NOAA Technical Memorandum ERL PMEL-95

MEAN SEASONAL CYCLES AND INTERANNUAL VARIATIONS AT 0°, 110°W AND 0°, 140°W DURING 1980-1991

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CONTENTS

Mean Seasonal Cycles and Interannual Variations at 0°, 110°W and 0°, 140°W during 1980–1991

M. J. McPhaden[1] and M.E. McCarty[2]

Abstract. This report summarizes current meter mooring data at 0°, 110°W and 0°, 140°W in terms of multi-year monthly mean time series and mean seasonal cycles. Data span the years 1980–1991 at 110°W and 1983–1991 at 140°W. The measurements consist of surface winds, air temperatures, ocean currents in the upper 250 m and ocean temperatures in the upper 500 m.

1. INTRODUCTION

Wind, air temperature, ocean temperature and current measurements have been made in the vicinity of 0°, 110°W and 0°, 140°W since the early 1980's from surface moorings deployed as part of NOAA's Equatorial Pacific Ocean Climate Studies (EPOCS) program and the Tropical Ocean-Global Atmosphere (TOGA) program. The 2 mooring sites are situated in the equatorial Pacific cold tongue where sea surface temperature (SST) anomalies associated with El Niño/Southern Oscillation (ENSO) events tend to be largest, and where ocean dynamics are crucial to the development of ENSO variability. Over 11 years of data are available at 110°W (1980–1991) making this the longest continuous moored time series in the world ocean (McPhaden, 1990). The shorter 140°W time series is over 8 years long.

The purpose of this report is to summarize the mooring data in terms of multi-year monthly mean time series and mean seasonal cycles. Mean seasonal cycle calculations using shorter versions of these time series have appeared previously in the literature (e.g. Halpern, 1987a; McPhaden and Hayes, 1990a; Latif *et al.*, 1990; McPhaden *et al.*, 1991). However, given the effort required to collect these data over the past decade, it is desirable to have a consistent analysis of the entire data set for the longest possible period. We expect that this analyzed data set will be useful for validating ocean general circulation models under development for short term climate prediction. These data should also be valuable as background climatological information for past and future field programs in the eastern equatorial Pacific. Finally, as part of the TOGA Observing Array (National Academy of Science, 1990), a program was begun in 1990 to measure and transmit in real-time moored velocity measurements along the Pacific equator using acoustic Doppler current profilers (McPhaden *et al.*, 1990b). It is therefore appropriate to summarize the long records of mechanical current meter data collected in the eastern equatorial Pacific at this point of technological transition in EPOCS and TOGA mooring programs.

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2. INSTRUMENTATION AND DATA PROCESSING

The moored time series used in this study consist of current, temperature and wind data from nominal locations of 0°, 110°W and 0°, 140°W. Data from a mooring at 0°, 108°W were also used on occasion as described below. The moorings were taut-line surface moorings deployed in depths of about 3700 m at 108°W and 110°W, and 4300 m at 140°W. Mooring recoveries and deployments were made at roughly 6 month intervals. The lengths of the moored time series and the depths instrumented at 110°W and 140°W are shown in Figures A1 and B1 of the Appendices. The time series are gappy because of occasional instrument failures and because instrument depths changed with time due to changing program priorities.

Current velocity and temperature were measured with EG&G Vector Averaging Current Meters (VACMs) and Vector Measuring Current Meters (VMCMs) in the upper 250 m. Speed differences between VACM and VMCM measurements are generally <5 cm s^{-1} (Halpern, 1987b), so for the purposes of this study they can be considered interchangeable. In 1983, additional temperature measurements were introduced in the upper 300–500 m. These were made for the most part using SeaData temperature recorders, although at 140°W SeaBird SEACAT temperatures were used at 100 m depth in 1987–88. In addition, mini-Temperature Recorders (MTRs) designed and built by PMEL replaced the SeaData recorders at 0°, 140°W in early 1991. Instrumental accuracies for VACM, SEACAT, and MTR temperatures are 0.01°C, whereas accuracy for SeaData temperatures is 0.05°C. SST was measured 1 m below the surface using either a Yellow Springs Instrument (YSI) model 44032 temperature sensor (calibrated accuracy of 0.01°C) or a YSI model 44204 temperature sensor (calibrated accuracy of 0.05°C). Air temperature was measured at 3 m above mean sea level using a YSI model 42032 thermistor in a multi-plated, self-aspirated radiation shields.

Winds from the equatorial current meter mooring were sampled 4 m above the mean water line on the surface toroid with either a vector averaging wind recorder (VAWR) or an Argos meteorological platform (AMP). The VAWR is an inverted VACM equipped with a Climet cup model 011-2B three-cup anemometer and pivoted vane (Freitag *et al.*, 1989). The AMP, designed at PMEL to transmit data in real time, is equipped with an R.M. Young model 05103 propeller and vane. Predeployment and postdeployment calibrations for the VAWR and AMP indicate expected instrumental errors in wind speed of about 0.2 m s^{-1}. Comparisons of the two wind systems in a field experiment near 0°, 140°W suggest that for our purposes the cup and vane and the propeller and vane systems can be considered interchangeable (Freitag *et al.*, 1989).

Data were recorded at 15-minute to 2-hour intervals depending on instrument, then processed to daily averages for subsequent analysis. Gaps of less than 5 days duration were then filled by linear interpolation. Further details on data processing procedures can be found in Freitag *et al.* (1987, 1991).

3. INTERANNUAL VARIATIONS AND MEAN SEASONAL CYCLES

Daily averaged temperature (T), ocean current ($\vec{u}$) and wind velocity ($\vec{U}$) data were first block averaged into calendar month means for all months in which 15 days or more of data were available. For wind speed ($|\vec{U}|$) and pseudostress ($|\vec{U}|\vec{U}$), daily values were first computed before monthly averaging. Mean seasonal cycles were then calculated by averaging monthly values across different years. Ocean temperature and velocity mean seasonal cycles based on these monthly averages were noisy because in some cases record lengths at a particular depth were short (e.g. only 1 year at 20 m for 110°W). Moreover, energetic 20–30 day waves in meridional velocity (Halpern *et al.*, 1988) and 60–90 day waves in zonal velocity and temperature (McPhaden and Taft, 1988) were not completely filtered out of the records by block averaging. Hence, additional filtering and gridding to standard depths were required to yield smoother vertical profiles and time series of climatological monthly means. Filling of partial records by linear regression or linear interpolation was also done to minimize aliasing of interannual variability associated with El Niño and La Niña events into estimates of the mean seasonal cycle. Gridding, filling and filtering procedures were performed as follows.

3.1. Gridding

We chose standard depths of 10 m, 25 m, 45 m, 80 m, 120 m, 160 m, 200 m and 250 m for ocean velocity. These depths, plus depths of 1 m (SST), 35 m, 60 m, 100 m, 140 m, 300 m and 500 m were chosen for temperature. Data prior to November 1983 at 110°W were adjusted to standard depths by linear interpolation or extrapolation. The greatest vertical distance over which data were interpolated was 20 m (100 m to 120 m for velocities) during this time period. The 15 m velocity records at 110°W for 1981–83 were extrapolated to 10 m depth using the 1983–1991 mean vertical shear profiles between 10 m and 25 m. Linear interpolation was used to adjust the temperature records at 40 m depth to either 35 m depth (1987–91 at 140°W) or 45 m depth (1987–89 at 110°W). Records at 3 m depth were linearly interpolated to 10 m depth at 140°W for velocity (November 1990–October 1991) and temperature (May–October 1991). Also at 140°W, temperature records from 350 m depth (October 1990–May 1991) and 400 m depth (October 1987–May 1988) were adjusted to 300 m and 500 m, respectively, using the mean vertical temperature gradient between 300 m and 500 m.

3.2. Filling gaps

Some gaps in the monthly mean records at 110°W were filled by direct substitution of wind, air temperature, ocean temperature and current data from the backup mooring at 108°W. The 108°W measurements are a reasonable proxy for those at 110°W by virtue of the high coherences between the 2 sites (e.g. Halpern, 1987a). Table 1 lists the times, depths and variables for which substitutions were made. No more than 13 months of data were substituted

Table 1. Data substitutions from 0°, 108°W time series into 0°, 110°W records. Data at 15 m, 50 m and 100 m were later gridded to the nearest standard depths in the climatologies.

VARIABLE	DATES Day/Mon/Yr
Winds	16/04/82–26/10/82
Air Temperature	16/04/82–26/10/82
Ocean Temperature	
SST	16/04/82–22/10/82
	29/11/84–09/05/85
	27/02/87–10/03/87
	07/04/87–25/04/87
15 m	16/04/82–26/10/82
50 m	16/04/82–22/10/82
80 m	16/10/84–09/05/85
100 m	16/04/82–26/10/82
Currents	
15 m	16/04/82–26/10/82
25 m	24/03/87–25/04/87
50 m	16/04/82–26/10/82
80 m	16/10/84–09/05/85
	02/07/86–06/11/86
100 m	16/04/82–26/10/82

at any given depth from the 108°W mooring, with the maximum number of substitutions occurring for SST.

Some data gaps in monthly mean zonal velocity and temperature records were filled by a combination of linear extrapolation and/or interpolation in depth. We used formulae of the form $\hat{Y} = aX_1 + bX_2 + c$, where $\hat{Y}$ is an estimate of the variable Y, and where time series X_1 and X_2 bracket the series Y in depth. In the case of extrapolation, b was set to zero and the coefficients a and c were determined by linear least squares orthogonal regression. For linear interpolation, c was set to zero and the coefficients a and b were weighted by vertical distance from Y. In some instances, we used multiple linear regression to compute the coefficients a, b and c. Extrapolation was required for 10 m zonal velocity and SST. Otherwise, different methods of filling were compared and the best estimator was selected for a given depth and variable.

To fill a gap by vertical interpolation or extrapolation, we required that the crosscorrelation of estimated monthly data ($\hat{Y}$) with actual monthly data (Y) be ≥ 0.9; we also required that there be no temperature inversions created by regression fills. Expected errors (ε) in the estimates $\hat{Y}$ were determined by computing the root-mean-square (rms) deviations from measured monthly means, i.e. $\varepsilon = \text{rms}\ (\hat{Y}-Y)$. These errors were roughly 0.2°–0.4°C for temperature in the upper 10 m at 110°W; 0.1°C–0.2°C for temperature in the upper 45 m at 140°W; 0.3°–0.5°C for temperature in the upper thermocline (60 m to 160 m at 140°W; 25 m to 120 m at 110°W), and 0.1°–0.2°C in the weak temperature gradient region below the upper thermocline. At both locations, the expected analysis error in vertically interpolated/extrapolated zonal velocities was 10–15 cm s^{-1} in and above the Undercurrent core, and 5–10 cm s^{-1} below the Undercurrent core.

For the data set as a whole, less than 20% of the monthly ocean temperature and zonal velocity estimates were filled by vertical interpolation or extrapolation, though at some depths the percentage rose to approximately 50% (Table 2). Monthly mean meridional velocities were not as highly correlated vertically as temperature or zonal velocity, so no meridional velocity gaps were filled using data from neighboring depths. We made no attempt to interpolate in time across record gaps in any of the monthly time series.

3.3. Filtering

The resulting gridded and filled monthly mean time series were smoothed with a 1-2-1 filter in time to eliminate the residual effects of intraseasonal fluctuations in the records. An identical filter was applied to the monthly mean wind vector components, wind speed, wind pseudostress and air temperature data. These smoothed time series were then averaged for each month for different years to produce estimates of the mean seasonal cycle. Computations including data from the 1982–83 ENSO lead to large biases (particularly in thermocline temperatures) as one would expect by including a "100-year" event in a decade long climatology.

Table 2a. Summary of monthly mean estimates for zonal velocity and temperature at 0°, 110°W. "Months of Data" refers to monthly means based on a combination of direct measurements at standard depths, measurements gridded to those depths according to procedures discussed in Section 3.1, plus direct substitutions of data from 108°W. "Percent Filled" refers to the number of monthly estimates derived by vertical interpolation or extrapolation from neighboring depths as discussed in Section 3.2.

Depth (m)	Number of Monthly Estimates	Months of Data	% Filled
	Zonal Velocity		
10	139	123	12
25	140	112	20
45	140	115	18
80	140	129	8
120	137	137	0
160	130	76	42
200	122	78	36
250	76	76	0
Total	**1024**	**846**	**17**
	Temperature		
SST	132	121	8
10	140	118	16
25	140	112	20
35	29	29	0
45	140	133	5
60	140	69	51
80	140	129	8
100	140	115	18
120	133	96	28
140	133	82	38
160	133	81	39
200	130	117	10
250	81	81	0
300	54	54	0
500	42	42	0
Total	**1707**	**1379**	**19**

Table 2b. Summary of monthly mean estimates for zonal velocity and temperature at 0°, 140°W. "Months of Data" refers to monthly means based on a combination of direct measurements at standard depths, plus measurements gridded to those depths according to procedures discussed in Section 3.1. "Percent Filled" refers to the number of monthly estimates derived by vertical interpolation or extrapolation from neighboring depths as discussed in Section 3.2.

Depth (m)	Number of Monthly Estimates	Months of Data	% Filled
	Zonal Velocity		
10	96	82	15
25	99	96	3
45	100	47	53
80	99	99	0
120	103	103	0
160	50	50	0
200	49	49	0
250	56	56	0
Total	**652**	**582**	**10**
	Temperature		
SST	103	77	25
10	103	97	6
25	103	103	0
35	103	95	8
45	103	47	54
60	103	65	37
80	103	97	6
100	103	70	32
120	103	102	1
140	103	75	27
160	103	54	48
200	103	89	14
250	66	66	0
300	71	71	0
500	31	31	0
Total	**1404**	**1139**	**18**

Hence data from July 1982–June 1983 were excluded from the mean seasonal calculations for 110°W. For consistency, data from April–June 1983 were excluded at 140°W. We also excluded the 35 m temperature time series from the 110°W mean seasonal calculation. This record contained only 29 months of data, and was much shorter than time series immediately above and below.

Finally, we found that smoother vertical profiles of zonal velocity at 140°W resulted if we did not include the monthly values for July–October 1983 at 160 m and 250 m. The records at these depths were relatively short, and means were biased towards zero by weak eastward or westward flow during the 1983 La Niña. No similar bias due to interannual variability occurred in the equally short 200 m record begun in 1987 at the termination of the 160 m and 250 m time series, so that straight record length averages at these 3 depths lead to unrealistic positive curvature in July–October vertical profiles of zonal velocity between 160–250 m.

For temperature and zonal velocity, the resulting mean seasonal cycles (time series and vertical profiles) were much smoother and more realistic compared to similar analyses based on ungridded, unfilled, unfiltered monthly mean data. However, meridional velocities were still somewhat noisy because of the relative weakness of the mean seasonal cycle, the weaker vertical correlations and the smaller number of available monthly estimates. Details of the meridional velocity profiles and time series should therefore be interpreted with caution unless they are supported by a large amount of data (e.g. at 25 m, 80 m, 120 m at 140°W; and in the upper 120 m at 110°W).

4. DATA PRESENTATION

4.1 Plots

Data are presented in Appendix A for 110°W and Appendix B for 140°W. Figures A2–A4 and B2–B4 show the gridded, interpolated and smoothed time series of individual monthly mean ocean temperature and velocity. Dashed lines in these figures indicate values that have been interpolated from adjacent depths. Figures A5 and B5 show corresponding time series plots for wind velocities, wind speeds, wind pseudostresses, and air temperatures. Mean seasonal temperature and velocity time series at each depth are plotted in Figure A6–A8 and B6–B8 using cubic spline interpolation between data points; corresponding mean seasonal time series for wind velocities, wind speeds, wind pseudostresses, and air temperatures are shown in Figures A9 and B9. Estimated standard errors for each monthly mean are superimposed on these time series, assuming that monthly values from different years are independent Gaussian-distributed random variables. The standard error is defined as $\sigma/N^{1/2}$, where σ is the estimated standard deviation and N is the number of samples. Standard errors are estimated only when $N > 3$. Both σ and N are listed in Tables A5–A8 and B5–B8. The monthly mean time series are contoured in Figures A10 and B10. Figures A11 and B11 show climatological monthly mean vertical profiles using cubic

spline interpolation between data points indicated on the right axes. Figures A12 and B12 show the corresponding annual averages and standard deviations of the 12 monthly means.

4.2. Tables

The individual monthly means are tabulated in Tables A1–A4 and B1–B4. Interpolated values are underlined and a data void is indicated by –999.99. The monthly mean climatologies are tabulated in Tables A5–A8 and B5–B8. These tables list monthly means, standard deviations, minima, maxima, skew, number of monthly samples on which the statistics are based (N), and (for zonal velocity and ocean temperature) the number estimates (M) at a particular level before filling by vertical interpolation or extrapolation. In the case of 110°W, the parameter M includes data substituted from 108°W. Standard deviation in these tables is defined as

$$\sigma = \left[\frac{1}{N-1} \sum_{n=1}^{N} (X_n - \bar{X})^2 \right]^{1/2}$$

where X is the variable in question and $\bar{X}$ is its sample mean. Skew, which provides a measure of the symmetry of the probability distribution, is defined as

$$\gamma = \frac{1}{N\sigma^3} \sum_{n=1}^{N} (X_n - \bar{X})^3$$

Similar statistical summaries for annual means are presented in Tables A9–A10 and B9–B10, in which N = 12 indicates that the statistics are based on the 12 monthly values from the mean seasonal cycle. NTOT in Tables A9–A10 and B9–B10 refers to the total number of months of independent data that go into the calculation at each depth; it differs slightly from the months of data listed in Table 2 for zonal velocity and temperature because data from the 1982–83 ENSO were excluded from the climatologies.

5. ACKNOWLEDGMENTS

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APPENDIX A

0°, 110°W Figures and Tables

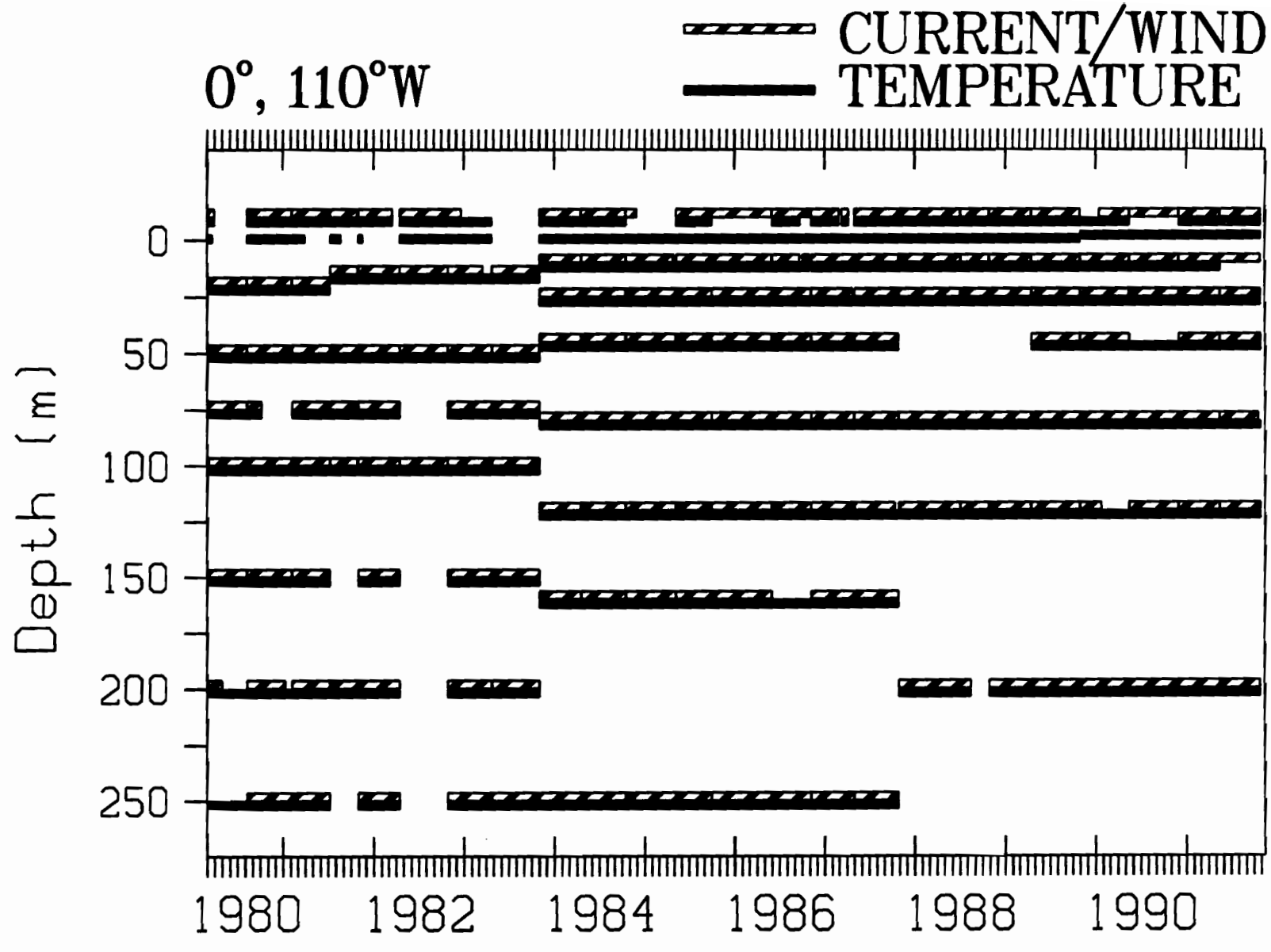


Figure A1a. Bar chart showing velocity and temperature data availability from current meters and from wind recorders as a function of depth at 0°, 110°W.

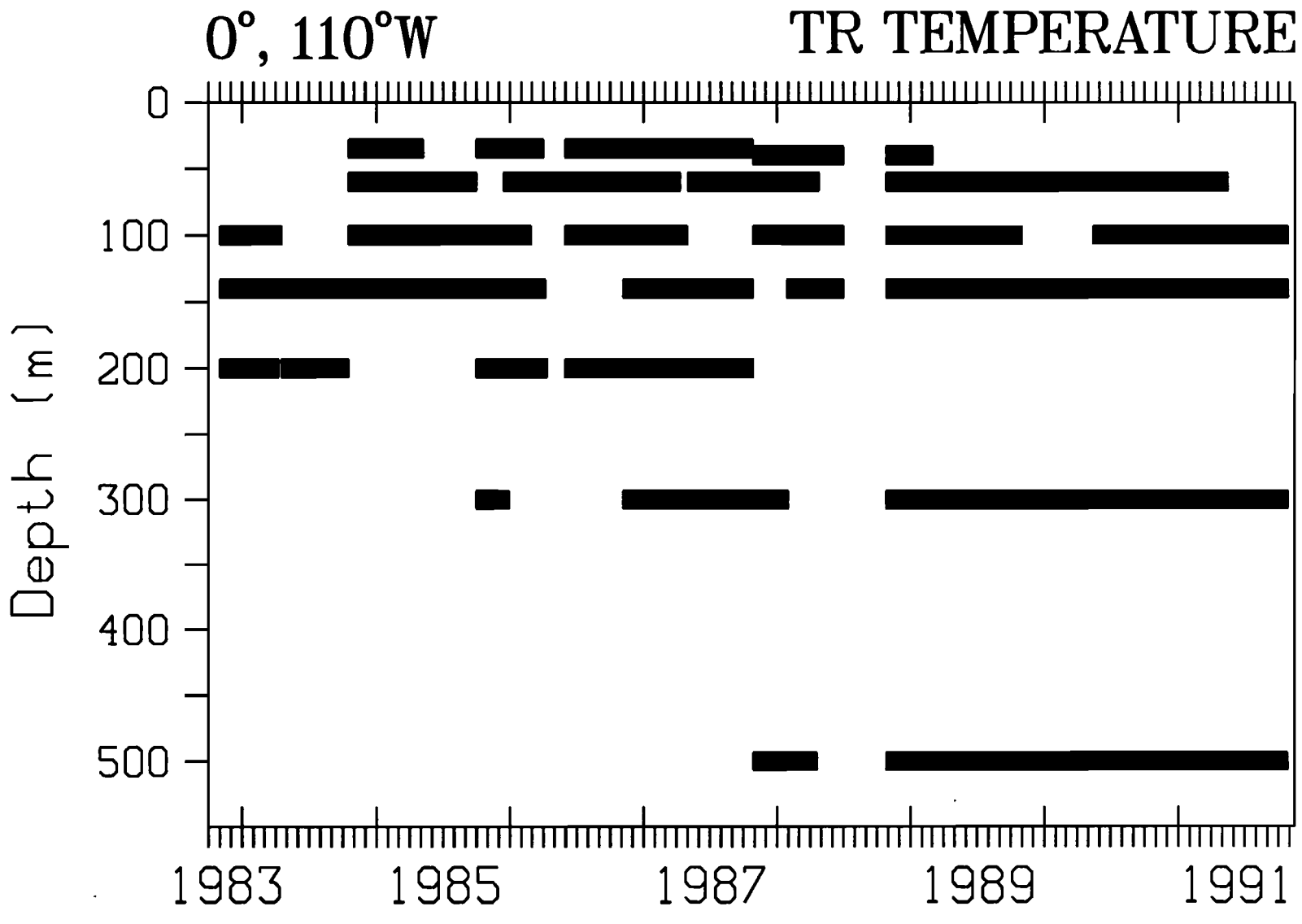


Figure A1b. Bar chart showing availability of data from temperature recorders (TRs) at 0°, 110°W.

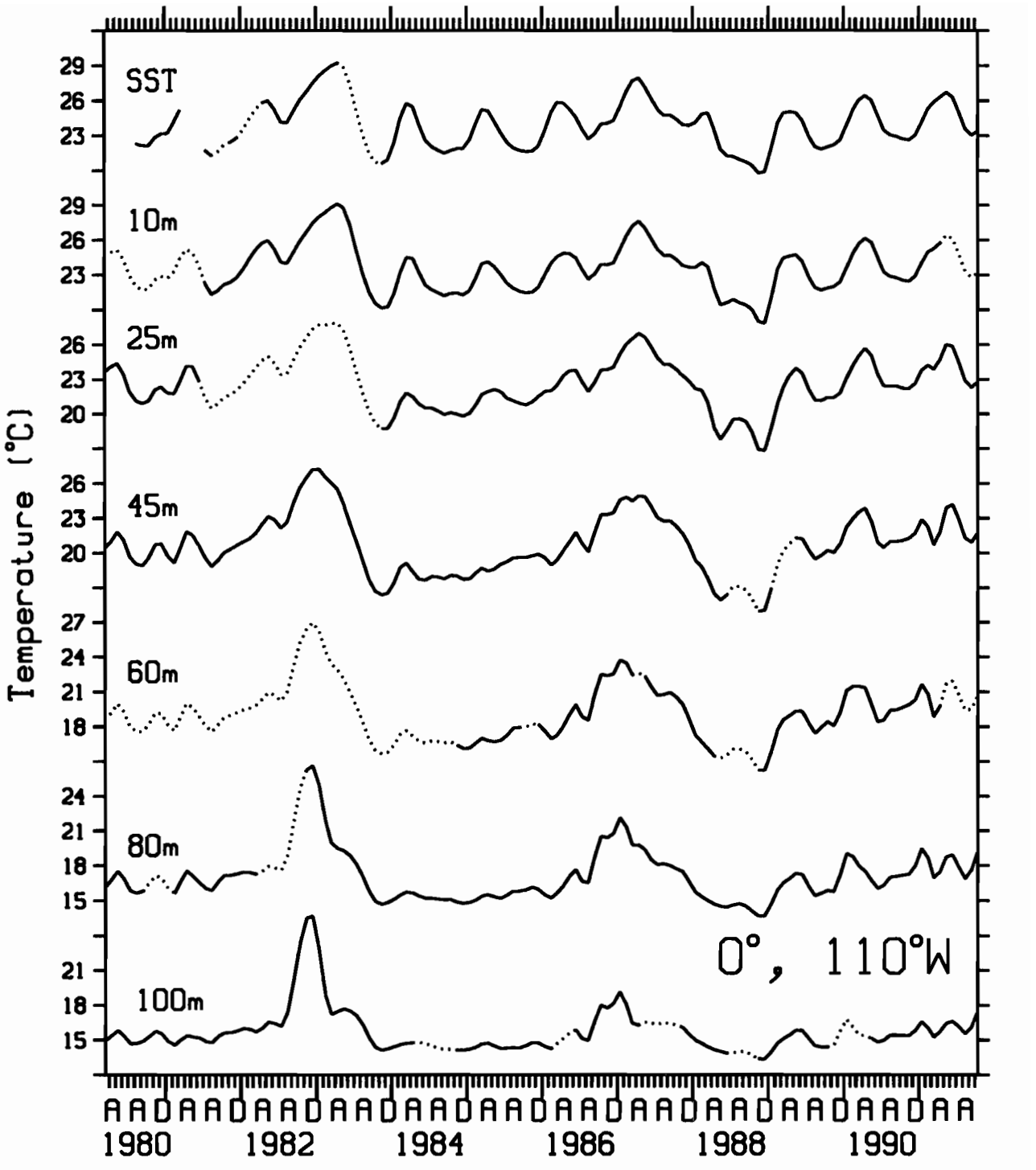


Figure A2. Time series of monthly mean temperatures (in °C) at 0°, 110°W. Dotted lines indicate data that have been filled by vertical interpolation or extrapolation.

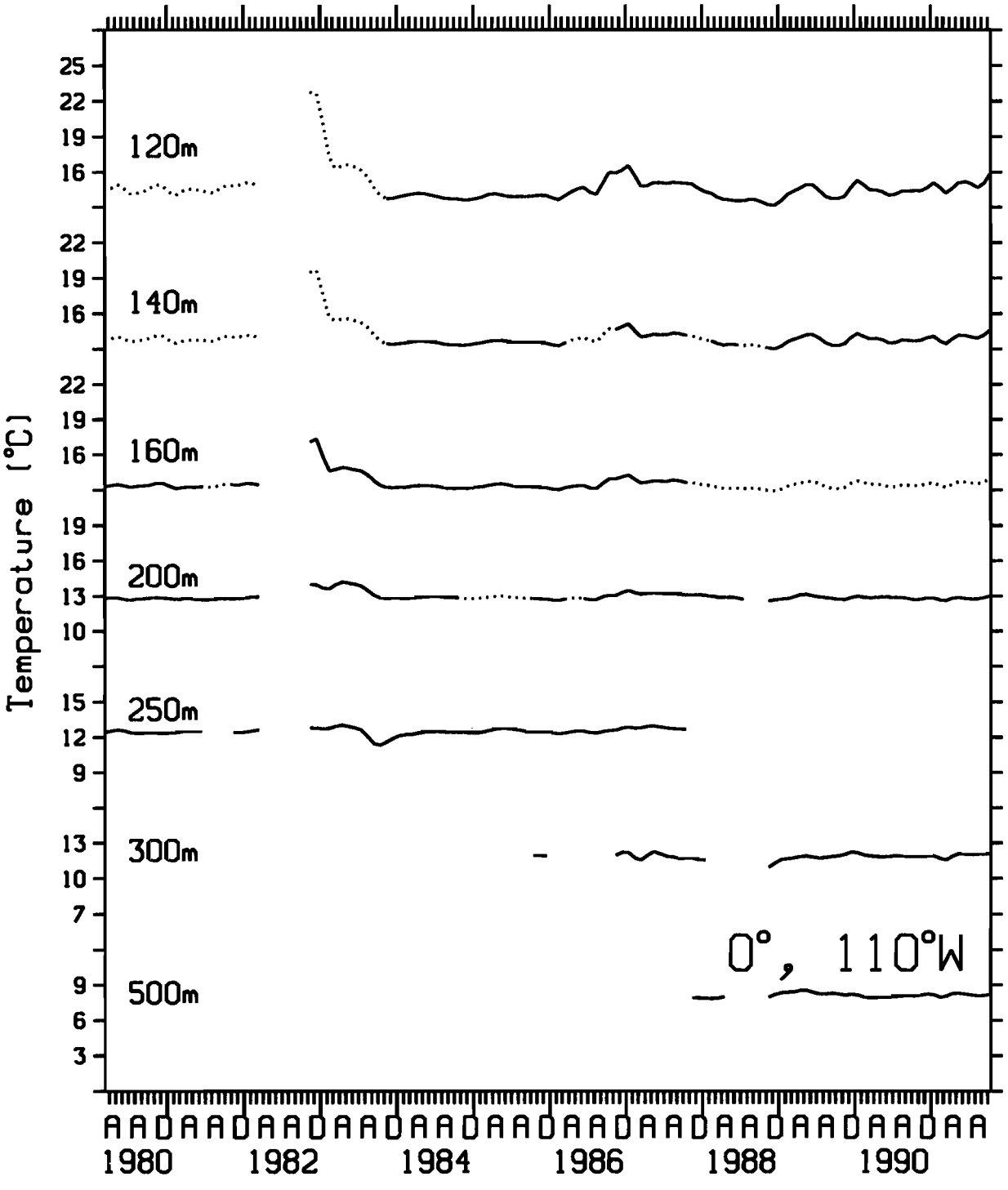


Figure A2. Continued.

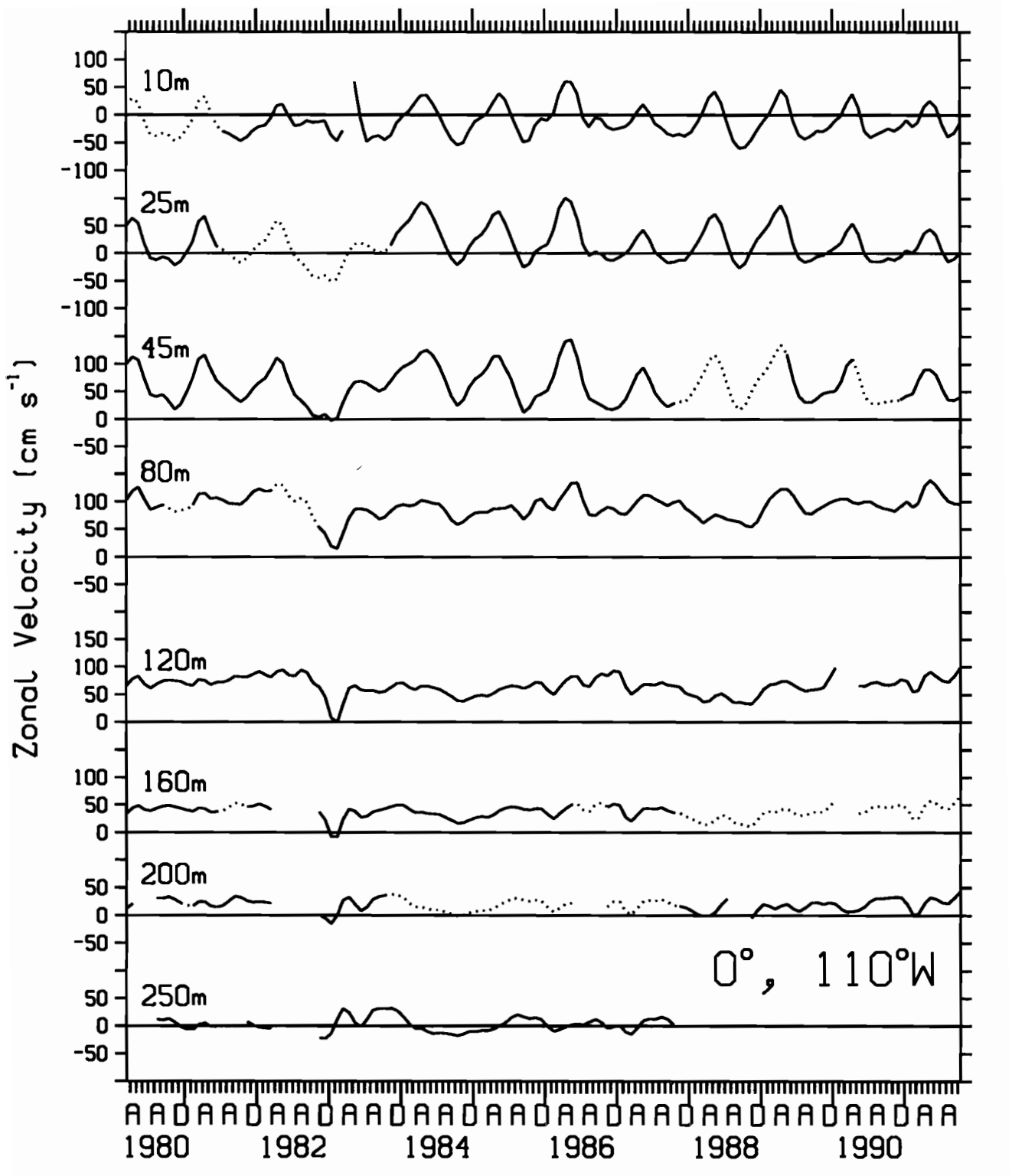


Figure A3. Time series of monthly mean zonal velocities (in cm s^{-1}) at 0°, 110°W. Dotted lines indicate data that have been filled by vertical interpolation or extrapolation.

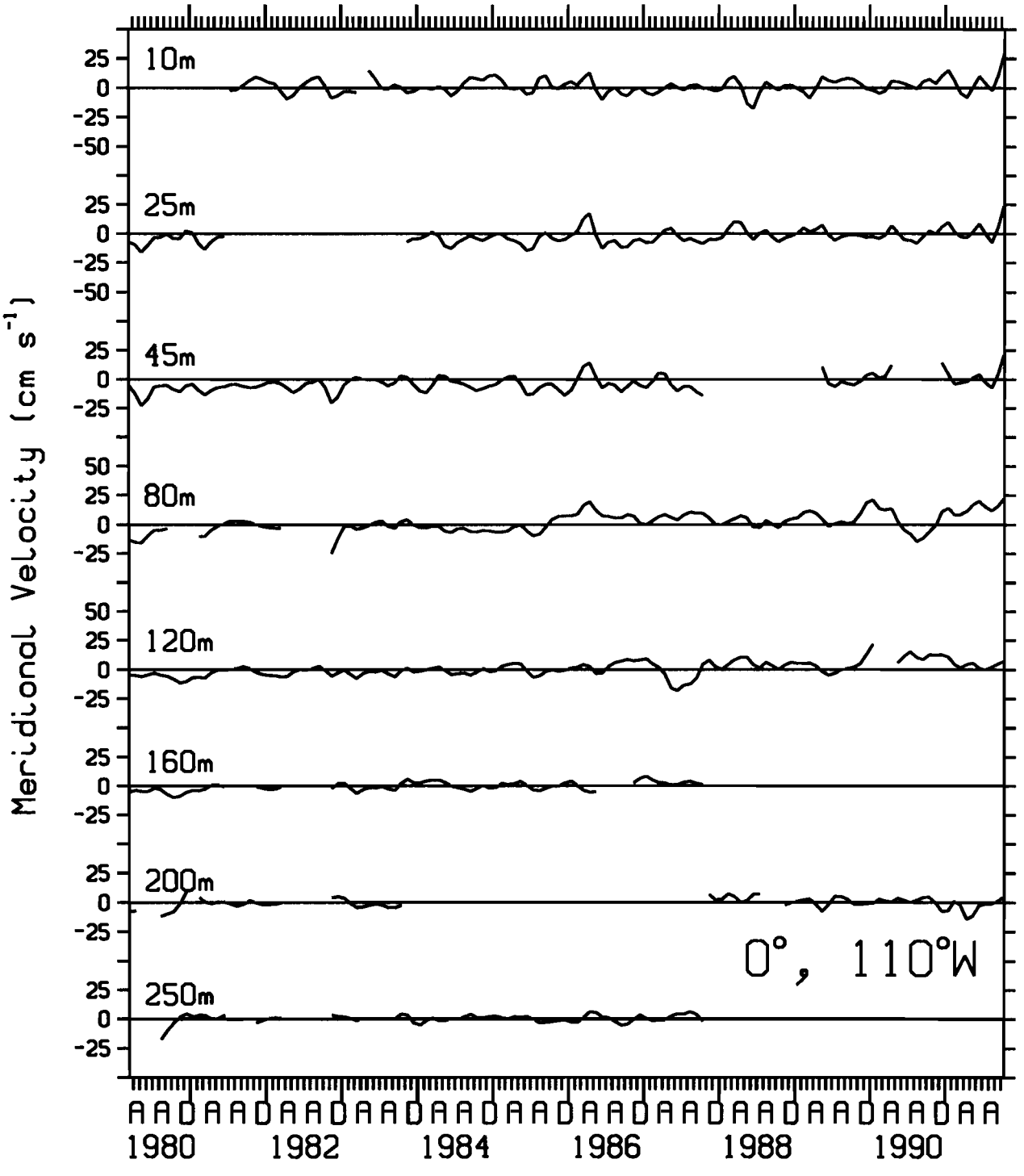


Figure A4. Time series of monthly mean meridional velocities (in cm s^{-1}) at 0°, 110°W.

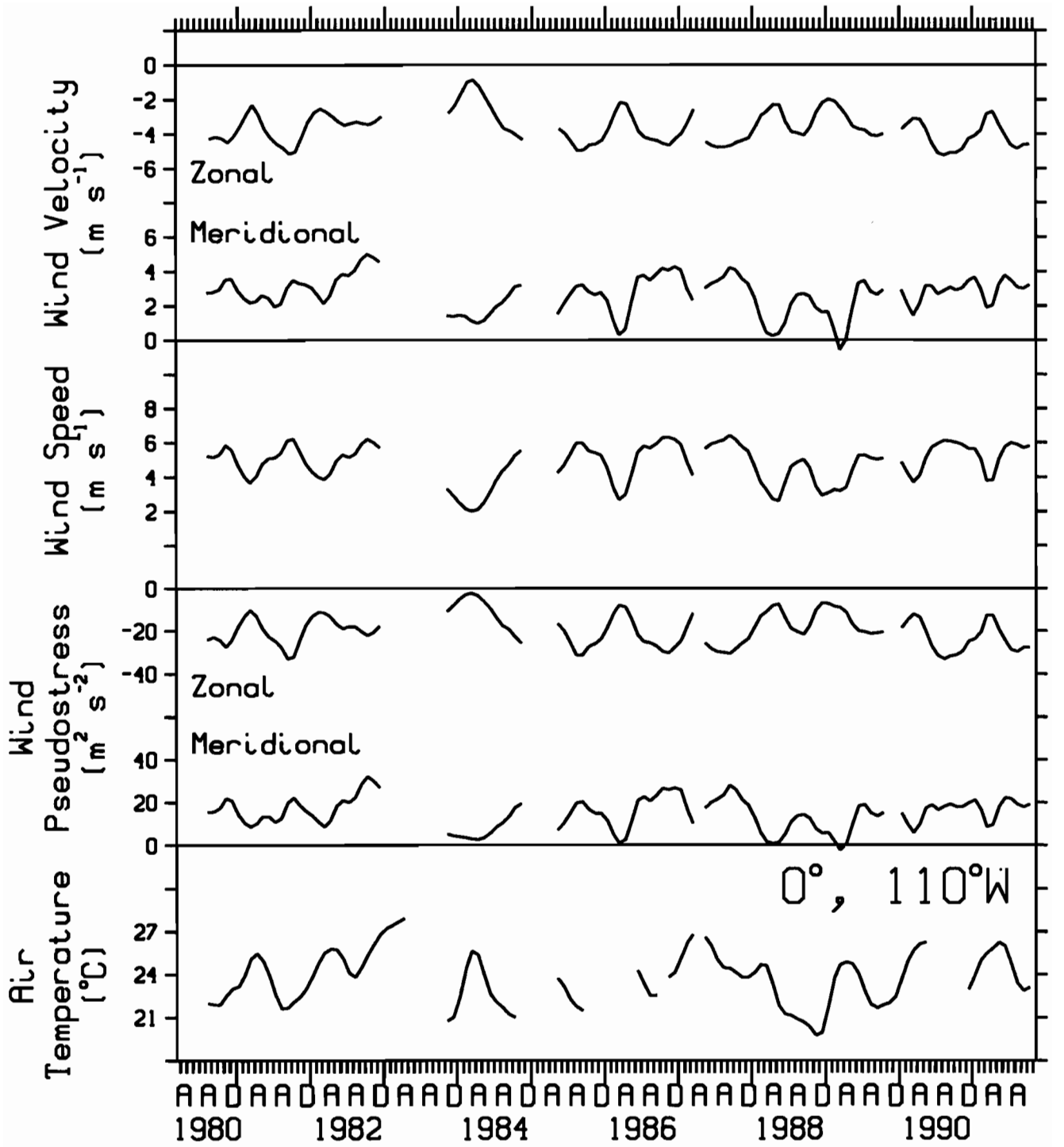


Figure A5. Time series of monthly mean winds and air temperatures at 0°, 110°W.

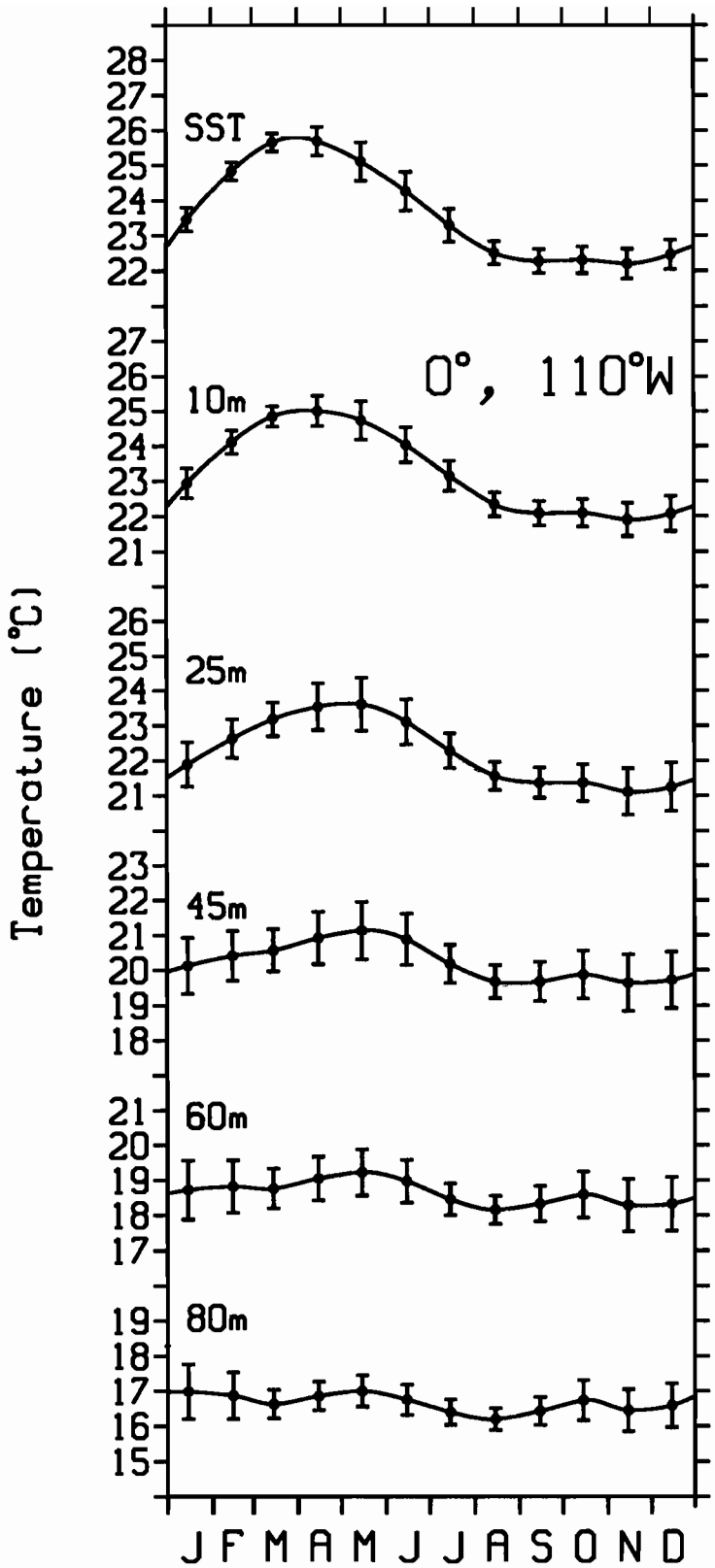


Figure A6. Time series of climatological monthly mean temperatures (in °C) at 0°, 110°W. One standard error is shown for means based on more than 3 estimates.

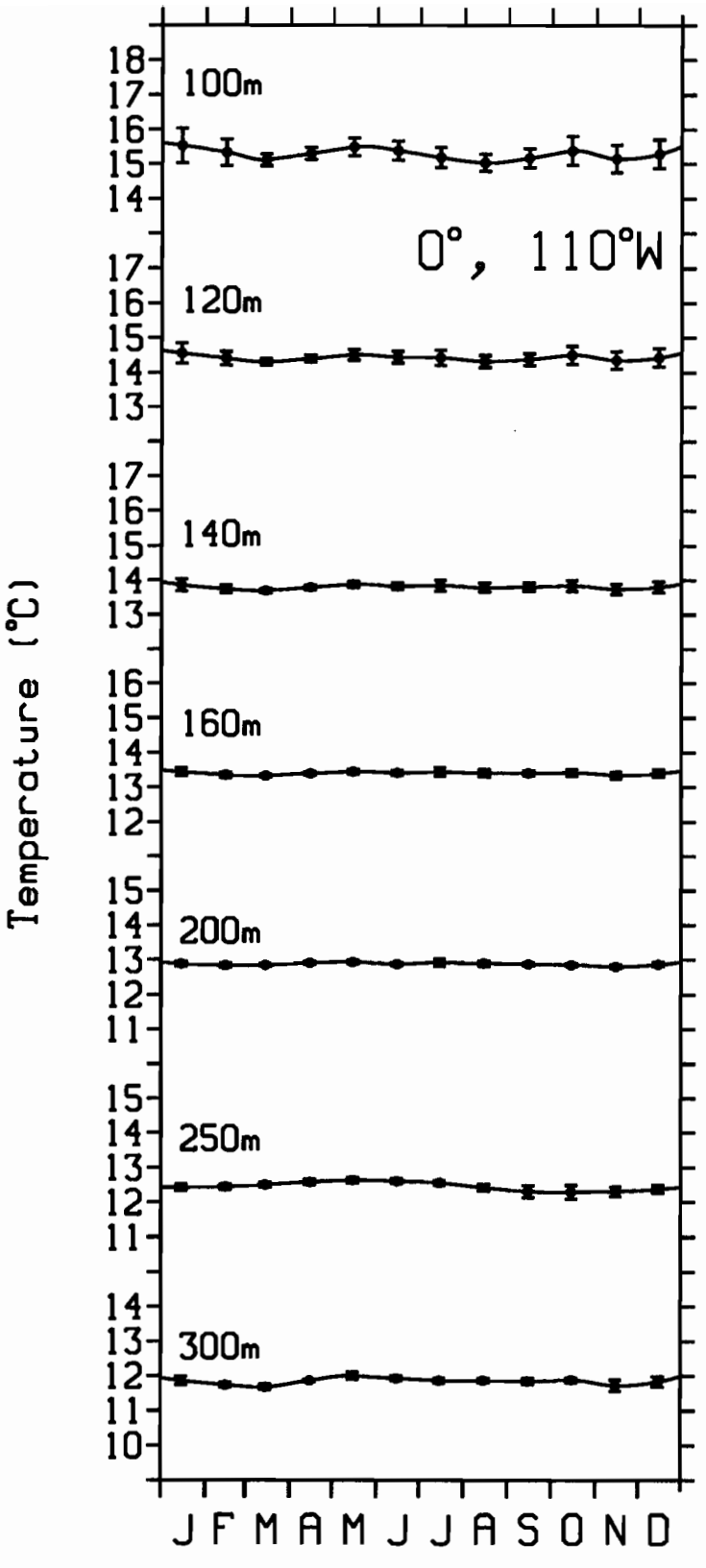


Figure A6. Continued.

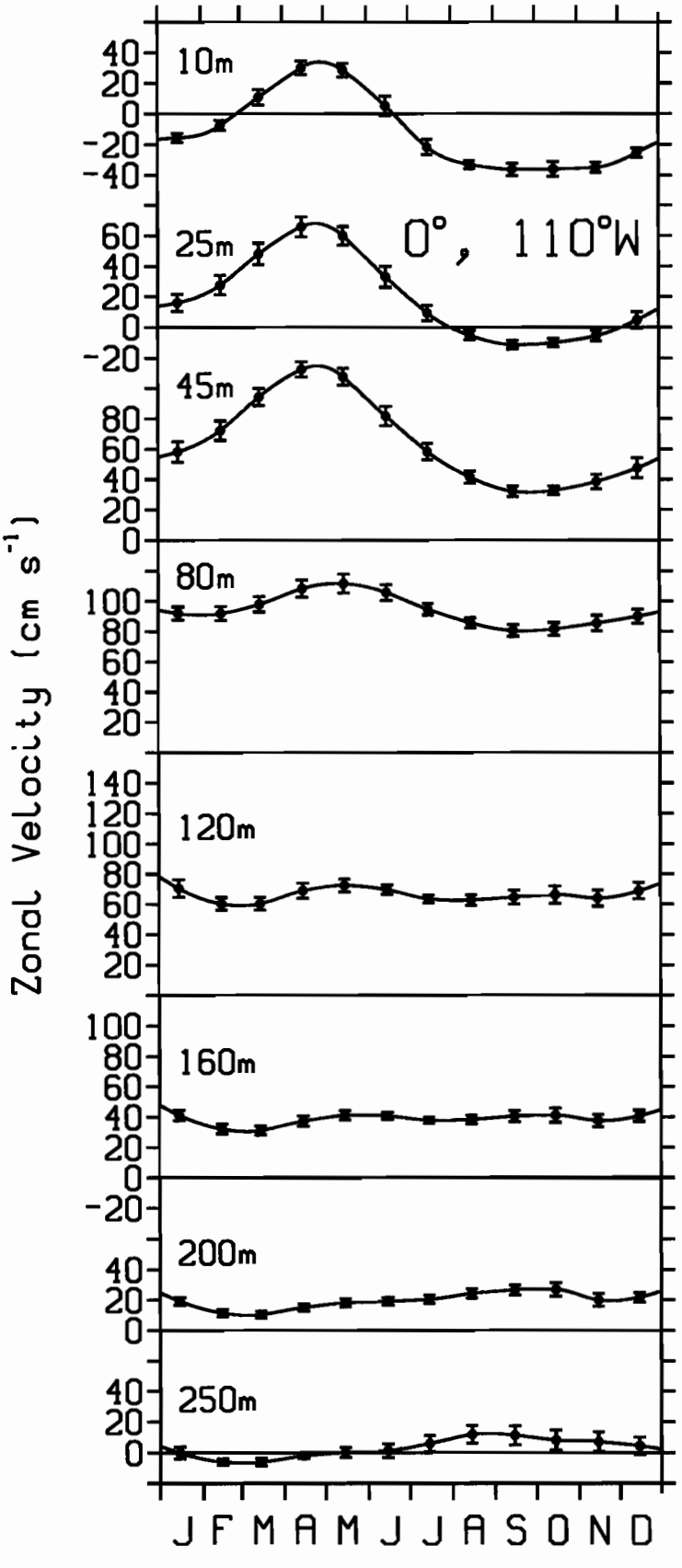


Figure A7. Time series of climatological monthly mean zonal velocities (in cm s^{-1}) at 0°, 110°W. One standard error is shown for means based on more than 3 estimates.

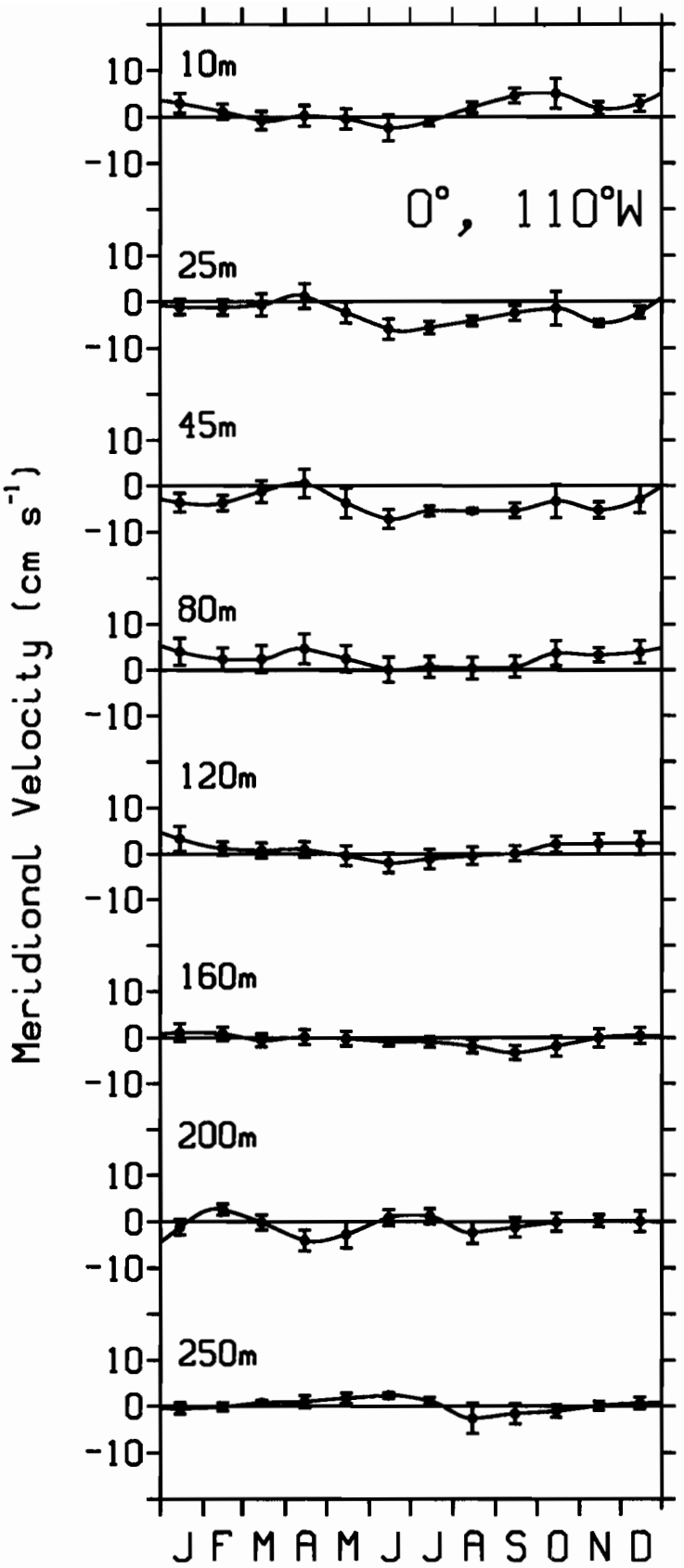


Figure A8. Time series of climatological monthly mean meridional velocities (in cm s^{-1}) at 0°, 110°W. One standard error is shown for means based on more than 3 estimates.

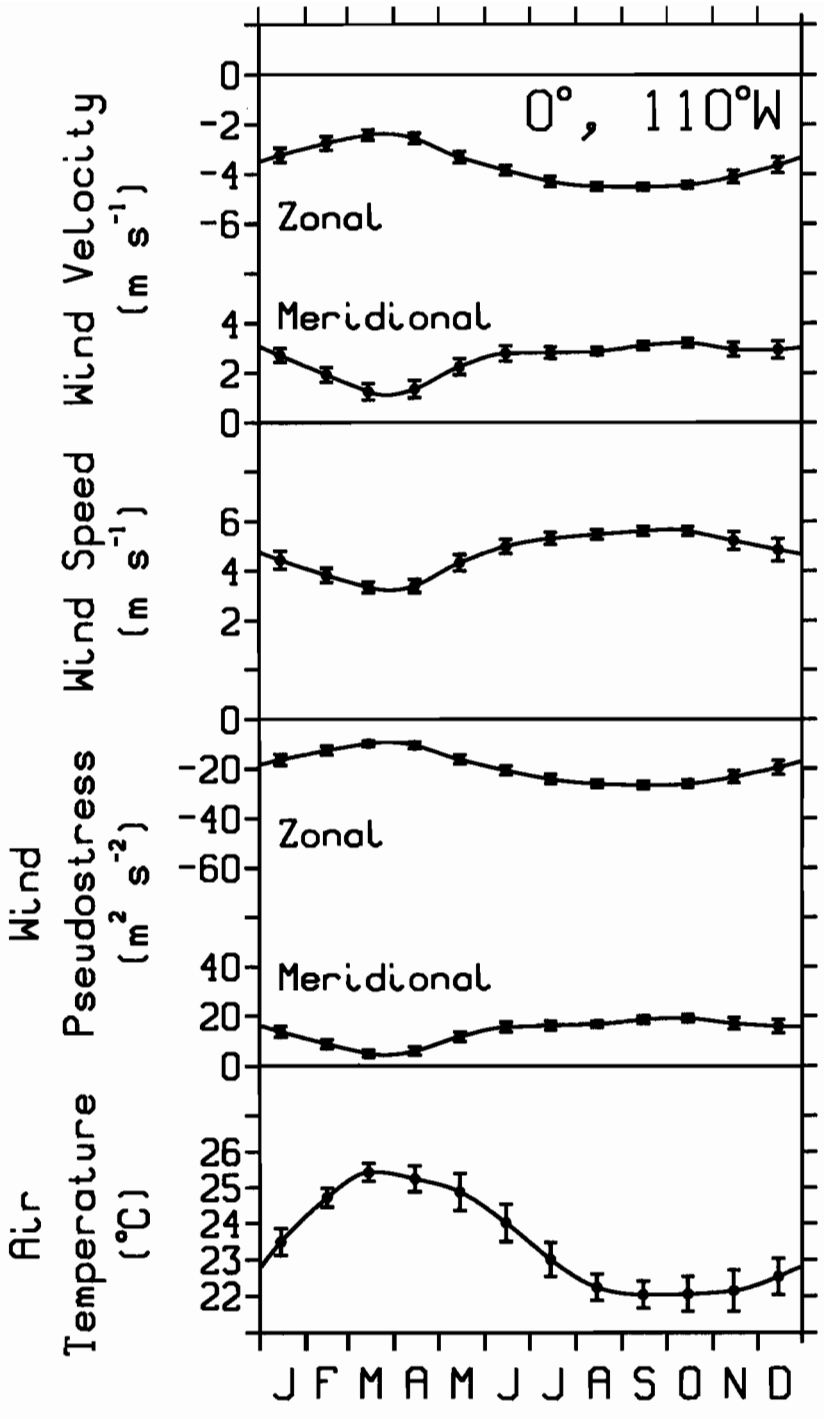


Figure A9. Time series of climatological monthly mean winds and air temperatures at 0°, 110°W. One standard error is shown for means based on more than 3 estimates.

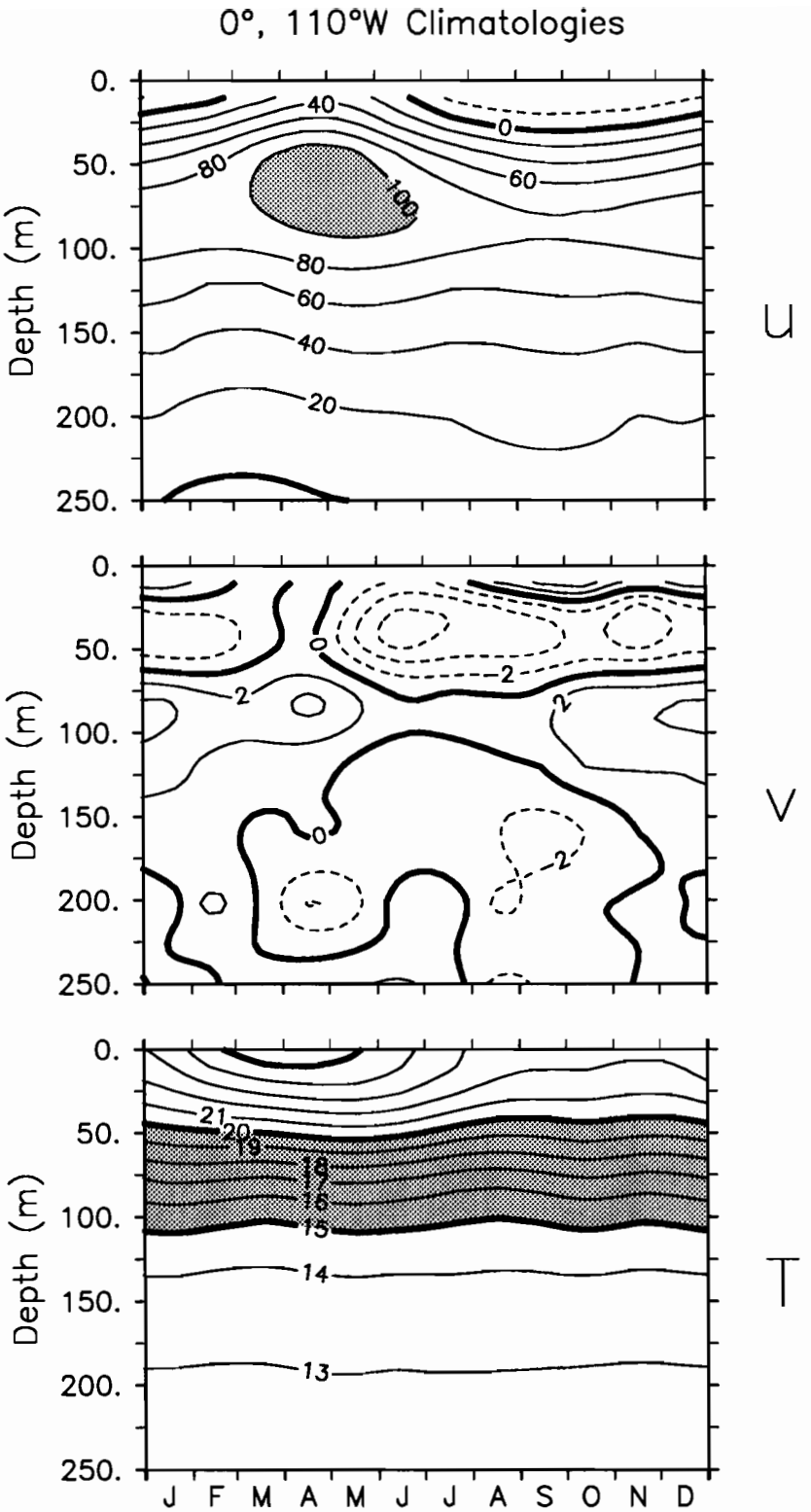


Figure A10. Contoured time series of zonal velocity (u), meridional velocity (v) and temperature (T) at 0°, 110°W. Velocities are in cm s^{-1} and temperature is in °C. Dashed contours are for westward or southward flow. Shading highlights zonal velocities > 100 cm s^{-1}, and temperatures between 15°–20°C.

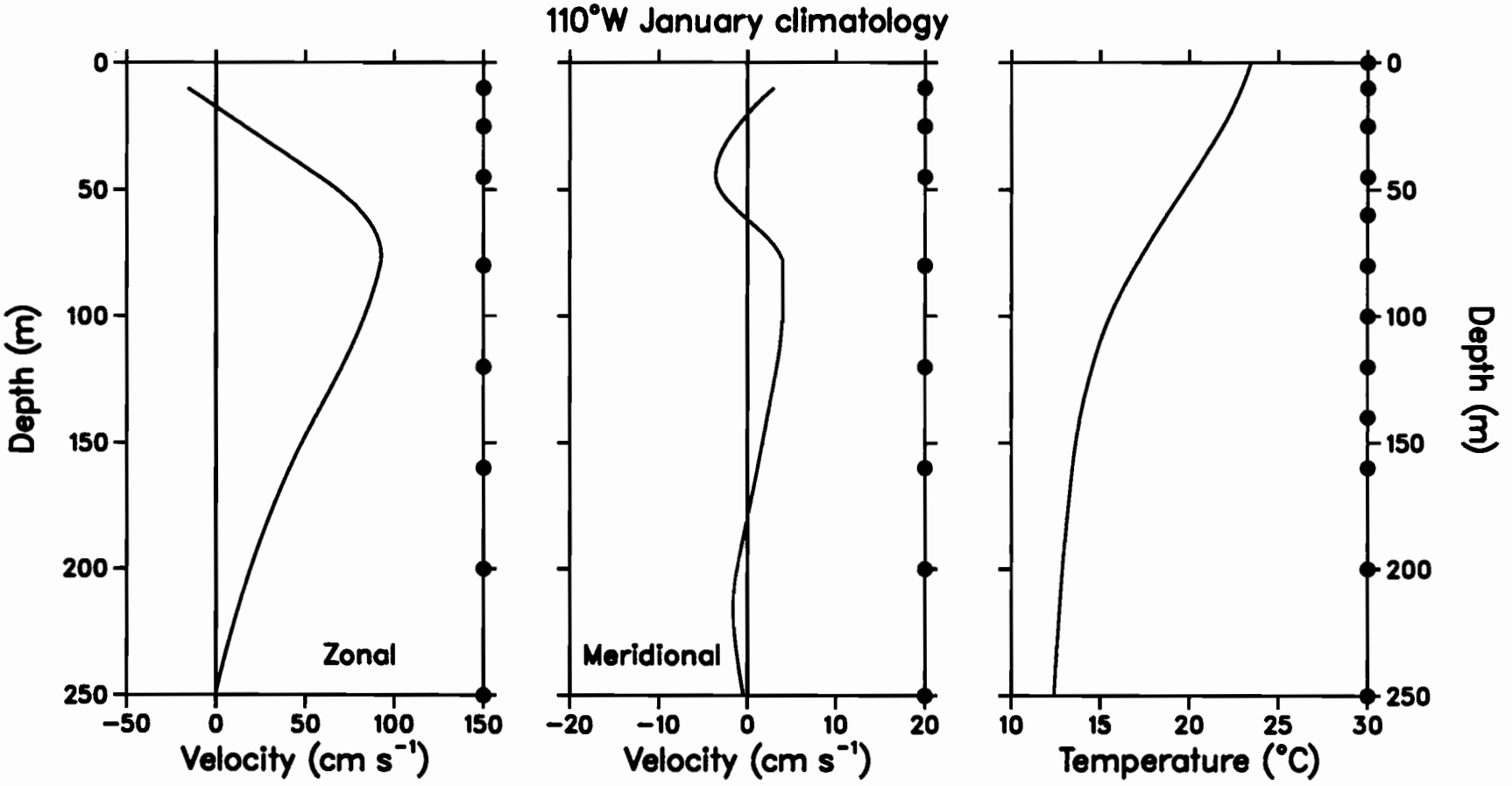


Figure A11. Climatological monthly mean profiles of zonal velocity, meridonal velocity and temperature at 0°, 110°W. Solid circles on the left axes indicate standard depths on which the profiles are based.

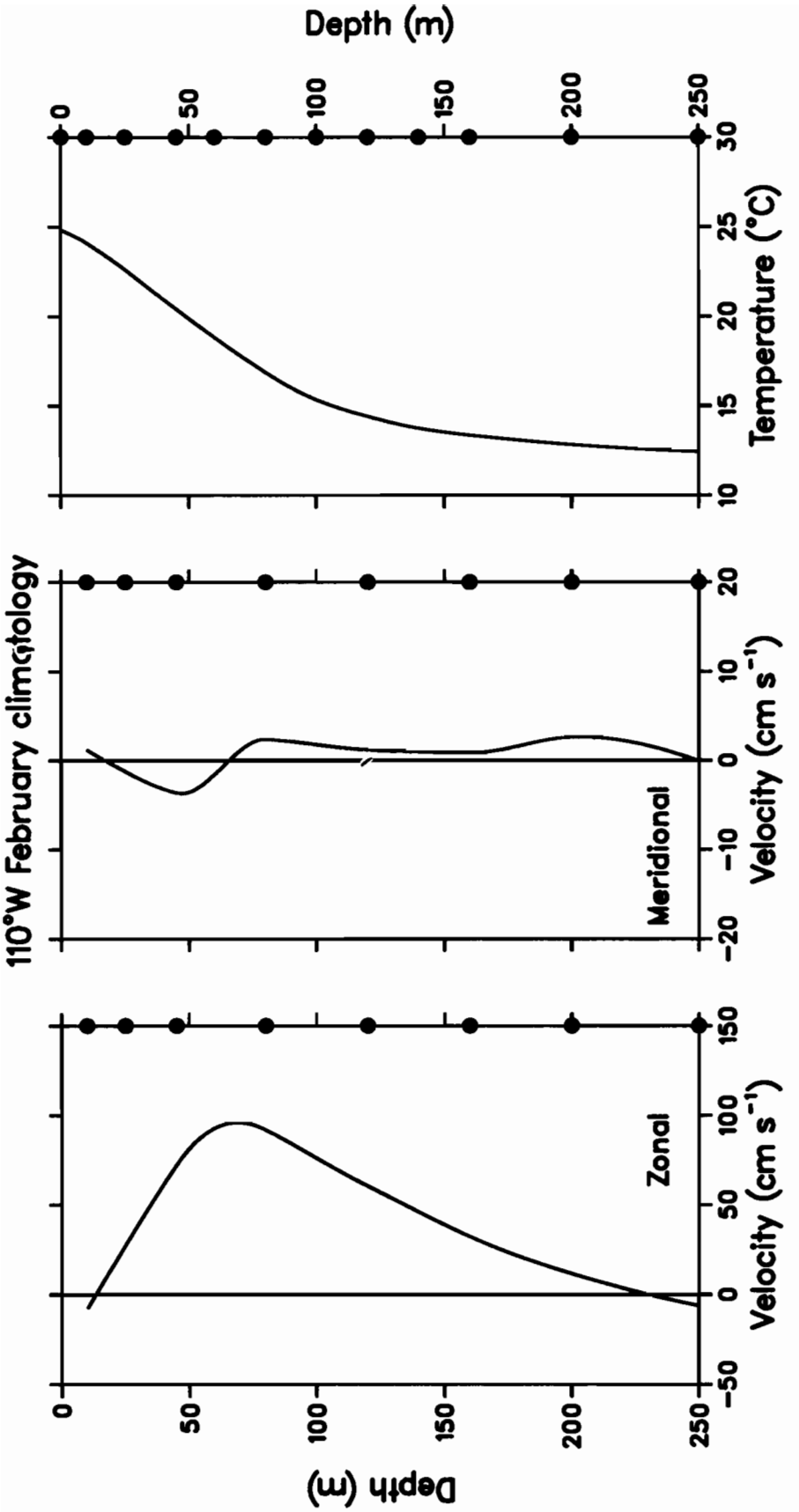


Figure A11. Continued.

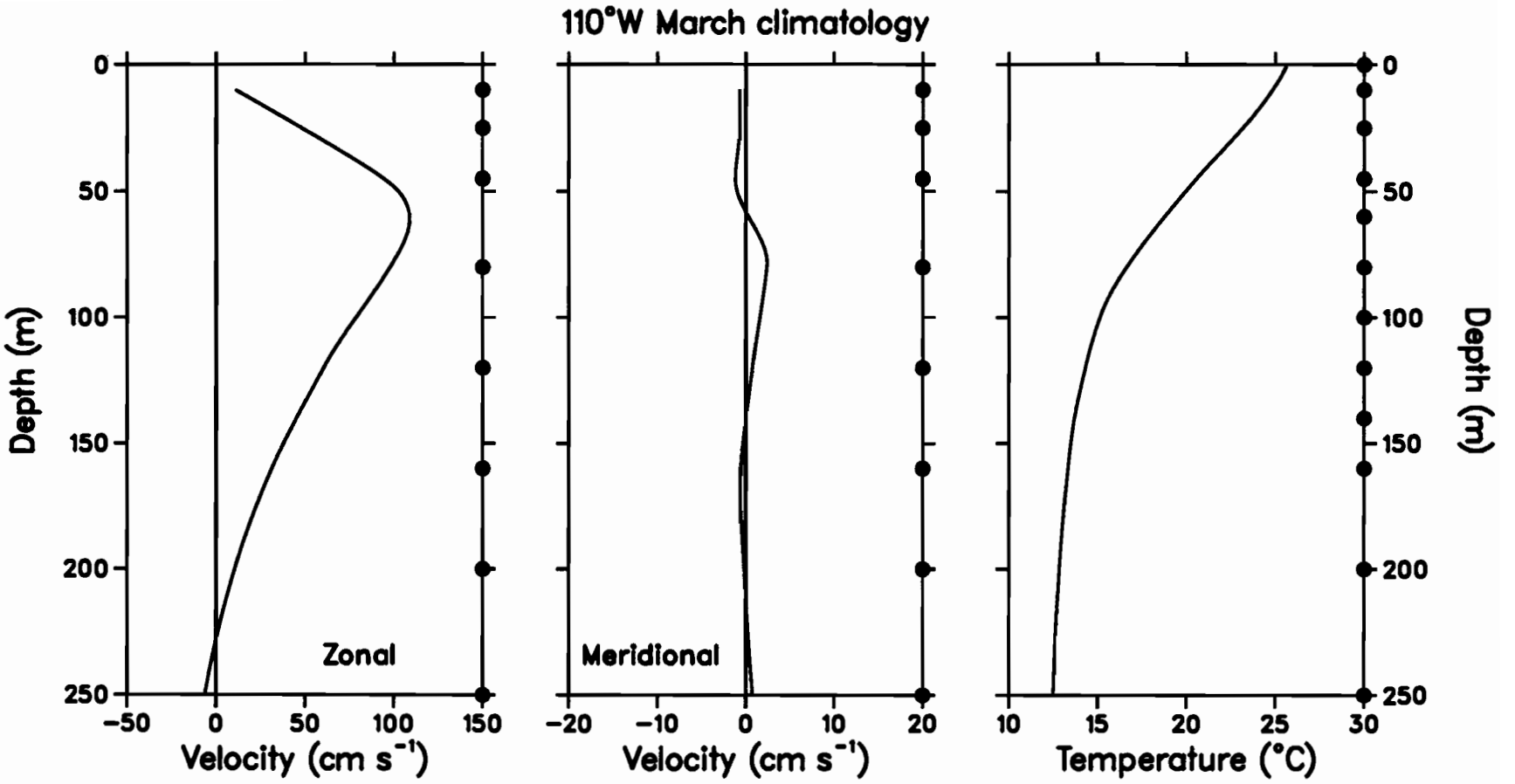


Figure A11. Continued.

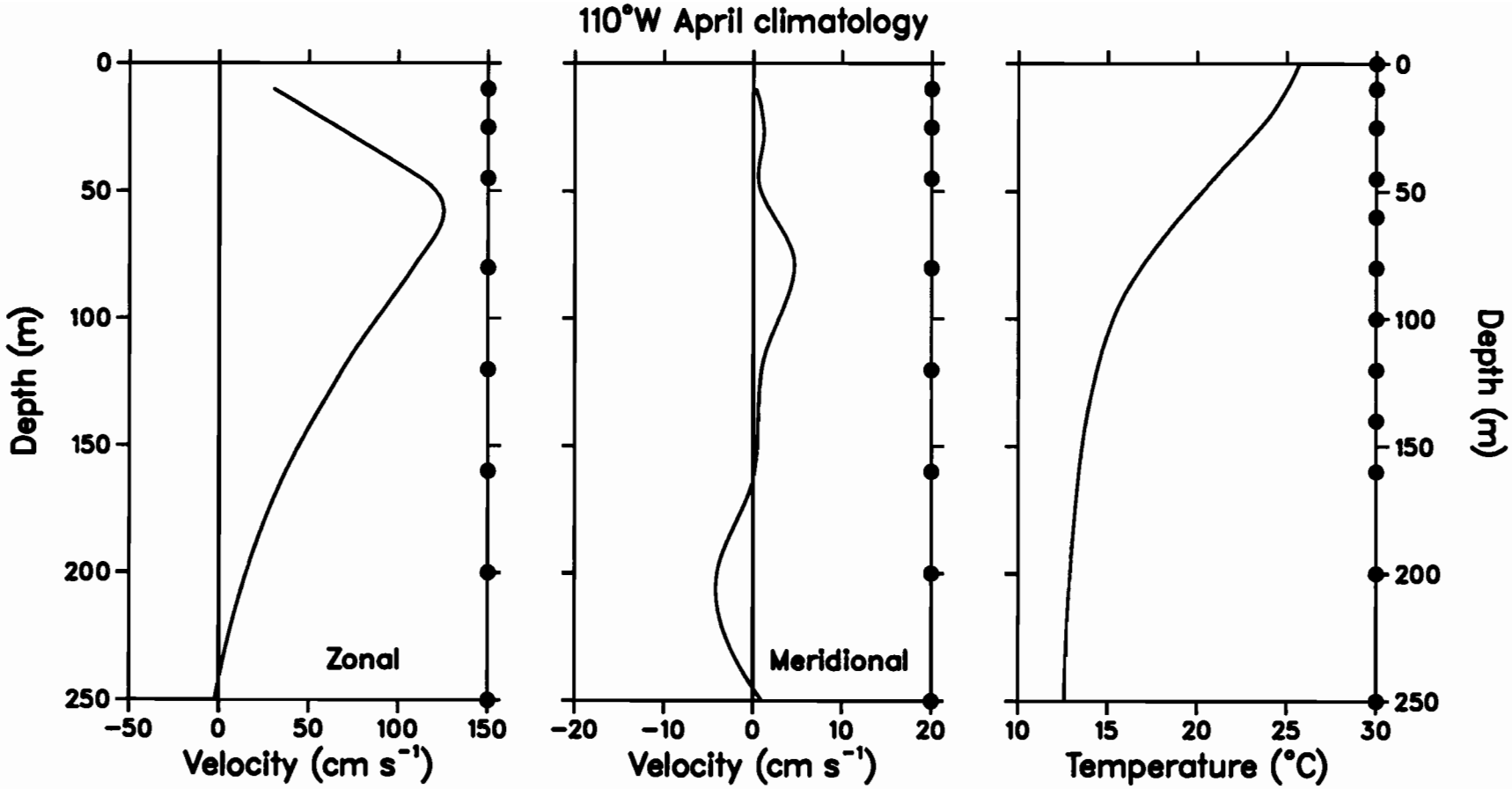


Figure A11. Continued.

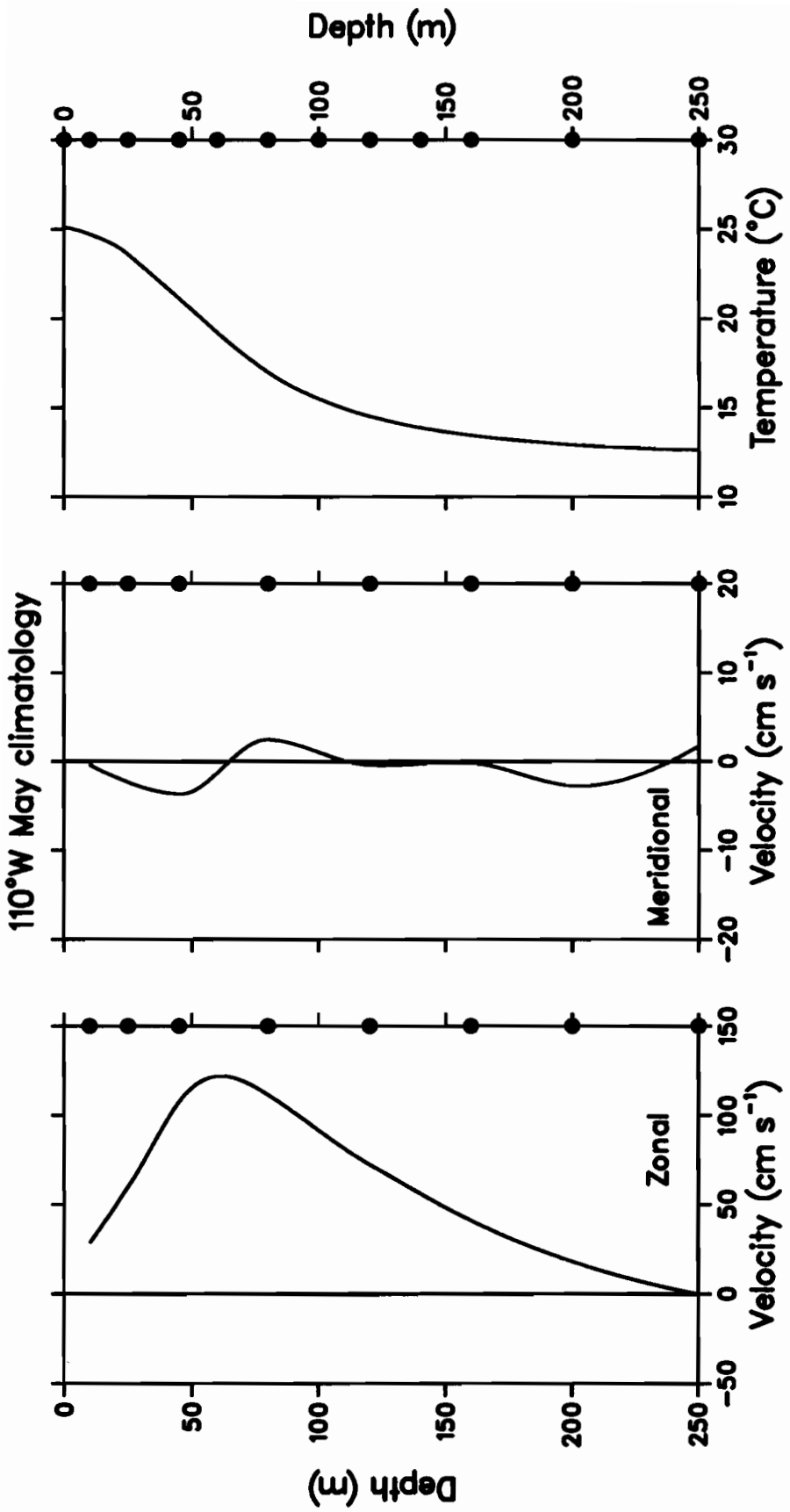


Figure A11. Continued.

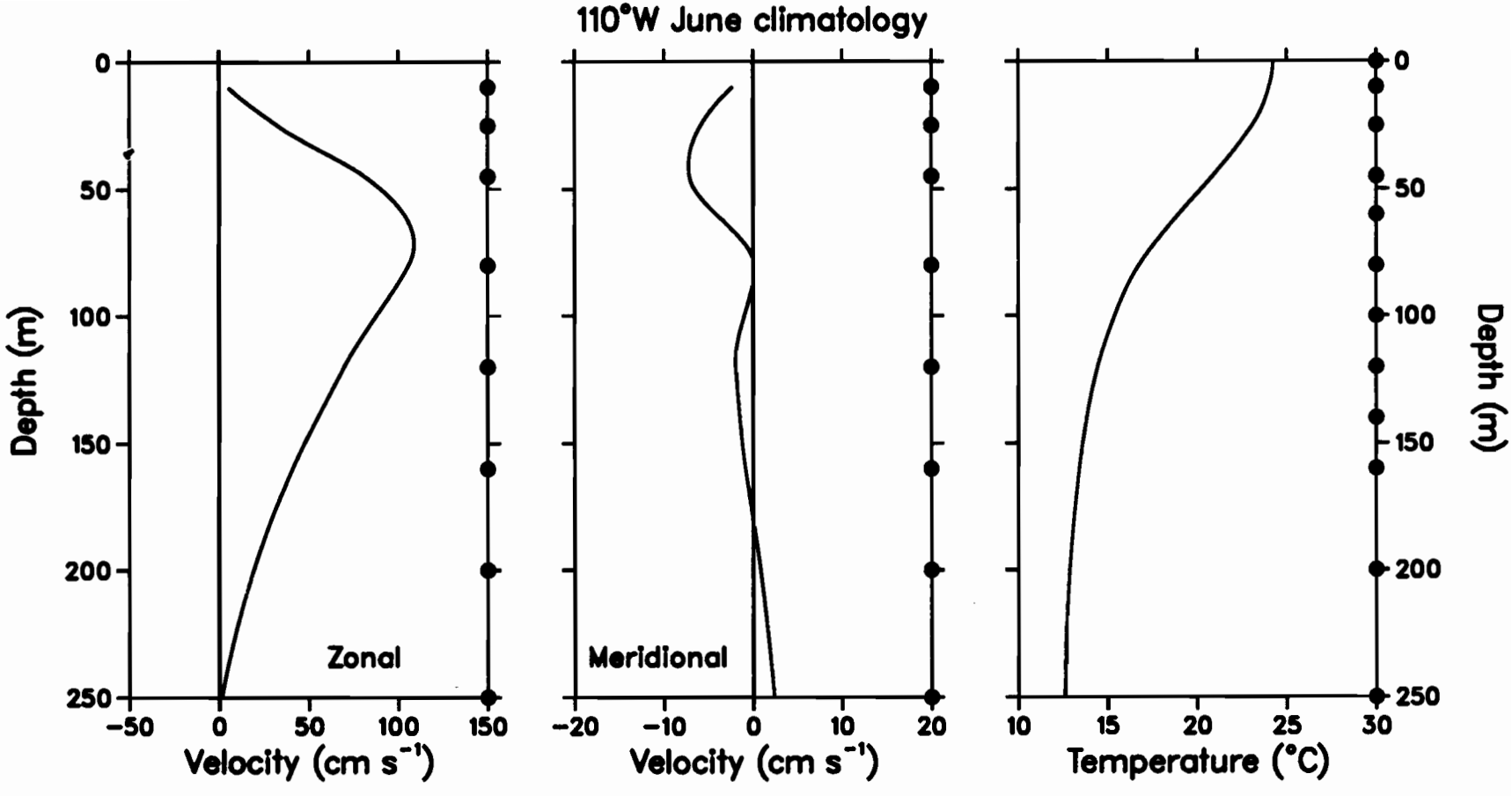


Figure A11. Continued.

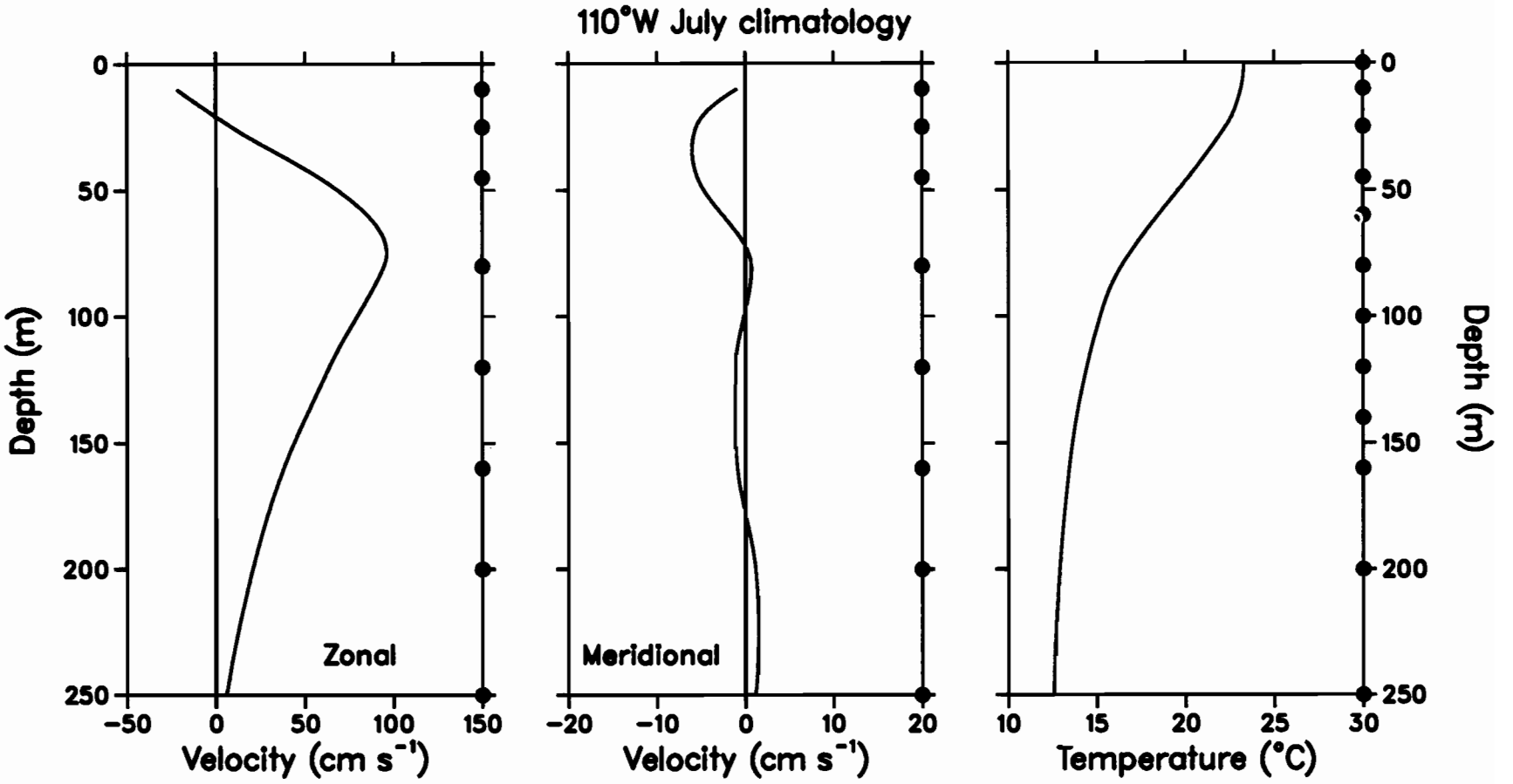


Figure A11. Continued.

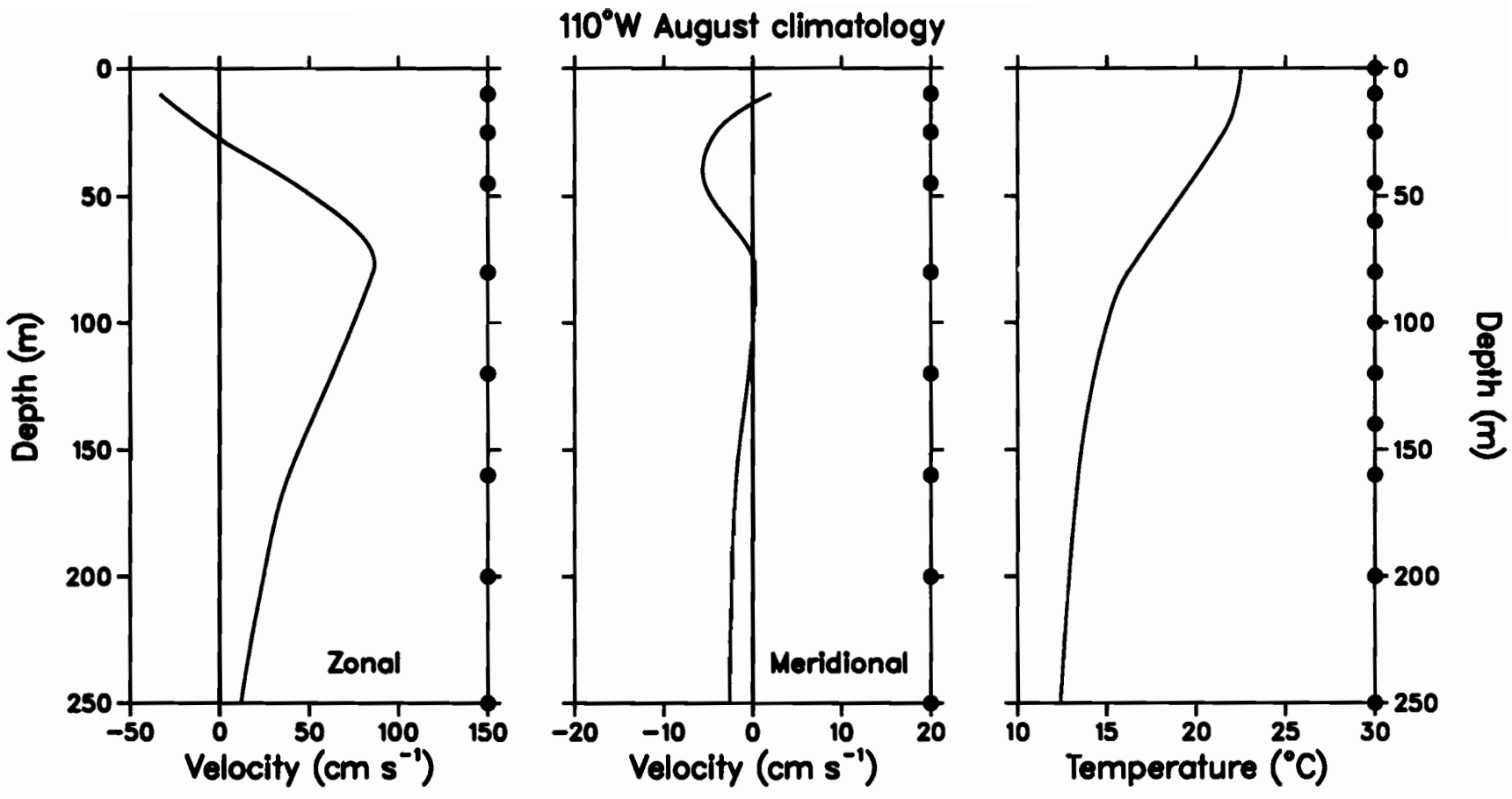


Figure A11. Continued.

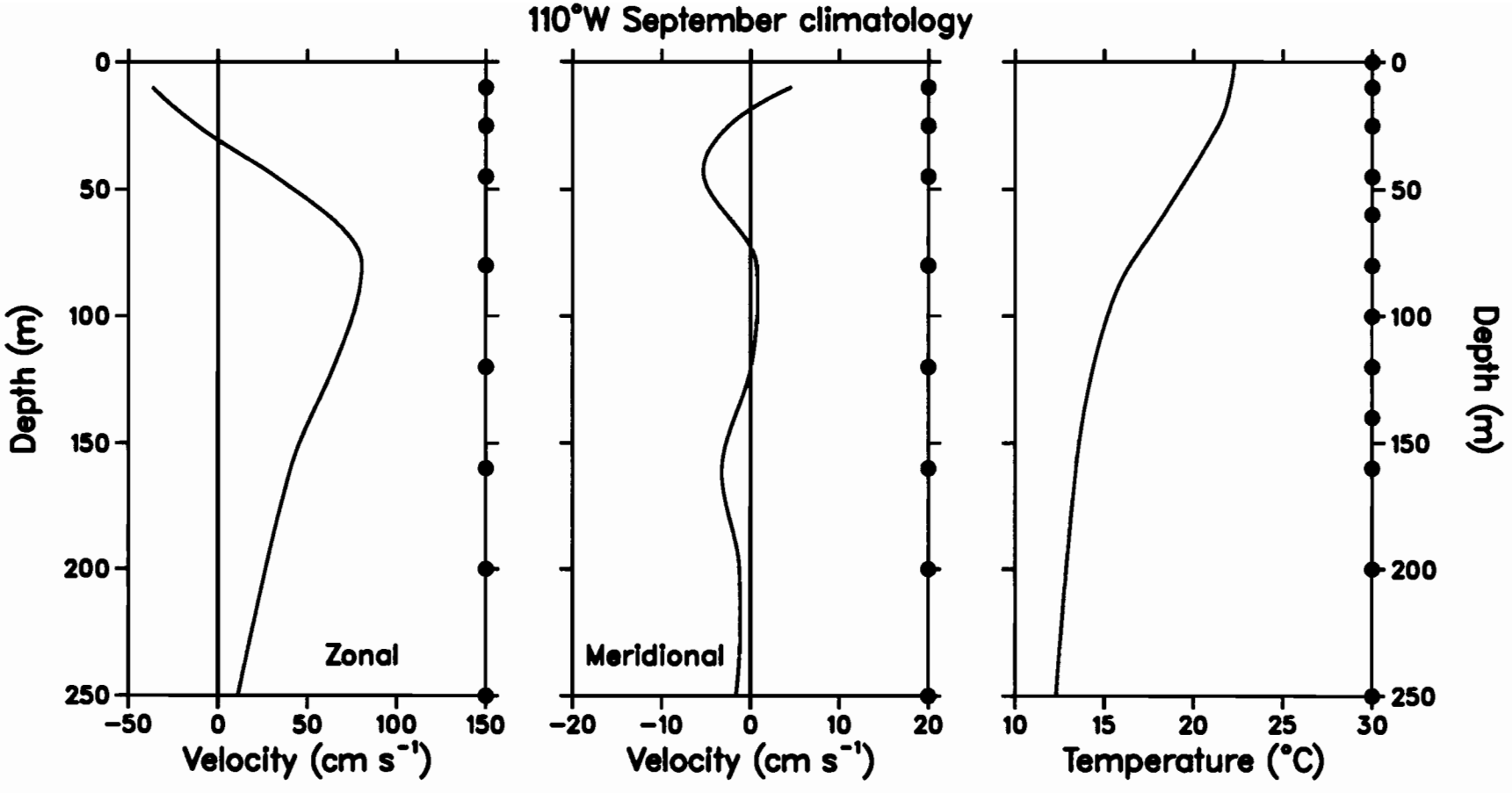


Figure A11. Continued.

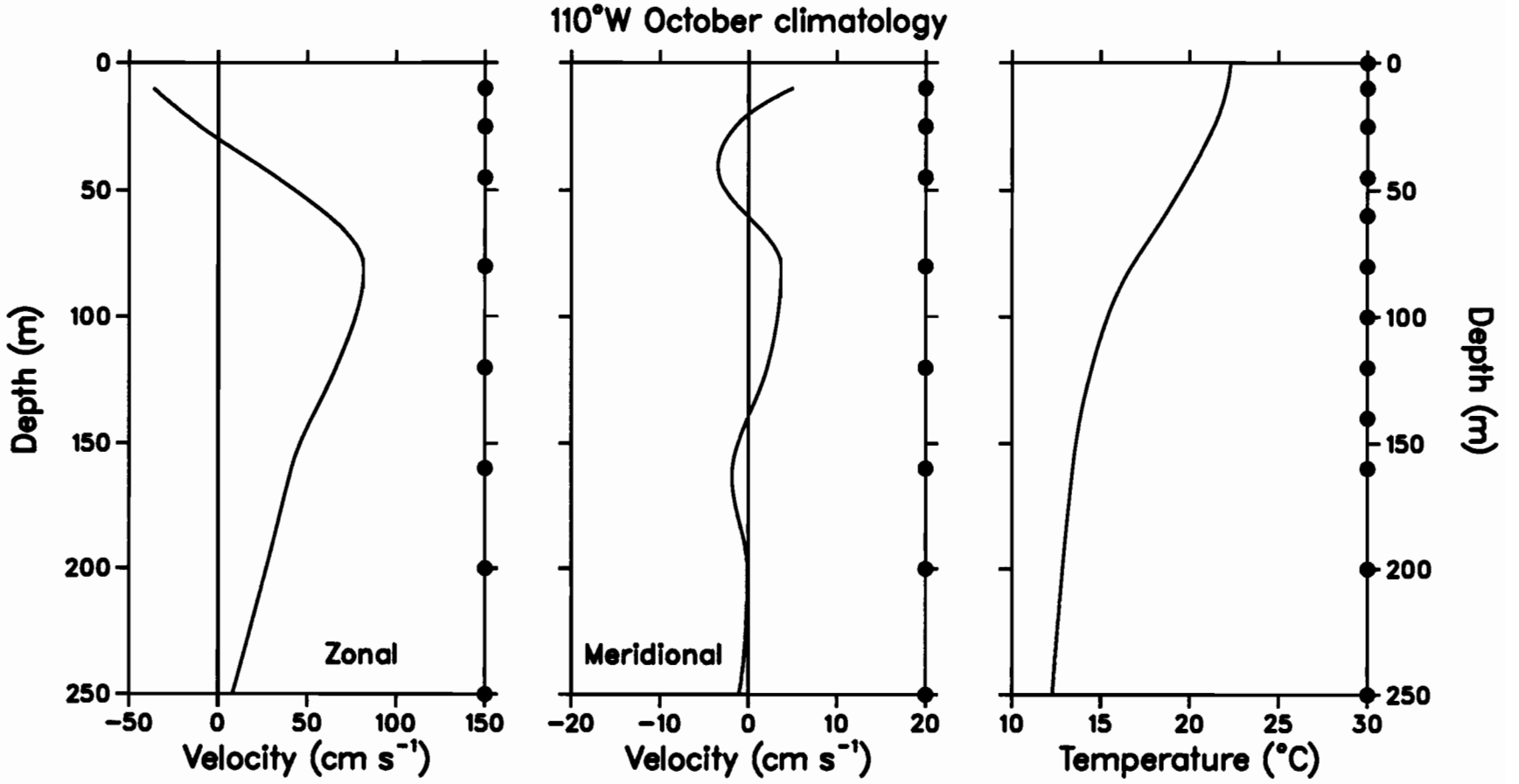


Figure A11. Continued.

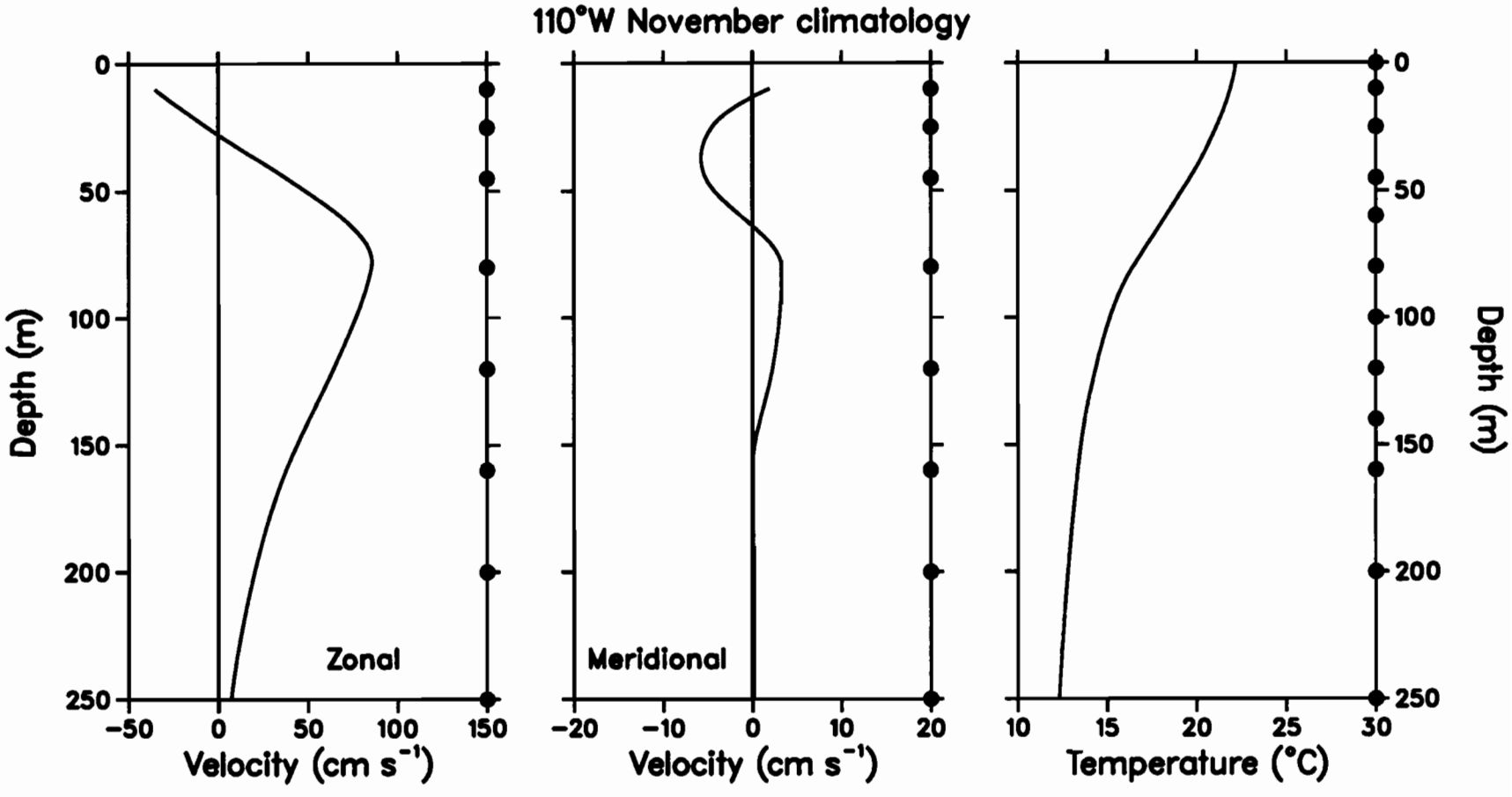


Figure A11. Continued.

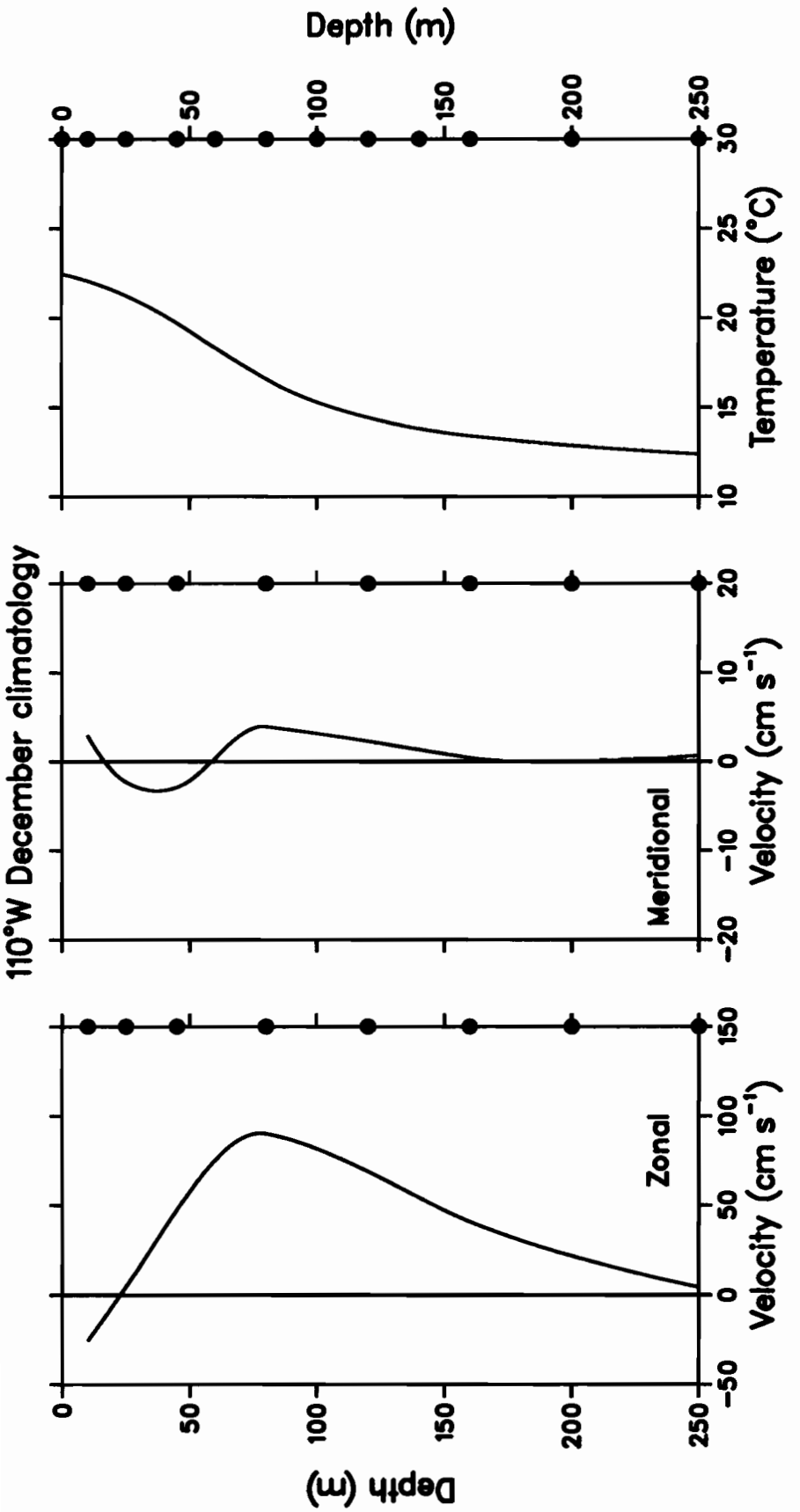


Figure A11. Continued.

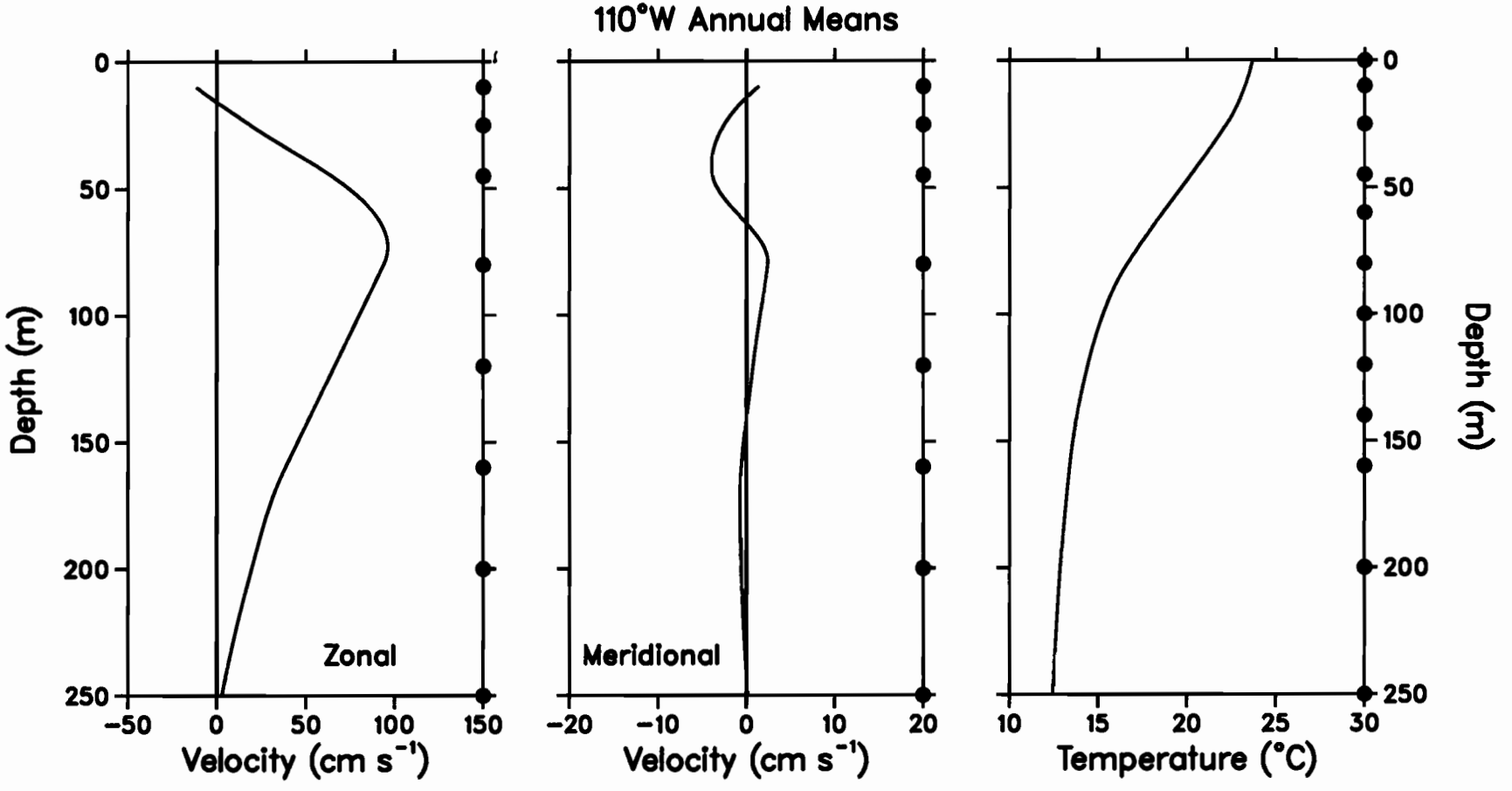


Figure A12a. Profiles of annual mean zonal velocity, meridional velocity and temperature at 0°, 110°W. Solid circles on the left axes indicate standard depths on which the profiles are based.

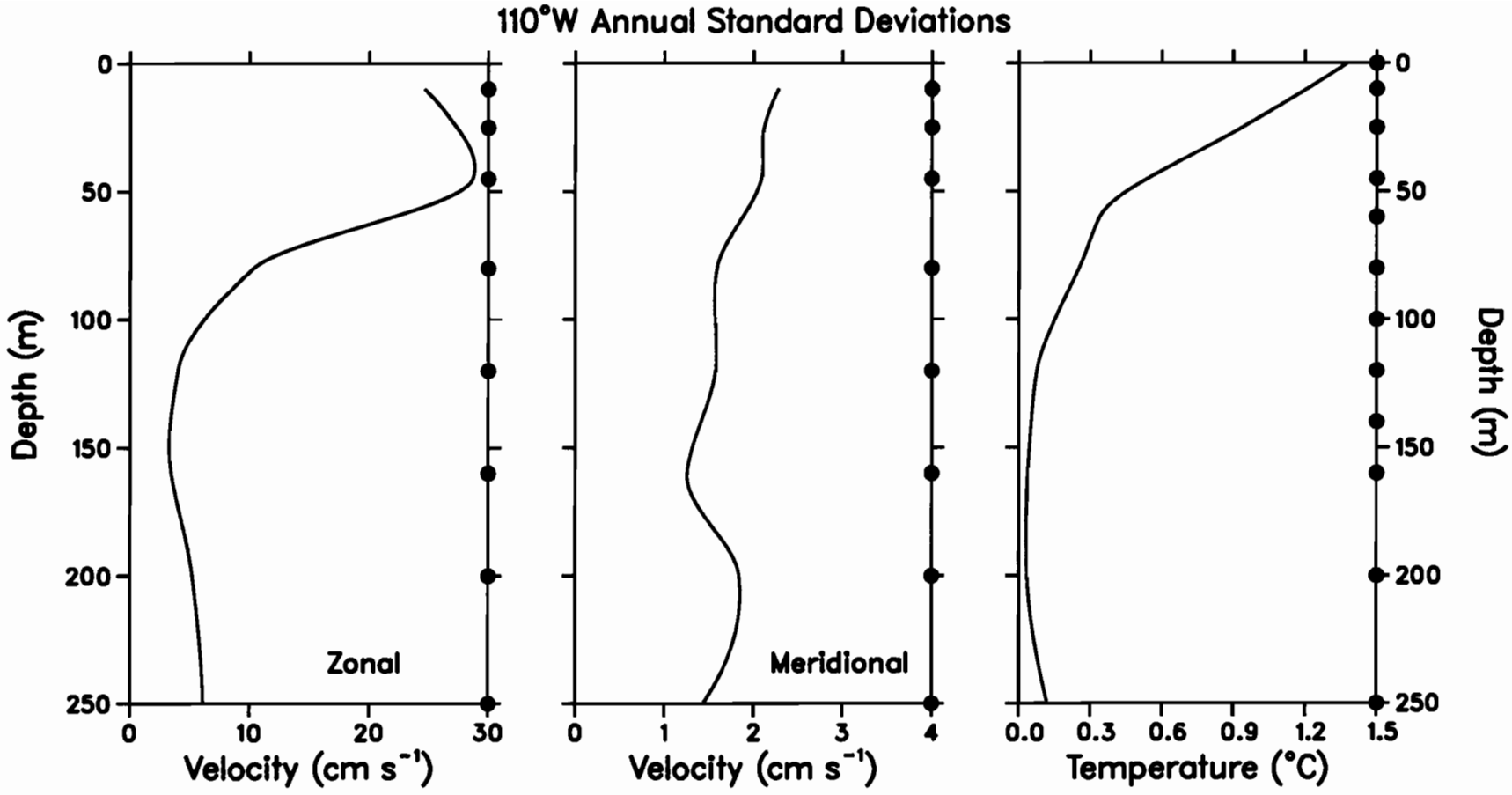


Figure A12b. Profiles of annual standard deviations for zonal velocity, meridional velocity and temperature at 0°, 110°W. Solid circles on the left axes indicate standard depths on which the profiles are based.

Table A1. Monthly averaged temperatures (in °C) at 0°, 110°W for 1980–1991. Filled data are underlined and missing data are indicated by –999.99.

Month	SST	10 m	25 m	35 m	45 m	60 m	80 m	100 m	120 m	140 m	160 m	200 m	250 m	300 m	500 m
Mar 80	-999.99	24.67	23.68	-999.99	20.43	18.59	16.14	14.94	14.33	13.72	13.30	12.83	12.42	-999.99	-999.99
Apr 80	-999.99	24.94	24.10	-999.99	21.03	19.22	16.81	15.39	14.64	13.89	13.39	12.86	12.54	-999.99	-999.99
May 80	-999.99	25.14	24.39	-999.99	21.83	19.98	17.50	15.82	14.94	14.06	13.47	12.85	12.64	-999.99	-999.99
Jun 80	-999.99	24.37	23.48	-999.99	21.11	19.28	16.85	15.32	14.60	13.88	13.36	12.72	12.55	-999.99	-999.99
Jul 80	-999.99	22.91	21.91	-999.99	19.65	18.02	15.84	14.68	14.16	13.64	13.24	12.67	12.40	-999.99	-999.99
Aug 80	22.32	22.04	21.14	-999.99	19.04	17.58	15.64	14.72	14.21	13.71	13.32	12.74	12.34	-999.99	-999.99
Sep 80	22.15	21.69	20.93	-999.99	18.93	17.60	15.82	14.91	14.35	13.79	13.36	12.78	12.36	-999.99	-999.99
Oct 80	22.13	21.76	21.15	-999.99	19.59	18.27	16.50	15.31	14.62	13.92	13.42	12.84	12.38	-999.99	-999.99
Nov 80	22.84	22.56	22.10	-999.99	20.74	19.20	17.14	15.76	14.95	14.15	13.57	12.88	12.36	-999.99	-999.99
Dec 80	23.17	22.87	22.36	-999.99	20.79	19.12	16.90	15.52	14.81	14.11	13.57	12.85	12.35	-999.99	-999.99
Jan 81	23.21	22.69	21.83	-999.99	19.73	18.15	16.06	14.85	14.29	13.74	13.32	12.77	12.36	-999.99	-999.99
Feb 81	24.17	23.27	21.77	-999.99	19.16	17.65	15.63	14.57	14.04	13.50	13.13	12.71	12.40	-999.99	-999.99
Mar 81	25.20	24.43	22.81	-999.99	20.39	18.77	16.62	15.02	14.35	13.66	13.21	12.76	12.49	-999.99	-999.99
Apr 81	-999.99	25.20	24.14	-999.99	21.84	20.00	17.55	15.38	14.58	13.77	13.26	12.78	12.52	-999.99	-999.99
May 81	-999.99	24.94	24.15	-999.99	21.56	19.65	17.11	15.27	14.50	13.73	13.23	12.73	12.50	-999.99	-999.99
Jun 81	-999.99	23.82	22.92	-999.99	20.64	18.89	16.55	15.19	14.49	13.79	13.29	12.71	12.50	-999.99	-999.99
Jul 81	21.76	22.26	21.38	-999.99	19.60	18.08	16.05	14.87	14.28	13.69	13.25	12.70	-999.99	-999.99	-999.99
Aug 81	21.30	21.32	20.51	-999.99	18.85	17.57	15.88	14.79	14.23	13.67	13.25	12.73	-999.99	-999.99	-999.99
Sep 81	21.63	21.64	20.89	-999.99	19.37	18.18	16.61	15.34	14.65	13.97	13.45	12.78	-999.99	-999.99	-999.99
Oct 81	22.22	22.16	21.45	-999.99	20.07	18.82	17.15	15.62	14.86	14.10	13.53	12.78	-999.99	-999.99	-999.99
Nov 81	22.46	22.38	21.68	-999.99	20.36	19.00	17.18	15.64	14.83	14.03	13.45	12.76	12.41	-999.99	-999.99
Dec 81	22.81	22.75	22.04	-999.99	20.67	19.22	17.28	15.78	14.91	14.04	13.45	12.79	12.41	-999.99	-999.99
Jan 82	23.53	23.48	22.63	-999.99	20.97	19.46	17.44	15.99	15.09	14.18	13.56	12.86	12.46	-999.99	-999.99
Feb 82	24.46	24.39	23.33	-999.99	21.25	19.60	17.41	15.92	15.03	14.14	13.54	12.91	12.56	-999.99	-999.99
Mar 82	25.22	25.14	23.97	-999.99	21.69	19.79	17.26	15.70	14.77	13.96	13.43	12.93	12.63	-999.99	-999.99
Apr 82	25.81	25.74	24.63	-999.99	22.48	20.34	17.50	16.03	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
May 82	26.00	25.96	25.01	-999.99	23.15	20.92	17.95	16.55	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Jun 82	25.25	25.22	24.42	-999.99	22.87	20.70	17.81	16.41	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Jul 82	24.16	24.09	23.42	-999.99	22.16	20.20	17.59	16.19	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Aug 82	24.10	23.99	23.51	-999.99	22.70	21.03	18.81	17.38	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Sep 82	25.10	24.93	24.68	-999.99	24.34	23.23	21.76	20.23	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Oct 82	26.03	25.89	25.76	-999.99	25.63	25.25	24.74	23.39	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Nov 82	26.72	26.66	26.58	-999.99	26.47	26.39	26.27	25.51	22.74	19.49	17.09	13.96	12.80	-999.99	-999.99
Dec 82	27.44	27.42	27.34	-999.99	27.20	26.96	26.63	25.67	22.67	19.66	17.32	13.94	12.78	-999.99	-999.99
Jan 83	28.09	27.98	27.69	-999.99	27.21	26.25	24.97	22.74	20.19	17.63	15.81	13.66	12.73	-999.99	-999.99
Feb 83	28.57	28.37	27.68	-999.99	26.52	24.51	21.84	18.83	17.25	15.66	14.61	13.61	12.76	-999.99	-999.99
Mar 83	28.96	28.80	27.82	-999.99	26.02	23.41	19.93	17.23	16.31	15.40	14.74	13.95	12.93	-999.99	-999.99
Apr 83	29.22	29.11	27.86	-999.99	25.46	22.89	19.45	17.45	16.50	15.54	14.89	14.18	13.03	-999.99	-999.99
May 83	28.90	28.78	27.21	-999.99	24.20	22.09	19.28	17.70	16.62	15.55	14.83	14.10	12.92	-999.99	-999.99
Jun 83	27.40	27.29	25.66	-999.99	22.49	20.92	18.84	17.49	16.44	15.41	14.71	14.00	12.80	-999.99	-999.99
Jul 83	25.21	25.14	23.73	-999.99	21.01	19.77	18.11	17.10	16.17	15.25	14.60	13.85	12.62	-999.99	-999.99
Aug 83	23.24	23.19	21.91	-999.99	19.42	18.42	17.07	16.34	15.59	14.84	14.27	13.47	12.05	-999.99	-999.99
Sep 83	21.59	21.57	20.27	-999.99	17.70	16.89	15.81	15.20	14.70	14.18	13.76	13.05	11.43	-999.99	-999.99
Oct 83	20.73	20.57	19.21	-999.99	16.70	15.94	14.93	14.37	14.01	13.68	13.38	12.82	11.33	-999.99	-999.99
Nov 83	20.62	20.16	18.74	-999.99	16.39	15.66	14.68	14.13	13.74	13.44	13.21	12.78	11.62	-999.99	-999.99
Dec 83	20.90	20.20	18.73	-999.99	16.52	15.79	14.83	14.24	13.77	13.40	13.18	12.81	11.91	-999.99	-999.99
Jan 84	22.33	21.33	19.62	-999.99	17.42	16.43	15.11	14.42	13.91	13.46	13.20	12.80	12.14	-999.99	-999.99
Feb 84	24.50	23.20	21.08	-999.99	18.78	17.38	15.49	14.61	14.03	13.52	13.23	12.78	12.23	-999.99	-999.99
Mar 84	25.76	24.48	21.82	-999.99	19.11	17.66	15.73	14.71	14.13	13.60	13.30	12.81	12.25	-999.99	-999.99
Apr 84	25.47	24.40	21.49	-999.99	18.36	17.19	15.64	14.75	14.20	13.68	13.37	12.87	12.37	-999.99	-999.99
May 84	23.98	23.22	20.85	-999.99	17.72	16.71	15.37	14.78	14.15	13.65	13.34	12.90	12.45	-999.99	-999.99
Jun 84	22.61	22.12	20.51	-999.99	17.65	16.59	15.19	14.69	14.03	13.60	13.33	12.95	12.48	-999.99	-999.99
Jul 84	22.06	21.72	20.51	-999.99	17.96	16.77	15.19	14.49	13.91	13.54	13.29	12.96	12.50	-999.99	-999.99

Table A1. Continued.

Month	SST	10 m	25 m	35 m	45 m	60 m	80 m	100 m	120 m	140 m	160 m	200 m	250 m	300 m	500 m
Aug 84	21.75	21.45	20.25	-999.99	17.91	16.71	15.12	14.28	13.78	13.41	13.17	12.89	12.45	-999.99	-999.99
Sep 84	21.50	21.20	19.95	-999.99	17.76	16.61	15.06	14.21	13.74	13.36	13.11	12.85	12.42	-999.99	-999.99
Oct 84	21.71	21.40	20.10	-999.99	18.05	16.68	15.07	14.21	13.72	13.35	13.12	12.84	12.42	-999.99	-999.99
Nov 84	21.88	21.44	19.98	18.66	18.00	16.41	14.86	14.13	13.64	13.32	13.11	12.78	12.42	-999.99	-999.99
Dec 84	21.91	21.27	19.80	18.70	17.72	16.11	14.75	14.13	13.66	13.37	13.16	12.77	12.39	-999.99	-999.99
Jan 85	22.63	21.61	20.04	18.82	17.75	16.15	14.83	14.20	13.75	13.46	13.22	12.81	12.36	-999.99	-999.99
Feb 85	24.07	22.74	20.80	19.38	18.28	16.60	15.04	14.38	13.89	13.54	13.27	12.84	12.44	-999.99	-999.99
Mar 85	25.22	23.94	21.68	19.94	18.69	16.99	15.38	14.67	14.10	13.66	13.37	12.90	12.57	-999.99	-999.99
Apr 85	25.11	24.11	21.94	19.73	18.43	16.78	15.48	14.71	14.16	13.73	13.47	12.96	12.67	-999.99	-999.99
May 85	24.20	23.69	22.11	-999.99	18.60	16.69	15.31	14.47	14.05	13.72	13.51	12.99	12.73	-999.99	-999.99
Jun 85	23.25	23.03	21.93	-999.99	19.02	16.81	15.18	14.27	13.93	13.64	13.42	12.93	12.72	-999.99	-999.99
Jul 85	22.44	22.27	21.36	-999.99	19.23	17.23	15.44	14.30	13.92	13.59	13.29	12.85	12.66	-999.99	-999.99
Aug 85	21.95	21.84	21.14	-999.99	19.56	17.86	15.80	14.34	13.93	13.60	13.26	12.83	12.58	-999.99	-999.99
Sep 85	21.71	21.56	20.91	-999.99	19.60	17.92	15.81	14.31	13.91	13.59	13.27	12.82	12.46	-999.99	-999.99
Oct 85	21.64	21.44	20.79	20.27	19.61	17.97	15.91	14.51	13.97	13.57	13.23	12.77	12.41	11.91	-999.99
Nov 85	21.67	21.49	21.03	20.52	19.75	18.22	16.13	14.77	14.03	13.53	13.19	12.75	12.44	11.90	-999.99
Dec 85	22.11	21.91	21.50	20.93	19.87	18.17	15.95	14.74	13.99	13.47	13.17	12.73	12.43	11.89	-999.99
Jan 86	23.41	22.96	21.94	20.95	19.60	17.64	15.49	14.45	13.79	13.34	13.06	12.65	12.35	-999.99	-999.99
Feb 86	25.00	24.00	22.01	20.49	18.96	16.94	15.22	14.24	13.64	13.26	13.01	12.62	12.28	-999.99	-999.99
Mar 86	25.82	24.54	22.47	20.31	19.36	17.23	15.61	14.66	13.95	13.49	13.17	12.72	12.34	-999.99	-999.99
Apr 86	25.78	24.84	23.29	-999.99	20.20	18.02	16.24	15.15	14.30	13.73	13.27	12.82	12.45	-999.99	-999.99
May 86	25.25	24.81	23.74	-999.99	20.96	19.03	17.06	15.57	14.54	13.87	13.33	12.81	12.53	-999.99	-999.99
Jun 86	24.57	24.44	23.77	23.40	21.78	19.87	17.63	15.87	14.69	13.97	13.35	12.77	12.50	-999.99	-999.99
Jul 86	23.53	23.44	22.78	21.93	20.80	18.83	16.63	15.12	14.25	13.69	13.14	12.67	12.37	-999.99	-999.99
Aug 86	22.71	22.58	21.93	21.15	20.09	18.54	16.52	14.95	14.11	13.61	13.13	12.70	12.35	-999.99	-999.99
Sep 86	23.17	23.09	22.76	22.41	21.82	20.81	18.79	16.62	15.05	14.19	13.57	12.94	12.48	-999.99	-999.99
Oct 86	23.99	23.89	23.80	23.65	23.31	22.47	20.50	17.99	15.94	14.71	13.92	13.05	12.55	-999.99	-999.99
Nov 86	24.05	23.84	23.84	23.69	23.30	22.35	20.38	17.74	15.90	14.66	13.92	13.05	12.60	11.96	-999.99
Dec 86	24.29	24.02	24.05	23.88	23.46	22.52	20.75	18.12	16.13	14.87	14.10	13.29	12.77	12.20	-999.99
Jan 87	25.50	25.19	25.19	24.98	24.57	23.72	22.11	19.14	16.52	15.11	14.23	13.45	12.84	12.16	-999.99
Feb 87	26.79	26.35	26.04	25.49	24.78	23.45	21.31	18.06	15.66	14.52	13.86	13.25	12.75	11.69	-999.99
Mar 87	27.68	27.21	26.49	25.52	24.47	22.43	19.76	16.45	14.80	14.03	13.58	13.14	12.79	11.55	-999.99
Apr 87	27.92	27.60	26.94	26.01	24.90	22.56	19.73	16.26	14.81	14.10	13.64	13.20	12.92	11.95	-999.99
May 87	27.15	27.03	26.64	25.98	24.83	22.34	19.38	16.54	15.07	14.24	13.74	13.25	12.94	12.25	-999.99
Jun 87	26.16	26.09	25.79	25.22	23.97	21.41	18.49	16.46	15.08	14.21	13.73	13.21	12.86	12.06	-999.99
Jul 87	25.26	25.17	24.85	24.24	23.02	20.66	18.06	16.33	15.00	14.19	13.70	13.17	12.77	11.85	-999.99
Aug 87	24.73	24.64	24.29	23.73	22.73	20.75	18.14	16.49	15.10	14.34	13.82	13.19	12.72	11.80	-999.99
Sep 87	24.74	24.66	24.25	23.73	22.75	20.92	17.98	16.41	15.05	14.28	13.75	13.13	12.68	11.66	-999.99
Oct 87	24.39	24.28	23.82	23.62	22.27	20.50	17.70	16.28	15.01	14.15	13.61	13.06	12.66	11.69	-999.99
Nov 87	23.92	23.78	23.31	-999.99	21.68	19.91	17.47	16.09	14.96	14.11	13.60	13.10	-999.99	11.71	7.90
Dec 87	23.86	23.63	22.81	-999.99	20.66	18.66	16.64	15.50	14.60	13.91	13.49	13.09	-999.99	11.56	7.88
Jan 88	24.12	23.62	22.17	-999.99	19.37	17.26	15.73	14.98	14.32	13.75	13.39	13.03	-999.99	11.54	7.86
Feb 88	24.83	24.01	22.04	-999.99	18.75	16.65	15.30	14.70	14.17	13.67	13.35	12.97	-999.99	-999.99	7.83
Mar 88	24.92	23.67	20.98	-999.99	17.77	16.07	14.98	14.39	13.85	13.44	13.20	12.88	-999.99	-999.99	7.86
Apr 88	23.46	21.79	18.76	-999.99	16.46	15.45	14.68	14.16	13.66	13.32	13.11	12.85	-999.99	-999.99	7.98
May 88	21.78	20.40	17.77	-999.99	15.91	15.25	14.49	14.01	13.60	13.37	13.14	12.89	-999.99	-999.99	-999.99
Jun 88	21.24	20.57	18.57	-999.99	16.36	15.52	14.41	13.85	13.52	13.33	13.12	12.81	-999.99	-999.99	-999.99
Jul 88	21.20	20.86	19.50	-999.99	17.08	16.01	14.60	13.88	13.54	13.29	13.10	12.70	-999.99	-999.99	-999.99
Aug 88	20.93	20.58	19.56	-999.99	17.09	16.07	14.71	14.03	13.64	13.31	13.11	-999.99	-999.99	-999.99	-999.99
Sep 88	20.73	20.38	19.31	-999.99	16.79	15.81	14.51	14.00	13.62	13.30	13.11	-999.99	-999.99	-999.99	-999.99
Oct 88	20.43	19.99	18.39	-999.99	16.01	15.13	14.08	13.69	13.42	13.19	13.03	-999.99	-999.99	-999.99	-999.99
Nov 88	19.76	18.97	16.88	-999.99	14.92	14.21	13.66	13.37	13.19	13.05	12.93	12.56	-999.99	10.93	7.96
Dec 88	19.89	18.83	16.80	-999.99	15.02	14.20	13.68	13.35	13.15	12.99	12.89	12.64	-999.99	11.28	8.17

Table A1. Continued.

Month	SST	10 m	25 m	35 m	45 m	60 m	80 m	100 m	120 m	140 m	160 m	200 m	250 m	300 m	500 m
Jan 89	21.84	20.94	18.70	-999.99	16.84	15.77	14.65	13.94	13.52	13.21	13.04	12.70	-999.99	11.58	8.32
Feb 89	24.07	23.46	20.86	-999.99	19.00	17.72	15.89	14.71	14.07	13.59	13.29	12.76	-999.99	11.65	8.36
Mar 89	24.93	24.43	22.30	-999.99	20.17	18.58	16.49	15.09	14.35	13.80	13.43	12.90	-999.99	11.71	8.40
Apr 89	25.03	24.60	23.34	-999.99	20.79	18.93	16.87	15.42	14.59	13.97	13.55	13.08	-999.99	11.82	8.51
May 89	24.95	24.70	23.95	-999.99	21.28	19.32	17.31	15.81	14.90	14.18	13.68	13.11	-999.99	11.86	8.52
Jun 89	24.27	24.11	23.50	-999.99	21.20	19.28	17.21	15.80	14.88	14.19	13.69	12.98	-999.99	11.78	8.36
Jul 89	22.98	22.83	22.16	-999.99	20.26	18.31	16.23	15.15	14.43	13.91	13.50	12.89	-999.99	11.69	8.21
Aug 89	22.04	21.88	21.20	-999.99	19.46	17.42	15.40	14.49	13.91	13.52	13.24	12.83	-999.99	11.74	8.22
Sep 89	21.83	21.67	21.15	-999.99	19.79	17.94	15.61	14.38	13.72	13.29	13.10	12.76	-999.99	11.83	8.28
Oct 89	22.01	21.84	21.41	-999.99	20.19	18.41	15.84	14.38	13.73	13.26	13.08	12.67	-999.99	11.87	8.20
Nov 89	22.19	21.96	21.40	-999.99	20.02	18.05	15.76	14.54	13.90	13.43	13.19	12.66	-999.99	12.01	8.12
Dec 89	22.63	22.36	21.80	-999.99	20.76	19.19	17.18	15.73	14.65	13.94	13.53	12.85	-999.99	12.20	8.17
Jan 90	23.88	23.59	23.09	-999.99	22.23	21.09	19.00	16.76	15.26	14.28	13.74	12.95	-999.99	12.13	8.12
Feb 90	25.19	24.81	24.18	-999.99	22.95	21.43	18.74	16.11	14.87	14.03	13.58	12.86	-999.99	11.94	7.95
Mar 90	26.02	25.63	25.00	-999.99	23.49	21.44	17.95	15.42	14.46	13.84	13.45	12.81	-999.99	11.87	7.89
Apr 90	26.41	26.13	25.65	-999.99	23.83	21.31	17.49	15.36	14.45	13.87	13.48	12.86	-999.99	11.81	7.92
May 90	26.01	25.77	25.08	-999.99	22.73	19.90	16.71	15.12	14.30	13.76	13.40	12.91	-999.99	11.80	7.96
Jun 90	24.74	24.49	23.45	-999.99	20.89	18.39	16.02	14.80	14.01	13.49	13.23	12.88	-999.99	11.83	7.96
Jul 90	23.48	23.22	22.42	-999.99	20.45	18.56	16.29	14.97	14.08	13.52	13.24	12.86	-999.99	11.89	8.00
Aug 90	23.05	22.84	22.42	-999.99	20.99	19.39	16.99	15.40	14.35	13.74	13.39	12.85	-999.99	11.88	8.06
Sep 90	22.92	22.72	22.40	-999.99	20.99	19.43	17.06	15.40	14.36	13.71	13.37	12.76	-999.99	11.82	8.07
Oct 90	22.71	22.52	22.22	-999.99	21.06	19.64	17.15	15.37	14.38	13.67	13.34	12.67	-999.99	11.82	8.06
Nov 90	22.62	22.43	22.18	-999.99	21.26	19.86	17.23	15.36	14.39	13.73	13.38	12.72	-999.99	11.81	8.13
Dec 90	23.02	22.87	22.63	-999.99	21.72	20.28	17.96	15.81	14.65	13.95	13.52	12.83	-999.99	11.86	8.22
Jan 91	24.15	24.01	23.78	-999.99	22.85	21.60	19.43	16.56	15.06	14.06	13.60	12.81	-999.99	11.89	8.15
Feb 91	25.29	24.96	24.22	-999.99	22.25	20.80	18.67	16.04	14.67	13.65	13.33	12.64	-999.99	11.66	7.95
Mar 91	25.85	25.23	23.86	-999.99	20.68	18.83	16.94	15.25	14.21	13.45	13.20	12.61	-999.99	11.56	8.04
Apr 91	26.28	25.70	24.69	-999.99	21.82	19.76	17.45	15.72	14.60	13.86	13.47	12.81	-999.99	11.87	8.27
May 91	26.70	26.41	26.01	-999.99	23.90	21.68	18.74	16.44	15.08	14.18	13.68	12.86	-999.99	12.08	8.29
Jun 91	26.30	26.13	25.86	-999.99	24.16	21.91	18.91	16.60	15.18	14.14	13.65	12.78	-999.99	12.03	8.22
Jul 91	25.01	24.82	24.50	-999.99	22.90	20.75	17.88	16.17	14.98	14.01	13.57	12.74	-999.99	12.01	8.14
Aug 91	23.58	23.31	22.87	-999.99	21.28	19.39	16.87	15.55	14.68	13.93	13.52	12.75	-999.99	12.03	8.08
Sep 91	23.06	22.77	22.29	-999.99	20.93	19.51	17.61	16.11	15.05	14.19	13.69	12.87	-999.99	12.05	8.11
Oct 91	23.36	23.15	22.79	-999.99	21.73	20.66	19.23	17.47	15.91	14.65	13.99	13.00	-999.99	12.12	8.20

Table A2. Monthly averaged zonal velocity (in cm s^{-1}) at 0°, 110°W for 1980–1991. Filled data are underlined and missing data are indicated by –999.99.

Month	10 m	25 m	45 m	80 m	120 m	160 m	200 m	250 m
Mar 80	17.20	49.82	99.47	101.61	64.82	33.57	11.82	-999.99
Apr 80	29.57	63.63	112.39	118.85	78.03	44.13	20.75	-999.99
May 80	22.10	55.29	107.82	126.11	82.60	48.45	-999.99	-999.99
Jun 80	-11.44	17.89	73.62	104.12	68.42	41.09	-999.99	-999.99
Jul 80	-35.20	-8.60	44.73	85.21	60.97	38.88	-999.99	-999.99
Aug 80	-38.11	-11.85	40.92	89.59	68.60	43.93	31.18	12.08
Sep 80	-33.48	-6.68	44.50	93.83	73.85	47.28	30.71	10.49
Oct 80	-36.09	-9.59	33.33	88.15	75.45	48.99	33.47	13.15
Nov 80	-46.66	-21.39	17.71	81.65	74.68	46.09	28.53	6.32
Dec 80	-40.67	-14.70	26.92	83.93	73.09	43.34	21.66	-2.52
Jan 81	-25.60	2.11	49.19	85.92	67.65	40.15	17.96	-6.03
Feb 81	-7.46	22.34	76.06	93.64	66.29	38.06	17.32	-6.19
Mar 81	23.81	57.19	109.03	113.63	76.71	44.27	24.38	2.66
Apr 81	33.17	67.64	116.27	114.90	74.81	42.95	24.18	4.93
May 81	6.33	37.71	91.54	104.94	67.50	36.38	16.38	-1.36
Jun 81	-18.88	13.14	69.92	106.69	71.61	37.52	14.82	-1.73
Jul 81	-29.59	6.38	59.02	102.59	71.80	39.16	17.38	-999.99
Aug 81	-33.66	0.39	50.00	96.67	75.65	45.69	26.06	-999.99
Sep 81	-40.20	-10.30	38.99	95.63	82.90	53.10	34.25	-999.99
Oct 81	-46.49	-17.35	31.73	94.85	81.34	50.74	32.00	-999.99
Nov 81	-40.03	-8.98	40.34	104.72	81.37	46.49	25.83	7.23
Dec 81	-28.76	5.05	54.80	117.61	86.36	47.71	23.31	1.48
Jan 82	-21.22	16.23	66.31	122.89	91.28	51.37	24.13	-2.87
Feb 82	-19.11	23.55	73.85	118.32	85.43	47.42	23.27	-4.05
Mar 82	-6.35	39.85	90.64	119.32	81.26	41.60	21.89	-4.36
Apr 82	16.06	59.47	110.85	131.76	90.93	-999.99	-999.99	-999.99
May 82	19.36	50.77	101.89	129.83	94.01	-999.99	-999.99	-999.99
Jun 82	-1.72	18.17	68.31	109.76	84.75	-999.99	-999.99	-999.99
Jul 82	-19.71	-5.69	43.74	99.96	83.46	-999.99	-999.99	-999.99
Aug 82	-17.63	-15.17	33.97	105.81	93.83	-999.99	-999.99	-999.99
Sep 82	-10.44	-26.29	22.51	97.89	89.48	-999.99	-999.99	-999.99
Oct 82	-13.50	-41.79	6.55	71.00	70.95	-999.99	-999.99	-999.99
Nov 82	-12.60	-44.19	4.08	53.22	62.98	36.69	0.42	-21.88
Dec 82	-10.69	-40.03	8.37	41.81	45.47	22.26	-5.42	-22.92
Jan 83	-35.62	-50.86	-2.78	19.36	7.69	-8.27	-14.96	-13.64
Feb 83	-46.52	-46.60	1.60	15.14	-0.52	-8.01	0.92	12.78
Mar 83	-28.78	-20.22	28.77	40.88	31.29	22.75	27.08	31.01
Apr 83	-999.99	2.95	52.64	70.33	61.10	42.16	32.47	23.93
May 83	59.96	17.12	67.23	86.06	65.99	37.92	19.77	5.40
Jun 83	-6.68	19.00	69.17	86.74	57.78	26.94	8.07	-1.66
Jul 83	-47.81	15.05	65.10	84.29	56.39	29.22	15.06	12.40
Aug 83	-39.59	7.70	57.53	77.76	56.87	37.15	28.92	28.71
Sep 83	-37.20	1.25	50.89	68.32	53.49	40.23	33.86	31.64
Oct 83	-44.77	2.55	55.63	71.81	55.35	43.11	35.96	31.09
Nov 83	-36.32	15.95	70.28	83.68	63.10	46.81	37.88	32.02
Dec 83	-14.02	36.55	84.65	91.41	70.07	49.69	36.82	27.48
Jan 84	-1.91	49.13	94.64	94.41	70.51	49.64	32.19	17.14
Feb 84	6.88	59.45	100.42	92.09	62.24	41.90	21.76	3.32
Mar 84	21.35	77.42	107.45	94.00	58.78	35.71	14.86	-4.47
Apr 84	35.15	92.61	121.01	101.87	64.98	36.63	15.40	-4.39
May 84	35.35	87.11	125.10	99.98	65.03	34.30	11.49	-10.28
Jun 84	19.52	65.78	114.66	96.43	62.01	33.16	9.10	-14.23
Jul 84	0.16	41.51	96.91	95.26	59.16	32.40	9.43	-12.54

Table A2. Continued.

Month	10 m	25 m	45 m	80 m	120 m	160 m	200 m	250 m
Aug 84	-22.69	15.21	71.19	83.70	52.89	27.10	5.96	-13.72
Sep 84	-42.90	-8.45	41.88	66.86	46.31	21.70	2.29	-15.21
Oct 84	-54.02	-20.52	24.80	58.29	38.44	16.40	-1.82	-17.84
Nov 84	-49.78	-10.27	35.37	64.03	37.60	17.45	0.30	-14.39
Dec 84	-28.36	11.90	58.47	73.12	42.46	22.08	4.76	-10.16
Jan 85	-11.26	26.19	73.42	79.60	47.21	26.54	7.11	-10.44
Feb 85	-4.80	34.32	81.08	80.57	48.68	28.83	9.15	-8.70
Mar 85	3.31	47.84	93.37	80.45	46.73	26.96	7.98	-8.99
Apr 85	21.96	70.12	113.63	86.54	51.91	31.60	11.98	-5.81
May 85	38.31	76.42	114.31	87.15	59.00	39.66	19.15	0.26
Jun 85	27.70	54.92	93.18	88.28	62.73	44.17	24.23	6.06
Jul 85	1.45	28.12	72.47	92.96	65.59	46.34	29.57	15.36
Aug 85	-24.36	-0.34	40.21	81.94	64.11	45.12	31.07	20.26
Sep 85	-48.70	-24.79	12.27	68.06	60.94	41.93	27.47	16.14
Oct 85	-45.60	-18.92	21.14	78.97	64.99	40.74	25.52	13.23
Nov 85	-18.51	2.97	40.98	100.67	72.09	42.65	27.28	14.83
Dec 85	-6.69	10.81	45.83	105.28	70.83	42.92	25.98	11.55
Jan 86	-9.80	16.17	52.27	90.47	57.46	32.51	14.73	-0.75
Feb 86	1.95	42.15	77.52	85.06	49.57	24.52	6.27	-9.79
Mar 86	36.92	81.72	113.64	102.16	62.32	33.83	12.84	-6.65
Apr 86	59.74	100.73	140.90	117.79	75.05	42.90	19.95	-2.00
May 86	59.80	93.63	143.71	133.22	82.46	50.13	22.30	2.14
Jun 86	39.25	63.28	112.37	134.22	82.20	52.17	-999.99	3.43
Jul 86	-5.34	16.23	65.43	101.65	66.73	40.14	-999.99	2.03
Aug 86	-21.49	-3.83	37.68	75.92	64.31	38.19	-999.99	7.28
Sep 86	-5.13	3.02	31.19	75.19	80.47	51.19	-999.99	11.87
Oct 86	-7.41	-0.63	25.39	83.30	87.22	53.42	-999.99	6.44
Nov 86	-21.72	-11.27	18.59	89.94	84.06	45.90	15.70	-3.92
Dec 86	-26.34	-12.45	17.65	87.15	92.43	51.54	24.93	-1.57
Jan 87	-23.89	-6.66	22.80	78.65	90.69	49.22	25.02	1.51
Feb 87	-20.68	0.11	36.51	77.00	63.26	26.72	6.87	-11.21
Mar 87	-12.38	11.01	56.99	87.19	50.34	20.03	1.37	-15.20
Apr 87	5.54	29.99	82.02	101.22	58.92	32.31	13.40	-3.49
May 87	18.66	42.62	93.68	111.62	68.15	43.47	25.44	9.65
Jun 87	5.00	26.07	73.16	110.98	67.98	43.40	26.87	12.96
Jul 87	-15.41	2.36	47.76	104.50	67.62	42.24	25.85	12.12
Aug 87	-22.85	-7.12	32.56	98.75	71.75	44.98	29.32	16.49
Sep 87	-33.42	-16.38	22.72	92.66	67.27	39.40	24.38	12.35
Oct 87	-37.00	-15.76	28.42	98.93	65.66	35.95	17.89	2.54
Nov 87	-34.51	-12.09	32.27	101.67	63.46	35.41	16.59	-999.99
Dec 87	-37.83	-11.86	31.52	88.25	52.42	29.34	14.26	-999.99
Jan 88	-30.35	2.25	45.88	80.26	48.33	24.50	8.67	-999.99
Feb 88	-13.45	19.49	63.41	71.19	45.06	19.40	1.74	-999.99
Mar 88	5.76	37.80	82.04	61.85	36.50	13.68	-1.14	-999.99
Apr 88	31.94	62.61	107.28	69.51	38.66	14.91	-0.83	-999.99
May 88	41.88	71.89	116.72	76.59	47.96	22.90	5.84	-999.99
Jun 88	21.73	53.59	98.11	72.85	51.51	31.81	20.10	-999.99
Jul 88	-13.31	19.21	63.13	67.87	44.41	28.89	29.92	-999.99
Aug 88	-45.21	-12.24	31.14	65.89	35.68	17.98	-999.99	-999.99
Sep 88	-59.89	-26.29	16.84	63.64	36.06	15.49	-999.99	-999.99
Oct 88	-57.78	-17.56	25.72	56.73	33.91	12.20	-999.99	-999.99
Nov 88	-44.75	6.02	49.71	54.38	32.99	10.77	-4.67	-999.99
Dec 88	-27.20	25.47	69.50	64.50	43.94	22.78	9.62	-999.99

Table A2. Continued.

Month	10 m	25 m	45 m	80 m	120 m	160 m	200 m	250 m
Jan 89	-11.41	38.94	83.20	86.49	59.61	35.91	20.19	-999.99
Feb 89	2.32	54.14	98.67	105.40	67.82	38.17	16.51	-999.99
Mar 89	22.63	73.39	118.25	114.76	69.07	36.37	11.68	-999.99
Apr 89	45.48	87.39	134.77	123.22	73.45	41.57	17.69	-999.99
May 89	33.06	64.65	118.08	123.06	73.80	43.11	20.43	-999.99
Jun 89	-9.67	17.72	72.34	111.15	67.65	35.75	11.85	-999.99
Jul 89	-35.68	-8.60	41.26	93.98	60.79	30.24	7.69	-999.99
Aug 89	-43.01	-15.65	31.33	79.29	56.30	31.09	13.89	-999.99
Sep 89	-37.64	-12.29	30.55	77.76	58.45	36.57	22.68	-999.99
Oct 89	-28.82	-5.64	38.17	85.40	59.63	37.47	23.30	-999.99
Nov 89	-30.01	-3.62	47.03	91.43	62.20	37.13	20.06	-999.99
Dec 89	-23.42	3.16	49.76	97.65	79.75	47.45	23.15	-999.99
Jan 90	-11.09	10.49	51.25	102.35	98.46	58.65	21.12	-999.99
Feb 90	-1.08	19.40	68.56	105.43	-999.99	-999.99	11.05	-999.99
Mar 90	20.50	39.62	97.85	105.50	-999.99	-999.99	6.43	-999.99
Apr 90	37.44	54.13	108.66	98.56	-999.99	-999.99	7.13	-999.99
May 90	13.77	35.00	81.68	96.48	65.70	34.40	9.52	-999.99
Jun 90	-28.67	-1.22	42.35	100.21	65.16	36.69	16.23	-999.99
Jul 90	-40.45	-14.08	29.26	99.87	70.76	44.58	26.40	-999.99
Aug 90	-34.71	-14.79	28.54	92.78	72.64	47.92	31.20	-999.99
Sep 90	-29.47	-14.01	29.34	88.39	68.26	45.70	31.14	-999.99
Oct 90	-24.31	-8.62	34.81	86.19	67.05	45.61	32.16	-999.99
Nov 90	-28.66	-12.02	32.74	82.88	69.18	47.17	33.15	-999.99
Dec 90	-21.69	-6.05	36.10	91.83	77.32	51.16	33.00	-999.99
Jan 91	-9.36	5.64	42.84	100.10	74.54	43.85	21.16	-999.99
Feb 91	-20.68	0.77	47.03	90.53	54.83	24.32	1.80	-999.99
Mar 91	-13.34	12.45	70.02	97.61	57.86	26.17	2.48	-999.99
Apr 91	15.00	36.67	90.10	128.04	83.55	48.68	21.80	-999.99
May 91	24.88	44.01	90.17	139.15	91.04	57.71	32.38	-999.99
Jun 91	14.53	33.81	80.84	128.80	82.78	52.12	29.46	-999.99
Jul 91	-16.08	5.46	56.33	113.59	75.26	45.27	23.26	-999.99
Aug 91	-38.69	-14.55	35.31	101.12	72.66	43.26	21.84	-999.99
Sep 91	-32.42	-9.99	34.71	96.50	83.96	54.03	32.11	-999.99
Oct 91	-15.41	1.38	40.49	95.78	99.67	67.79	43.91	-999.99

Table A3. Monthly averaged meridional velocity (in cm s^{-1}) at 0°, 110°W for 1980–1991. Missing data are indicated by –999.99.

Month	10 m	25 m	45 m	80 m	120 m	160 m	200 m	250 m
Mar 80	-999.99	-7.29	-5.29	-13.36	-5.14	-5.33	-8.10	-999.99
Apr 80	-999.99	-9.65	-12.44	-15.32	-5.20	-3.83	-7.12	-999.99
May 80	-999.99	-16.02	-22.83	-15.83	-6.18	-4.67	-999.99	-999.99
Jun 80	-999.99	-10.20	-16.73	-9.49	-4.63	-4.72	-999.99	-999.99
Jul 80	-999.99	-3.82	-6.67	-5.01	-3.17	-1.92	-999.99	-999.99
Aug 80	-999.99	-3.39	-5.83	-5.04	-4.97	-3.29	-11.80	-17.60
Sep 80	-999.99	-0.40	-5.42	-3.55	-5.84	-7.53	-9.69	-9.56
Oct 80	-999.99	-4.31	-8.77	-999.99	-8.36	-10.04	-7.79	-3.36
Nov 80	-999.99	-4.55	-10.84	-999.99	-11.70	-8.88	-0.69	2.14
Dec 80	-999.99	2.27	-5.82	-999.99	-10.47	-5.57	8.98	4.28
Jan 81	-999.99	0.80	-4.29	-999.99	-7.02	-3.88	-999.99	1.94
Feb 81	-999.99	-9.23	-9.74	-10.45	-6.84	-4.10	4.08	3.31
Mar 81	-999.99	-13.61	-13.47	-10.22	-7.33	-2.71	-0.06	2.84
Apr 81	-999.99	-7.06	-9.80	-4.85	-2.84	0.85	-1.05	-0.49
May 81	-999.99	-3.15	-7.13	-1.41	-0.58	0.90	0.58	0.63
Jun 81	-999.99	-2.87	-6.69	0.56	-0.72	-0.77	0.24	3.18
Jul 81	-2.32	-999.99	-4.71	3.06	0.09	-999.99	-1.37	-999.99
Aug 81	-1.68	-999.99	-4.64	2.91	0.74	-999.99	-3.35	-999.99
Sep 81	1.88	-999.99	-6.30	2.85	2.40	-999.99	-1.41	-999.99
Oct 81	5.98	-999.99	-7.16	1.99	0.91	-999.99	1.62	-999.99
Nov 81	9.02	-999.99	-6.92	-0.23	-2.53	-0.65	-0.43	-3.57
Dec 81	7.38	-999.99	-5.14	-1.53	-4.28	-1.90	-1.88	-1.33
Jan 82	4.72	-999.99	-2.68	-2.41	-5.12	-3.05	-1.66	0.45
Feb 82	3.33	-999.99	-2.73	-3.32	-5.34	-2.66	-1.38	0.87
Mar 82	-2.70	-999.99	-3.76	-3.38	-6.35	-1.13	-0.30	0.53
Apr 82	-9.50	-999.99	-7.55	-999.99	-6.01	-999.99	-999.99	-999.99
May 82	-6.65	-999.99	-11.56	-999.99	-2.07	-999.99	-999.99	-999.99
Jun 82	0.17	-999.99	-8.40	-999.99	-0.20	-999.99	-999.99	-999.99
Jul 82	4.31	-999.99	-3.66	-999.99	-0.59	-999.99	-999.99	-999.99
Aug 82	7.72	-999.99	-2.84	-999.99	0.83	-999.99	-999.99	-999.99
Sep 82	9.38	-999.99	-0.10	-999.99	2.80	-999.99	-999.99	-999.99
Oct 82	1.55	-999.99	-6.94	-999.99	-1.06	-999.99	-999.99	-999.99
Nov 82	-8.58	-999.99	-20.40	-24.92	-5.84	-2.33	4.19	3.40
Dec 82	-6.92	-999.99	-15.49	-12.46	-3.05	2.07	4.87	2.01
Jan 83	-3.27	-999.99	-4.81	-1.76	-0.50	2.40	3.50	1.83
Feb 83	-3.28	-999.99	-0.25	-1.14	-4.56	-2.57	-1.24	0.22
Mar 83	-3.95	-999.99	1.59	-4.11	-7.70	-6.48	-4.36	-1.52
Apr 83	-999.99	-999.99	0.12	-2.96	-3.55	-3.31	-3.75	0.50
May 83	14.50	-999.99	-0.50	-0.63	-1.63	-1.36	-2.33	0.65
Jun 83	7.54	-999.99	-0.31	1.86	-2.12	-1.76	-1.19	0.33
Jul 83	-0.56	-999.99	-2.37	3.13	-0.76	-0.61	-2.51	0.68
Aug 83	-1.10	-999.99	-5.74	-1.46	-3.86	-2.70	-4.52	-0.53
Sep 83	2.39	-999.99	-3.22	-3.31	-6.36	-3.99	-4.58	0.40
Oct 83	0.54	-999.99	2.90	2.62	-0.98	2.15	-2.59	4.30
Nov 83	-4.19	-7.12	1.66	4.09	1.02	5.78	-999.99	3.08
Dec 83	-3.04	-4.54	-4.64	-0.29	-2.18	2.92	-999.99	-3.58
Jan 84	-0.20	-4.25	-10.14	-2.46	-1.50	2.74	-999.99	-5.18
Feb 84	-0.02	-1.96	-11.83	-2.82	-0.34	4.26	-999.99	-1.21
Mar 84	-1.22	1.30	-5.53	-1.35	0.94	5.13	-999.99	0.79
Apr 84	1.07	-1.94	3.31	-1.43	2.07	5.17	-999.99	-1.46
May 84	-1.07	-10.62	2.69	-5.82	-0.99	2.96	-999.99	-1.57
Jun 84	-6.86	-12.90	-1.81	-6.95	-4.47	-0.23	-999.99	0.47
Jul 84	-3.01	-7.91	-2.83	-3.68	-3.65	-1.55	-999.99	-0.08

Table A3. Continued.

Month	10 m	25 m	45 m	80 m	120 m	160 m	200 m	250 m
Aug 84	3.81	-4.88	-4.26	-3.40	-3.15	-2.86	-999.99	1.81
Sep 84	8.77	-2.08	-6.98	-6.07	-4.96	-4.71	-999.99	3.94
Oct 84	7.63	-4.30	-9.94	-6.43	-2.42	-2.32	-999.99	1.30
Nov 84	6.42	-6.09	-8.09	-5.14	0.75	0.73	-999.99	0.88
Dec 84	10.01	-3.14	-6.03	-5.55	-1.79	-1.95	-999.99	2.00
Jan 85	10.72	-0.67	-4.67	-6.53	-1.49	-1.43	-999.99	2.40
Feb 85	6.56	-0.61	-0.55	-6.51	2.91	2.44	-999.99	0.88
Mar 85	-0.46	-4.63	1.85	-5.53	4.22	1.03	-999.99	0.09
Apr 85	-0.97	-6.11	2.68	-1.84	5.36	1.96	-999.99	1.82
May 85	0.09	-8.55	-3.56	-0.26	4.86	4.02	-999.99	1.45
Jun 85	-5.60	-14.71	-13.34	-5.68	-1.50	0.32	-999.99	2.02
Jul 85	-4.25	-13.08	-12.99	-9.79	-6.74	-3.65	-999.99	-0.12
Aug 85	8.42	-2.53	-7.30	-8.30	-5.52	-4.30	-999.99	-3.48
Sep 85	10.19	0.73	-4.33	-2.18	-1.65	-2.00	-999.99	-2.98
Oct 85	0.73	-4.21	-4.34	4.55	-0.43	-0.05	-999.99	-2.26
Nov 85	-0.92	-6.28	-9.04	6.84	-1.65	-0.19	-999.99	-1.48
Dec 85	3.01	-5.36	-13.86	7.39	-0.68	2.56	-999.99	-0.80
Jan 86	5.09	-1.54	-9.51	7.40	1.26	4.13	-999.99	-2.69
Feb 86	2.35	1.92	0.53	8.81	1.91	0.08	-999.99	-2.85
Mar 86	7.88	12.36	10.89	16.17	4.17	-3.80	-999.99	1.28
Apr 86	12.66	17.13	14.05	19.37	2.46	-5.57	-999.99	6.06
May 86	-1.53	-0.74	2.25	12.20	-3.45	-5.18	-999.99	5.53
Jun 86	-10.17	-12.77	-7.50	7.34	-3.18	-999.99	-999.99	1.70
Jul 86	-3.08	-7.51	-3.82	6.92	2.41	-999.99	-999.99	1.11
Aug 86	0.29	-5.97	-5.05	5.68	5.90	-999.99	-999.99	-2.27
Sep 86	-5.20	-11.91	-10.99	5.58	7.21	-999.99	-999.99	-5.44
Oct 86	-6.85	-11.45	-6.20	8.30	8.56	-999.99	-999.99	-4.58
Nov 86	-1.68	-6.05	-1.64	7.23	7.45	2.77	-999.99	-0.48
Dec 86	0.33	-5.01	-5.42	0.98	8.18	6.50	-999.99	3.43
Jan 87	-4.31	-7.92	-7.14	-0.14	9.14	8.28	-999.99	0.34
Feb 87	-5.95	-7.36	-1.68	3.46	4.66	4.96	-999.99	-1.58
Mar 87	-3.67	-2.40	5.20	6.63	2.04	2.98	-999.99	-0.91
Apr 87	0.15	3.02	4.78	8.60	-4.20	2.42	-999.99	-0.90
May 87	3.47	4.68	-5.11	6.03	-15.95	0.81	-999.99	2.63
Jun 87	0.08	-1.85	-10.15	3.87	-18.12	1.07	-999.99	4.35
Jul 87	-1.90	-6.21	-6.21	8.18	-13.47	3.20	-999.99	4.07
Aug 87	2.04	-4.23	-6.39	10.62	-12.50	3.91	-999.99	6.22
Sep 87	2.62	-6.80	-11.10	9.48	-7.44	2.05	-999.99	3.80
Oct 87	-0.32	-8.73	-14.15	9.59	4.32	1.08	-999.99	-1.81
Nov 87	-0.77	-5.07	-999.99	5.68	7.92	-999.99	6.61	-999.99
Dec 87	-2.90	-5.31	-999.99	-0.13	2.20	-999.99	2.18	-999.99
Jan 88	-1.00	-3.62	-999.99	-0.08	0.20	-999.99	2.71	-999.99
Feb 88	7.11	4.07	-999.99	2.63	4.27	-999.99	7.20	-999.99
Mar 88	9.52	9.98	-999.99	4.78	8.07	-999.99	5.14	-999.99
Apr 88	2.35	9.81	-999.99	7.45	10.57	-999.99	-0.20	-999.99
May 88	-12.97	0.83	-999.99	5.61	10.56	-999.99	1.44	-999.99
Jun 88	-17.69	-5.08	-999.99	-2.09	3.90	-999.99	6.87	-999.99
Jul 88	-4.08	0.12	-999.99	-2.58	1.35	-999.99	7.10	-999.99
Aug 88	4.69	2.76	-999.99	3.25	6.07	-999.99	-999.99	-999.99
Sep 88	0.86	-3.20	-999.99	0.06	3.07	-999.99	-999.99	-999.99
Oct 88	-2.02	-7.07	-999.99	-2.73	-0.33	-999.99	-999.99	-999.99
Nov 88	2.00	-3.96	-999.99	2.75	3.87	-999.99	-2.06	-999.99
Dec 88	2.26	-2.13	-999.99	4.78	6.12	-999.99	-0.23	-999.99

Table A3. Continued.

Month	10 m	25 m	45 m	80 m	120 m	160 m	200 m	250 m
Jan 89	-0.84	0.23	-999.99	5.62	5.09	-999.99	0.88	-999.99
Feb 89	-3.59	4.82	-999.99	10.31	5.17	-999.99	2.07	-999.99
Mar 89	-8.76	1.60	-999.99	11.52	5.49	-999.99	2.86	-999.99
Apr 89	-0.71	3.47	-999.99	9.60	2.88	-999.99	-2.06	-999.99
May 89	9.37	7.33	10.59	4.46	-2.07	-999.99	-7.78	-999.99
Jun 89	5.96	-1.64	-3.95	-1.60	-5.15	-999.99	-1.78	-999.99
Jul 89	4.65	-5.84	-6.42	0.42	-3.30	-999.99	5.07	-999.99
Aug 89	6.82	-2.88	-2.30	2.33	-0.29	-999.99	4.81	-999.99
Sep 89	7.95	-1.53	-3.89	0.40	0.88	-999.99	2.52	-999.99
Oct 89	7.08	-1.21	-5.03	2.27	1.84	-999.99	-1.63	-999.99
Nov 89	3.39	-1.84	-1.90	9.09	4.87	-999.99	-1.95	-999.99
Dec 89	-1.01	-3.43	3.50	18.59	12.97	-999.99	-1.18	-999.99
Jan 90	-2.18	-3.00	5.11	20.86	21.53	-999.99	-0.85	-999.99
Feb 90	-4.86	-4.30	0.77	13.35	-999.99	-999.99	2.61	-999.99
Mar 90	-2.87	-1.57	2.35	12.42	-999.99	-999.99	1.14	-999.99
Apr 90	5.65	6.52	11.97	13.35	-999.99	-999.99	0.26	-999.99
May 90	5.21	1.03	-999.99	2.68	5.71	-999.99	3.54	-999.99
Jun 90	3.48	-5.53	-999.99	-4.92	11.36	-999.99	1.68	-999.99
Jul 90	1.48	-5.74	-999.99	-8.30	15.23	-999.99	-0.21	-999.99
Aug 90	-0.85	-8.37	-999.99	-14.65	10.11	-999.99	1.82	-999.99
Sep 90	5.32	-2.77	-999.99	-11.70	8.41	-999.99	4.20	-999.99
Oct 90	7.28	2.32	-999.99	-6.01	12.59	-999.99	4.40	-999.99
Nov 90	3.68	-0.21	-999.99	-0.95	12.36	-999.99	-0.53	-999.99
Dec 90	10.29	5.86	14.05	11.06	12.56	-999.99	-7.53	-999.99
Jan 91	14.90	9.77	4.44	13.90	10.82	-999.99	-7.06	-999.99
Feb 91	5.76	1.47	-4.02	8.29	4.30	-999.99	1.10	-999.99
Mar 91	-4.43	-2.72	-3.07	8.50	1.39	-999.99	-2.06	-999.99
Apr 91	-8.04	-3.39	-1.88	11.52	4.32	-999.99	-14.10	-999.99
May 91	0.69	1.77	1.37	16.97	5.56	-999.99	-11.47	-999.99
Jun 91	9.78	8.50	4.08	19.98	1.23	-999.99	-2.85	-999.99
Jul 91	3.60	-0.16	-2.85	15.22	-0.30	-999.99	-1.18	-999.99
Aug 91	-2.20	-7.59	-7.18	11.98	2.23	-999.99	-1.21	-999.99
Sep 91	10.98	5.82	4.65	15.95	4.90	-999.99	1.42	-999.99
Oct 91	30.39	25.50	22.85	22.65	7.38	-999.99	5.07	-999.99

Table A4. Monthly averaged winds and air temperatures at 0°, 110°W for 1980–1991. Missing data are indicated by –999.99.

Month	Wind Velocity (m/s) u	Wind Velocity (m/s) v	Wind Speed (m/s)	Wind Pseudostress (m**2/s**2) u	Wind Pseudostress (m**2/s**2) v	Air Temperature (deg C)
Mar 80	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Apr 80	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
May 80	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Jun 80	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Jul 80	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Aug 80	-4.27	2.76	5.22	-24.07	15.41	21.98
Sep 80	-4.16	2.80	5.14	-22.89	15.60	21.88
Oct 80	-4.25	2.94	5.30	-24.24	17.28	21.89
Nov 80	-4.49	3.53	5.84	-27.48	21.94	22.53
Dec 80	-4.11	3.55	5.56	-24.17	20.63	22.99
Jan 81	-3.51	2.86	4.65	-17.88	14.06	23.16
Feb 81	-2.83	2.43	4.01	-13.17	10.25	23.99
Mar 81	-2.31	2.19	3.66	-10.22	8.60	25.08
Apr 81	-2.87	2.26	4.03	-13.26	10.03	25.45
May 81	-3.72	2.61	4.74	-18.94	13.36	24.95
Jun 81	-4.24	2.46	5.08	-22.78	13.32	23.91
Jul 81	-4.57	1.96	5.11	-24.63	10.74	22.57
Aug 81	-4.79	2.11	5.39	-27.52	12.46	21.60
Sep 81	-5.14	3.05	6.12	-32.83	19.78	21.66
Oct 81	-5.03	3.48	6.21	-32.17	22.14	22.09
Nov 81	-4.19	3.30	5.48	-24.27	18.49	22.44
Dec 81	-3.33	3.23	4.78	-17.32	15.91	23.02
Jan 82	-2.76	3.04	4.30	-13.14	13.66	23.88
Feb 82	-2.53	2.58	3.99	-11.18	10.72	24.86
Mar 82	-2.69	2.15	3.86	-11.47	8.59	25.52
Apr 82	-2.95	2.59	4.17	-13.31	11.62	25.78
May 82	-3.26	3.52	4.93	-16.82	18.31	25.73
Jun 82	-3.48	3.84	5.30	-18.92	20.98	25.08
Jul 82	-3.37	3.76	5.14	-17.95	20.04	24.07
Aug 82	-3.29	4.05	5.32	-18.00	22.31	23.82
Sep 82	-3.38	4.68	5.89	-20.25	28.58	24.51
Oct 82	-3.44	5.00	6.21	-22.08	32.12	25.36
Nov 82	-3.26	4.81	6.01	-20.63	29.88	26.11
Dec 82	-2.98	4.56	5.70	-17.76	26.81	26.77
Jan 83	-999.99	-999.99	-999.99	-999.99	-999.99	27.23
Feb 83	-999.99	-999.99	-999.99	-999.99	-999.99	27.45
Mar 83	-999.99	-999.99	-999.99	-999.99	-999.99	27.67
Apr 83	-999.99	-999.99	-999.99	-999.99	-999.99	27.92
May 83	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Jun 83	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Jul 83	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Aug 83	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Sep 83	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Oct 83	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Nov 83	-2.77	1.44	3.31	-10.90	5.19	20.75
Dec 83	-2.35	1.39	2.93	-8.15	4.40	21.02
Jan 84	-1.67	1.46	2.49	-5.04	3.98	22.40
Feb 84	-0.98	1.40	2.15	-2.87	3.57	24.41
Mar 84	-0.87	1.13	2.02	-2.37	2.96	25.63
Apr 84	-1.26	0.99	2.11	-3.50	2.70	25.38
May 84	-1.88	1.14	2.51	-6.20	3.54	23.96
Jun 84	-2.51	1.55	3.13	-9.44	5.77	22.61

Table A4. Continued.

Month	Wind Velocity (m/s) u	Wind Velocity (m/s) v	Wind Speed (m/s)	Wind Pseudostress (m**2/s**2) u	Wind Pseudostress (m**2/s**2) v	Air Temperature (deg C)
Jul 84	-3.14	1.95	3.81	-13.69	8.47	22.05
Aug 84	-3.67	2.20	4.36	-17.53	10.45	21.69
Sep 84	-3.82	2.61	4.73	-19.26	13.31	21.21
Oct 84	-4.05	3.11	5.24	-22.67	17.62	21.01
Nov 84	-4.32	3.21	5.53	-25.60	19.38	-999.99
Dec 84	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Jan 85	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Feb 85	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Mar 85	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Apr 85	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
May 85	-3.70	1.54	4.25	-16.71	7.15	23.72
Jun 85	-3.97	2.12	4.67	-19.82	10.45	23.15
Jul 85	-4.44	2.64	5.28	-25.20	14.77	22.29
Aug 85	-4.96	3.13	5.96	-31.30	19.70	21.75
Sep 85	-4.92	3.22	5.97	-31.13	20.27	21.48
Oct 85	-4.62	2.82	5.51	-27.30	16.70	-999.99
Nov 85	-4.58	2.64	5.40	-25.99	14.83	-999.99
Dec 85	-4.35	2.77	5.26	-23.81	14.83	-999.99
Jan 86	-3.70	2.31	4.51	-18.44	11.49	-999.99
Feb 86	-2.83	1.13	3.35	-11.93	4.85	-999.99
Mar 86	-2.17	0.31	2.68	-8.01	1.00	-999.99
Apr 86	-2.25	0.63	2.97	-8.78	2.69	-999.99
May 86	-3.03	2.21	4.14	-14.43	11.22	-999.99
Jun 86	-3.86	3.65	5.44	-21.95	20.97	24.27
Jul 86	-4.20	3.77	5.79	-25.05	22.56	23.36
Aug 86	-4.31	3.48	5.68	-25.55	20.66	22.51
Sep 86	-4.39	3.81	5.92	-27.09	23.30	22.53
Oct 86	-4.56	4.16	6.28	-29.60	26.51	-999.99
Nov 86	-4.64	4.06	6.30	-30.33	25.94	23.81
Dec 86	-4.28	4.25	6.19	-27.72	26.72	24.12
Jan 87	-3.94	4.08	5.88	-24.64	25.74	25.13
Feb 87	-3.28	2.97	4.84	-17.83	16.50	26.21
Mar 87	-2.58	2.33	4.09	-11.85	10.15	26.78
Apr 87	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
May 87	-4.46	3.02	5.64	-25.79	17.32	26.59
Jun 87	-4.68	3.27	5.91	-28.42	20.00	25.98
Jul 87	-4.78	3.43	6.02	-29.77	21.43	25.02
Aug 87	-4.76	3.66	6.14	-30.12	23.41	24.46
Sep 87	-4.68	4.20	6.41	-30.66	27.94	24.41
Oct 87	-4.49	4.07	6.16	-28.31	25.82	24.12
Nov 87	-4.37	3.57	5.75	-25.73	21.12	23.78
Dec 87	-4.23	3.28	5.49	-23.82	18.66	23.80
Jan 88	-3.62	2.50	4.64	-18.56	12.92	24.10
Feb 88	-2.92	1.29	3.68	-13.18	5.68	24.66
Mar 88	-2.68	0.43	3.24	-11.10	1.58	24.61
Apr 88	-2.30	0.25	2.70	-8.19	0.69	23.30
May 88	-2.32	0.37	2.60	-7.65	1.31	21.80
Jun 88	-3.29	0.97	3.65	-13.95	5.12	21.21
Jul 88	-3.88	2.08	4.58	-19.00	10.93	21.12
Aug 88	-3.95	2.63	4.85	-20.46	13.63	20.86
Sep 88	-4.08	2.70	5.00	-21.71	14.14	20.66
Oct 88	-3.63	2.54	4.53	-17.69	12.36	20.32

Table A4. Continued.

Month	Wind Velocity (m/s) u	Wind Velocity (m/s) v	Wind Speed (m/s)	Wind Pseudostress (m**2/s**2) u	Wind Pseudostress (m**2/s**2) v	Air Temperature (deg C)
Nov 88	-2.75	1.89	3.46	-10.39	7.49	19.74
Dec 88	-2.20	1.63	2.92	-7.04	5.54	19.94
Jan 89	-1.99	1.65	3.06	-7.31	5.74	21.71
Feb 89	-2.12	0.57	3.25	-8.63	1.60	23.75
Mar 89	-2.47	-0.58	3.17	-9.16	-2.38	24.66
Apr 89	-2.96	0.05	3.39	-11.53	0.77	24.85
May 89	-3.56	1.85	4.42	-17.05	9.82	24.72
Jun 89	-3.72	3.30	5.22	-20.02	18.13	24.02
Jul 89	-3.78	3.45	5.25	-20.55	18.85	22.83
Aug 89	-4.07	2.82	5.08	-21.34	14.82	21.88
Sep 89	-4.12	2.63	5.00	-21.03	13.48	21.65
Oct 89	-4.00	2.90	5.07	-20.60	14.95	21.85
Nov 89	-999.99	-999.99	-999.99	-999.99	-999.99	21.98
Dec 89	-999.99	-999.99	-999.99	-999.99	-999.99	22.41
Jan 90	-3.73	2.90	4.84	-18.76	14.78	23.66
Feb 90	-3.40	2.06	4.18	-15.09	9.46	24.91
Mar 90	-3.10	1.43	3.68	-12.22	5.68	25.66
Apr 90	-3.15	2.10	4.07	-13.78	9.81	26.12
May 90	-3.72	3.15	5.07	-20.27	17.29	26.23
Jun 90	-4.55	3.14	5.72	-27.48	18.60	-999.99
Jul 90	-5.12	2.66	5.92	-31.61	16.28	-999.99
Aug 90	-5.25	2.86	6.10	-33.14	17.99	-999.99
Sep 90	-5.09	3.06	6.06	-31.78	19.01	-999.99
Oct 90	-5.09	2.89	5.98	-31.28	17.69	-999.99
Nov 90	-4.88	3.02	5.86	-29.59	17.84	-999.99
Dec 90	-4.27	3.45	5.63	-24.87	19.67	22.95
Jan 91	-4.11	3.65	5.63	-23.78	21.00	23.93
Feb 91	-3.78	2.98	5.02	-20.61	16.42	24.99
Mar 91	-2.83	1.90	3.77	-12.82	8.53	25.47
Apr 91	-2.70	2.02	3.81	-12.78	9.46	25.83
May 91	-3.43	3.23	5.04	-19.43	17.84	26.23
Jun 91	-4.06	3.76	5.75	-24.48	22.08	25.98
Jul 91	-4.64	3.49	5.97	-28.80	21.60	24.81
Aug 91	-4.85	3.08	5.88	-29.71	18.97	23.40
Sep 91	-4.63	3.00	5.68	-27.74	17.68	22.85
Oct 91	-4.59	3.21	5.80	-27.74	19.02	23.09

Table A5. Mean seasonal cycles of temperature (in °C) between the surface and 500 m at 0°, 110°W. Statistics are based on N monthly estimates, M of which are directly measured.

January

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	23.46	1.05	0.25	21.84	25.50	10	9
10	22.94	1.33	-0.05	20.94	25.19	10	9
25	21.90	1.98	-0.09	18.70	25.19	10	9
45	20.13	2.52	0.30	16.84	24.57	10	10
60	18.73	2.66	0.54	15.77	23.72	10	7
80	16.99	2.47	0.81	14.65	22.11	10	9
100	15.53	1.61	0.98	13.94	19.14	10	9
120	14.55	0.93	0.74	13.52	16.52	10	8
140	13.86	0.57	0.83	13.21	15.11	10	7
160	13.44	0.36	0.83	13.04	14.23	10	6
200	12.88	0.23	1.39	12.65	13.45	10	9
250	12.42	0.23	0.71	12.14	12.84	6	6
300	11.86	0.29	-0.06	11.54	12.16	5	6
500	8.11	0.19	-0.26	7.86	8.32	4	4

February

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	24.84	0.82	1.14	24.07	26.79	10	9
10	24.12	1.06	0.65	22.74	26.35	10	9
25	22.63	1.74	0.58	20.80	26.04	10	9
45	20.42	2.24	0.71	18.28	24.78	10	9
60	18.82	2.37	0.68	16.60	23.45	10	7
80	16.87	2.10	0.87	15.04	21.31	10	10
100	15.33	1.20	1.04	14.24	18.06	10	9
120	14.41	0.63	0.64	13.64	15.66	10	8
140	13.74	0.37	0.77	13.26	14.52	10	8
160	13.36	0.24	0.58	13.01	13.86	10	6
200	12.83	0.18	0.89	12.62	13.25	10	9
250	12.44	0.19	0.38	12.23	12.75	6	6
300	11.73	0.14	0.72	11.65	11.94	4	6
500	8.02	0.23	0.61	7.83	8.36	4	4

Table A5. Continued.

March

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	25.66	0.81	1.34	24.92	27.68	10	10
10	24.85	0.96	1.13	23.67	27.21	11	9
25	23.19	1.61	0.54	20.98	26.49	11	10
45	20.57	2.00	0.59	17.77	24.47	11	10
60	18.76	1.89	0.53	16.07	22.43	11	7
80	16.62	1.36	0.92	14.98	19.76	11	11
100	15.12	0.58	0.90	14.39	16.45	11	9
120	14.30	0.30	0.29	13.85	14.80	11	8
140	13.70	0.20	0.22	13.44	14.03	11	8
160	13.33	0.13	0.34	13.17	13.58	11	7
200	12.84	0.14	0.40	12.61	13.14	11	10
250	12.50	0.18	0.16	12.25	12.79	7	7
300	11.67	0.15	0.34	11.55	11.87	4	6
500	8.05	0.25	0.55	7.86	8.40	4	4

April

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	25.70	1.21	-0.01	23.46	27.92	9	9
10	25.00	1.44	-0.44	21.79	27.60	11	9
25	23.54	2.21	-0.59	18.76	26.94	11	10
45	20.92	2.48	-0.17	16.46	24.90	11	10
60	19.05	2.08	-0.08	15.45	22.56	11	6
80	16.86	1.36	0.35	14.68	19.73	11	10
100	15.30	0.60	-0.22	14.16	16.26	11	9
120	14.40	0.33	-0.88	13.66	14.81	10	8
140	13.79	0.21	-0.79	13.32	14.10	10	7
160	13.40	0.16	-0.30	13.11	13.64	10	6
200	12.91	0.13	1.06	12.78	13.20	10	8
250	12.58	0.19	0.65	12.37	12.92	6	6
300	11.86	0.06	0.90	11.81	11.95	4	6
500	8.17	0.27	0.22	7.92	8.51	4	4

Table A5. Continued.

May

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	25.11	1.64	-0.64	21.78	27.15	9	9
10	24.73	1.82	-1.00	20.40	27.03	11	8
25	23.61	2.53	-0.98	17.77	26.64	11	10
45	21.13	2.72	-0.52	15.91	24.83	11	11
60	19.22	2.20	-0.38	15.25	22.34	11	5
80	16.99	1.48	-0.14	14.49	19.38	11	10
100	15.49	0.85	-0.21	14.01	16.55	11	8
120	14.51	0.49	-0.36	13.60	15.08	10	8
140	13.88	0.28	-0.17	13.37	14.24	10	7
160	13.45	0.20	0.04	13.14	13.74	10	6
200	12.93	0.15	0.80	12.73	13.25	10	8
250	12.63	0.18	0.57	12.45	12.94	6	6
300	12.00	0.21	0.18	11.80	12.25	4	6
500	8.26	0.28	-0.12	7.96	8.52	3	4

June

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	24.27	1.66	-0.42	21.24	26.30	9	9
10	24.04	1.65	-0.61	20.57	26.13	11	8
25	23.11	2.15	-0.64	18.57	25.86	11	10
45	20.88	2.44	-0.37	16.36	24.16	11	11
60	18.97	2.03	-0.20	15.52	21.91	11	5
80	16.75	1.44	-0.11	14.41	18.91	11	10
100	15.39	0.93	-0.15	13.85	16.60	11	9
120	14.44	0.55	-0.18	13.52	15.18	10	8
140	13.82	0.31	-0.12	13.33	14.21	10	7
160	13.42	0.21	0.31	13.12	13.73	10	6
200	12.87	0.15	0.84	12.71	13.21	10	9
250	12.60	0.15	0.69	12.48	12.86	6	6
300	11.93	0.14	0.01	11.78	12.06	4	6
500	8.18	0.20	-0.19	7.96	8.36	3	4

Table A5. Continued.

July

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	23.29	1.48	0.14	21.20	25.26	10	9
10	23.15	1.41	0.14	20.86	25.17	11	9
25	22.28	1.63	0.05	19.50	24.85	11	9
45	20.18	1.81	0.03	17.08	23.02	11	10
60	18.45	1.51	0.10	16.01	20.75	11	5
80	16.39	1.18	0.24	14.60	18.11	11	11
100	15.19	0.97	0.61	13.88	17.10	11	8
120	14.43	0.72	1.10	13.54	16.17	11	8
140	13.85	0.53	1.57	13.29	15.25	11	6
160	13.45	0.42	1.72	13.10	14.60	11	6
200	12.91	0.35	1.72	12.67	13.85	11	10
250	12.55	0.16	0.09	12.37	12.77	6	6
300	11.86	0.13	-0.20	11.69	12.01	4	6
500	8.12	0.11	-0.20	8.00	8.21	3	4

August

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	22.51	1.10	0.43	20.93	24.73	11	10
10	22.33	1.13	0.42	20.58	24.64	11	9
25	21.57	1.32	0.45	19.56	24.29	11	9
45	19.67	1.58	0.27	17.09	22.73	11	10
60	18.15	1.33	0.33	16.07	20.75	11	5
80	16.19	1.01	0.31	14.71	18.14	11	11
100	15.03	0.82	0.58	14.03	16.49	11	8
120	14.32	0.59	0.86	13.64	15.59	11	8
140	13.79	0.44	1.18	13.31	14.84	11	6
160	13.41	0.35	1.35	13.11	14.27	11	6
200	12.90	0.24	1.31	12.70	13.47	10	9
250	12.41	0.23	-0.22	12.05	12.72	6	6
300	11.86	0.13	0.36	11.74	12.03	4	6
500	8.12	0.09	0.32	8.06	8.22	3	4

Table A5. Continued.

September

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	22.28	1.11	0.76	20.73	24.74	11	9
10	22.09	1.15	0.74	20.38	24.66	11	9
25	21.37	1.42	0.47	19.31	24.25	11	9
45	19.68	1.84	0.06	16.79	22.75	11	10
60	18.33	1.66	0.22	15.81	20.92	11	5
80	16.42	1.31	0.33	14.51	18.79	11	11
100	15.17	0.91	0.25	14.00	16.62	11	8
120	14.38	0.56	-0.08	13.62	15.05	11	8
140	13.80	0.38	-0.14	13.29	14.28	11	6
160	13.41	0.25	0.09	13.10	13.76	11	6
200	12.87	0.13	0.82	12.76	13.13	10	9
250	12.31	0.44	-1.17	11.43	12.68	6	6
300	11.84	0.16	0.22	11.66	12.05	4	6
500	8.15	0.11	0.34	8.07	8.28	3	4

October

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	22.30	1.24	0.20	20.43	24.39	11	9
10	22.09	1.31	0.17	19.99	24.28	11	9
25	21.38	1.74	-0.12	18.39	23.82	11	9
45	19.87	2.26	-0.26	16.01	23.31	11	10
60	18.59	2.17	0.07	15.13	22.47	11	4
80	16.73	1.91	0.52	14.08	20.50	11	10
100	15.38	1.38	0.64	13.69	17.99	11	8
120	14.51	0.86	0.48	13.42	15.94	11	8
140	13.84	0.52	0.40	13.19	14.71	11	6
160	13.42	0.32	0.49	13.03	13.99	11	6
200	12.85	0.14	0.28	12.67	13.06	10	10
250	12.29	0.48	-1.21	11.33	12.66	6	6
300	11.88	0.16	0.33	11.69	12.12	5	7
500	8.15	0.08	-0.41	8.06	8.20	3	5

Table A5. Continued.

November

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	22.20	1.33	-0.30	19.76	24.05	10	10
10	21.90	1.50	-0.48	18.97	23.84	10	9
25	21.11	2.10	-0.62	16.88	23.84	10	9
45	19.64	2.53	-0.50	14.92	23.30	10	10
60	18.29	2.36	-0.12	14.21	22.35	10	6
80	16.45	1.89	0.47	13.66	20.38	10	9
100	15.15	1.25	0.53	13.37	17.74	10	9
120	14.35	0.81	0.37	13.19	15.90	10	8
140	13.74	0.49	0.37	13.05	14.66	10	7
160	13.35	0.29	0.42	12.93	13.92	10	6
200	12.80	0.17	0.49	12.56	13.10	10	9
250	12.31	0.35	-1.18	11.62	12.60	6	6
300	11.72	0.40	-1.15	10.93	12.01	6	6
500	8.03	0.12	-0.07	7.90	8.13	4	4

December

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	22.46	1.32	-0.50	19.89	24.29	10	9
10	22.07	1.59	-0.71	18.83	24.02	10	9
25	21.25	2.18	-0.75	16.80	24.05	10	9
45	19.72	2.55	-0.48	15.02	23.46	10	10
60	18.33	2.41	-0.10	14.20	22.52	10	7
80	16.59	1.99	0.49	13.68	20.75	10	9
100	15.29	1.30	0.57	13.35	18.12	10	9
120	14.43	0.83	0.37	13.15	16.13	10	8
140	13.81	0.52	0.37	12.99	14.87	10	7
160	13.41	0.33	0.46	12.89	14.10	10	6
200	12.86	0.19	1.09	12.64	13.29	10	9
250	12.38	0.27	-0.33	11.91	12.77	6	6
300	11.83	0.36	-0.31	11.28	12.20	6	6
500	8.11	0.16	-0.70	7.88	8.22	4	4

Table A6. Mean seasonal cycles of zonal velocity (in cm s^{-1}) between the surface and 250 m at 0°, 110°W. Statistics are based on N monthly estimates, M of which are directly measured.

January

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-15.59	9.03	-0.23	-30.35	-1.91	10	9
25	16.05	17.51	0.57	-6.66	49.13	10	9
45	58.18	21.23	0.18	22.80	94.64	10	8
80	92.11	13.63	0.96	78.65	122.89	10	9
120	70.57	18.16	0.19	47.21	98.46	10	10
160	41.23	11.30	-0.09	24.50	58.65	10	6
200	19.23	7.56	-0.13	7.11	32.19	10	5
250	-0.24	9.49	0.78	-10.44	17.14	6	6

February

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-7.61	10.32	-0.09	-20.68	6.88	10	9
25	27.57	20.08	0.16	0.11	59.45	10	9
45	72.31	20.05	-0.27	36.51	100.42	10	8
80	91.92	14.51	0.30	71.19	118.32	10	10
120	60.35	12.49	0.56	45.06	85.43	9	9
160	32.15	9.50	0.22	19.40	47.42	9	6
200	11.57	7.79	0.17	1.74	23.27	10	6
250	-6.10	5.28	0.73	-11.21	3.32	6	6

March

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	10.86	16.53	-0.17	-13.34	36.92	11	9
25	48.01	23.68	-0.12	11.01	81.72	11	10
45	94.43	18.77	-0.59	56.99	118.25	11	9
80	98.01	16.78	-0.68	61.85	119.32	11	11
120	60.44	13.61	-0.13	36.50	81.26	10	10
160	31.22	9.51	-0.40	13.68	44.27	10	7
200	10.42	8.10	0.25	-1.14	24.38	11	7
250	-6.17	5.90	-0.05	-15.20	2.66	6	6

April

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	30.10	15.17	0.23	5.54	59.74	11	9
25	65.91	21.79	-0.02	29.99	100.73	11	10
45	112.53	16.93	-0.10	82.02	140.90	11	9
80	108.39	18.90	-0.60	69.51	131.76	11	10
120	69.03	15.62	-0.51	38.66	90.93	10	10
160	37.30	10.10	-1.00	14.91	48.68	9	6
200	15.14	7.60	-0.75	-0.83	24.18	10	6
250	-2.15	4.19	0.79	-5.81	4.93	5	5

Table A6. Continued.

May

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	28.50	15.05	0.49	6.33	59.80	11	9
25	59.92	20.21	0.31	35.00	93.63	11	10
45	107.70	18.19	0.36	81.68	143.71	11	9
80	111.65	20.33	-0.24	76.59	139.15	11	10
120	72.48	13.93	0.01	47.96	94.01	11	11
160	41.05	9.82	-0.09	22.90	57.71	10	6
200	18.10	8.31	0.12	5.84	32.38	9	5
250	0.08	7.16	-0.13	-10.28	9.65	5	5

June

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	5.21	21.22	-0.02	-28.67	39.25	11	9
25	33.01	22.79	0.18	-1.22	65.78	11	10
45	81.71	21.26	0.03	42.35	114.66	11	9
80	105.77	17.10	-0.12	72.85	134.22	11	10
120	69.71	10.13	0.06	51.51	84.75	11	11
160	40.79	7.21	0.42	31.81	52.17	10	5
200	19.08	7.31	0.08	9.10	29.46	8	5
250	1.30	10.17	-0.39	-14.23	12.96	5	5

July

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-21.57	17.02	-0.05	-47.81	1.45	11	10
25	9.37	16.82	0.31	-14.08	41.51	11	9
45	58.31	18.01	0.44	29.26	96.91	11	9
80	94.71	12.30	-0.62	67.87	113.59	11	11
120	63.59	8.60	-0.71	44.41	75.26	11	11
160	37.94	6.65	-0.20	28.89	46.34	11	5
200	20.51	8.43	-0.32	7.69	29.92	9	6
250	5.87	11.46	-0.65	-12.54	15.36	5	5

August

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-33.12	8.78	0.16	-45.21	-21.49	11	10
25	-5.19	10.13	0.65	-15.65	15.21	11	9
45	41.49	13.13	1.03	28.54	71.19	11	9
80	85.76	10.97	-0.15	65.89	101.12	11	11
120	62.86	11.78	-0.93	35.68	75.65	11	11
160	38.40	9.41	-0.90	17.98	47.92	11	5
200	24.38	8.95	-0.97	5.96	31.20	9	6
250	11.85	14.50	-0.62	-13.72	28.71	6	6

Table A6. Continued.

September

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-36.40	13.49	0.59	-59.89	-5.13	11	10
25	-11.36	9.14	-0.09	-26.29	3.02	11	9
45	32.17	11.75	-0.15	12.27	50.89	11	9
80	80.62	12.97	0.02	63.64	96.50	11	11
120	64.72	15.46	-0.34	36.06	83.96	11	11
160	40.60	12.36	-0.80	15.49	54.03	11	5
200	26.54	9.94	-1.48	2.29	34.25	9	6
250	11.21	15.11	-0.47	-15.21	31.64	6	6

October

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-36.15	15.84	0.37	-57.78	-7.41	11	10
25	-10.06	8.55	0.23	-20.52	2.55	11	9
45	32.69	9.69	0.99	21.14	55.63	11	9
80	81.67	14.22	-0.59	56.73	98.93	11	10
120	66.25	19.63	-0.07	33.91	99.67	11	11
160	41.13	15.90	-0.39	12.20	67.79	11	5
200	26.93	13.18	-0.89	-1.82	43.91	9	6
250	8.10	16.04	-0.21	-17.84	31.09	6	6

November

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-35.10	10.49	0.14	-49.78	-18.51	10	9
25	-5.47	10.93	0.54	-21.39	15.95	10	9
45	38.50	15.38	0.46	17.71	70.28	10	7
80	85.50	16.23	-0.59	54.38	104.72	10	9
120	64.07	16.91	-0.69	32.99	84.06	10	10
160	37.59	13.14	-1.05	10.77	47.17	10	6
200	20.07	13.66	-0.55	-4.67	37.88	10	6
250	7.01	15.90	0.21	-14.39	32.02	6	6

December

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-25.50	10.05	0.28	-40.67	-6.69	10	9
25	4.79	16.99	0.47	-14.70	36.55	10	9
45	47.52	20.40	0.27	17.65	84.65	10	8
80	90.07	15.07	0.09	64.50	117.61	10	9
120	68.87	17.20	-0.35	42.46	92.43	10	10
160	40.80	11.60	-0.65	22.08	51.54	10	6
200	21.75	9.88	-0.22	4.76	36.82	10	6
250	4.38	13.33	0.64	-10.16	27.48	6	6

Table A7. Mean seasonal cycles of meridional velocity (in cm s^{-1}) between the surface and 250 m at 0°, 110°W. Statistics are based on N directly measured monthly estimates.

January

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	2.99	6.42	0.62	-4.31	14.90	9
25	-1.13	4.88	0.90	-7.92	9.77	9
45	-3.61	5.77	0.43	-10.14	5.11	8
80	4.02	8.83	0.63	-6.53	20.86	9
120	3.29	8.59	0.75	-7.02	21.53	10
160	1.13	4.73	0.28	-3.88	8.28	6
200	-1.20	3.68	-0.53	-7.06	2.71	5
250	-0.46	2.92	-0.52	-5.18	2.40	6

February

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	1.19	5.03	-0.20	-5.95	7.11	9
25	-1.24	4.92	-0.32	-9.23	4.82	9
45	-3.66	4.71	-0.68	-11.83	0.77	8
80	2.38	7.92	-0.17	-10.45	13.35	10
120	1.19	4.47	-0.78	-6.84	5.17	9
160	0.83	3.70	-0.16	-4.10	4.96	6
200	2.61	2.89	0.22	-1.38	7.20	6
250	-0.10	2.21	0.24	-2.85	3.31	6

March

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-0.75	5.86	0.62	-8.76	9.52	9
25	-0.70	7.65	0.21	-13.61	12.36	10
45	-1.20	7.12	0.03	-13.47	10.89	9
80	2.38	9.76	-0.19	-13.36	16.17	11
120	0.75	5.29	-0.34	-7.33	8.07	10
160	-0.55	3.78	0.20	-5.33	5.13	7
200	-0.20	4.19	-0.61	-8.10	5.14	7
250	0.77	1.26	0.33	-0.91	2.84	6

April

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	0.30	6.66	0.20	-9.50	12.66	9
25	1.18	8.40	0.43	-9.65	17.13	10
45	0.57	9.29	0.02	-12.44	14.05	9
80	4.65	10.30	-0.45	-15.32	19.37	10
120	0.94	5.35	0.18	-6.01	10.57	10
160	0.17	4.07	-0.27	-5.57	5.17	6
200	-4.05	5.60	-0.83	-14.10	0.26	6
250	1.01	3.09	0.71	-1.46	6.06	5

Table A7. Continued.

May

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-0.38	6.54	-0.43	-12.97	9.37	9
25	-2.34	7.29	-0.51	-16.02	7.33	10
45	-3.70	9.67	-0.49	-22.83	10.59	9
80	2.46	9.17	-0.35	-15.83	16.97	10
120	-0.42	7.15	-0.51	-15.95	10.56	11
160	-0.19	3.87	-0.30	-5.18	4.02	6
200	-2.74	6.51	-0.32	-11.47	3.54	5
250	1.73	2.62	0.20	-1.57	5.53	5

June

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-2.32	8.59	-0.30	-17.69	9.78	9
25	-5.91	7.03	0.50	-14.71	8.50	10
45	-7.17	6.18	0.22	-16.73	4.08	9
80	0.10	8.63	1.05	-9.49	19.98	10
120	-1.95	7.16	-0.42	-18.12	11.36	11
160	-0.87	2.26	-0.83	-4.72	1.07	5
200	0.83	3.80	0.55	-2.85	6.87	5
250	2.34	1.48	0.11	0.47	4.35	5

July

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-0.95	3.17	0.61	-4.25	4.65	10
25	-5.57	4.04	-0.16	-13.08	0.12	9
45	-5.43	3.28	-1.16	-12.99	-2.37	9
80	0.69	7.55	0.33	-9.79	15.22	11
120	-1.12	6.98	0.62	-13.47	15.23	11
160	-0.91	2.55	0.57	-3.65	3.20	5
200	1.15	3.94	0.52	-2.51	7.10	6
250	1.13	1.72	0.84	-0.12	4.07	5

August

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	2.02	3.75	0.40	-2.20	8.42	10
25	-4.12	3.28	0.65	-8.37	2.76	9
45	-5.41	1.57	0.54	-7.30	-2.30	9
80	0.36	7.96	-0.25	-14.65	11.98	11
120	-0.48	6.43	-0.09	-12.50	10.11	11
160	-1.85	3.28	0.97	-4.30	3.91	5
200	-2.38	5.74	-0.35	-11.80	4.81	6
250	-2.64	8.09	-0.80	-17.60	6.22	6

Table A7. Continued.

September

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	4.58	5.03	-0.37	-5.20	10.98	10
25	-2.46	4.91	-0.30	-11.91	5.82	9
45	-5.29	4.69	0.65	-11.10	4.65	9
80	0.68	7.62	0.41	-11.70	15.95	11
120	0.06	5.66	0.04	-7.44	8.41	11
160	-3.24	3.56	0.30	-7.53	2.05	5
200	-1.26	5.17	-0.48	-9.69	4.20	6
250	-1.64	5.36	-0.23	-9.56	3.94	6

October

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	5.04	10.10	1.35	-6.85	30.39	10
25	-1.50	10.89	1.56	-11.45	25.50	9
45	-3.32	10.85	1.42	-14.15	22.85	9
80	3.68	8.56	0.78	-6.43	22.65	10
120	2.10	5.81	0.13	-8.36	12.59	11
160	-1.84	4.88	-0.79	-10.04	2.15	5
200	-0.15	4.85	-0.32	-7.79	5.07	6
250	-1.07	3.29	0.52	-4.58	4.30	6

November

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	1.88	4.21	0.23	-4.19	9.02	9
25	-4.57	2.26	0.72	-7.12	-0.21	9
45	-5.25	4.63	0.23	-10.84	1.66	7
80	3.26	4.61	-0.44	-5.14	9.09	9
120	2.24	6.73	-0.49	-11.70	12.36	10
160	-0.07	4.92	-0.64	-8.88	5.78	6
200	0.16	3.24	1.21	-2.06	6.61	6
250	0.10	2.45	-0.20	-3.57	3.08	6

December

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	2.93	5.20	0.28	-3.04	10.29	9
25	-2.31	3.88	1.05	-5.36	5.86	9
45	-2.92	8.29	0.82	-13.86	14.05	8
80	3.92	7.43	0.65	-5.55	18.59	9
120	2.26	7.60	0.01	-10.47	12.97	10
160	0.43	4.35	0.02	-5.57	6.50	6
200	0.06	5.42	0.29	-7.53	8.98	6
250	0.67	3.05	-0.10	-3.58	4.28	6

Table A8. Mean seasonal cycles of winds and air temperature at 0°, 110°W. Statistics are based on N directly measured monthly estimates.

Zonal Wind Pseudo-stress (m**2/s**2)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	-16.39	6.72	0.46	-24.64	-5.04	9
February	-12.72	5.14	0.32	-20.61	-2.87	9
March	-9.91	3.21	1.30	-12.82	-2.37	9
April	-10.64	3.58	0.84	-13.78	-3.50	8
May	-16.33	5.81	0.38	-25.79	-6.20	10
June	-20.73	5.80	0.48	-28.42	-9.44	10
July	-24.26	5.70	0.43	-31.61	-13.69	9
August	-26.07	5.17	0.22	-33.14	-17.53	10
September	-26.61	5.02	0.16	-32.83	-19.26	10
October	-26.16	4.73	0.40	-32.17	-17.69	10
November	-23.36	7.47	0.91	-30.33	-10.39	9
December	-19.61	7.97	0.64	-27.72	-7.04	8

Meridional Wind Pseudo-stress (m**2/s**2)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	13.71	6.73	0.25	3.98	25.74	9
February	8.78	5.34	0.23	1.60	16.50	9
March	4.97	4.35	-0.30	-2.38	10.15	9
April	5.97	4.66	-0.02	0.69	11.62	8
May	11.72	6.20	-0.38	1.31	18.31	10
June	15.54	6.43	-0.55	5.12	22.08	10
July	16.18	5.28	-0.14	8.47	22.56	9
August	16.75	4.06	0.04	10.45	23.41	10
September	18.45	4.68	0.60	13.31	27.94	10
October	19.01	4.54	0.41	12.36	26.51	10
November	16.91	6.75	-0.54	5.19	25.94	9
December	15.80	7.58	-0.30	4.40	26.72	8

Air Temperature (deg C)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	23.50	1.06	-0.24	21.71	25.13	8
February	24.72	0.75	0.59	23.75	26.21	8
March	25.43	0.69	0.56	24.61	26.78	8
April	25.24	0.95	-1.07	23.30	26.12	7
May	24.88	1.54	-0.64	21.80	26.59	9
June	24.02	1.56	-0.28	21.21	25.98	9
July	23.01	1.34	0.31	21.12	25.02	8
August	22.24	1.08	0.82	20.86	24.46	9
September	22.04	1.10	0.87	20.66	24.41	9
October	22.05	1.26	0.26	20.32	24.12	7
November	22.15	1.50	-0.33	19.74	23.81	7
December	22.53	1.40	-0.66	19.94	24.12	8

Table A8. Continued.

Zonal Wind Velocity (m/s)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	-3.23	0.88	0.72	-4.11	-1.67	9
February	-2.74	0.82	0.83	-3.78	-0.98	9
March	-2.41	0.64	1.37	-3.10	-0.87	9
April	-2.56	0.61	1.00	-3.15	-1.26	8
May	-3.31	0.74	0.52	-4.46	-1.88	10
June	-3.84	0.64	0.58	-4.68	-2.51	10
July	-4.28	0.60	0.46	-5.12	-3.14	9
August	-4.49	0.51	0.11	-5.25	-3.67	10
September	-4.50	0.46	-0.05	-5.14	-3.82	10
October	-4.43	0.46	0.15	-5.09	-3.63	10
November	-4.11	0.79	0.93	-4.88	-2.75	9
December	-3.64	0.90	0.68	-4.35	-2.20	8

Meridional Wind Velocity (m/s)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	2.72	0.85	0.02	1.46	4.08	9
February	1.93	0.87	-0.14	0.57	2.98	9
March	1.25	1.01	-0.48	-0.58	2.33	9
April	1.36	0.99	-0.10	0.05	2.59	8
May	2.26	1.03	-0.42	0.37	3.52	10
June	2.81	0.99	-0.59	0.97	3.84	10
July	2.83	0.73	-0.04	1.95	3.77	9
August	2.87	0.50	-0.02	2.11	3.66	10
September	3.11	0.52	0.93	2.61	4.20	10
October	3.21	0.54	0.68	2.54	4.16	10
November	2.96	0.84	-0.56	1.44	4.06	9
December	2.94	0.98	-0.45	1.39	4.25	8

Wind Speed (m/s)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	4.44	1.09	-0.47	2.49	5.88	9
February	3.83	0.87	-0.39	2.15	5.02	9
March	3.35	0.66	-0.79	2.02	4.09	9
April	3.41	0.75	-0.46	2.11	4.17	8
May	4.33	1.04	-0.72	2.51	5.64	10
June	4.99	0.92	-0.90	3.13	5.91	10
July	5.30	0.74	-0.74	3.81	6.02	9
August	5.47	0.59	-0.44	4.36	6.14	10
September	5.60	0.58	-0.18	4.73	6.41	10
October	5.61	0.58	-0.39	4.53	6.28	10
November	5.21	1.07	-0.93	3.31	6.30	9
December	4.85	1.25	-0.68	2.92	6.19	8

Table A9. Annual means for ocean temperature and velocity at 0°, 110°W. Statistics are based on N = 12 climatological monthly means as presented in Tables A5–A7. NTOT is an index showing the total number of months of directly measured data at each depth.

Zonal Currents (cm/s)

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
10	-11.37	24.66	0.51	-36.40	30.09	12	112
25	19.38	27.37	0.43	-11.35	65.91	12	112
45	64.80	28.69	0.40	32.17	112.53	12	103
80	93.85	10.30	0.40	80.62	111.65	12	119
120	66.08	4.02	0.03	60.35	72.48	12	125
160	38.35	3.46	-1.00	31.22	41.23	12	66
200	19.48	5.24	-0.25	10.42	26.93	12	68
250	2.93	6.13	-0.06	-6.17	11.85	12	66

Meridional Currents (cm/s)

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
10	1.38	2.28	0.08	-2.32	5.04	12	112
25	-2.56	2.12	-0.11	-5.91	1.18	12	112
45	-3.87	2.08	0.53	-7.17	0.57	12	103
80	2.38	1.59	-0.15	0.10	4.64	12	119
120	0.74	1.57	-0.07	-1.95	3.29	12	125
160	-0.58	1.25	-0.57	-3.24	1.13	12	66
200	-0.60	1.84	-0.20	-4.05	2.61	12	68
250	0.15	1.43	-0.38	-2.64	2.34	12	66

Temperature (degrees C)

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
SST	23.67	1.38	0.29	22.20	25.70	12	113
10	23.28	1.21	0.22	21.90	25.00	12	106
25	22.25	0.94	0.22	21.11	23.61	12	112
45	20.23	0.54	0.32	19.64	21.13	12	121
60	18.64	0.34	0.18	18.16	19.23	12	69
80	16.66	0.25	-0.22	16.19	16.99	12	119
100	15.28	0.15	0.06	15.03	15.53	12	103
120	14.42	0.08	0.14	14.30	14.55	12	96
140	13.80	0.05	0.10	13.69	13.88	12	82
160	13.40	0.04	-0.95	13.33	13.45	12	71
200	12.87	0.04	0.03	12.80	12.93	12	107
250	12.45	0.12	0.11	12.29	12.63	12	71
300	11.84	0.09	-0.38	11.67	12.00	12	54
500	8.12	0.07	0.17	8.02	8.26	12	42

Table A10. Annual means for winds and air temperatures at 0°, 110°W. Statistics are based on N = 12 climatological monthly means as presented in Table A8. NTOT is an index showing the total number of months of directly measured data at each depth.

Air Temperature (degrees C)

	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
Air T	23.48	1.32	0.23	22.04	25.43	12	99

Winds (m/s)

	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
Zonal	-3.63	0.77	0.29	-4.50	-2.41	12	113
Meridional	2.52	0.67	-0.85	1.25	3.21	12	113
Speed	4.70	0.82	-0.45	3.35	5.61	12	113

Wind Pseudo-stress (m**2/s**2)

	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
Zonal	-19.40	6.13	0.26	-26.61	-9.91	12	113
Meridional	13.65	4.75	-0.67	4.97	19.01	12	113

APPENDIX B

0°, 140°W Figures and Tables

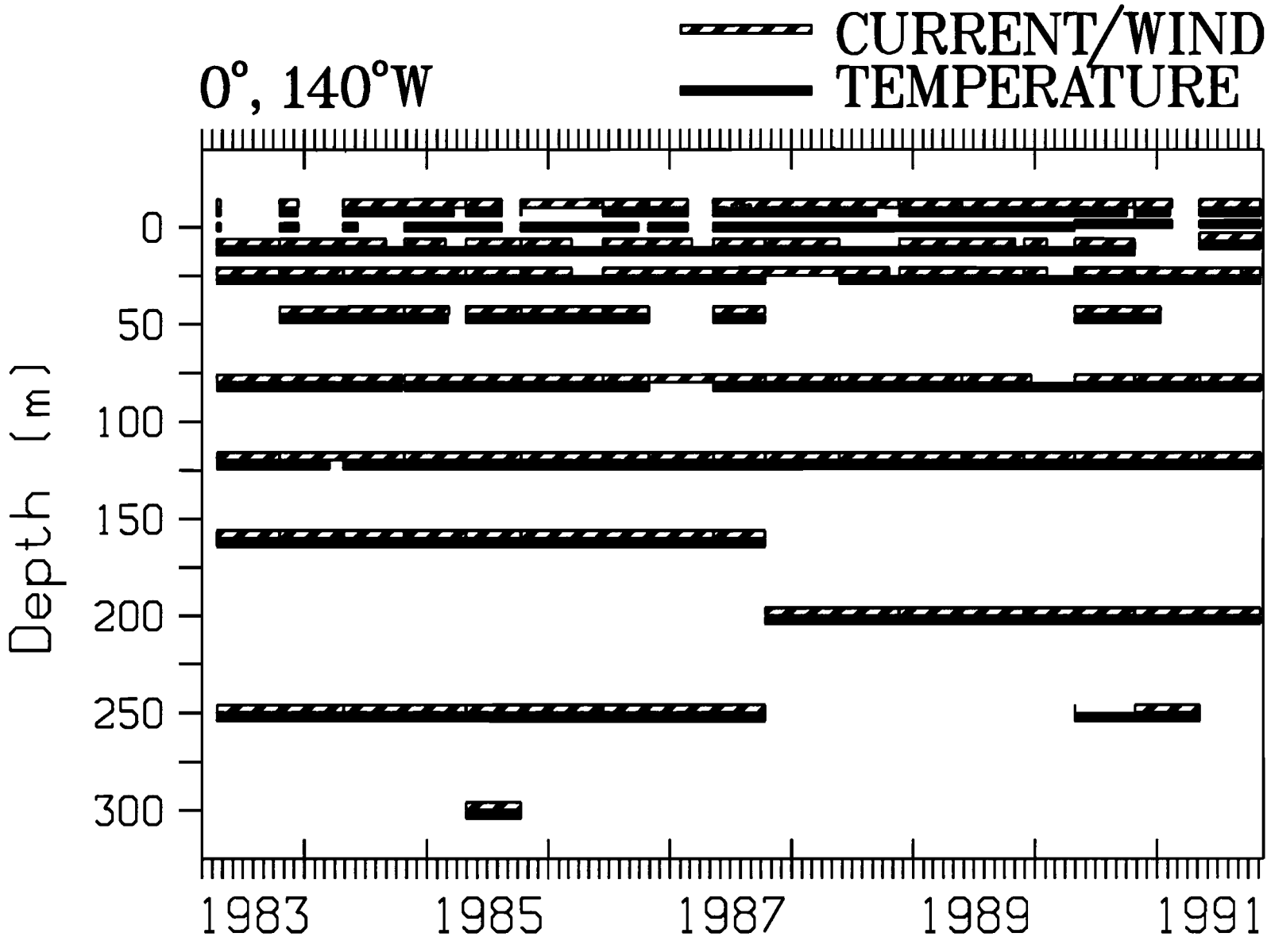


Figure B1a. Bar chart showing velocity and temperature data availability from current meters and from wind recorders as a function of depth at 0°, 140°W.

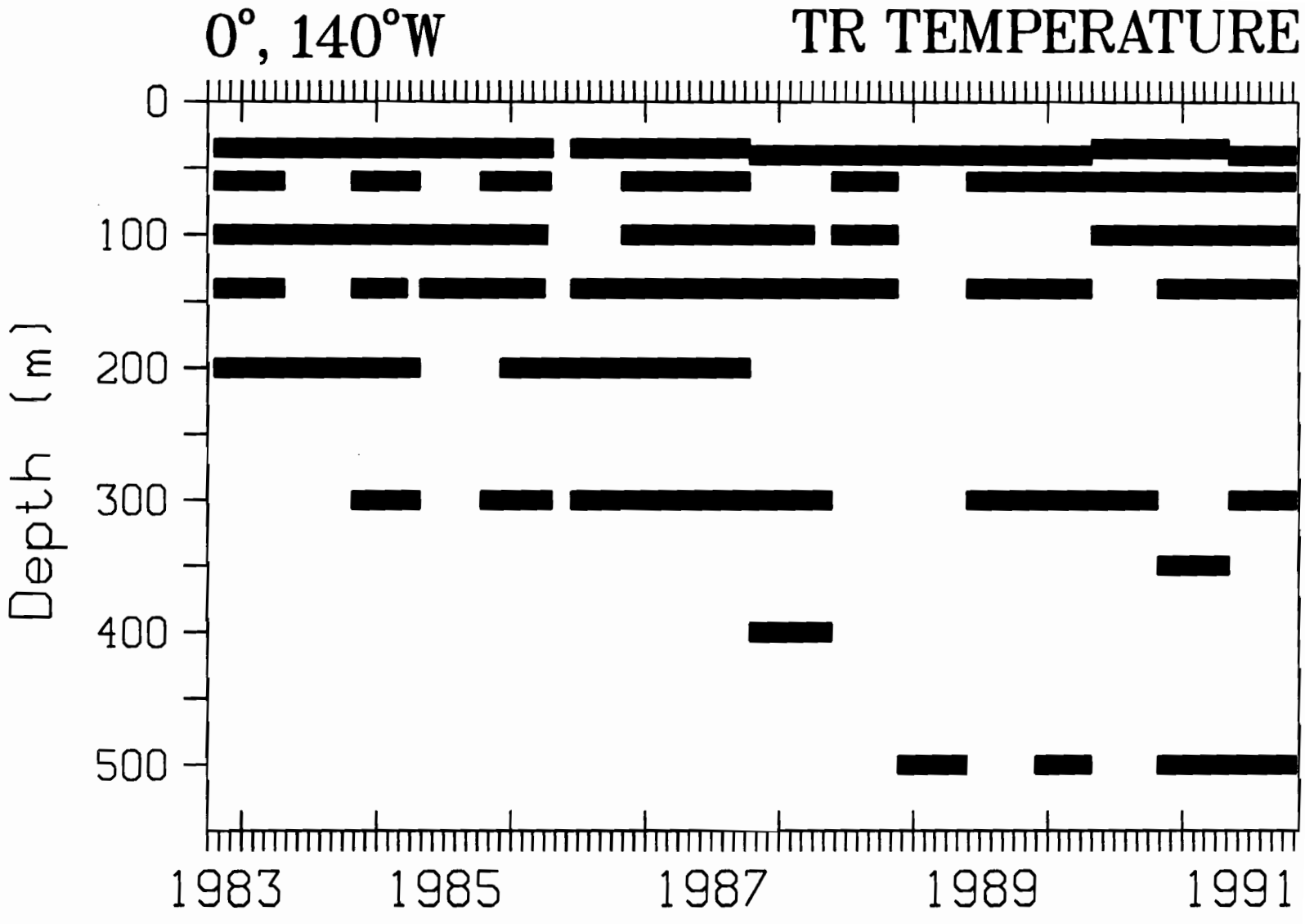


Figure B1b. Bar chart showing availability of data from temperature recorders (TRs) at 0°, 140°W.

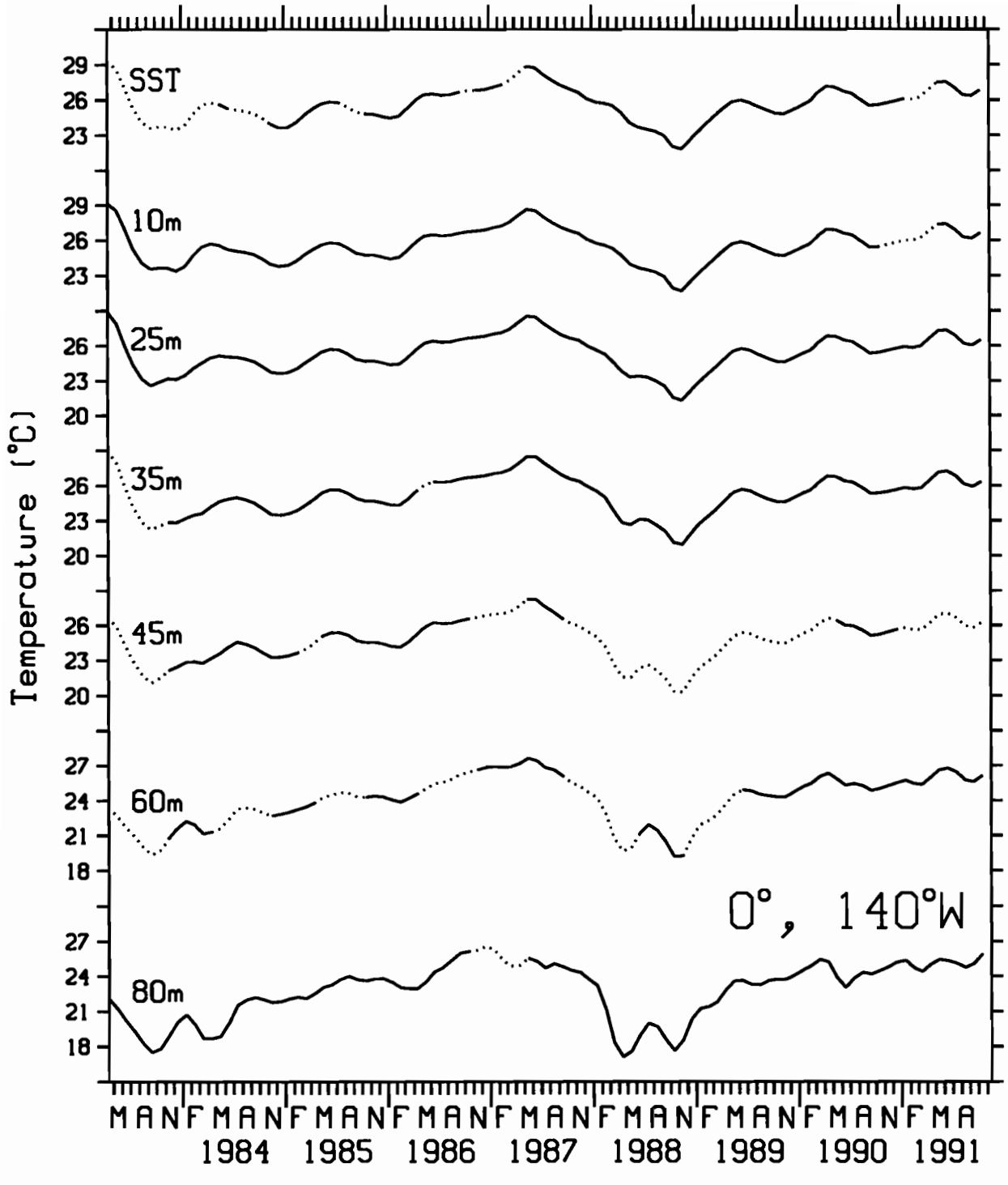


Figure B2. Time series of monthly mean temperatures (in °C) at 0°, 140°W. Dotted lines indicate data that have been filled by vertical interpolation or extrapolation.

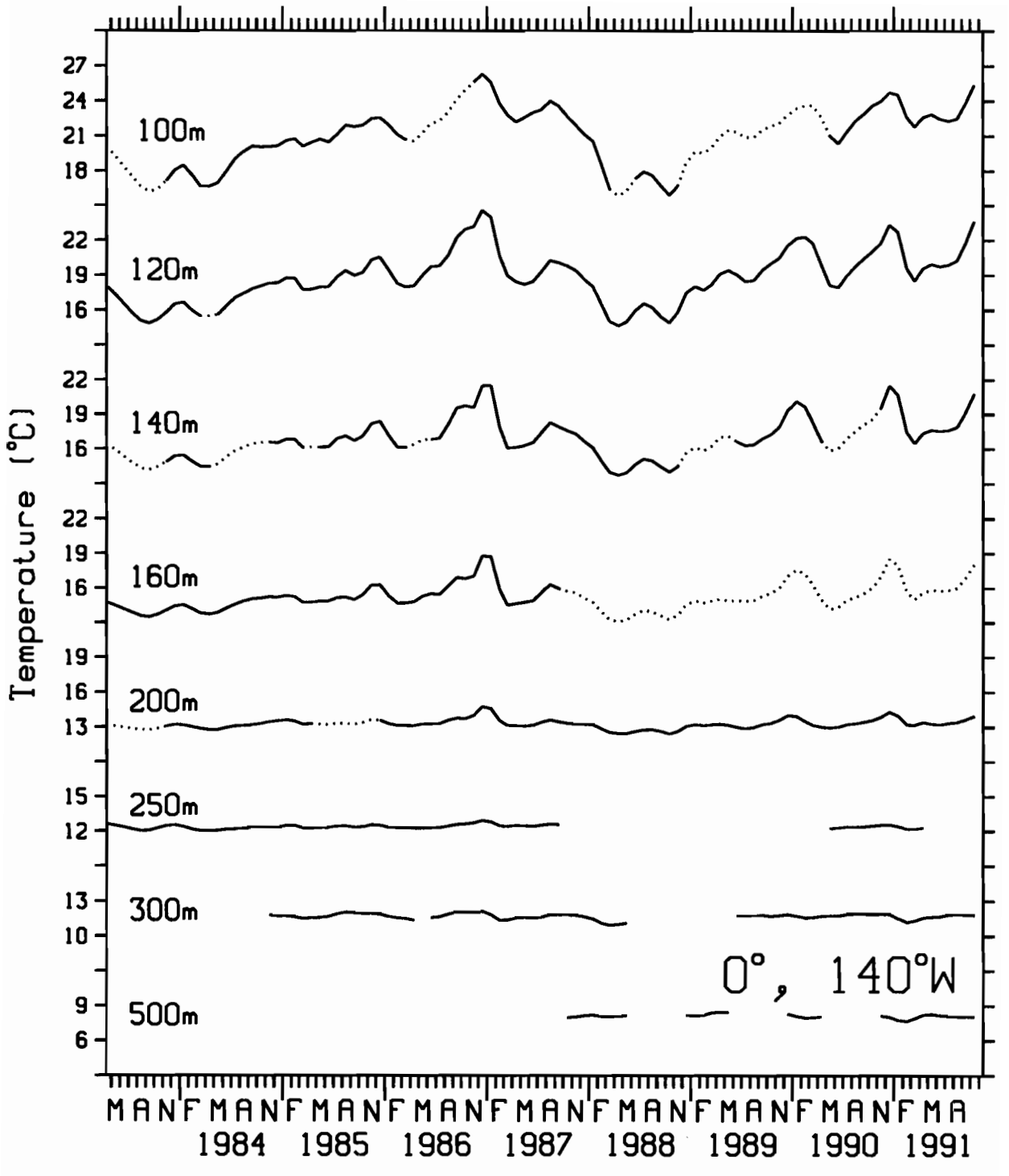


Figure B2. Continued.

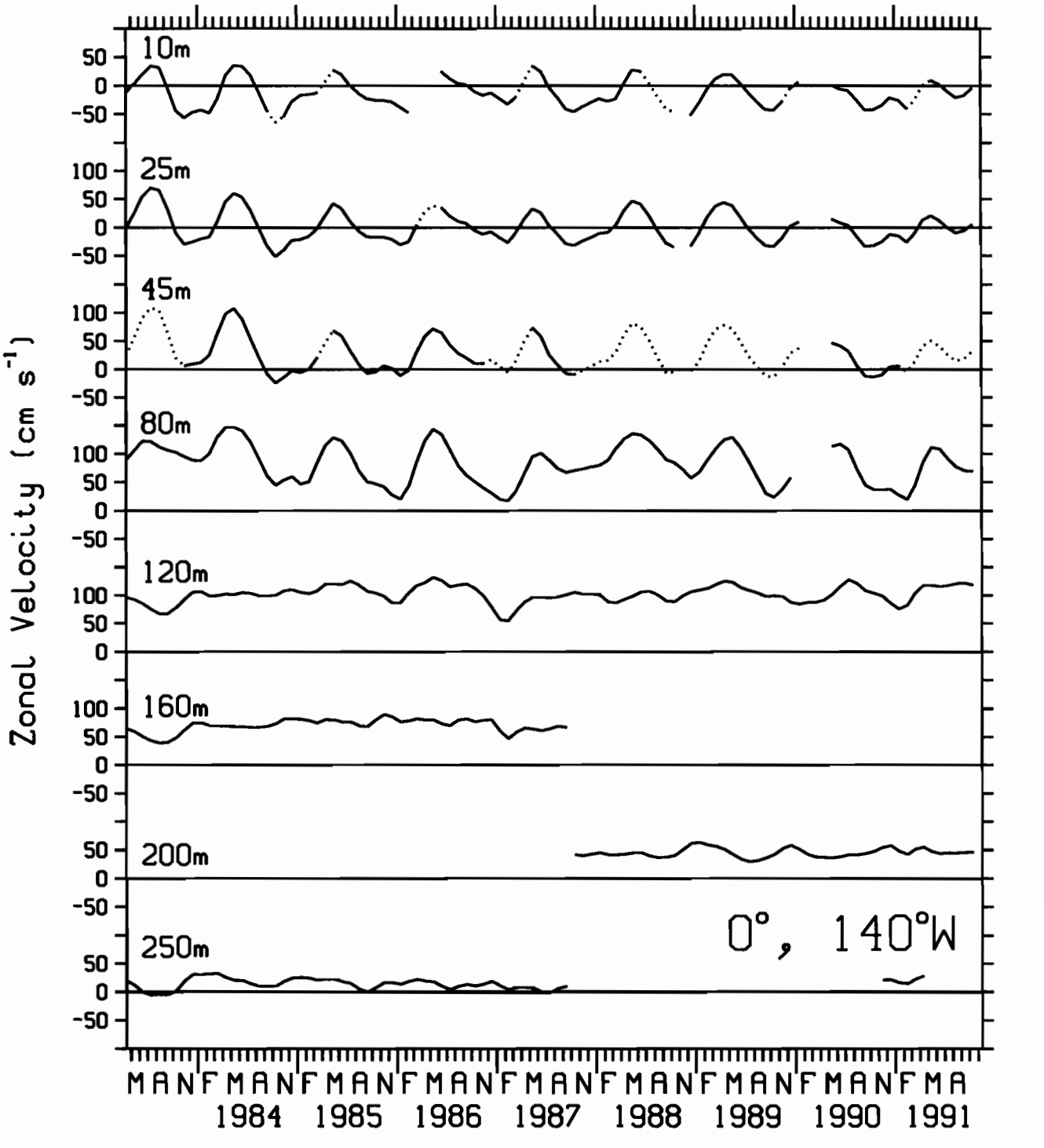


Figure B3. Time series of monthly mean zonal velocities (in cm s^{-1}) at 0°, 140°W. Dotted lines indicate data that have been filled by vertical interpolation or extrapolation.

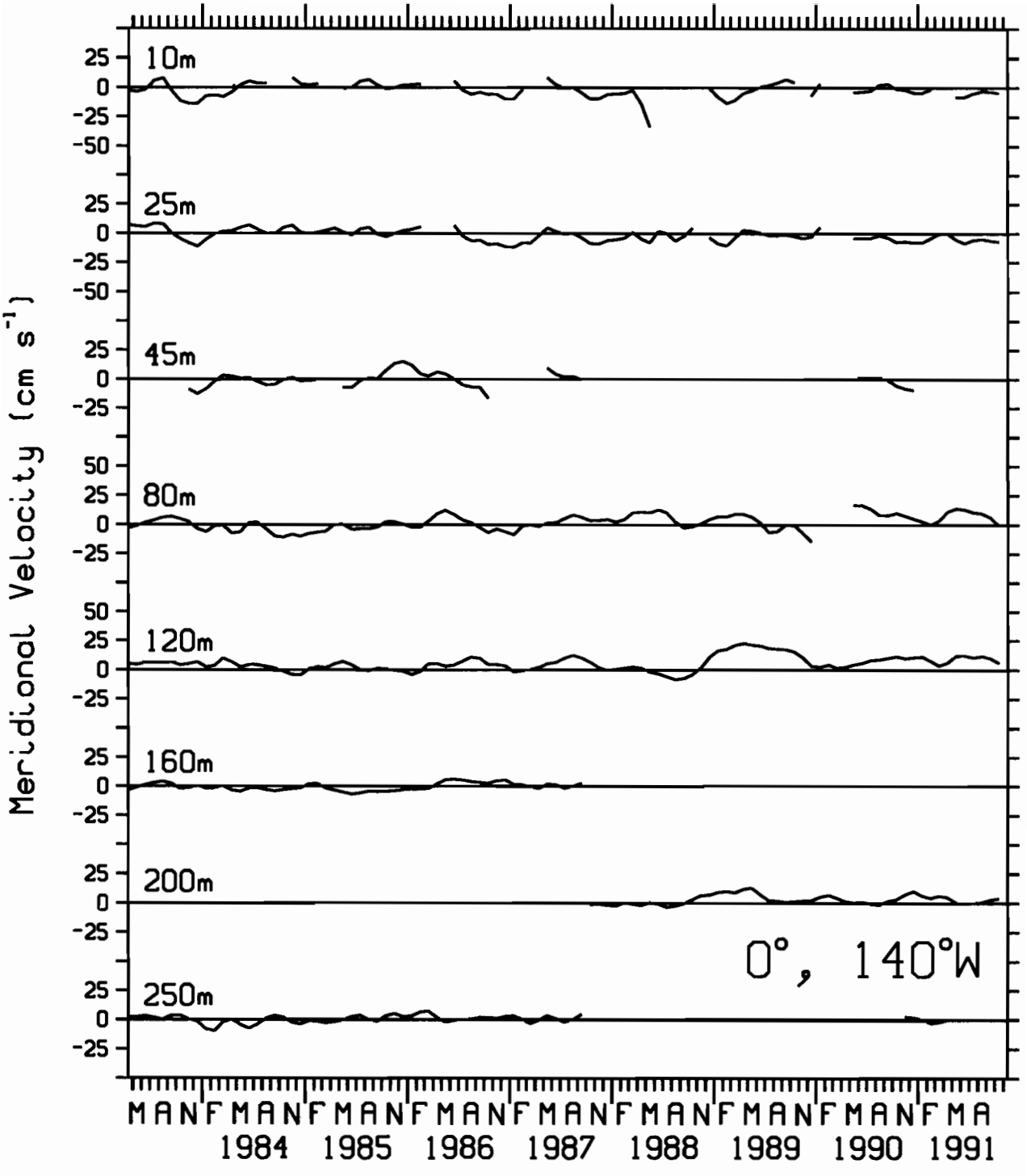


Figure B4. Time series of monthly mean meridional velocities (in cm s^{-1}) at 0°, 140°W.

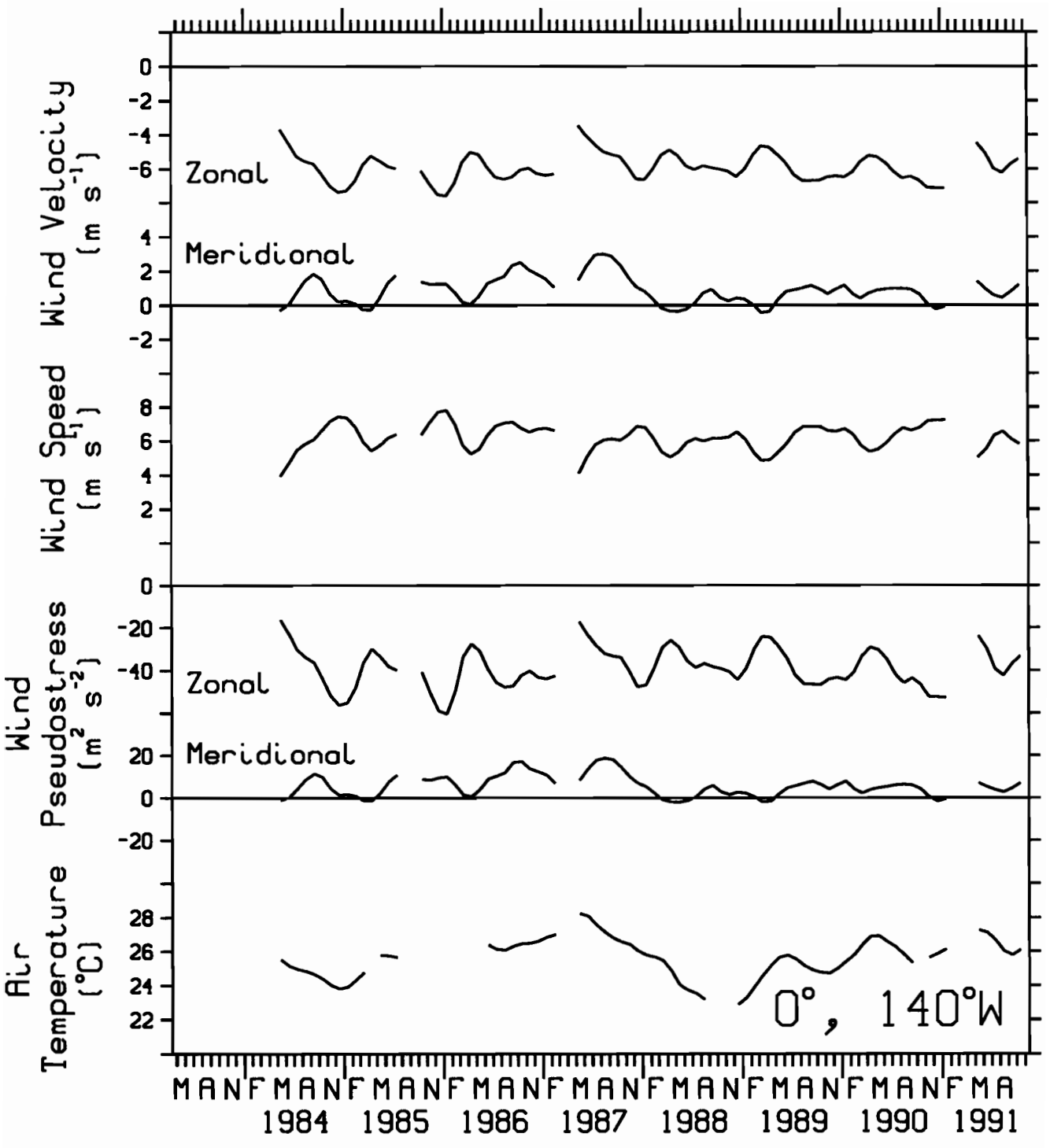


Figure B5. Time series of monthly mean winds and air temperatures at 0°, 140°W.

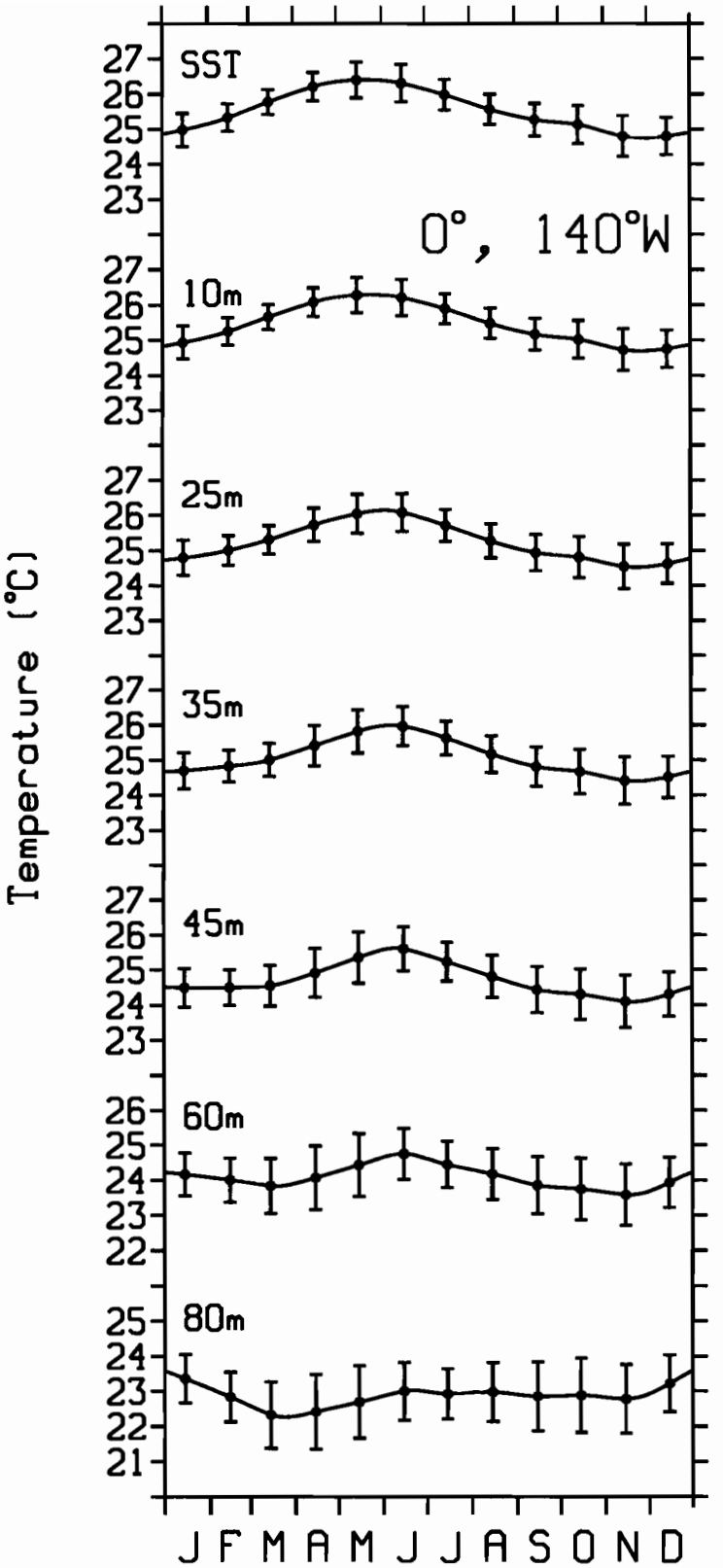


Figure B6. Time series of climatological monthly mean temperatures (in °C) at 0°, 140°W. One standard error is shown for means based on more than 3 estimates.

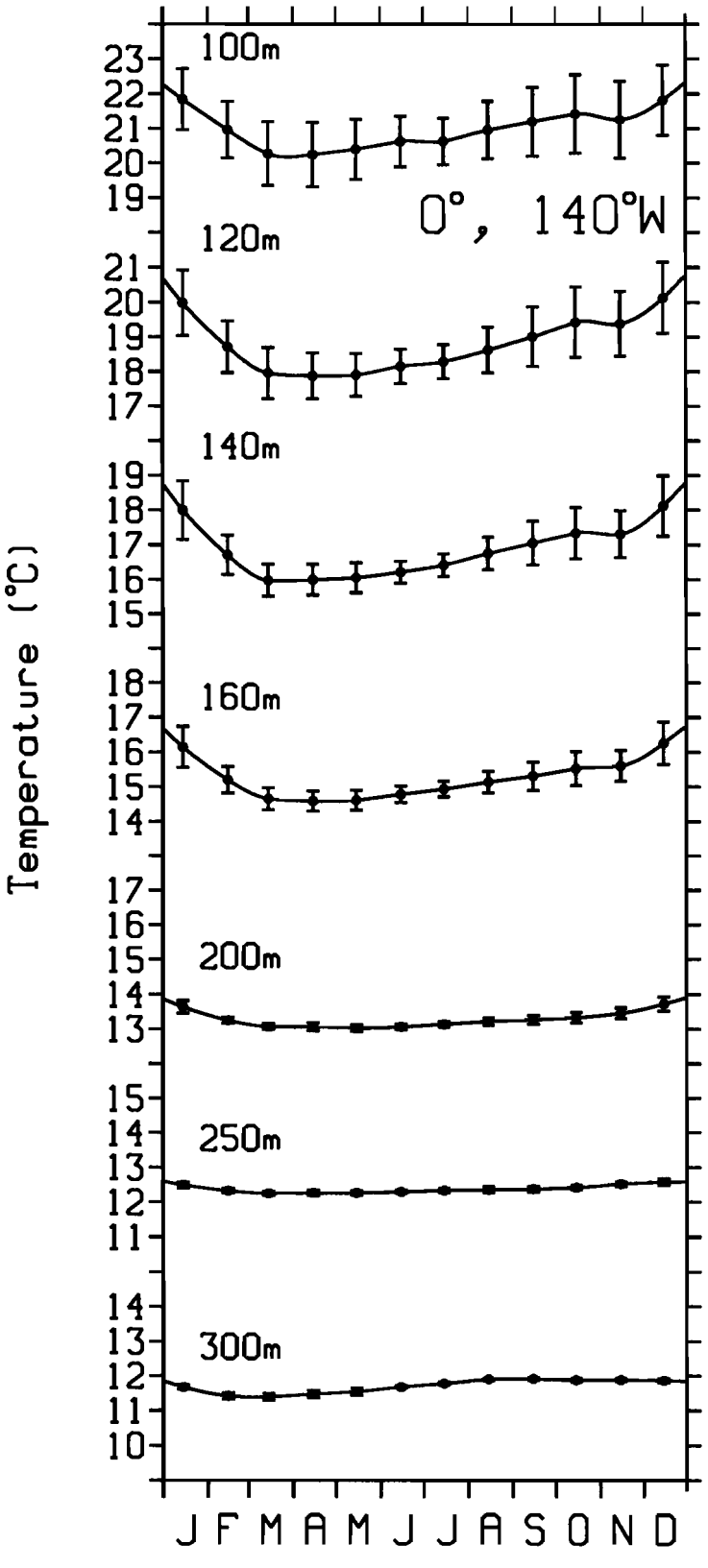


Figure B6. Continued.

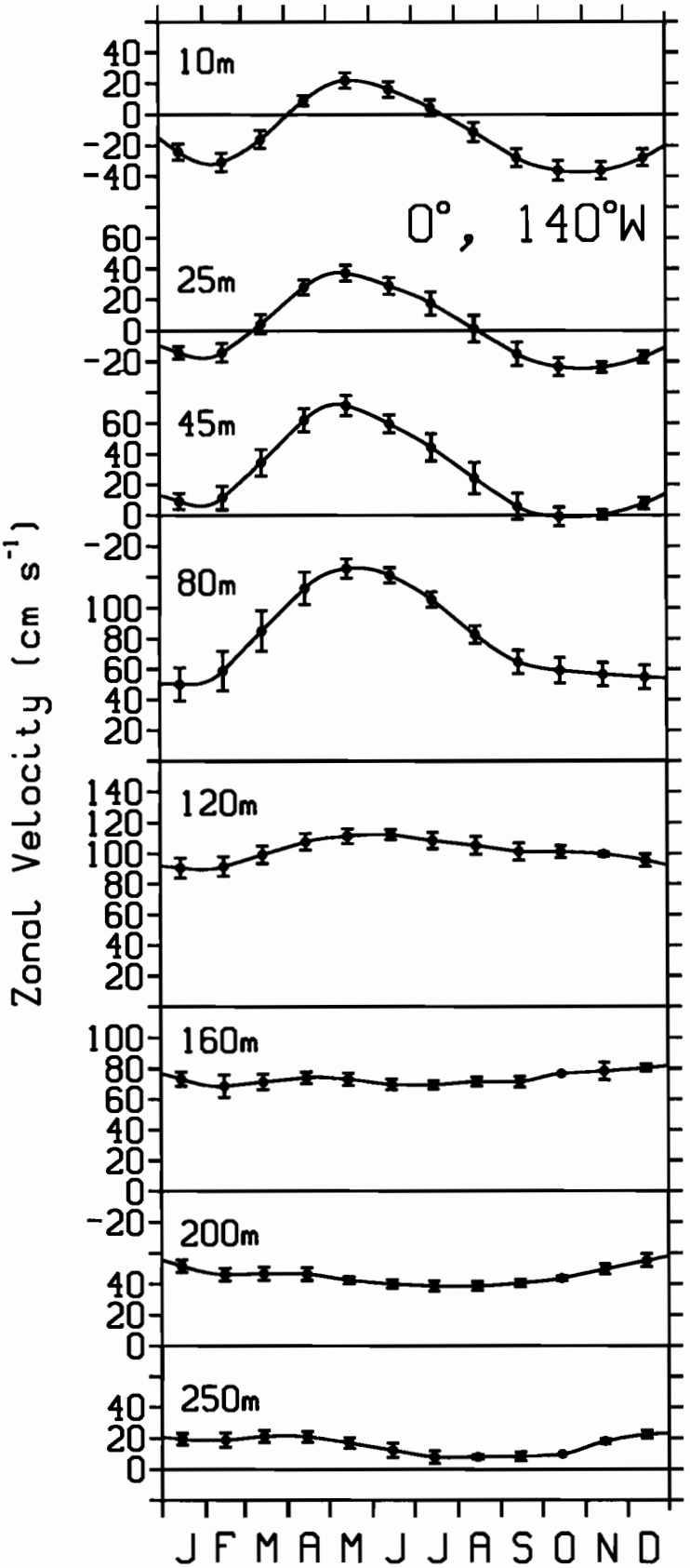


Figure B7. Time series of climatological monthly mean zonal velocities (in cm s^{-1}) at 0°, 140°W. One standard error is shown for means based on more than 3 estimates.

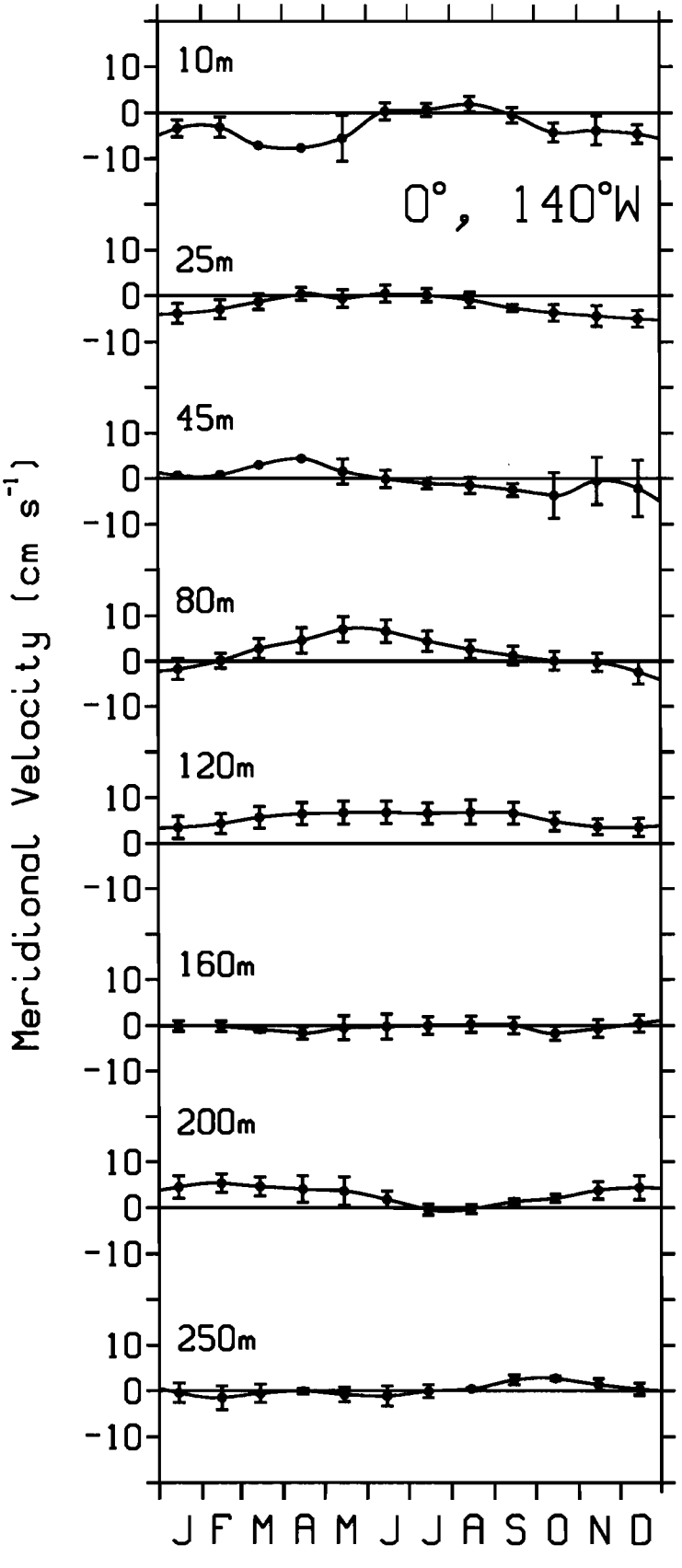


Figure B8. Time series of climatological monthly mean meridional velocities (in cm s^{-1}) at 0°, 140°W. One standard error is shown for means based on more than 3 estimates.

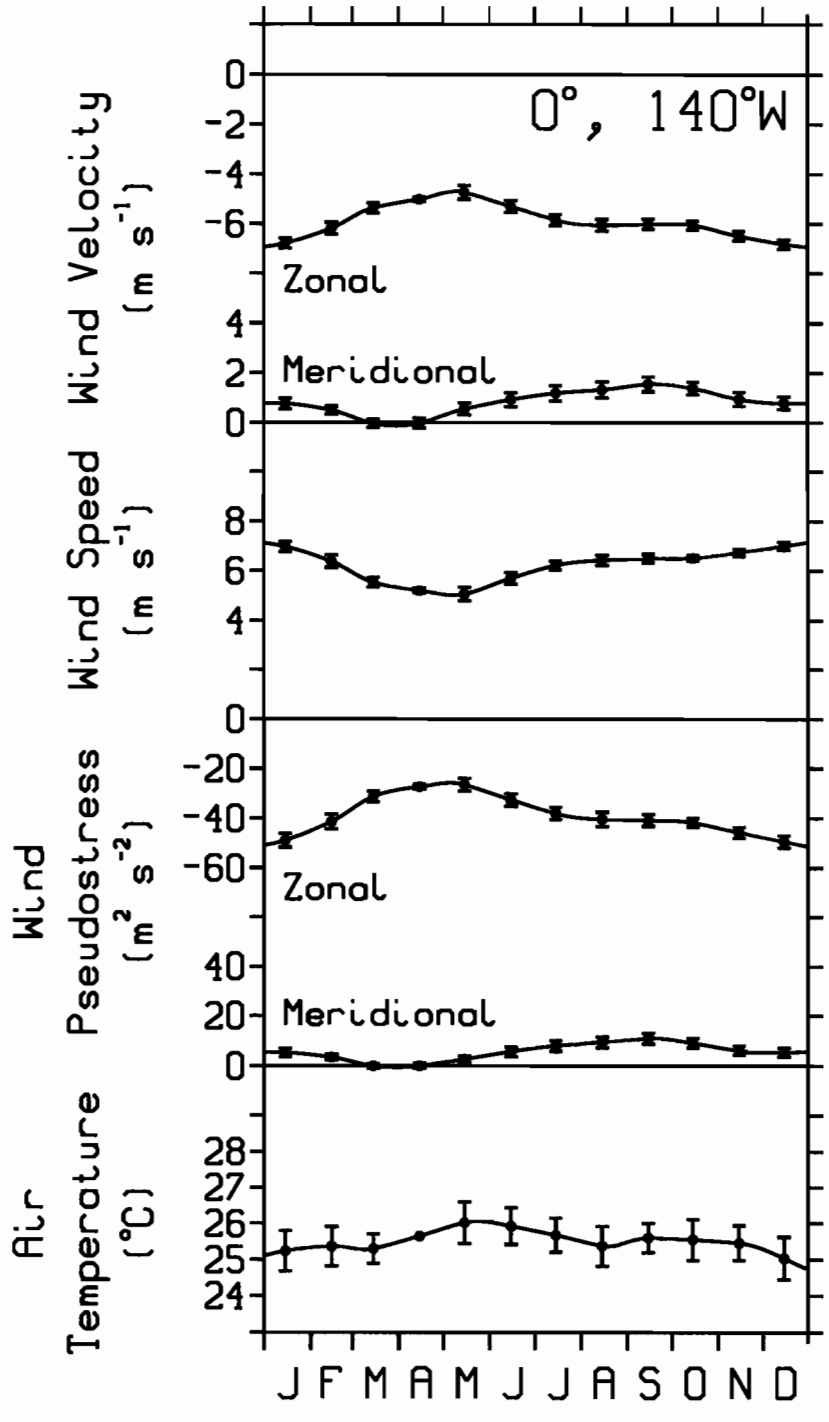


Figure B9. Time series of climatological monthly mean winds and air temperatures at 0°, 140°W. One standard error is shown for means based on more than 3 estimates.

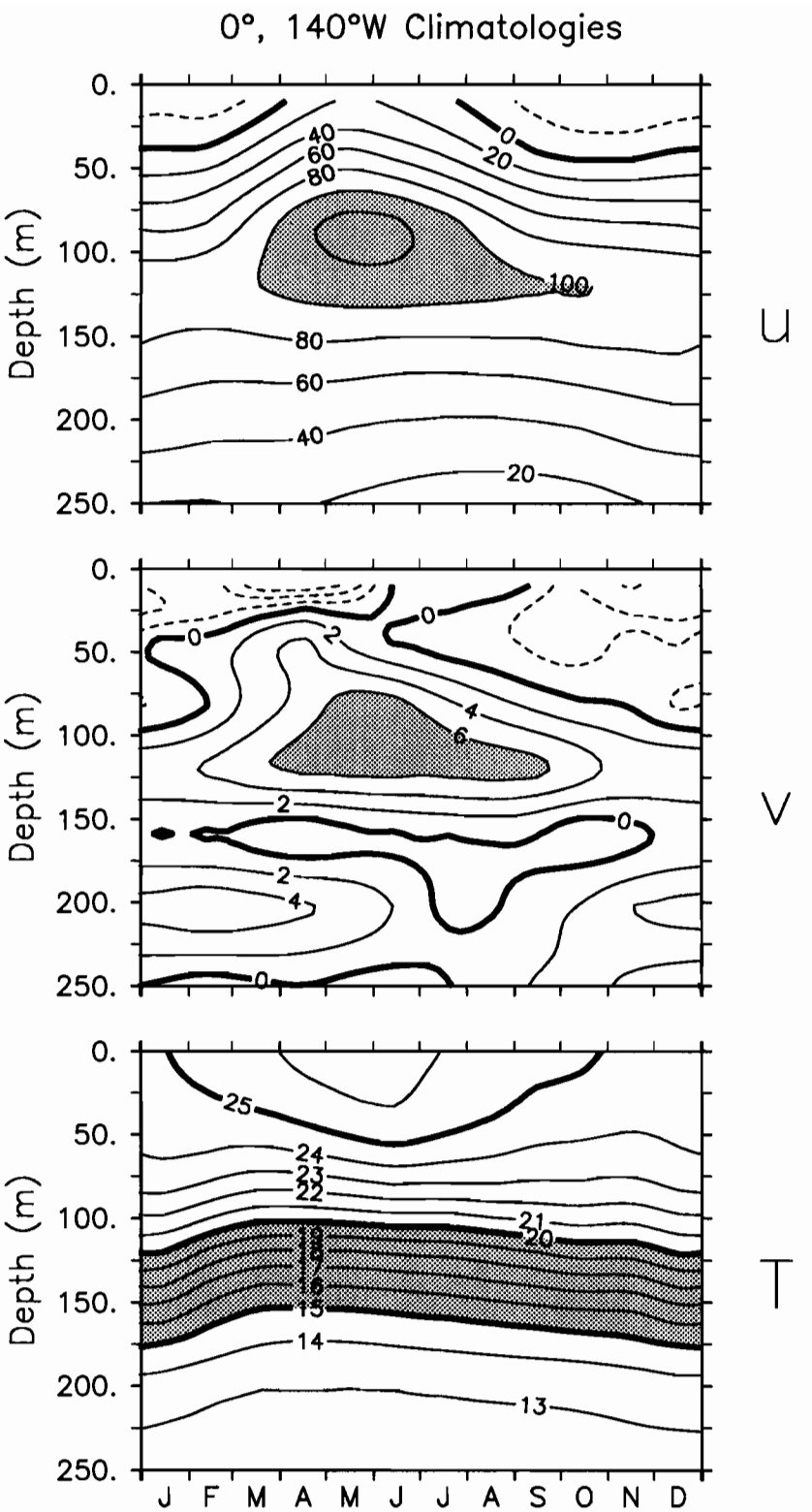


Figure B10. Contoured time series of zonal velocity (u), meridional velocity (v) and temperature (T) at 0°, 140°W. Velocities are in cm s^{-1} and temperature is in °C. Dashed contours are for westward or southward flow. Shading highlights zonal velocities > 100 cm s^{-1}, meridional velocities > 6 cm s^{-1} and temperatures between 15°–20°C.

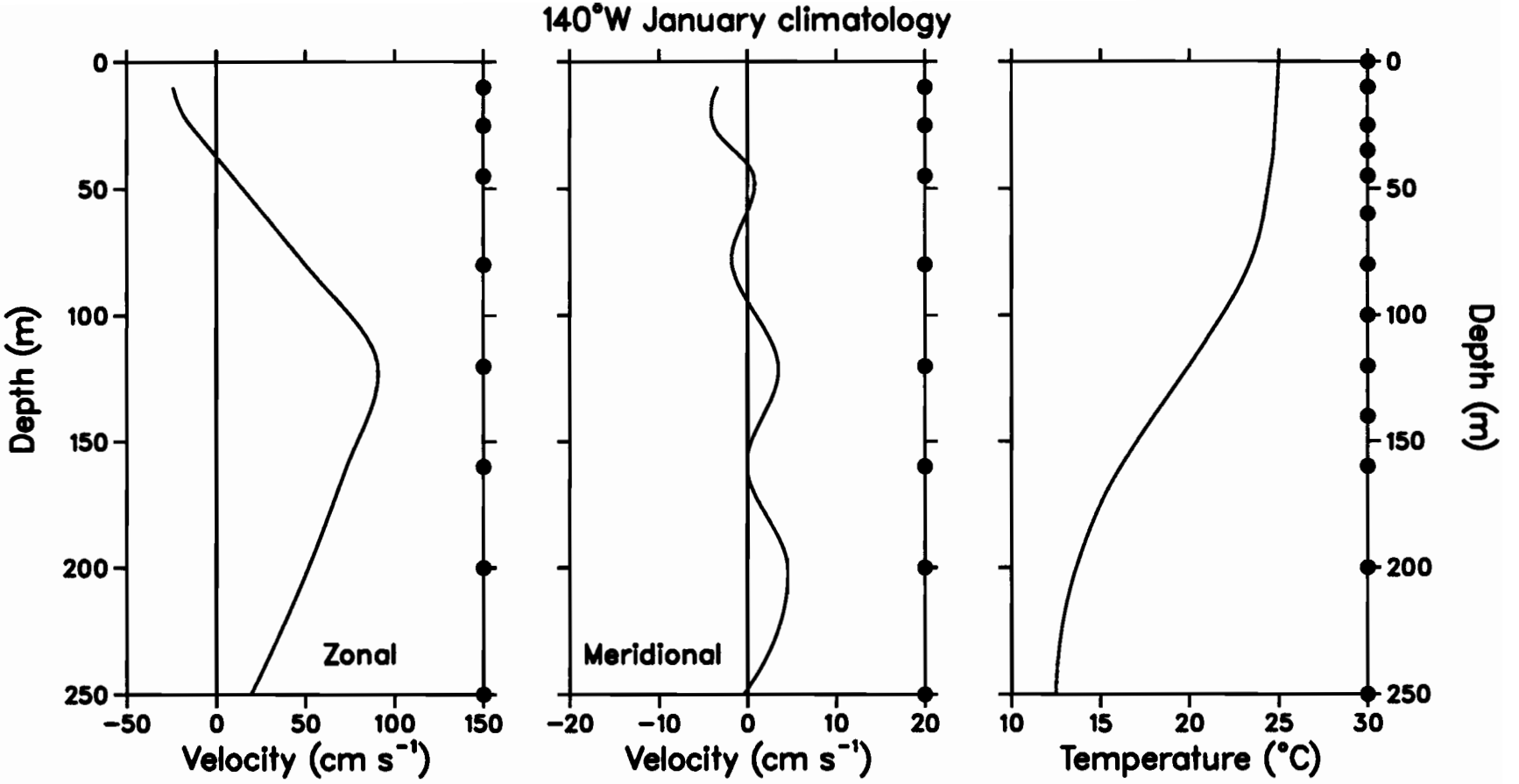


Figure B11. Climatological monthly mean profiles of zonal velocity, meridonal velocity and temperature at 0°, 140°W. Solid circles on the left axes indicate standard depths on which the profiles are based.

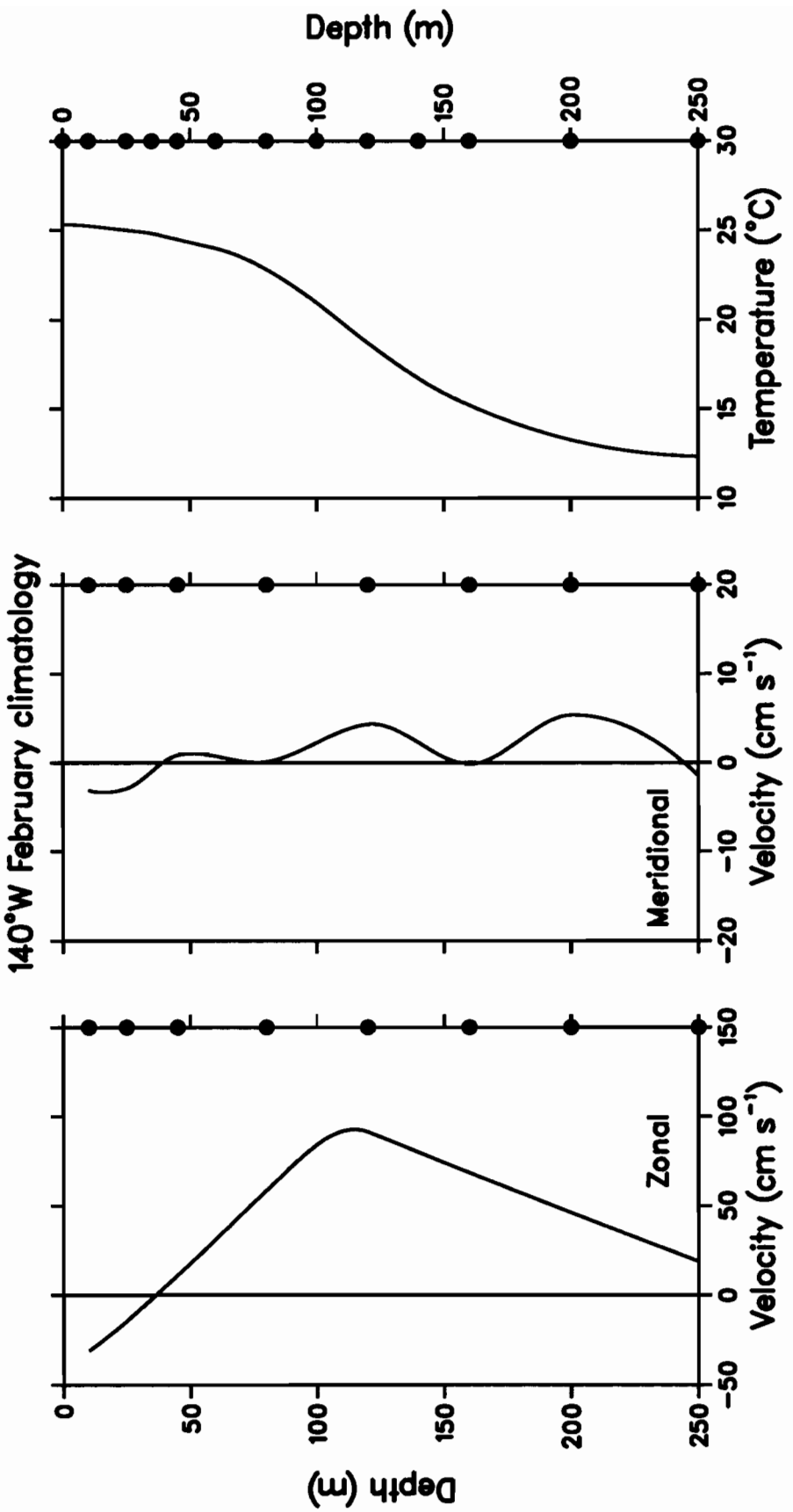


Figure B11. Continued.

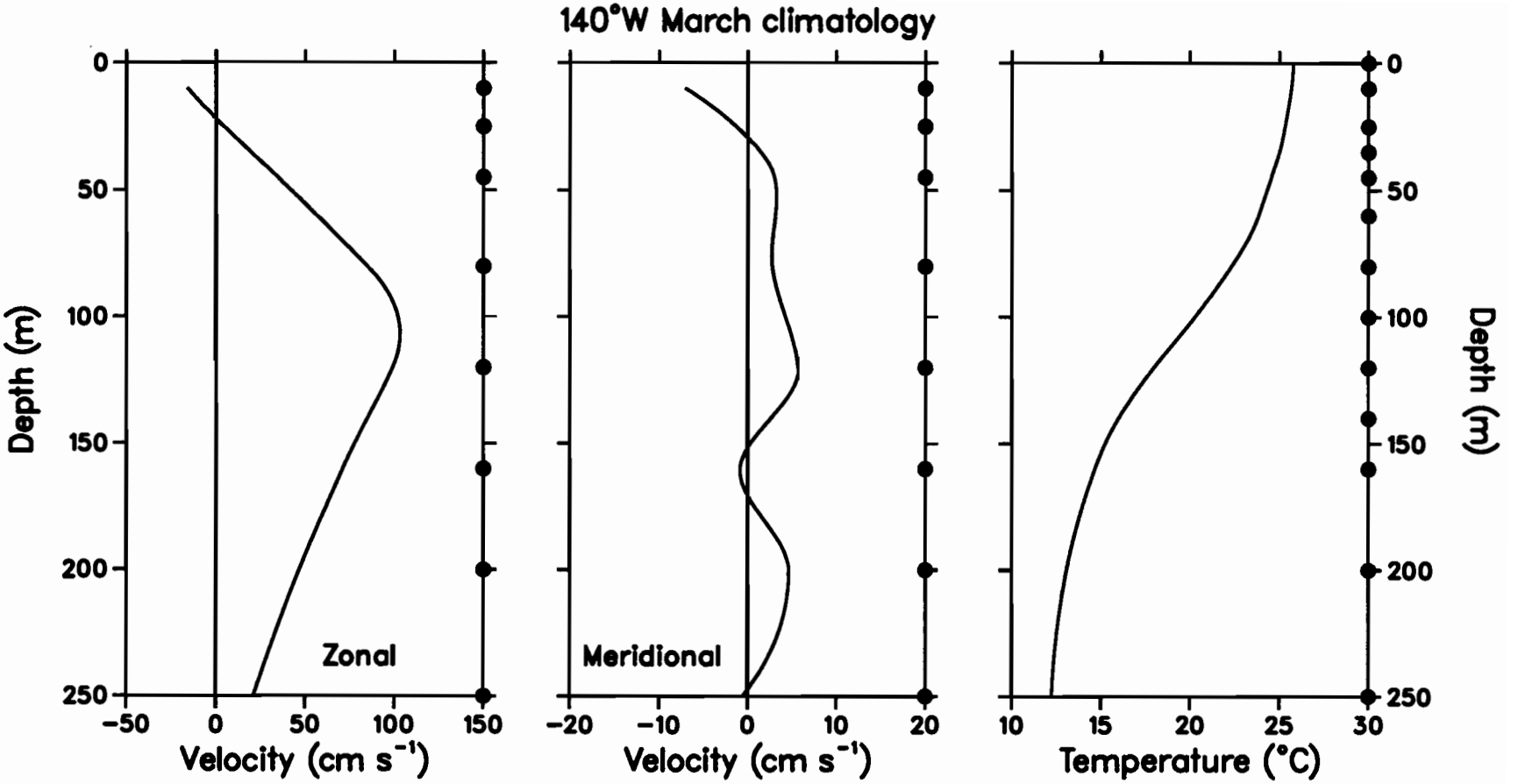


Figure B11. Continued.

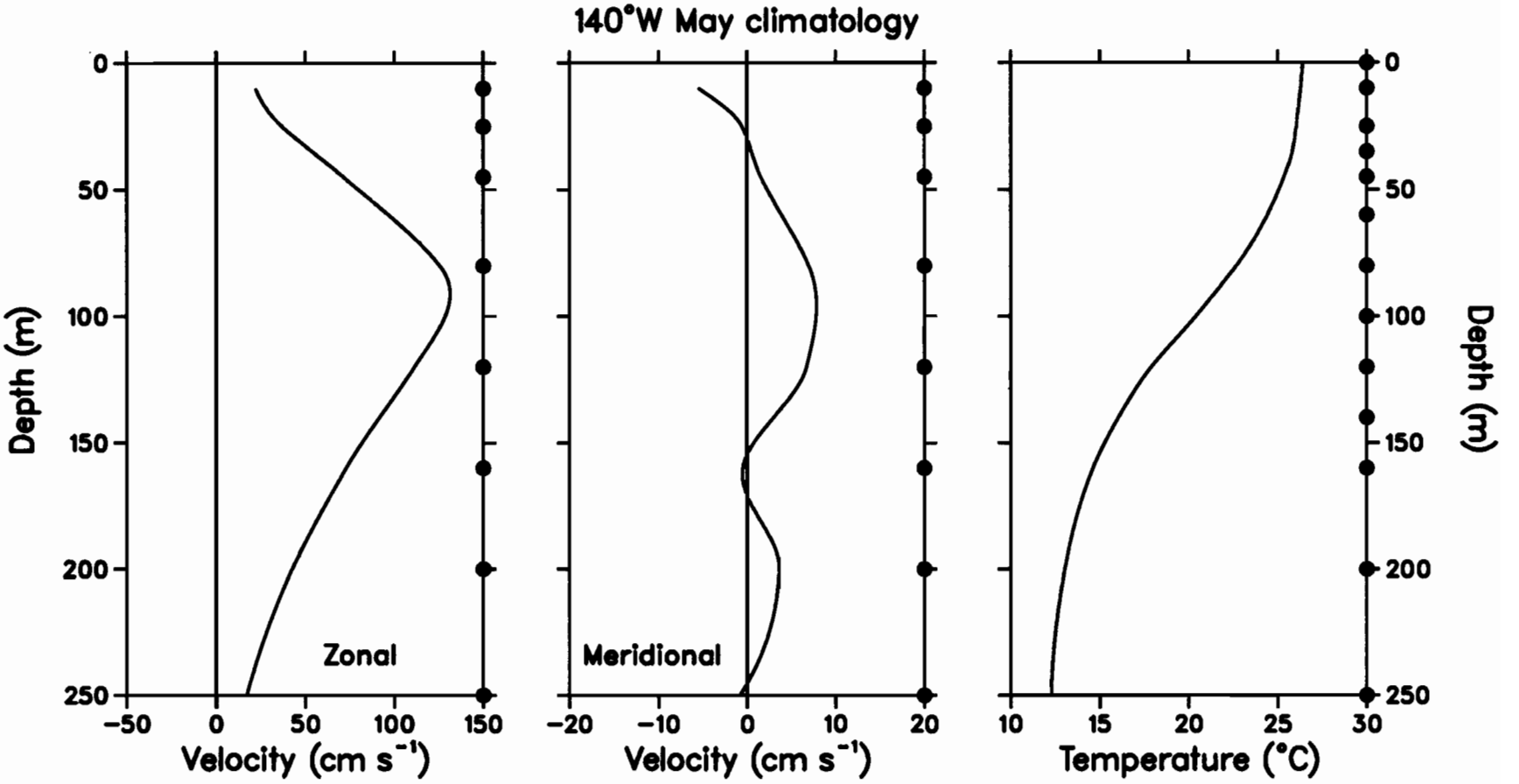


Figure B11. Continued.

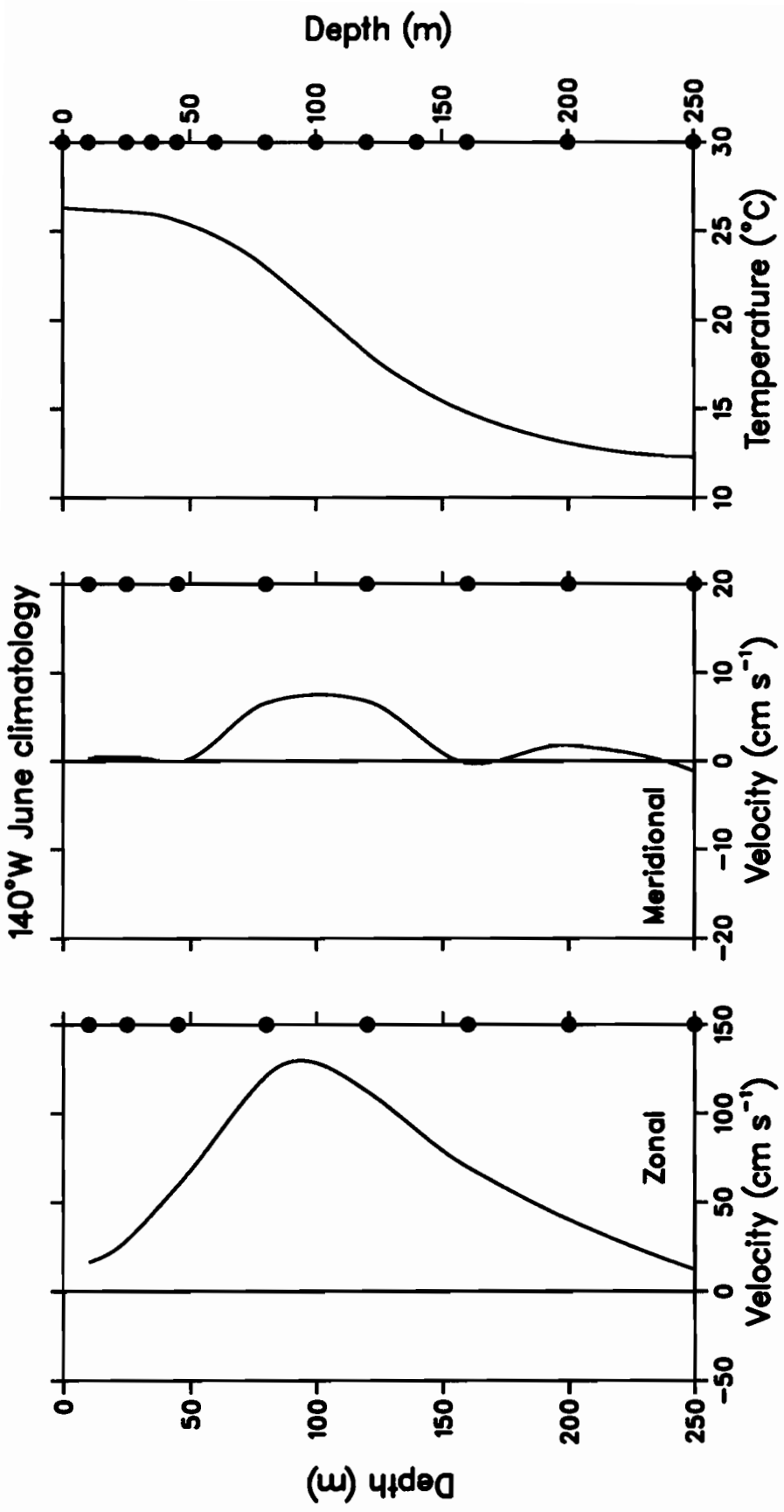
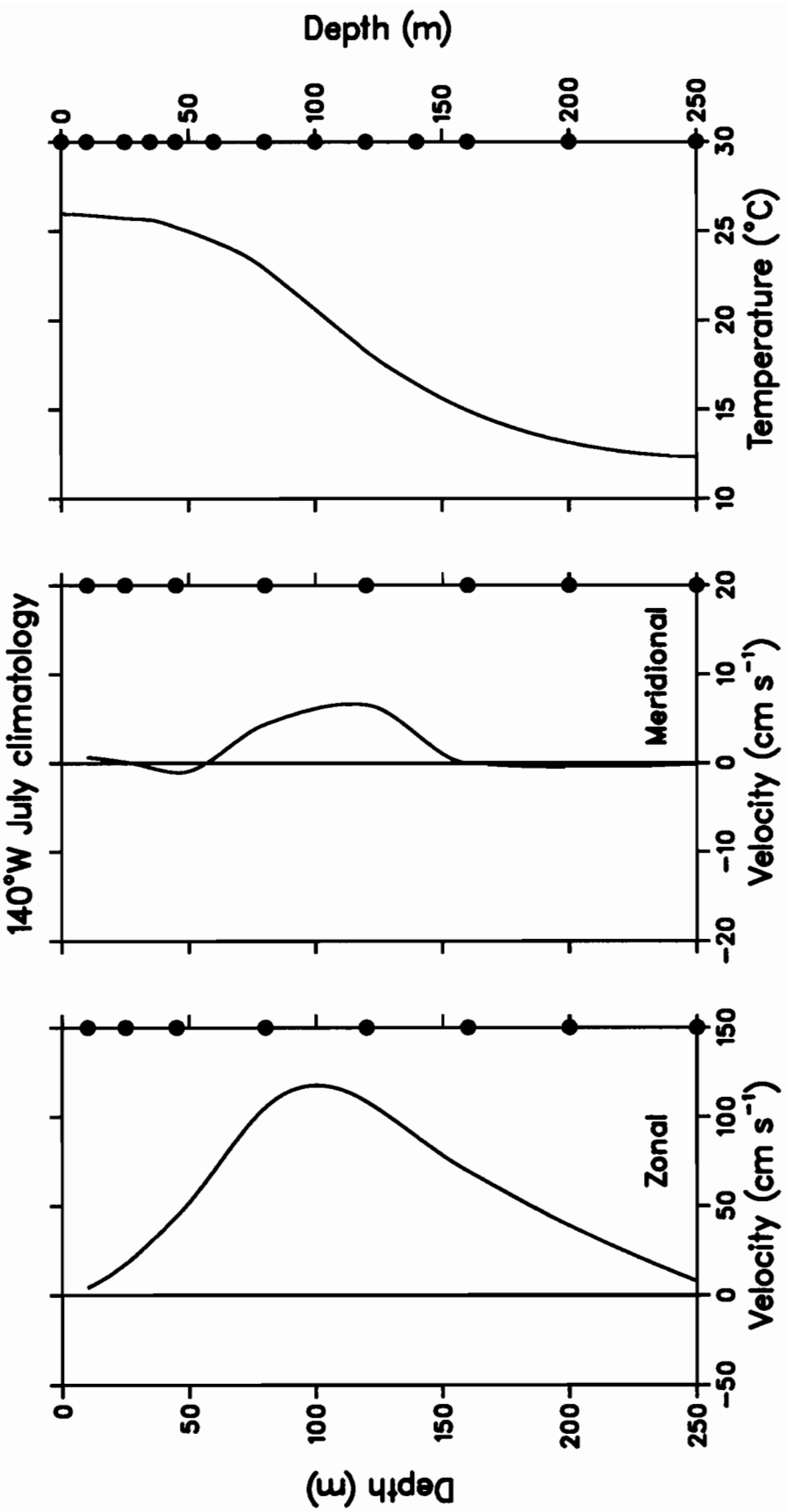


Figure B11. Continued.



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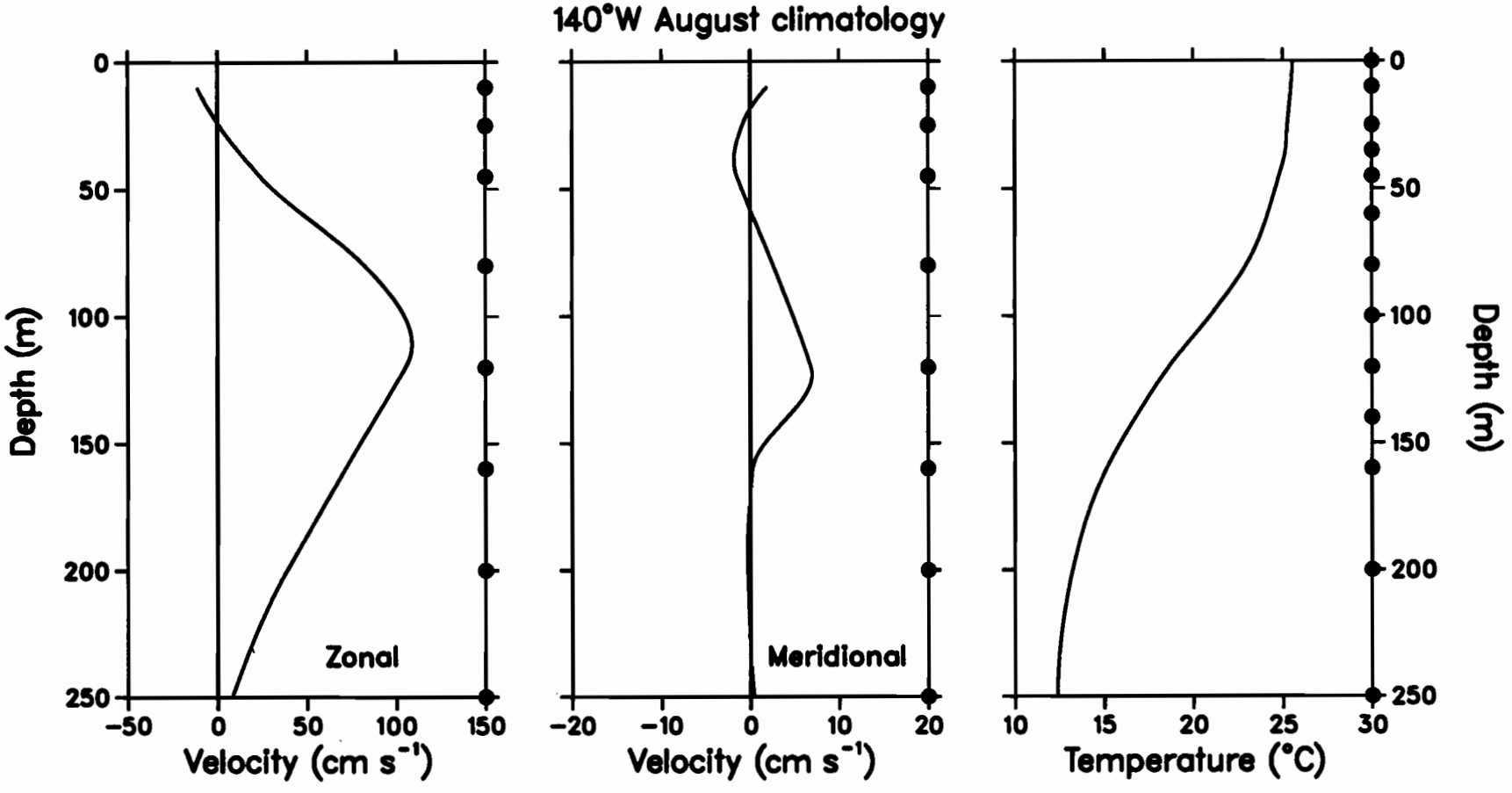
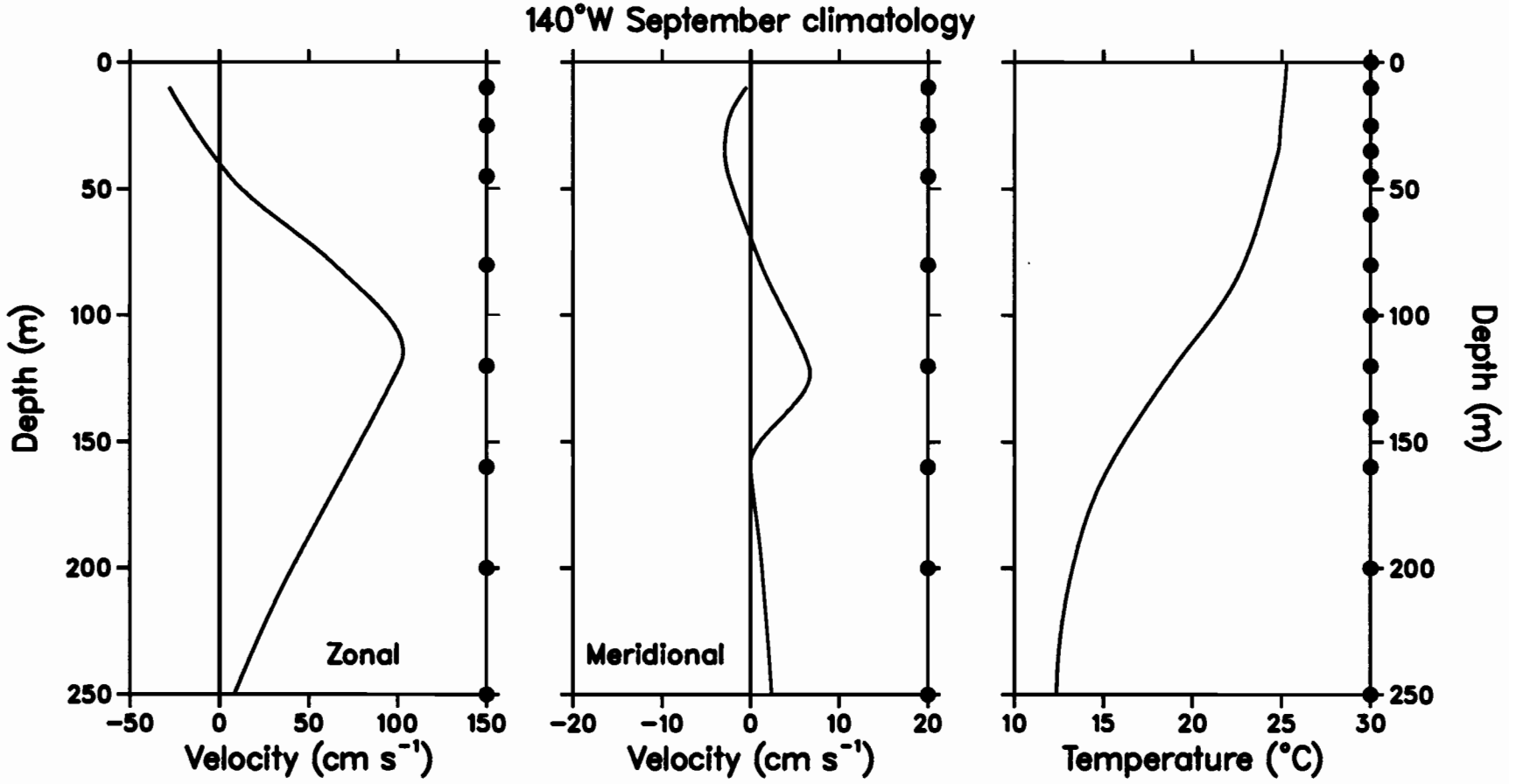


Figure B11. Continued.



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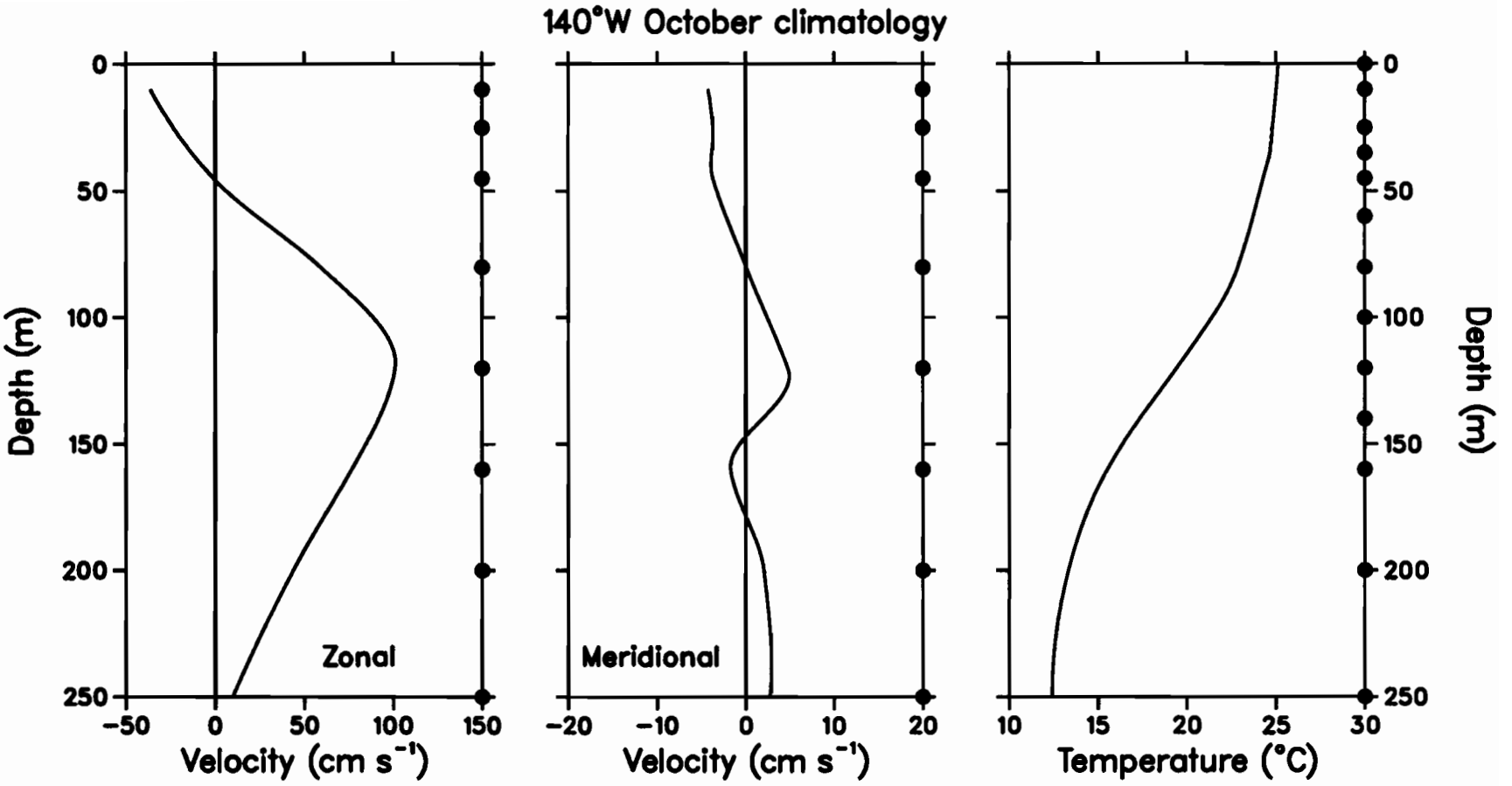

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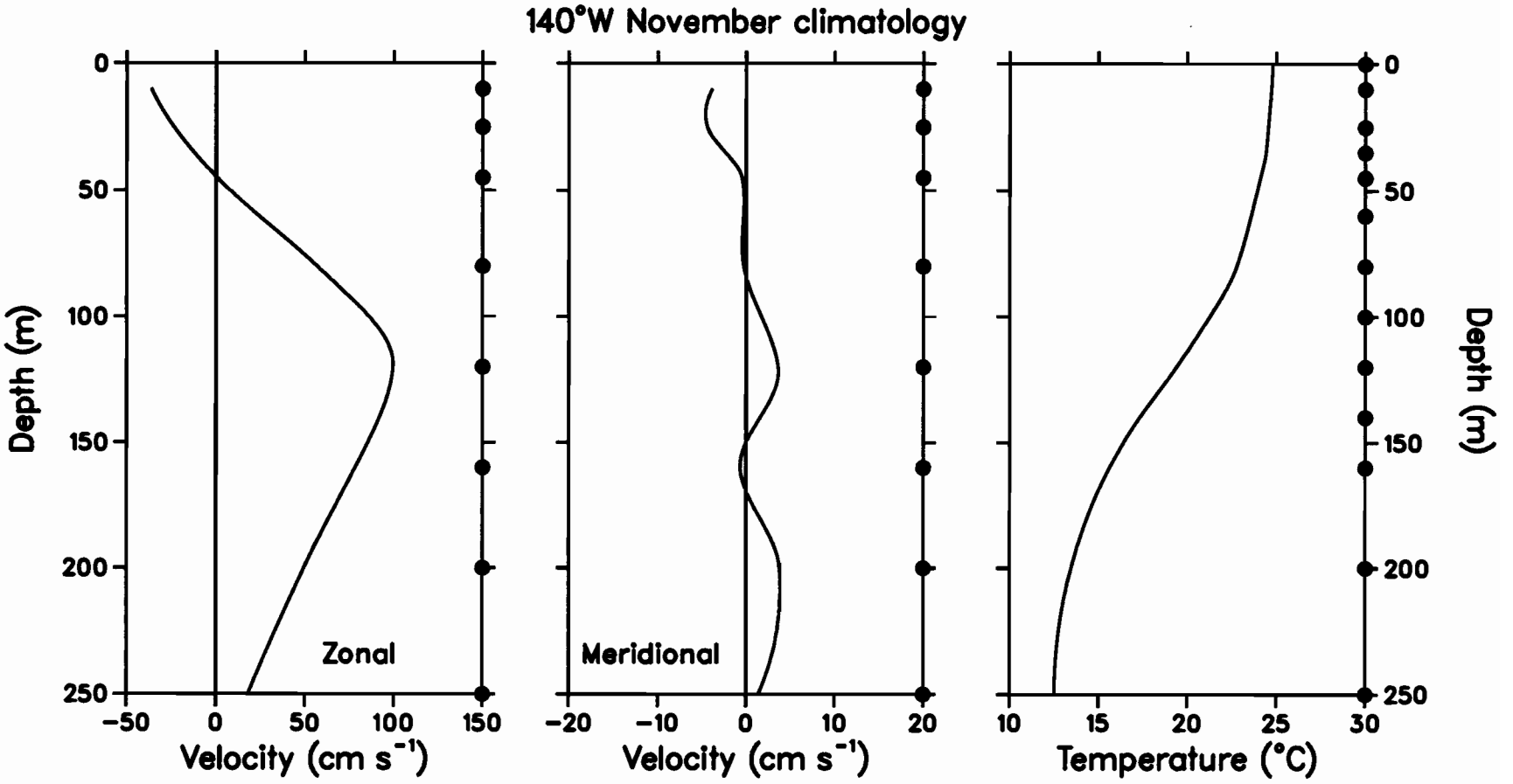

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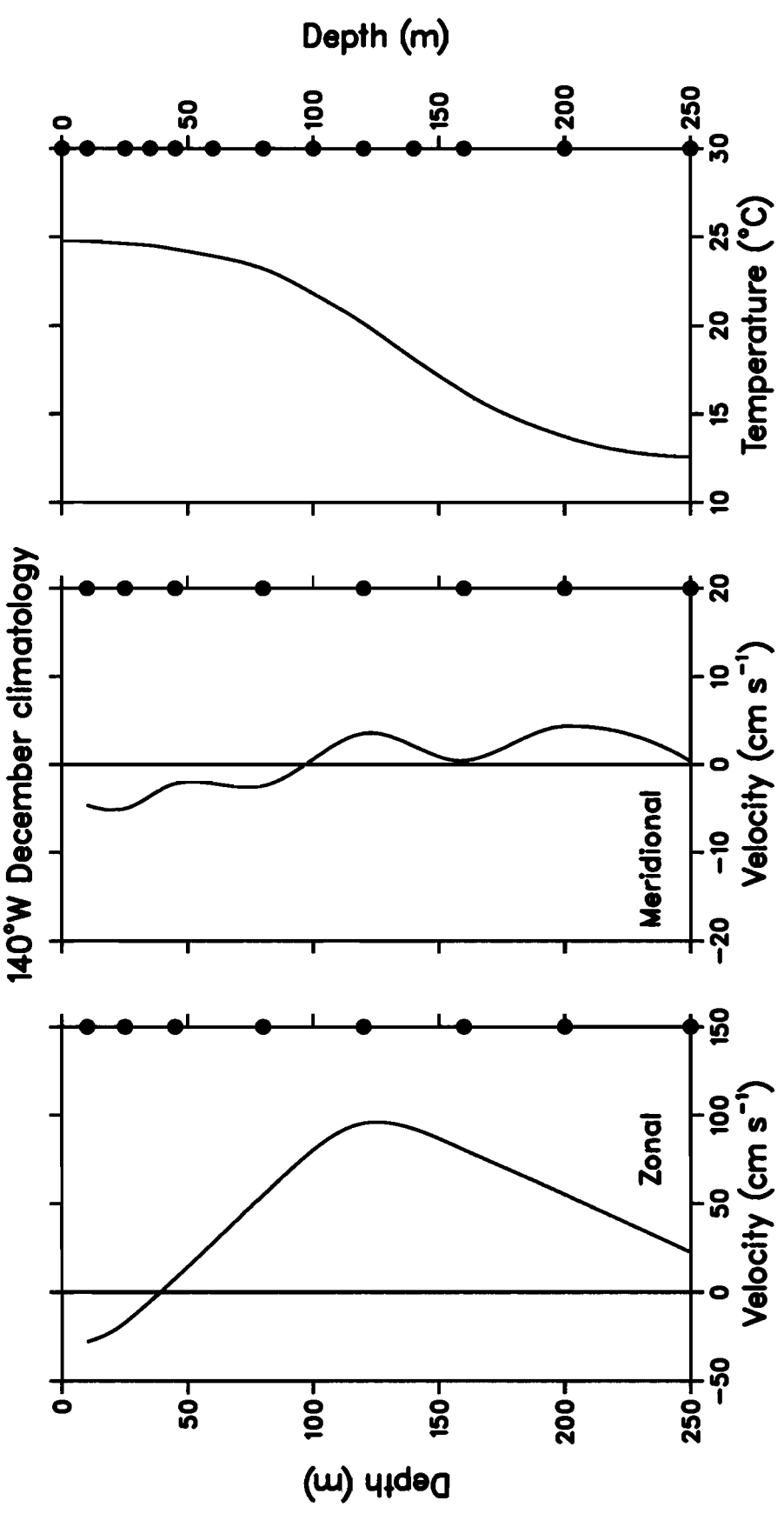

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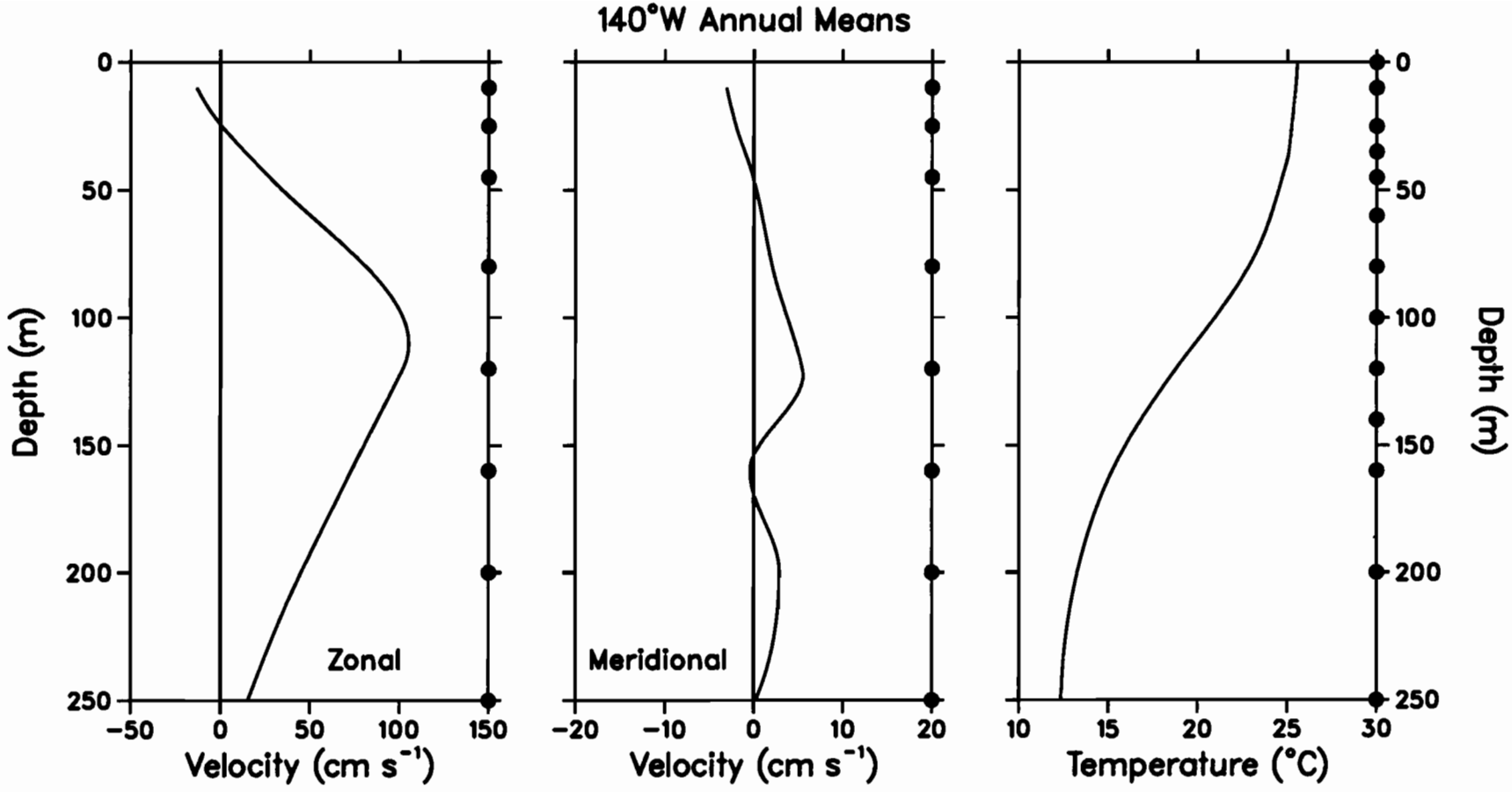

Figure B12a. Profiles of annual mean zonal velocity, meridional velocity and temperature at 0°, 140°W. Solid circles on the left axes indicate standard depths on which the profiles are based.

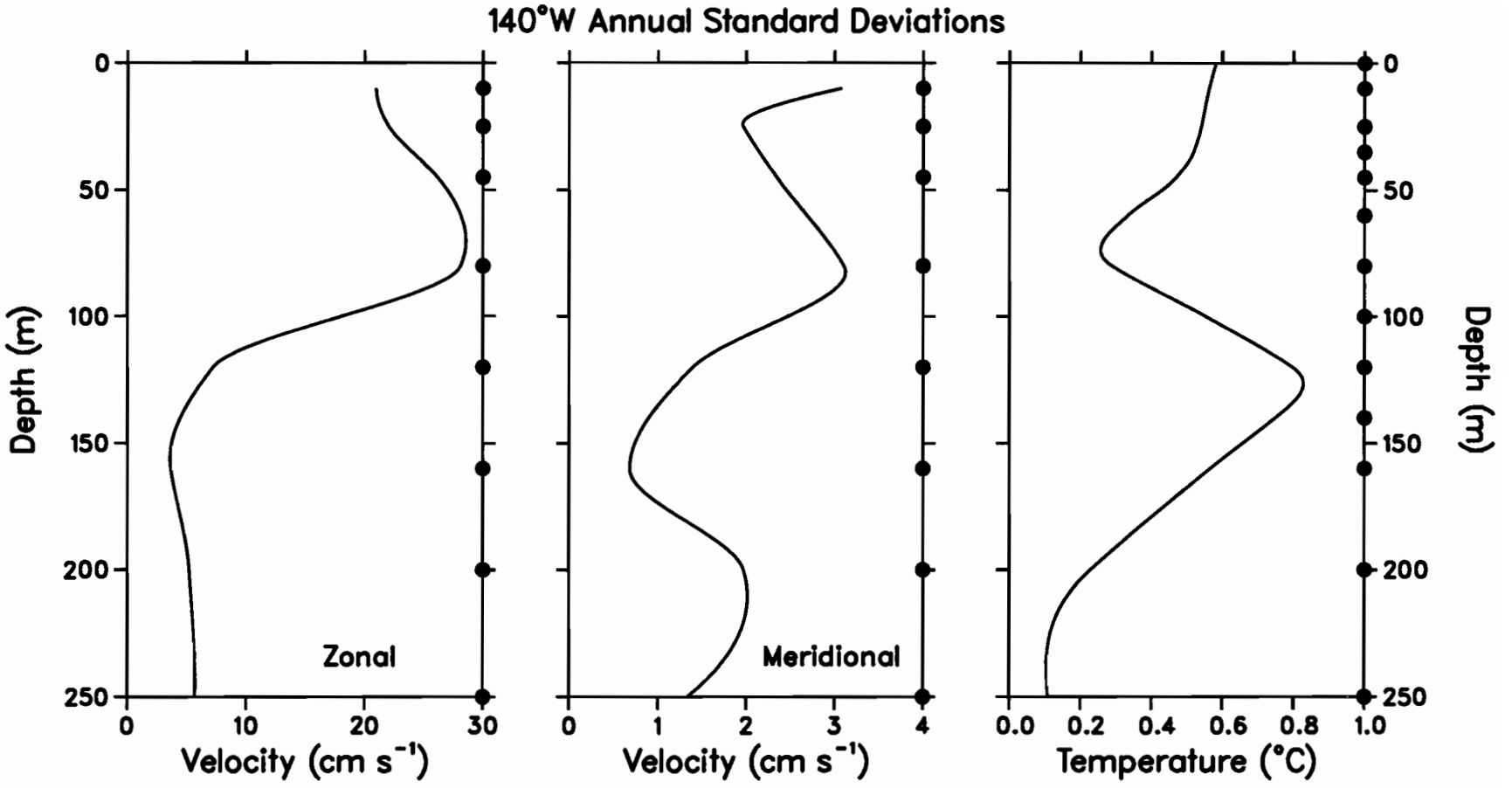

Figure B12b. Profiles of annual standard deviations for zonal velocity, meridional velocity and temperature at 0°, 140°W. Solid circles on the left axes indicate standard depths on which the profiles are based.

Table B1. Monthly averaged temperatures (in °C) at 0°, 140°W for 1983–1991. Filled data are underlined and missing data are indicated by –999.99.

Month	SST	10 m	25 m	35 m	45 m	60 m	80 m	100 m	120 m	140 m	160 m	200 m	250 m	300 m	500 m
Apr 83	29.30	29.17	28.90	29.00	26.77	23.42	22.10	20.07	18.05	16.41	14.76	13.18	12.61	-999.99	-999.99
May 83	28.70	28.58	27.92	27.95	25.83	22.65	21.23	19.30	17.38	15.94	14.49	13.09	12.48	-999.99	-999.99
Jun 83	27.10	26.99	25.99	25.89	24.23	21.73	20.19	18.37	16.55	15.36	14.17	12.97	12.34	-999.99	-999.99
Jul 83	25.33	25.24	24.33	24.11	22.84	20.94	19.29	17.53	15.77	14.83	13.88	12.87	12.17	-999.99	-999.99
Aug 83	24.16	24.08	23.17	22.87	21.73	20.03	18.26	16.68	15.09	14.33	13.58	12.76	12.03	-999.99	-999.99
Sep 83	23.62	23.56	22.59	22.25	21.09	19.35	17.50	16.18	14.86	14.18	13.48	12.73	12.06	-999.99	-999.99
Oct 83	23.72	23.65	22.90	22.57	21.47	19.72	17.81	16.41	15.18	14.43	13.70	12.86	12.26	-999.99	-999.99
Nov 83	23.71	23.64	23.20	22.87	22.15	20.80	18.95	17.12	15.79	14.87	14.05	13.07	12.46	-999.99	-999.99
Dec 83	23.46	23.40	23.14	22.86	22.46	21.62	20.09	18.04	16.50	15.36	14.42	13.20	12.52	-999.99	-999.99
Jan 84	23.86	23.79	23.48	23.21	22.85	22.24	20.72	18.47	16.65	15.44	14.52	13.17	12.38	-999.99	-999.99
Feb 84	24.84	24.76	24.10	23.51	22.90	21.92	19.85	17.60	15.94	14.89	14.18	13.01	12.14	-999.99	-999.99
Mar 84	25.54	25.45	24.55	23.65	22.77	21.18	18.71	16.66	15.48	14.47	13.81	12.86	12.03	-999.99	-999.99
Apr 84	25.80	25.72	24.99	24.22	23.20	21.31	18.69	16.64	15.49	14.45	13.71	12.76	12.01	-999.99	-999.99
May 84	25.67	25.60	25.16	24.66	23.61	21.61	18.87	16.93	15.59	14.66	13.85	12.76	12.05	-999.99	-999.99
Jun 84	25.32	25.25	25.06	24.86	24.16	22.39	20.03	17.93	16.33	15.28	14.23	12.95	12.15	-999.99	-999.99
Jul 84	25.20	25.11	25.04	25.00	24.60	23.30	21.55	19.00	17.04	15.80	14.56	13.09	12.18	-999.99	-999.99
Aug 84	25.08	25.00	24.90	24.82	24.41	23.37	21.99	19.63	17.40	16.12	14.84	13.12	12.22	-999.99	-999.99
Sep 84	24.90	24.82	24.68	24.56	24.12	23.30	22.20	20.11	17.80	16.42	15.05	13.19	12.31	-999.99	-999.99
Oct 84	24.52	24.45	24.25	24.08	23.67	22.96	22.01	20.04	18.05	16.52	15.11	13.29	12.34	-999.99	-999.99
Nov 84	23.97	23.97	23.75	23.57	23.27	22.70	21.77	20.07	18.29	16.57	15.23	13.45	12.33	11.80	-999.99
Dec 84	23.66	23.80	23.64	23.50	23.30	22.84	21.84	20.15	18.31	16.50	15.19	13.53	12.35	11.73	-999.99
Jan 85	23.69	23.88	23.73	23.62	23.43	23.01	22.08	20.60	18.75	16.83	15.34	13.62	12.48	11.74	-999.99
Feb 85	24.11	24.24	24.04	23.89	23.65	23.25	22.23	20.75	18.70	16.78	15.23	13.50	12.47	11.64	-999.99
Mar 85	24.73	24.77	24.51	24.31	23.96	23.45	22.10	20.11	17.74	16.11	14.74	13.25	12.27	11.52	-999.99
Apr 85	25.28	25.25	25.00	24.82	24.47	23.80	22.52	20.44	17.77	16.15	14.77	13.28	12.26	11.57	-999.99
May 85	25.69	25.64	25.49	25.40	25.10	24.26	23.06	20.72	17.97	16.15	14.84	13.25	12.30	11.60	-999.99
Jun 85	25.86	25.82	25.73	25.67	25.38	24.48	23.28	20.47	17.98	16.17	14.86	13.21	12.31	11.69	-999.99
Jul 85	25.80	25.75	25.67	25.64	25.39	24.69	23.75	21.14	18.84	16.88	15.16	13.31	12.43	11.91	-999.99
Aug 85	25.47	25.40	25.34	25.37	25.17	24.67	24.01	21.92	19.38	17.11	15.20	13.32	12.45	12.05	-999.99
Sep 85	25.02	24.93	24.86	24.91	24.71	24.34	23.73	21.80	18.96	16.70	14.99	13.25	12.33	12.00	-999.99
Oct 85	24.85	24.77	24.70	24.71	24.54	24.30	23.64	21.93	19.21	17.10	15.42	13.40	12.37	11.95	-999.99
Nov 85	24.82	24.77	24.71	24.70	24.57	24.40	23.79	22.49	20.31	18.18	16.26	13.66	12.54	11.96	-999.99
Dec 85	24.64	24.60	24.57	24.56	24.45	24.33	23.82	22.57	20.55	18.38	16.28	13.60	12.50	11.89	-999.99
Jan 86	24.49	24.43	24.38	24.36	24.22	24.07	23.49	21.95	19.43	17.16	15.33	13.30	12.33	11.68	-999.99
Feb 86	24.66	24.57	24.44	24.36	24.15	23.88	23.04	21.12	18.28	16.13	14.68	13.14	12.31	11.57	-999.99
Mar 86	25.28	25.15	24.97	24.85	24.58	24.19	22.97	20.70	17.99	16.13	14.69	13.14	12.31	11.52	-999.99
Apr 86	26.01	25.87	25.68	25.55	25.25	24.58	22.97	20.56	18.07	16.38	14.80	13.12	12.23	11.36	-999.99
May 86	26.47	26.38	26.24	26.08	25.89	25.01	23.54	21.25	18.96	16.77	15.28	13.26	12.24	-999.99	-999.99
Jun 86	26.55	26.51	26.43	26.33	26.25	25.46	24.40	22.07	19.74	16.81	15.50	13.27	12.27	11.59	-999.99
Jul 86	26.42	26.40	26.33	26.30	26.17	25.57	24.76	22.27	19.78	16.91	15.45	13.30	12.29	11.65	-999.99
Aug 86	26.47	26.45	26.36	26.35	26.19	25.84	25.38	23.04	20.70	18.13	16.17	13.60	12.44	11.89	-999.99
Sep 86	26.66	26.62	26.53	26.56	26.41	26.24	26.00	24.13	22.25	19.55	16.92	13.77	12.57	12.06	-999.99
Oct 86	26.80	26.74	26.65	26.69	26.56	26.44	26.12	24.91	22.95	19.73	16.82	13.73	12.62	12.06	-999.99
Nov 86	26.84	26.81	26.73	26.76	26.69	26.64	26.24	25.61	23.19	19.58	17.04	14.02	12.72	12.05	-999.99
Dec 86	26.90	26.90	26.83	26.86	26.85	26.84	26.57	26.29	24.59	21.48	18.79	14.76	12.92	12.14	-999.99
Jan 87	27.08	27.08	27.01	27.02	26.98	26.92	26.24	25.56	24.00	21.50	18.72	14.59	12.81	11.85	-999.99
Feb 87	27.29	27.24	27.14	27.13	27.02	26.87	25.34	23.80	20.68	17.92	15.90	13.57	12.47	11.37	-999.99
Mar 87	27.66	27.57	27.43	27.37	27.19	26.92	24.87	22.81	18.96	16.07	14.51	13.14	12.41	11.38	-999.99
Apr 87	28.31	28.16	28.01	27.92	27.67	27.19	24.93	22.21	18.43	16.13	14.65	13.13	12.50	11.56	-999.99
May 87	28.85	28.66	28.54	28.49	28.26	27.63	25.55	22.59	18.20	16.29	14.77	13.09	12.46	11.61	-999.99
Jun 87	28.74	28.56	28.46	28.46	28.22	27.44	25.28	23.01	18.45	16.55	14.91	13.16	12.41	11.56	-999.99
Jul 87	28.16	28.00	27.89	27.90	27.63	26.84	24.71	23.25	19.30	17.40	15.63	13.43	12.52	11.64	-999.99
Aug 87	27.68	27.52	27.39	27.40	27.16	26.65	25.08	24.01	20.27	18.28	16.32	13.62	12.61	11.84	-999.99

Table B1. Continued.

Month	SST	10 m	25 m	35 m	45 m	60 m	80 m	100 m	120 m	140 m	160 m	200 m	250 m	300 m	500 m
Sep 87	27.25	27.10	26.92	26.89	26.59	26.13	24.81	23.56	20.07	17.91	15.96	13.46	12.57	11.85	-999.99
Oct 87	26.95	26.83	26.65	26.56	26.17	25.57	24.51	22.69	19.80	17.58	15.73	13.34	-999.99	11.84	7.98
Nov 87	26.66	26.60	26.47	26.37	25.92	25.24	24.34	21.92	19.39	17.29	15.59	13.29	-999.99	11.78	8.03
Dec 87	26.13	26.10	26.01	25.92	25.44	24.72	23.76	21.17	18.65	16.68	15.16	13.25	-999.99	11.67	8.14
Jan 88	25.82	25.77	25.64	25.53	25.01	24.23	23.19	20.56	18.02	16.09	14.75	13.21	-999.99	11.48	8.20
Feb 88	25.73	25.60	25.29	25.01	24.15	22.86	21.16	18.56	16.48	14.95	13.94	12.86	-999.99	11.12	8.09
Mar 88	25.53	25.31	24.62	23.89	22.65	20.80	18.32	16.46	15.03	13.99	13.27	12.55	-999.99	10.94	8.07
Apr 88	24.95	24.74	23.82	22.84	21.57	19.66	17.12	15.86	14.66	13.74	13.09	12.45	-999.99	11.01	8.11
May 88	24.09	23.97	23.32	22.66	21.57	19.94	17.59	16.28	15.02	13.96	13.25	12.46	-999.99	11.12	8.16
Jun 88	23.69	23.65	23.40	23.11	22.35	21.20	18.99	17.32	15.97	14.67	13.75	12.64	-999.99	-999.99	-999.99
Jul 88	23.51	23.49	23.31	23.08	22.61	21.92	19.97	17.94	16.57	15.14	14.08	12.77	-999.99	-999.99	-999.99
Aug 88	23.34	23.28	22.98	22.63	22.16	21.44	19.68	17.62	16.24	14.98	13.96	12.79	-999.99	-999.99	-999.99
Sep 88	22.96	22.88	22.53	22.09	21.43	20.43	18.54	16.72	15.43	14.46	13.60	12.64	-999.99	-999.99	-999.99
Oct 88	22.06	21.93	21.55	21.13	20.35	19.19	17.64	15.91	14.94	14.02	13.28	12.43	-999.99	-999.99	-999.99
Nov 88	21.84	21.68	21.30	20.96	20.27	19.24	18.55	16.72	15.84	14.51	13.65	12.64	-999.99	-999.99	-999.99
Dec 88	22.56	22.43	22.10	21.88	21.44	20.78	20.33	18.71	17.50	15.71	14.59	13.09	-999.99	-999.99	8.20
Jan 89	23.33	23.19	22.90	22.76	22.42	21.92	21.25	19.65	18.03	16.13	14.92	13.23	-999.99	-999.99	8.15
Feb 89	24.06	23.88	23.57	23.39	22.95	22.29	21.42	19.57	17.73	15.87	14.72	13.16	-999.99	-999.99	8.20
Mar 89	24.68	24.50	24.17	23.96	23.48	22.76	21.81	19.99	18.17	16.24	14.89	13.22	-999.99	-999.99	8.40
Apr 89	25.32	25.16	24.87	24.69	24.28	23.66	22.83	20.98	19.12	17.03	15.04	13.27	-999.99	-999.99	8.48
May 89	25.85	25.73	25.53	25.40	25.05	24.52	23.61	21.51	19.42	17.11	14.91	13.18	-999.99	-999.99	8.44
Jun 89	25.99	25.88	25.76	25.67	25.38	24.93	23.64	21.34	19.04	16.63	14.91	13.01	-999.99	11.77	-999.99
Jul 89	25.79	25.69	25.61	25.53	25.25	24.84	23.31	20.89	18.46	16.30	14.89	12.88	-999.99	11.75	-999.99
Aug 89	25.45	25.35	25.24	25.15	24.90	24.53	23.28	20.91	18.55	16.39	14.95	13.00	-999.99	11.80	-999.99
Sep 89	25.15	25.04	24.92	24.84	24.66	24.40	23.64	21.55	19.46	16.91	15.32	13.24	-999.99	11.80	-999.99
Oct 89	24.88	24.76	24.66	24.63	24.50	24.31	23.76	21.88	20.01	17.26	15.57	13.35	-999.99	11.71	-999.99
Nov 89	24.82	24.69	24.60	24.59	24.48	24.32	23.74	22.11	20.49	17.92	16.03	13.62	-999.99	11.78	-999.99
Dec 89	25.14	25.01	24.94	24.94	24.86	24.75	24.10	22.83	21.57	19.36	17.05	14.02	-999.99	11.87	8.31
Jan 90	25.49	25.36	25.30	25.31	25.26	25.18	24.53	23.36	22.18	20.13	17.59	13.94	-999.99	11.73	8.11
Feb 90	25.89	25.72	25.63	25.63	25.58	25.51	24.94	23.62	22.30	19.65	17.25	13.51	-999.99	11.59	7.98
Mar 90	26.59	26.38	26.26	26.24	26.17	26.05	25.43	23.60	21.76	18.30	16.30	13.18	-999.99	11.62	8.00
Apr 90	27.16	26.94	26.83	26.81	26.63	26.35	25.23	22.64	19.91	16.68	15.01	13.03	-999.99	11.73	8.06
May 90	27.08	26.90	26.80	26.75	26.43	25.85	23.88	21.05	18.13	15.85	14.17	12.95	12.24	11.74	-999.99
Jun 90	26.74	26.61	26.48	26.39	26.00	25.31	23.04	20.36	17.95	16.06	14.35	13.03	12.30	11.75	-999.99
Jul 90	26.55	26.44	26.34	26.26	25.93	25.45	23.84	21.36	18.95	16.89	14.97	13.25	12.38	11.87	-999.99
Aug 90	26.03	25.94	25.86	25.84	25.58	25.28	24.33	22.29	19.73	17.54	15.20	13.32	12.37	11.93	-999.99
Sep 90	25.53	25.41	25.35	25.32	25.11	24.85	24.18	22.89	20.43	18.13	15.55	13.45	12.39	11.92	-999.99
Oct 90	25.58	25.44	25.42	25.36	25.22	25.03	24.49	23.60	21.04	18.59	16.04	13.60	12.47	11.89	-999.99
Nov 90	25.74	25.63	25.59	25.48	25.43	25.27	24.81	23.99	21.77	19.56	17.01	13.89	12.54	11.92	8.15
Dec 90	25.90	25.80	25.76	25.63	25.62	25.52	25.21	24.73	23.35	21.49	18.55	14.31	12.57	11.89	8.05
Jan 91	26.07	25.99	25.92	25.81	25.79	25.73	25.35	24.55	22.74	20.70	17.99	13.99	12.43	11.54	7.77
Feb 91	26.06	26.01	25.85	25.70	25.60	25.45	24.68	22.66	19.62	17.45	15.71	13.23	12.20	11.21	7.67
Mar 91	26.22	26.18	25.98	25.78	25.61	25.37	24.40	21.80	18.52	16.49	15.03	13.20	12.19	11.33	7.92
Apr 91	26.88	26.81	26.65	26.47	26.28	26.00	25.05	22.61	19.59	17.38	15.65	13.44	12.30	11.59	8.22
May 91	27.51	27.38	27.27	27.13	26.93	26.63	25.43	22.86	19.95	17.63	15.83	13.28	-999.99	11.64	8.27
Jun 91	27.56	27.41	27.34	27.23	27.05	26.77	25.33	22.47	19.76	17.55	15.77	13.23	-999.99	11.69	8.18
Jul 91	27.07	26.93	26.89	26.82	26.67	26.44	25.10	22.29	19.89	17.62	15.82	13.35	-999.99	11.84	8.12
Aug 91	26.42	26.27	26.20	26.12	25.98	25.76	24.75	22.49	20.27	17.91	16.02	13.44	-999.99	11.90	8.09
Sep 91	26.35	26.16	26.04	25.90	25.79	25.61	25.07	23.84	21.81	19.21	16.94	13.67	-999.99	11.85	8.06
Oct 91	26.83	26.64	26.50	26.32	26.25	26.14	25.92	25.38	23.66	20.81	18.06	13.97	-999.99	11.82	8.05

Table B2. Monthly averaged zonal velocity (in cm s^{-1}) at 0°, 140°W for 1983–1991. Filled data are underlined and missing data are indicated by –999.99.

Month	10 m	25 m	45 m	80 m	120 m	160 m	200 m	250 m
Apr 83	-11.99	-1.85	23.90	89.27	95.97	64.62	-999.99	19.64
May 83	3.04	25.32	55.97	106.39	92.63	59.35	-999.99	11.36
Jun 83	19.68	55.44	91.54	122.75	85.14	50.36	-999.99	-0.98
Jul 83	34.44	69.92	108.64	121.72	75.31	43.12	-999.99	-5.62
Aug 83	31.61	66.06	104.08	112.12	66.92	39.36	-999.99	-4.82
Sep 83	-4.03	33.05	65.10	106.51	67.15	40.34	-999.99	-5.08
Oct 83	-43.57	-9.70	20.05	102.78	78.11	48.75	-999.99	2.62
Nov 83	-56.28	-29.46	6.22	95.03	92.68	62.61	-999.99	20.06
Dec 83	-46.65	-25.37	9.63	89.07	105.51	74.45	-999.99	31.00
Jan 84	-42.47	-20.00	12.11	88.23	106.54	74.97	-999.99	30.76
Feb 84	-47.96	-16.77	25.64	100.66	98.55	69.96	-999.99	31.74
Mar 84	-24.20	9.45	62.40	129.71	99.66	69.97	-999.99	32.38
Apr 84	17.84	45.79	98.49	146.91	102.43	69.72	-999.99	25.10
May 84	35.44	60.64	107.75	146.99	101.39	67.81	-999.99	20.49
Jun 84	34.02	53.96	88.97	140.84	105.05	68.20	-999.99	20.14
Jul 84	18.61	30.96	54.85	121.15	103.62	66.94	-999.99	14.18
Aug 84	-11.68	-0.85	21.19	91.52	99.09	67.17	-999.99	10.15
Sep 84	-43.71	-32.43	-8.36	60.89	98.92	68.77	-999.99	10.11
Oct 84	-64.39	-51.26	-24.23	44.97	100.26	73.29	-999.99	10.90
Nov 84	-53.98	-39.72	-13.88	54.19	108.11	82.05	-999.99	19.10
Dec 84	-27.67	-22.42	-2.47	59.91	109.98	81.77	-999.99	24.74
Jan 85	-16.67	-20.97	-5.36	47.04	105.14	81.29	-999.99	25.75
Feb 85	-15.44	-15.64	0.55	51.06	102.94	78.86	-999.99	24.45
Mar 85	-13.08	-3.13	19.29	82.60	107.68	74.63	-999.99	20.50
Apr 85	5.44	20.25	46.62	114.69	119.86	80.72	-999.99	22.59
May 85	27.44	42.66	68.44	128.87	120.36	80.22	-999.99	22.55
Jun 85	19.63	33.65	59.11	122.76	119.43	76.69	-999.99	18.31
Jul 85	0.39	11.25	33.17	101.80	125.40	76.73	-999.99	14.82
Aug 85	-12.94	-5.60	9.88	71.23	118.67	70.00	-999.99	5.19
Sep 85	-22.78	-16.27	-7.15	50.81	107.14	68.18	-999.99	-0.35
Oct 85	-25.42	-17.27	-4.88	47.44	104.24	79.86	-999.99	7.76
Nov 85	-25.87	-16.95	6.27	42.55	98.25	89.59	-999.99	16.52
Dec 85	-28.14	-20.61	1.74	27.91	86.37	85.52	-999.99	16.26
Jan 86	-37.86	-30.07	-10.71	20.65	87.04	76.51	-999.99	13.74
Feb 86	-46.90	-25.15	-1.73	43.76	104.80	78.39	-999.99	18.90
Mar 86	-999.99	2.56	30.06	85.15	117.10	82.11	-999.99	22.16
Apr 86	-999.99	27.35	58.38	123.38	122.60	79.84	-999.99	19.38
May 86	-999.99	38.83	71.65	143.52	131.97	80.16	-999.99	17.78
Jun 86	25.24	35.69	64.97	134.62	126.47	73.15	-999.99	9.93
Jul 86	12.80	20.64	43.63	107.52	115.10	70.17	-999.99	4.09
Aug 86	4.13	11.26	28.68	79.52	118.08	80.01	-999.99	10.03
Sep 86	1.55	7.33	20.10	61.89	120.04	81.78	-999.99	13.06
Oct 86	-10.16	-5.08	10.18	51.05	112.33	76.93	-999.99	10.35
Nov 86	-16.94	-11.77	10.07	40.32	99.23	79.29	-999.99	13.40
Dec 86	-12.64	-7.61	17.09	30.99	79.30	80.10	-999.99	18.67
Jan 87	-22.29	-18.01	4.81	19.91	56.33	60.06	-999.99	10.48
Feb 87	-32.57	-26.68	-5.42	17.56	54.40	47.08	-999.99	3.96
Mar 87	-20.47	-9.22	15.20	34.97	72.54	58.23	-999.99	7.97
Apr 87	7.20	14.67	49.22	66.08	88.15	65.56	-999.99	8.31
May 87	34.69	33.13	74.00	95.44	96.21	63.94	-999.99	6.89
Jun 87	25.36	26.69	58.34	100.99	96.43	61.04	-999.99	0.42
Jul 87	-2.74	3.87	25.56	88.56	95.65	64.22	-999.99	-2.03
Aug 87	-20.17	-11.59	7.90	74.00	97.19	68.89	-999.99	6.16

Table B2. Continued.

Month	10 m	25 m	45 m	80 m	120 m	160 m	200 m	250 m
Sep 87	-40.85	-28.68	-7.58	67.36	100.89	66.92	-999.99	9.94
Oct 87	-45.46	-31.58	-9.36	70.82	105.15	-999.99	41.78	-999.99
Nov 87	-36.89	-23.72	-1.93	73.40	102.36	-999.99	39.84	-999.99
Dec 87	-29.59	-17.60	5.30	77.19	102.72	-999.99	42.66	-999.99
Jan 88	-22.81	-10.53	13.65	79.82	100.84	-999.99	45.02	-999.99
Feb 88	-27.00	-8.81	15.68	88.53	88.18	-999.99	41.66	-999.99
Mar 88	-23.35	3.50	30.22	109.78	86.68	-999.99	41.74	-999.99
Apr 88	3.42	30.03	61.54	126.71	92.83	-999.99	42.69	-999.99
May 88	27.53	46.90	81.45	135.51	98.45	-999.99	44.80	-999.99
Jun 88	25.40	41.58	75.17	133.38	105.88	-999.99	45.29	-999.99
Jul 88	6.08	21.60	51.59	123.83	107.25	-999.99	39.37	-999.99
Aug 88	-18.33	-4.59	20.67	108.17	100.71	-999.99	36.68	-999.99
Sep 88	-39.42	-27.22	-6.06	89.76	89.66	-999.99	37.13	-999.99
Oct 88	-46.26	-34.55	-4.60	84.59	88.56	-999.99	40.27	-999.99
Nov 88	-999.99	-999.99	2.19	72.71	99.18	-999.99	51.03	-999.99
Dec 88	-51.80	-33.07	-3.29	57.37	106.26	-999.99	61.81	-999.99
Jan 89	-30.94	-9.63	14.72	67.86	109.25	-999.99	62.96	-999.99
Feb 89	-5.42	19.33	48.91	90.23	112.58	-999.99	58.67	-999.99
Mar 89	11.34	37.64	70.53	109.02	119.05	-999.99	56.28	-999.99
Apr 89	19.76	44.29	78.37	125.23	125.28	-999.99	51.14	-999.99
May 89	19.00	39.18	72.34	129.60	123.21	-999.99	42.20	-999.99
Jun 89	4.75	18.77	48.24	110.79	113.68	-999.99	33.78	-999.99
Jul 89	-12.15	-2.54	23.09	85.85	108.72	-999.99	29.65	-999.99
Aug 89	-27.85	-18.49	4.25	58.13	104.38	-999.99	31.65	-999.99
Sep 89	-41.70	-31.94	-11.63	30.17	97.84	-999.99	36.32	-999.99
Oct 89	-42.86	-33.22	-13.14	24.00	99.52	-999.99	42.18	-999.99
Nov 89	-28.36	-18.27	4.51	38.25	97.83	-999.99	52.86	-999.99
Dec 89	-5.03	2.68	29.25	58.17	87.51	-999.99	58.36	-999.99
Jan 90	6.16	9.89	37.76	-999.99	84.33	-999.99	50.64	-999.99
Feb 90	-999.99	-999.99	-999.99	-999.99	87.61	-999.99	41.99	-999.99
Mar 90	-999.99	-999.99	-999.99	-999.99	87.34	-999.99	37.68	-999.99
Apr 90	-999.99	-999.99	-999.99	-999.99	91.50	-999.99	36.85	-999.99
May 90	1.06	15.11	46.80	113.49	101.66	-999.99	36.17	-999.99
Jun 90	-5.96	8.48	41.76	117.41	116.29	-999.99	38.22	-999.99
Jul 90	-8.51	3.92	32.29	106.98	127.74	-999.99	41.85	-999.99
Aug 90	-24.69	-15.54	6.49	72.39	120.71	-999.99	41.68	-999.99
Sep 90	-42.40	-33.28	-12.44	44.64	107.95	-999.99	43.79	-999.99
Oct 90	-42.23	-32.02	-13.38	37.23	103.76	-999.99	47.79	-999.99
Nov 90	-34.99	-25.41	-10.12	36.98	98.99	-999.99	54.32	21.13
Dec 90	-21.33	-12.40	4.43	37.84	86.16	-999.99	57.52	21.36
Jan 91	-25.47	-14.48	5.99	27.51	75.73	-999.99	47.84	16.20
Feb 91	-40.27	-25.75	-4.32	20.02	82.30	-999.99	42.29	14.84
Mar 91	-26.20	-11.09	12.98	43.94	103.33	-999.99	51.31	22.30
Apr 91	0.15	13.52	42.04	86.03	117.76	-999.99	54.88	28.35
May 91	9.32	20.81	50.65	111.37	117.32	-999.99	47.07	-999.99
Jun 91	2.37	12.41	40.73	108.40	115.63	-999.99	43.56	-999.99
Jul 91	-9.82	-0.32	25.70	91.28	117.49	-999.99	44.59	-999.99
Aug 91	-20.92	-9.67	14.67	76.65	120.77	-999.99	44.56	-999.99
Sep 91	-17.65	-5.84	19.19	70.30	121.58	-999.99	45.38	-999.99
Oct 91	-4.14	5.28	32.32	69.81	118.21	-999.99	46.40	-999.99

Table B3. Monthly averaged meridional velocity (in cm s^{-1}) at 0°, 140°W for 1983–1991. Missing data are indicated by –999.99.

Month	10 m	25 m	45 m	80 m	120 m	160 m	200 m	250 m
Apr 83	-2.73	7.16	-999.99	-3.03	5.08	-3.30	-999.99	2.44
May 83	-3.68	6.07	-999.99	-1.14	4.39	-1.08	-999.99	2.43
Jun 83	-1.73	5.64	-999.99	1.77	5.94	1.33	-999.99	3.26
Jul 83	5.76	8.44	-999.99	3.78	6.26	3.09	-999.99	1.91
Aug 83	7.96	7.96	-999.99	6.06	6.21	4.28	-999.99	0.12
Sep 83	-3.24	-0.13	-999.99	6.88	6.58	2.42	-999.99	3.52
Oct 83	-11.51	-4.68	-999.99	4.99	4.06	-2.08	-999.99	3.90
Nov 83	-13.79	-8.44	-8.74	2.51	5.04	-1.53	-999.99	0.36
Dec 83	-13.60	-11.23	-12.77	-3.53	6.61	0.68	-999.99	-1.61
Jan 84	-7.13	-5.13	-8.37	-6.16	2.29	-1.91	-999.99	-8.20
Feb 84	-6.55	-0.32	-1.70	-0.99	3.64	-1.33	-999.99	-9.64
Mar 84	-7.99	1.53	3.30	-0.66	9.85	0.47	-999.99	-2.14
Apr 84	-3.94	2.18	2.56	-7.30	6.60	-3.46	-999.99	0.32
May 84	2.22	4.91	0.75	-6.40	2.28	-4.57	-999.99	-4.24
Jun 84	5.32	7.01	1.26	1.70	4.30	-1.75	-999.99	-7.47
Jul 84	3.38	3.20	-2.24	1.96	4.07	-1.45	-999.99	-4.12
Aug 84	3.33	-0.15	-5.15	-3.78	2.82	-3.04	-999.99	1.12
Sep 84	-999.99	-0.40	-4.54	-9.92	1.21	-4.26	-999.99	3.40
Oct 84	-999.99	5.12	-0.35	-10.76	-1.48	-3.05	-999.99	1.97
Nov 84	8.29	6.73	1.37	-8.40	-4.29	-2.18	-999.99	-2.52
Dec 84	2.83	0.72	-1.63	-9.98	-4.55	-1.51	-999.99	-3.83
Jan 85	2.04	-0.58	-1.51	-7.61	0.86	2.08	-999.99	-1.06
Feb 85	3.14	0.79	-0.19	-6.48	2.45	2.14	-999.99	-1.64
Mar 85	-999.99	2.48	-999.99	-5.77	1.56	-1.61	-999.99	-2.84
Apr 85	-999.99	4.30	-999.99	0.15	4.98	-3.43	-999.99	-1.90
May 85	-1.07	0.99	-7.14	0.19	6.94	-5.08	-999.99	-0.53
Jun 85	0.06	-1.41	-7.29	-3.97	4.14	-6.79	-999.99	2.51
Jul 85	5.31	3.66	-1.34	-3.84	-0.09	-5.80	-999.99	3.78
Aug 85	6.70	4.98	0.88	-3.79	-0.85	-4.25	-999.99	0.13
Sep 85	1.84	-0.85	0.30	-2.12	1.08	-4.52	-999.99	-1.59
Oct 85	-1.18	-2.86	7.61	2.50	0.75	-4.35	-999.99	3.39
Nov 85	-0.17	-0.22	13.49	2.29	-0.49	-3.81	-999.99	5.23
Dec 85	2.02	2.28	15.05	0.41	-1.29	-2.98	-999.99	2.68
Jan 86	2.41	3.47	12.06	-2.31	-4.16	-2.24	-999.99	3.31
Feb 86	3.22	5.45	4.46	-2.17	-1.53	-2.66	-999.99	6.54
Mar 86	-999.99	-999.99	2.74	2.91	4.95	-1.83	-999.99	7.44
Apr 86	-999.99	-999.99	6.24	9.27	5.21	2.13	-999.99	1.84
May 86	-999.99	-999.99	4.45	12.38	3.13	5.67	-999.99	-2.10
Jun 86	5.72	6.75	0.23	8.69	4.05	6.28	-999.99	-0.67
Jul 86	-2.45	-2.46	-5.00	4.03	7.34	5.47	-999.99	-0.03
Aug 86	-5.76	-6.43	-6.54	1.72	10.88	4.26	-999.99	0.63
Sep 86	-4.09	-5.88	-7.01	-2.62	9.92	3.45	-999.99	1.86
Oct 86	-6.02	-9.69	-16.57	-6.76	4.41	2.63	-999.99	1.64
Nov 86	-5.91	-8.94	-999.99	-3.78	4.51	4.81	-999.99	1.14
Dec 86	-9.94	-11.45	-999.99	-6.14	3.38	5.58	-999.99	2.65
Jan 87	-9.79	-11.87	-999.99	-8.65	-1.90	1.67	-999.99	3.29
Feb 87	-1.75	-7.96	-999.99	-1.08	-0.94	1.20	-999.99	0.12
Mar 87	-999.99	-8.40	-999.99	-0.07	0.39	-0.48	-999.99	-3.35
Apr 87	-999.99	-2.03	-999.99	-1.44	2.10	-1.80	-999.99	-0.37
May 87	8.38	4.80	9.63	1.45	5.24	1.94	-999.99	3.48
Jun 87	2.35	1.66	4.14	1.94	6.43	1.27	-999.99	0.91
Jul 87	-0.71	-0.60	1.94	5.20	9.88	-1.51	-999.99	-2.09
Aug 87	-0.10	0.13	2.30	8.39	12.39	0.07	-999.99	-0.01

Table B3. Continued.

Month	10 m	25 m	45 m	80 m	120 m	160 m	200 m	250 m
Sep 87	-4.50	-3.90	-0.39	6.51	10.15	2.80	-999.99	4.63
Oct 87	-9.63	-8.64	-999.99	3.63	6.51	-999.99	-1.26	-999.99
Nov 87	-9.57	-9.01	-999.99	3.88	2.00	-999.99	-0.76	-999.99
Dec 87	-5.98	-6.13	-999.99	4.64	-0.57	-999.99	-1.78	-999.99
Jan 88	-5.31	-5.35	-999.99	2.44	0.38	-999.99	-2.41	-999.99
Feb 88	-5.05	-3.99	-999.99	4.66	1.47	-999.99	0.48	-999.99
Mar 88	-2.38	0.87	-999.99	10.42	2.56	-999.99	-0.79	-999.99
Apr 88	-14.02	-4.80	-999.99	10.94	1.46	-999.99	-1.90	-999.99
May 88	-33.52	-7.93	-999.99	10.42	-1.85	-999.99	0.62	-999.99
Jun 88	-999.99	1.76	-999.99	12.82	-3.43	-999.99	-0.81	-999.99
Jul 88	-999.99	-0.01	-999.99	10.37	-5.78	-999.99	-3.40	-999.99
Aug 88	-999.99	-6.36	-999.99	2.34	-8.30	-999.99	-2.28	-999.99
Sep 88	-999.99	-2.21	-999.99	-2.64	-7.21	-999.99	-0.25	-999.99
Oct 88	-999.99	4.49	-999.99	-1.59	-4.11	-999.99	3.07	-999.99
Nov 88	-999.99	-999.99	-999.99	0.97	1.94	-999.99	6.57	-999.99
Dec 88	-0.72	-3.64	-999.99	4.66	10.95	-999.99	6.89	-999.99
Jan 89	-8.10	-8.85	-999.99	7.02	16.61	-999.99	9.13	-999.99
Feb 89	-13.39	-10.39	-999.99	6.89	17.85	-999.99	9.85	-999.99
Mar 89	-10.88	-4.05	-999.99	9.16	21.03	-999.99	8.80	-999.99
Apr 89	-4.98	2.80	-999.99	9.13	22.84	-999.99	11.83	-999.99
May 89	-2.55	2.29	-999.99	6.82	21.56	-999.99	12.93	-999.99
Jun 89	0.45	0.39	-999.99	1.83	20.74	-999.99	7.23	-999.99
Jul 89	1.97	-1.60	-999.99	-6.46	18.52	-999.99	2.30	-999.99
Aug 89	4.04	-1.65	-999.99	-5.63	17.84	-999.99	1.73	-999.99
Sep 89	7.00	-0.99	-999.99	0.25	17.47	-999.99	0.75	-999.99
Oct 89	4.35	-2.53	-999.99	-0.60	15.45	-999.99	1.38	-999.99
Nov 89	-999.99	-4.17	-999.99	-7.40	10.54	-999.99	1.96	-999.99
Dec 89	-7.19	-2.87	-999.99	-14.64	3.01	-999.99	2.20	-999.99
Jan 90	3.35	5.34	-999.99	-999.99	2.62	-999.99	5.34	-999.99
Feb 90	-999.99	-999.99	-999.99	-999.99	4.30	-999.99	6.76	-999.99
Mar 90	-999.99	-999.99	-999.99	-999.99	1.67	-999.99	4.48	-999.99
Apr 90	-999.99	-999.99	-999.99	-999.99	2.37	-999.99	1.48	-999.99
May 90	-4.12	-3.88	0.09	17.04	4.49	-999.99	0.35	-999.99
Jun 90	-3.62	-4.12	1.23	16.58	5.81	-999.99	0.99	-999.99
Jul 90	-2.82	-3.96	1.25	13.69	8.23	-999.99	-0.71	-999.99
Aug 90	2.23	-1.83	0.99	8.27	8.77	-999.99	-1.41	-999.99
Sep 90	3.08	-3.67	-0.81	8.09	10.17	-999.99	1.73	-999.99
Oct 90	-1.14	-7.42	-5.52	10.00	11.47	-999.99	3.17	-999.99
Nov 90	-1.94	-6.87	-8.07	7.59	9.83	-999.99	7.38	2.66
Dec 90	-4.28	-7.80	-9.41	5.18	10.73	-999.99	10.14	1.99
Jan 91	-4.53	-7.74	-999.99	2.95	11.29	-999.99	6.07	0.38
Feb 91	-1.43	-3.98	-999.99	-0.03	7.43	-999.99	4.34	-2.87
Mar 91	-999.99	-0.38	-999.99	3.44	3.61	-999.99	6.06	-2.03
Apr 91	-999.99	0.02	-999.99	11.18	6.20	-999.99	4.91	-0.25
May 91	-7.96	-5.26	-999.99	13.93	12.04	-999.99	0.60	-999.99
Jun 91	-8.01	-8.35	-999.99	13.10	12.22	-999.99	-0.34	-999.99
Jul 91	-5.05	-5.67	-999.99	10.76	10.67	-999.99	0.08	-999.99
Aug 91	-3.22	-4.77	-999.99	9.78	11.76	-999.99	0.65	-999.99
Sep 91	-3.52	-6.06	-999.99	6.38	10.01	-999.99	2.90	-999.99
Oct 91	-4.65	-6.99	-999.99	-0.94	5.91	-999.99	3.92	-999.99

Table B4. Monthly averaged winds and air temperatures at 0°, 140°W for 1983–1991. Missing data are indicated by -999.99.

Month	Wind Velocity (m/s) u	Wind Velocity (m/s) v	Wind Speed (m/s)	Wind Pseudostress (m**2/s**2) u	Wind Pseudostress (m**2/s**2) v	Air Temperature (deg C)
May 84	-3.68	-0.31	3.93	-16.32	-1.25	25.51
Jun 84	-4.47	0.02	4.66	-22.85	0.21	25.14
Jul 84	-5.27	0.72	5.45	-30.38	4.23	24.95
Aug 84	-5.55	1.43	5.83	-33.83	8.57	24.84
Sep 84	-5.70	1.83	6.08	-36.31	11.35	24.65
Oct 84	-6.30	1.53	6.61	-43.59	9.82	24.39
Nov 84	-7.01	0.66	7.16	-51.89	4.19	24.01
Dec 84	-7.37	0.22	7.43	-56.18	1.32	23.81
Jan 85	-7.29	0.25	7.36	-55.15	1.65	23.91
Feb 85	-6.72	0.10	6.83	-47.81	0.74	24.35
Mar 85	-5.78	-0.26	5.96	-36.40	-1.36	24.76
Apr 85	-5.24	-0.27	5.42	-29.93	-1.40	-999.99
May 85	-5.52	0.41	5.73	-33.41	2.31	25.78
Jun 85	-5.85	1.30	6.18	-38.16	7.61	25.75
Jul 85	-5.99	1.74	6.38	-39.83	10.77	25.66
Aug 85	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Sep 85	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Oct 85	-6.11	1.37	6.36	-40.72	8.69	-999.99
Nov 85	-6.89	1.23	7.10	-50.69	8.36	-999.99
Dec 85	-7.51	1.24	7.70	-58.98	9.43	-999.99
Jan 86	-7.60	1.24	7.80	-60.37	9.88	-999.99
Feb 86	-6.82	0.76	6.97	-49.28	5.84	-999.99
Mar 86	-5.63	0.20	5.76	-33.69	1.44	-999.99
Apr 86	-5.02	0.05	5.24	-27.59	0.59	-999.99
May 86	-5.15	0.52	5.51	-30.88	3.92	-999.99
Jun 86	-5.91	1.27	6.34	-39.56	8.95	26.39
Jul 86	-6.48	1.48	6.88	-45.64	10.23	26.14
Aug 86	-6.60	1.68	7.05	-47.78	11.91	26.09
Sep 86	-6.48	2.32	7.11	-47.26	16.72	26.32
Oct 86	-6.06	2.50	6.76	-42.26	17.22	26.47
Nov 86	-5.96	2.07	6.52	-40.25	13.69	26.50
Dec 86	-6.27	1.82	6.70	-43.17	12.34	26.61
Jan 87	-6.38	1.55	6.75	-43.88	10.68	26.85
Feb 87	-6.30	1.05	6.62	-42.49	6.92	27.00
Mar 87	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Apr 87	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
May 87	-3.46	1.47	4.10	-17.21	8.25	28.23
Jun 87	-4.08	2.31	5.08	-23.33	13.58	28.09
Jul 87	-4.56	2.94	5.78	-28.24	17.70	27.58
Aug 87	-4.98	2.99	6.06	-32.10	18.79	27.15
Sep 87	-5.16	2.86	6.11	-33.28	18.01	26.80
Oct 87	-5.27	2.38	6.04	-33.89	14.45	26.58
Nov 87	-5.91	1.62	6.38	-40.51	9.95	26.42
Dec 87	-6.61	1.07	6.86	-47.62	6.96	26.05
Jan 88	-6.62	0.79	6.78	-46.82	5.17	25.79
Feb 88	-5.98	0.33	6.12	-38.59	2.08	25.68
Mar 88	-5.19	-0.17	5.34	-29.24	-1.02	25.48
Apr 88	-4.89	-0.34	5.05	-25.92	-2.01	24.88
May 88	-5.22	-0.36	5.34	-29.23	-2.13	24.04
Jun 88	-5.83	-0.23	5.91	-35.70	-1.41	23.73
Jul 88	-6.05	0.13	6.14	-38.63	0.46	23.54
Aug 88	-5.82	0.71	5.99	-36.72	4.05	23.18

Table B4. Continued.

Month	Wind Velocity (m/s) u	Wind Velocity (m/s) v	Wind Speed (m/s)	Wind Pseudostress (m**2/s**2) u	Wind Pseudostress (m**2/s**2) v	Air Temperature (deg C)
Sep 88	-5.93	0.93	6.14	-38.26	5.88	-999.99
Oct 88	-6.02	0.45	6.15	-39.15	2.79	-999.99
Nov 88	-6.14	0.26	6.23	-40.62	1.49	-999.99
Dec 88	-6.45	0.42	6.53	-44.26	2.63	22.88
Jan 89	-6.01	0.35	6.10	-39.18	2.11	23.28
Feb 89	-5.16	0.02	5.30	-29.72	0.34	23.96
Mar 89	-4.65	-0.44	4.85	-24.13	-2.01	24.56
Apr 89	-4.73	-0.36	4.90	-24.60	-1.70	25.17
May 89	-5.16	0.32	5.32	-28.87	1.81	25.65
Jun 89	-5.66	0.81	5.84	-34.47	4.68	25.78
Jul 89	-6.35	0.90	6.50	-42.48	5.67	25.56
Aug 89	-6.70	1.01	6.83	-46.35	6.78	25.16
Sep 89	-6.70	1.15	6.85	-46.51	7.70	24.90
Oct 89	-6.68	0.95	6.83	-46.66	6.22	24.76
Nov 89	-6.48	0.67	6.59	-44.10	4.07	24.71
Dec 89	-6.42	0.94	6.57	-43.32	6.10	25.00
Jan 90	-6.48	1.17	6.71	-44.49	7.80	25.42
Feb 90	-6.18	0.65	6.37	-40.70	4.06	25.82
Mar 90	-5.59	0.41	5.72	-33.40	2.20	26.38
Apr 90	-5.21	0.72	5.37	-29.19	3.83	26.89
May 90	-5.29	0.88	5.49	-30.38	4.65	26.91
Jun 90	-5.64	0.95	5.87	-34.83	5.22	26.57
Jul 90	-6.16	0.98	6.40	-41.77	5.93	26.27
Aug 90	-6.54	0.97	6.76	-45.84	6.25	25.81
Sep 90	-6.44	0.93	6.62	-43.60	5.92	25.33
Oct 90	-6.67	0.65	6.78	-46.48	4.12	-999.99
Nov 90	-7.11	0.08	7.19	-52.32	0.47	25.65
Dec 90	-7.12	-0.23	7.21	-52.39	-1.68	25.87
Jan 91	-7.14	-0.08	7.24	-52.71	-0.55	26.14
Feb 91	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Mar 91	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
Apr 91	-999.99	-999.99	-999.99	-999.99	-999.99	-999.99
May 91	-4.46	1.41	5.02	-23.79	6.99	27.26
Jun 91	-5.06	0.95	5.51	-29.87	5.10	27.11
Jul 91	-5.97	0.58	6.32	-39.35	3.69	26.67
Aug 91	-6.23	0.44	6.56	-42.39	2.70	26.03
Sep 91	-5.73	0.79	6.11	-36.95	4.50	25.79
Oct 91	-5.42	1.20	5.82	-33.26	6.93	26.10

Table B5. Mean seasonal cycles of temperature (in °C) between the surface and 500 m at 0°, 140°W. Statistics are based on N monthly estimates, M of which are directly measured.

January

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	24.98	1.33	0.17	23.33	27.08	8	7
10	24.94	1.33	0.19	23.19	27.08	8	7
25	24.80	1.40	0.12	22.90	27.01	8	8
35	24.70	1.46	0.11	22.76	27.02	8	8
45	24.50	1.55	0.12	22.42	26.98	8	3
60	24.16	1.74	0.14	21.92	26.92	8	6
80	23.36	1.95	0.06	20.72	26.24	8	7
100	21.84	2.47	0.19	18.47	25.56	8	6
120	19.98	2.65	0.29	16.65	24.00	8	8
140	18.00	2.39	0.37	15.44	21.50	8	7
160	16.15	1.67	0.44	14.52	18.72	8	4
200	13.63	0.51	0.65	13.17	14.59	8	8
250	12.49	0.19	0.84	12.33	12.81	5	5
300	11.67	0.14	-0.19	11.48	11.85	6	6
500	8.06	0.20	-0.67	7.77	8.20	4	4

February

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	25.33	1.11	0.35	24.06	27.29	8	6
10	25.25	1.10	0.41	23.88	27.24	8	7
25	25.01	1.19	0.43	23.57	27.14	8	8
35	24.83	1.29	0.42	23.39	27.13	8	8
45	24.50	1.45	0.42	22.90	27.02	8	3
60	24.00	1.76	0.32	21.92	26.87	8	6
80	22.83	2.01	-0.04	19.85	25.34	8	7
100	20.96	2.30	-0.08	17.60	23.80	8	6
120	18.72	2.12	0.27	15.94	22.30	8	8
140	16.70	1.61	0.47	14.89	19.65	8	7
160	15.20	1.07	0.58	13.94	17.25	8	4
200	13.25	0.26	-0.04	12.86	13.57	8	8
250	12.32	0.15	-0.01	12.14	12.47	5	5
300	11.42	0.22	-0.25	11.12	11.64	6	6
500	7.99	0.23	-0.42	7.67	8.20	4	4

Table B5. Continued.

March

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	25.78	1.00	0.57	24.68	27.66	8	5
10	25.66	1.00	0.62	24.50	27.57	8	7
25	25.31	1.13	0.68	24.17	27.43	8	8
35	25.01	1.33	0.54	23.65	27.37	8	8
45	24.55	1.65	0.28	22.65	27.19	8	2
60	23.84	2.22	-0.05	20.80	26.92	8	6
80	22.33	2.68	-0.37	18.32	25.43	8	7
100	20.27	2.61	-0.32	16.46	23.60	8	6
120	17.96	2.09	0.22	15.03	21.76	8	8
140	15.97	1.31	0.08	13.99	18.30	8	7
160	14.65	0.89	0.22	13.27	16.30	8	4
200	13.07	0.24	-1.18	12.55	13.25	8	8
250	12.24	0.14	-0.33	12.03	12.41	5	5
300	11.39	0.24	-0.83	10.94	11.62	6	6
500	8.10	0.21	0.57	7.92	8.40	4	4

April

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	26.21	1.15	0.56	24.95	28.31	8	5
10	26.08	1.14	0.52	24.74	28.16	8	7
25	25.73	1.35	0.28	23.82	28.01	8	8
35	25.41	1.62	0.01	22.84	27.92	8	8
45	24.92	1.97	-0.24	21.57	27.67	8	2
60	24.07	2.57	-0.42	19.66	27.19	8	6
80	22.42	3.01	-0.66	17.12	25.23	8	7
100	20.24	2.62	-0.67	15.86	22.64	8	4
120	17.88	1.89	-0.58	14.66	19.91	8	7
140	15.99	1.26	-0.68	13.74	17.38	8	5
160	14.59	0.81	-0.63	13.09	15.65	8	4
200	13.06	0.32	-0.70	12.45	13.44	8	8
250	12.26	0.18	-0.07	12.01	12.50	5	5
300	11.47	0.25	-0.79	11.01	11.73	6	6
500	8.22	0.19	0.49	8.06	8.48	4	4

Table B5. Continued.

May

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	26.40	1.43	0.13	24.09	28.85	8	8
10	26.28	1.40	0.09	23.97	28.66	8	8
25	26.04	1.56	-0.11	23.32	28.54	8	8
35	25.82	1.75	-0.26	22.66	28.49	8	7
45	25.35	2.07	-0.42	21.57	28.26	8	5
60	24.43	2.55	-0.50	19.94	27.63	8	3
80	22.69	2.91	-0.72	17.59	25.55	8	8
100	20.40	2.46	-0.70	16.28	22.86	8	5
120	17.91	1.75	-0.54	15.02	19.95	8	8
140	16.05	1.23	-0.43	13.96	17.63	8	4
160	14.61	0.82	-0.21	13.25	15.83	8	4
200	13.03	0.29	-0.82	12.46	13.28	8	7
250	12.26	0.15	-0.05	12.05	12.46	5	5
300	11.54	0.24	-0.93	11.12	11.74	5	5
500	8.29	0.14	0.16	8.16	8.44	3	3

June

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	26.31	1.51	-0.09	23.69	28.74	8	7
10	26.21	1.46	-0.12	23.65	28.56	8	8
25	26.08	1.51	-0.18	23.40	28.46	8	8
35	25.97	1.59	-0.22	23.11	28.46	8	8
45	25.60	1.78	-0.35	22.35	28.22	8	5
60	24.75	2.08	-0.41	21.20	27.44	8	5
80	23.00	2.33	-0.62	18.99	25.33	8	8
100	20.62	2.07	-0.45	17.32	23.01	8	6
120	18.15	1.42	-0.33	15.97	19.76	8	8
140	16.22	0.90	-0.31	14.67	17.55	8	6
160	14.78	0.66	-0.02	13.75	15.77	8	4
200	13.06	0.21	-0.85	12.64	13.27	8	7
250	12.29	0.09	-0.37	12.15	12.41	5	5
300	11.68	0.08	-0.33	11.56	11.77	6	6
500	8.18	x	x	8.18	8.18	1	1

Table B5. Continued.

July

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	25.98	1.31	-0.20	23.51	28.16	9	7
10	25.89	1.27	-0.21	23.49	28.00	9	9
25	25.71	1.37	-0.19	23.31	27.89	9	9
35	25.63	1.44	-0.23	23.08	27.90	9	8
45	25.23	1.67	-0.34	22.61	27.63	9	5
60	24.44	2.01	-0.50	20.94	26.84	9	5
80	22.92	2.14	-0.59	19.29	25.10	9	9
100	20.63	2.02	-0.35	17.53	23.25	9	6
120	18.29	1.48	-0.49	15.77	19.89	9	9
140	16.42	0.98	-0.40	14.83	17.62	9	6
160	14.94	0.67	-0.26	13.88	15.82	9	5
200	13.14	0.24	-0.33	12.77	13.43	9	7
250	12.33	0.14	0.05	12.17	12.52	6	6
300	11.78	0.11	-0.12	11.64	11.91	6	6
500	8.12	x	x	8.12	8.12	1	1

August

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	25.57	1.30	-0.16	23.34	27.68	9	6
10	25.48	1.27	-0.18	23.28	27.52	9	9
25	25.27	1.44	-0.35	22.98	27.39	9	9
35	25.17	1.57	-0.43	22.63	27.40	9	8
45	24.81	1.81	-0.56	21.73	27.16	9	5
60	24.17	2.19	-0.71	20.03	26.65	9	5
80	22.97	2.51	-0.76	18.26	25.38	9	9
100	20.95	2.50	-0.52	16.68	24.01	9	6
120	18.63	1.97	-0.58	15.09	20.70	9	9
140	16.75	1.41	-0.47	14.33	18.28	9	6
160	15.14	0.95	-0.26	13.58	16.32	9	5
200	13.22	0.32	-0.18	12.76	13.62	9	7
250	12.35	0.20	-0.34	12.03	12.61	6	6
300	11.90	0.09	0.63	11.80	12.05	6	6
500	8.09	x	x	8.09	8.09	1	1

Table B5. Continued.

September

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	25.27	1.39	-0.22	22.96	27.25	9	6
10	25.17	1.36	-0.22	22.88	27.10	9	9
25	24.94	1.55	-0.40	22.53	26.92	9	9
35	24.81	1.69	-0.49	22.09	26.89	9	8
45	24.43	1.98	-0.63	21.09	26.59	9	5
60	23.85	2.44	-0.75	19.35	26.24	9	5
80	22.85	2.95	-0.78	17.50	26.00	9	9
100	21.20	2.98	-0.65	16.18	24.13	9	6
120	19.01	2.58	-0.38	14.86	22.25	9	9
140	17.05	1.88	-0.23	14.18	19.55	9	6
160	15.31	1.23	-0.15	13.48	16.94	9	5
200	13.27	0.38	-0.38	12.64	13.77	9	7
250	12.37	0.19	-0.38	12.06	12.57	6	6
300	11.91	0.10	0.29	11.80	12.06	6	6
500	8.06	x	x	8.06	8.06	1	1

October

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	25.13	1.62	-0.43	22.06	26.95	9	6
10	25.02	1.62	-0.45	21.93	26.83	9	9
25	24.81	1.75	-0.50	21.55	26.65	9	9
35	24.67	1.88	-0.58	21.13	26.69	9	8
45	24.30	2.16	-0.65	20.35	26.56	9	4
60	23.74	2.65	-0.70	19.19	26.44	9	5
80	22.88	3.17	-0.71	17.64	26.12	9	9
100	21.42	3.39	-0.51	15.91	25.38	9	6
120	19.43	3.03	-0.18	14.94	23.66	9	9
140	17.34	2.22	-0.04	14.02	20.81	9	6
160	15.53	1.46	0.04	13.28	18.06	9	4
200	13.33	0.46	-0.56	12.43	13.97	9	7
250	12.41	0.14	0.41	12.26	12.62	5	5
300	11.88	0.12	0.19	11.71	12.06	6	6
500	8.02	0.05	0.00	7.98	8.05	2	2

Table B5. Continued.

November

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	24.80	1.65	-0.33	21.84	26.84	8	7
10	24.72	1.68	-0.36	21.68	26.81	8	7
25	24.54	1.80	-0.40	21.30	26.73	8	8
35	24.41	1.91	-0.42	20.96	26.76	8	8
45	24.10	2.12	-0.50	20.27	26.69	8	4
60	23.58	2.49	-0.52	19.24	26.64	8	7
80	22.77	2.78	-0.45	18.55	26.24	8	7
100	21.25	3.12	-0.24	16.72	25.61	8	7
120	19.38	2.64	-0.14	15.79	23.19	8	8
140	17.31	1.92	-0.23	14.51	19.58	8	8
160	15.61	1.25	-0.33	13.65	17.04	8	4
200	13.45	0.45	-0.45	12.64	14.02	8	7
250	12.52	0.14	0.09	12.33	12.72	5	5
300	11.88	0.11	0.39	11.78	12.05	6	6
500	8.09	0.08	0.00	8.03	8.15	2	2

December

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
SST	24.80	1.49	-0.08	22.56	26.90	8	7
10	24.75	1.50	-0.09	22.43	26.90	8	7
25	24.62	1.59	-0.17	22.10	26.83	8	8
35	24.52	1.67	-0.19	21.88	26.86	8	8
45	24.30	1.79	-0.22	21.44	26.85	8	4
60	23.93	2.03	-0.22	20.78	26.84	8	6
80	23.22	2.29	-0.11	20.09	26.57	8	7
100	21.81	2.86	0.15	18.04	26.29	8	6
120	20.13	2.88	0.26	16.50	24.59	8	8
140	18.12	2.46	0.30	15.36	21.49	8	7
160	16.25	1.72	0.38	14.42	18.79	8	4
200	13.72	0.59	0.51	13.09	14.76	8	8
250	12.57	0.21	0.65	12.35	12.92	5	5
300	11.86	0.16	0.42	11.67	12.14	6	6
500	8.18	0.11	0.08	8.05	8.31	4	4

Table B6. Mean seasonal cycles of zonal velocity (in cm s^{-1}) between the surface and 250 m at 0°, 140°W. Statistics are based on N monthly estimates, M of which are directly measured.

January

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-24.04	14.89	0.71	-42.47	6.16	8	8
25	-14.22	11.71	0.75	-30.07	9.89	8	8
45	9.12	14.70	0.51	-10.71	37.76	8	3
80	50.15	28.73	0.13	19.91	88.23	7	7
120	90.65	18.38	-0.59	56.33	109.25	8	8
160	73.21	9.17	-0.55	60.06	81.29	4	4
200	51.62	7.90	0.57	45.02	62.96	4	4
250	19.39	8.53	0.26	10.48	30.76	5	5

February

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-30.79	16.03	0.34	-47.96	-5.42	7	7
25	-14.21	16.18	1.12	-26.68	19.33	7	7
45	11.33	20.20	0.76	-5.42	48.91	7	3
80	58.83	34.44	-0.01	17.56	100.66	7	7
120	91.42	18.08	-0.80	54.40	112.58	8	8
160	68.57	14.90	-0.60	47.08	78.86	4	4
200	46.15	8.35	0.75	41.66	58.67	4	4
250	18.78	10.43	-0.17	3.96	31.74	5	5

March

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-15.99	14.15	1.08	-26.20	11.34	6	3
25	4.24	16.41	1.00	-11.09	37.64	7	6
45	34.38	23.03	0.57	12.98	70.53	7	2
80	85.02	35.08	-0.25	34.97	129.71	7	7
120	99.17	16.09	-0.25	72.54	119.05	8	8
160	71.24	10.01	-0.22	58.23	82.11	4	4
200	46.75	8.54	0.03	37.68	56.28	4	4
250	21.06	8.70	-0.24	7.97	32.38	5	5

April

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	8.97	7.99	0.34	0.15	19.76	6	3
25	27.99	13.13	0.26	13.52	45.79	7	6
45	62.09	20.05	0.68	42.04	98.49	7	2
80	112.72	27.47	-0.51	66.08	146.91	7	7
120	107.55	15.46	-0.10	88.15	125.28	8	8
160	73.96	7.50	-0.09	65.56	80.72	4	4
200	46.39	8.15	-0.09	36.85	54.88	4	4
250	20.75	7.69	-0.61	8.31	28.35	5	5

Table B6. Continued.

May

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	22.07	12.97	-0.44	1.06	35.44	7	7
25	37.16	14.41	-0.05	15.11	60.64	8	7
45	71.64	18.80	0.44	46.80	107.75	8	5
80	125.60	17.58	-0.36	95.44	146.99	8	8
120	111.32	13.48	0.20	96.21	131.97	8	8
160	73.03	8.41	-0.07	63.94	80.22	4	4
200	42.56	4.70	-0.38	36.17	47.07	4	4
250	16.93	6.97	-0.58	6.89	22.55	4	4

June

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	16.35	14.11	-0.34	-5.96	34.02	8	7
25	28.90	15.37	0.14	8.48	53.96	8	8
45	59.66	16.64	0.41	40.73	88.97	8	5
80	121.15	14.20	0.02	100.99	140.84	8	8
120	112.36	9.46	-0.21	96.43	126.47	8	8
160	69.77	6.78	-0.24	61.04	76.69	4	4
200	40.21	5.24	-0.18	33.78	45.29	4	4
250	12.20	9.02	-0.31	0.42	20.14	4	4

July

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	4.34	15.36	0.64	-12.15	34.44	9	8
25	17.70	22.59	1.21	-2.54	69.92	9	9
45	44.28	26.74	1.41	23.09	108.64	9	5
80	105.41	14.74	-0.02	85.85	123.83	9	9
120	108.48	16.09	-0.68	75.31	127.74	9	9
160	69.51	5.39	0.34	64.22	76.73	4	4
200	38.86	6.50	-0.52	29.65	44.59	4	4
250	7.76	8.17	-0.17	-2.03	14.82	4	4

August

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-11.20	18.56	1.27	-27.85	31.61	9	8
25	1.22	25.84	1.66	-18.49	66.06	9	9
45	24.20	31.02	1.82	4.25	104.08	9	5
80	82.64	17.87	0.48	58.13	112.12	9	9
120	105.17	17.39	-0.94	66.92	120.77	9	9
160	71.52	5.78	0.66	67.17	80.01	4	4
200	38.64	5.69	-0.16	31.65	44.56	4	4
250	7.88	2.58	-0.04	5.19	10.15	4	4

Table B6. Continued.

September

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-27.89	17.75	0.54	-43.71	1.55	9	7
25	-15.03	22.79	0.96	-33.28	33.05	9	9
45	5.69	25.56	1.30	-12.44	65.10	9	5
80	64.70	22.98	0.34	30.17	106.51	9	9
120	101.24	16.43	-0.64	67.15	121.58	9	9
160	71.41	6.95	0.72	66.92	81.78	4	4
200	40.66	4.60	0.03	36.32	45.38	4	4
250	8.19	5.87	-0.61	-0.35	13.06	4	4

October

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-36.05	19.17	0.40	-64.39	-4.14	9	7
25	-23.27	17.75	0.13	-51.26	5.28	9	9
45	-0.78	18.08	0.55	-24.23	32.32	9	4
80	59.19	24.80	0.31	24.00	102.78	9	9
120	101.13	11.94	-0.50	78.11	118.21	9	9
160	76.69	3.29	-0.07	73.29	79.86	3	3
200	43.68	3.23	0.23	40.27	47.79	5	5
250	9.67	1.68	-0.34	7.76	10.90	3	3

November

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-36.19	14.49	-0.24	-56.28	-16.94	7	6
25	-23.61	9.22	-0.41	-39.72	-11.77	7	7
45	0.42	8.47	-0.56	-13.88	10.07	8	4
80	56.68	21.41	0.56	36.98	95.03	8	8
120	99.58	4.37	0.46	92.68	108.11	8	8
160	78.39	11.38	-0.42	62.61	89.59	4	4
200	49.51	6.59	-0.66	39.84	54.32	4	4
250	18.04	3.11	-0.43	13.40	21.13	5	5

December

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	M
10	-27.86	15.70	-0.15	-51.80	-5.03	8	8
25	-17.05	11.13	0.34	-33.07	2.68	8	8
45	7.71	10.91	0.79	-3.29	29.25	8	4
80	54.81	21.70	0.17	27.91	89.07	8	8
120	95.48	11.80	-0.05	79.30	109.98	8	8
160	80.46	4.60	-0.22	74.45	85.52	4	4
200	55.09	8.49	-0.64	42.66	61.81	4	4
250	22.41	5.75	0.38	16.26	31.00	5	5

Table B7. Mean seasonal cycles of meridional velocity (in cm s^{-1}) between the surface and 250 m at 0°, 140°W. Statistics are based on N directly measured monthly estimates.

January

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-3.38	5.22	0.20	-9.79	3.35	8
25	-3.84	6.06	0.27	-11.87	5.34	8
45	0.73	10.40	0.21	-8.37	12.06	3
80	-1.76	6.03	0.16	-8.65	7.02	7
120	3.50	6.96	0.77	-4.16	16.61	8
160	-0.10	2.29	0.00	-2.24	2.08	4
200	4.53	4.91	-0.49	-2.41	9.13	4
250	-0.46	4.72	-0.68	-8.20	3.31	5

February

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-3.12	5.85	-0.45	-13.39	3.22	7
25	-2.91	5.39	0.10	-10.39	5.45	7
45	0.86	3.21	0.29	-1.70	4.46	3
80	0.11	4.43	0.17	-6.48	6.89	7
120	4.33	6.17	1.13	-1.53	17.85	8
160	-0.16	2.22	-0.06	-2.66	2.14	4
200	5.36	3.96	-0.10	0.48	9.85	4
250	-1.50	5.82	-0.02	-9.64	6.54	5

March

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-7.08	4.32	0.20	-10.88	-2.38	3
25	-1.32	4.14	-0.67	-8.40	2.48	6
45	3.02	0.40	0.00	2.74	3.30	2
80	2.78	5.67	0.02	-5.77	10.42	7
120	5.70	6.85	1.30	0.39	21.03	8
160	-0.86	1.07	0.23	-1.83	0.47	4
200	4.64	4.03	-0.32	-0.79	8.80	4
250	-0.58	4.52	1.04	-3.35	7.44	5

April

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-7.65	5.54	-0.37	-14.02	-3.94	3
25	0.41	3.38	-0.34	-4.80	4.30	6
45	4.40	2.60	0.00	2.56	6.24	2
80	4.56	7.35	-0.44	-7.30	11.18	7
120	6.47	6.90	1.56	1.46	22.84	8
160	-1.64	2.63	0.57	-3.46	2.13	4
200	4.08	5.87	0.29	-1.90	11.83	4
250	-0.07	1.35	0.07	-1.90	1.84	5

Table B7. Continued.

May

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-5.52	13.38	-1.12	-33.52	8.38	7
25	-0.58	5.11	-0.20	-7.93	4.91	7
45	1.56	6.16	-0.09	-7.14	9.63	5
80	6.98	7.98	-0.33	-6.40	17.04	8
120	6.73	7.19	0.89	-1.85	21.56	8
160	-0.51	5.21	0.16	-5.08	5.67	4
200	3.63	6.20	0.75	0.35	12.93	4
250	-0.85	3.26	0.29	-4.24	3.48	4

June

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	0.32	4.89	-0.43	-8.01	5.72	7
25	0.46	5.18	-0.23	-8.35	7.01	8
45	-0.09	4.28	-0.75	-7.29	4.14	5
80	6.59	7.22	0.01	-3.97	16.58	8
120	6.78	7.07	0.62	-3.43	20.74	8
160	-0.25	5.48	0.00	-6.79	6.28	4
200	1.77	3.72	0.66	-0.81	7.23	4
250	-1.18	4.39	-0.56	-7.47	2.51	4

July

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	0.67	4.02	-0.02	-5.05	5.76	8
25	0.11	4.35	0.50	-5.67	8.44	9
45	-1.08	2.80	-0.20	-5.00	1.94	5
80	4.39	6.66	-0.21	-6.46	13.69	9
120	6.57	6.87	-0.13	-5.78	18.52	9
160	-0.04	4.40	0.00	-5.80	5.47	5
200	-0.43	2.35	-0.11	-3.40	2.30	4
250	-0.11	3.13	-0.03	-4.12	3.78	5

August

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	1.90	4.71	-0.29	-5.76	7.96	8
25	-0.90	4.89	0.48	-6.43	7.96	9
45	-1.50	4.03	-0.28	-6.54	2.30	5
80	2.60	5.91	-0.15	-5.63	9.78	9
120	6.84	7.91	-0.51	-8.30	17.84	9
160	0.26	3.98	0.00	-4.25	4.28	5
200	-0.33	1.84	0.04	-2.28	1.73	4
250	0.40	0.47	0.53	-0.01	1.12	5

Table B7. Continued.

September

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-0.49	4.47	0.51	-4.50	7.00	7
25	-2.68	2.30	-0.32	-6.06	-0.13	9
45	-2.49	3.15	-0.42	-7.01	0.30	5
80	1.20	6.12	-0.35	-9.92	8.09	9
120	6.60	7.21	-0.45	-7.21	17.47	9
160	-0.02	4.01	-0.27	-4.52	3.45	5
200	1.28	1.35	0.06	-0.25	2.90	4
250	2.36	2.42	-0.67	-1.59	4.63	5

October

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-4.25	5.45	0.14	-11.51	4.35	7
25	-3.69	5.40	0.57	-9.69	5.12	9
45	-3.71	10.13	-0.16	-16.57	7.61	4
80	0.05	6.22	-0.19	-10.76	10.00	9
120	4.77	6.10	0.25	-4.11	15.45	9
160	-1.71	3.04	0.54	-4.35	2.63	4
200	2.06	2.07	-0.63	-1.26	3.92	5
250	2.73	1.09	0.04	1.64	3.90	4

November

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-3.85	7.75	0.24	-13.79	8.29	6
25	-4.42	5.86	0.85	-9.01	6.73	7
45	-0.49	10.40	0.39	-8.74	13.49	4
80	-0.29	5.66	-0.23	-8.40	7.59	8
120	3.63	4.99	-0.01	-4.29	10.54	8
160	-0.68	3.78	0.60	-3.81	4.81	4
200	3.79	3.86	-0.14	-0.76	7.38	4
250	1.37	2.86	-0.01	-2.52	5.23	5

December

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N
10	-4.61	5.76	-0.09	-13.60	2.83	8
25	-5.01	5.09	0.06	-11.45	2.28	8
45	-2.19	12.40	0.47	-12.77	15.05	4
80	-2.42	7.44	-0.34	-14.64	5.18	8
120	3.53	5.63	0.07	-4.55	10.95	8
160	0.44	3.74	0.42	-2.98	5.58	4
200	4.36	5.23	-0.06	-1.78	10.14	4
250	0.38	2.95	-0.42	-3.83	2.68	5

Table B8. Mean seasonal cycles of winds and air temperature at 0°, 140°W. Statistics are based on N directly measured monthly estimates.

Zonal Wind Velocity (m/s)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	-6.79	0.57	-0.10	-7.60	-6.01	7
February	-6.19	0.60	0.56	-6.82	-5.16	6
March	-5.37	0.46	0.58	-5.78	-4.65	5
April	-5.02	0.22	0.16	-5.24	-4.73	5
May	-4.74	0.79	0.63	-5.52	-3.46	8
June	-5.31	0.70	0.69	-5.91	-4.08	8
July	-5.85	0.63	0.96	-6.48	-4.56	8
August	-6.06	0.64	0.48	-6.70	-4.98	7
September	-6.02	0.55	0.18	-6.70	-5.16	7
October	-6.07	0.51	0.29	-6.68	-5.27	8
November	-6.50	0.51	-0.01	-7.11	-5.91	7
December	-6.82	0.50	-0.25	-7.51	-6.27	7

Meridional Wind Velocity (m/s)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	0.75	0.60	-0.05	-0.08	1.55	7
February	0.48	0.40	0.11	0.02	1.05	6
March	-0.05	0.35	0.22	-0.44	0.41	5
April	-0.04	0.46	0.78	-0.36	0.72	5
May	0.54	0.69	0.05	-0.36	1.47	8
June	0.92	0.79	0.13	-0.23	2.31	8
July	1.18	0.87	0.78	0.13	2.94	8
August	1.32	0.85	0.88	0.44	2.99	7
September	1.54	0.81	0.50	0.79	2.86	7
October	1.38	0.75	0.34	0.45	2.50	8
November	0.94	0.73	0.29	0.08	2.07	7
December	0.78	0.69	-0.01	-0.23	1.82	7

Wind Speed (m/s)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	6.96	0.55	0.00	6.10	7.80	7
February	6.37	0.61	-0.67	5.30	6.97	6
March	5.53	0.44	-0.50	4.85	5.96	5
April	5.20	0.22	-0.24	4.90	5.42	5
May	5.05	0.67	-0.72	3.93	5.73	8
June	5.67	0.56	-0.56	4.66	6.34	8
July	6.23	0.44	-0.39	5.45	6.88	8
August	6.44	0.48	-0.07	5.83	7.05	7
September	6.43	0.43	0.48	6.08	7.11	7
October	6.42	0.38	-0.28	5.82	6.83	8
November	6.74	0.40	0.05	6.23	7.19	7
December	7.00	0.45	0.33	6.53	7.70	7

Table B8. Continued.

Zonal Wind Pseudo-stress (m**2/s**2)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	-48.94	7.40	-0.22	-60.37	-39.18	7
February	-41.43	7.06	0.42	-49.28	-29.72	6
March	-31.37	4.79	0.44	-36.40	-24.13	5
April	-27.45	2.22	0.11	-29.93	-24.60	5
May	-26.26	6.46	0.54	-33.41	-16.32	8
June	-32.35	6.38	0.47	-39.56	-22.85	8
July	-38.29	5.99	0.58	-45.64	-28.24	8
August	-40.72	6.43	0.19	-47.78	-32.10	7
September	-40.31	5.45	-0.13	-47.26	-33.28	7
October	-40.75	5.12	0.30	-46.66	-33.26	8
November	-45.77	5.66	-0.14	-52.32	-40.25	7
December	-49.42	6.48	-0.31	-58.98	-43.17	7

Meridional Wind Pseudo-stress (m**2/s**2)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	5.25	4.36	0.01	-0.55	10.68	7
February	3.33	2.72	0.14	0.34	6.92	6
March	-0.15	1.85	0.26	-2.01	2.20	5
April	-0.14	2.44	0.70	-2.01	3.83	5
May	3.07	3.65	-0.05	-2.13	8.25	8
June	5.49	4.76	0.12	-1.41	13.58	8
July	7.34	5.38	0.62	0.46	17.70	8
August	8.44	5.46	0.76	2.70	18.79	7
September	10.01	5.48	0.43	4.50	18.01	7
October	8.78	4.96	0.46	2.79	17.22	8
November	6.03	4.80	0.31	0.47	13.69	7
December	5.30	4.86	0.00	-1.68	12.34	7

Air Temperature (deg C)

Month	Mean	Std. Dev.	Skew	Min	Max	N
January	25.23	1.37	-0.30	23.28	26.85	6
February	25.36	1.22	0.08	23.96	27.00	5
March	25.30	0.82	0.33	24.56	26.38	4
April	25.65	1.09	0.35	24.88	26.89	3
May	26.20	1.38	-0.03	24.04	28.23	7
June	26.07	1.31	-0.23	23.73	28.09	8
July	25.80	1.21	-0.40	23.54	27.58	8
August	25.47	1.25	-0.51	23.18	27.15	7
September	25.63	0.83	0.16	24.65	26.80	6
October	25.66	1.01	-0.26	24.39	26.58	5
November	25.46	1.08	-0.22	24.01	26.50	5
December	25.04	1.44	-0.36	22.88	26.61	6

Table B9. Annual means for ocean temperature and velocity at 0°, 140°W. Statistics are based on N = 12 climatological monthly means as presented in Tables B5–B7. NTOT is an index showing the total number of months of directly measured data at each depth.

Zonal Currents (cm/s)

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
10	-13.19	20.97	0.44	-36.19	22.07	12	79
25	0.82	22.04	0.39	-23.61	37.16	12	93
45	27.48	26.14	0.44	-0.78	71.64	12	47
80	81.41	28.09	0.38	50.15	125.60	12	96
120	101.96	7.23	-0.11	90.65	112.36	12	100
160	73.15	3.68	0.64	68.57	80.46	12	47
200	45.01	5.22	0.42	38.64	55.09	12	49
250	15.25	5.69	-0.23	7.76	22.41	12	53

Meridional Currents (cm/s)

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
10	-3.09	3.08	0.16	-7.65	1.90	12	79
25	-2.03	1.96	-0.07	-5.01	0.46	12	93
45	-0.08	2.35	0.33	-3.71	4.40	12	47
80	2.06	3.10	0.18	-2.42	6.98	12	96
120	5.45	1.40	-0.35	3.50	6.84	12	100
160	-0.44	0.68	-0.69	-1.71	0.44	12	51
200	2.89	1.97	-0.50	-0.43	5.36	12	49
250	0.21	1.34	0.63	-1.50	2.72	12	57

Temperature (degrees C)

Depth (m)	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
SST	25.55	0.58	0.14	24.80	26.40	12	77
10	25.46	0.56	0.16	24.72	26.28	12	94
25	25.24	0.54	0.30	24.54	26.08	12	100
35	25.08	0.52	0.40	24.41	25.97	12	95
45	24.72	0.47	0.53	24.10	25.60	12	47
60	24.08	0.33	0.44	23.58	24.75	12	65
80	22.85	0.29	-0.19	22.33	23.36	12	94
100	20.97	0.55	0.20	20.24	21.84	12	70
120	18.79	0.80	0.36	17.88	20.13	12	99
140	16.83	0.75	0.41	15.98	18.12	12	75
160	15.23	0.57	0.51	14.59	16.25	12	51
200	13.27	0.23	0.72	13.03	13.72	12	89
250	12.37	0.11	0.53	12.24	12.57	12	63
300	11.70	0.20	-0.34	11.39	11.91	12	71
500	8.11	0.09	0.42	7.99	8.29	12	31

Table B10. Annual means for winds and air temperatures at 0°, 140°W. Statistics are based on N = 12 climatological monthly means as presented in Table B8. NTOT is an index showing the total number of months of directly measured data at each depth.

	Air Temperature (degrees C)						
	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
Air T	25.51	0.28	0.21	25.04	26.02	12	70

	Winds (m/s)						
	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
Zonal	-5.90	0.67	0.22	-6.82	-4.74	12	83
Meridional	0.81	0.52	-0.34	-0.05	1.54	12	83
Speed	6.18	0.66	-0.43	5.06	7.00	12	83

	Wind Pseudo-stress (m**2/s**2)						
	Mean	Std. Dev.	Skew	Min	Max	N	NTOT
Zonal	-38.75	7.73	0.21	-49.42	-26.61	12	83
Meridional	5.41	3.57	-0.15	-0.15	10.93	12	83

*U.S. GOVERNMENT PRINTING OFFICE: 1992-673-025/69021