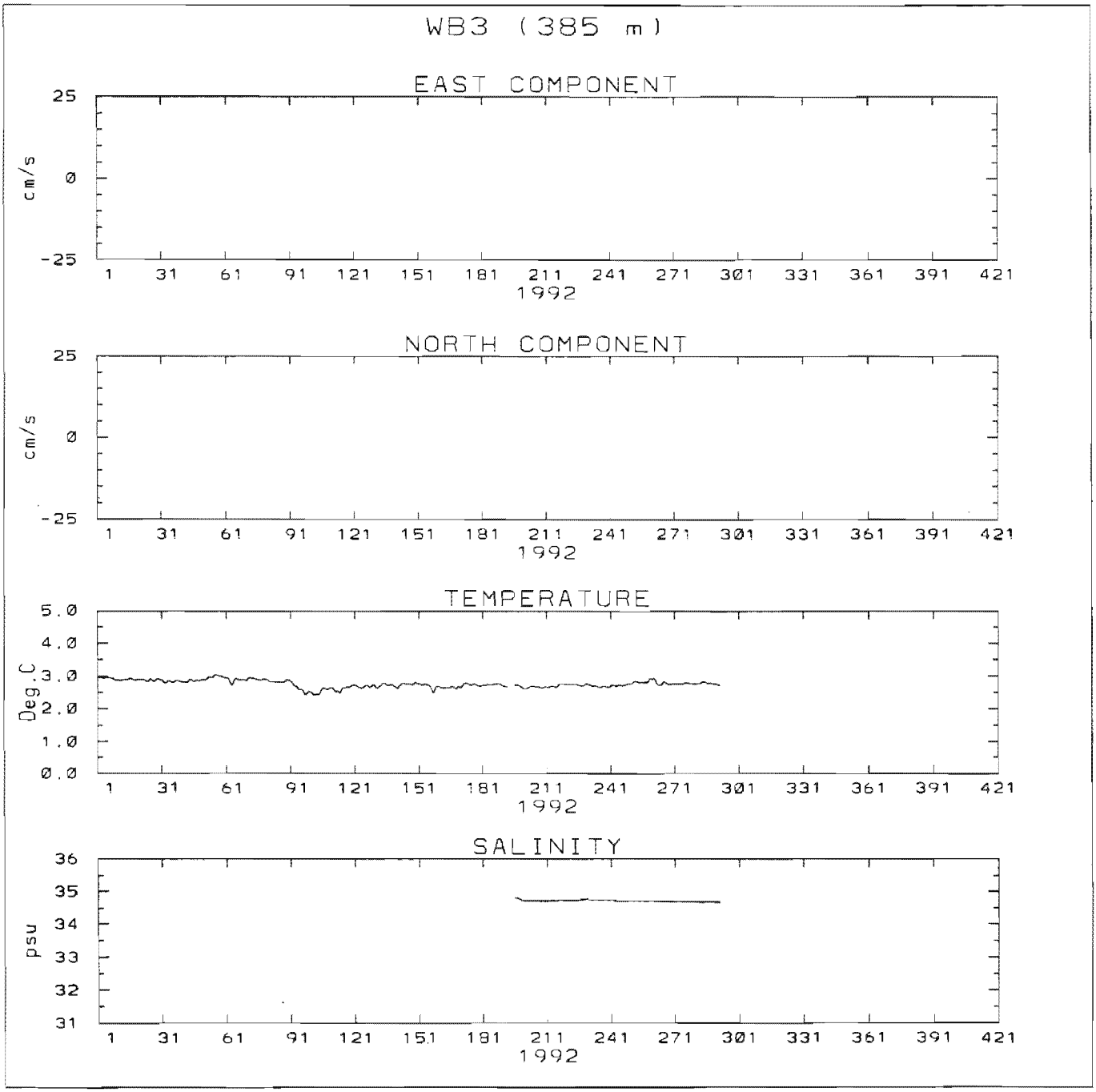

WB3 (40 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
6.0
4.0
2.0
0.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992


WB3 (75 m)
EAST COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
25
0
-25
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


WB3 (75 m)
EAST COMPONENT
cm/s
25
0
-25
NORTH COMPONENT
cm/s
25
0
-25
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

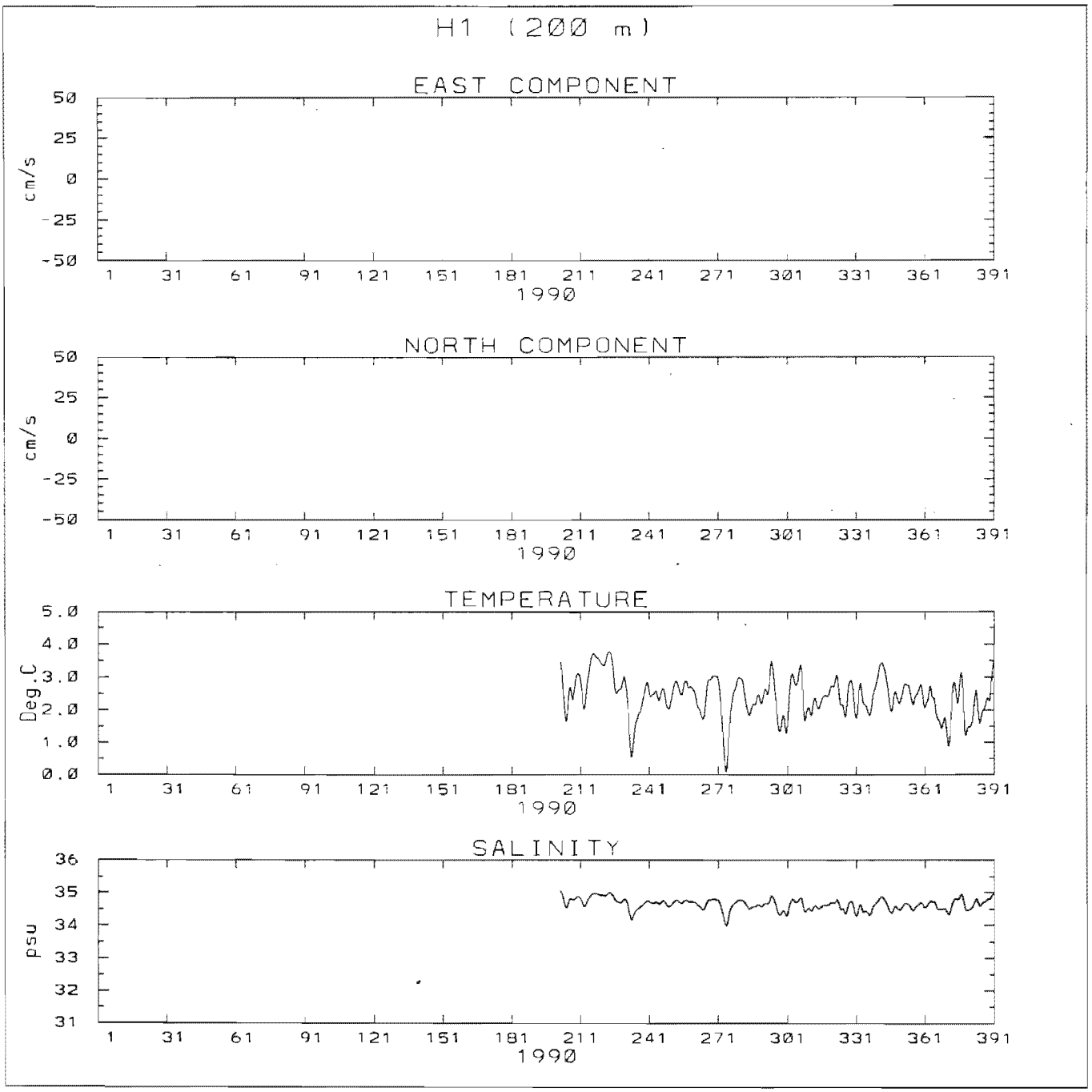

WB3 (150 m)
EAST COMPONENT
cm/s
25
0
-25
NORTH COMPONENT
cm/s
25
0
-25
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

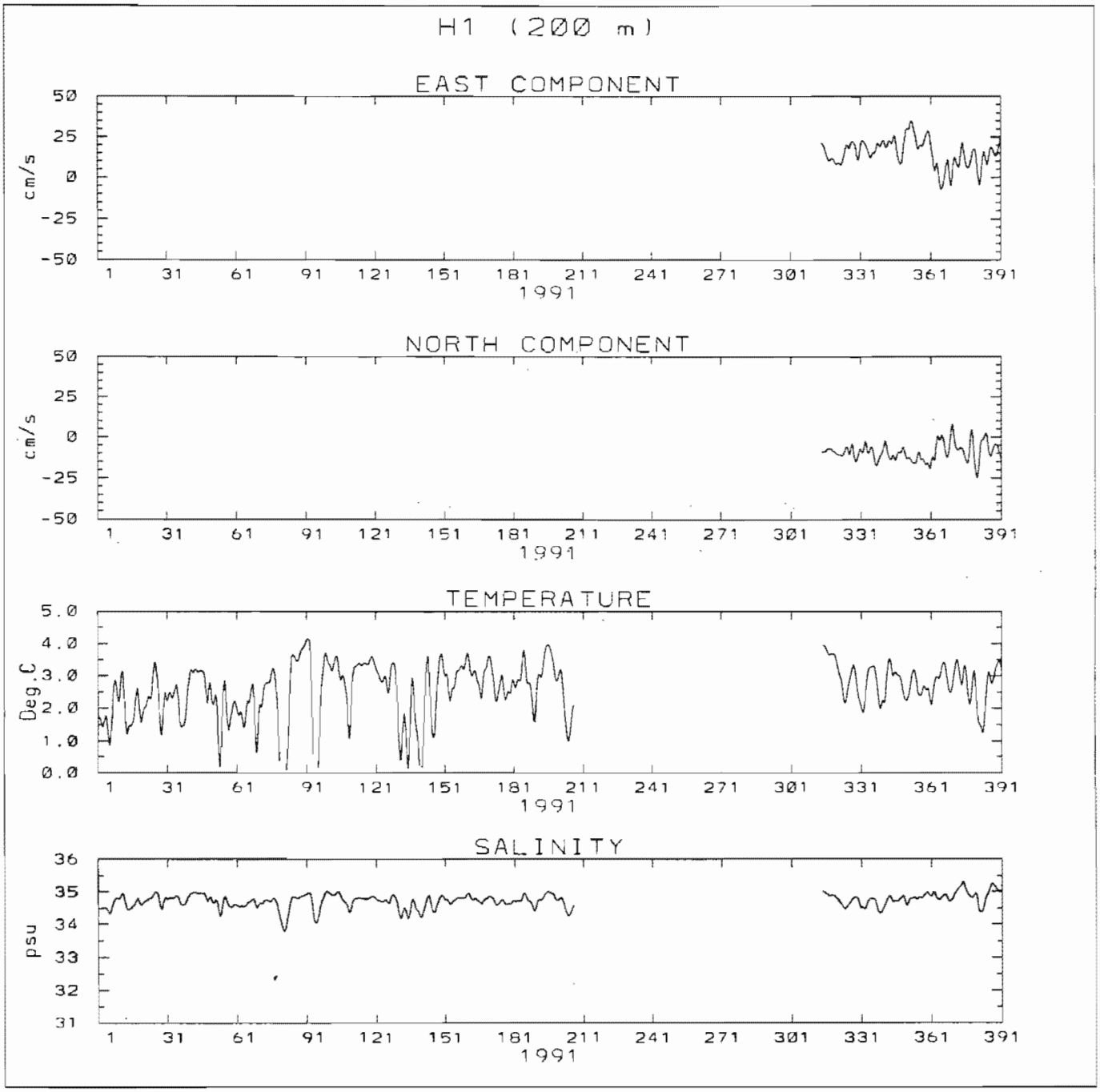

WB3 (385 m)
EAST COMPONENT
cm/s
25
0
-25
NORTH COMPONENT
cm/s
25
0
-25
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

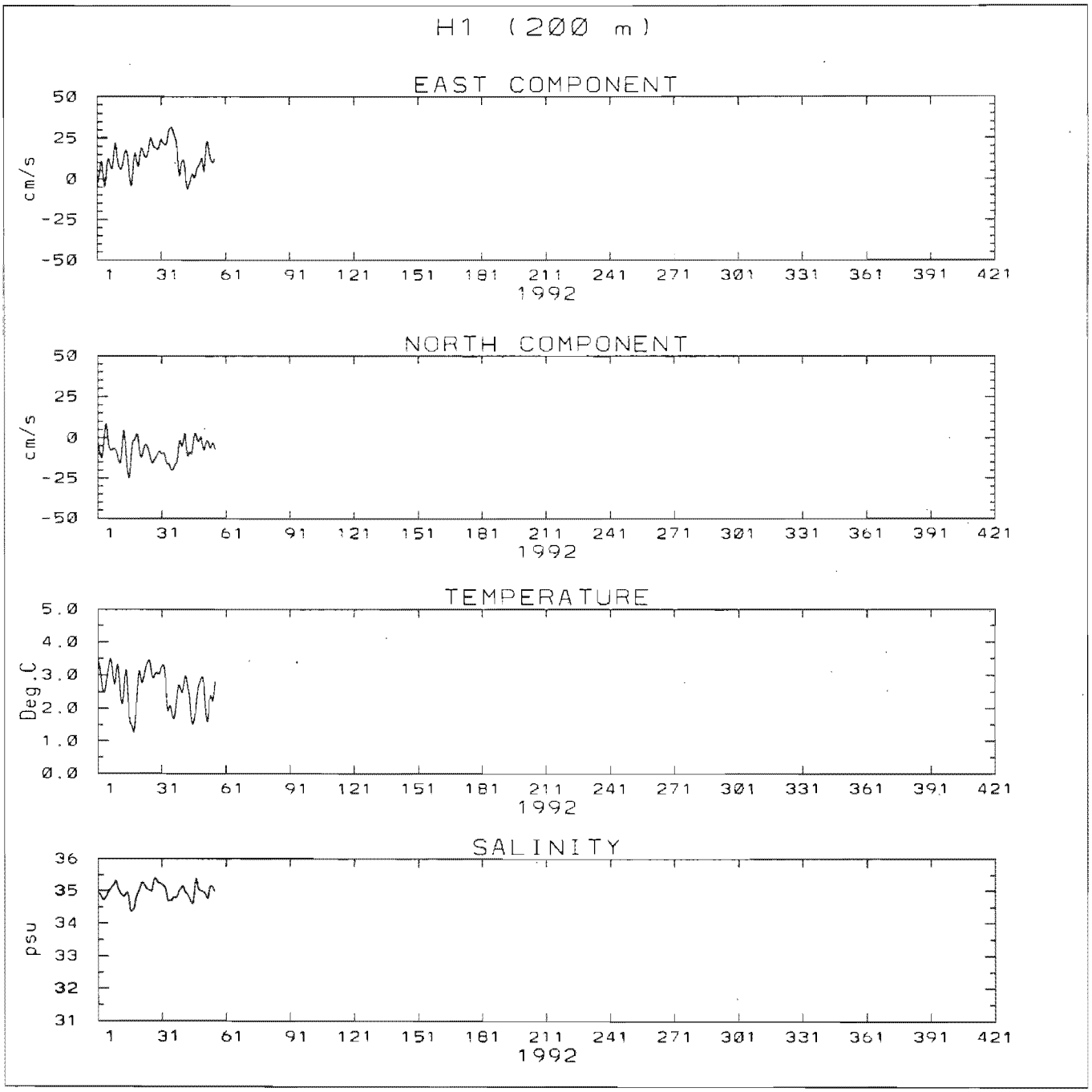

WB3 (385 m)
EAST COMPONENT
cm/s
25
0
-25
NORTH COMPONENT
cm/s
25
0
-25
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

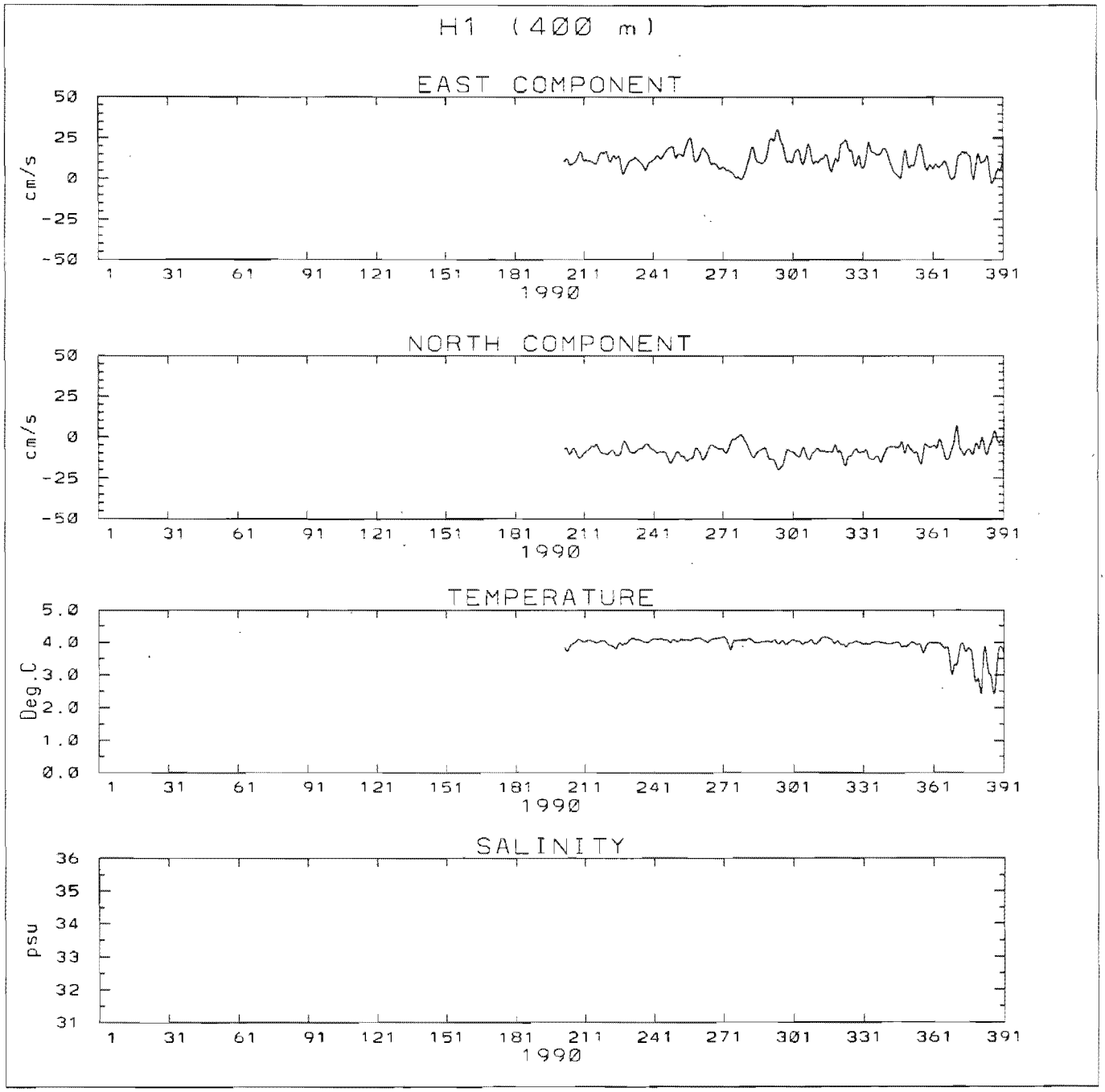
Appendix 15

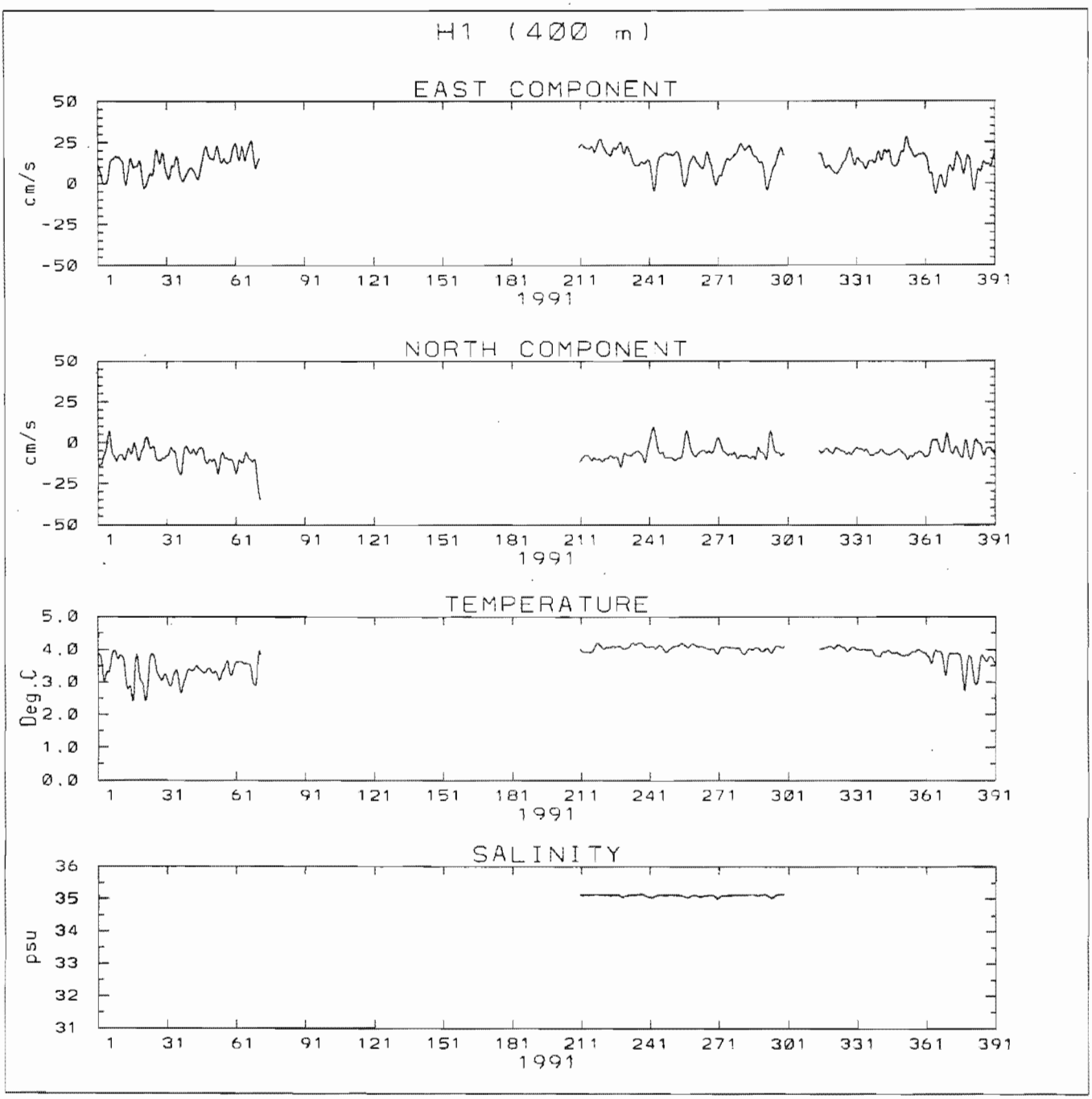
Time series plots of filtered data: H1

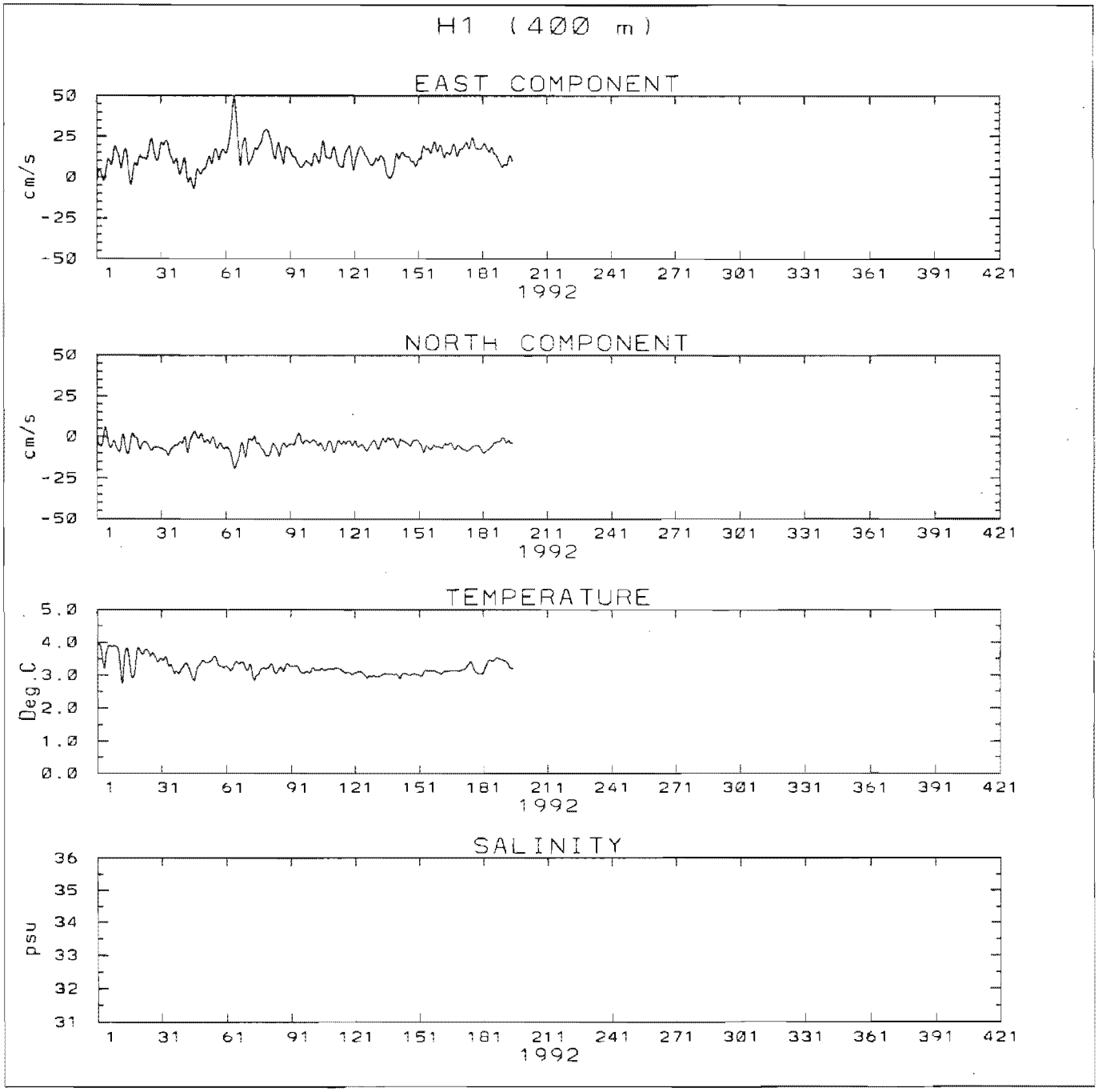

H1 (200 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990

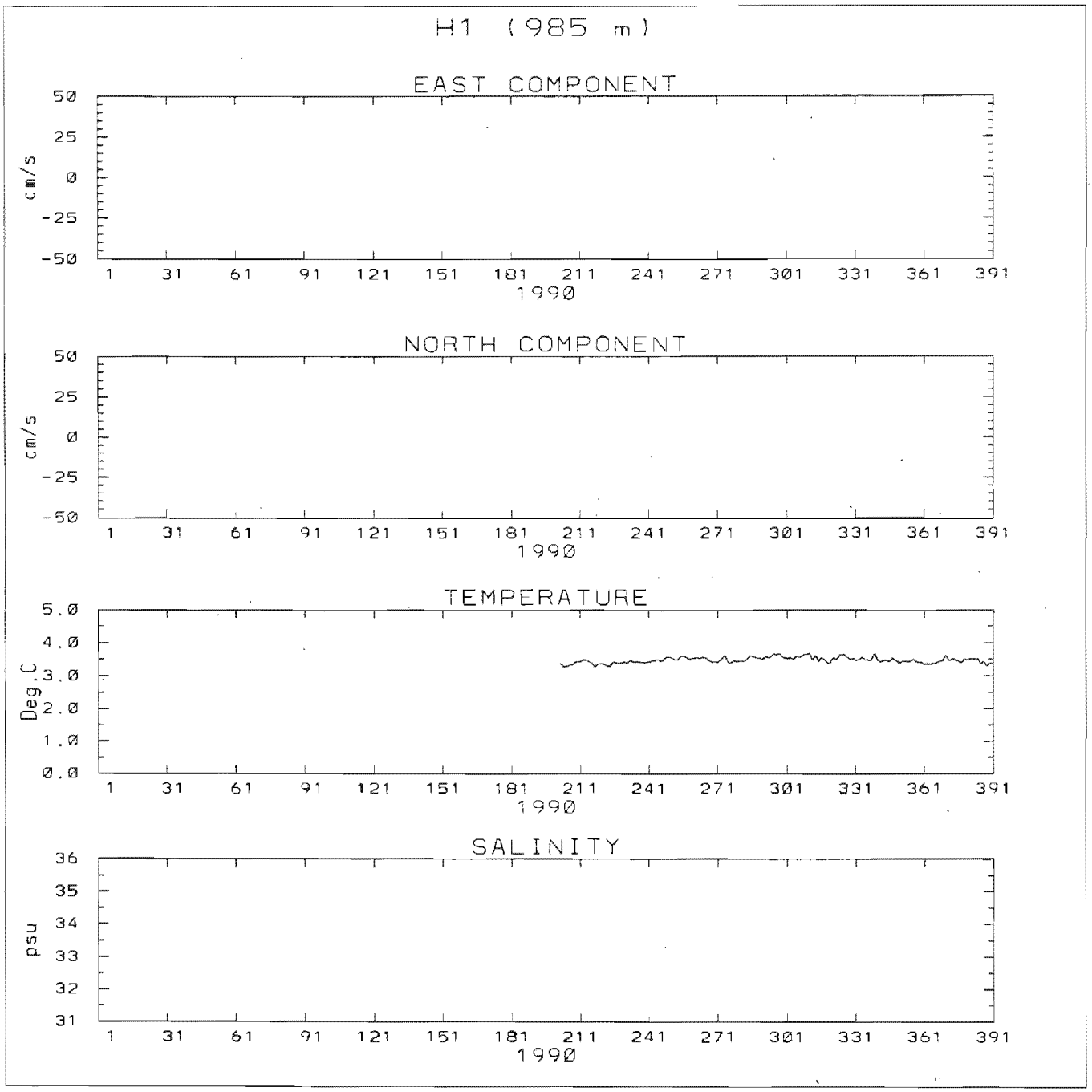

H1 (200 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

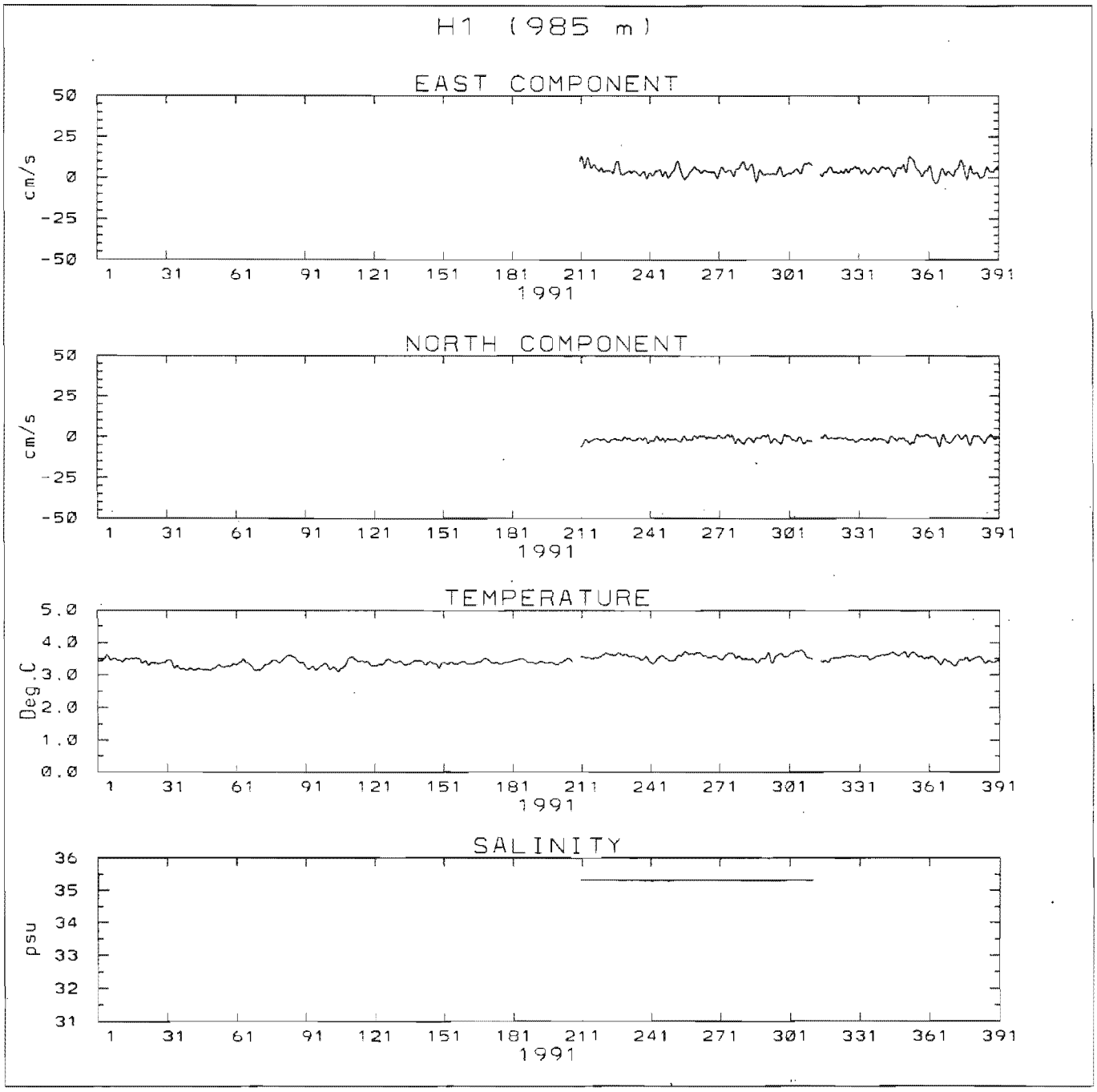

H1 (200 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

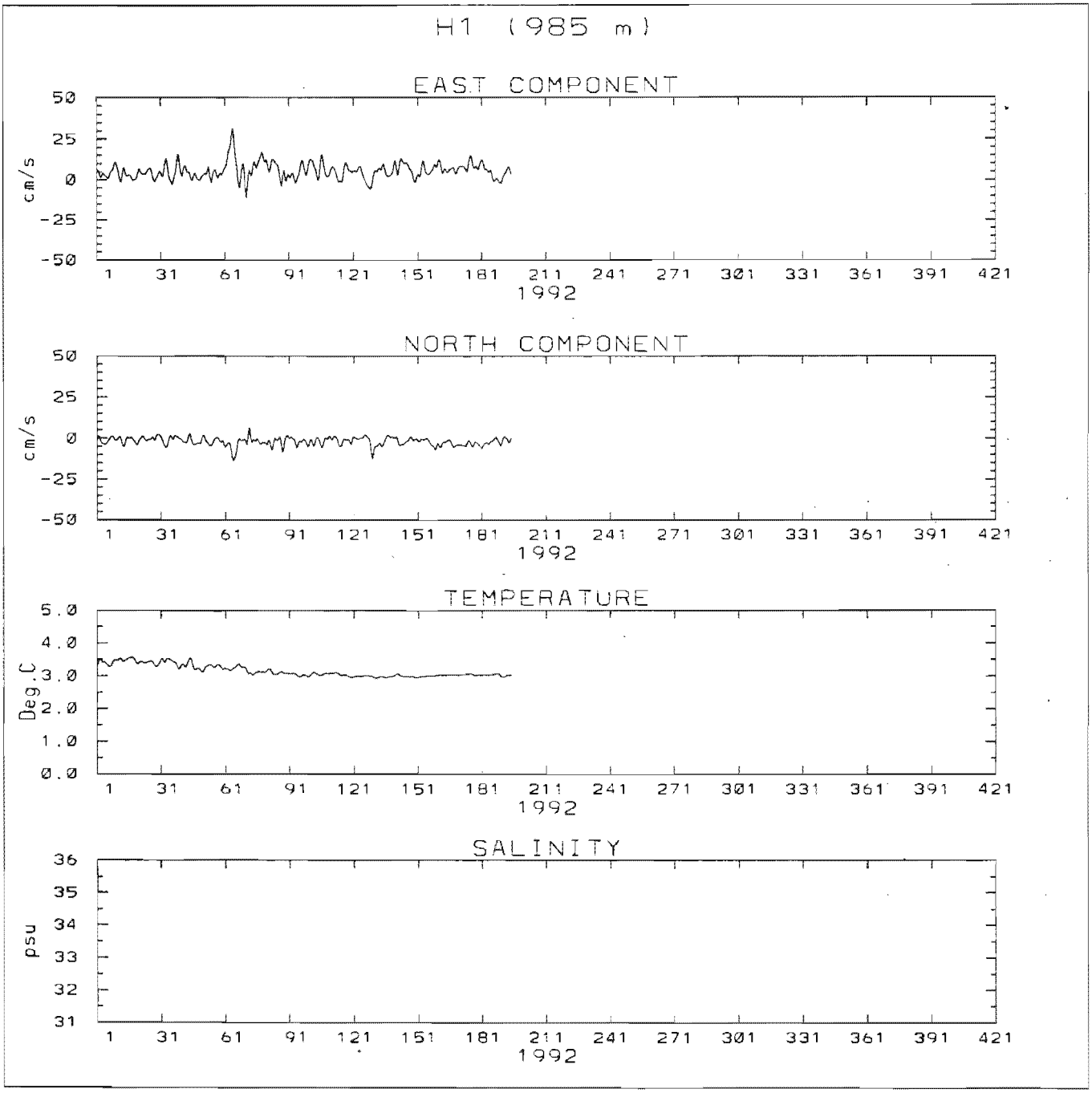

H1 (400 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
NORTH COMPONENT
cm/s
50
25
0
-25
-50
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990


H1 (400 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
NORTH COMPONENT
cm/s
50
25
0
-25
-50
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


H1 (400 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

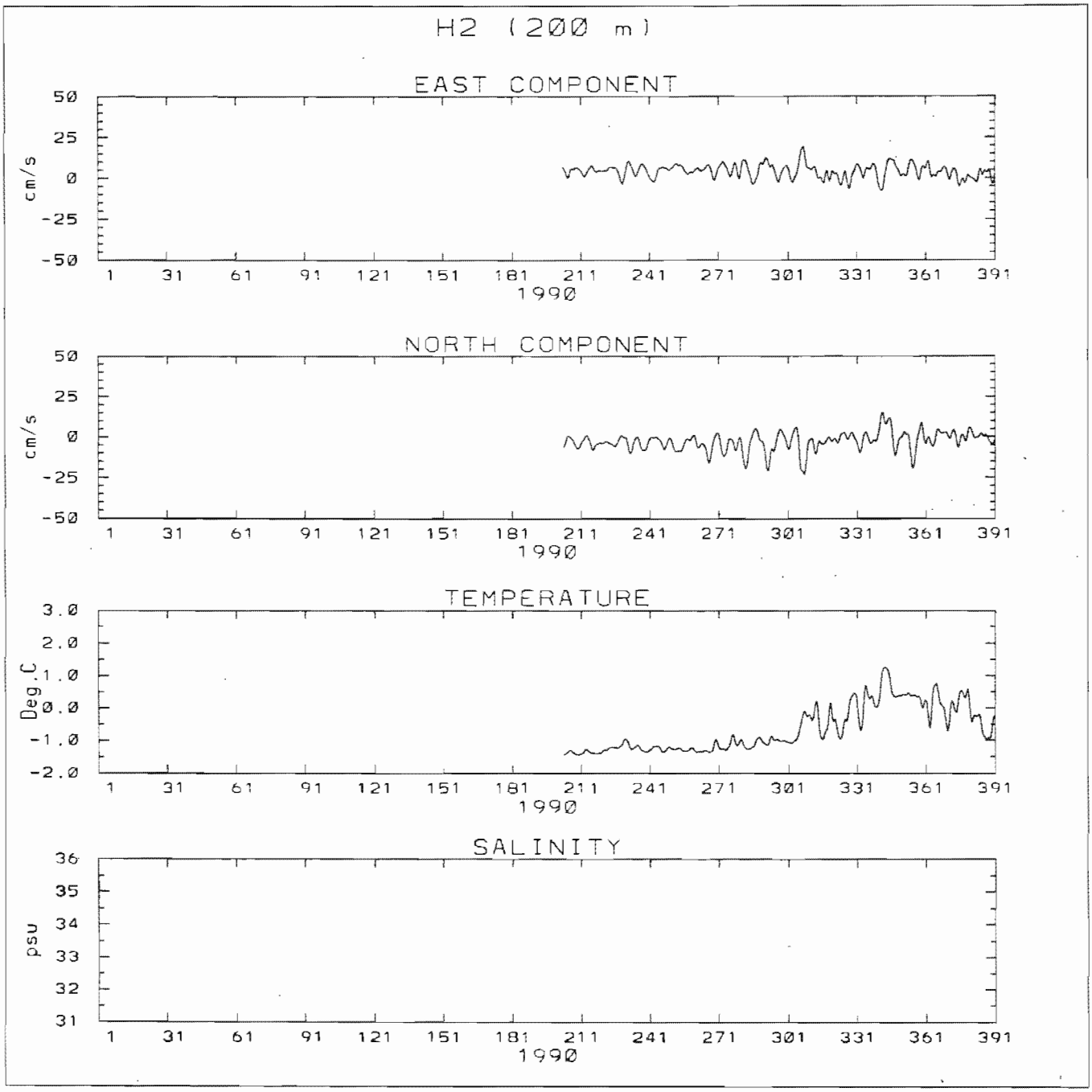

H1 (985 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990

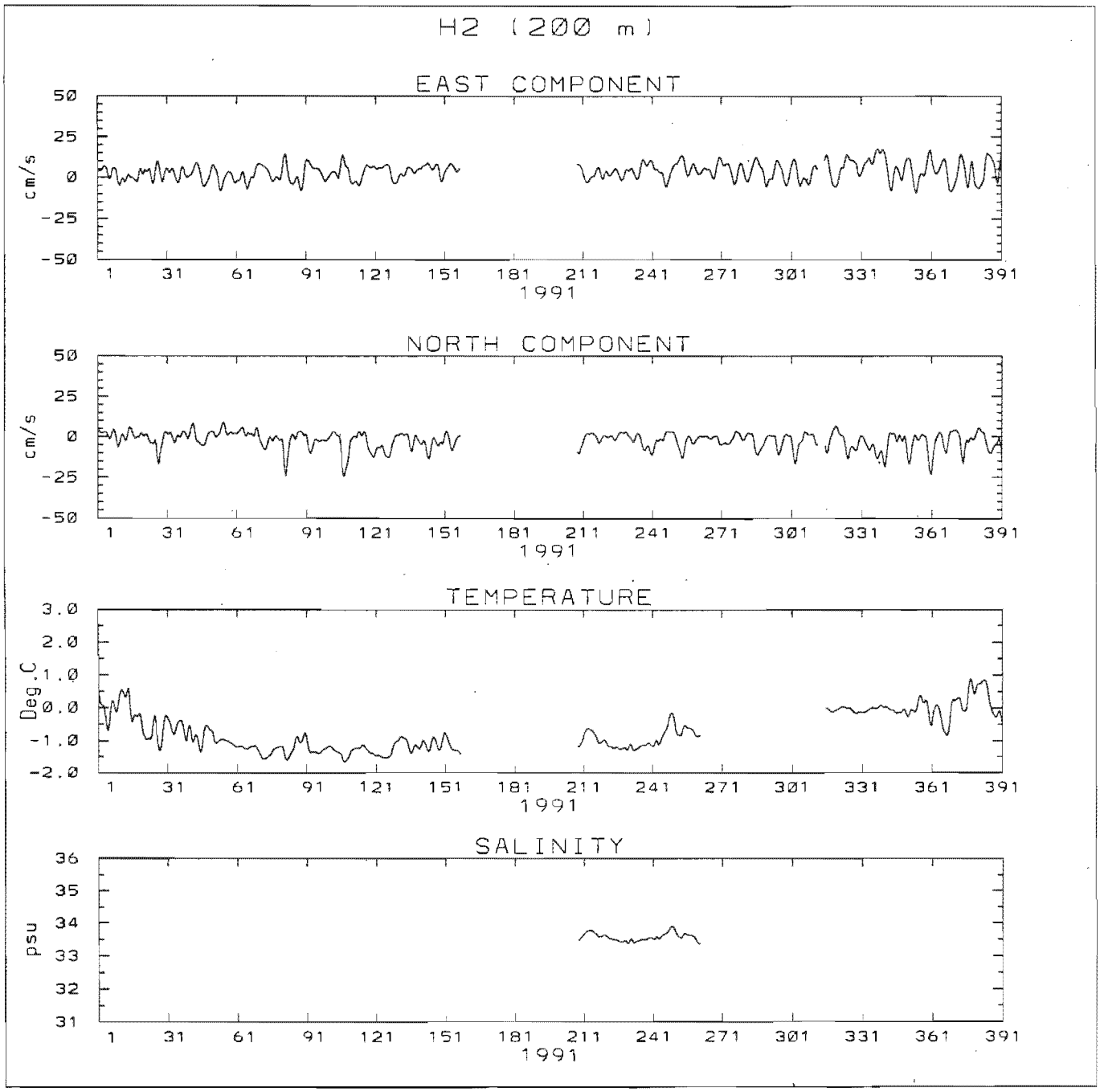

H1 (985 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991

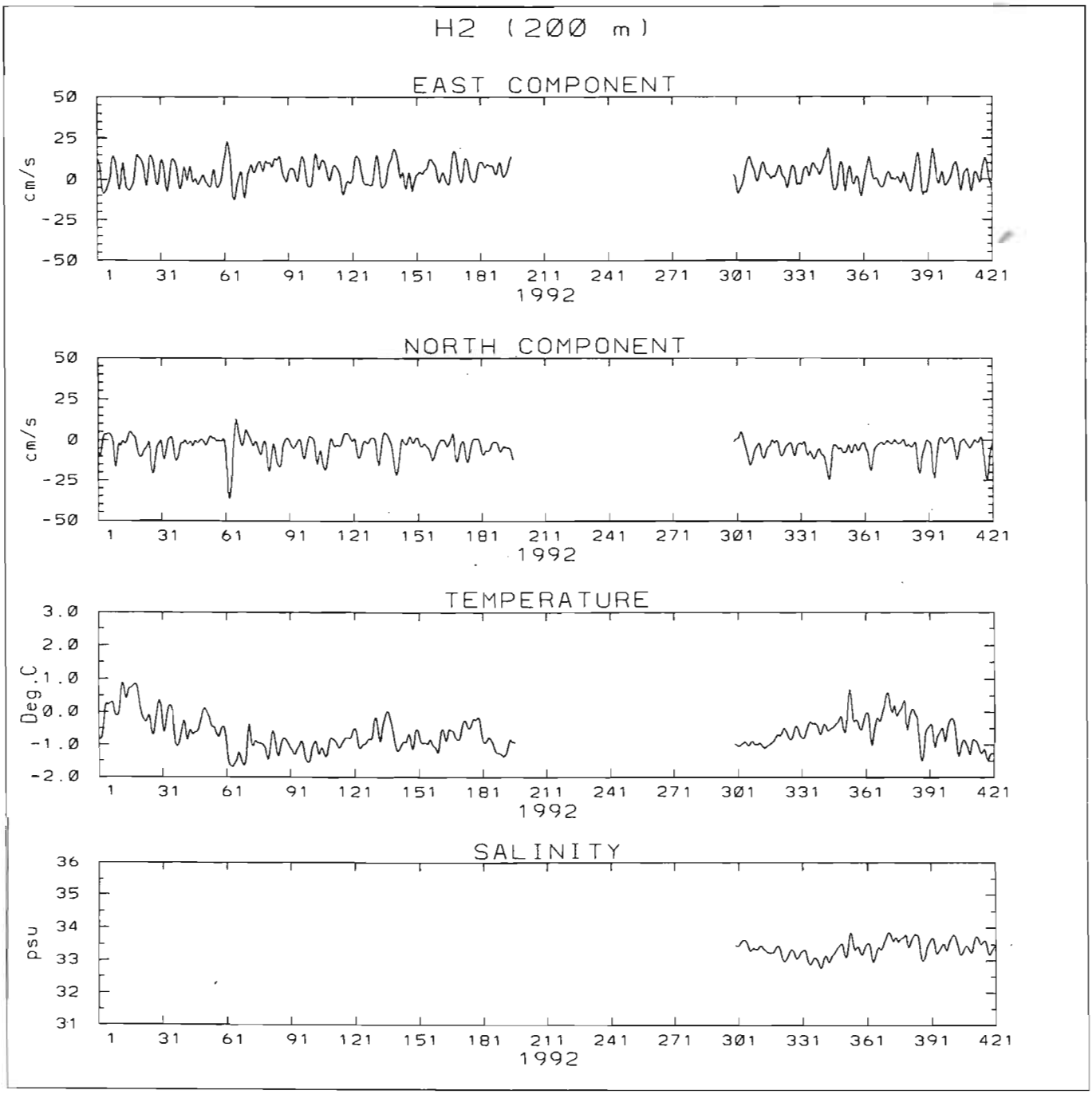

H1 (985 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
5.0
4.0
3.0
2.0
1.0
0.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992

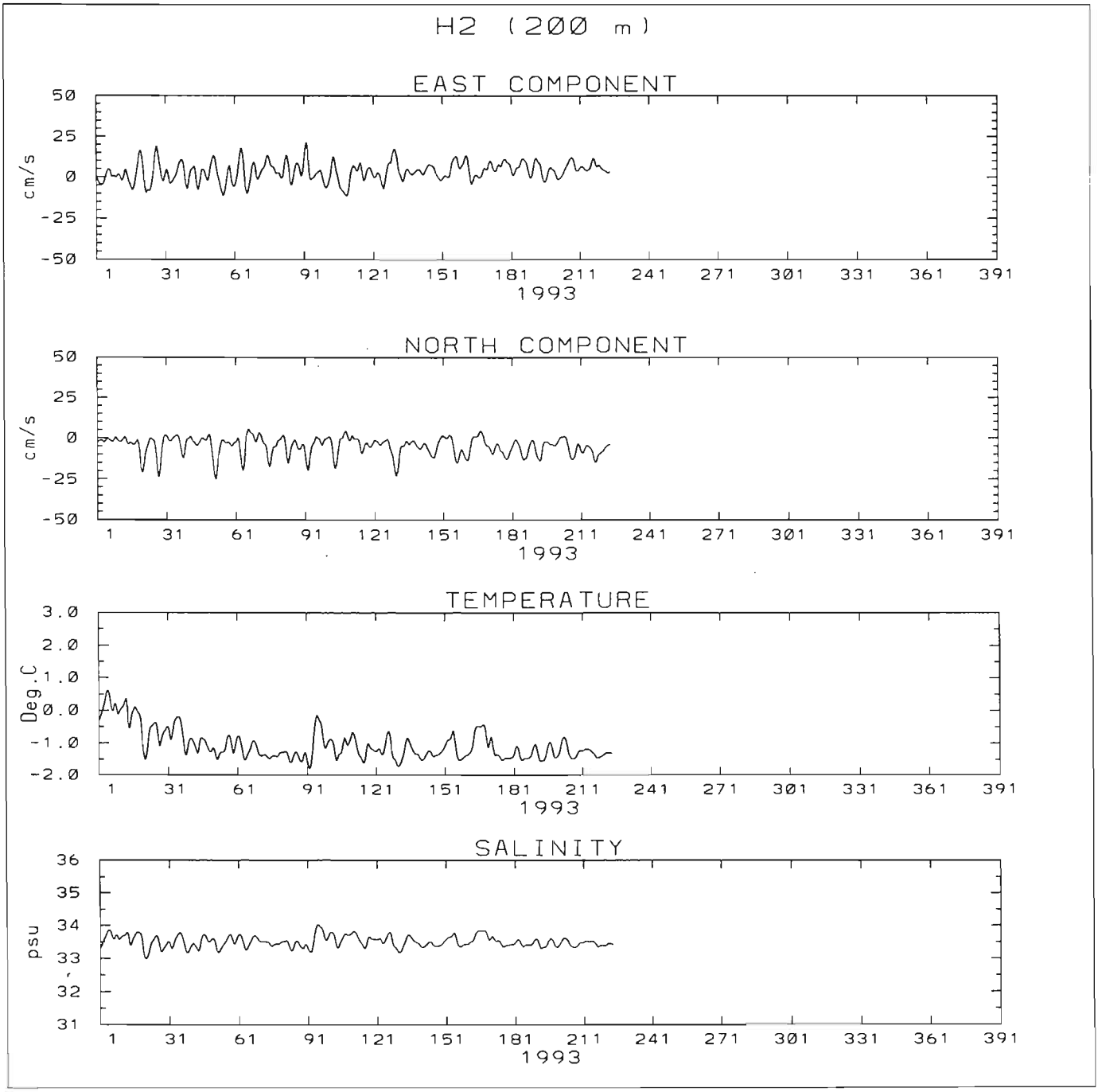
Appendix 16

Time series plots of filtered data: H2


H2 (200 m)
EAST COMPONENT
NORTH COMPONENT
TEMPERATURE
SALINITY
cm/s
Deg.C
psu
50
25
0
-25
-50
3.0
2.0
1.0
0.0
-1.0
-2.0
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1990


H2 (200 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1991


H2 (200 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391 421
1992


H2 (200 m)
EAST COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993
NORTH COMPONENT
cm/s
50
25
0
-25
-50
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993
TEMPERATURE
Deg.C
3.0
2.0
1.0
0.0
-1.0
-2.0
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993
SALINITY
psu
36
35
34
33
32
31
1 31 61 91 121 151 181 211 241 271 301 331 361 391
1993