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Hydrographic Study of Barnegat Bay - Year 1 -

Volume II

Final Report Submitted by:

Dr. Qizhong Guo
Dr. Norbert P. Psuty
Mr. George P. Lordi
Dr. Scott Glenn
Mr. Matthew R. Mund

Rutgers - The State University of New Jersey
New Brunswick, New Jersey

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Division of Science and Research
New Jersey Department of Environmental Protection

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HYDROGRAPHIC STUDY OF BARNEGAT BAY, NEW JERSEY

Year 1 FINAL REPORT

Volume II

September 22, 1995
Division of Science and Research
New Jersey Department of Environmental Protection
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Volume II

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Appendix A

Instrument Specifications

S-4 SPECIFICATIONS

Current Speed

Range:	0-350 cm/sec (standard) 0-50, 0-100, and 0-600 cm/sec (optional)
Resolution:	0.2 cm/sec (standard) 0.03 cm/sec (for 0-50 range) 0.06 cm/sec (for 0-100 range) 0.35 cm/sec (for 0-600 range)
Accuracy:	2% of reading +/-1 cm/sec
Noise:	Same as resolution for averages of 1 minute or longer 0.05 cm/sec rms for 10 second averages 0.25 cm/sec rms for 2 second averages 0.75 cm/sec rms for burst sampling (0.5 second rate)
Threshold:	Zero (Limited only by resolution and noise)
Vertical Response:	True cosine response (internally software corrected with Tilt option)

Tilt Option

Angle Range:	+/-45°
Resolution:	0.06°
Accuracy:	(Angle Output) +/-0.25° (Speed Correction) +/-1% of reading

Memory

Type:	CMOS static RAM (Non-restricted Lithium battery protected)
Battery Life:	10 years
Capacity:	64K Bytes standard (128K, 256K, 500K or 1M optional) 348,000 vector averages may be stored with 1M bts

Direction

Type:	Flux-Gate compass
Resolution:	0.5°
Accuracy:	2°
Tilt:	+/-25° for specified accuracy

Timekeeping

Type:	Temperature stable quartz oscillator
Accuracy:	+/-12 minutes\year
Power:	Temperature stable non-restricted Lithium battery (3 years)

Power Supply

Type:	Internal batteries (6 alkaline "D" cells) (Lithium optional)
Endurance:	Lithium option--1600 hours continuous logging. Five years deployment with total on-time less than 1200 hours. Alkaline cells--440 hours continuous logging. One year deployment with total on-time less than 440 hours.

Optional Sensors

Temperature

Type:	Semiconductor (standard)	Thermistor	Platinum
Range:	-5 - +45°C	-5°C - +45°C	-5°C - +45°C
Resolution:			
STD (10 bit)	0.05°C	0.05°C	
Hi-Res (14 bit)	0.003°C	0.003°C	0.003°C
Precision:			
(-2 to +35°C)	+/-0.2°C	+/-0.05°C	+/-0.02°C
Response Time (63%):			
Semicond.:	1 min.	1.5 sec.	60 msec

Conductivity

Type:	Conductive (4 electrode)	
Range:	0-70 ms/cm	0-5 ms/cm
Resolution:		
STD (10 bit)	0.1 ms/cm	0.01 ms/cm
Hi-Res (14 bit)	0.01 ms/cm	0.001 ms/cm
Precision:	+/-0.2 ms/cm (5-65 ms/cm)	+/-0.02 ms/cm (0.1 to 5 ms/cm)
Response Time (63%):	0.1 sec.	

Type:	Inductive Head	
Range:	0-70 ms/cm	0-5 ms/cm
Resolution:		
STD (10 bit)	0.1 ms/cm	0.01 ms/cm
Hi-Res (14 bit)	0.01 ms/cm	0.001 ms/cm
Precision:	+/-0.02 ms/cm (5-65 ms/cm)	+/-0.01 ms/cm (0.05-5 ms/cm)
Response Time (63%):	60 msec	

Pressure

Type:	Semiconductor Strain Gauge		
Range:	0-70M	(0-1000 dBar)	(0-6000 dBar)
Resolution:			
STD (10 bit)	---	1 dBar	6 dBar
Hi-Res (14 bit)	4mm	.06 dBar	.36 dBar
Precision:	+/-0.15% FS		
Response Time (63%):	60 msec		

Mechanical

Size:	Sphere, 25 cm (10 in.) diameter
Weight:	Air, 11 kg (24 lbs.) Water, 1.5 kg (4 lbs.)
Mooring:	In-line
Through Load:	4,500 kg (10,000 lbs. working
Pad Eyes:	Insulating liner, accepts 1.6 cm (5/8 in.) shackle pin
Material:	Sphere, glass-filled cycloaliphatic epoxy. Mooring rod, titanium 6 AL-4V
Drag:	8 kg (18 lbs.) at 250 cm/sec (8 ft/sec)
Depth:	1,000 M (3,200 ft.) maximum
Temperature:	Storage -40 to +50 C Operating -5 to +45 C

Mechanical Specification for S4D (6000 Meter Option)

Size:	35.5 cm (14 in.)
Weight:	Air 34.5 kg (76 lbs.) Water 10.5 kg (23 lbs.)
Drag:	0.63 kg (1.4 lbs.) @ 50 cm/sec
Depth:	6,000 m (19,200 ft.) maximum

(S4A Current Meter User's Manual, 1990)

MARSH McBIRNEY SPECIFICATIONS

Response Time

The outputs of the instrument are passed through low pass filters with a time constant of one second, which provides a (-3db) band width of 0.16 Hz. The corresponding time response to a step change in water velocity is shown in the following table:

Time after stepwise flowchange	Percentage of change seen at output jack
1 second	63%
2 seconds	86%
3 seconds	95%
4 seconds	98%
5 seconds	99%

Accuracy

The overall accuracy of the instrument is composed of four factors:

1) Long term zero drift	Less than ± 0.07 ft/sec
2) Linearity of response	± 2% of reading
3) Wideband electronic noise	$.03/\sqrt{T}$ rms ft/sec Where T is the output time constant expressed in seconds (standard value is one second)
4) Absolute Calibration	± 2% of reading

1) Long Term Zero Drift

Due to electrochemical reactions at the sensing electrodes, as well as electronic drift in the components, the output signals of former electromagnetic sensors would fluctuate around zero volts if the probe were immersed in still water for long periods of time. The unit incorporates a patented feature which reduces long term zero drift to less than ±0.07 feet per second. (Other models have a zero drift of less than ±0.02 feet/second.) This effect is separate and distinct from the slight random motion of the panel meters, which is due to electronic noise.

(Instruction Manual for Model 511 Electromagnetic Water Current Meter, 1976)

2) Linearity of Response

The output signals may deviate from exactly linear response to increasing water flow due to minor variations in flow streamlines at increasing velocity. This factor is small enough to guarantee that the outputs are within 2% of nominal over the velocity range of the instrument.

Note that the panel meters have an additional 2% accuracy specification, so for most accurate use of the unit, the user should monitor the analog voltage.

3) Electronic Noise

Due to the high electronic signal gains used, the first stages of signal amplification introduce some noise. To reduce this noise, as well as filter out the carrier frequency, low pass filters are used on the output signals, and result in a root-mean-square noise content of 0.03 feet per second at the output jack.

4) Calibration Procedure

Marsh-McBirney owns two recirculating water tunnels: one is fourteen inches in diameter, the second is ten inches in diameter. Depending on the sensor size, one of these tunnels is used to set the gain adjustment after the zero adjustment potentiometer has been adjusted in still water. The velocity in the water tunnel is measured by substituting a transfer standard velocity sensor that is calibrated periodically at the NSRDC towing carriage. Once the water flow is established, the transfer standard output is monitored by a digital voltmeter. The unit to be calibrated then replaces the transfer standard sensor, and the adjustable potentiometer R22 is varied until the output voltage corresponds to the velocity that was indicated by the transfer standard sensor. Once again, the strip chart recorder is used on the voltage output to determine correspondence with the transfer standard output. The gain of both axes of the instrument is checked in both directions.

(Instruction Manual for Model 511 Electromagnetic Water Current Meter, 1976)

CTD SPECIFICATIONS

Measurement Range:	Temperature	-5 to +35 °C
	Conductivity	0 to 7 S/m (0 to 70 mmho/cm)
	Pressure	50, 100, 150, 200, 300, 500, 1000, 3000, 5000, or 10,000 psia
Accuracy:	Temperature	0.01 °C/6 months
	Conductivity	0.001 S/m/month
	Pressure	0.25% of full scale range (50 to 1000 psia) 0.15% of full scale range (3000 to 10,000 psia)
Resolution:	Temperature	0.001 °C
	Conductivity	0.0001 S/m
	Pressure	0.015% of full scale range
Sensor Calibration:	Temperature	-1 to +31 °C (measurements outside this range may be at slightly reduced accuracy due to extrapolation errors)
	Conductivity	0 to 7 S/m. Physical calibration over the range 1.4 to 6 S/m. Measurements outside this range may be at slightly reduced accuracy due to extrapolation errors.
Pressure:	0 to full scale in 20% steps	
Counter time-base:	Quartz TCXO, +/- 2 ppm per year aging; +/- 2 ppm vs. temperature (- 5 to + 30 °C).	
Memory:	CMOS static RAM, 128K or (optional) 512K or 1024K byte; battery backed for minimum 2 years data retention.	
Real-time clock:	Watch-crystal type 32,768 Hz; battery backed for minimum of 1 year operation irrespective of condition of main battery. Corrected for drift and aging by comparison to SEACAT counter time-base.	
Batteries:	6 alkaline 'D'-cells provide 48 hours continuous operation and 2 year data retention reserve.	
Materials:	600 Meter Pressure Case, acetal copolymer (plastic) 3400 Meter Pressure Case, 6061-T6 anodized aluminum 6800 Meter Pressure Case, 7075-T6 anodized aluminum	

(SEACAT SBE 19-03 Conductivity, Temperature, Depth Recorder Operating Manual, 1993)

SIGMA 950 SPECIFICATIONS

General

- **Dimensions:** 13.5" H x 10.0" W x 9.5" D (34.3 cm x 25.4 cm x 24.1 cm).
- **Weight:** 11 lbs. (5 kg) not including power source.
- **Enclosure:** NEMA 4X,6 with front cover open or closed. UV resistant, stable from -40°F to 176°F (-40°C 80°C).
- **Temperature:** Storage from -40° to 176°F (-40°C to 80°C), Operate from 15°F to 150°F (-26°C to 65.5°C).
- **Power Requirements:** 12 VDC supplied from 6 amp-hr. gel or 4 amp-hr. Ni-Cad battery - 115 VAC, 230 VAC or 100 VAC power supply/battery charger.
- **Graphics Display:** Back-lit liquid crystal display (LCD) auto-off when not in use (under battery operation). 8 line x 40 character in text mode, 60 x 240 pixels in graphics mode.
- **Keypad:** 21 position sealed membrane switch with blinking green LED to indicate power on. 4 "soft keys", functions defined by display.
- **Totalizers:** 8-digit resettable and 8-digit non-resettable software. 6-digit non-resettable mechanical†. Units - ft^3, gal, M^3, liter, acre-ft.
- **Time Base Accuracy:** ± 0.007%
- **Measurement Modes:**
  Flumes - Parshall, Palmer Bowlus, Leopold-Lagco, H, HL, HS, Trapezoidal
  Weirs - V-notch, Contracted/Non-contracted rectangular, Thel-mar, Cipolletti
  Manning Equation: Round, U and Rectangular Channels
  Flow Nozzle: California Pipe
  Head vs. Flow: Custom programmable curve of up to 100 points.
  Level only: Inches, Feet, Centimeters, Meters
  Power Equation: $Q=K_1H^{n_1} \pm K_2H^{n_2}$
- **Datalogging:** "Smart" Dynamic memory allocation automatically partitions memory to provide the maximum logging time. No manual memory partitioning required.

  Either slate or wrap-around memory mode may be selected.

(Model 950 Area Velocity Flow Meter Operating and Maintenance Manual, 1994)

Approx. 18,400 data points standard. Expandable up to 116,000 data points.†

Daily statistics available for up to 32 days.

- **Recording Intervals:** 1, 2, 3, 5, 6, 10, 12, 15, 20, 30, 60 minutes.
- **4-20 mA Output:** 2 output signals available, user assignable. Each will drive up to 600 ohm load.†
- **Alarm Relays:** (4) 10 amp form C relays, user assignable for any internal or external data channel or event.†
- **Sampler Output:** 12-17 VDC pulse, 100 mA max at 500 ms duration.
- **Communications:** RS-232 - up to 19,200 baud, Modem - up to 2400 baud.†

VELOCITY TRANSDUCER

Method: Doppler Principle

Accuracy: ±5% of reading

Range: ±10 fps

Minimum velocity: .28 fps in .35 in (.89 cm) of liquid depth

Response time: 4.8 seconds

Profile Time: 4.8 seconds

Probe Dimensions:
Length: 3.65 inches (9.27 cm)
Width: 1.5 inches (3.81 cm)
Height: .72 inches (1.83 cm)

Cable: Urethane Jacket
(2x) RG174U Coax Cables
(4x) #22AWG Copper Stranded
.062" ID x .125 Wall Polyethylene Tube

Cable Length: 25' (7.6 m).

(Model 950 Area Velocity Flow Meter Operating and Maintenance Manual, 1994)

Bubbler Transducer

Accuracy: ±.01' (.003 m).

Maximum Depth: 10' (3.05 m).

Air Intakes: Bubble source and reference port - desiccant protected. Fittings provided for remote intakes.

Filter: 10 micron on bubble source intake.

Line Purge: Bubble line is high pressure purged at programmed intervals, or in manual mode on demand.

Line Size: 1/8" (.32 cm) ID standard.

Line Lengths: 500' (150 m) maximum.

† Optional Features

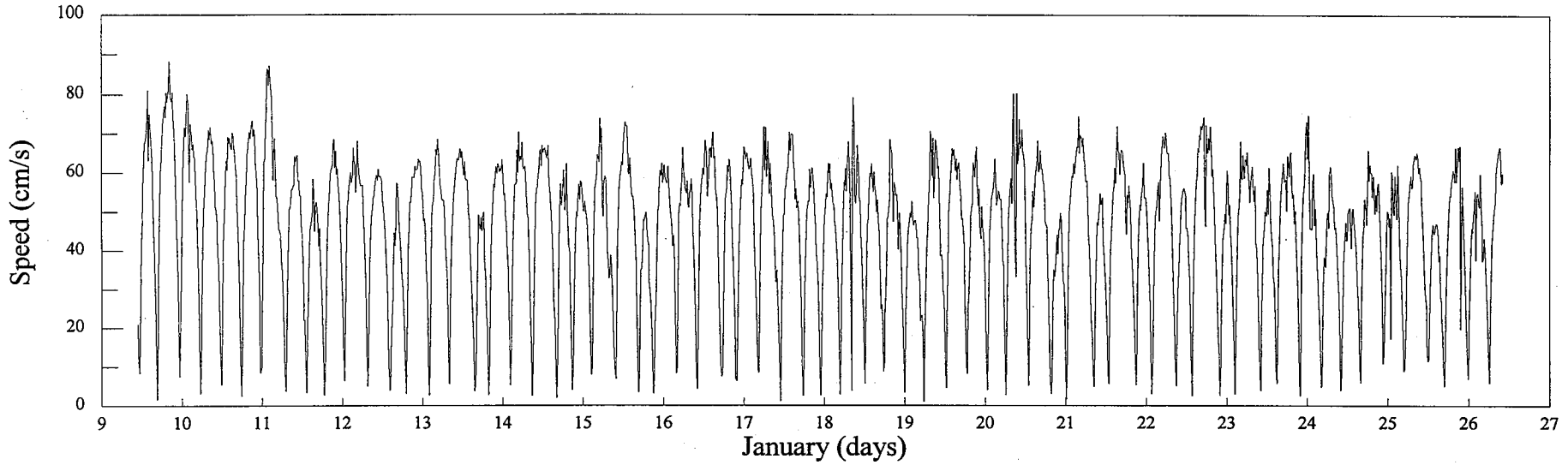
(Model 950 Area Velocity Flow Meter Operating and Maintenance Manual, 1994)

Appendix B

December/January Raw Data

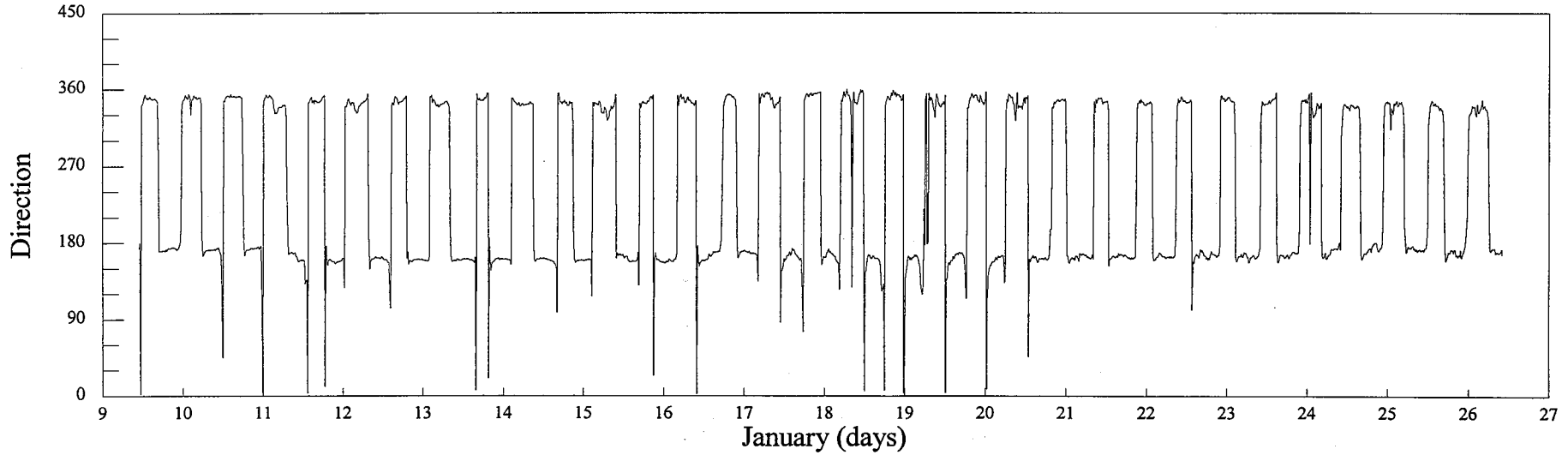
Speed vs. Time

Inlet 820



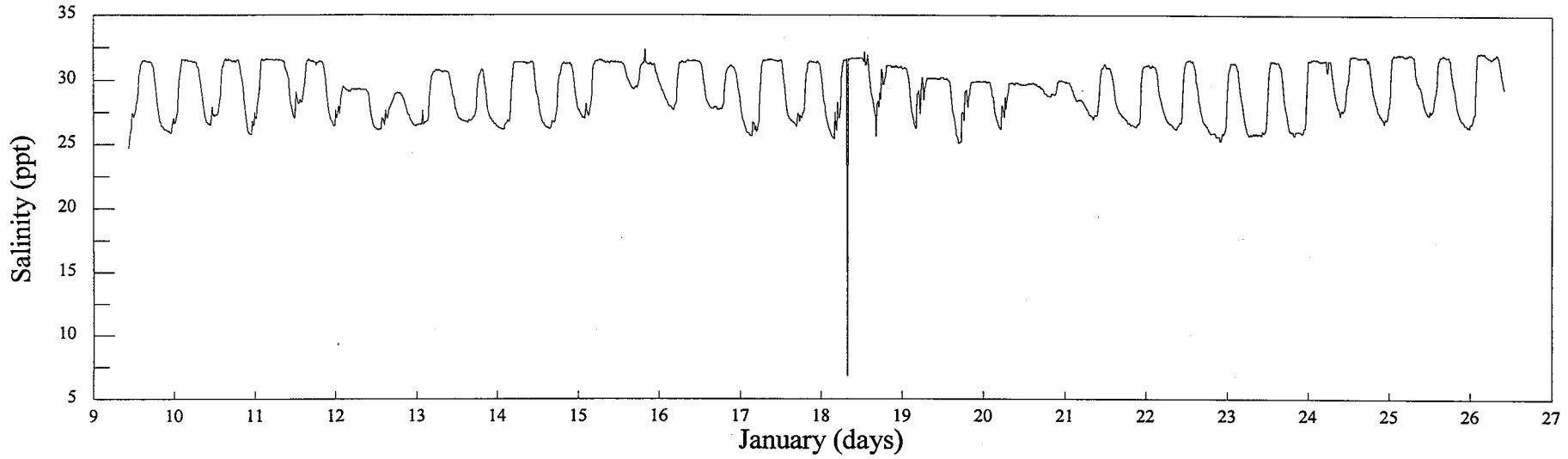
Direction vs. Time

Inlet 820



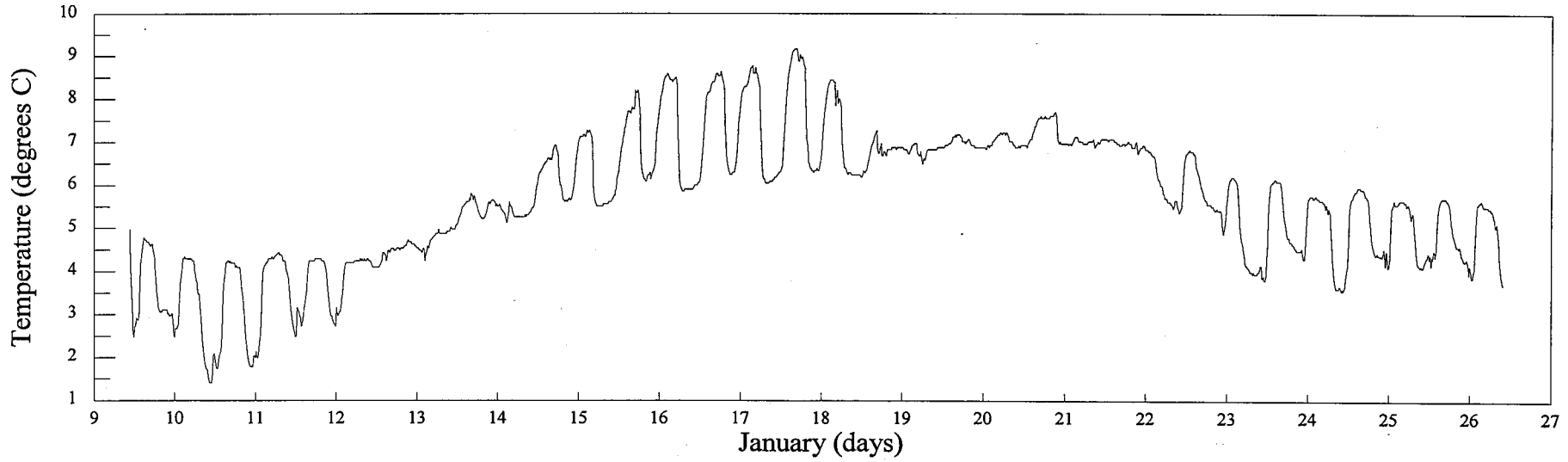
Salinity vs. Time

Inlet 820



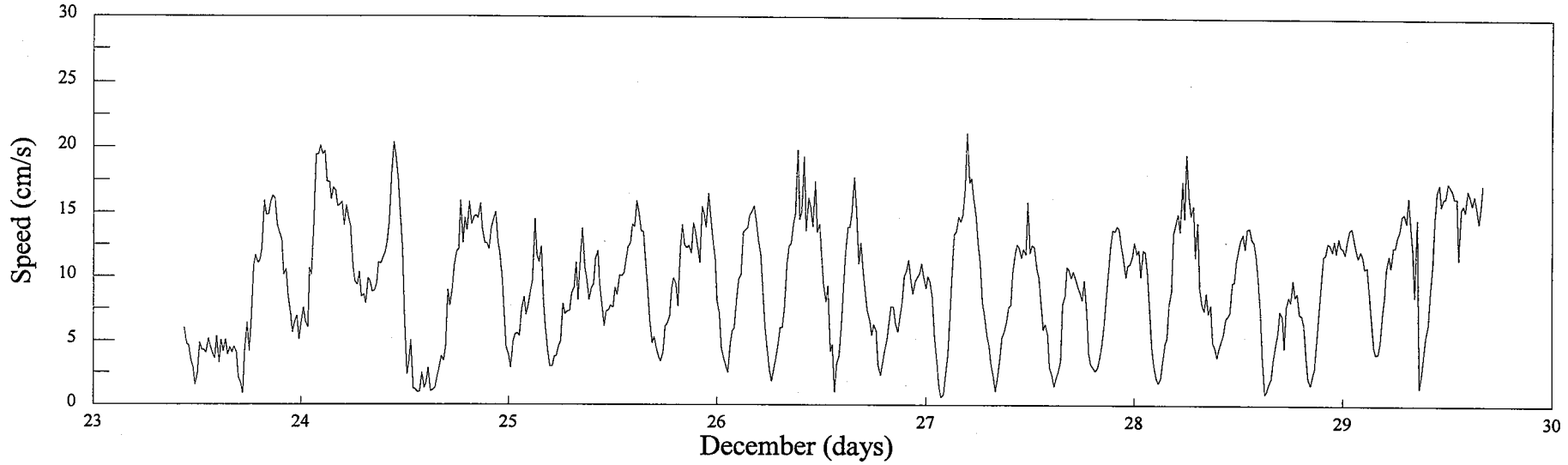
Temperature vs. Time

Inlet 820



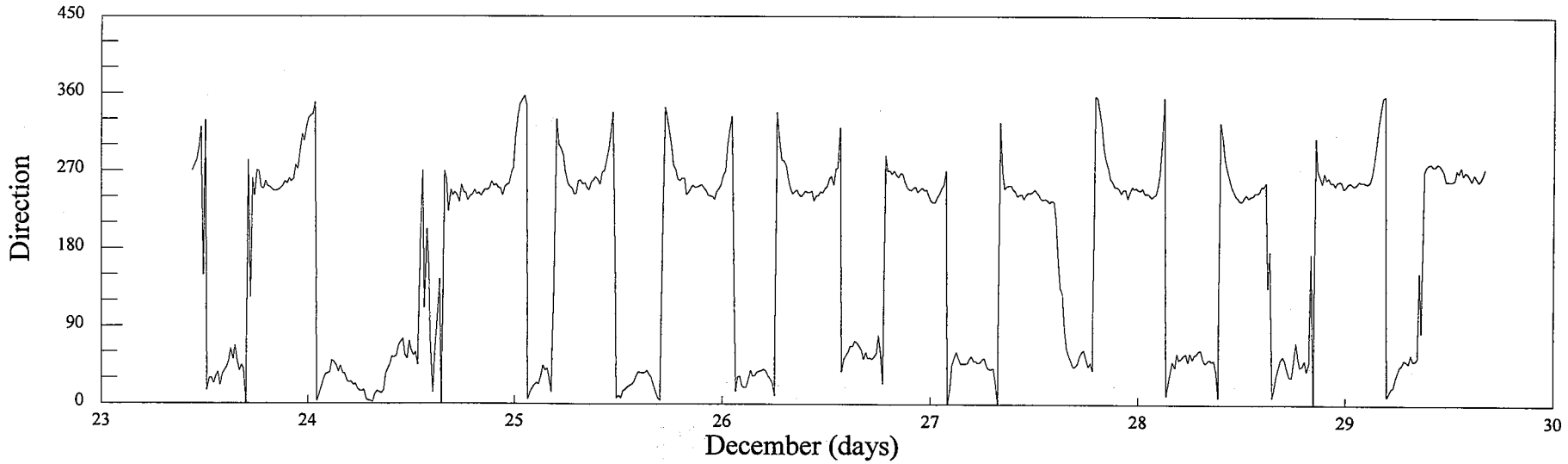
Speed vs. Time

Surf City 822



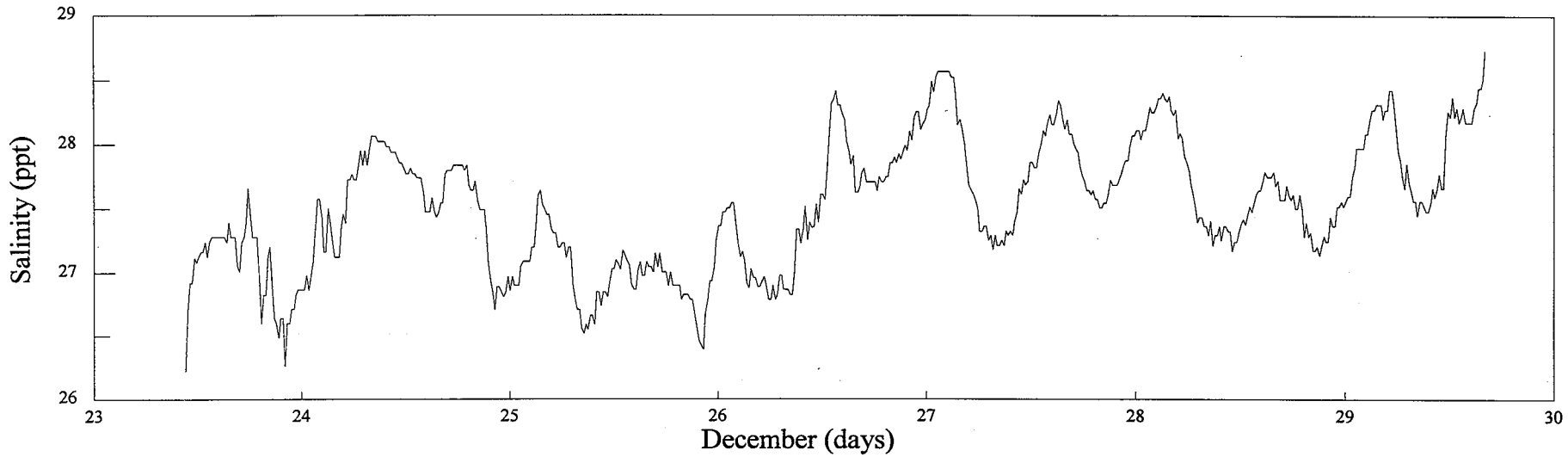
Direction vs. Time

Surf City 822



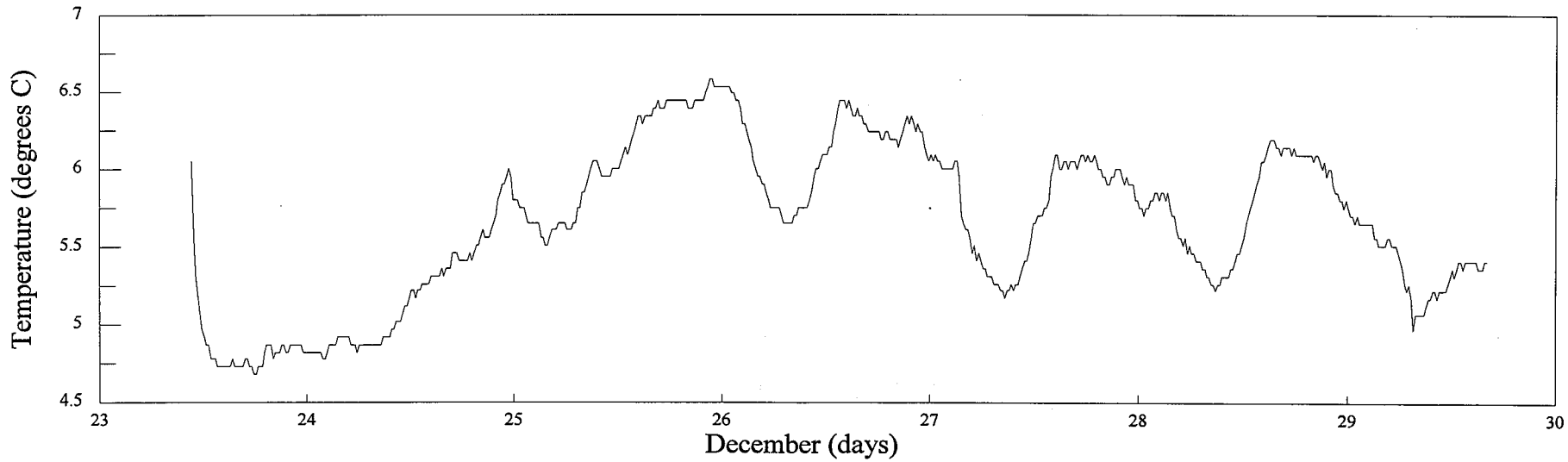
Salinity vs. Time

Surf City 822



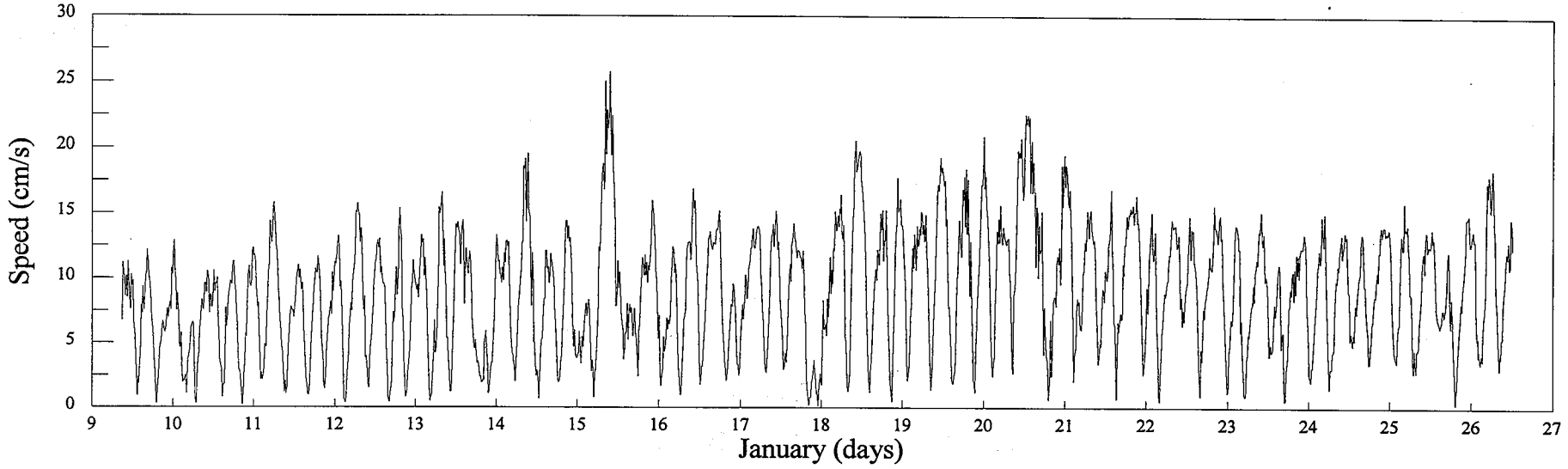
Temperature vs. Time

Surf City 822



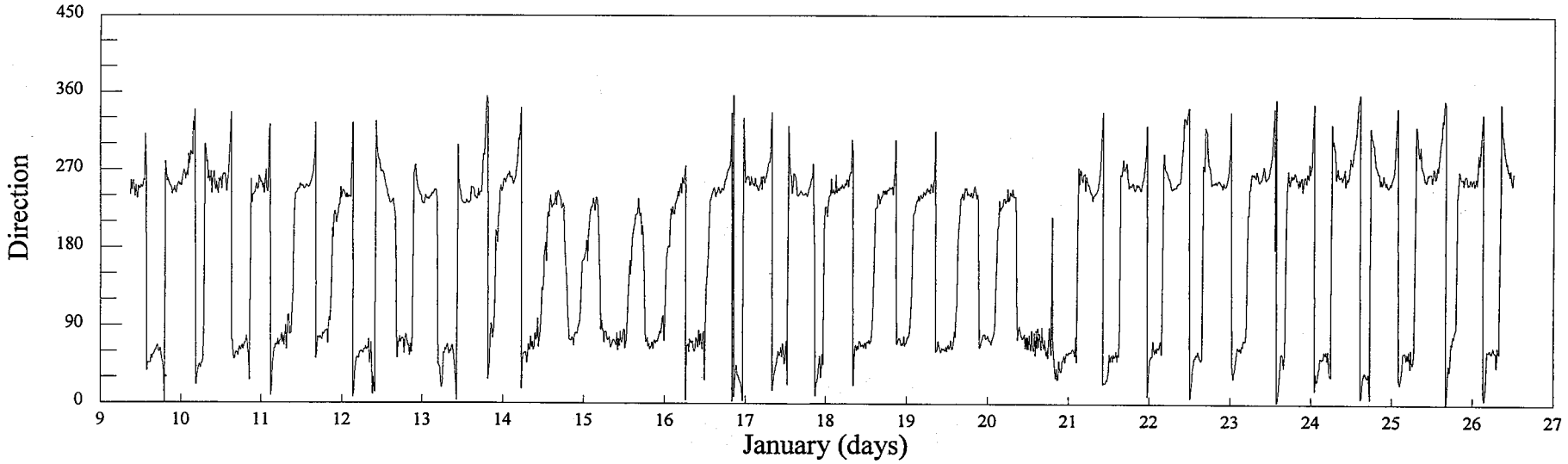
Speed vs. Time

Surf City 819



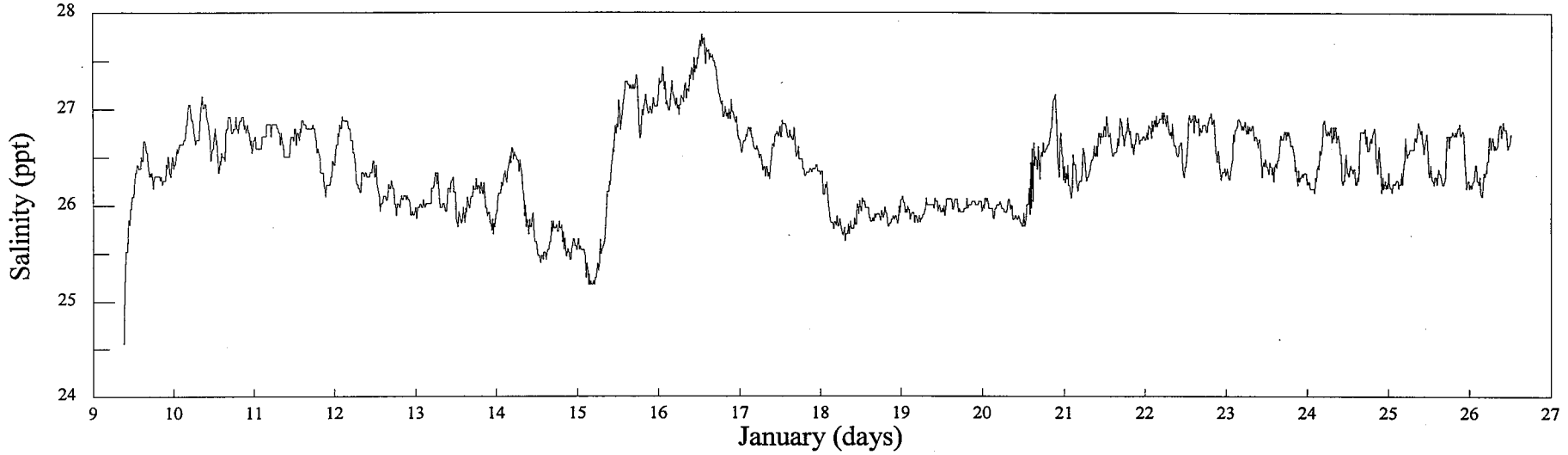
Direction vs. Time

Surf City 819



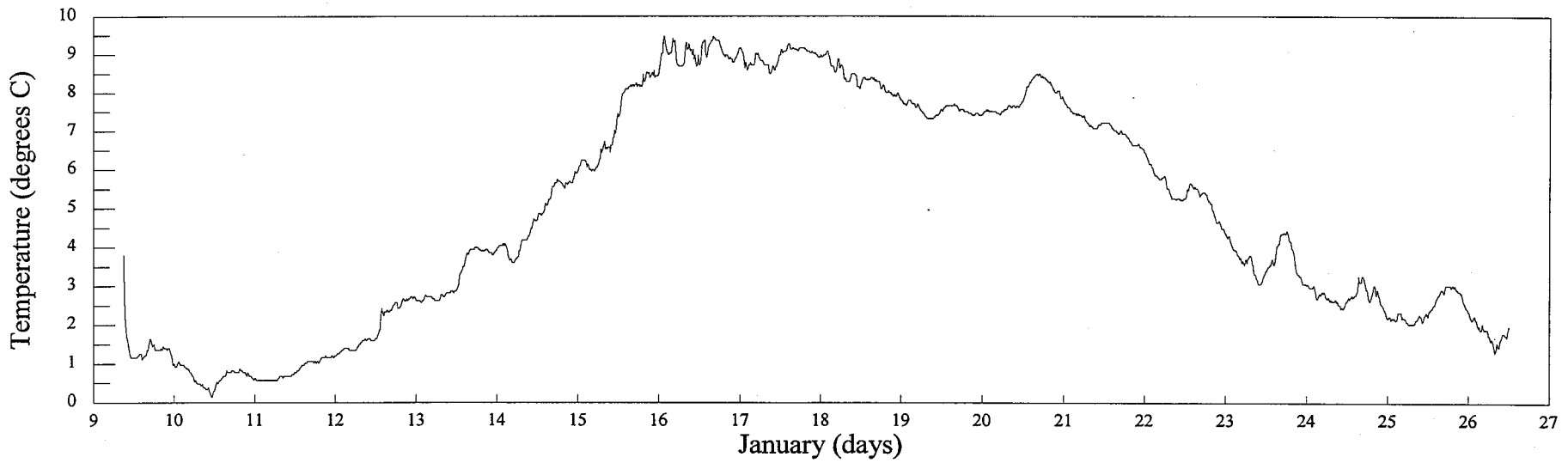
Salinity vs. Time

Surf City 819



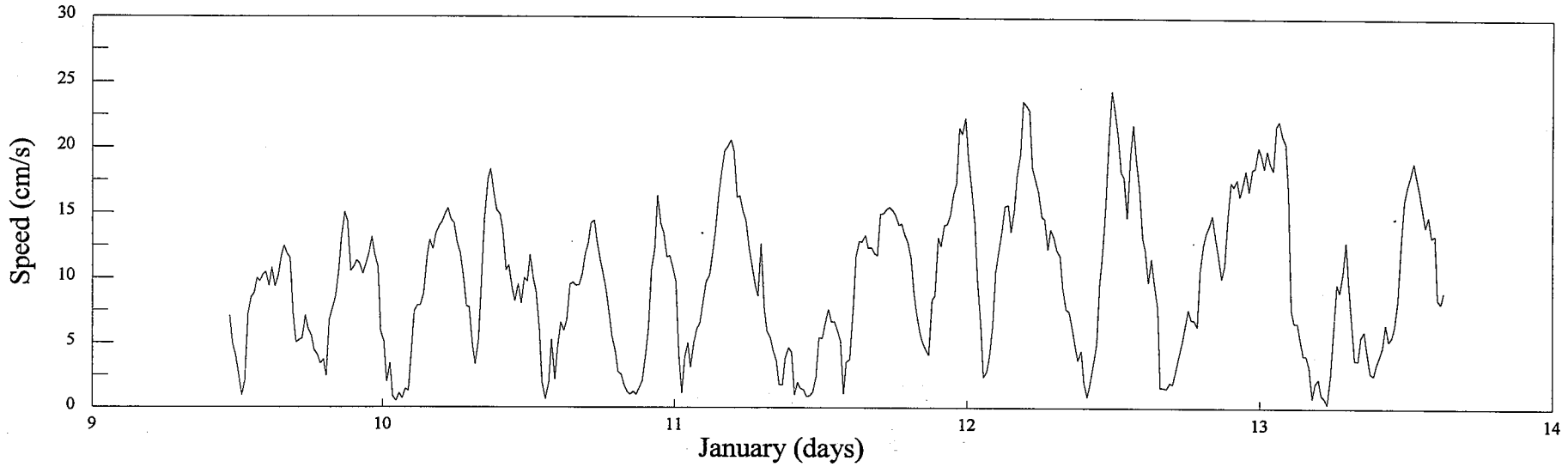
Temperature vs. Time

Surf City 819



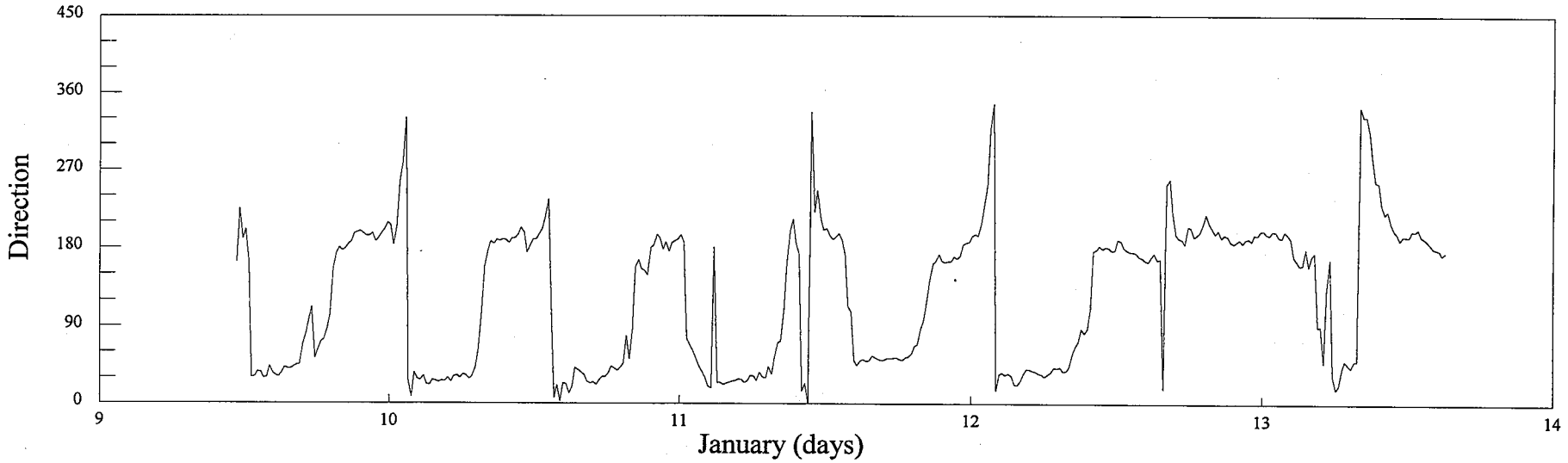
Speed vs. Time

Cedar Creek 822



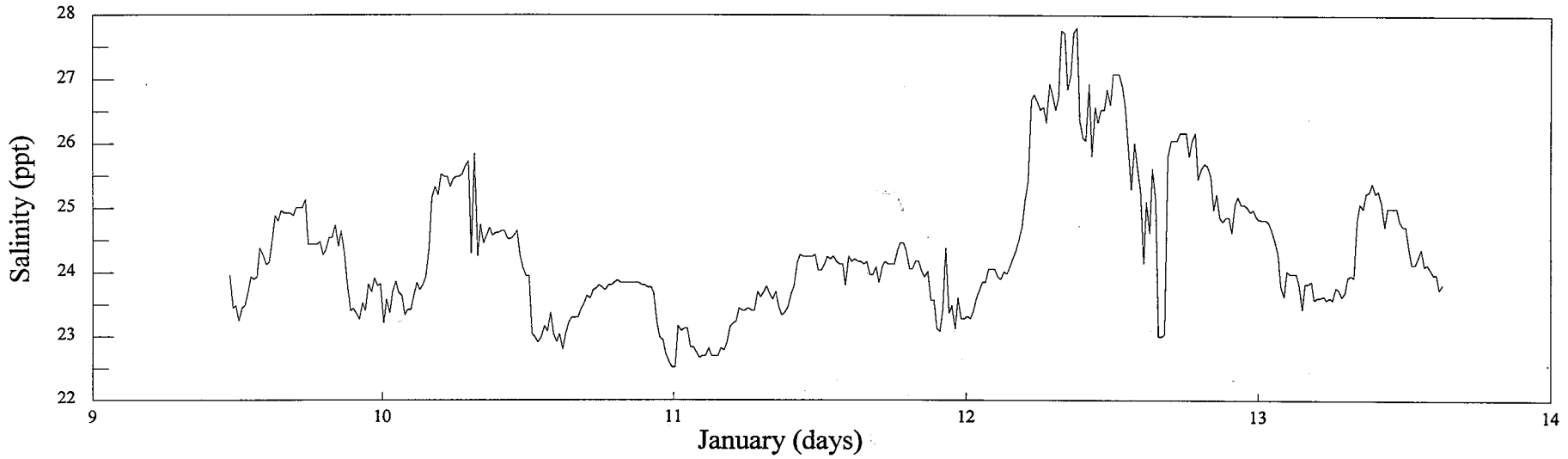
Direction vs. Time

Cedar Creek 822



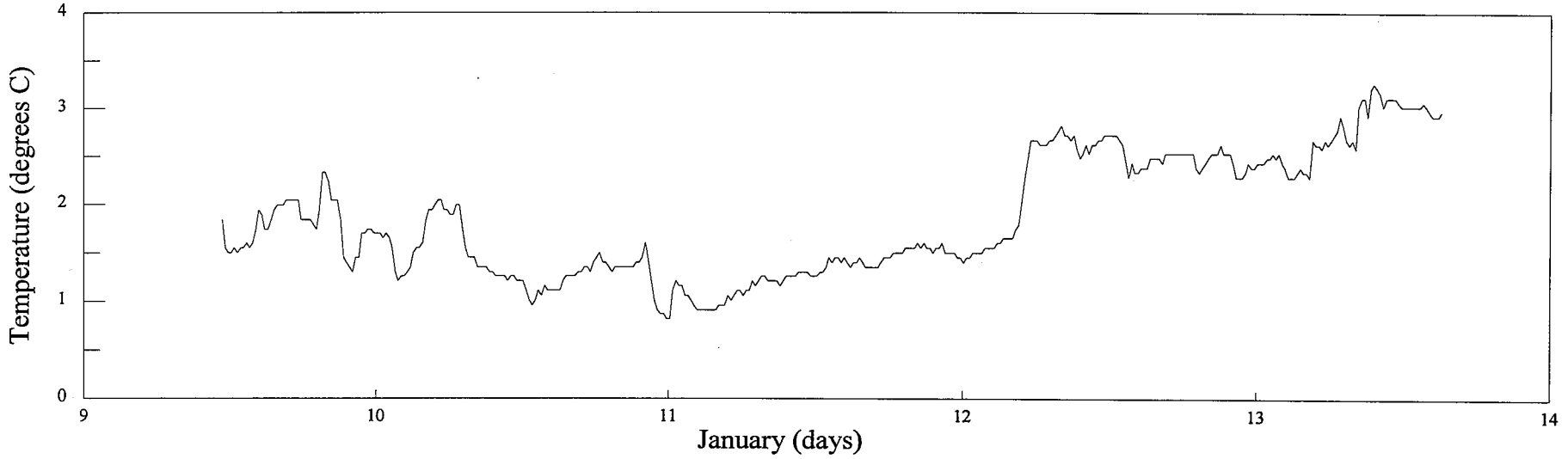
Salinity vs. Time

Cedar Creek 822



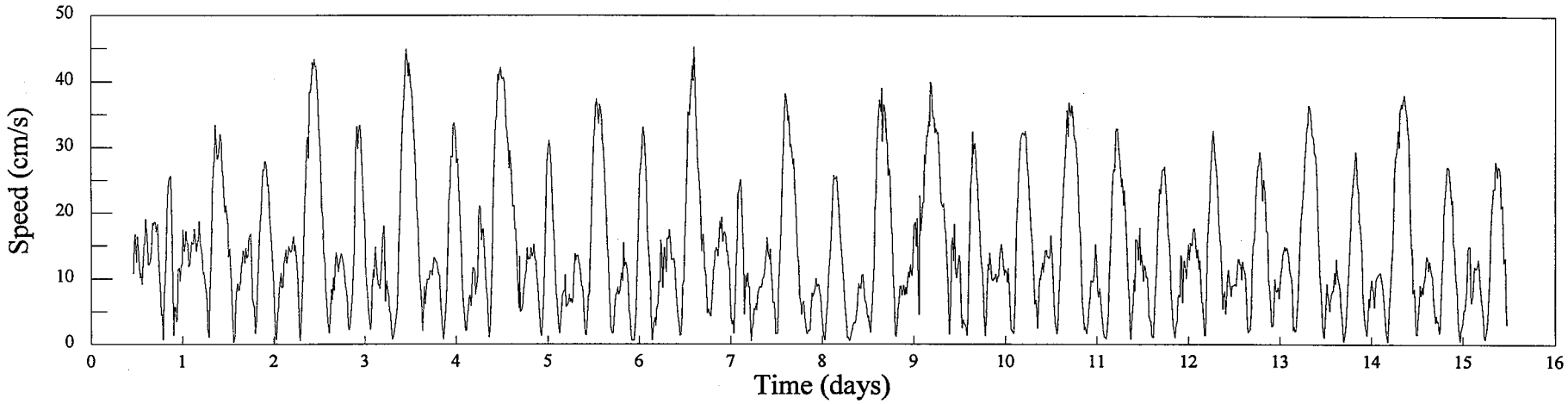
Temperature vs. Time

Cedar Creek 822



Speed vs. Time

Loveladies 733



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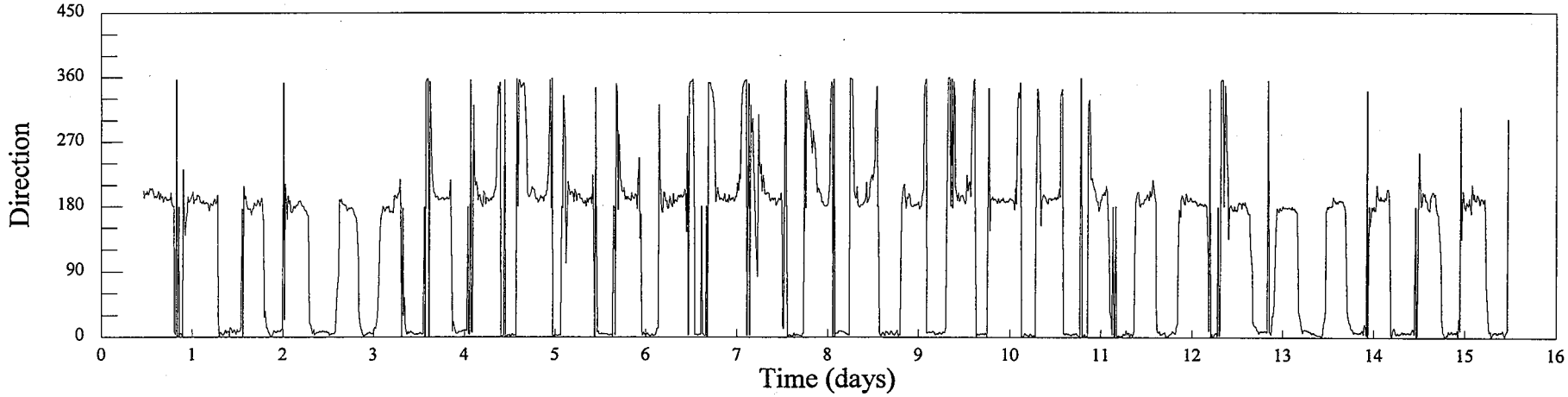
end date - 1/14/95

Direction vs. Time

Loveladies 733



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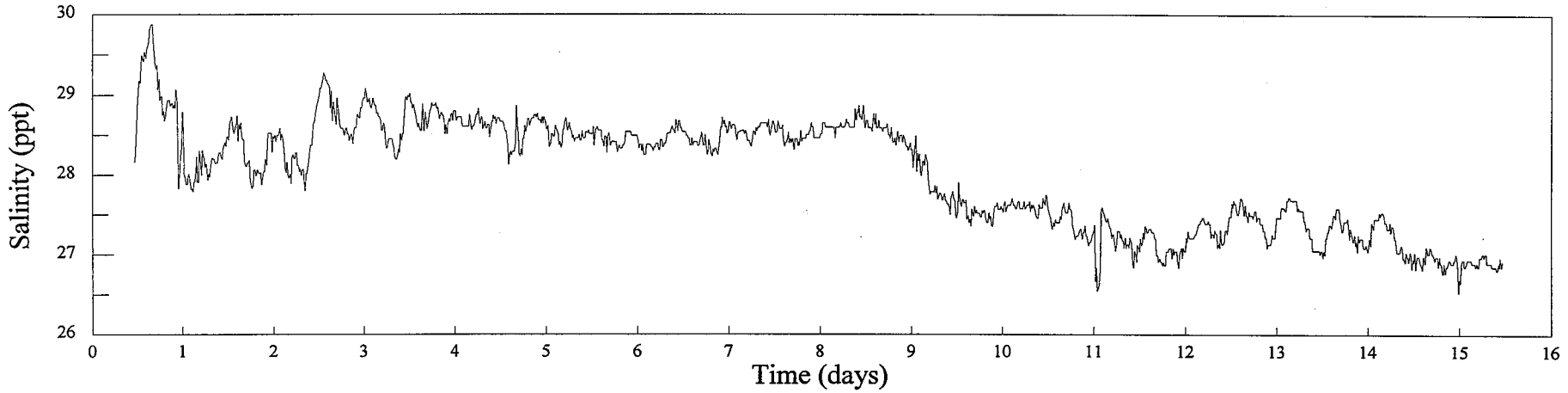
Salinity vs. Time

Loveladies 733



start date - 12/29/94
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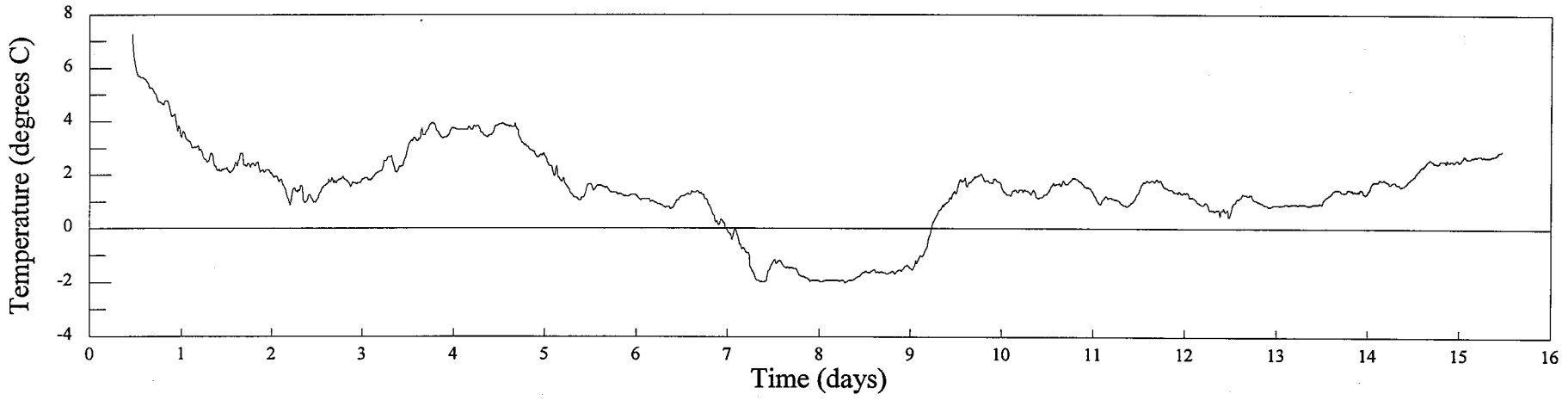
Temperature vs. Time

Loveladies 733



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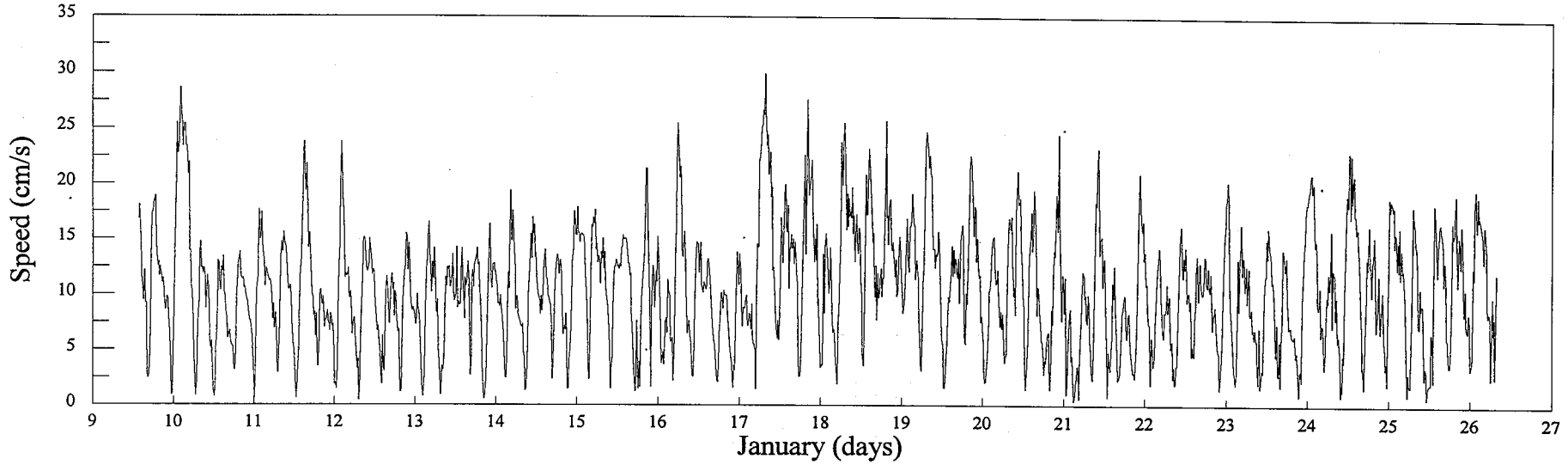
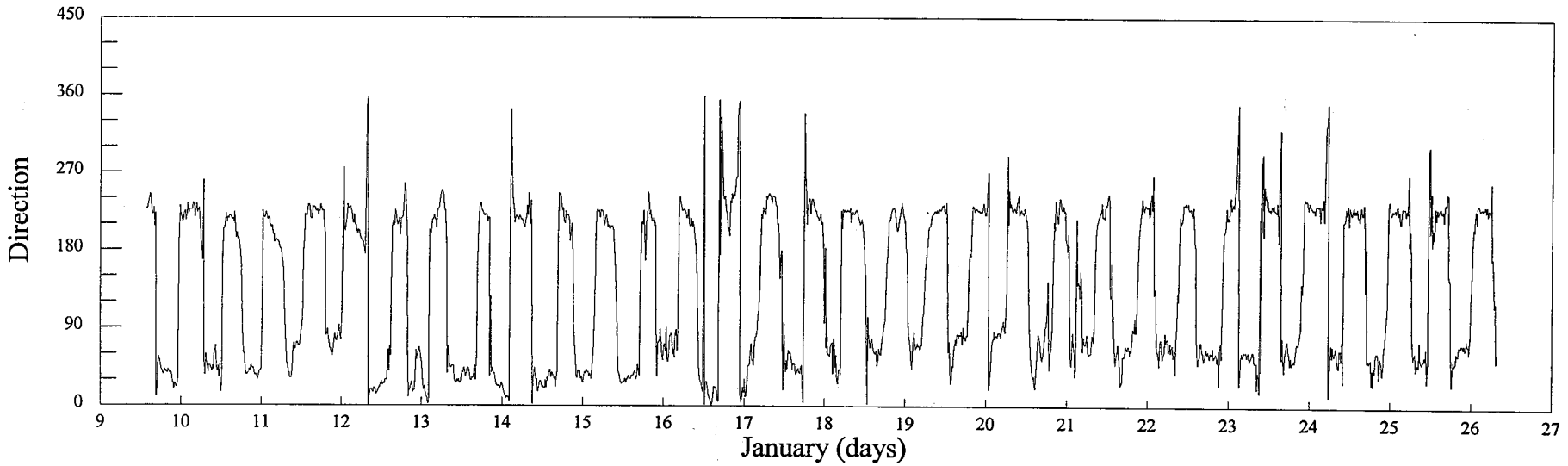
Speed vs. Time

Mantoloking 137



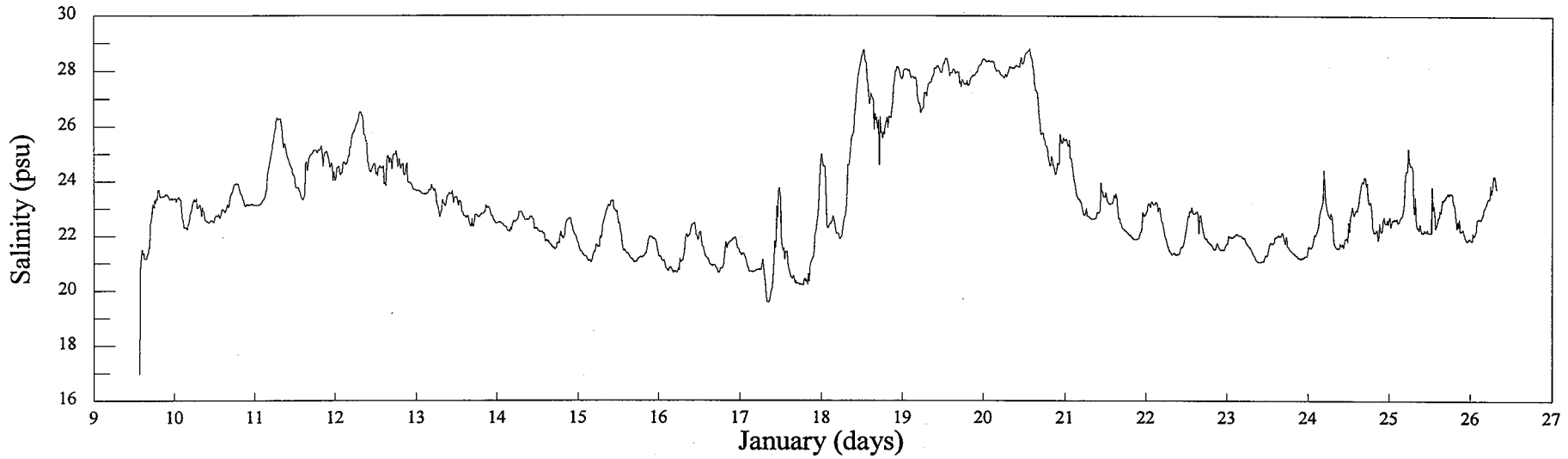
Direction vs. Time

Mantoloking 137



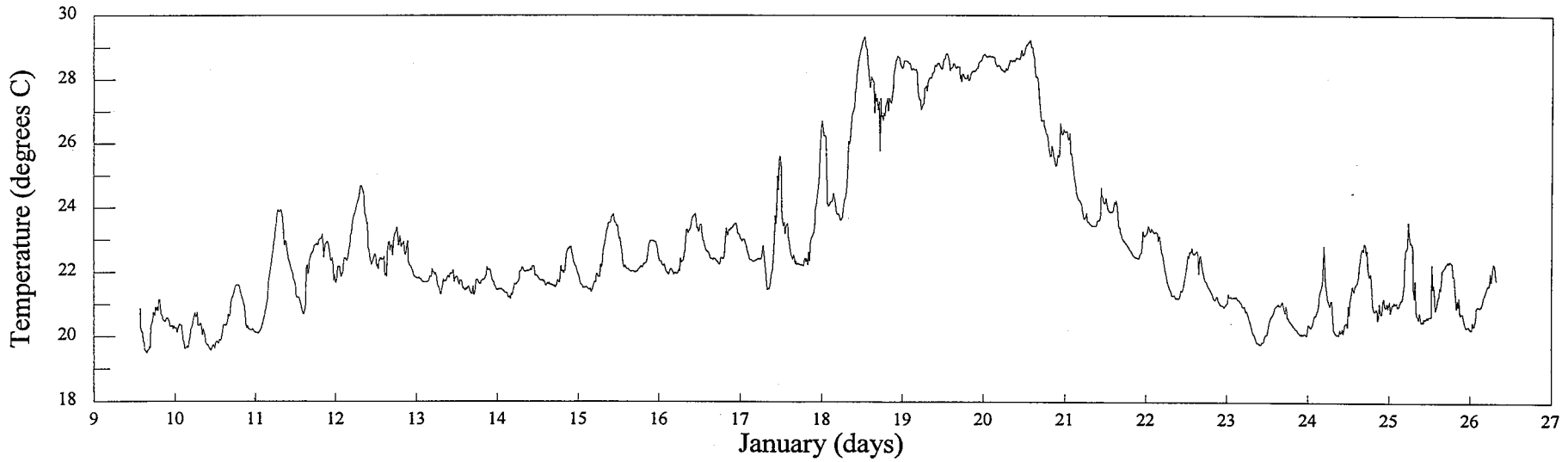
Salinity vs. Time

Mantoloking 137

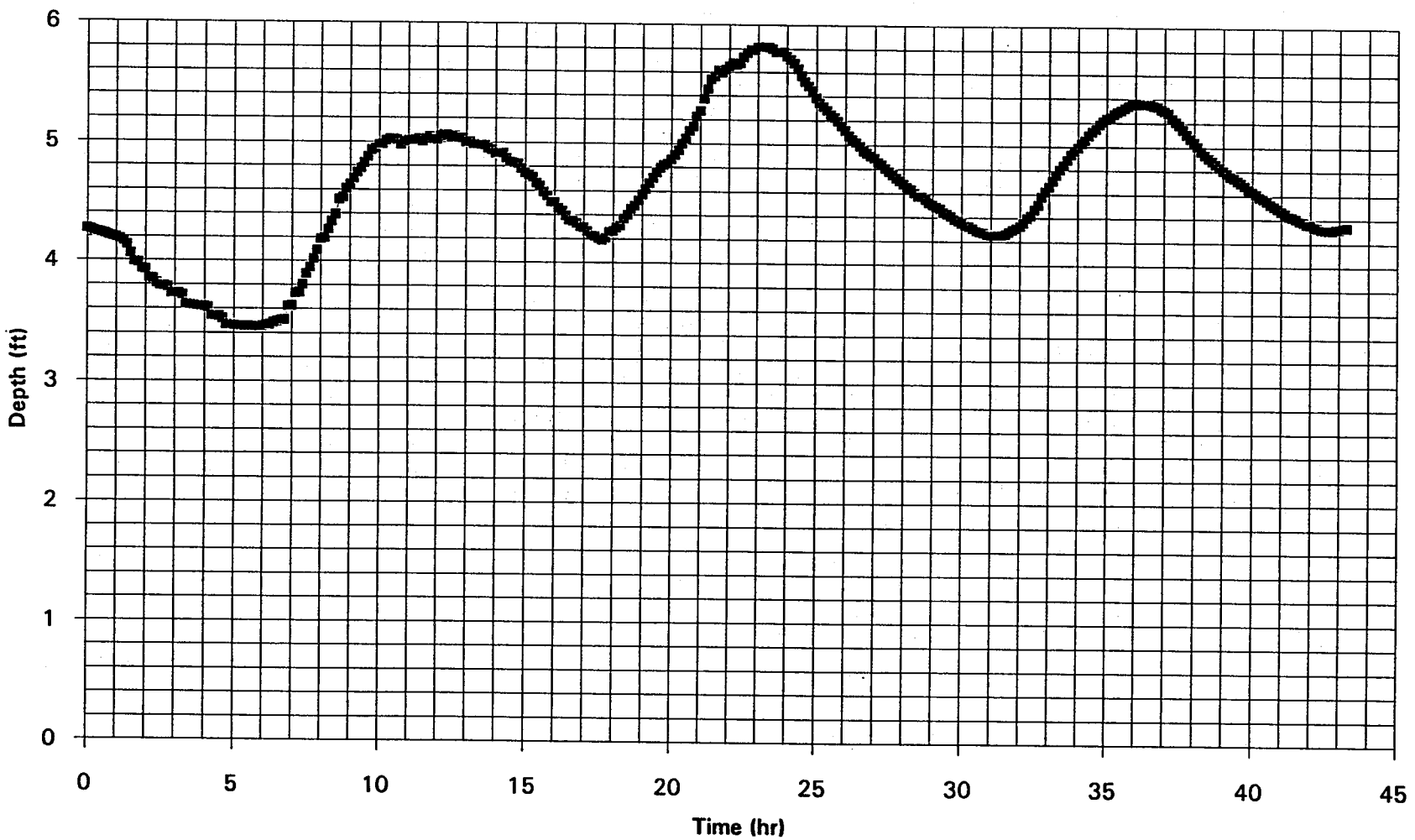


Temperature vs. Time

Mantoloking 137

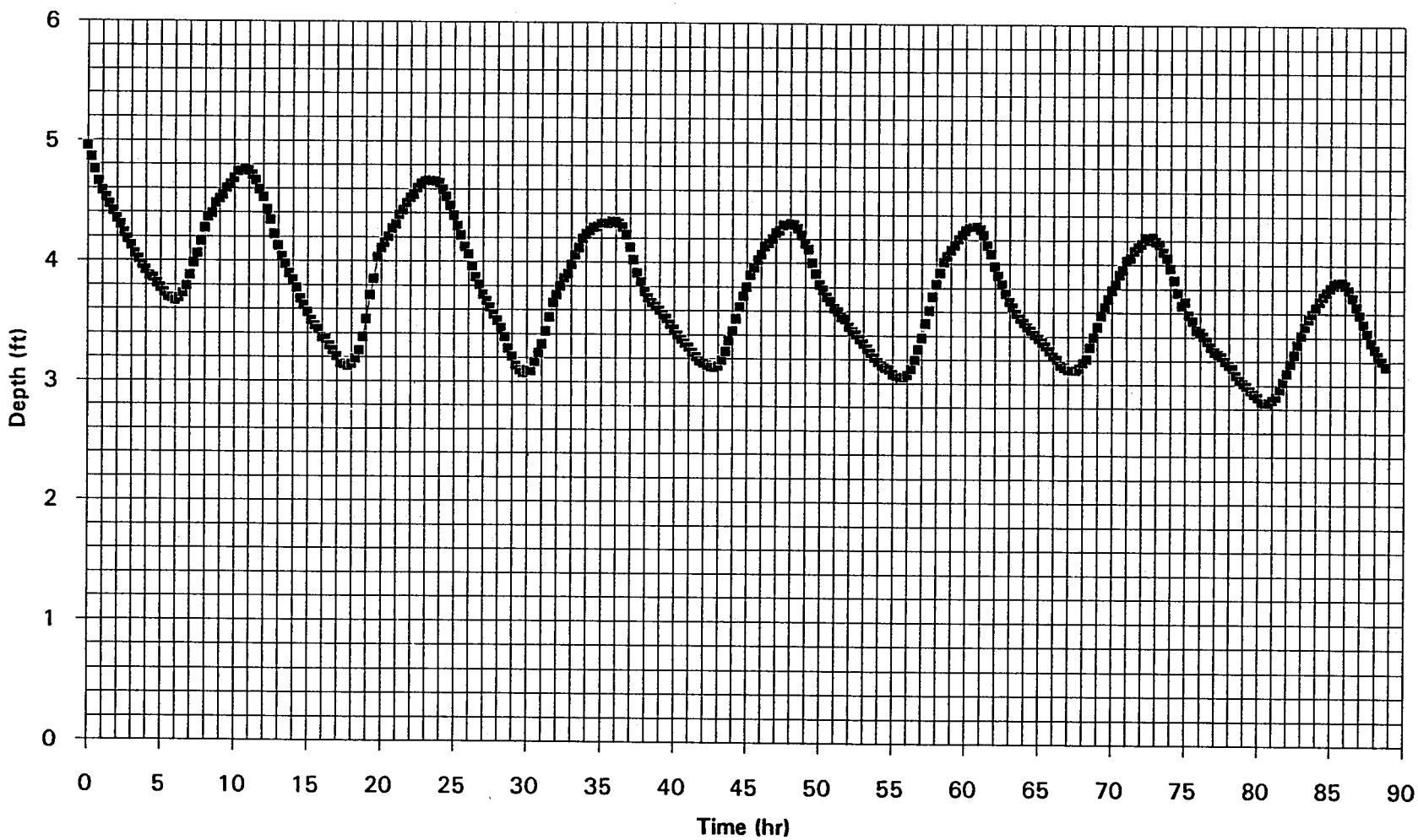


Tidal Depths - 12 / 23 / 94 (Surf City, N.J.)

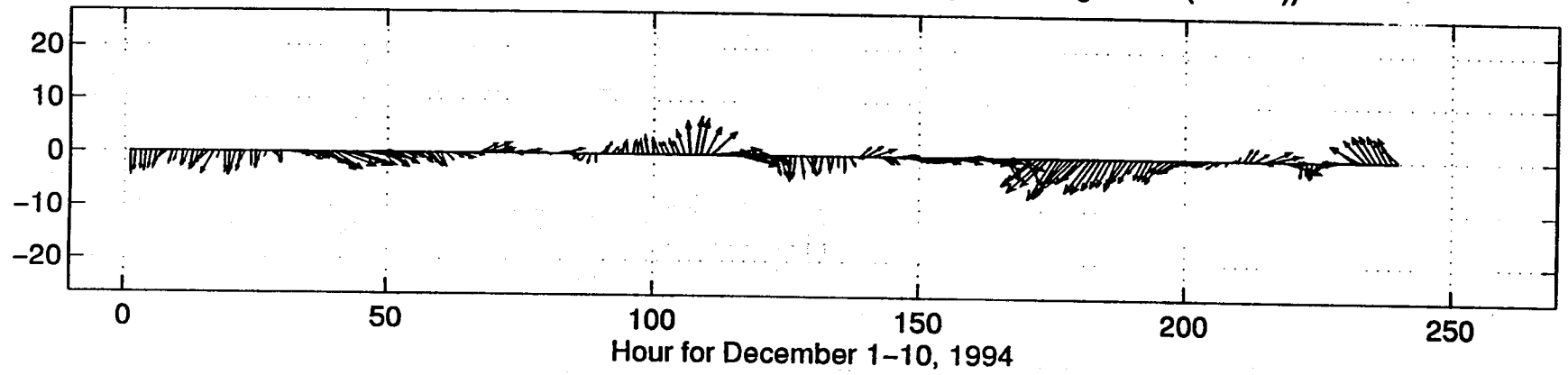


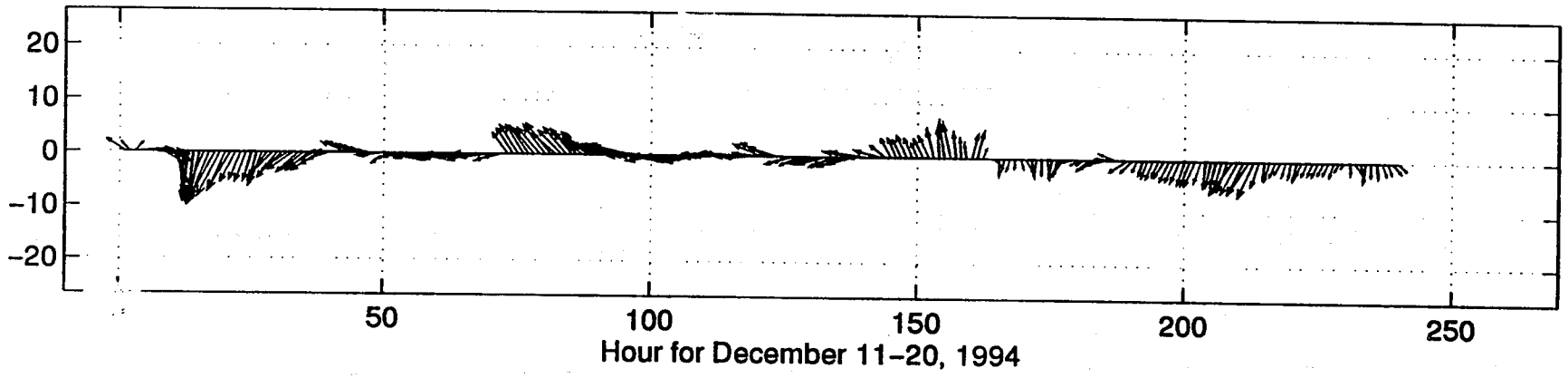
Time 0:00 is 2:53:15 PM on 12 / 23 / 94

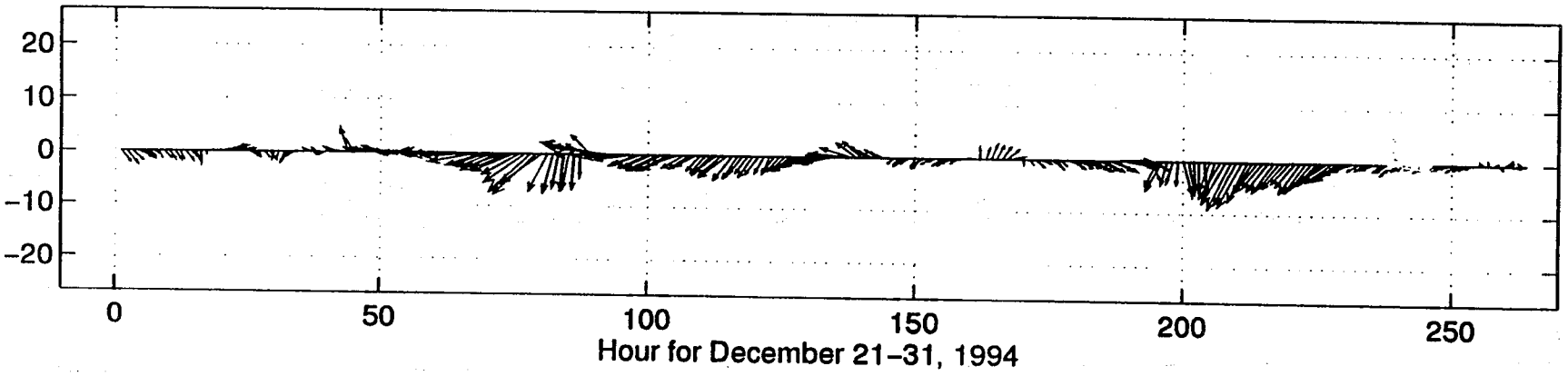
Tidal Depths - 1 / 19 / 95 (Surf City, N.J.)



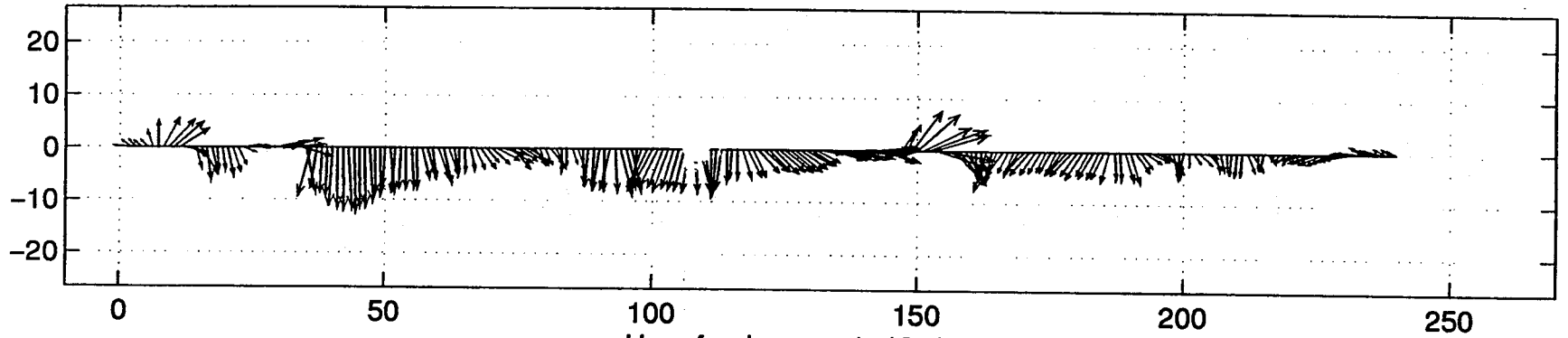
Time 0:00 is 1:21:00 PM on 1 / 19 / 95


Wind Velocity (up = Cross Shor Onshore), right = Along Shore (+ NNE))
20
10
0
-10
-20
0
50
100
150
200
250
Hour for December 1-10, 1994

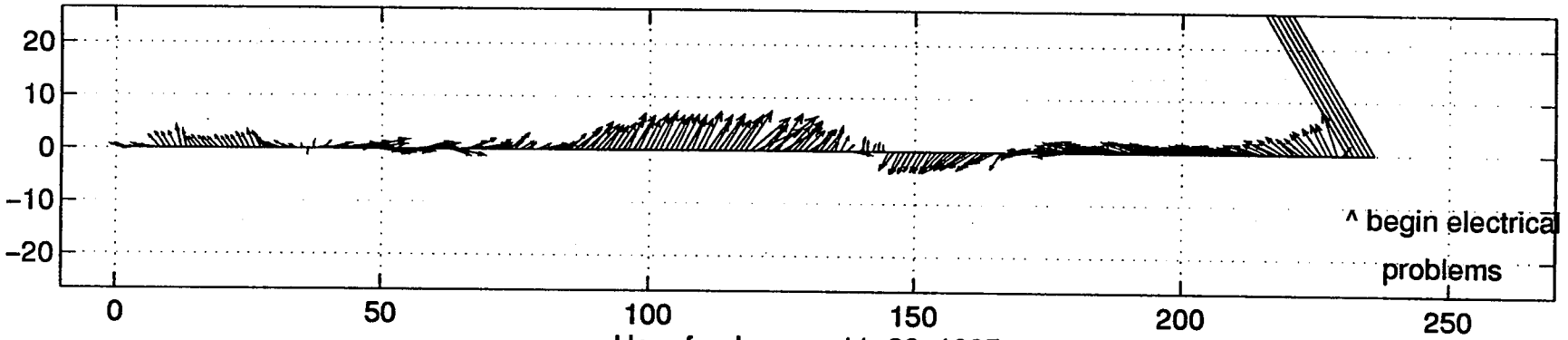

20
10
0
-10
-20
50
100
150
200
250
Hour for December 11-20, 1994


20
10
0
-10
-20
0
50
100
150
200
250
Hour for December 21-31, 1994

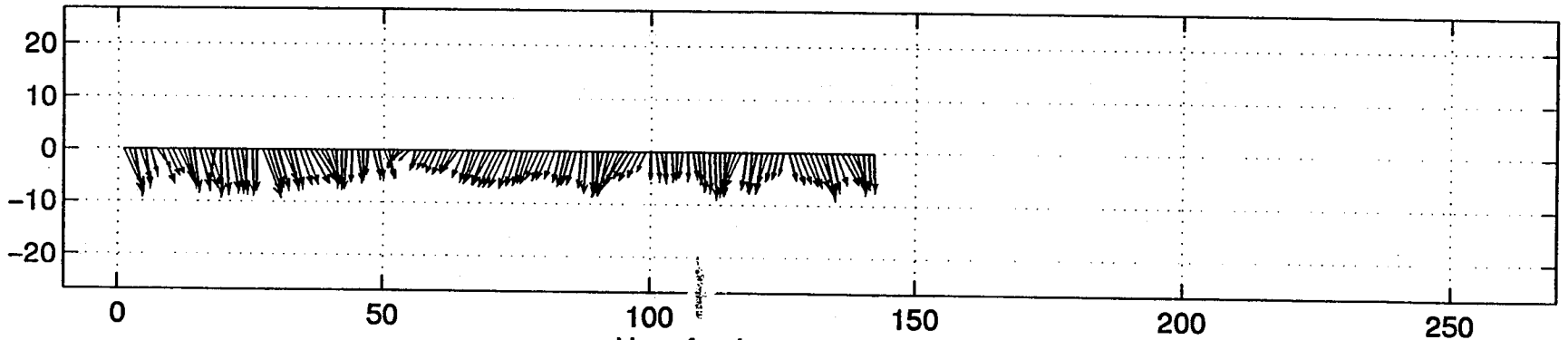
Wind Velocity (up = Cross Shore Onshore); right = Along Shore (+ NNE))



Hour for January 1–10, 1995



Hour for January 11–20, 1995



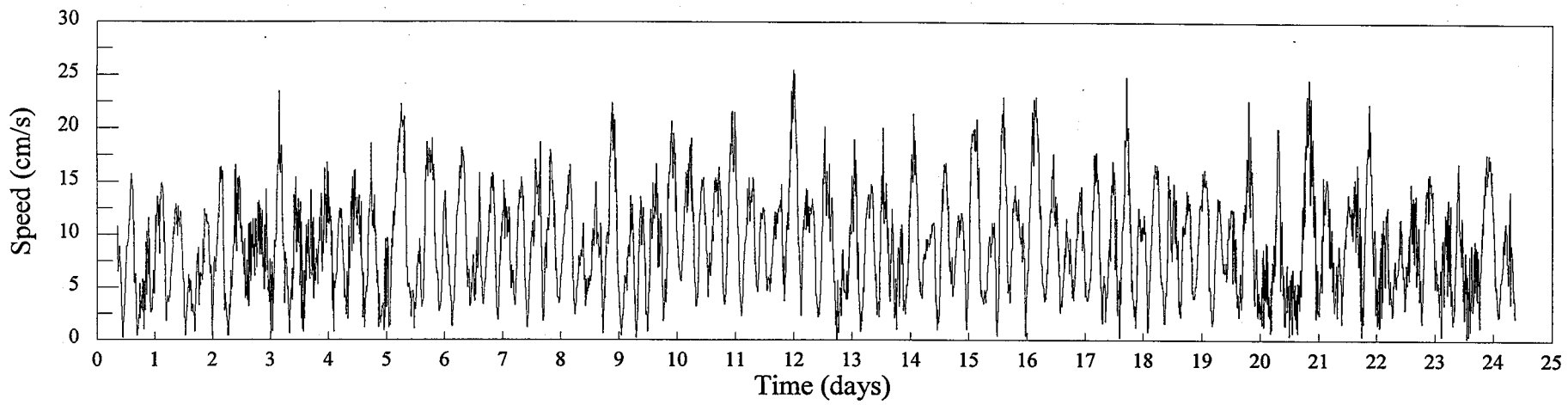
Hour for January 21–31, 1995

Appendix C

May/June Raw Data

Speed vs. Time

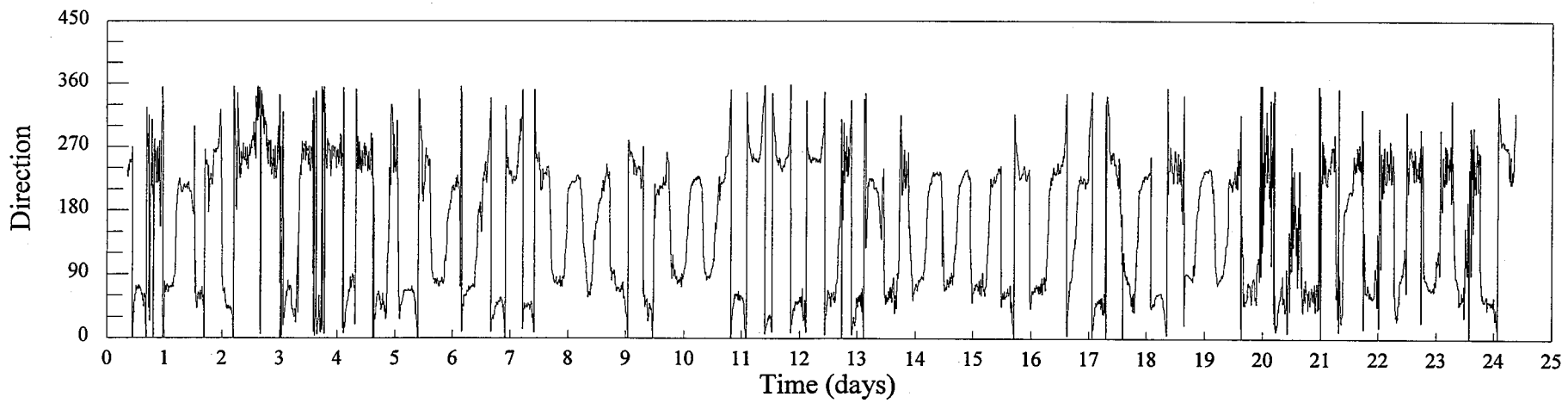
Surf City 238



start date - 5/4/95
end date - 5/28/95

Direction vs. Time

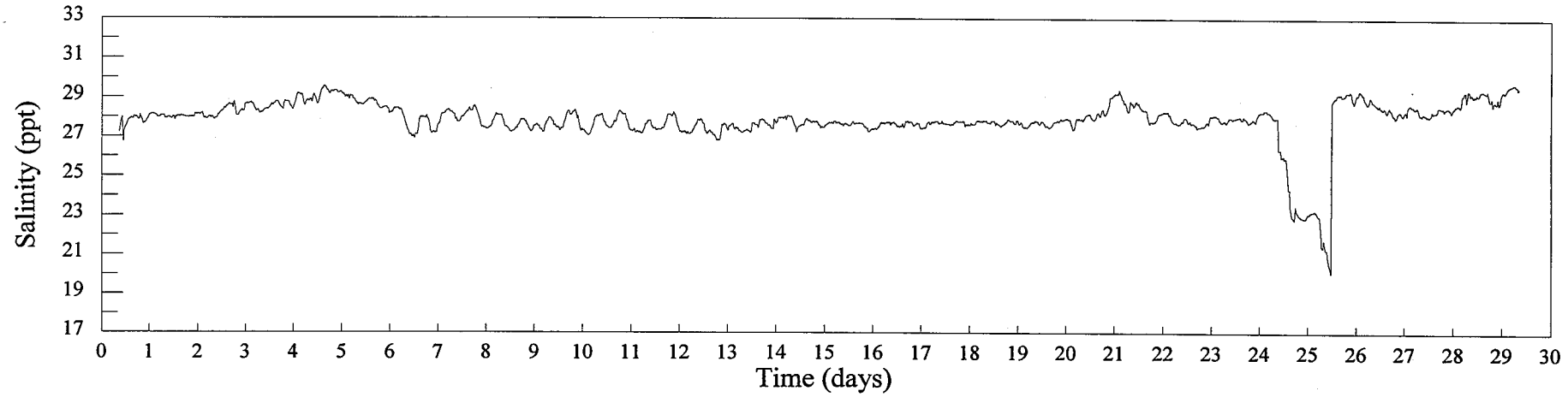
Surf City 238



start date - 5/4/95
end date - 5/28/95

Salinity vs. Time

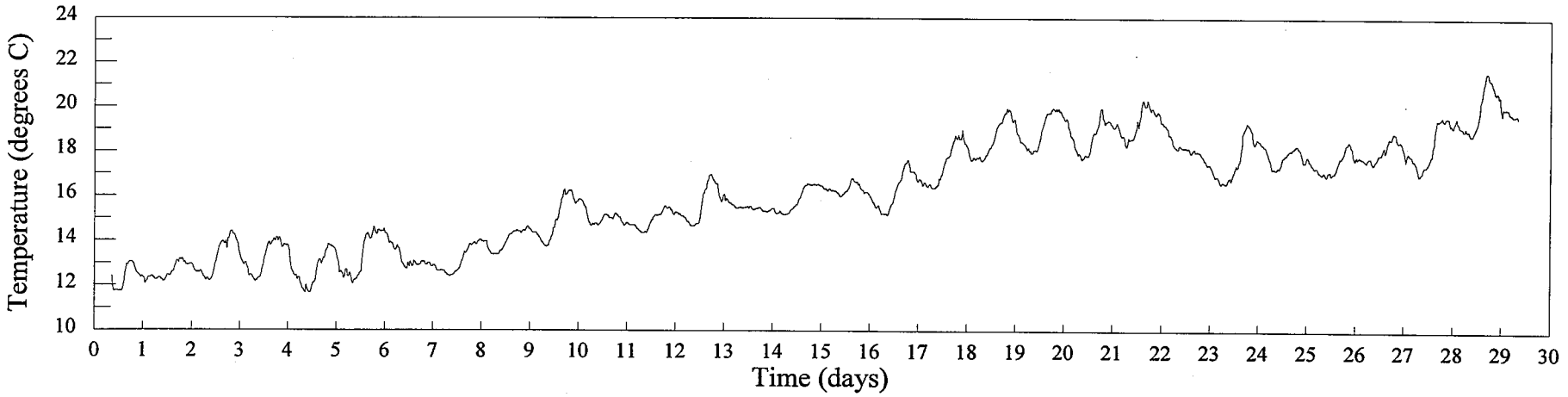
Surf City 238



start date - 5/4/95
end date - 6/2/95

Temperature vs. Time

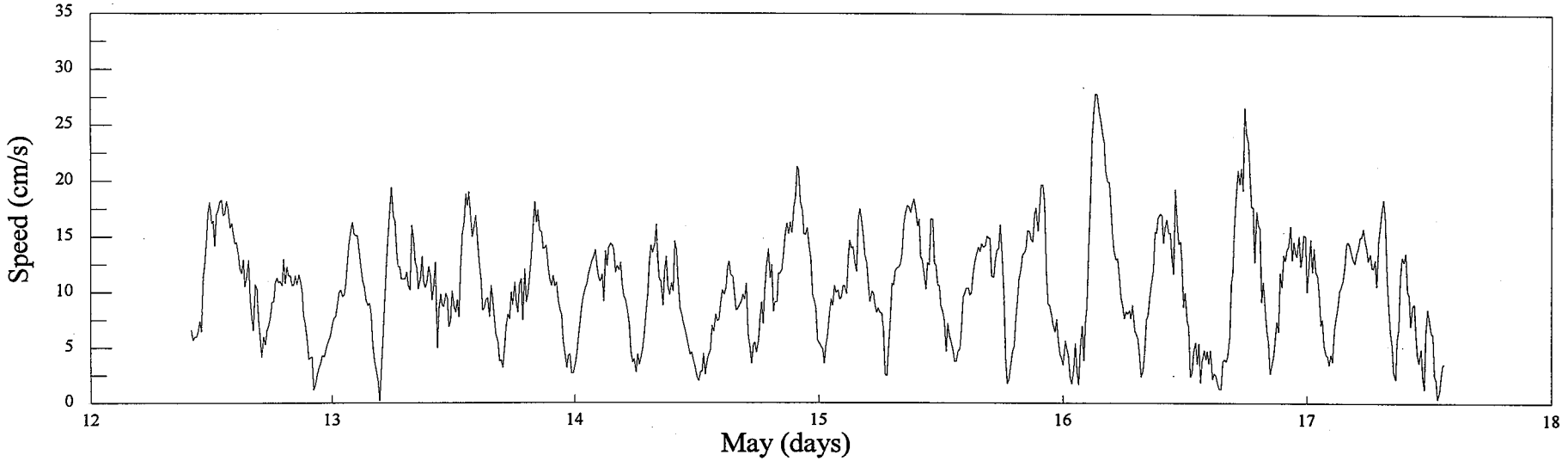
Surf City 238



start date - 5/4/95
end date - 6/2/95

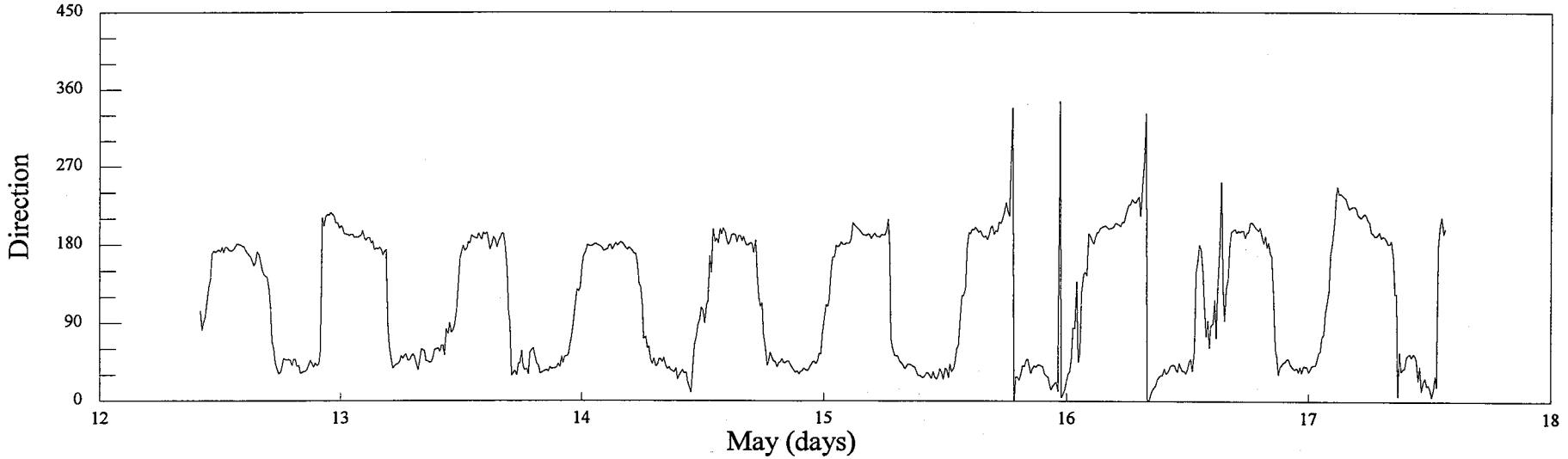
Speed vs. Time

Cedar Creek 137



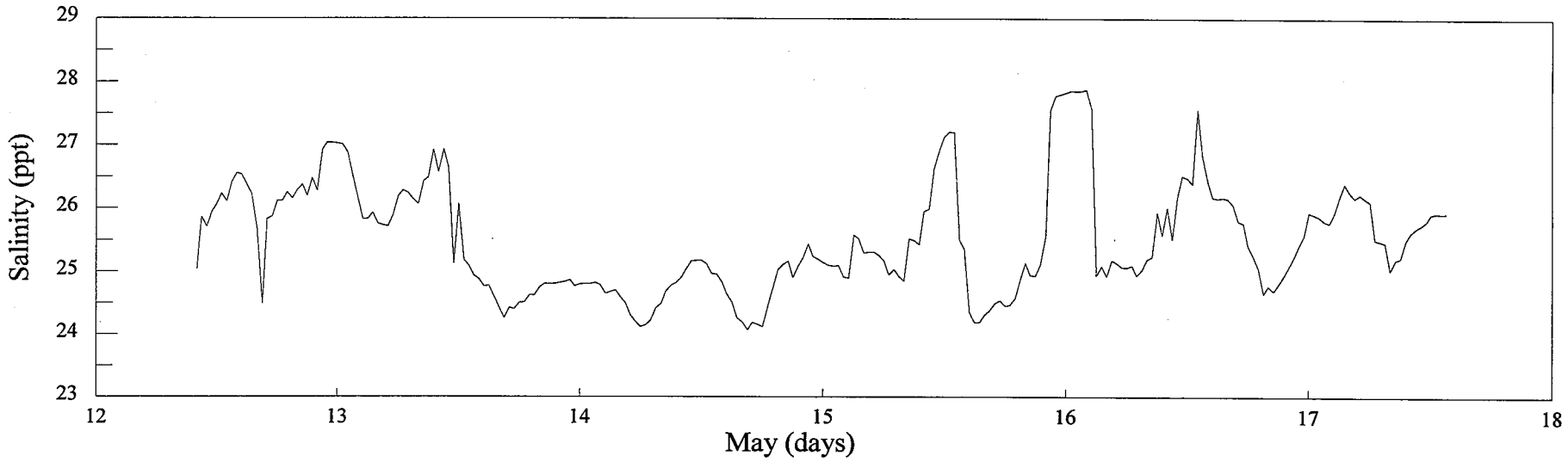
Direction vs. Time

Cedar Creek 137



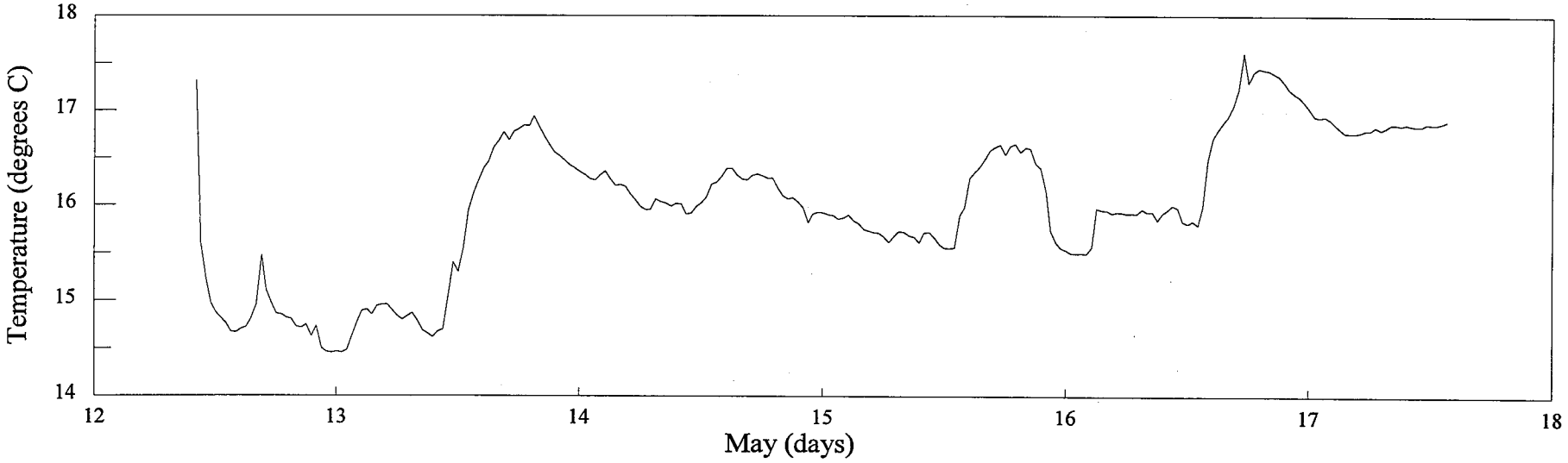
Salinity vs. Time

Cedar Creek 137



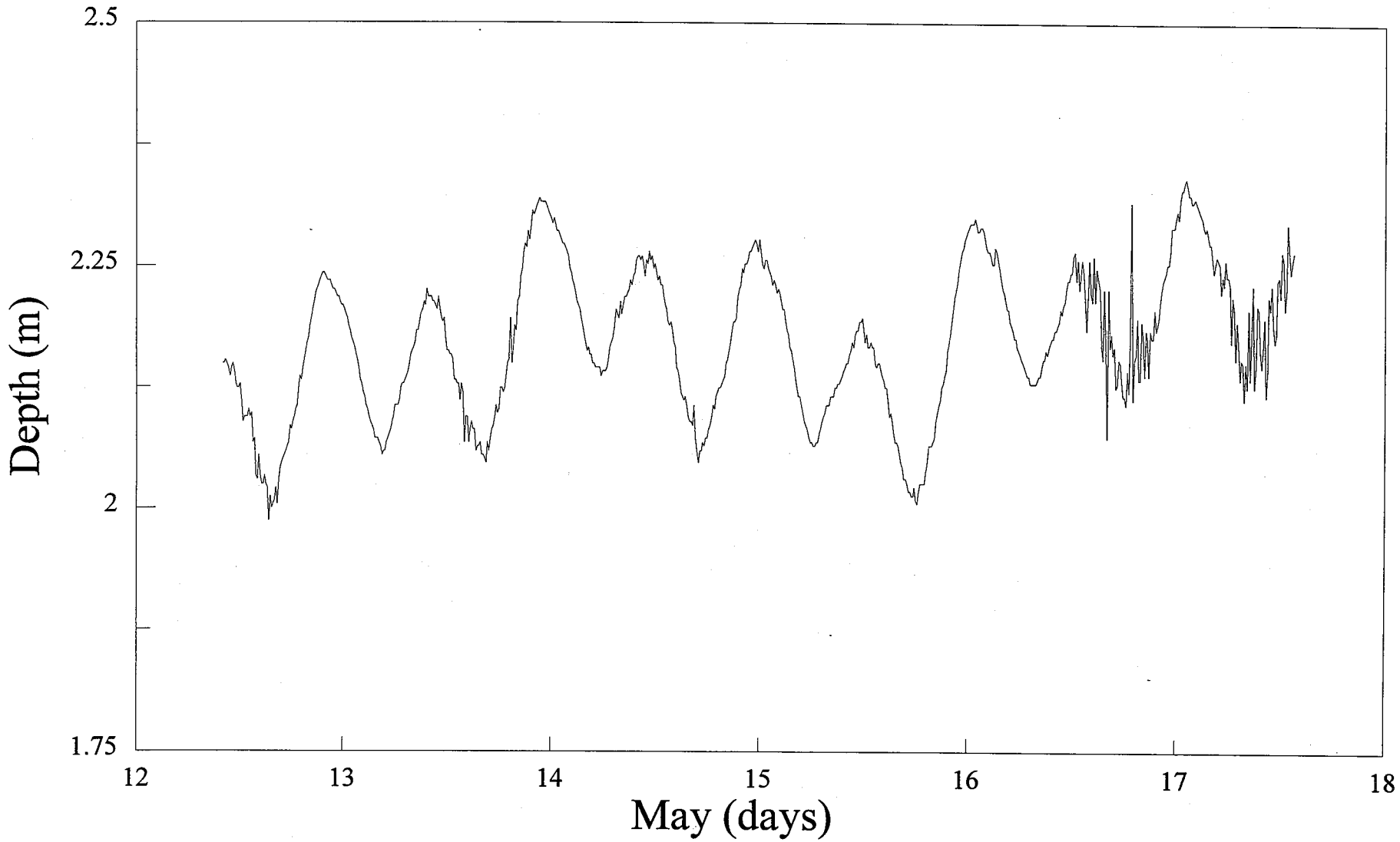
Temperature vs. Time

Cedar Creek 137



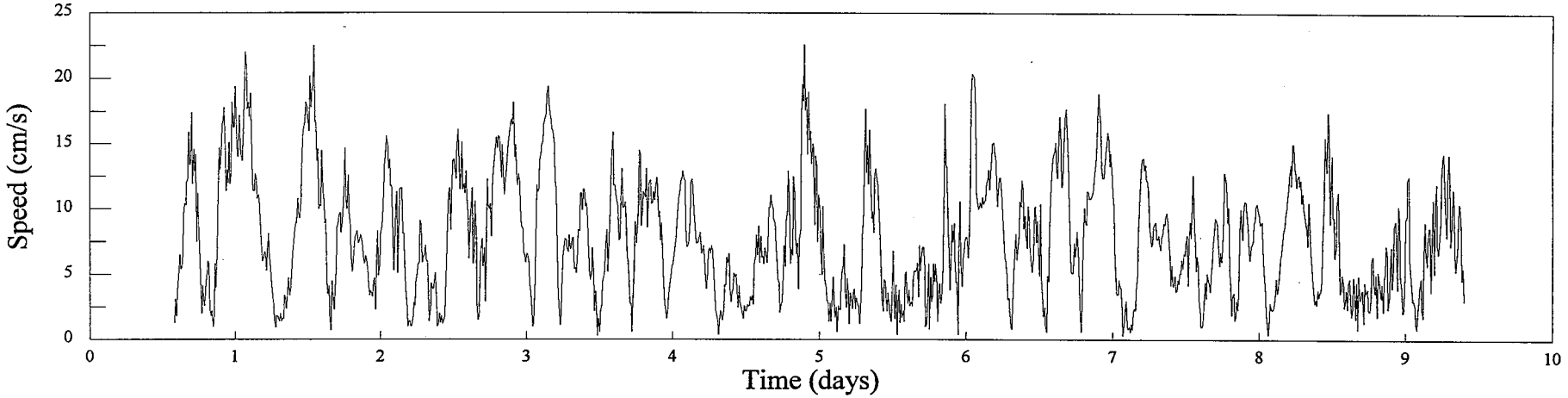
Depth vs. Time

Cedar Creek 137



Speed vs. Time

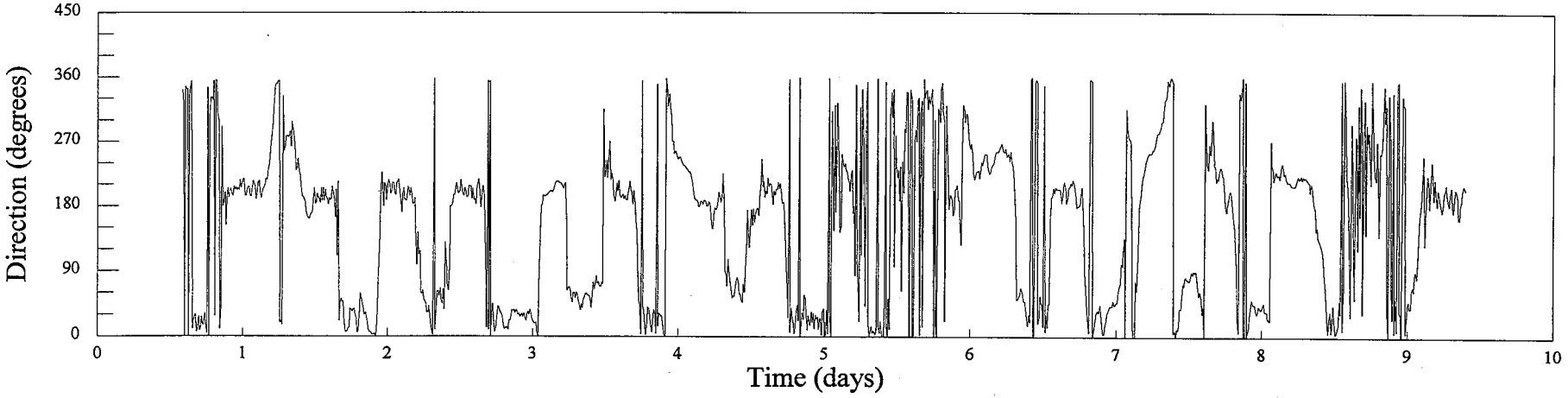
Cedar Creek 237



Start date - 5/24/95
end date - 6/2/95

Direction vs. Time

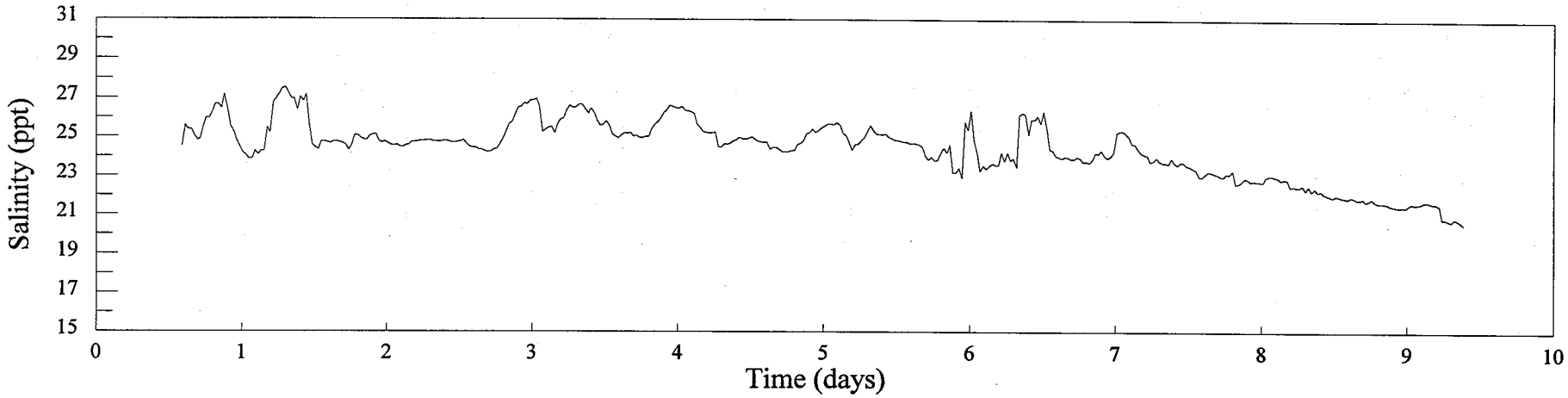
Cedar Creek 237



Start date - 5/24/95
end date - 6/2/95

Salinity vs. Time

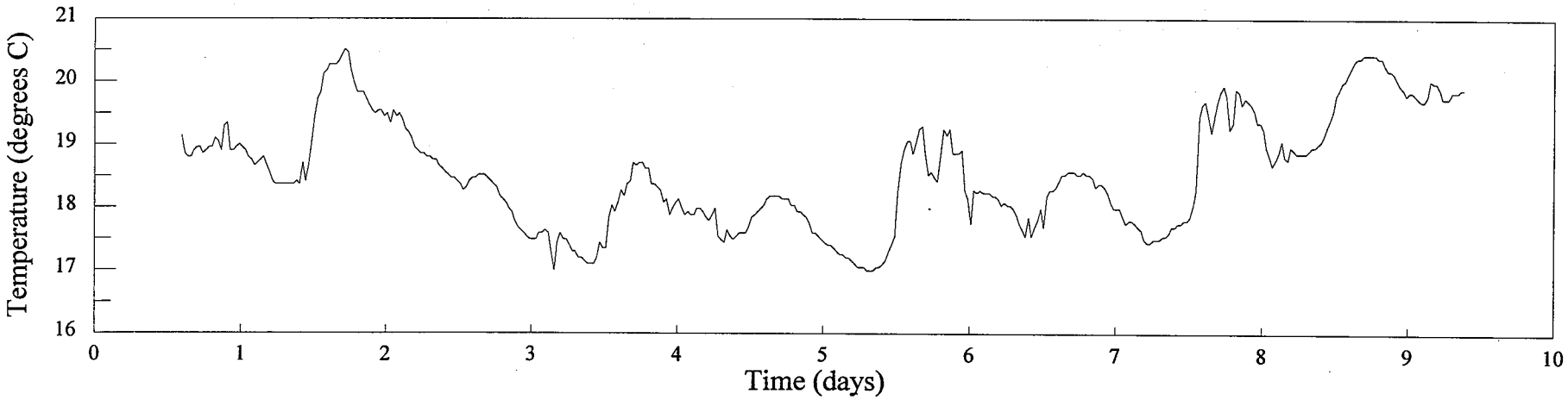
Cedar Creek 237



start date - 5/24/95
end date - 6/2/95

Temperature vs. Time

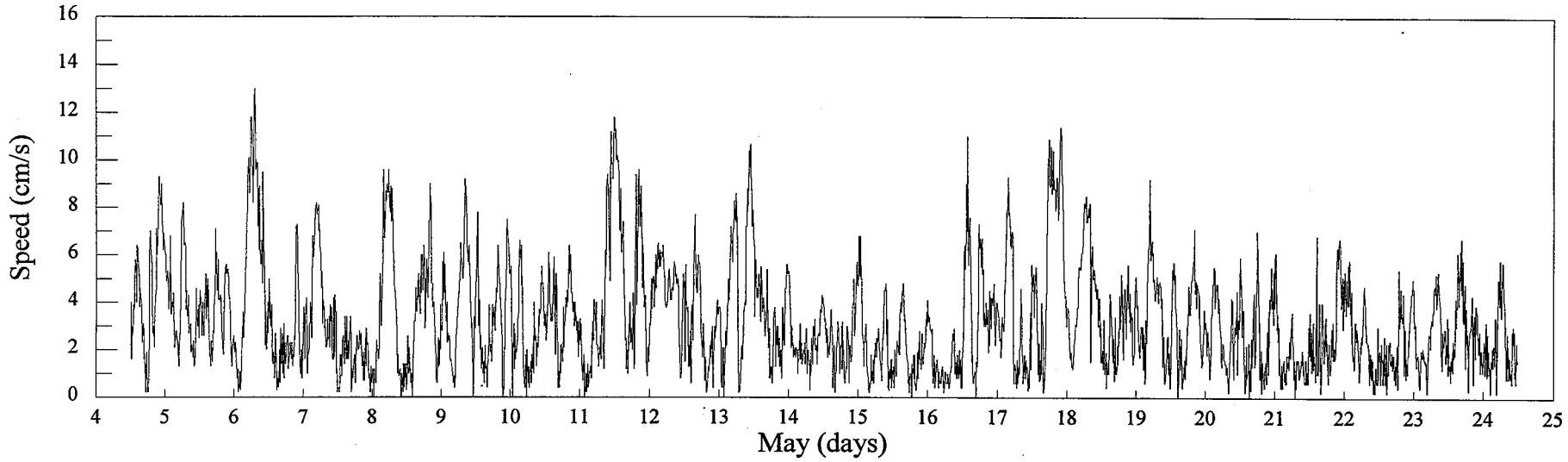
Cedar Creek 237



start date - 5/24/95
end date - 6/2/95

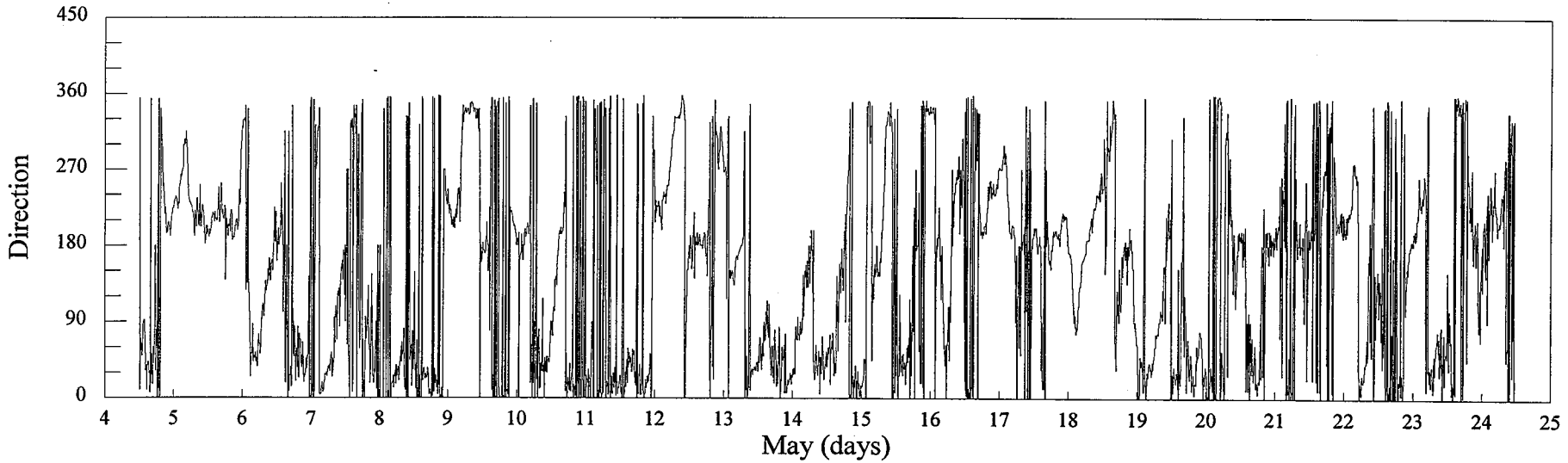
Speed vs. Time

Silver Bay 237



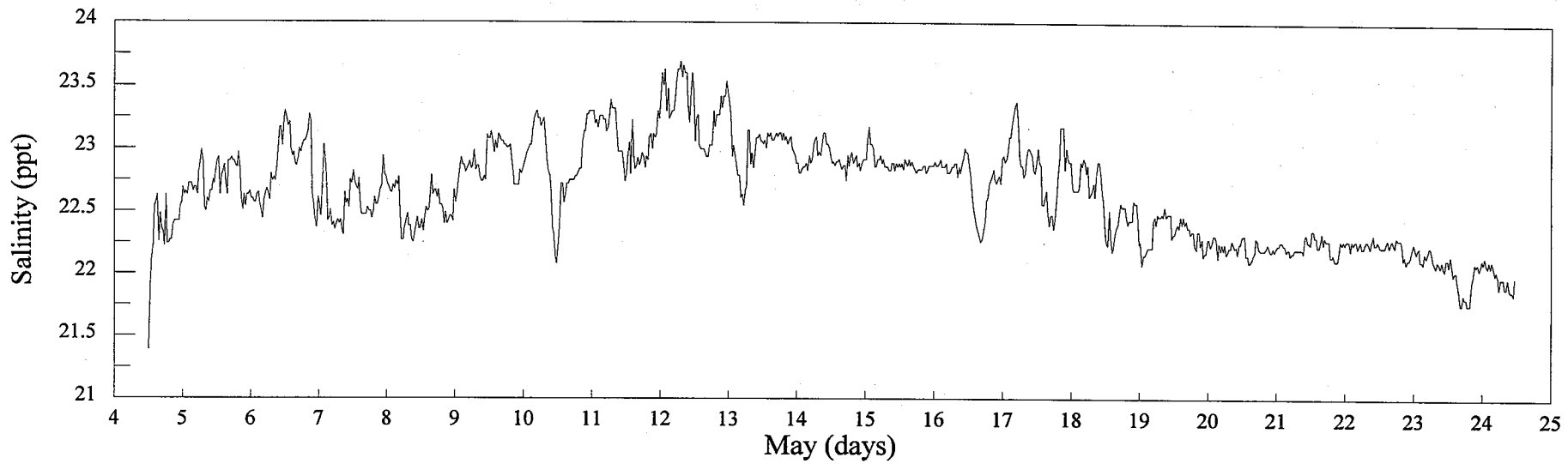
Direction vs. Time

Silver Bay 237



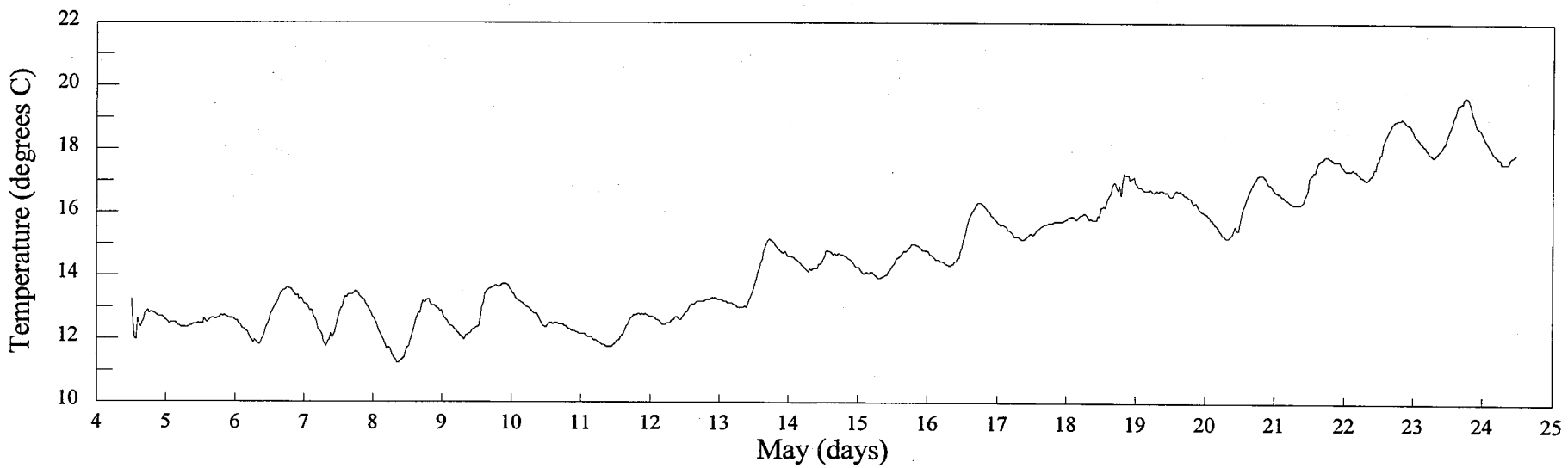
Salinity vs Time

Silver Bay 237



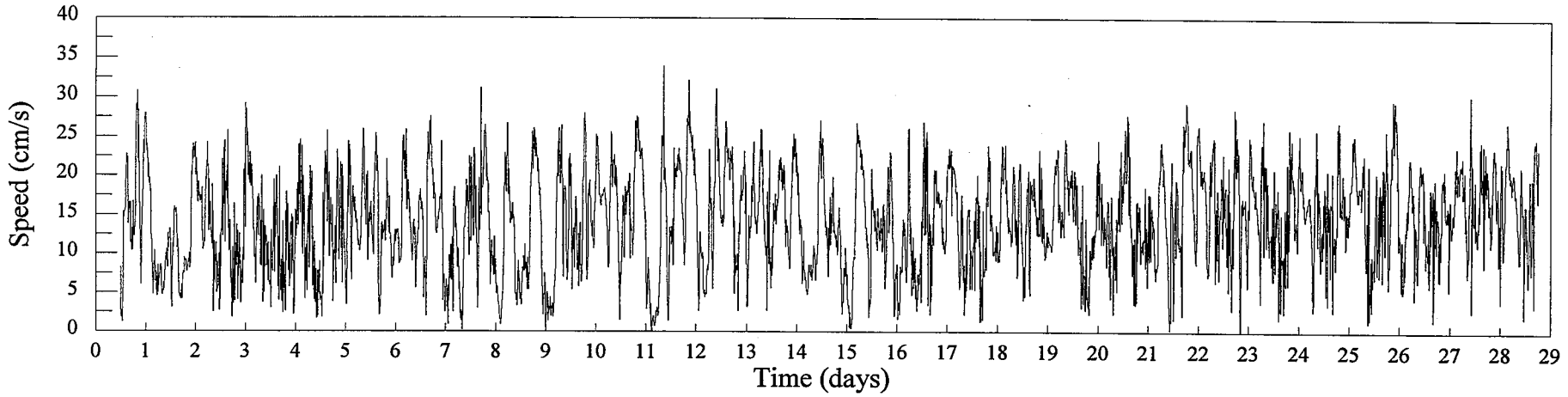
Temperature vs. Time

Silver Bay 237



Speed vs. Time

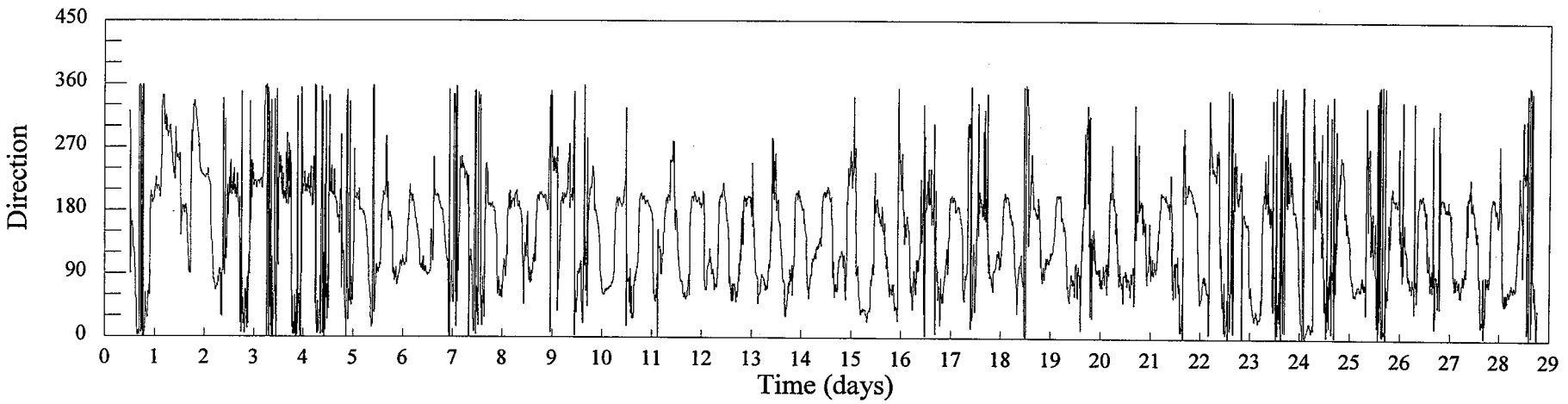
Mantoloking 239



start date - 5/4/95
end date - 6/1/95

Direction vs. Time

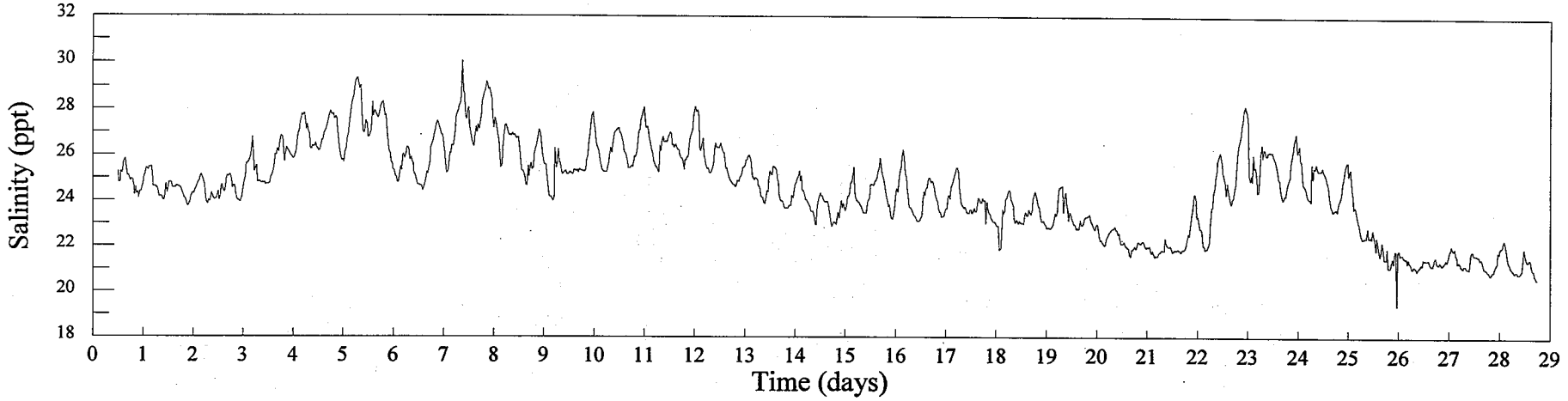
Mantoloking 239



start date - 5/4/95
end date - 6/1/95

Salinity vs. Time

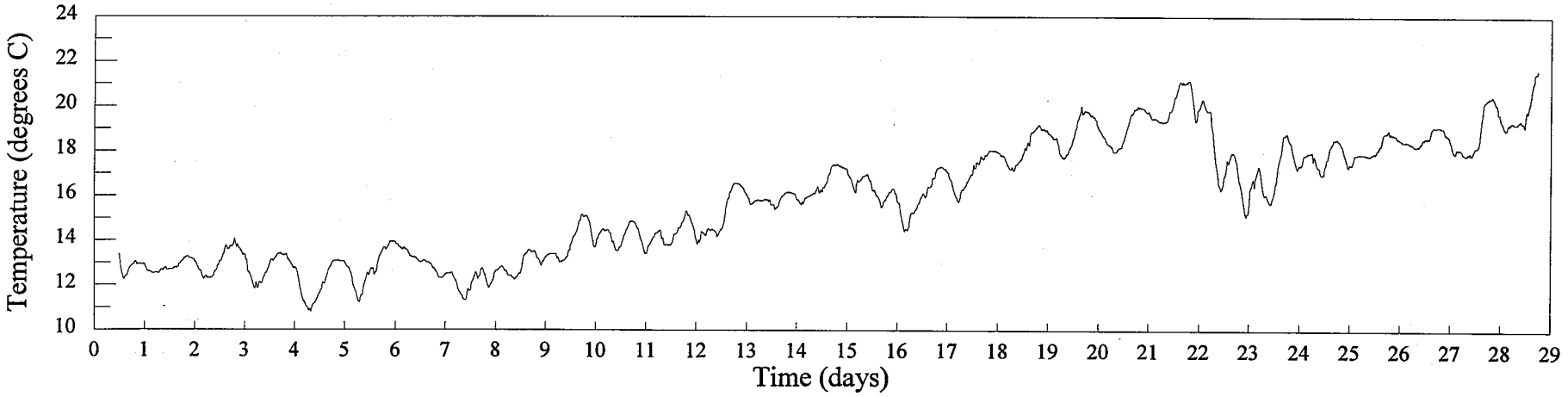
Mantoloking 239



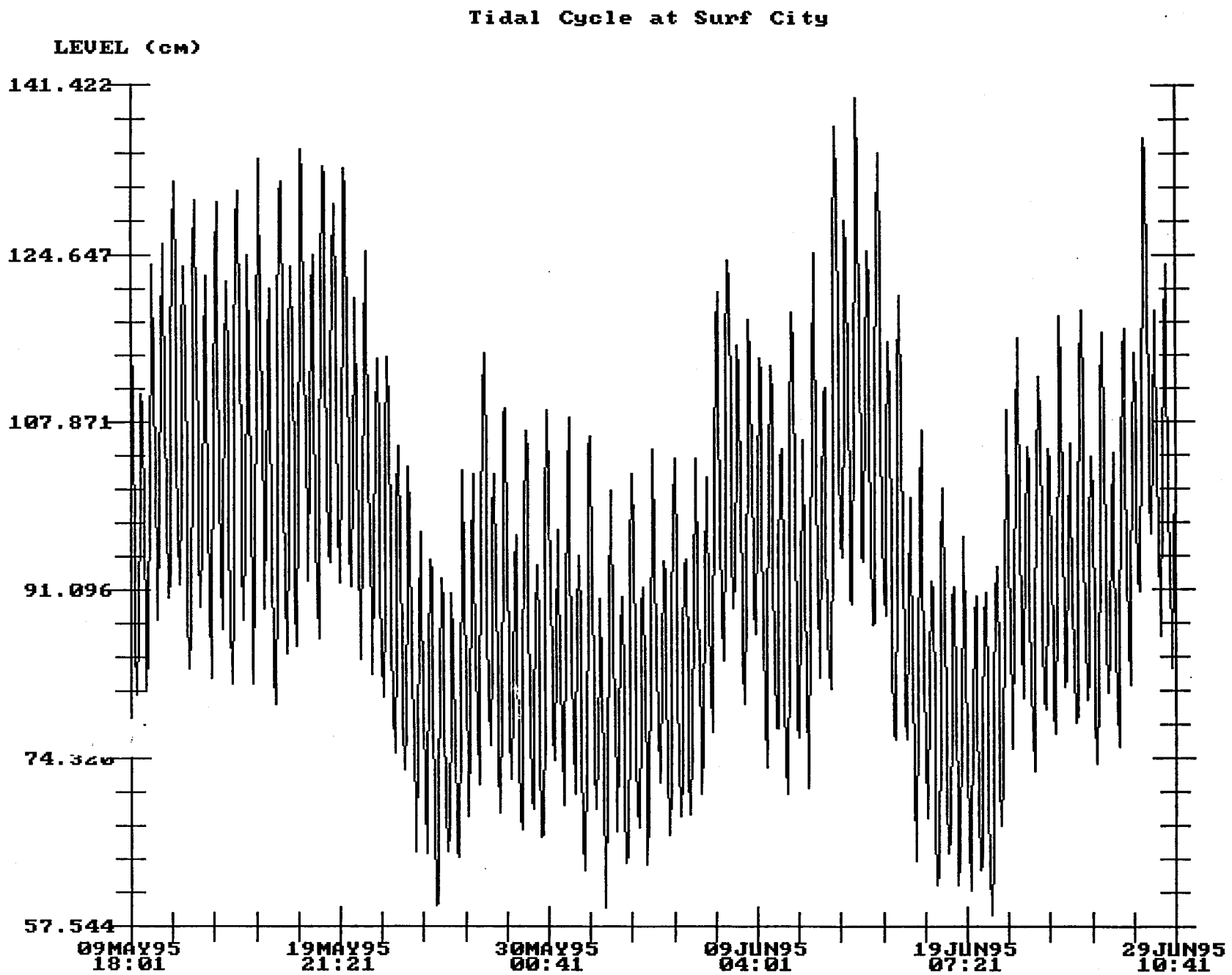
start date - 5/4/95
end date - 6/1/95

Temperature vs. Time

Mantoloking 239

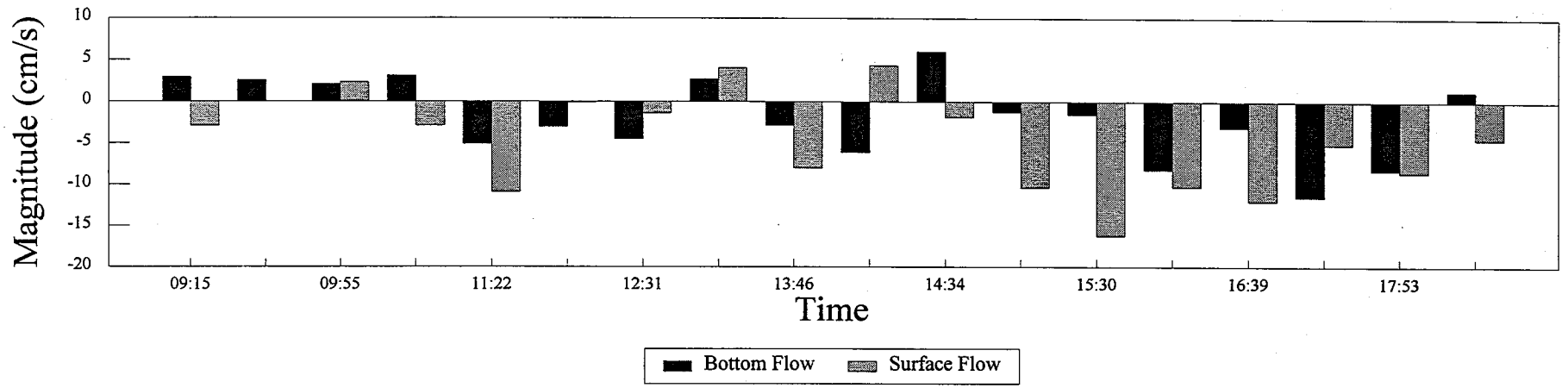


start date - 5/4/95
end date - 6/1/95


Tidal Cycle at Surf City
LEVEL (cm)
141.422
124.647
107.871
91.096
74.320
57.544
09MAY95 18:01
19MAY95 21:21
30MAY95 00:41
09JUN95 04:01
19JUN95 07:21
29JUN95 10:41

Cedar Creek 5/30/95 (west)

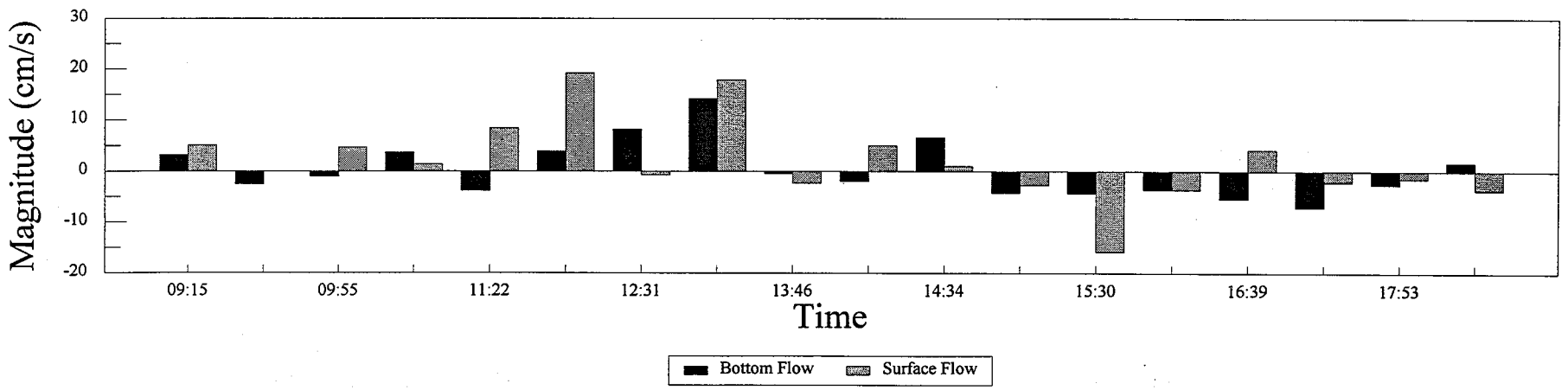
North-South Flow



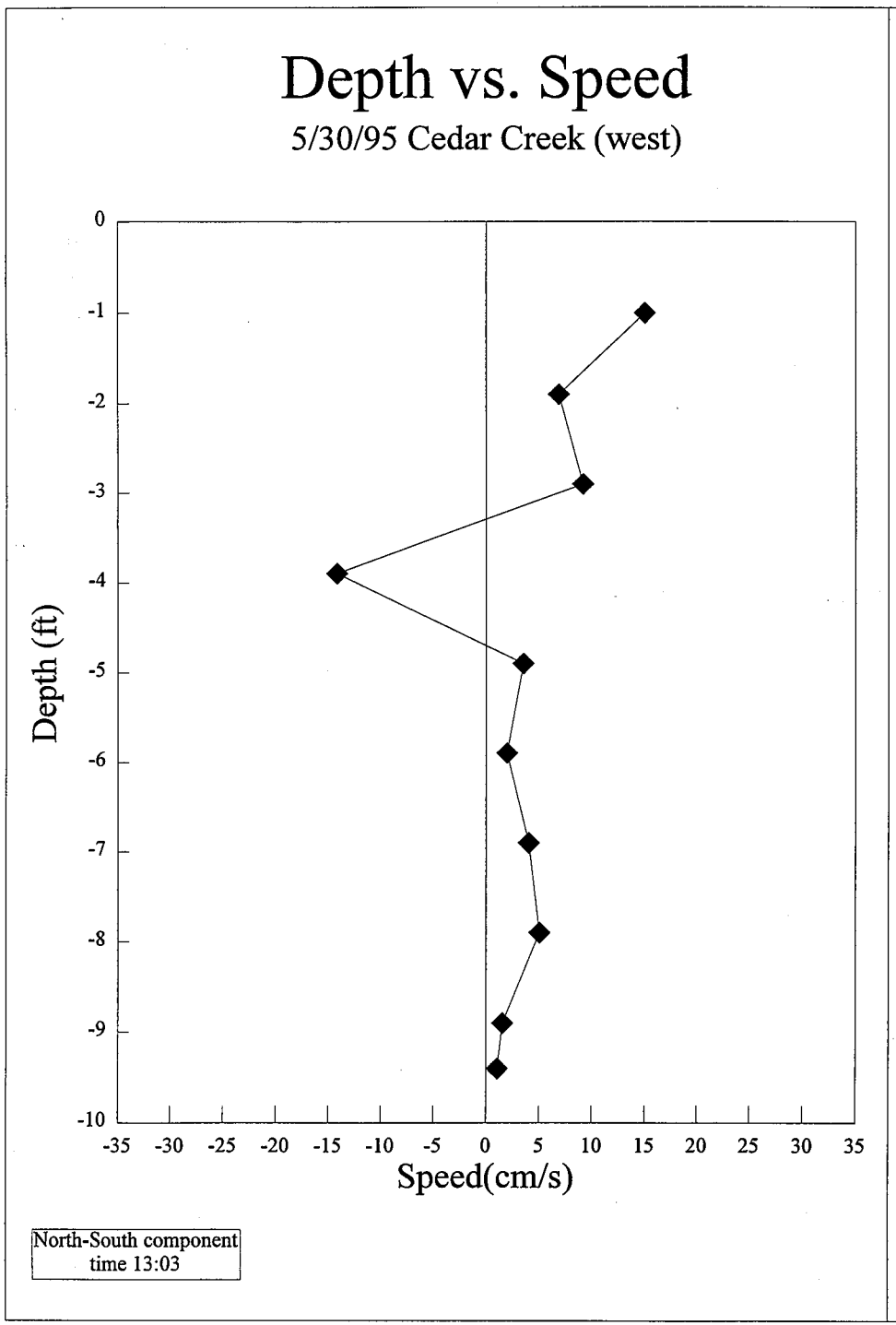
north is positive
south is negative

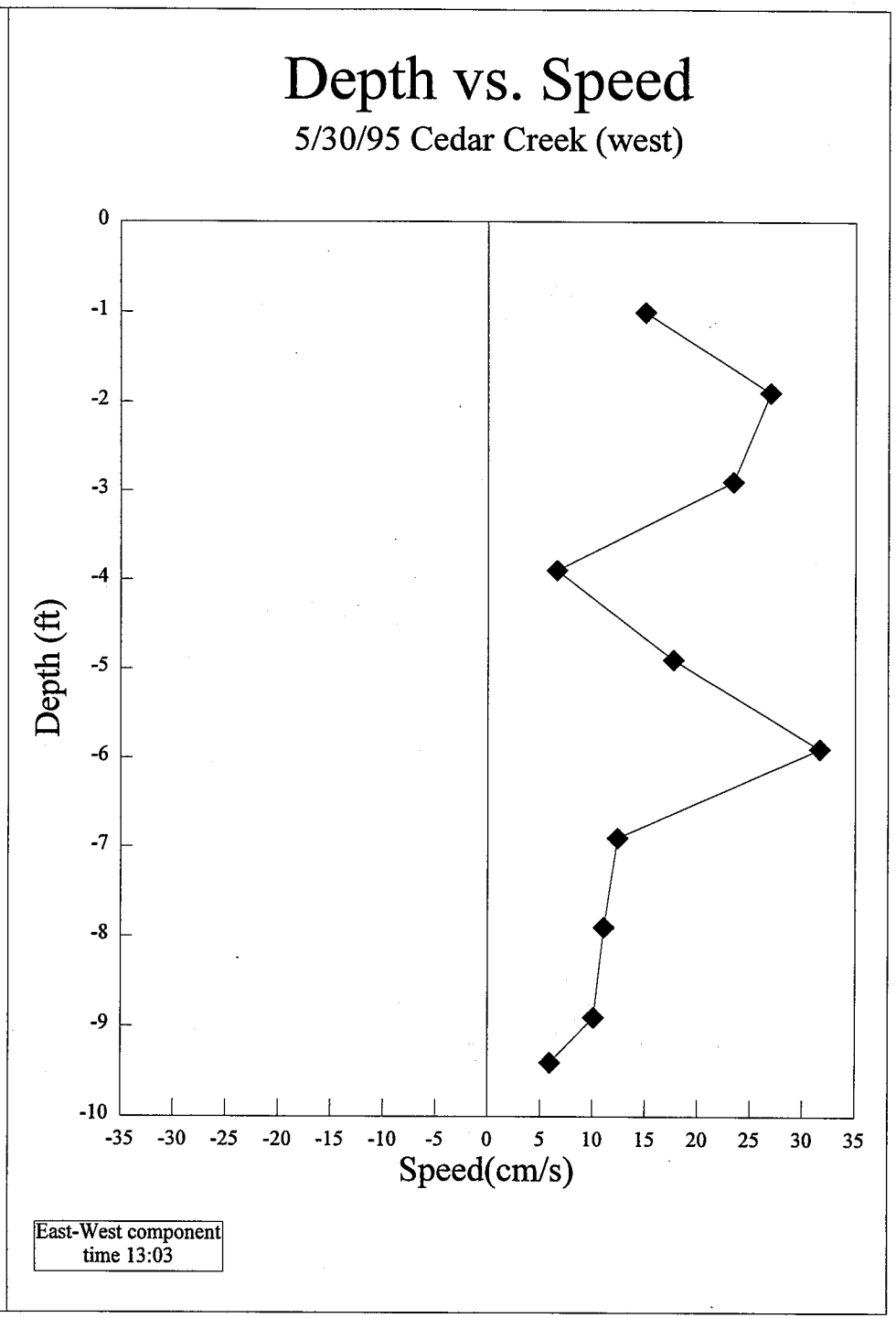
Cedar Creek 5/30/95 (west)

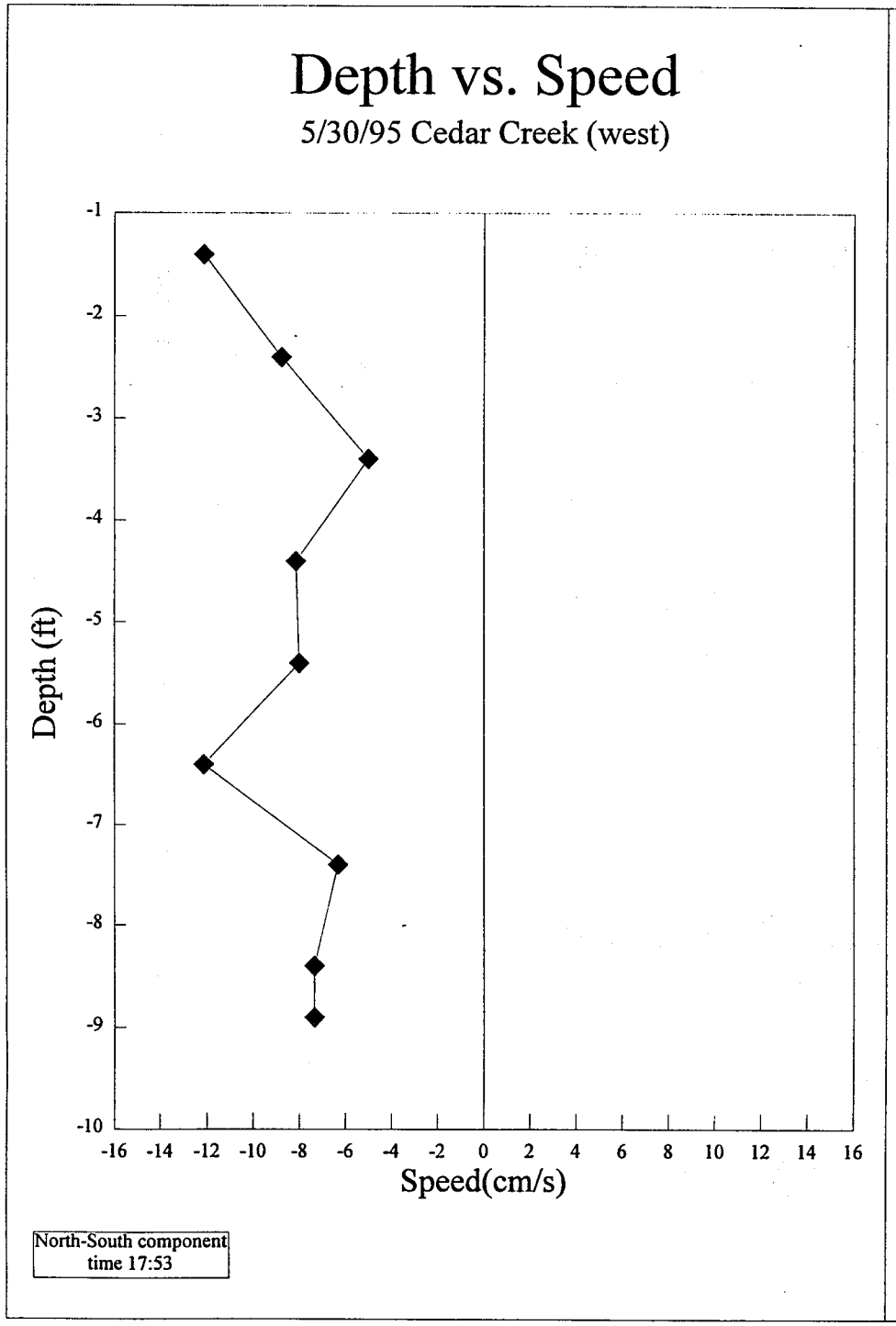
East-West Flow

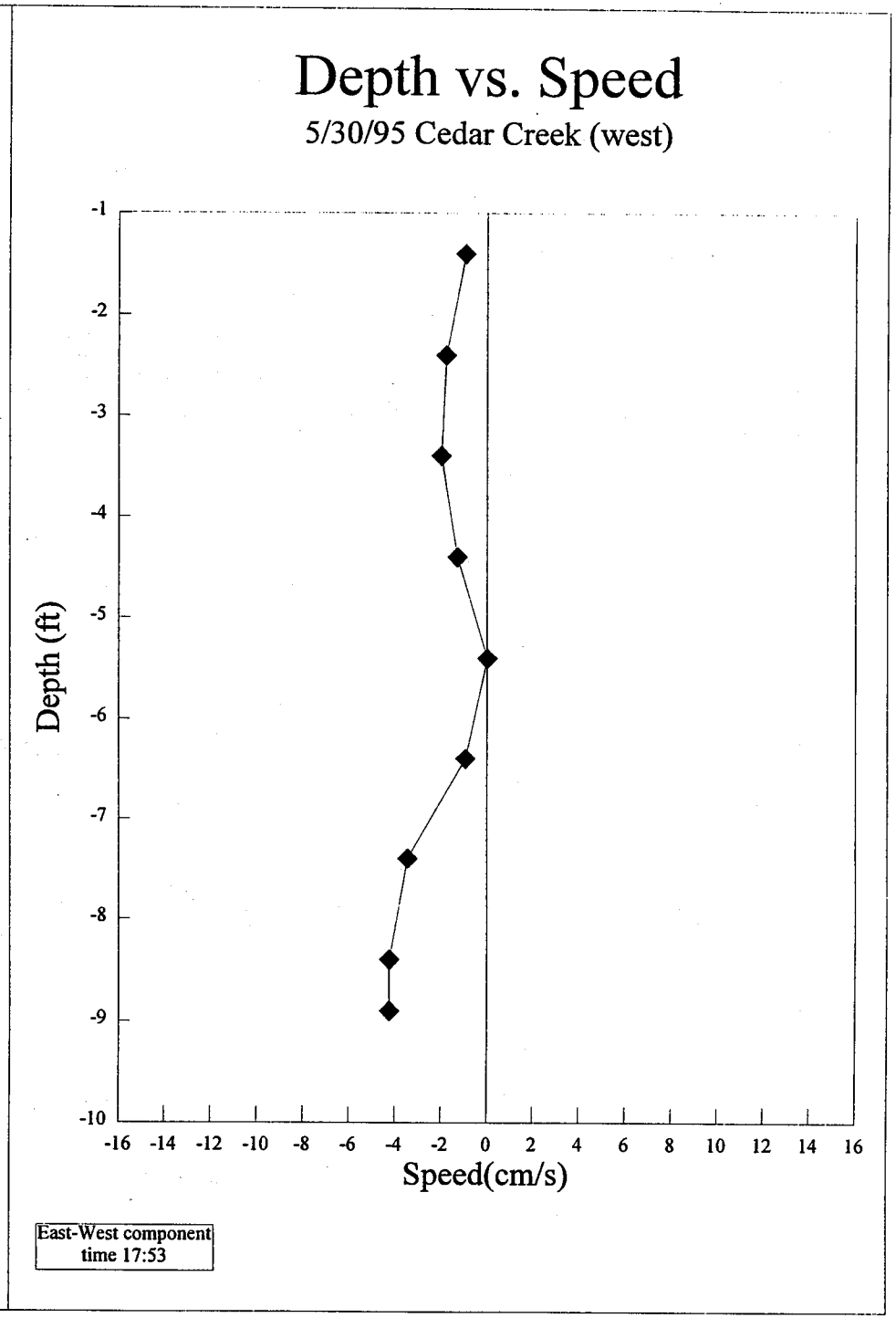


east is positive
west is negative


Depth vs. Speed
5/30/95 Cedar Creek (west)
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-35 -30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
Speed(cm/s)
North-South component
time 13:03

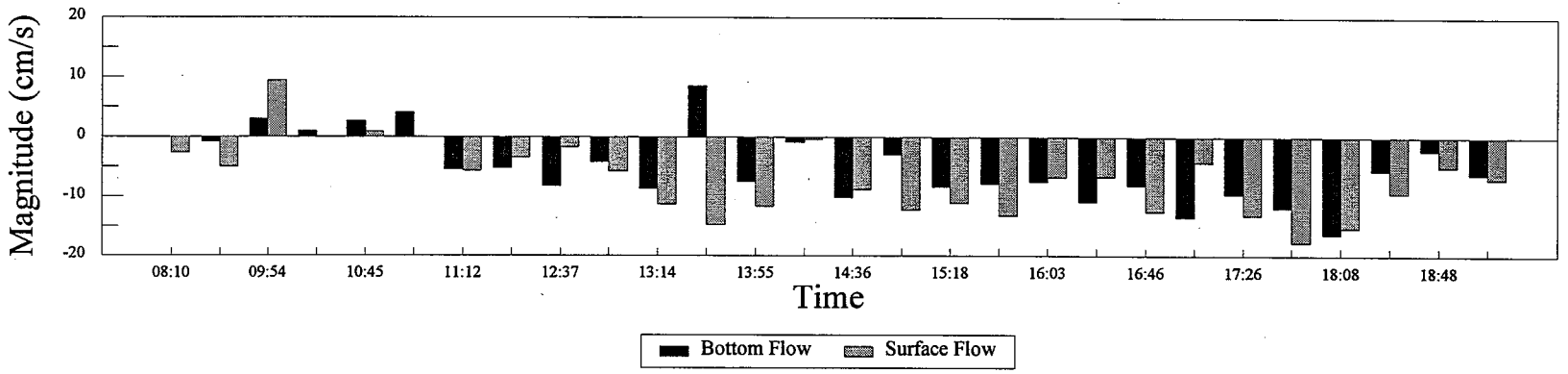

Depth vs. Speed
5/30/95 Cedar Creek (west)
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-35 -30 -25 -20 -15 -10 -5 0 5 10 15 20 25 30 35
Speed(cm/s)
East-West component
time 13:03


Depth vs. Speed
5/30/95 Cedar Creek (west)
Depth (ft)
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-16 -14 -12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12 14 16
Speed(cm/s)
North-South component
time 17:53


Depth vs. Speed
5/30/95 Cedar Creek (west)
Depth (ft)
-1
-2
-3
-4
-5
-6
-7
-8
-9
-10
-16 -14 -12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12 14 16
Speed(cm/s)
East-West component
time 17:53

Cedar Creek 5/30/95 (east)

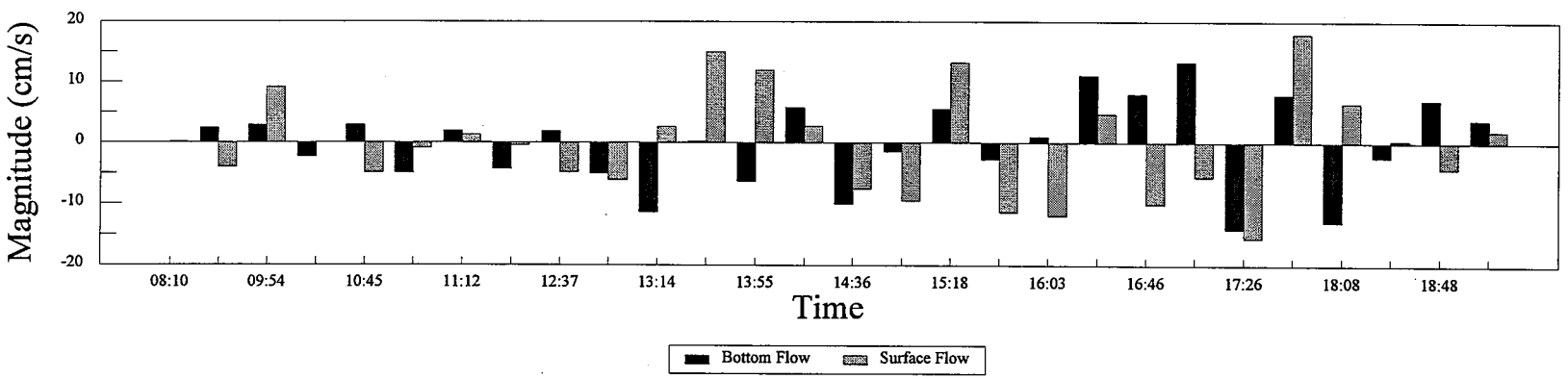
North-South Flow



north is positive
south is negative

Cedar Creek 5/30/95 (east)

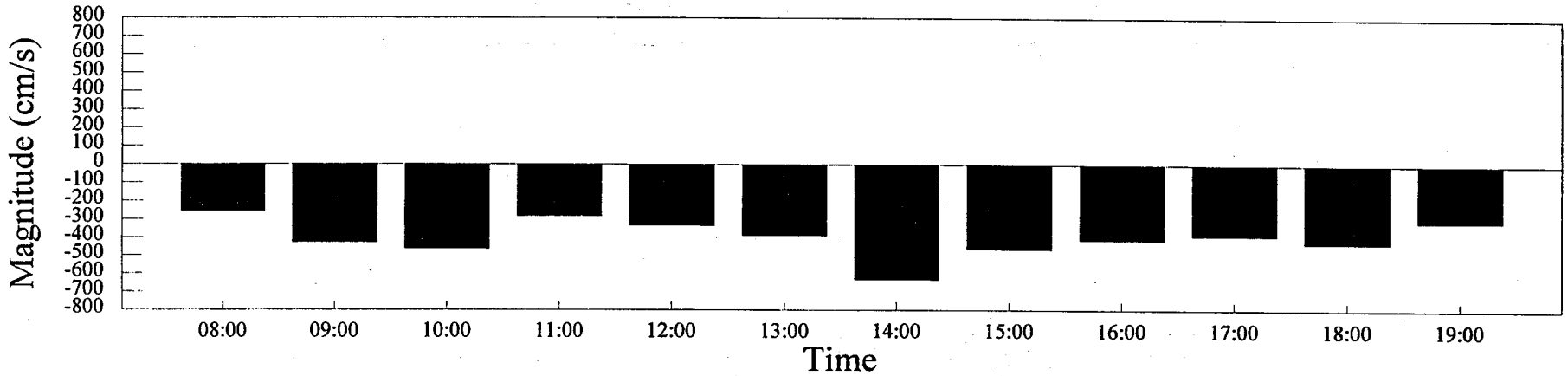
East-West Flow



east is positive
west is negative

Wind Velocities 5/30/95

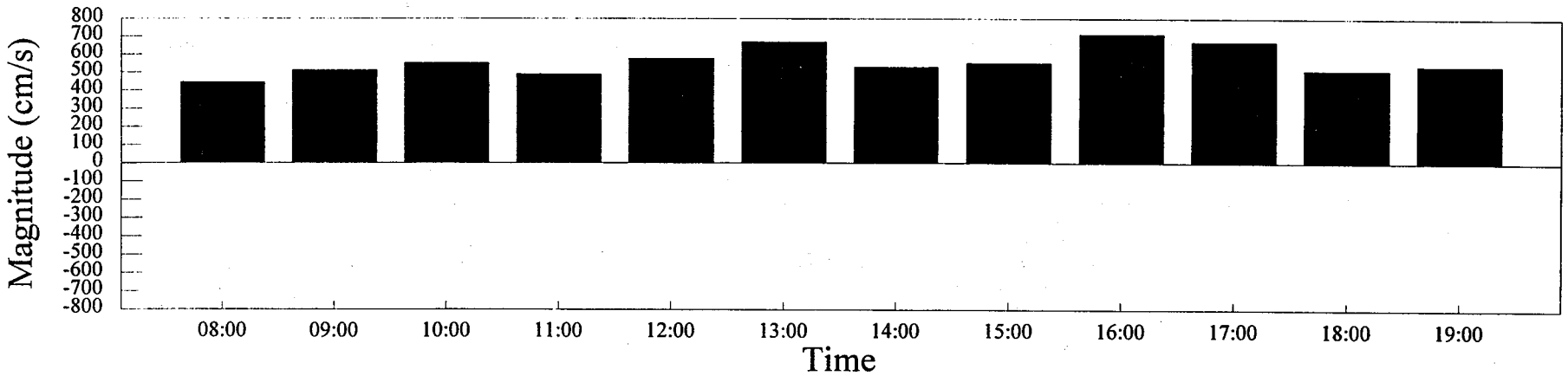
North-South



north is positive
south is negative

Wind Velocities 5/30/95

East-West

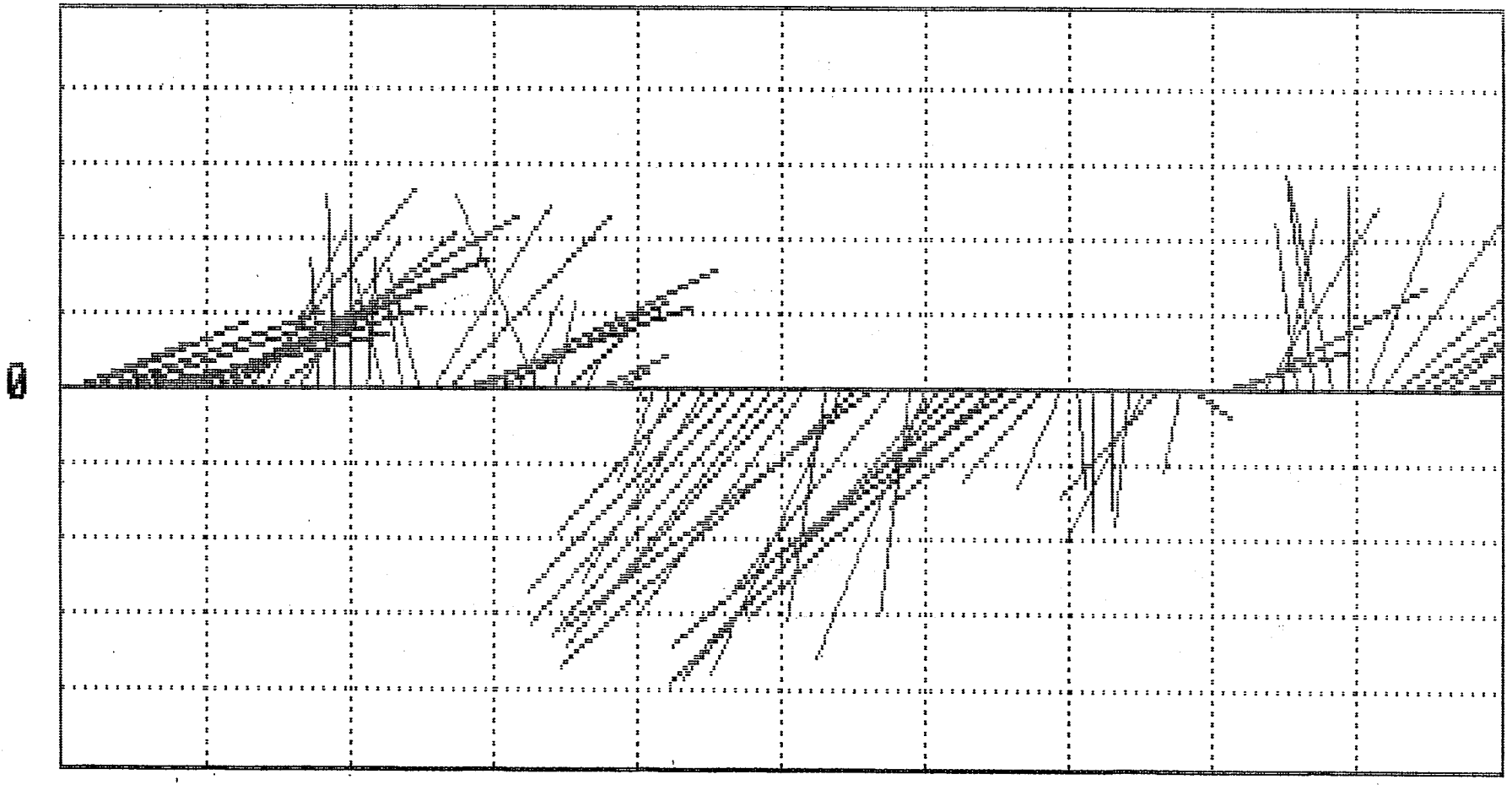


east is positive
west is negative

CEDAR CREEK

InterOcean Systems, Inc.
METER237
Samples averaged : 1

Model S4 Current Meter #05451237
File : CEDCK237.S4B
Mean : 49.11

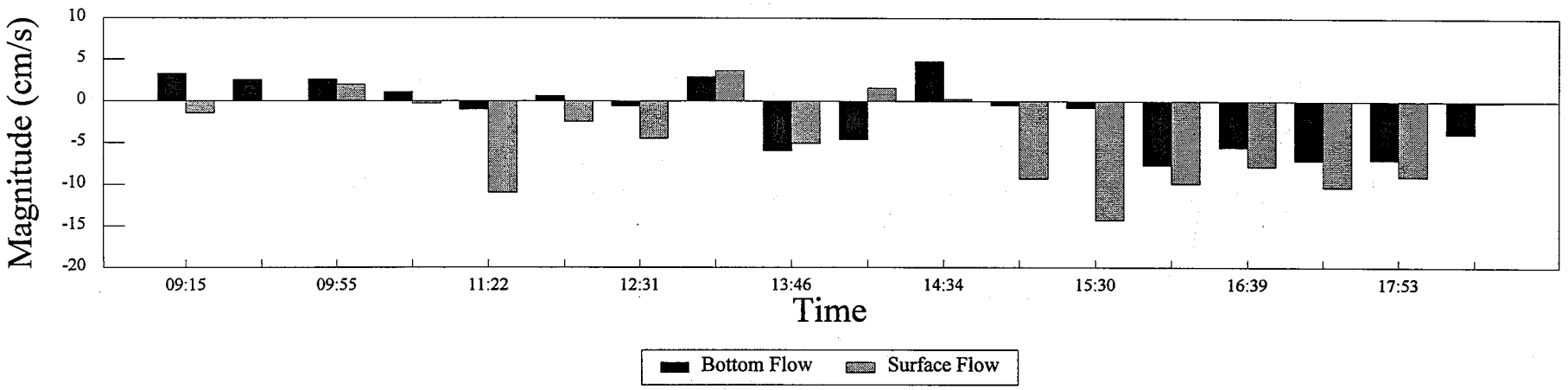


Samples 3785 - 3870 4.0cm/s/div

5/30/95 07:27:00 5/30/95 21:37:00

Cedar Creek 5/30/95 (west)

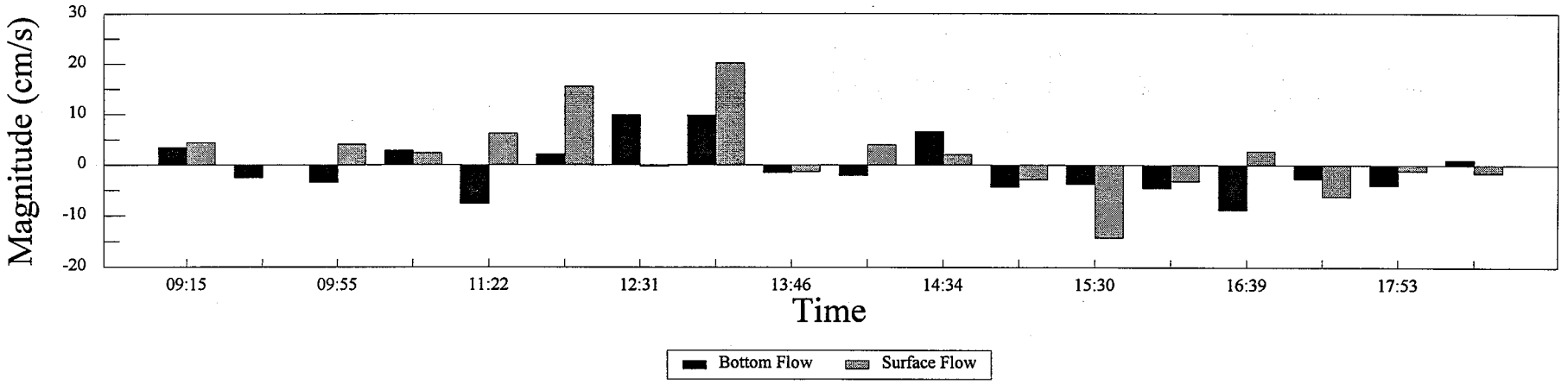
North-South Flow



north is positive
south is negative

Cedar Creek 5/30/95 (west)

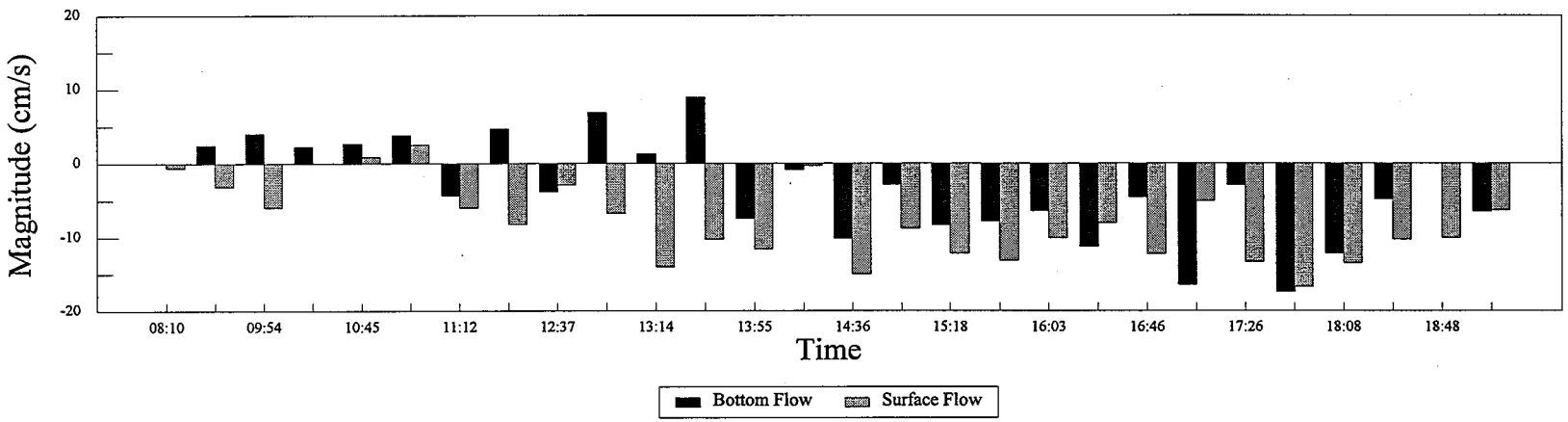
East-West Flow



east is positive
west is negative

Cedar Creek 5/30/95 (east)

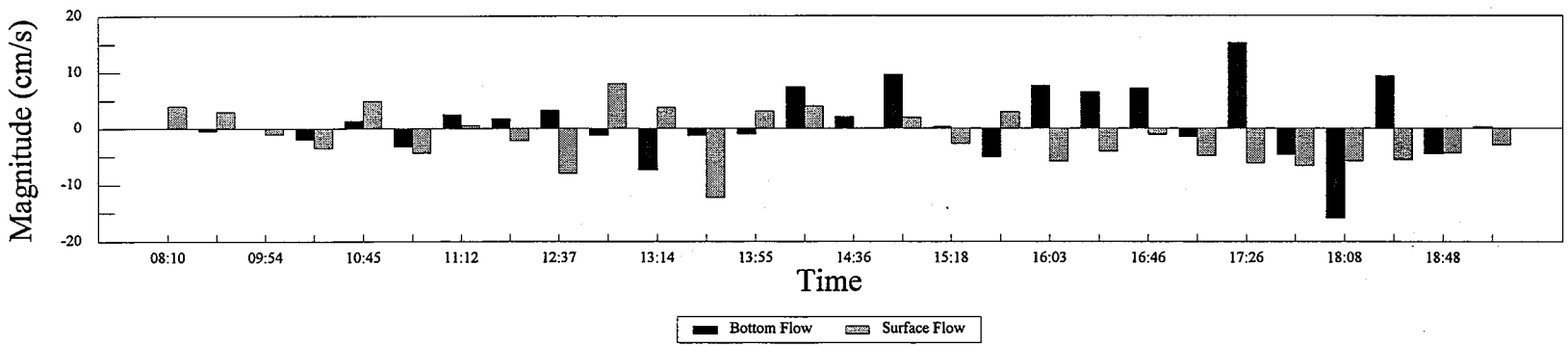
North-South Flow



north is positive
south is negative

Cedar Creek 5/30/95 (east)

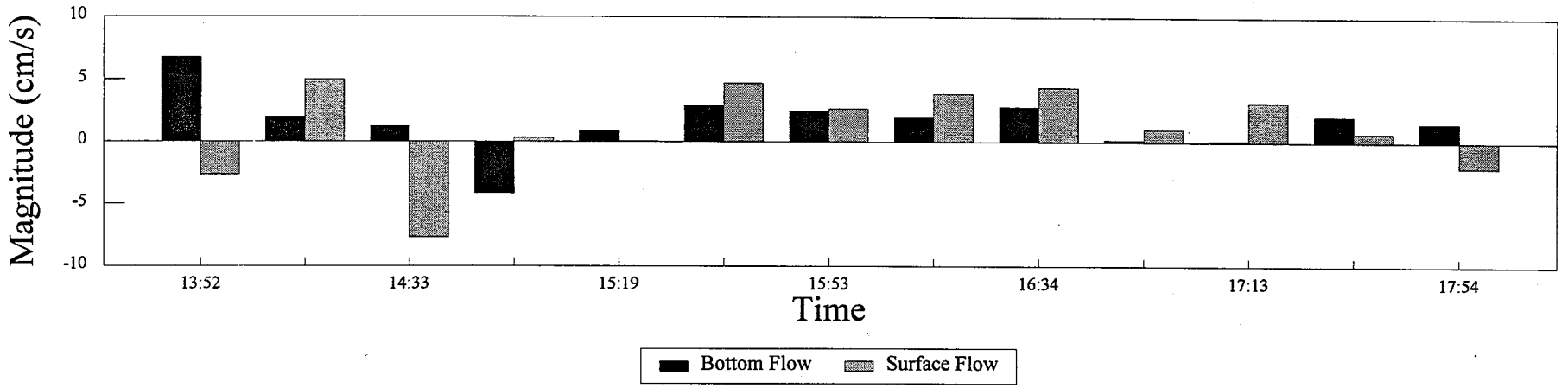
East-West Flow



east is positive
west is negative

Silver Bay 6/1/95

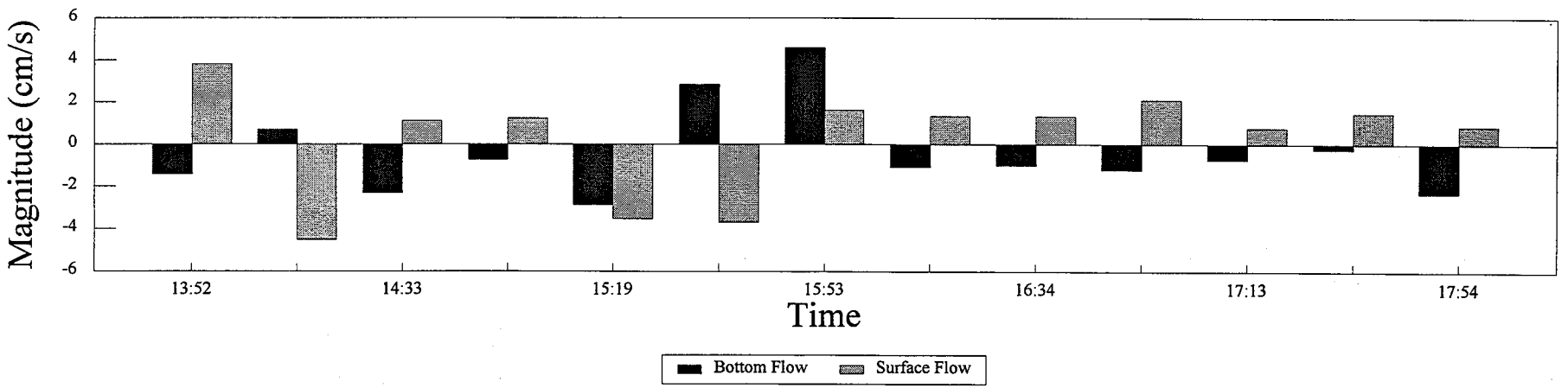
North-South Flow



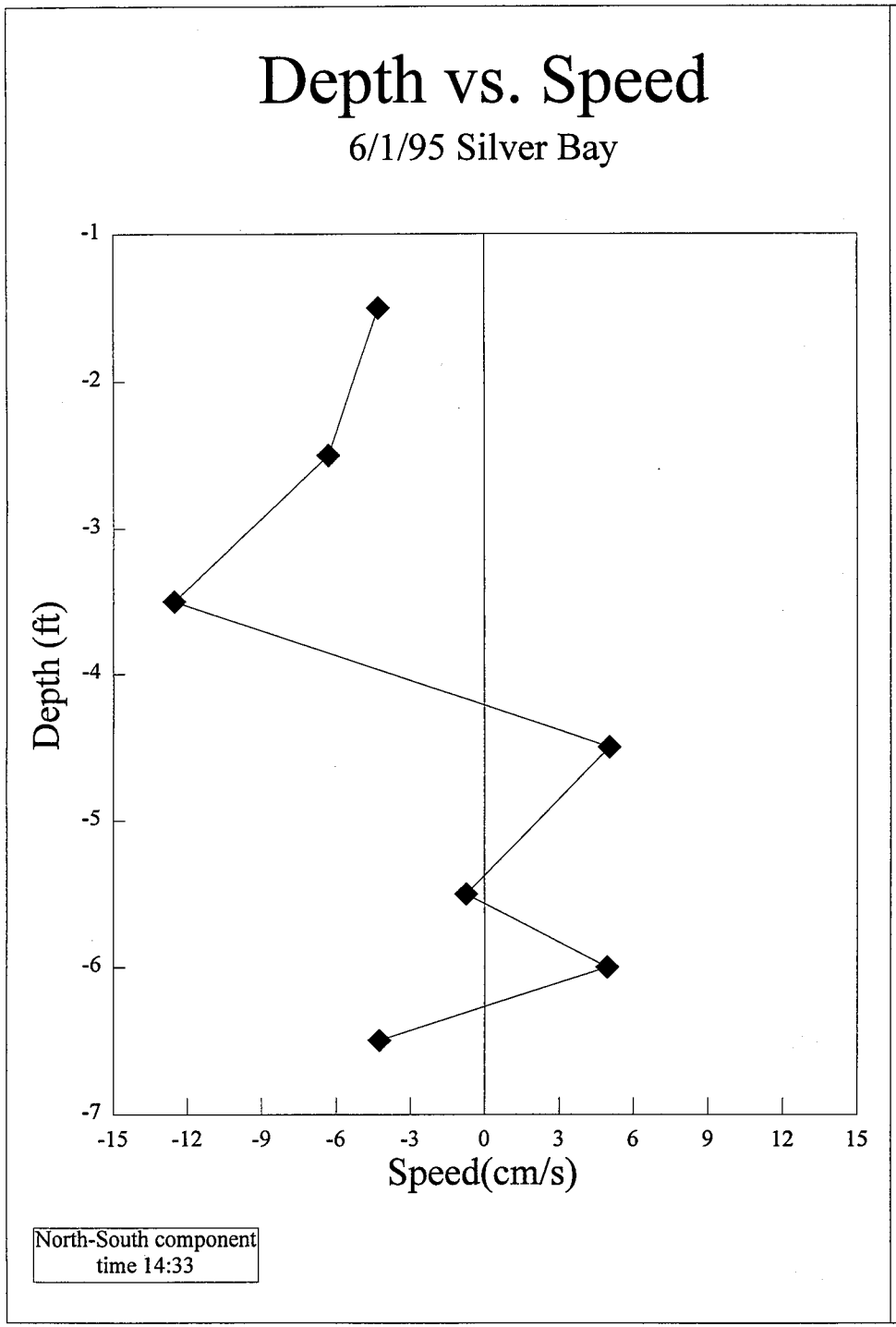
north is positive
south is negative

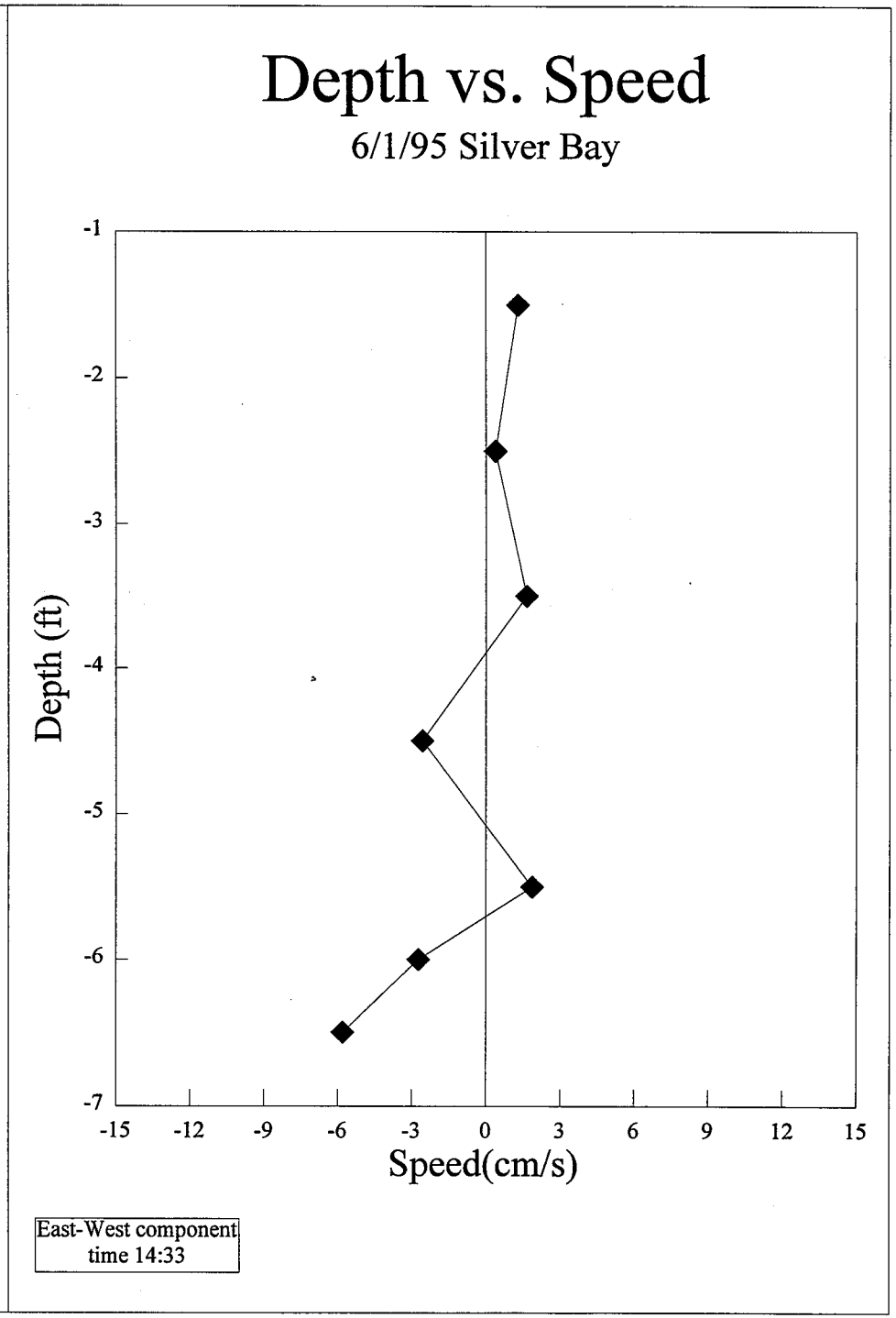
Silver Bay 6/1/95

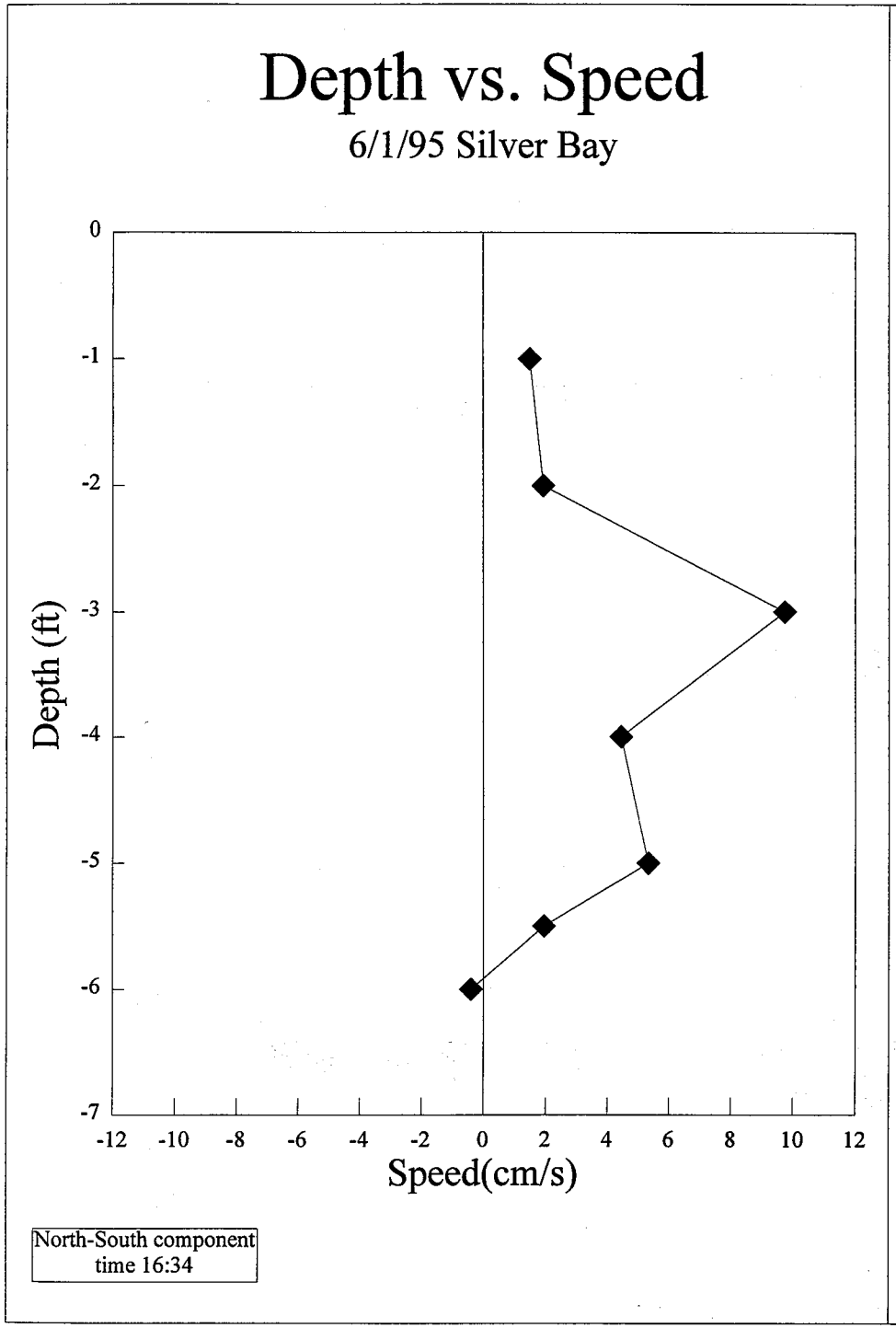
East-West Flow

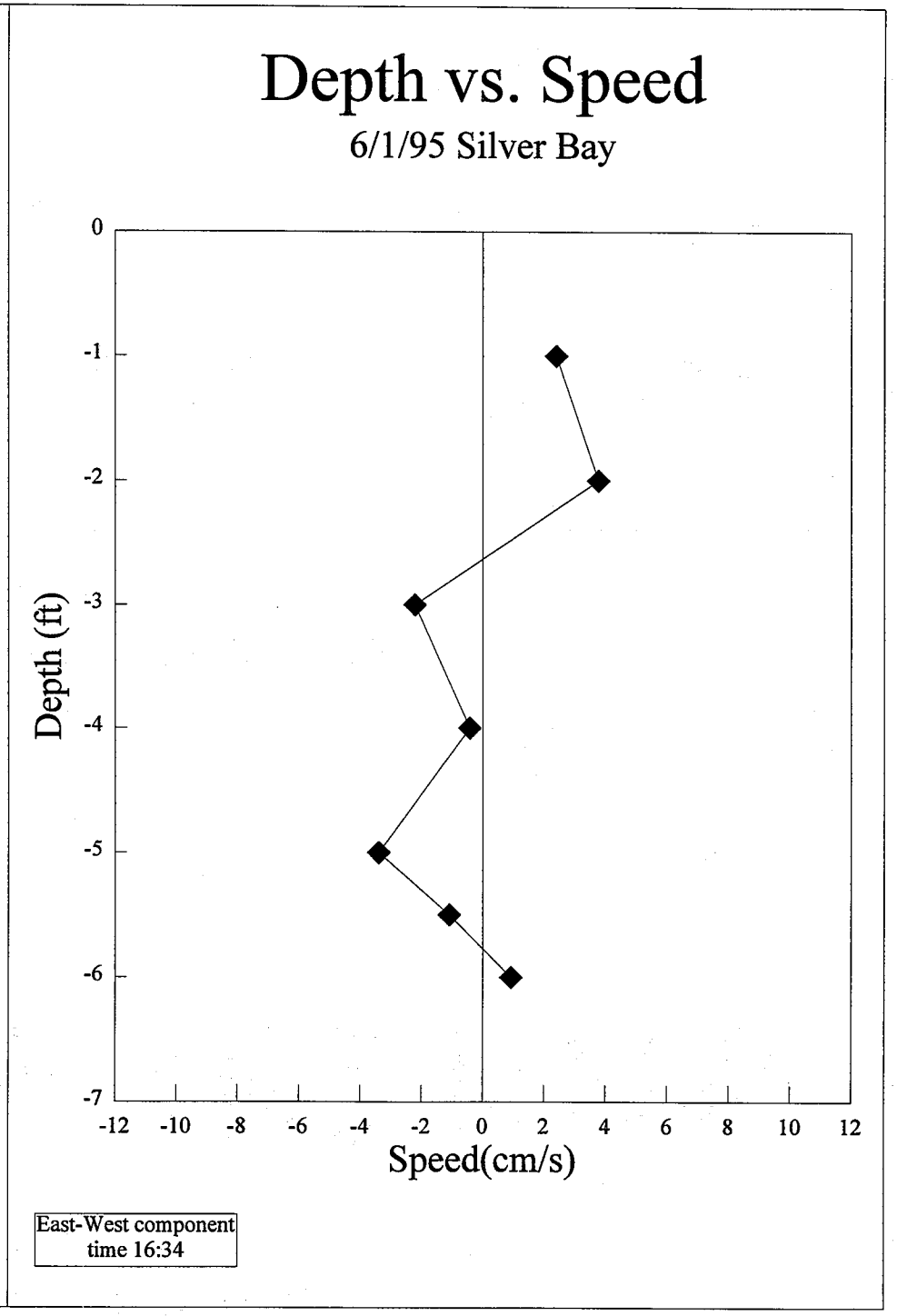


east is positive
west is negative


Depth vs. Speed
6/1/95 Silver Bay
Depth (ft)
-1
-2
-3
-4
-5
-6
-7
-15
-12
-9
-6
-3
0
3
6
9
12
15
Speed(cm/s)
North-South component
time 14:33

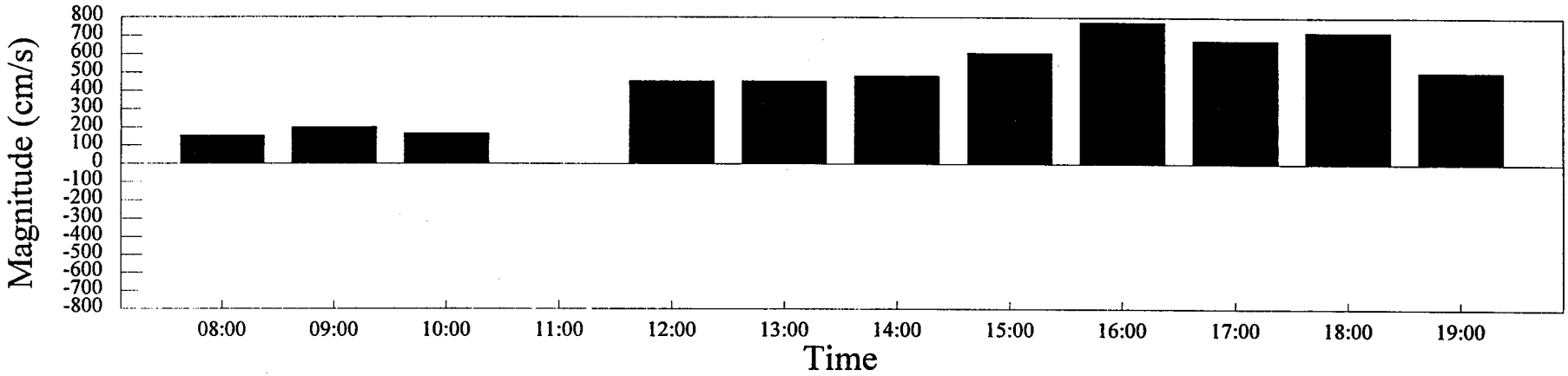

Depth vs. Speed
6/1/95 Silver Bay
Depth (ft)
-1
-2
-3
-4
-5
-6
-7
-15
-12
-9
-6
-3
0
3
6
9
12
15
Speed(cm/s)
East-West component
time 14:33


Depth vs. Speed
6/1/95 Silver Bay
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-7
-12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12
Speed(cm/s)
North-South component
time 16:34


Depth vs. Speed
6/1/95 Silver Bay
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-7
-12 -10 -8 -6 -4 -2 0 2 4 6 8 10 12
Speed(cm/s)
East-West component
time 16:34

Wind Velocities 6/1/95

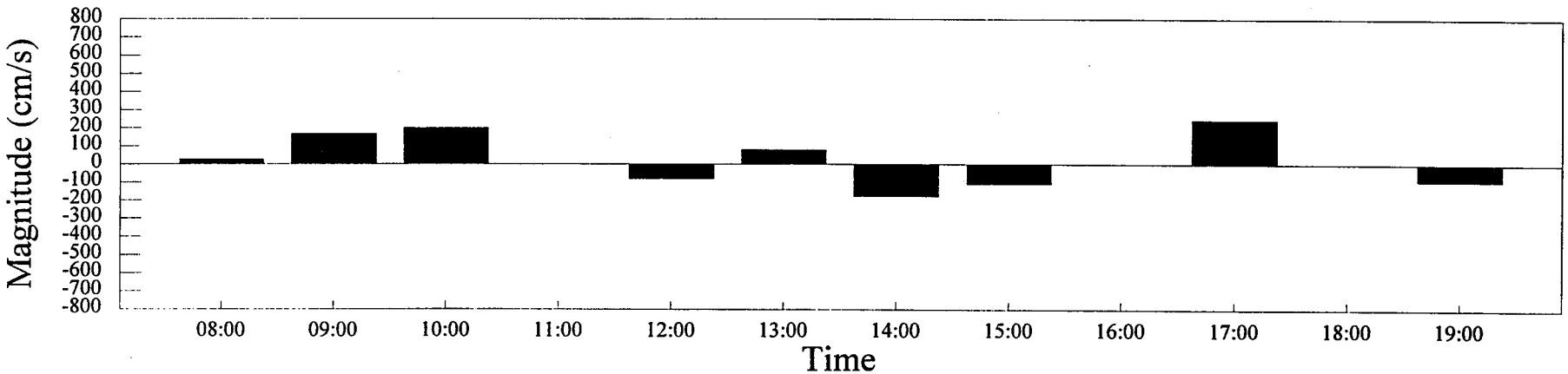
North-South



north is positive
south is negative

Wind Velocities 6/1/95

East-West

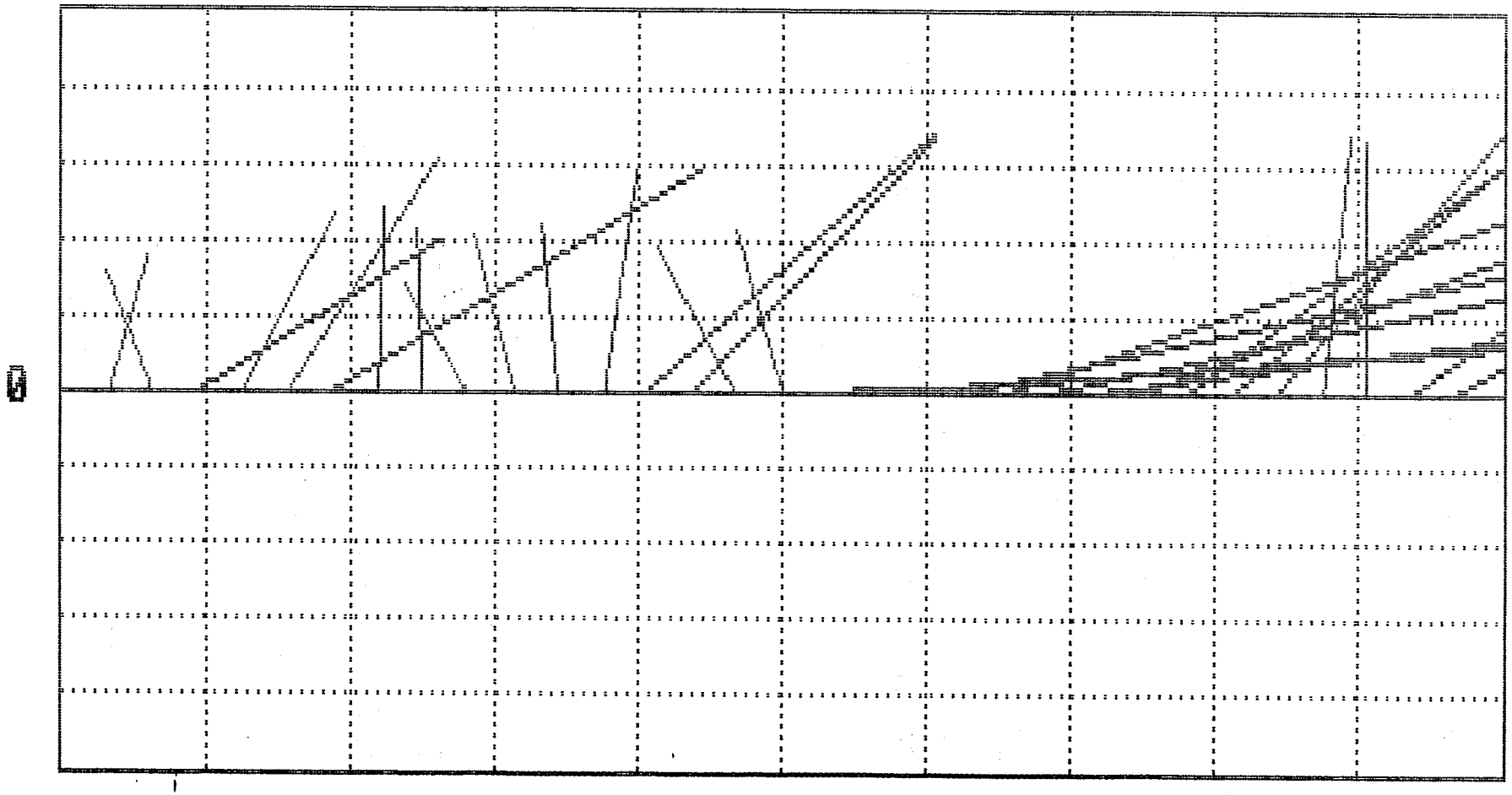


east is positive
west is negative

MANTOLOKING

InterOcean Systems, Inc.
METER239
Samples averaged : 1

Model S4 Current Meter #05451239
File : MANT239.S4B
Mean : 38.10

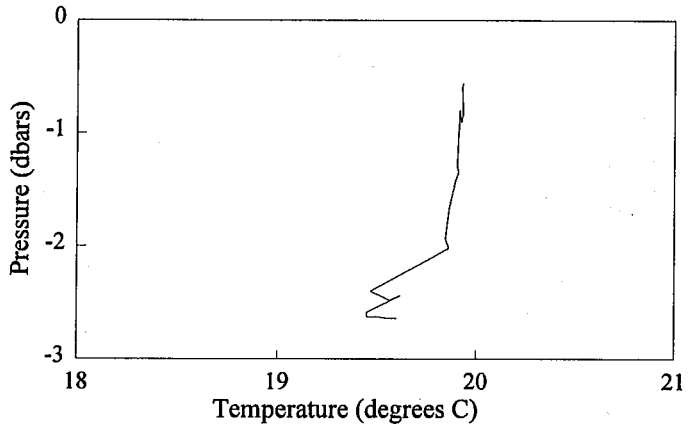


Samples 4111 - 4143 5.0cm/s/div

6/01/95 12:57:00 6/01/95 18:17:00

Cedar Creek Transect 5/30/95

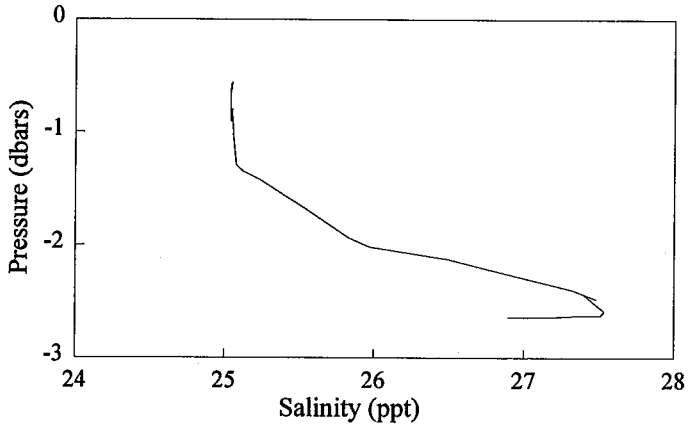
Cast 0



Latitude 39:51.48
Longitude 74:06.53

Cedar Creek Transect 5/30/95

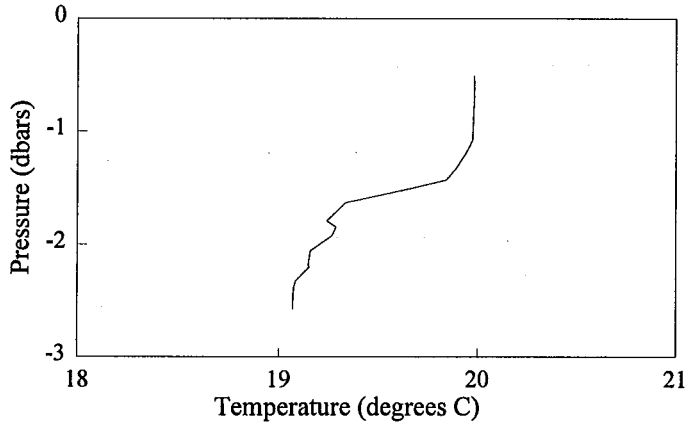
Cast 0



Time 9:59
Local

Cedar Creek Transect 5/30/95

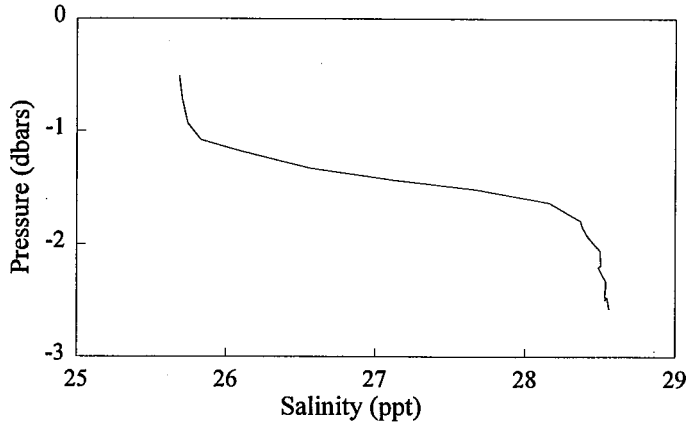
Cast 1



Latitude 39:51.63
Longitude 74:06.85

Cedar Creek Transect 5/30/95

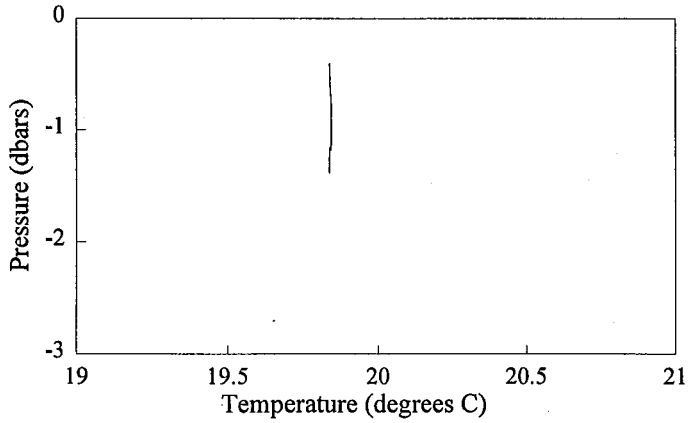
Cast 1



Time 10:14
Local

Cedar Creek Transect 5/30/95

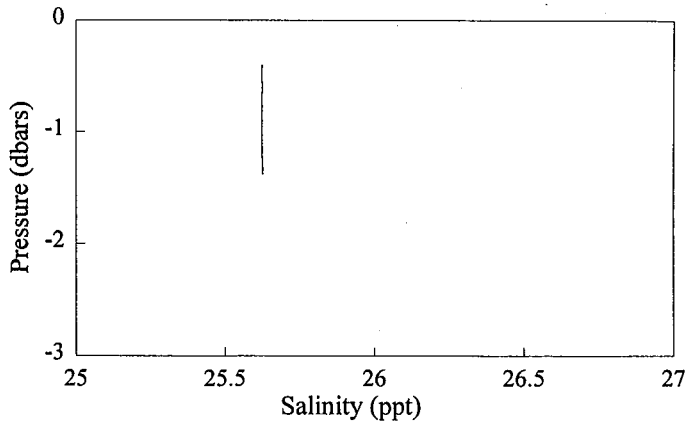
Cast 3



Latitude 39:51.23
Longitude 74:05.89

Cedar Creek Transect 5/30/95

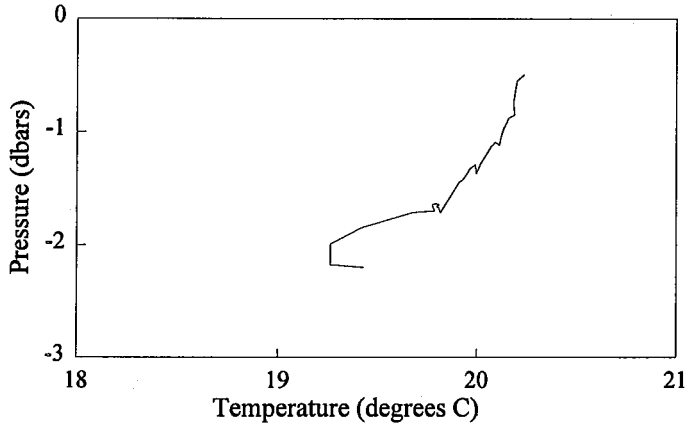
Cast 3



Time 10:35
Local

Cedar Creek Transect 5/30/95

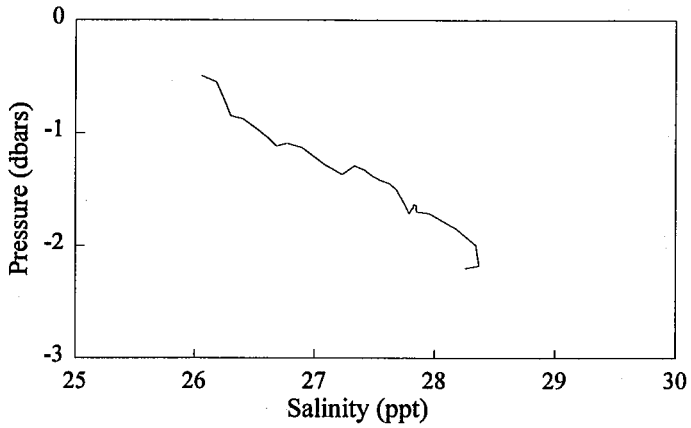
Cast 4



Latitude 39:51:63
Longitude 74:05.92

Cedar Creek Transect 5/30/95

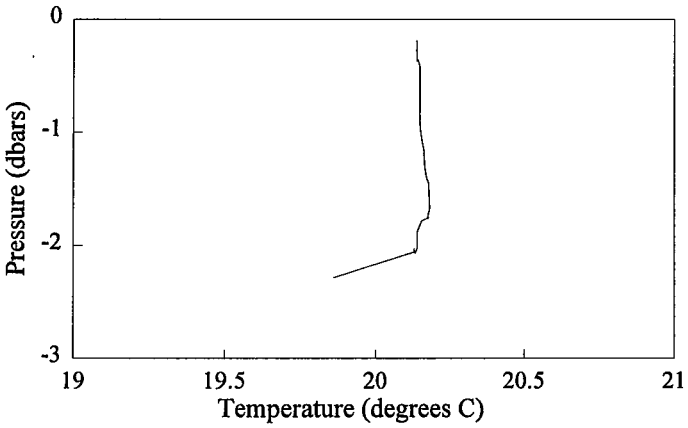
Cast 4



Time 11:41
Local

Cedar Creek Transect 5/30/95

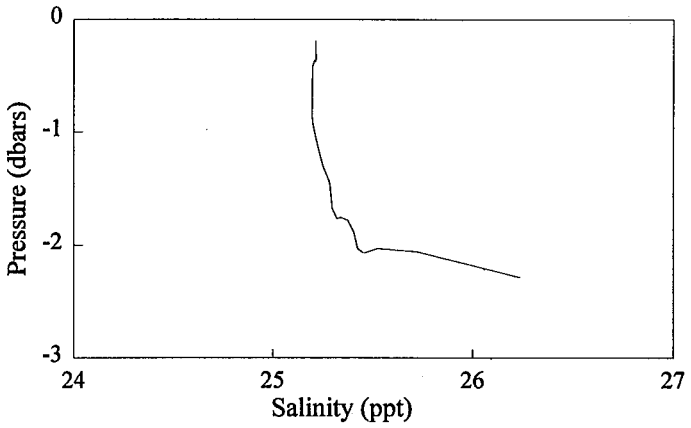
Cast 5



Latitude 39:51:47
Longitude 74:06.49

Cedar Creek Transect 5/30/95

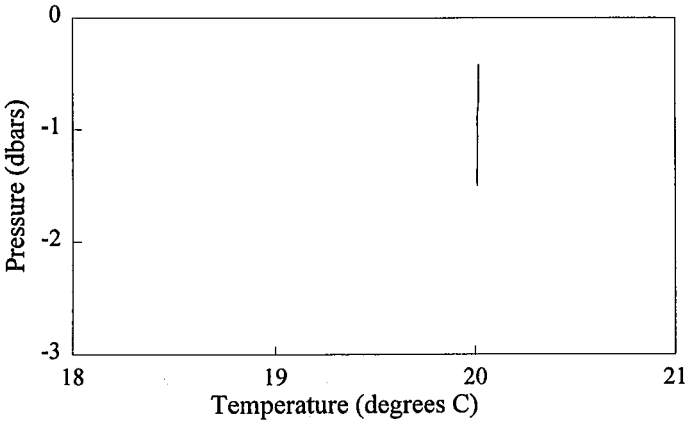
Cast 5



Time 11:45
Local

Cedar Creek Transect 5/30/95

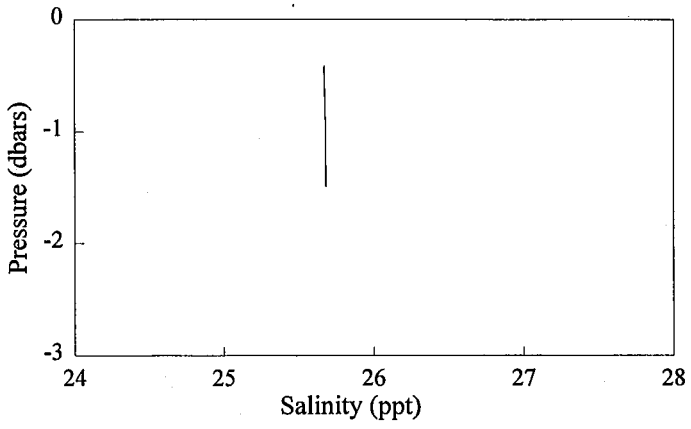
Cast 6



Latitude 39:51.25
Longitude 74:05.90

Cedar Creek Transect 5/30/95

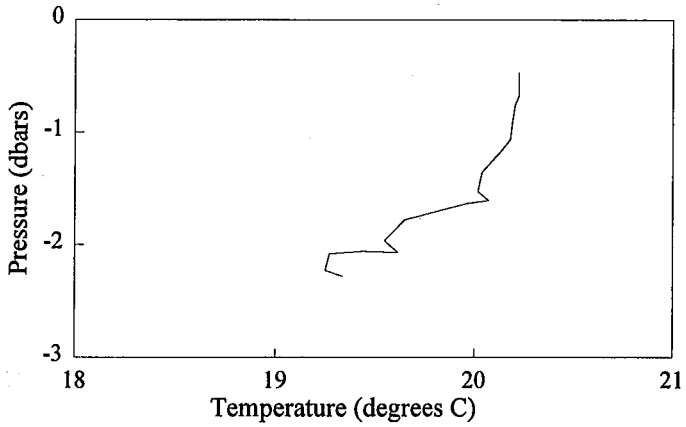
Cast 6



Time 11:51
Local

Cedar Creek Transect 5/30/95

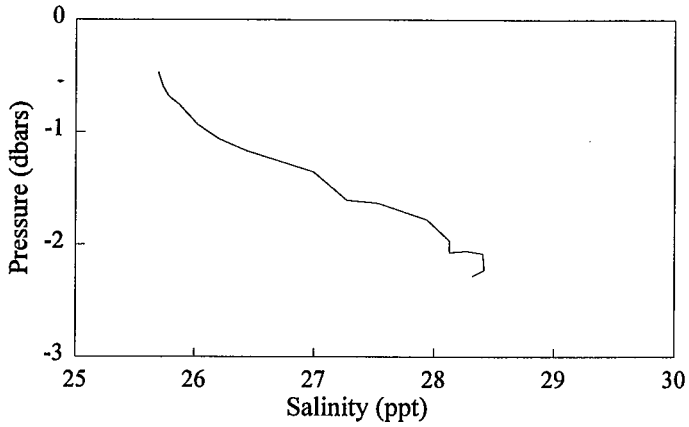
Cast 7



Latitude 39:51.64
Longitude 74:06.89

Cedar Creek Transect 5/30/95

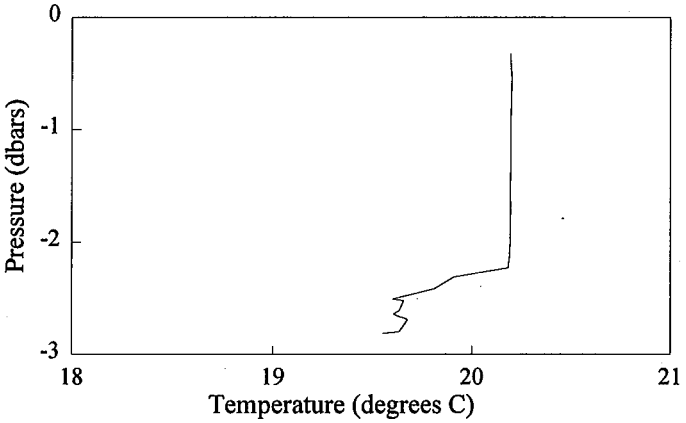
Cast 7



Time 12:39
Local

Cedar Creek Transect 5/30/95

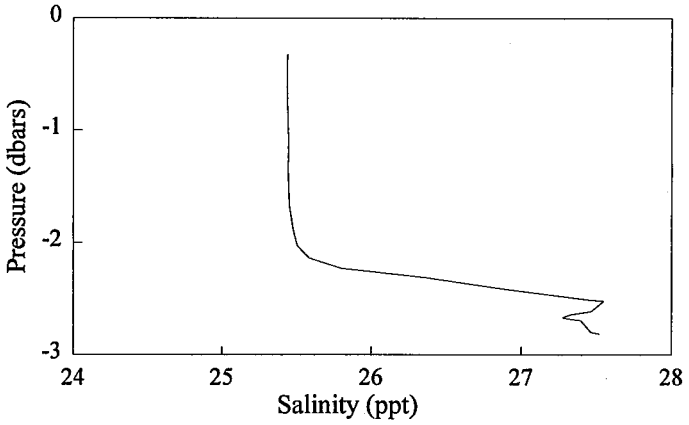
Cast 8



Latitude 39:51.47
Longitude 74:06.46

Cedar Creek Transect 5/30/95

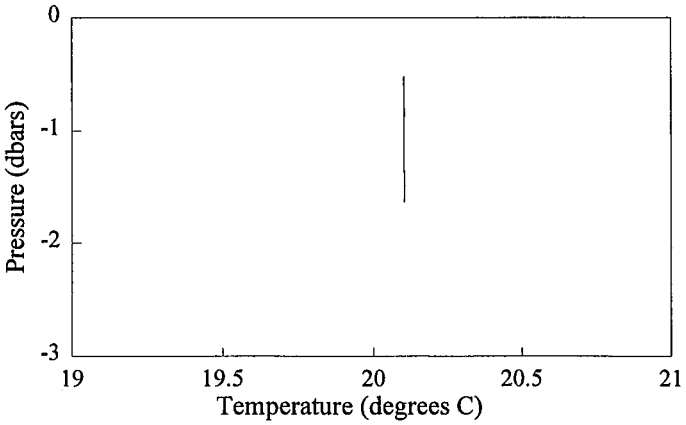
Cast 8



Time 12:44
Local

Cedar Creek Transect 5/30/95

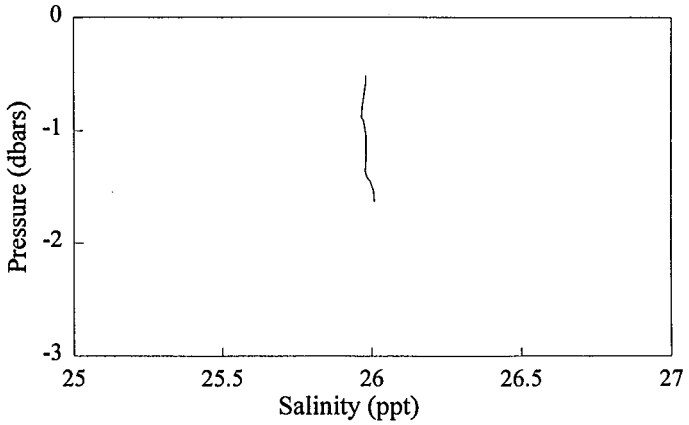
Cast 9



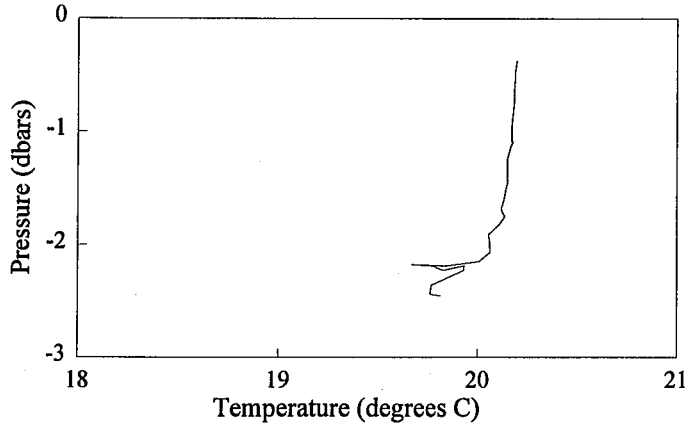
Latitude 39:51.27
Longitude 74:05.92

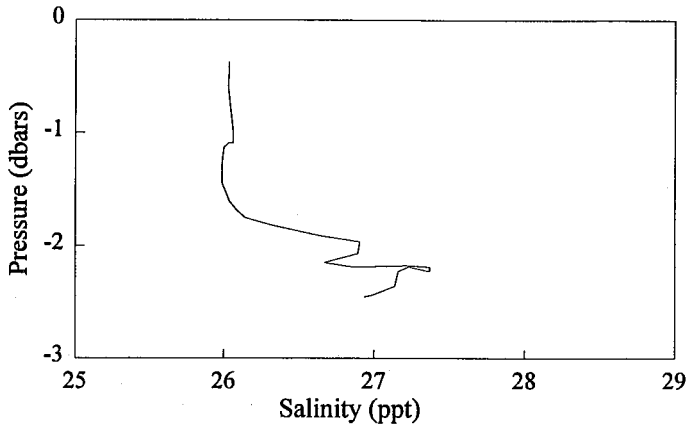
Cedar Creek Transect 5/30/95

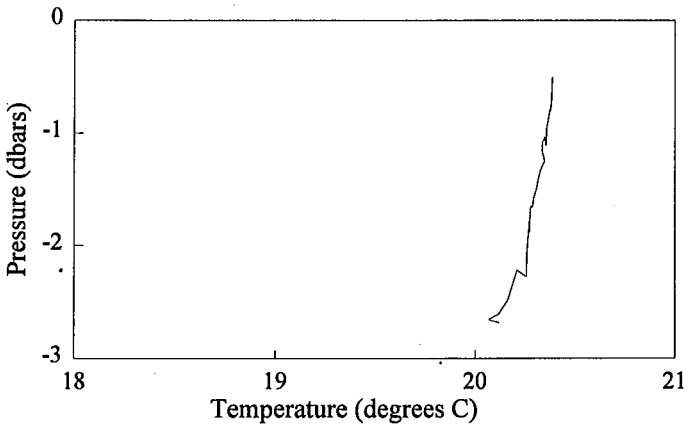
Cast 9

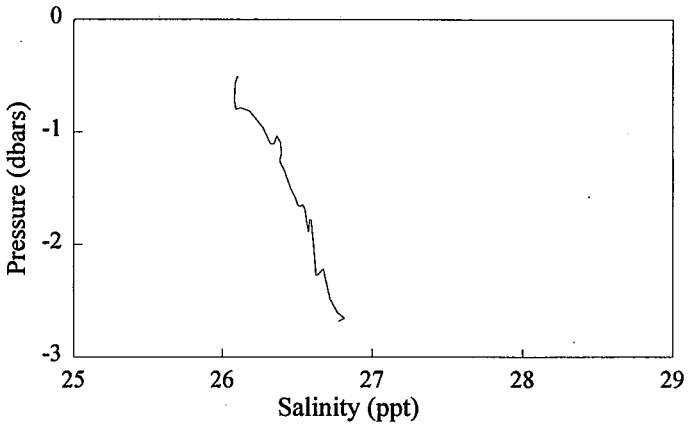


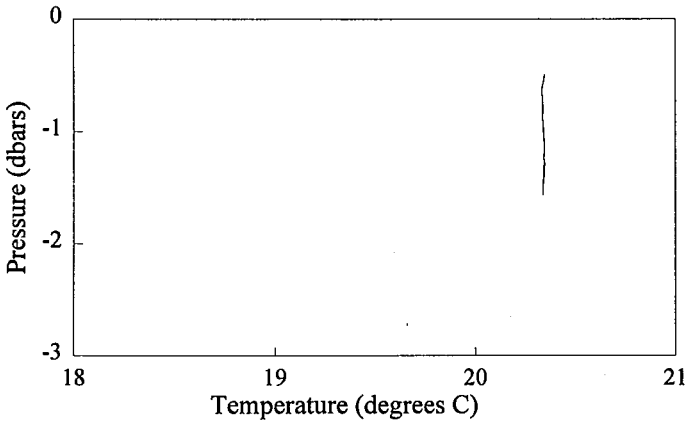
Time 12:49
Local

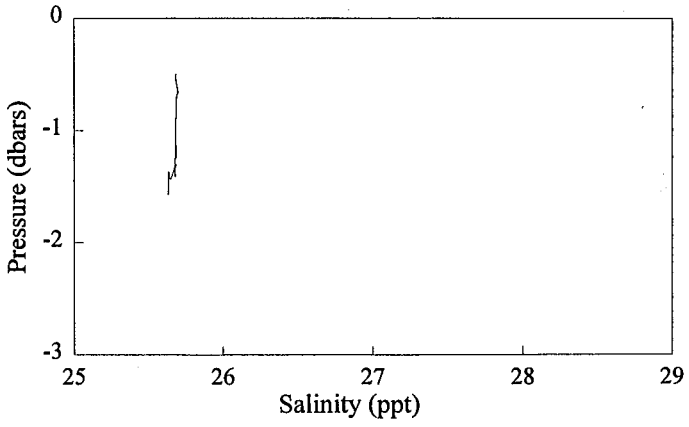

Cedar Creek Transect 5/30/95
Cast 10
Pressure (dbars)
0
-1
-2
-3
18
19
20
21
Temperature (degrees C)
Latitude 39:51.63
Longitude 74:06.90


Cedar Creek Transect 5/30/95
Cast 10
Pressure (dbars)
0
-1
-2
-3
25
26
27
28
29
Salinity (ppt)
Time 14:19
Local


Cedar Creek Transect 5/30/95
Cast 11
Pressure (dbars)
0
-1
-2
-3
18
19
20
21
Temperature (degrees C)
Latitude 39:51.46
Longitude 74:06.51

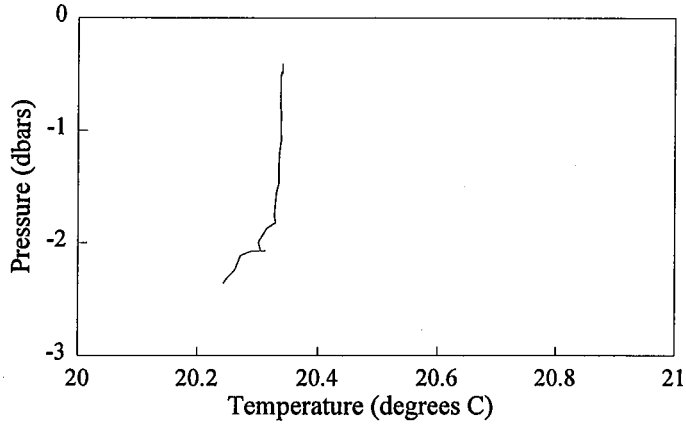

Cedar Creek Transect 5/30/95
Cast 11
Pressure (dbars)
0
-1
-2
-3
25
26
27
28
29
Salinity (ppt)
Time 14:23
Local


Cedar Creek Transect 5/30/95
Cast 12
Pressure (dbars)
0
-1
-2
-3
18
19
20
21
Temperature (degrees C)
Latitude 39:51.26
Longitude 74:05.92


Cedar Creek Transect 5/30/95
Cast 12
Pressure (dbars)
0
-1
-2
-3
25
26
27
28
29
Salinity (ppt)
Time 14:30
Local

Cedar Creek Transect 5/30/95

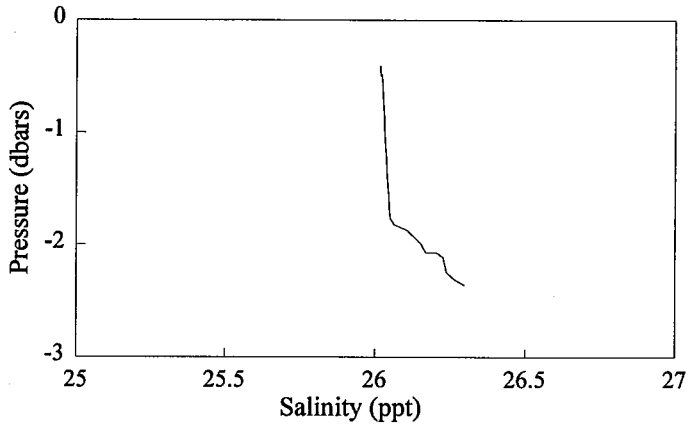
Cast 13



Latitude 39:51.62
Longitude 74:06.89

Cedar Creek Transect 5/30/95

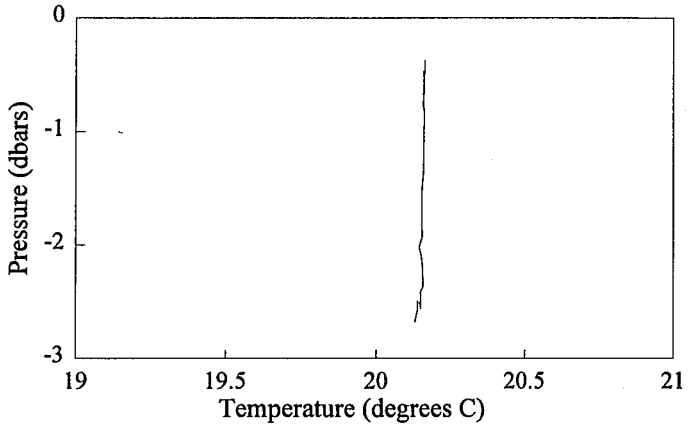
Cast 13



Time 16:42
Local

Cedar Creek Transect 5/30/95

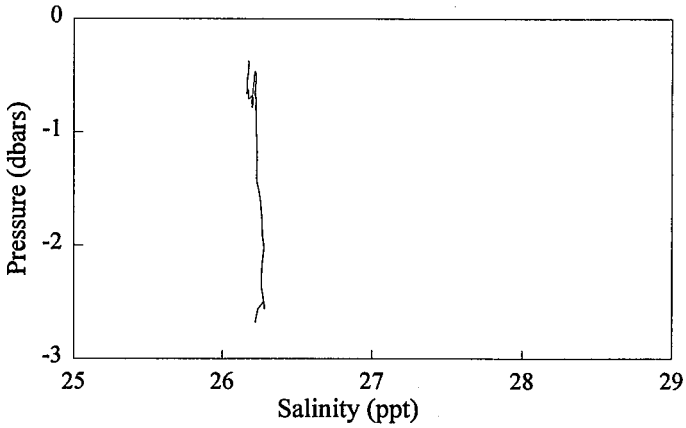
Cast 14



Latitude 39:51.47
Longitude 74:06.49

Cedar Creek Transect 5/30/95

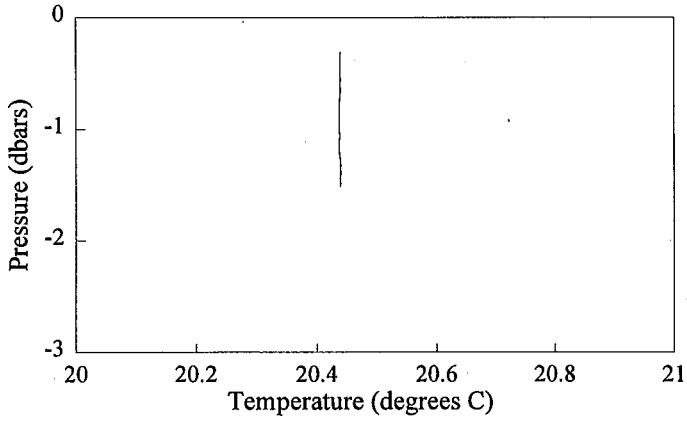
Cast 14



Time 16:47
Local

Cedar Creek Transect 5/30/95

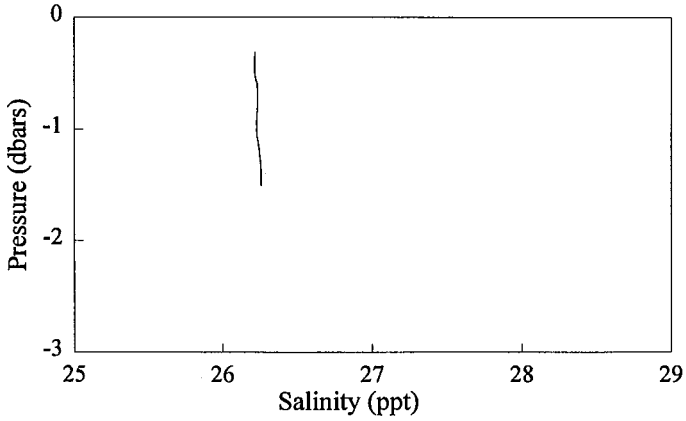
Cast 15



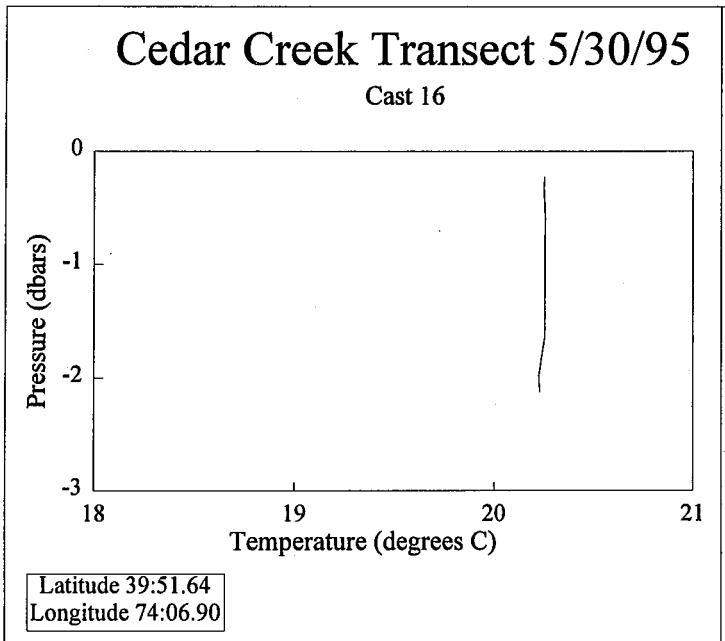
Latitude 39:51.25
Longitude 74:05.91

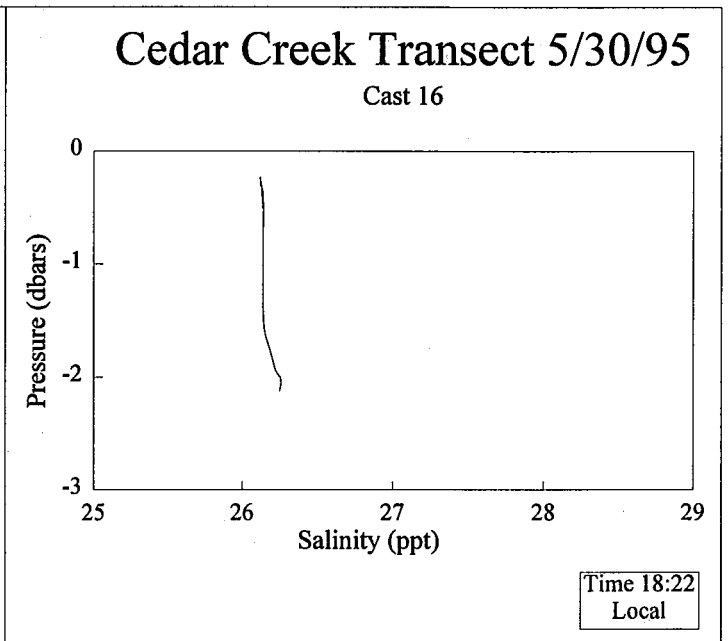
Cedar Creek Transect 5/30/95

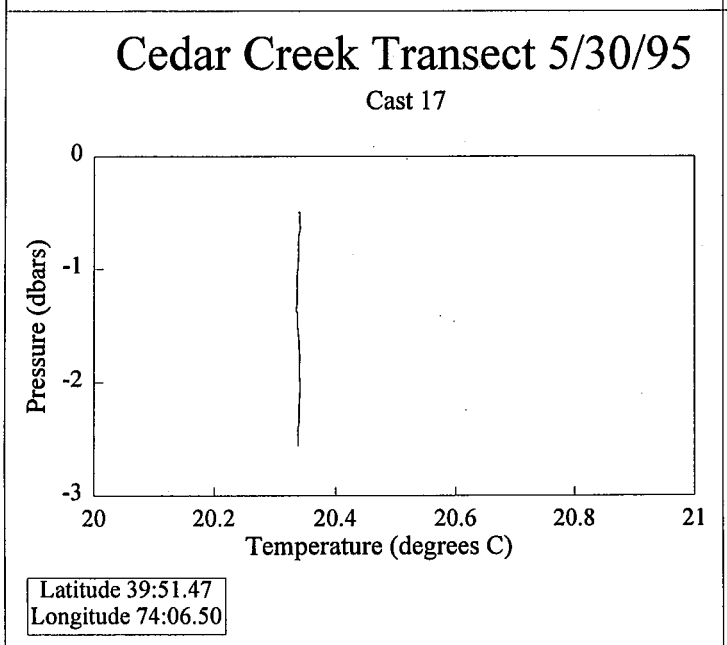
Cast 15

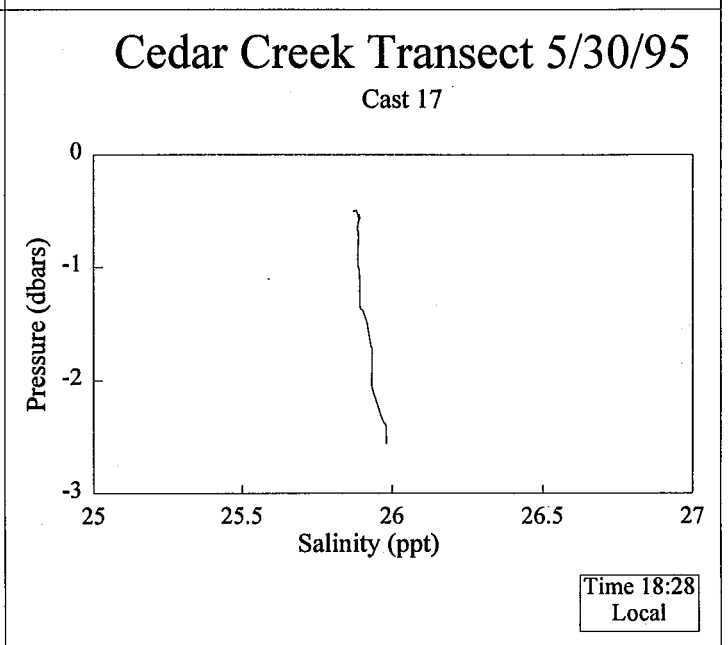


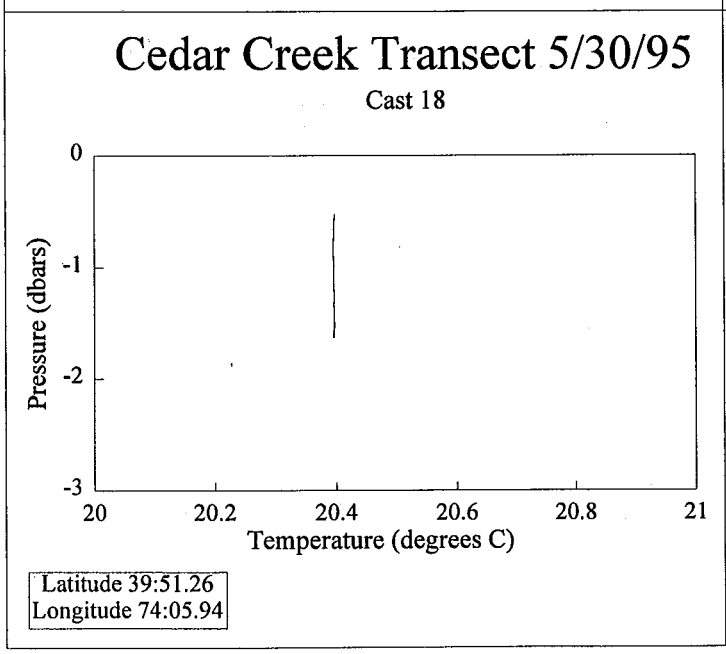
Time 16:51
Local

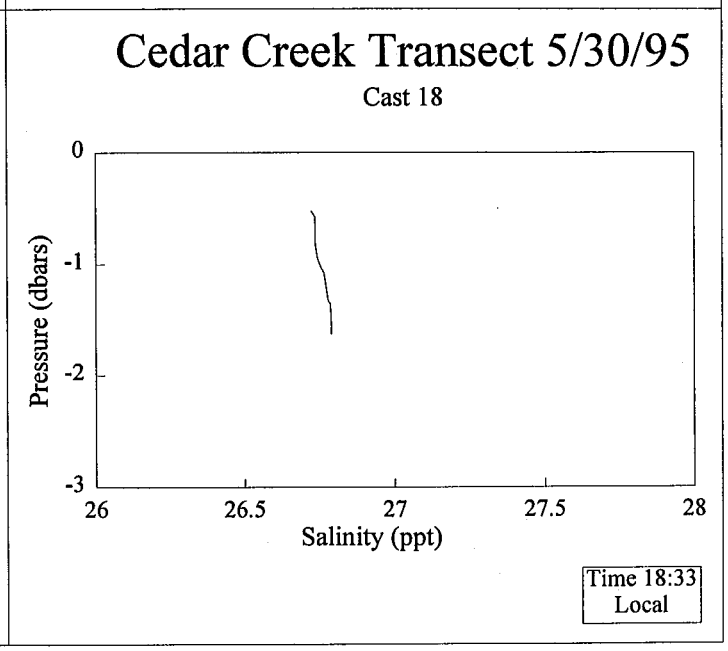

Cedar Creek Transect 5/30/95
Cast 16
Pressure (dbars)
0
-1
-2
-3
18
19
20
21
Temperature (degrees C)
Latitude 39:51.64
Longitude 74:06.90


Cedar Creek Transect 5/30/95
Cast 16
Pressure (dbars)
0
-1
-2
-3
25
26
27
28
29
Salinity (ppt)
Time 18:22
Local


Cedar Creek Transect 5/30/95
Cast 17
Pressure (dbars)
0
-1
-2
-3
20
20.2
20.4
20.6
20.8
21
Temperature (degrees C)
Latitude 39:51.47
Longitude 74:06.50

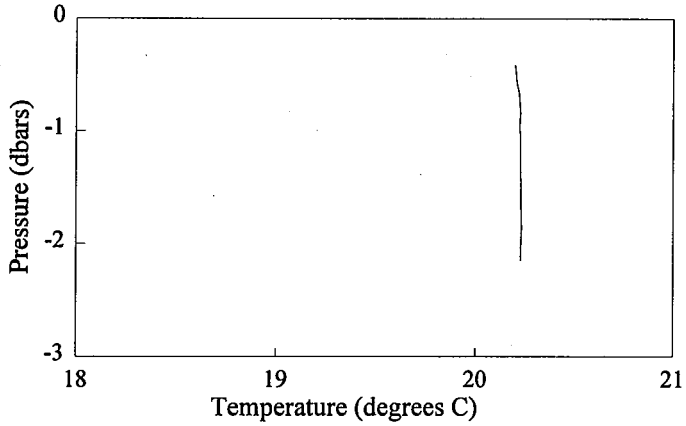

Cedar Creek Transect 5/30/95
Cast 17
Pressure (dbars)
0
-1
-2
-3
25
25.5
26
26.5
27
Salinity (ppt)
Time 18:28
Local


Cedar Creek Transect 5/30/95
Cast 18
Pressure (dbars)
0
-1
-2
-3
20
20.2
20.4
20.6
20.8
21
Temperature (degrees C)
Latitude 39:51.26
Longitude 74:05.94


Cedar Creek Transect 5/30/95
Cast 18
Pressure (dbars)
0
-1
-2
-3
26
26.5
27
27.5
28
Salinity (ppt)
Time 18:33
Local

Cedar Creek Transect 5/30/95

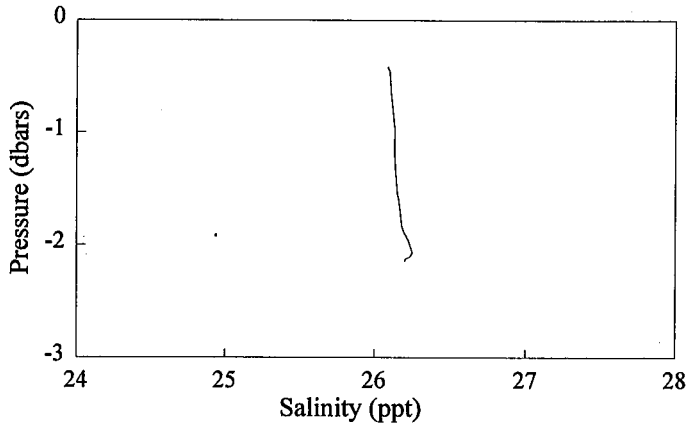
Cast 19



Latitude 39:51.61
Longitude 74:06.90

Cedar Creek Transect 5/30/95

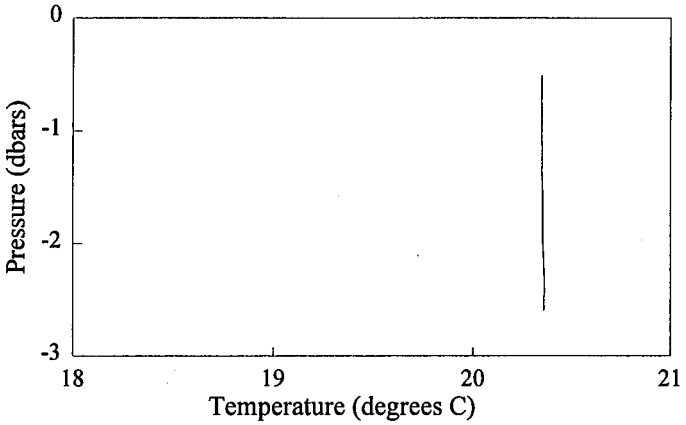
Cast 19



Time 19:00
Local

Cedar Creek Transect 5/30/95

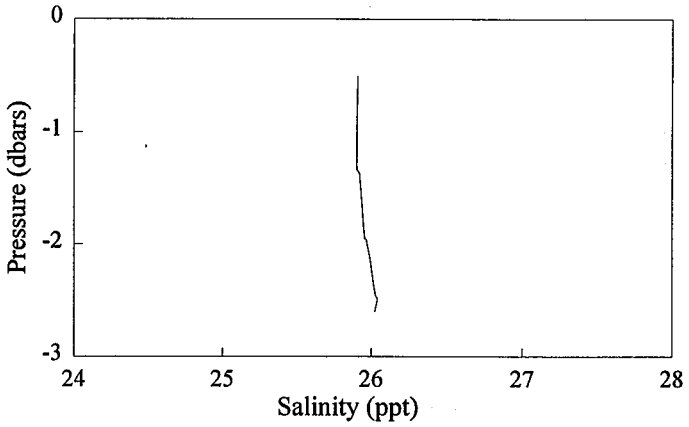
Cast 20



Latitude 39:51.46
Longitude 74:06.50

Cedar Creek Transect 5/30/95

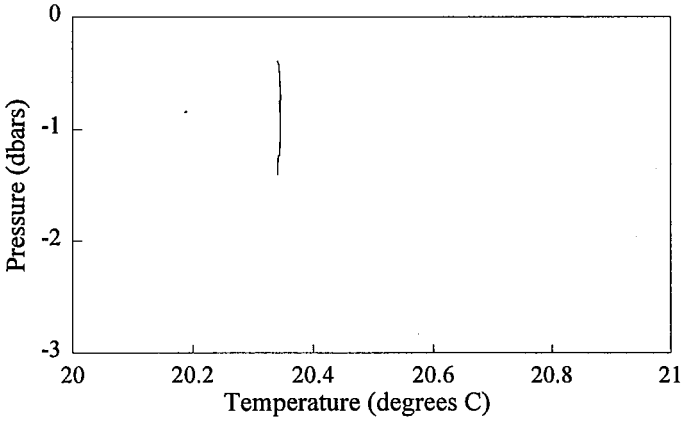
Cast 20



Time 19:06
Local

Cedar Creek Transect 5/30/95

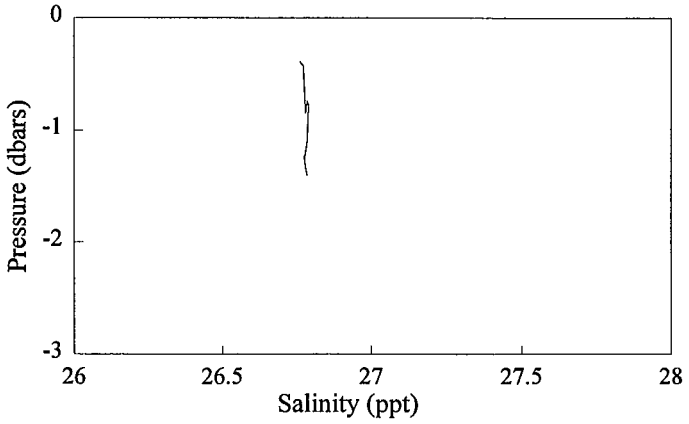
Cast 21



Latitude 39:51.27
Longitude 74:05.92

Cedar Creek Transect 5/30/95

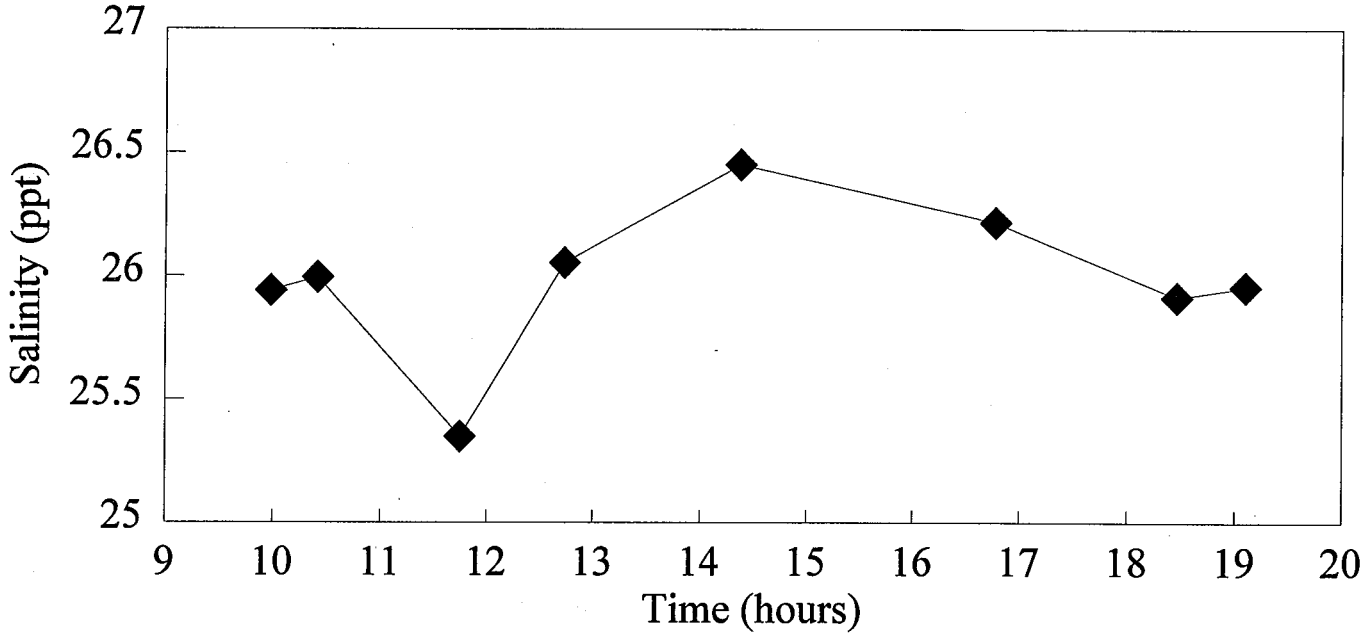
Cast 21



Time 19:10
Local

Salinity vs. Time 5/30/95

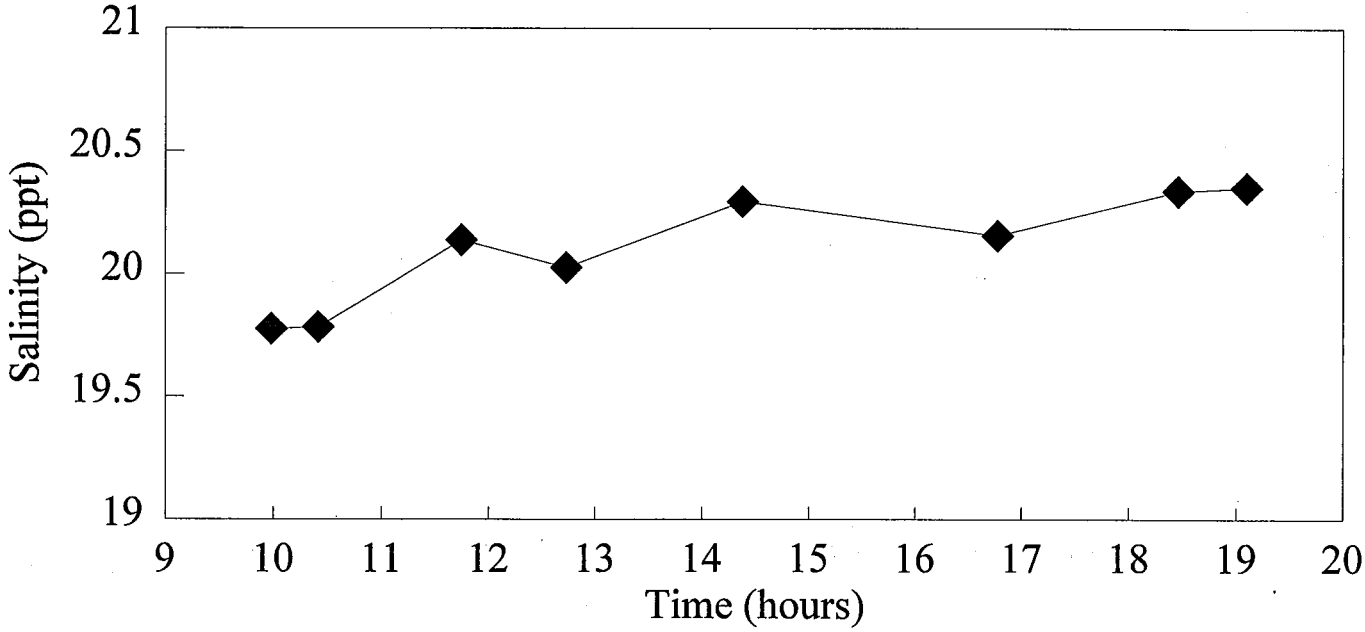
Cedar Creek Center



Latitude 39:51.48
Longitude 74:06.53

Temperature vs. Time 5/30/95

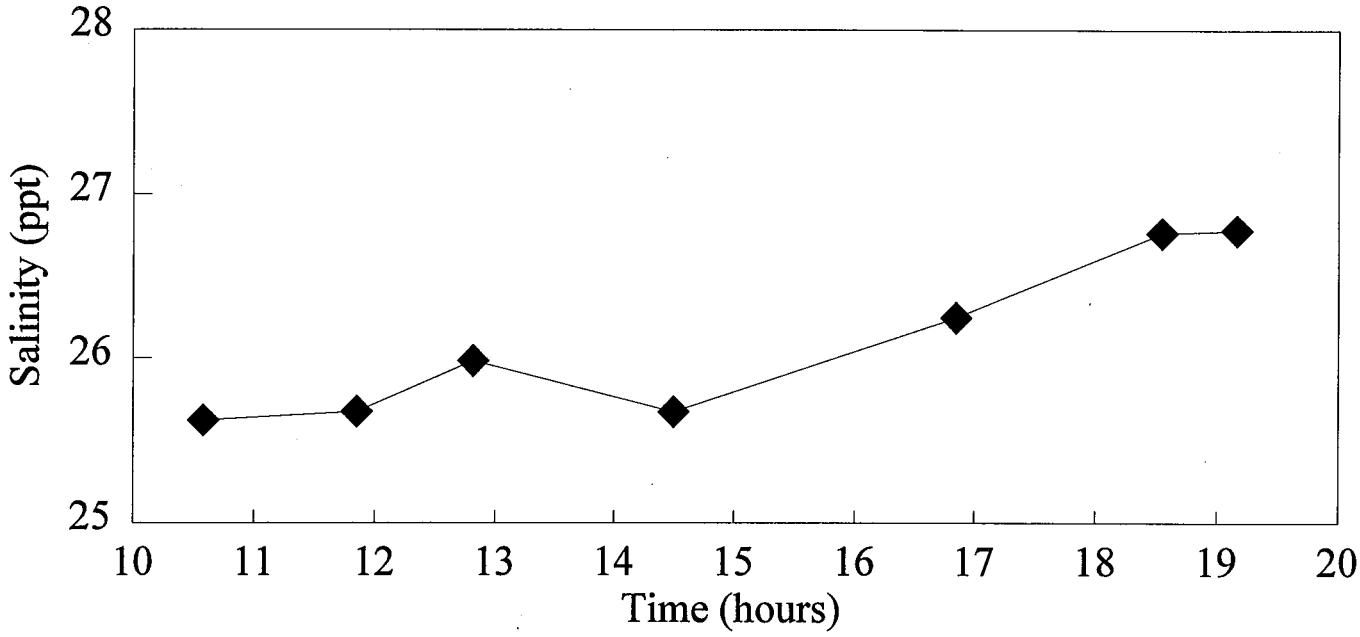
Cedar Creek Center



Latitude 39:51.48
Longitude 74:06.53

Salinity vs. Time 5/30/95

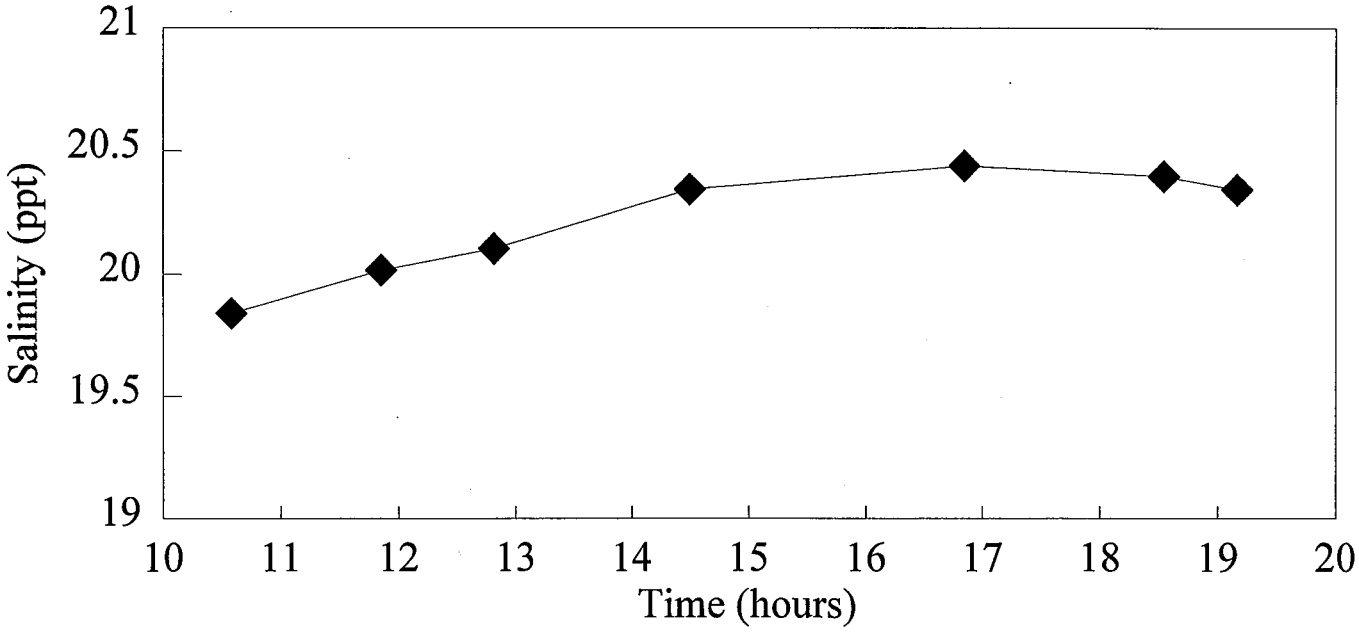
Cedar Creek East



Latitude 39:51.27
Longitude 74:06.92

Temperature vs. Time 5/30/95

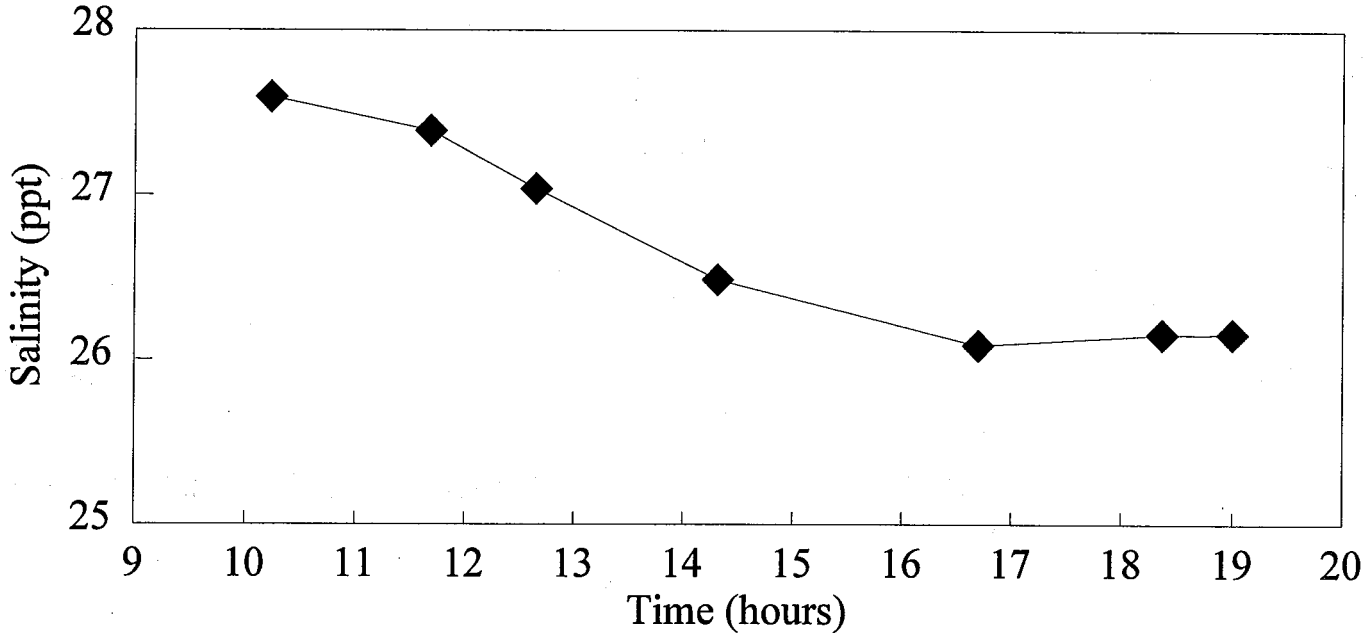
Cedar Creek East



Latitude 39:51.27
Longitude 74:06.92

Salinity vs. Time 5/30/95

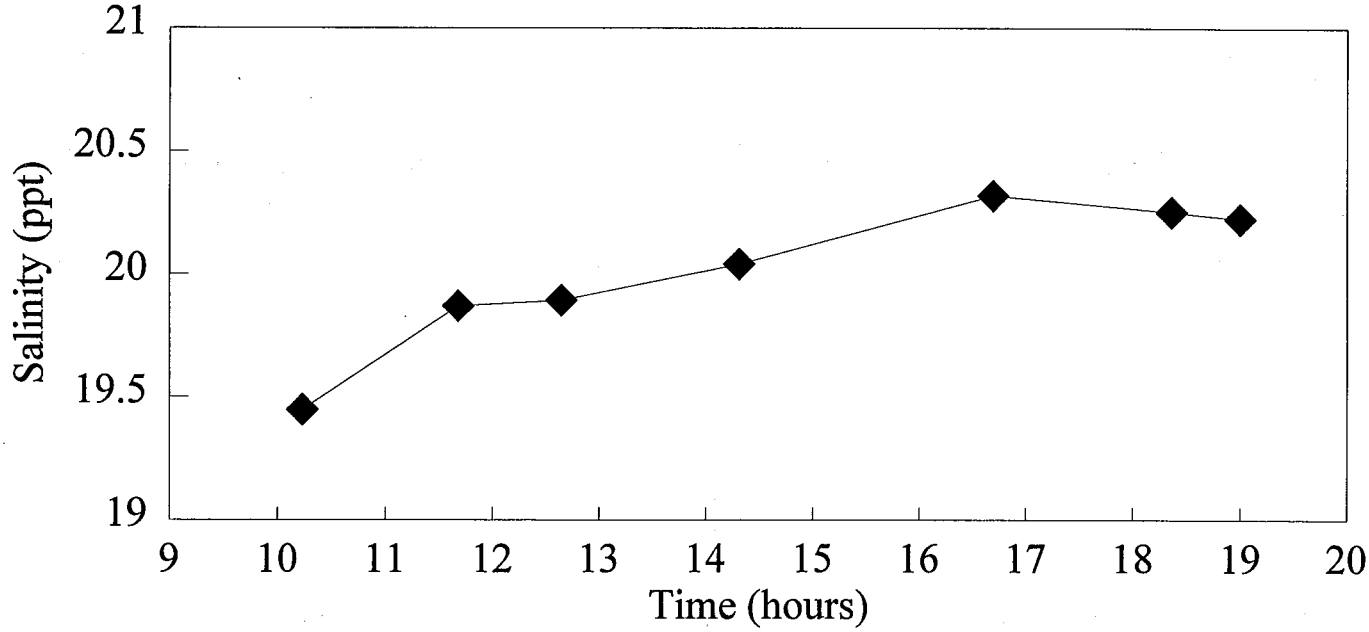
Cedar Creek West



Latitude 39:51.61
Longitude 74:06.90

Temperature vs. Time 5/30/95

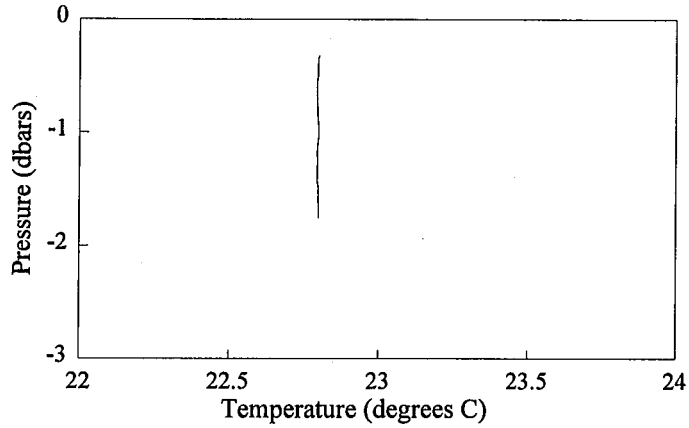
Cedar Creek West



Latitude 39:51.61
Longitude 74:06.90

Mantoloking Transect 6/1/95

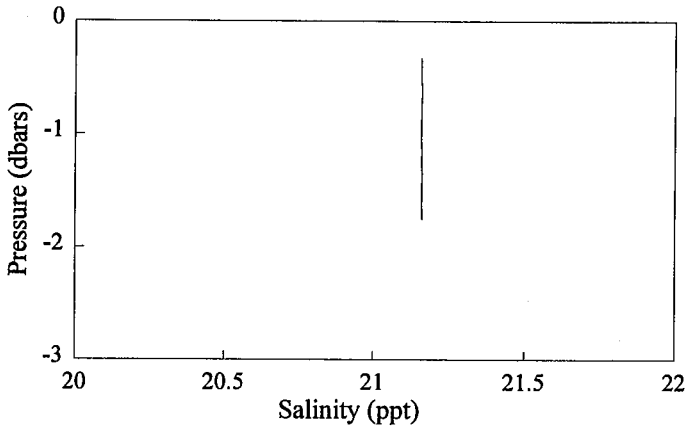
Cast 0



Latitude 39:59.36
Longitude 74:06.18

Mantoloking Transect 6/1/95

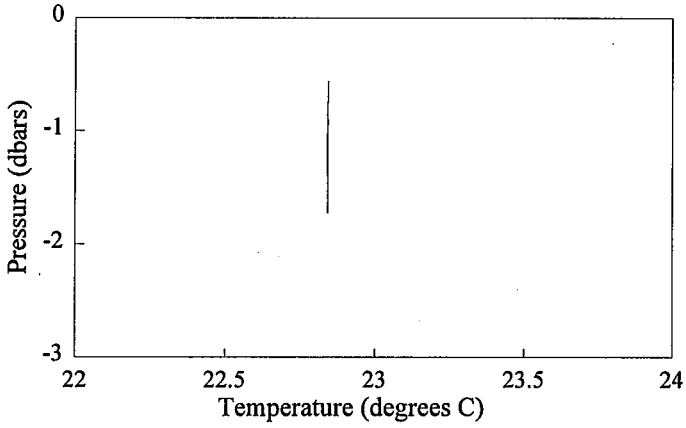
Cast 0



Time 13:52
Local

Mantoloking Transect 6/1/95

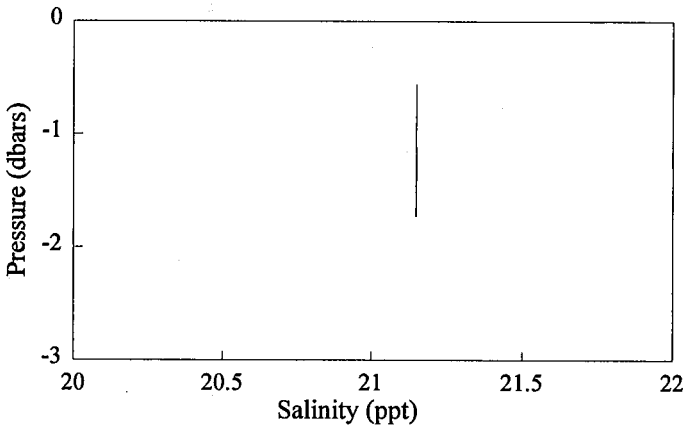
Cast 1



Latitude 39:59.36
Longitude 74:06.18

Mantoloking Transect 6/1/95

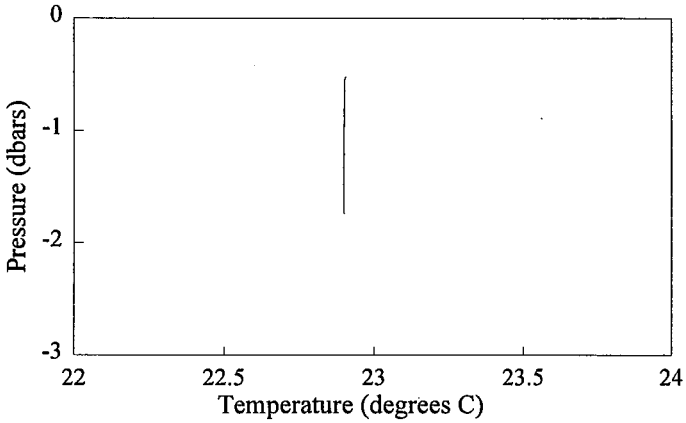
Cast 1



Time 14:13
Local

Mantoloking Transect 6/1/95

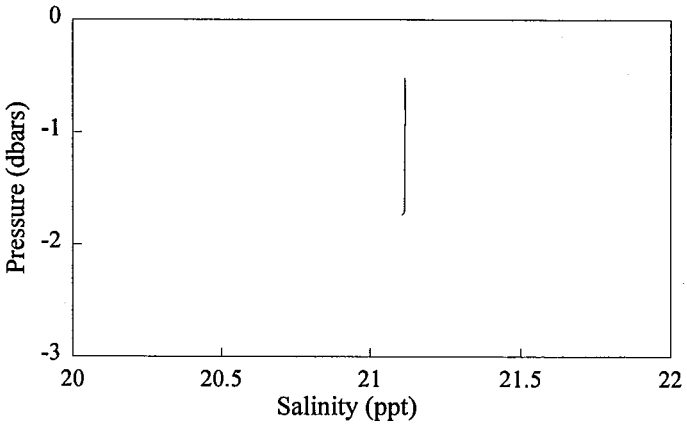
Cast 2



Latitude 39:59.36
Longitude 74:06.18

Mantoloking Transect 6/1/95

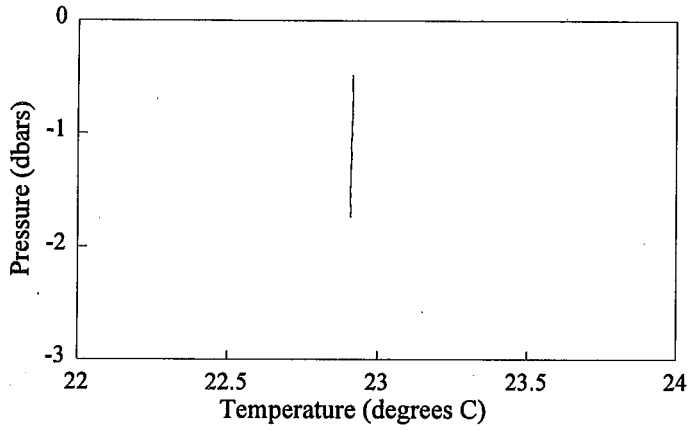
Cast 2



Time 14:33
Local

Mantoloking Transect 6/1/95

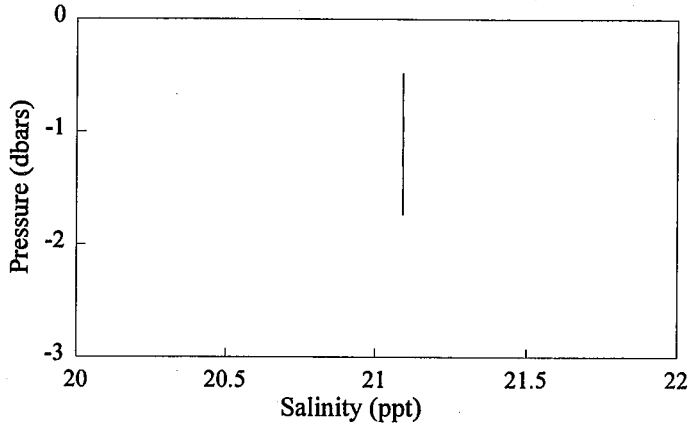
Cast 4



Latitude 39:59.36
Longitude 74:06.18

Mantoloking Transect 6/1/95

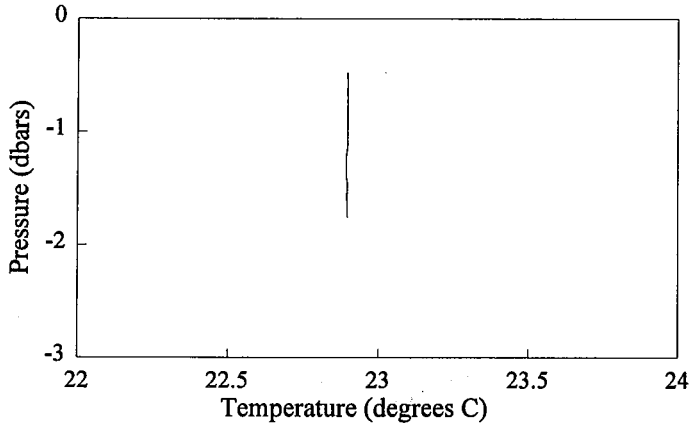
Cast 4



Time 15:19
Local

Mantoloking Transect 6/1/95

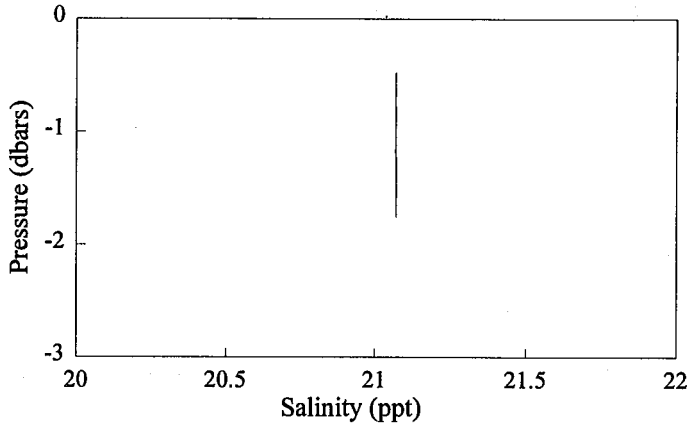
Cast 5



Latitude 39:59.36
Longitude 74:06.18

Mantoloking Transect 6/1/95

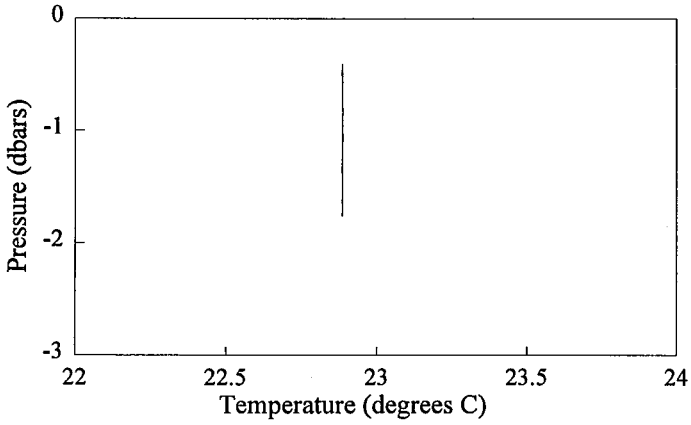
Cast 5



Time 15:33
Local

Mantoloking Transect 6/1/95

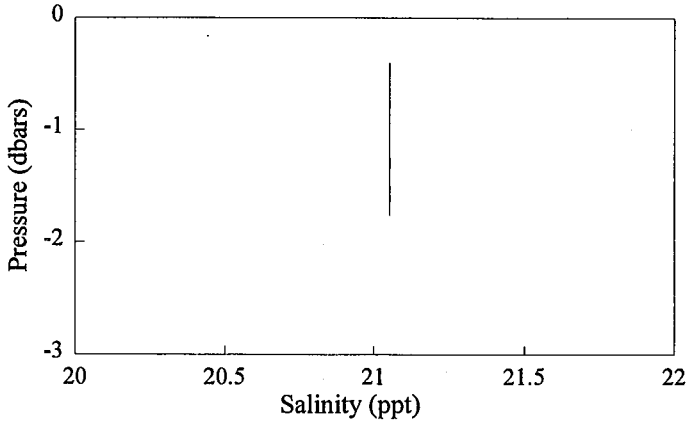
Cast 6



Latitude 39:59.36
Longitude 74:06.18

Mantoloking Transect 6/1/95

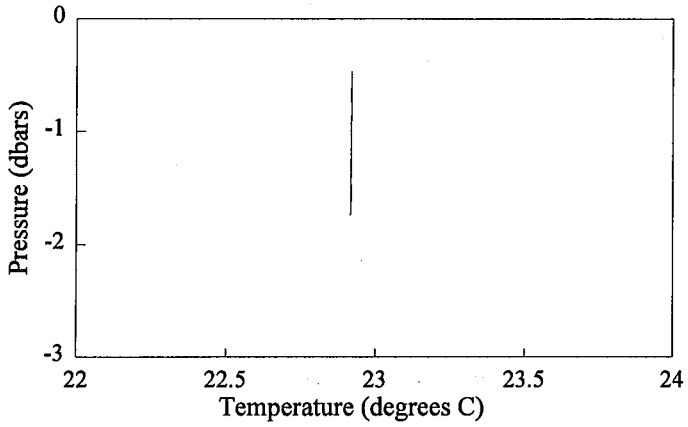
Cast 6



Time 15:53
Local

Mantoloking Transect 6/1/95

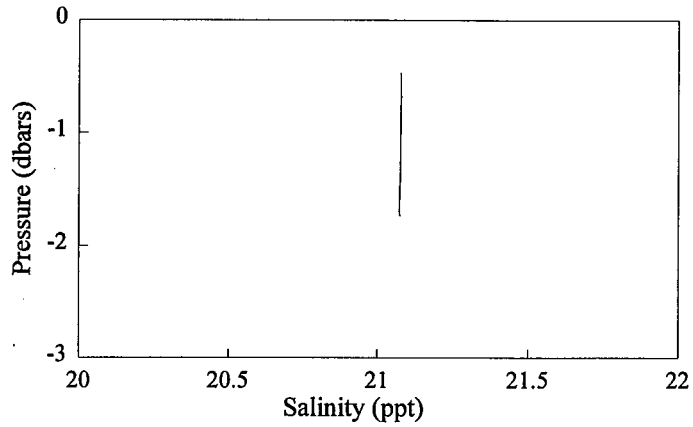
Cast 7



Latitude 39:59.36
Longitude 74:06.18

Mantoloking Transect 6/1/95

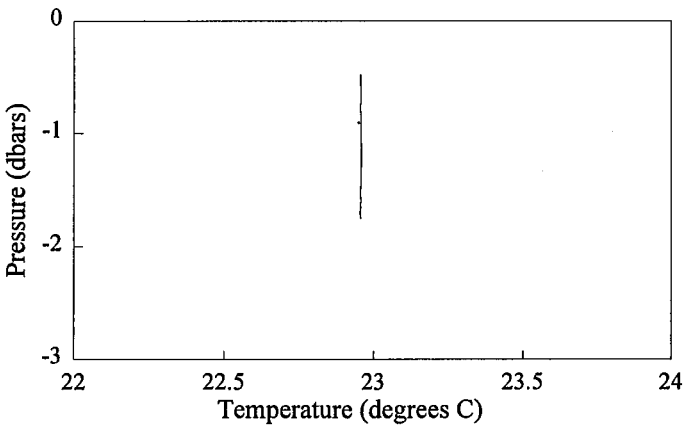
Cast 7



Time 16:13
Local

Mantoloking Transect 6/1/95

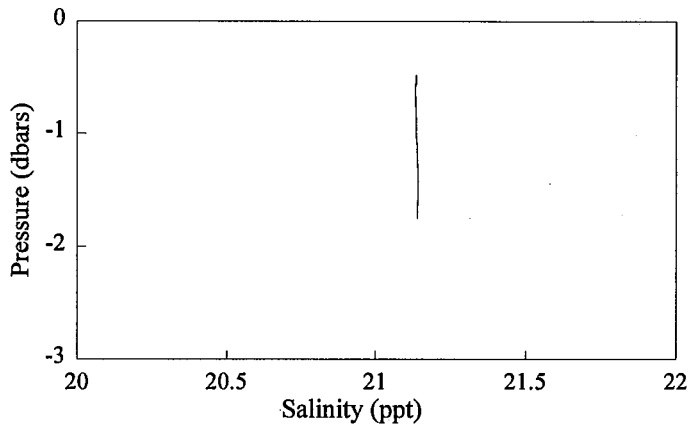
Cast 8



Latitude 39:59.36
Longitude 74:06.18

Mantoloking Transect 6/1/95

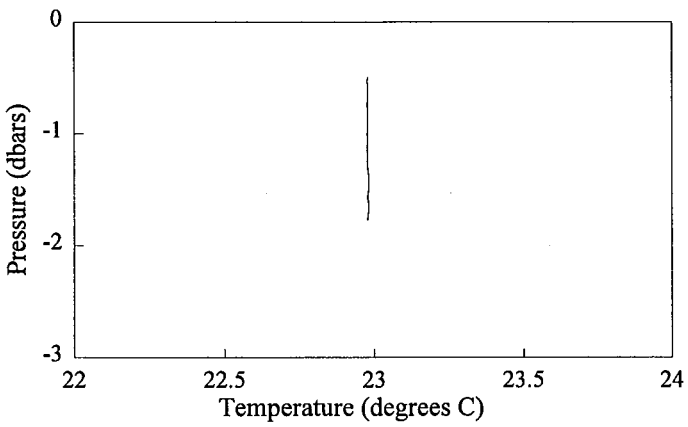
Cast 8



Time 16:34
Local

Mantoloking Transect 6/1/95

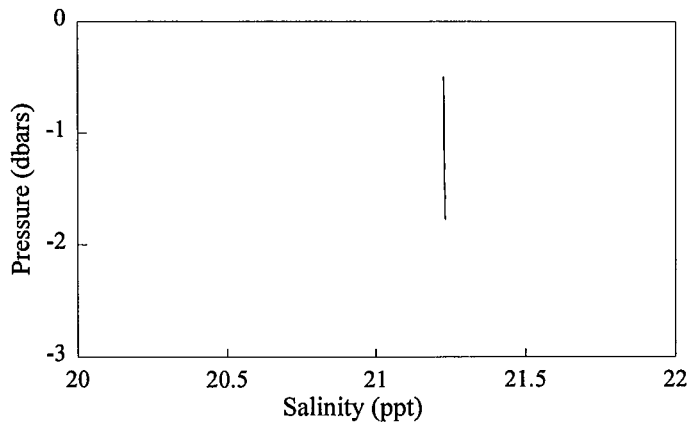
Cast 9



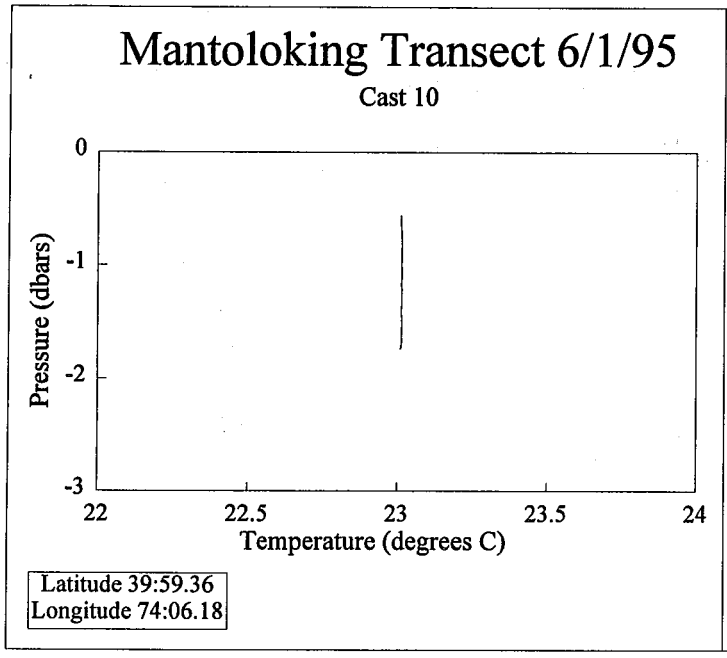
Latitude 39:59.36
Longitude 74:06.18

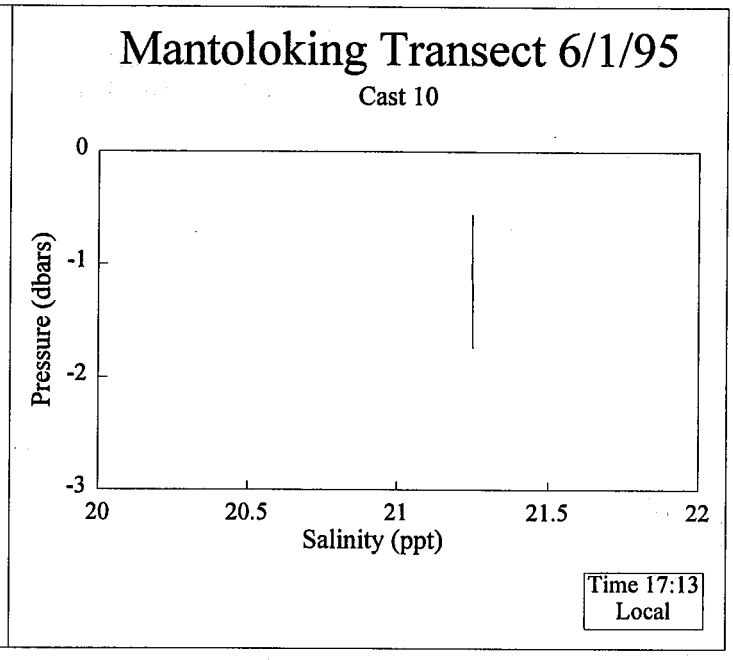
Mantoloking Transect 6/1/95

Cast 9



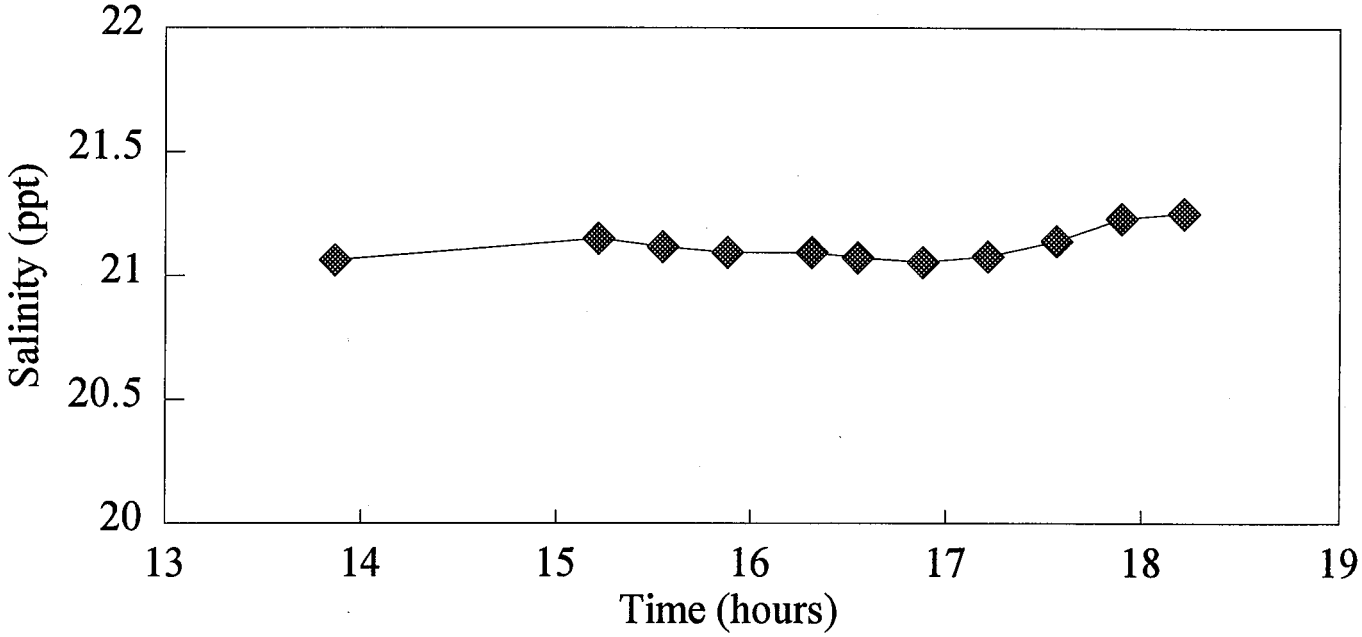
Time 16:54
Local


Mantoloking Transect 6/1/95
Cast 10
Pressure (dbars)
0
-1
-2
-3
22
22.5
23
23.5
24
Temperature (degrees C)
Latitude 39:59.36
Longitude 74:06.18


Mantoloking Transect 6/1/95
Cast 10
Pressure (dbars)
0
-1
-2
-3
20
20.5
21
21.5
22
Salinity (ppt)
Time 17:13
Local

Salinity vs. Time 6/1/95

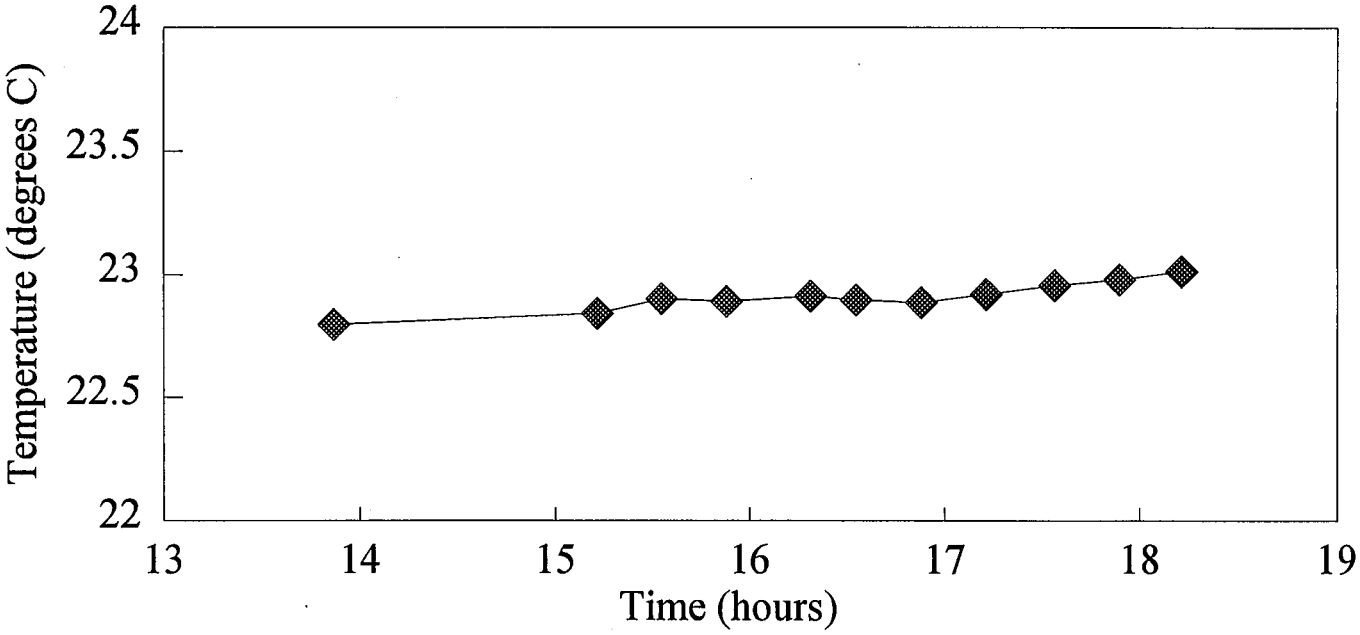
Mantoloking



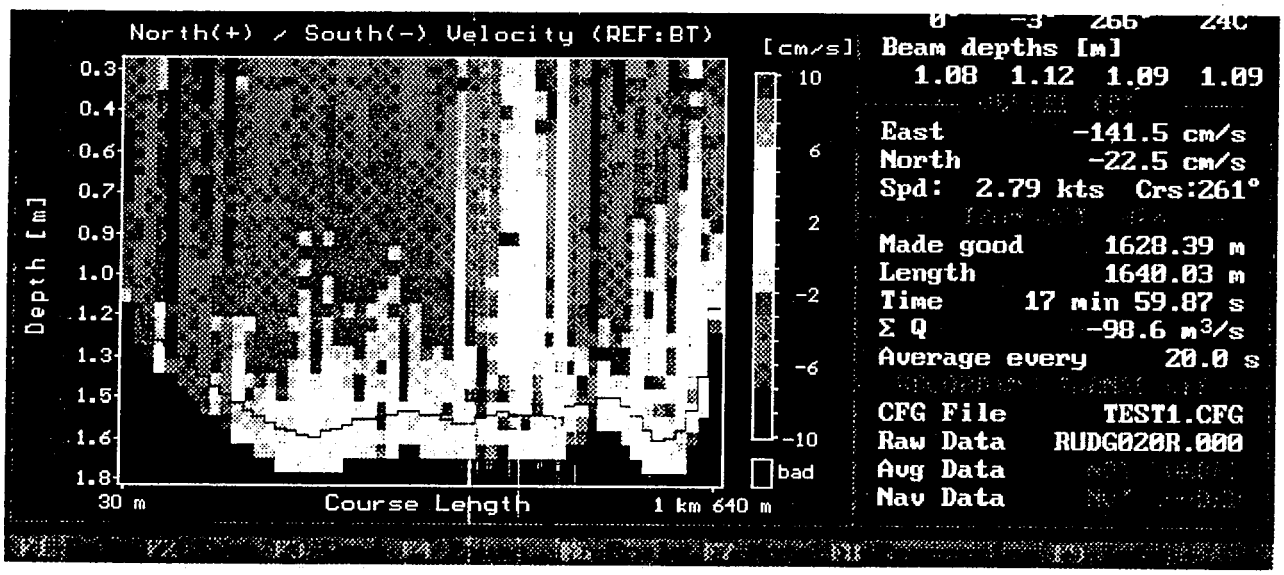
Latitude 39:59.36
Longitude 74:06.18

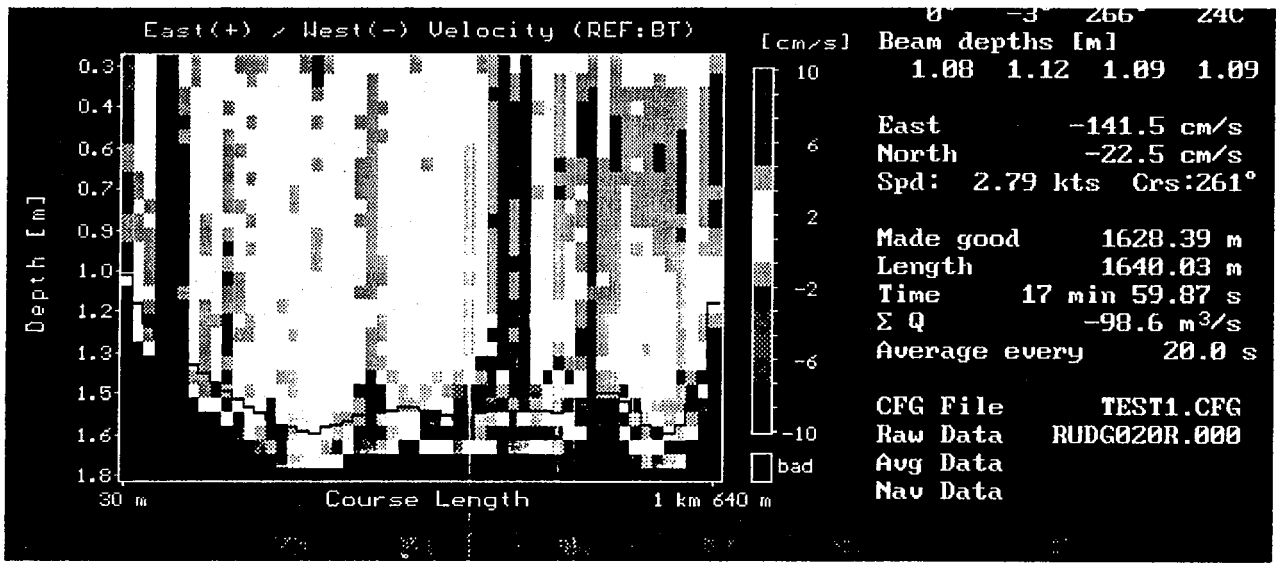
Temperature vs. Time 6/1/95

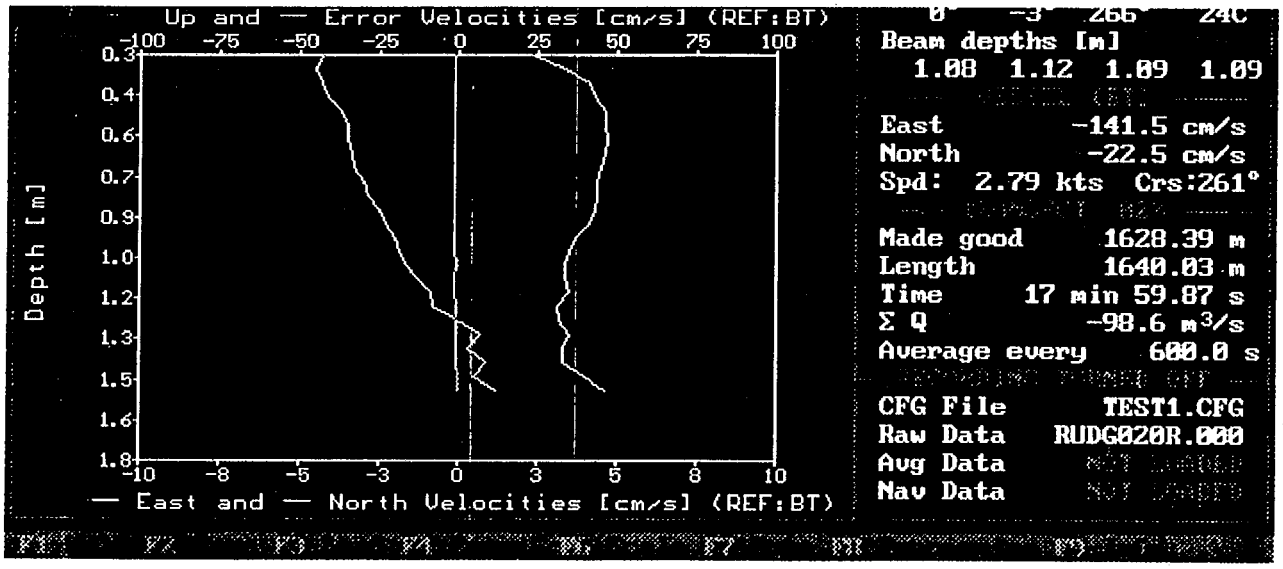
Mantoloking

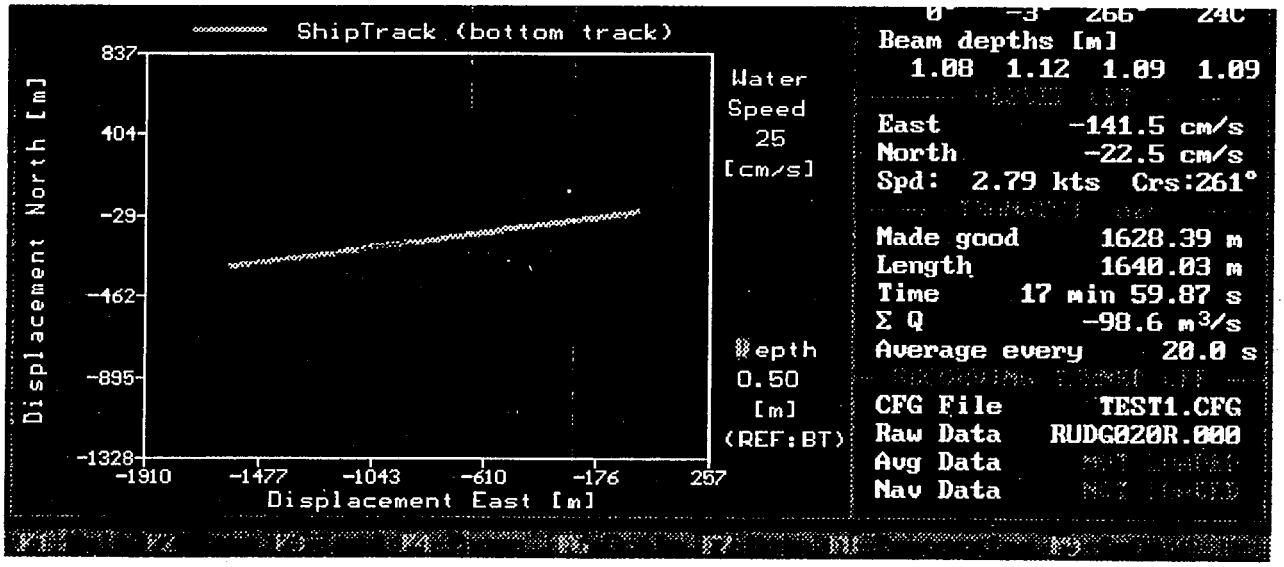


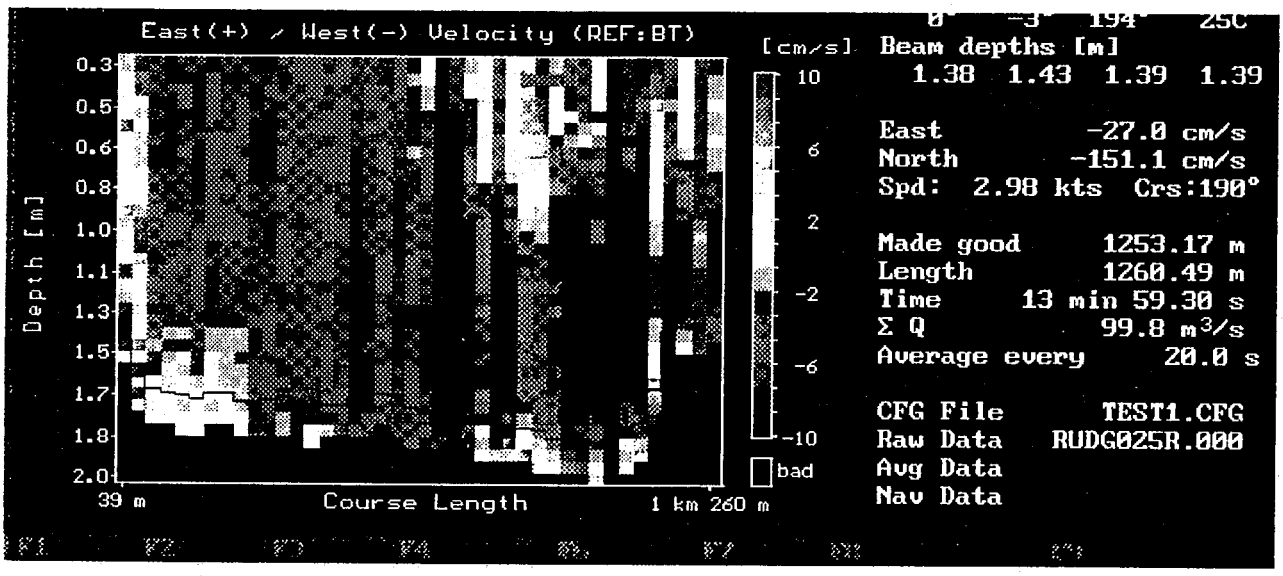
Latitude 39:59.36
Longitude 74:06.18


North(+) / South(-) Velocity (REF:BT)
[cm/s]
10
6
2
-2
-6
-10
bad
Depth [m]
0.3
0.4
0.6
0.7
0.9
1.0
1.2
1.3
1.5
1.6
1.8
30 m
Course Length
1 km 640 m
Beam depths [m]
1.08 1.12 1.09 1.09
East -141.5 cm/s
North -22.5 cm/s
Spd: 2.79 kts Crs:261°
Made good 1628.39 m
Length 1640.03 m
Time 17 min 59.87 s
Σ Q -98.6 m³/s
Average every 20.0 s
CFG File TEST1.CFG
Raw Data RUDG020R.000
Avg Data
Nav Data

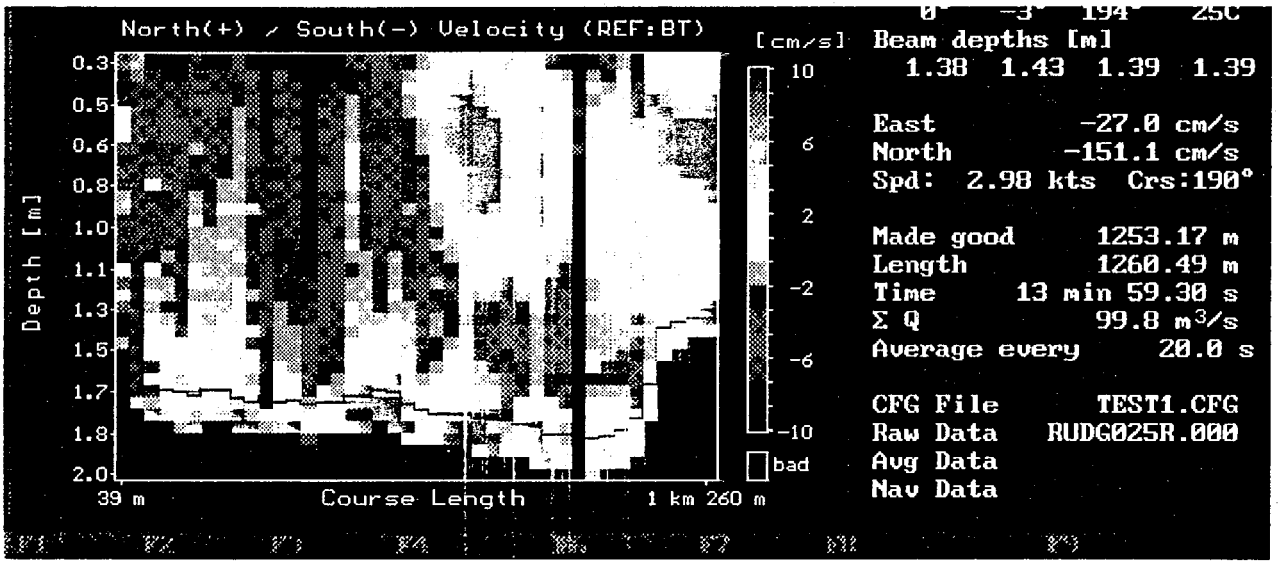

East(+) / West(-) Velocity (REF:BT)
[cm/s]
10
6
2
-2
-6
-10
bad
Depth [m]
0.3
0.4
0.6
0.7
0.9
1.0
1.2
1.3
1.5
1.6
1.8
30 m
Course Length
1 km 640 m
0° -3° 266° 24C
Beam depths [m]
1.08 1.12 1.09 1.09
East -141.5 cm/s
North -22.5 cm/s
Spd: 2.79 kts Crs:261°
Made good 1628.39 m
Length 1640.03 m
Time 17 min 59.87 s
Σ Q -98.6 m³/s
Average every 20.0 s
CFG File TEST1.CFG
Raw Data RUDG020R.000
Avg Data
Nav Data


Up and — Error Velocities [cm/s] (REF:BT)
-100 -75 -50 -25 0 25 50 75 100
0.3 0.4 0.6 0.7 0.9 1.0 1.2 1.3 1.5 1.6 1.8
Depth [m]
-10 -8 -5 -3 0 3 5 8 10
— East and — North Velocities [cm/s] (REF:BT)
Beam depths [m]
1.08 1.12 1.09 1.09
East -141.5 cm/s
North -22.5 cm/s
Spd: 2.79 kts Crs:261°
Made good 1628.39 m
Length 1640.03 m
Time 17 min 59.87 s
Σ Q -98.6 m³/s
Average every 600.0 s
CFG File TEST1.CFG
Raw Data RUDG020R.000
Avg Data
Nav Data

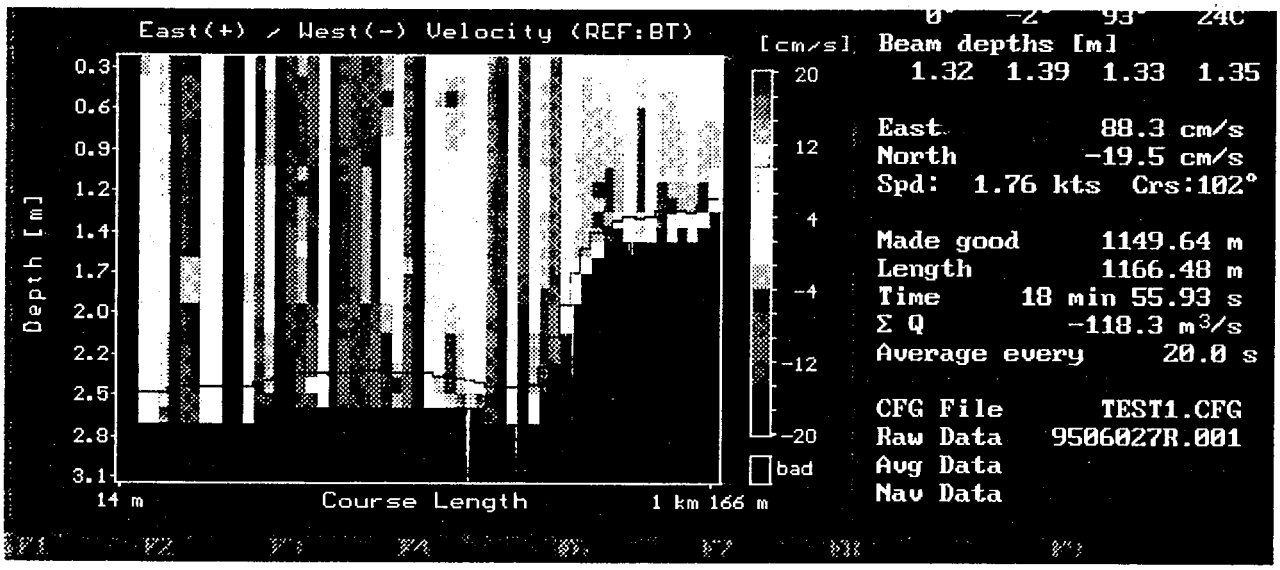

ShipTrack (bottom track)
837
404
-29
-462
-895
-1328
Displacement North [m]
-1910
-1477
-1043
-610
-176
257
Displacement East [m]
Water
Speed
25
[cm/s]
Depth
0.50
[m]
(REF:BT)
Beam depths [m]
1.08 1.12 1.09 1.09
East -141.5 cm/s
North -22.5 cm/s
Spd: 2.79 kts Crs:261°
Made good 1628.39 m
Length 1640.03 m
Time 17 min 59.87 s
Σ Q -98.6 m³/s
Average every 20.0 s
CFG File TEST1.CFG
Raw Data RUDG020R.000
Avg Data
Nav Data


East(+) / West(-) Velocity (REF:BT)
Depth [m]
0.3
0.5
0.6
0.8
1.0
1.1
1.3
1.5
1.7
1.8
2.0
39 m
Course Length
1 km 260 m
[cm/s]
10
6
2
-2
-6
-10
bad
Beam depths [m]
1.38 1.43 1.39 1.39
East -27.0 cm/s
North -151.1 cm/s
Spd: 2.98 kts Crs:190°
Made good 1253.17 m
Length 1260.49 m
Time 13 min 59.30 s
Σ Q 99.8 m³/s
Average every 20.0 s
CFG File TEST1.CFG
Raw Data RUDG025R.000
Avg Data
Nav Data

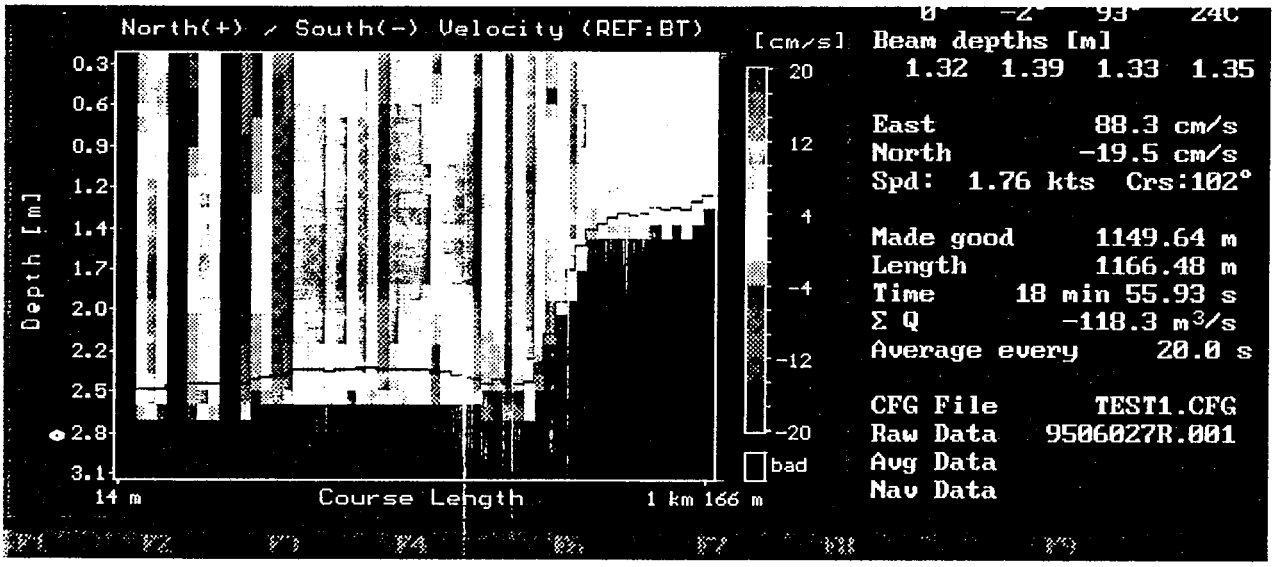
TOMS RIVER


North(+) / South(-) Velocity (REF:BT)
Depth [m]
0.3
0.5
0.6
0.8
1.0
1.1
1.3
1.5
1.7
1.8
2.0
39 m
Course Length
1 km 260 m
[cm/s]
10
6
2
-2
-6
-10
bad
Beam depths [m]
1.38 1.43 1.39 1.39
East -27.0 cm/s
North -151.1 cm/s
Spd: 2.98 kts Crs:190°
Made good 1253.17 m
Length 1260.49 m
Time 13 min 59.30 s
Σ Q 99.8 m³/s
Average every 20.0 s
CFG File TEST1.CFG
Raw Data RUDG025R.000
Avg Data
Nav Data

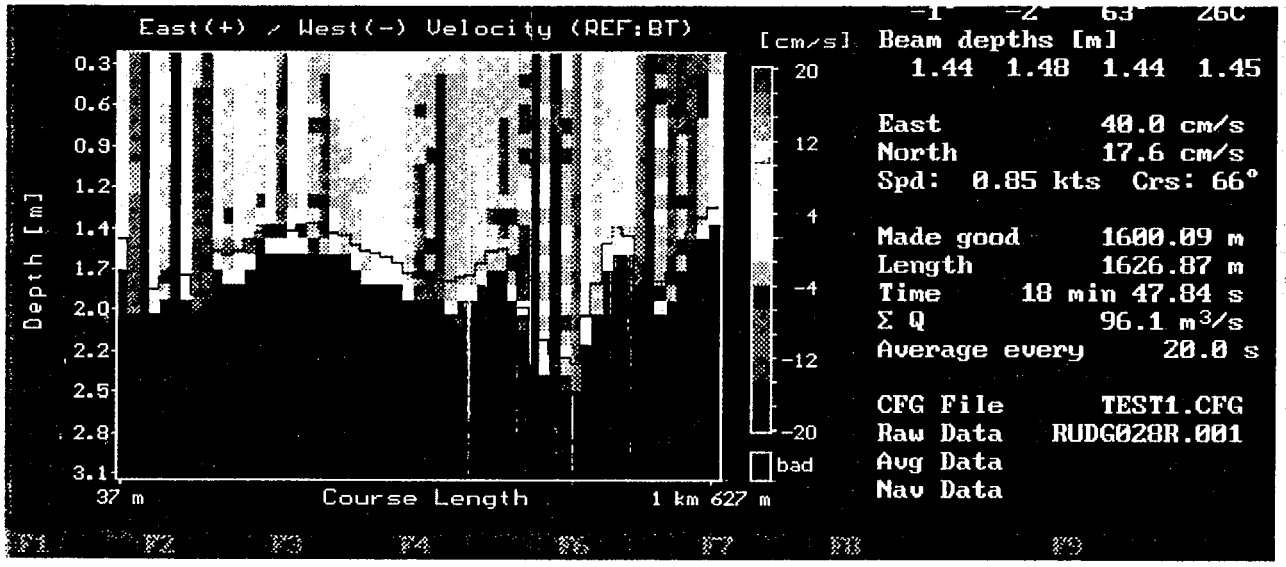
TOMS RIVER


East(+) / West(-) Velocity (REF:BT)
Depth [m]
0.3
0.6
0.9
1.2
1.4
1.7
2.0
2.2
2.5
2.8
3.1
14 m
Course Length
1 km 166 m
[cm/s]
20
12
4
-4
-12
-20
bad
Beam depths [m]
1.32 1.39 1.33 1.35
East 88.3 cm/s
North -19.5 cm/s
Spd: 1.76 kts Crs:102°
Made good 1149.64 m
Length 1166.48 m
Time 18 min 55.93 s
Σ Q -118.3 m³/s
Average every 20.0 s
CFG File TEST1.CFG
Raw Data 9506027R.001
Avg Data
Nav Data

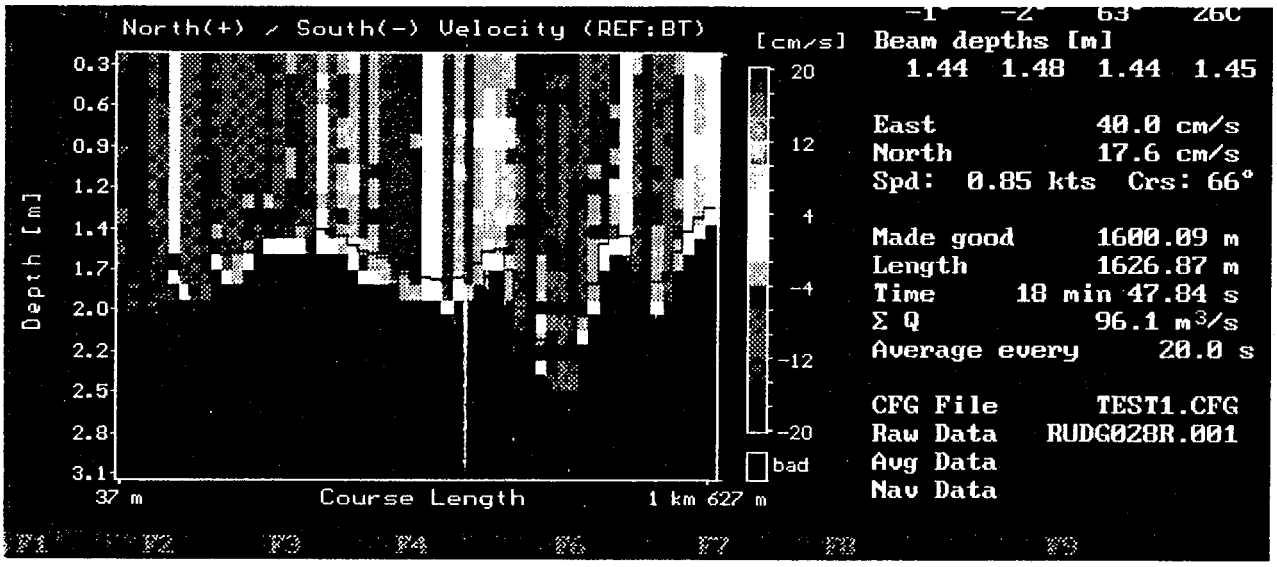
CEDAR CREEK


North(+) / South(-) Velocity (REF:BT)
[cm/s]
20
12
4
-4
-12
-20
bad
Depth [m]
0.3
0.6
0.9
1.2
1.4
1.7
2.0
2.2
2.5
2.8
3.1
14 m
Course Length
1 km 166 m
Beam depths [m]
1.32 1.39 1.33 1.35
East 88.3 cm/s
North -19.5 cm/s
Spd: 1.76 kts Crs:102°
Made good 1149.64 m
Length 1166.48 m
Time 18 min 55.93 s
Σ Q -118.3 m³/s
Average every 20.0 s
CFG File TEST1.CFG
Raw Data 9506027R.001
Avg Data
Nav Data

CEDAR CREEK


East(+) / West(-) Velocity (REF:BT)
[cm/s]
20
12
4
-4
-12
-20
bad
Depth [m]
0.3
0.6
0.9
1.2
1.4
1.7
2.0
2.2
2.5
2.8
3.1
37 m
Course Length
1 km 627 m
Beam depths [m]
1.44 1.48 1.44 1.45
East 40.0 cm/s
North 17.6 cm/s
Spd: 0.85 kts Crs: 66°
Made good 1600.09 m
Length 1626.87 m
Time 18 min 47.84 s
Σ Q 96.1 m³/s
Average every 20.0 s
CFG File TEST1.CFG
Raw Data RUDG028R.001
Avg Data
Nav Data

LOVELADIES


North(+) / South(-) Velocity (REF:BT)
[cm/s]
20
12
4
-4
-12
-20
bad
Depth [m]
0.3
0.6
0.9
1.2
1.4
1.7
2.0
2.2
2.5
2.8
3.1
37 m
Course Length
1 km 627 m
Beam depths [m]
1.44 1.48 1.44 1.45
East 40.0 cm/s
North 17.6 cm/s
Spd: 0.85 kts Crs: 66°
Made good 1600.09 m
Length 1626.87 m
Time 18 min 47.84 s
Σ Q 96.1 m³/s
Average every 20.0 s
CFG File TEST1.CFG
Raw Data RUDG028R.001
Avg Data
Nav Data

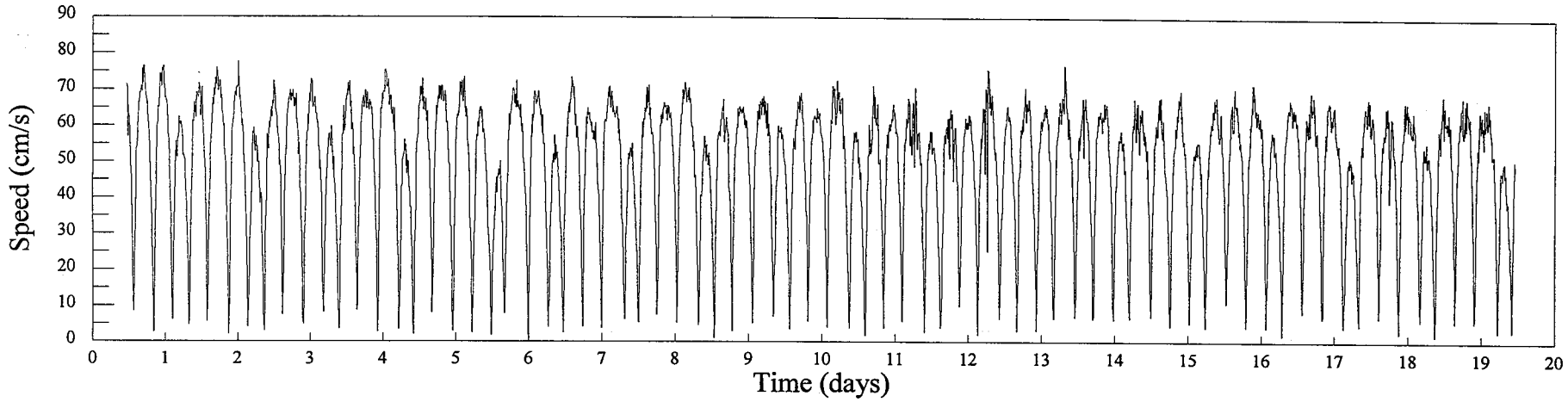
LOVELADIES

Appendix D

June/July Raw Data

Speed vs. Time

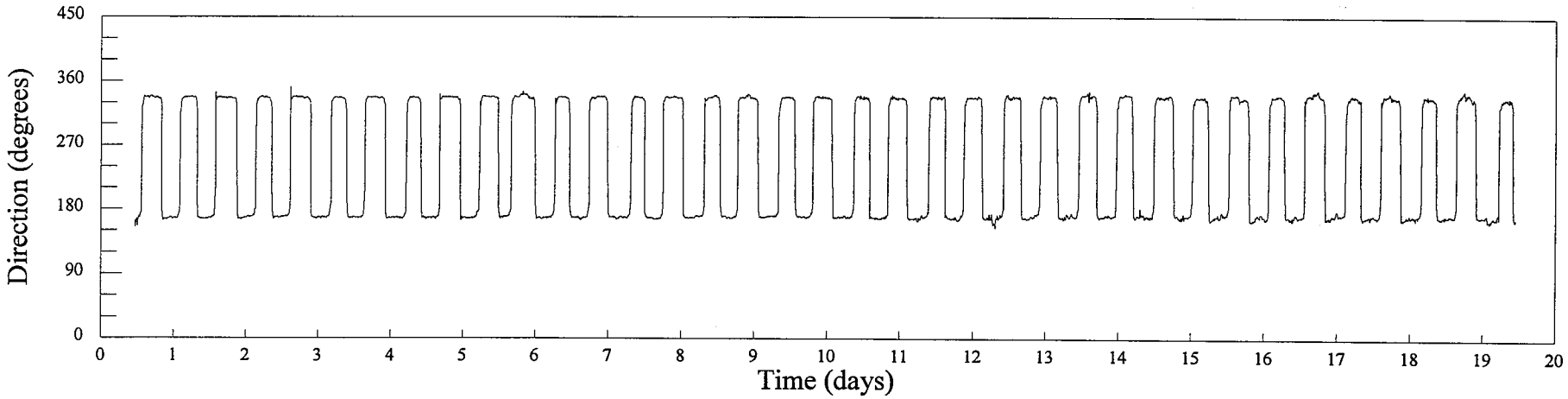
Inlet 238



Start date - 6/22/95
end date - 7/11/95

Direction vs. Time

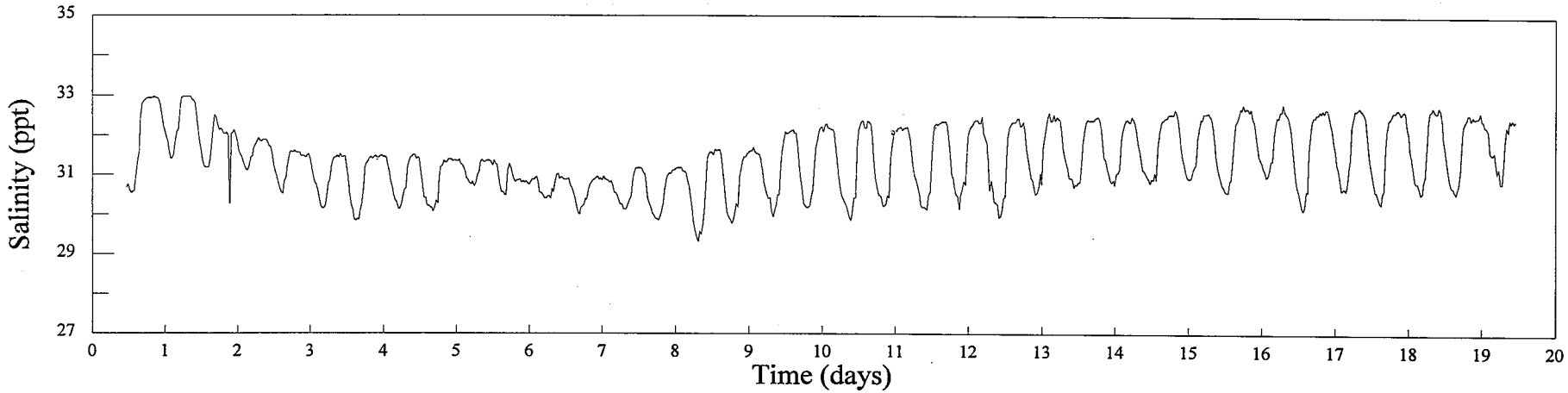
Inlet 238



Start date - 6/22/95
end date - 7/11/95

Salinity vs. Time

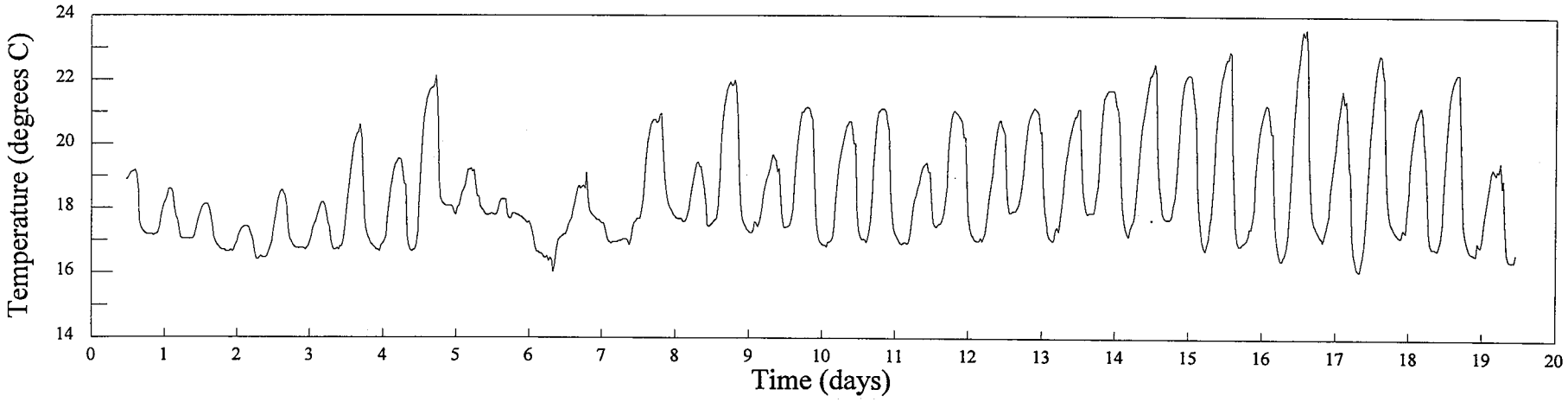
Inlet 238



start date - 6/22/95
end date - 7/11/95

Temperature vs. Time

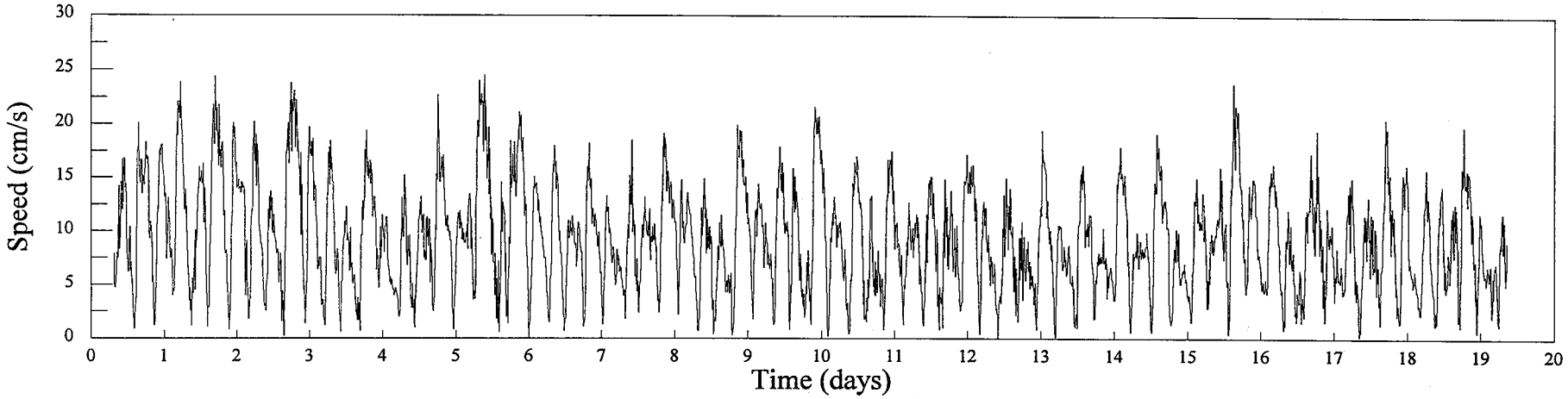
Inlet 238



start date - 6/22/95
end date - 7/11/95

Speed vs. Time

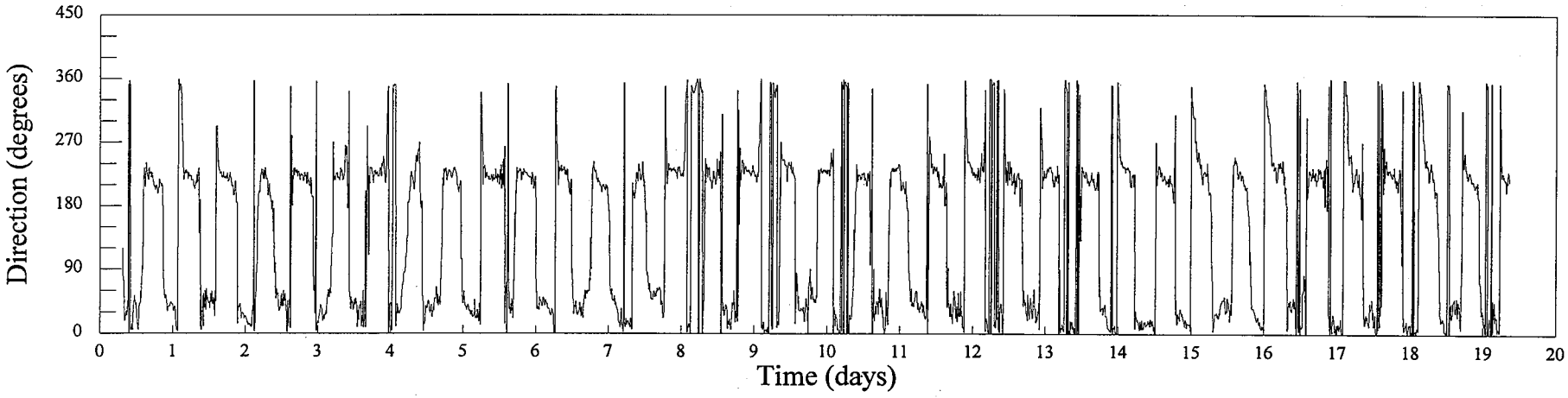
Mantoloking 237



Start date - 6/22/95
end date - 7/11/95

Direction vs. Time

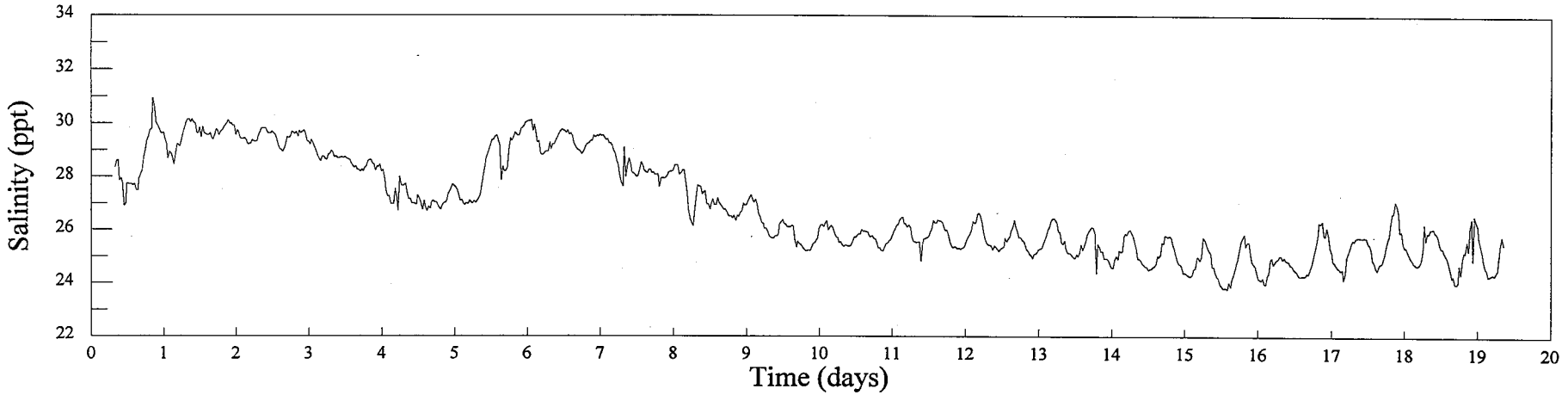
Mantoloking 237



Start date - 6/22/95
end date - 7/11/95

Salinity vs. Time

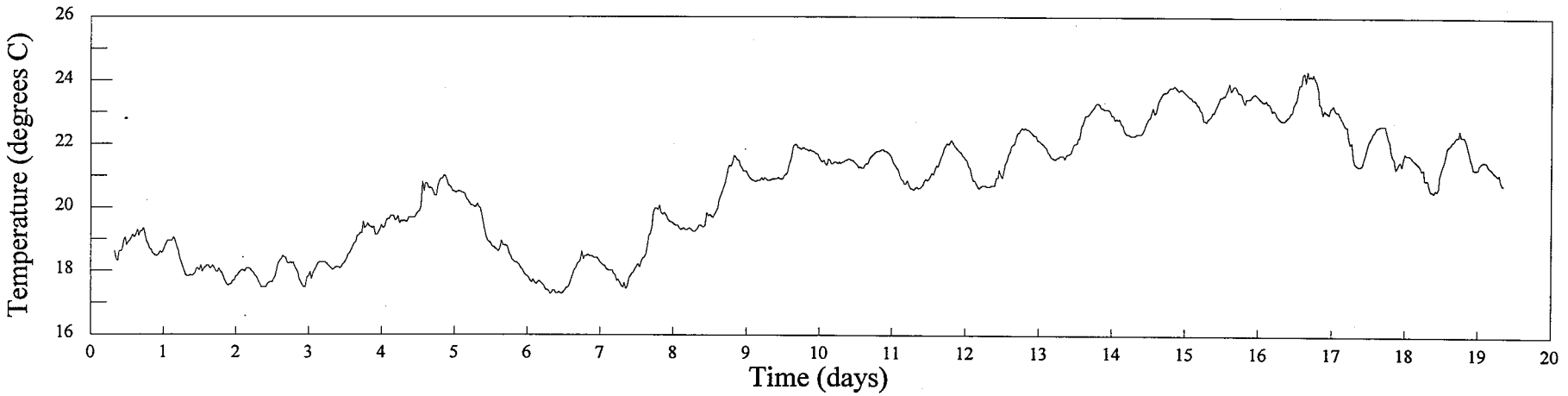
Mantoloking 237



start date - 6/22/95
end date - 7/11/95

Temperature vs. Time

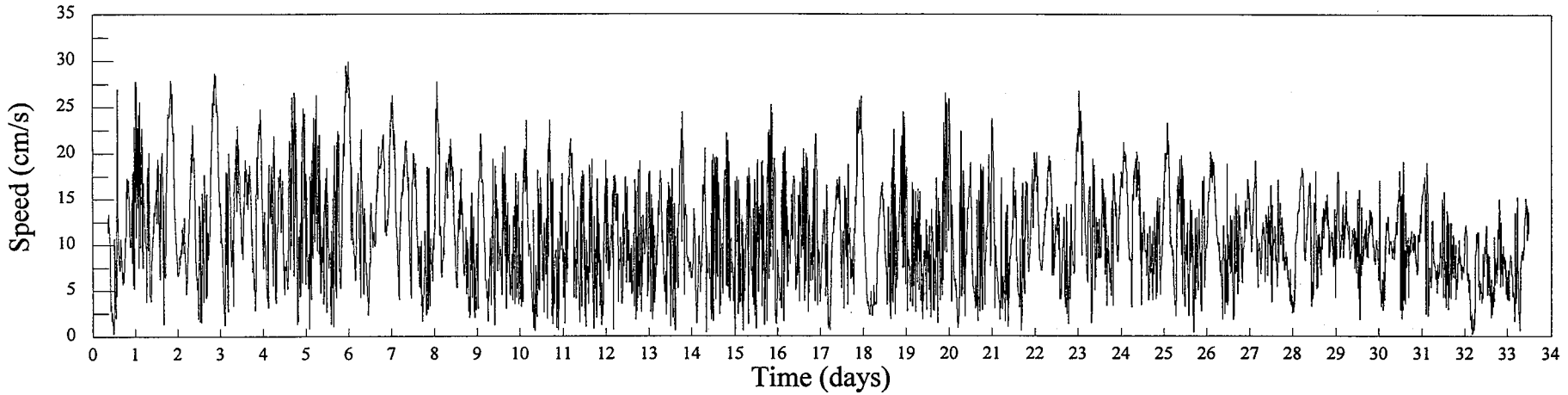
Mantoloking 237



start date - 6/22/95
end date - 7/11/95

Speed vs. Time

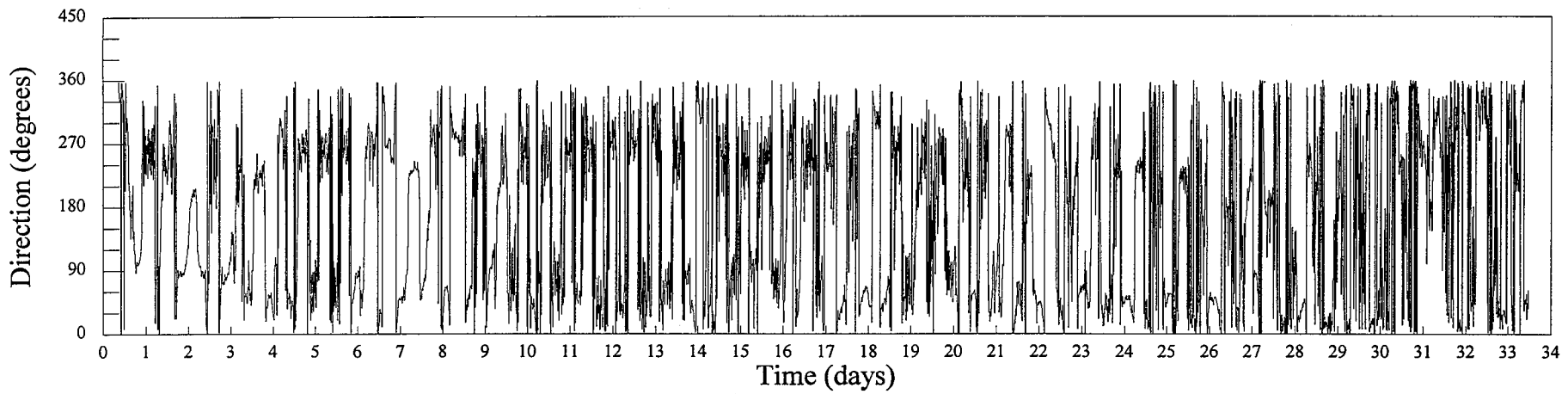
Surf City 239



Start date - 6/8/95
end date - 7/11/95

Direction vs. Time

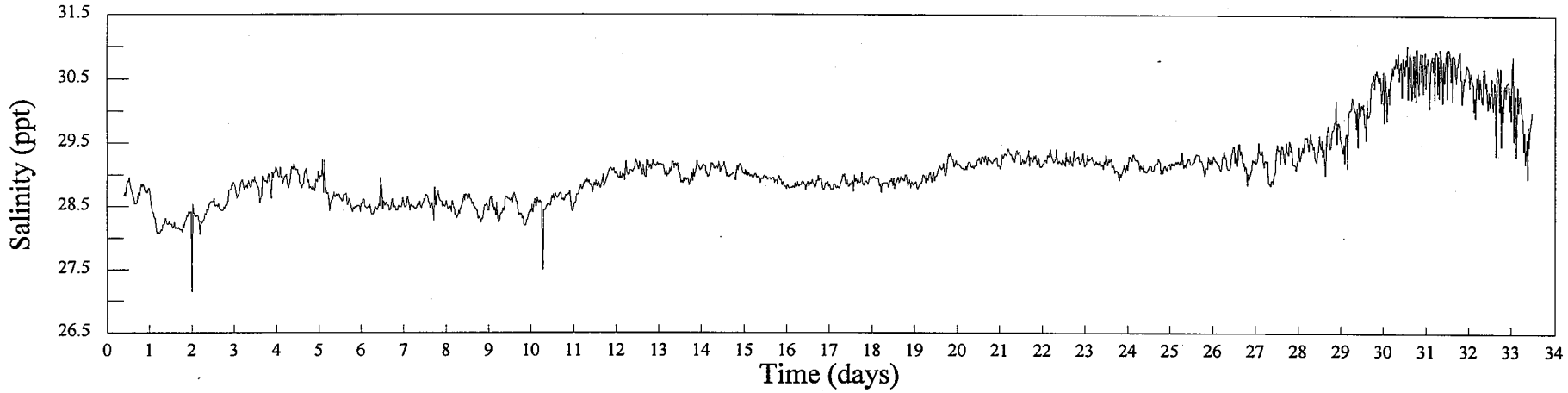
Surf City 239



Start date - 6/8/95
end date - 7/11/95

Salinity vs. Time

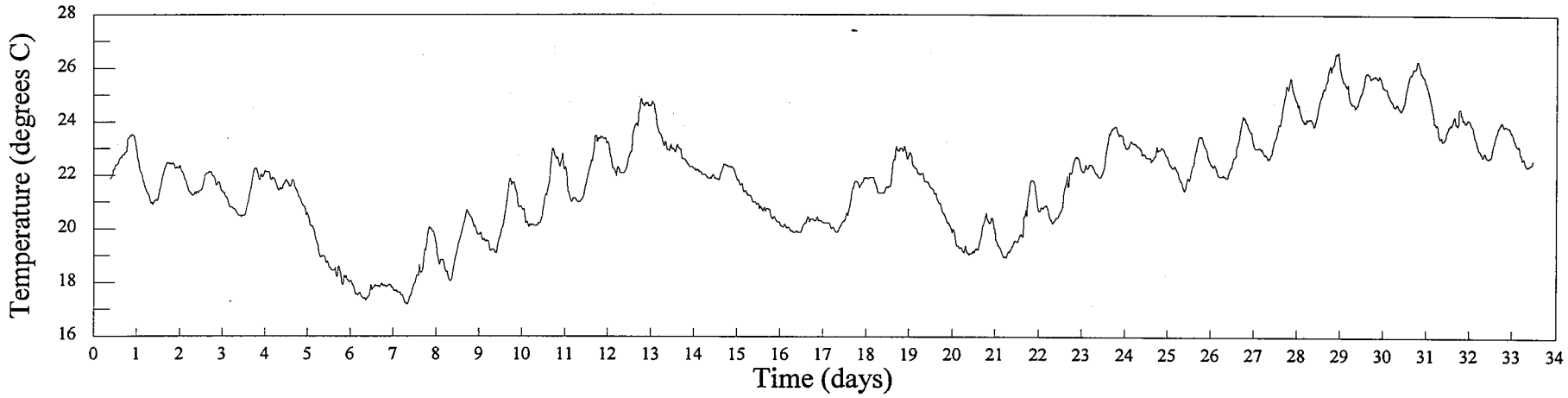
Surf City 239



start date - 6/8/95
end date - 7/11/95

Temperature vs. Time

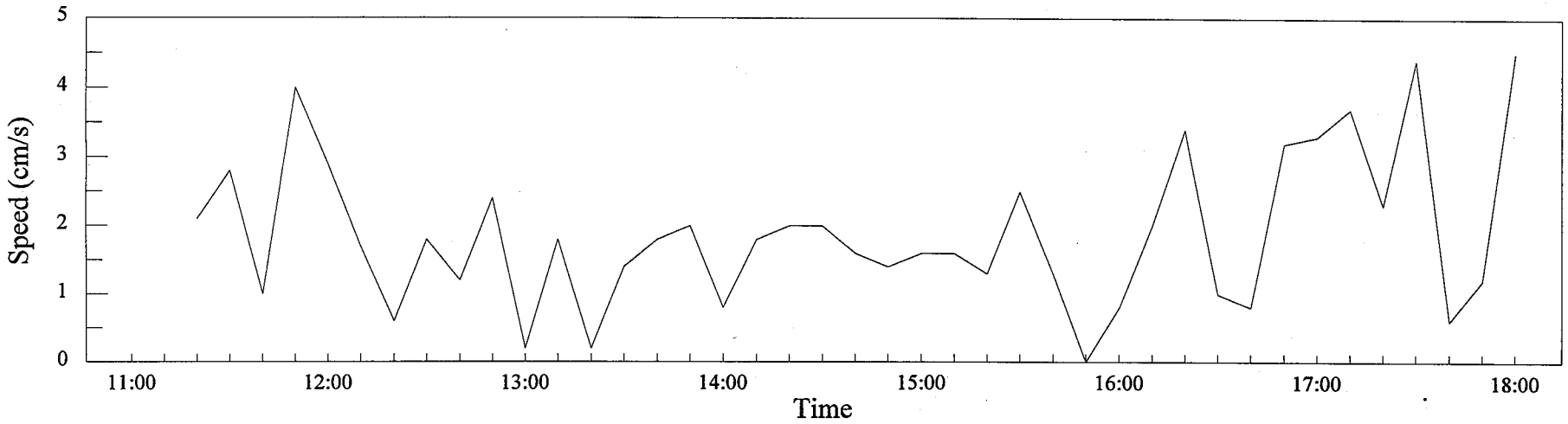
Surf City 239



start date - 6/8/95
end date - 7/11/95

Speed vs. Time

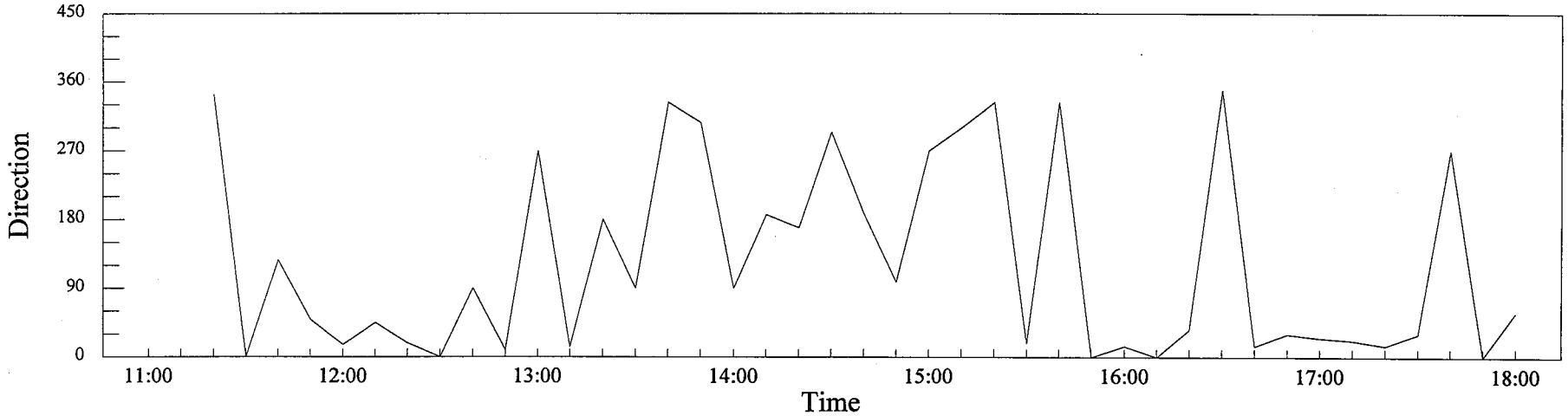
Mantoloking 237



6/8/95

Direction vs. Time

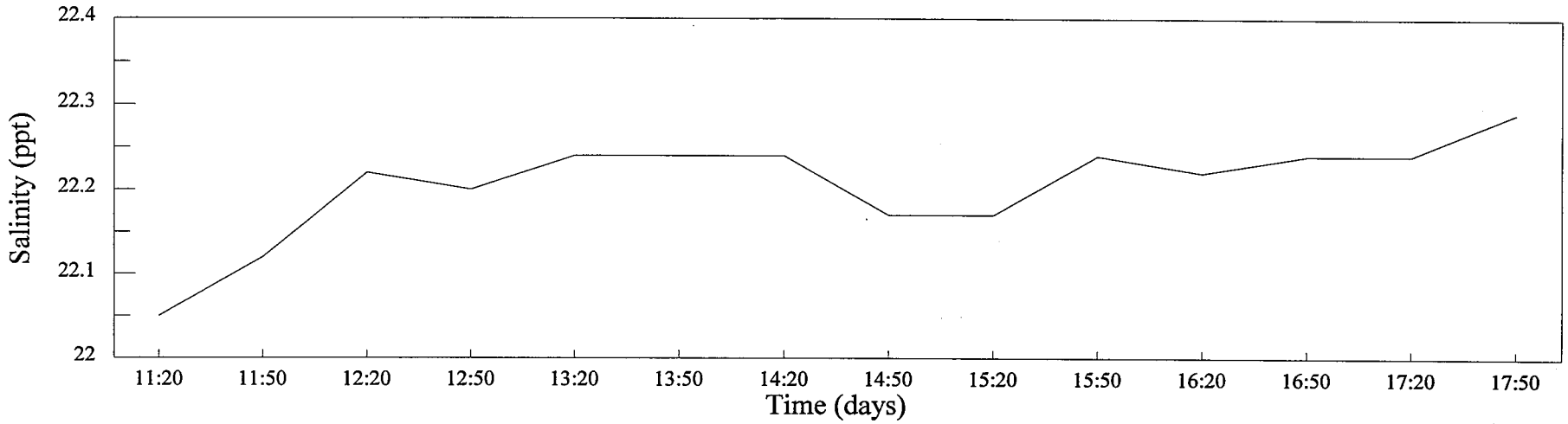
Mantoloking 237



6/8/95

Salinity vs. Time

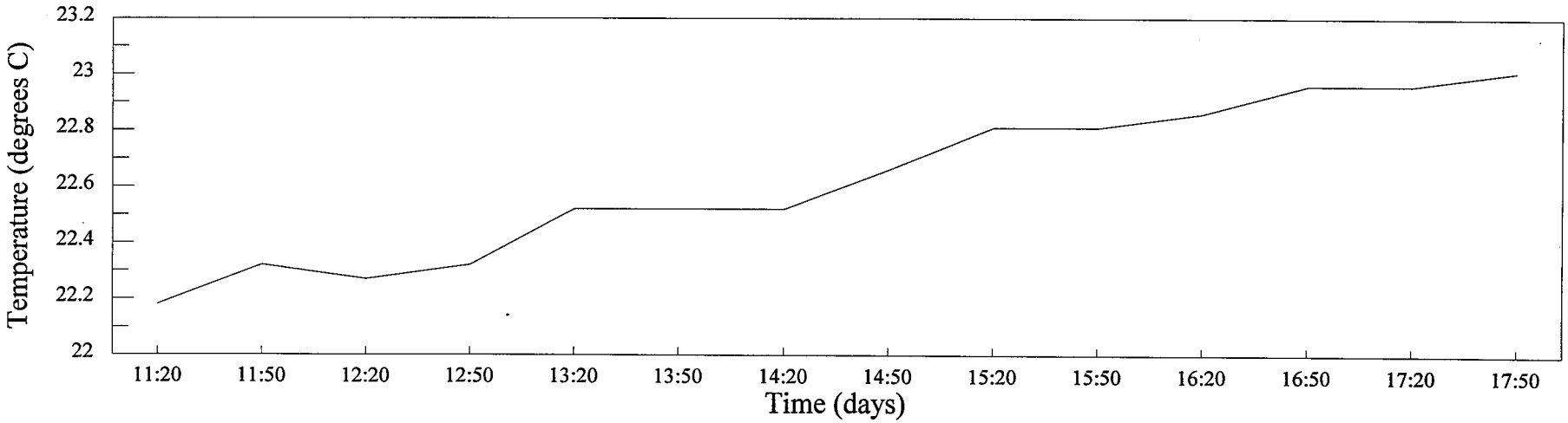
Mantoloking 237



6/8/95

Temperature vs. Time

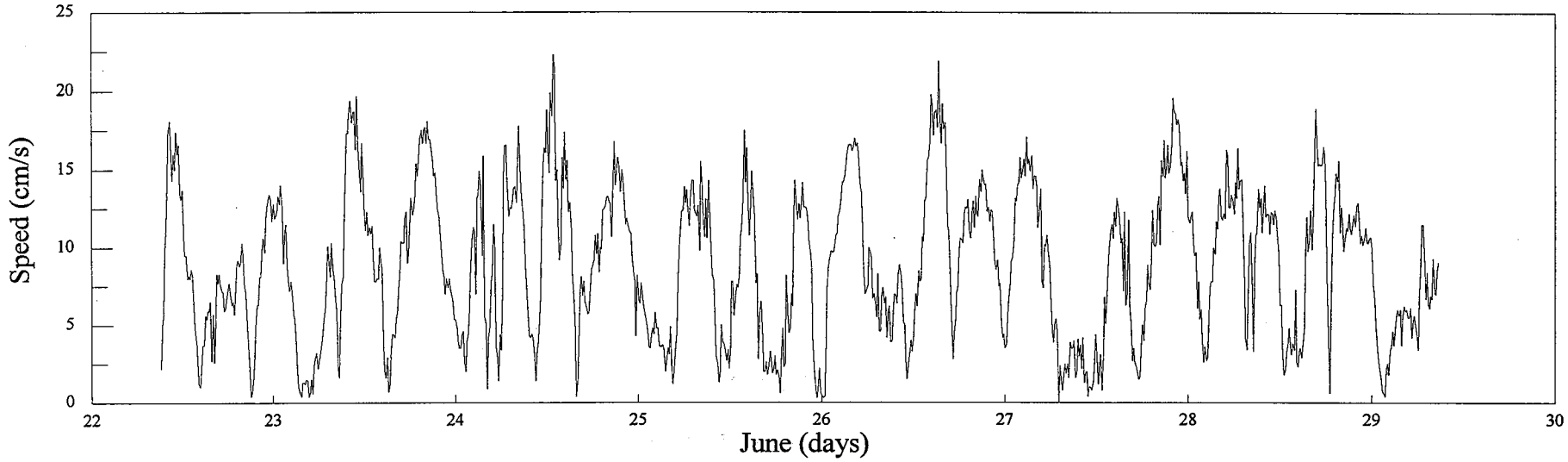
Mantoloking 237



6/8/95

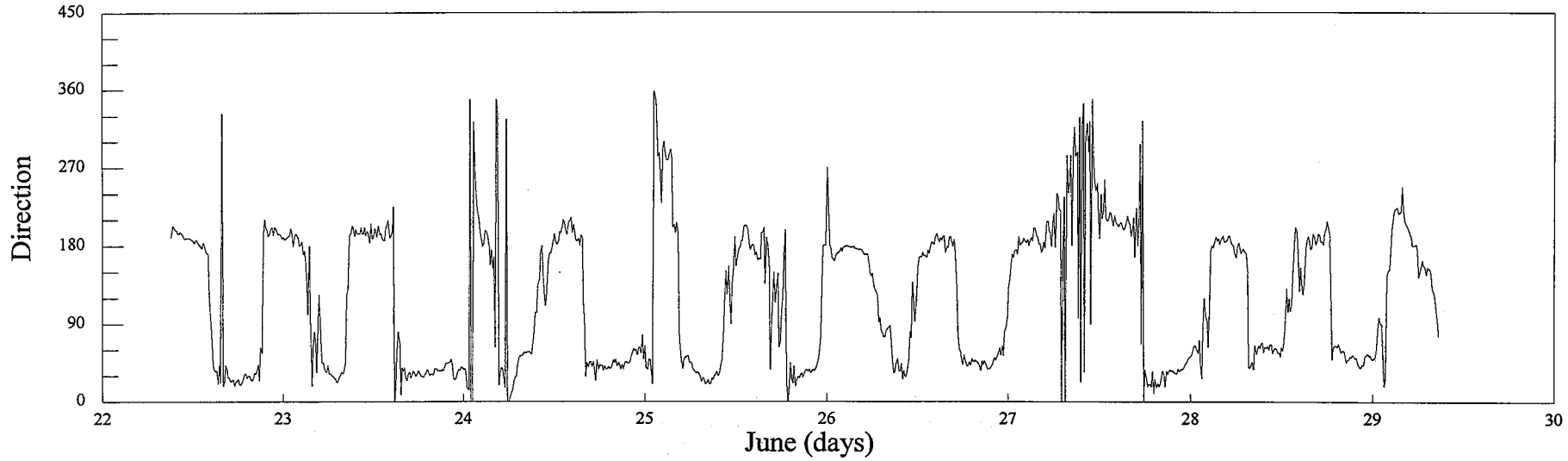
Speed vs. Time

Cedar Creek 137



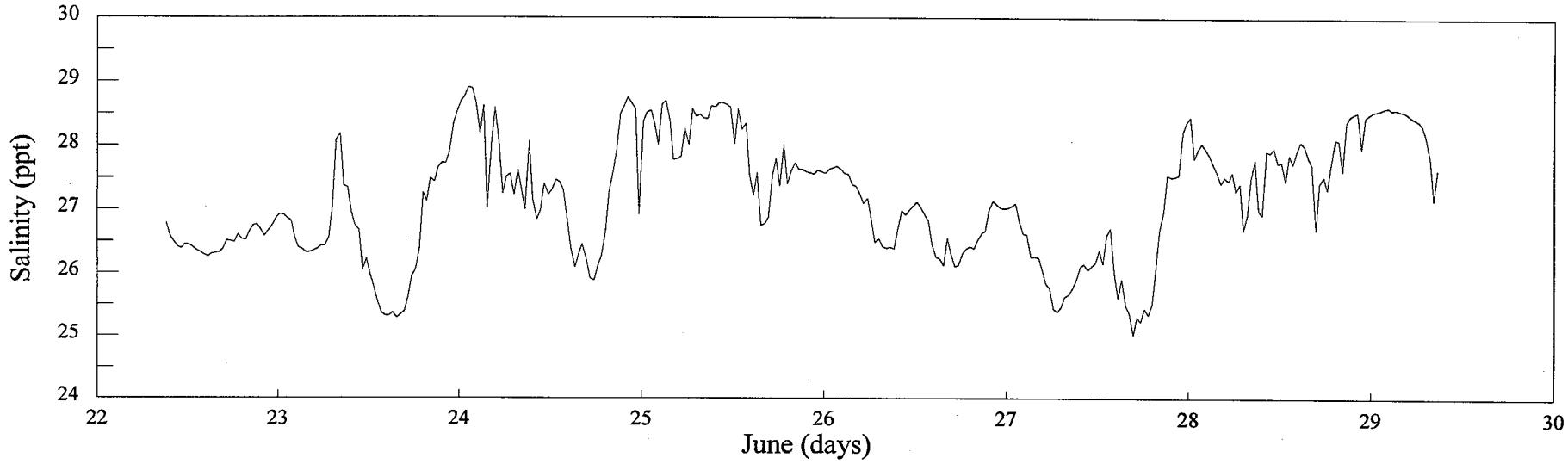
Direction vs. Time

Cedar Creek 137



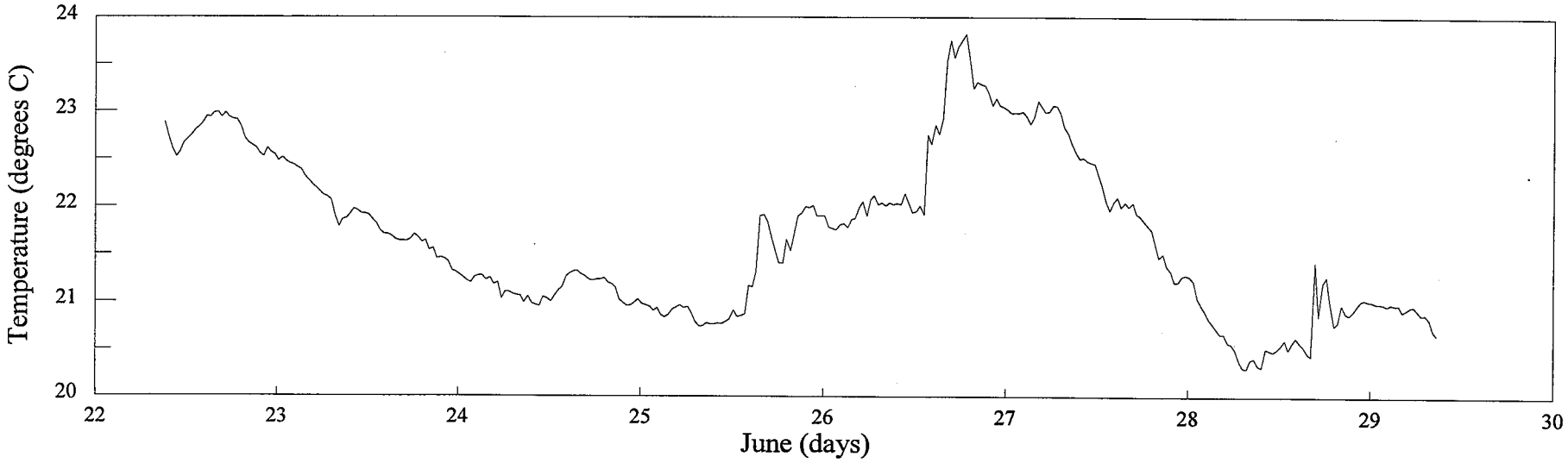
Salinity vs. Time

Cedar Creek 137



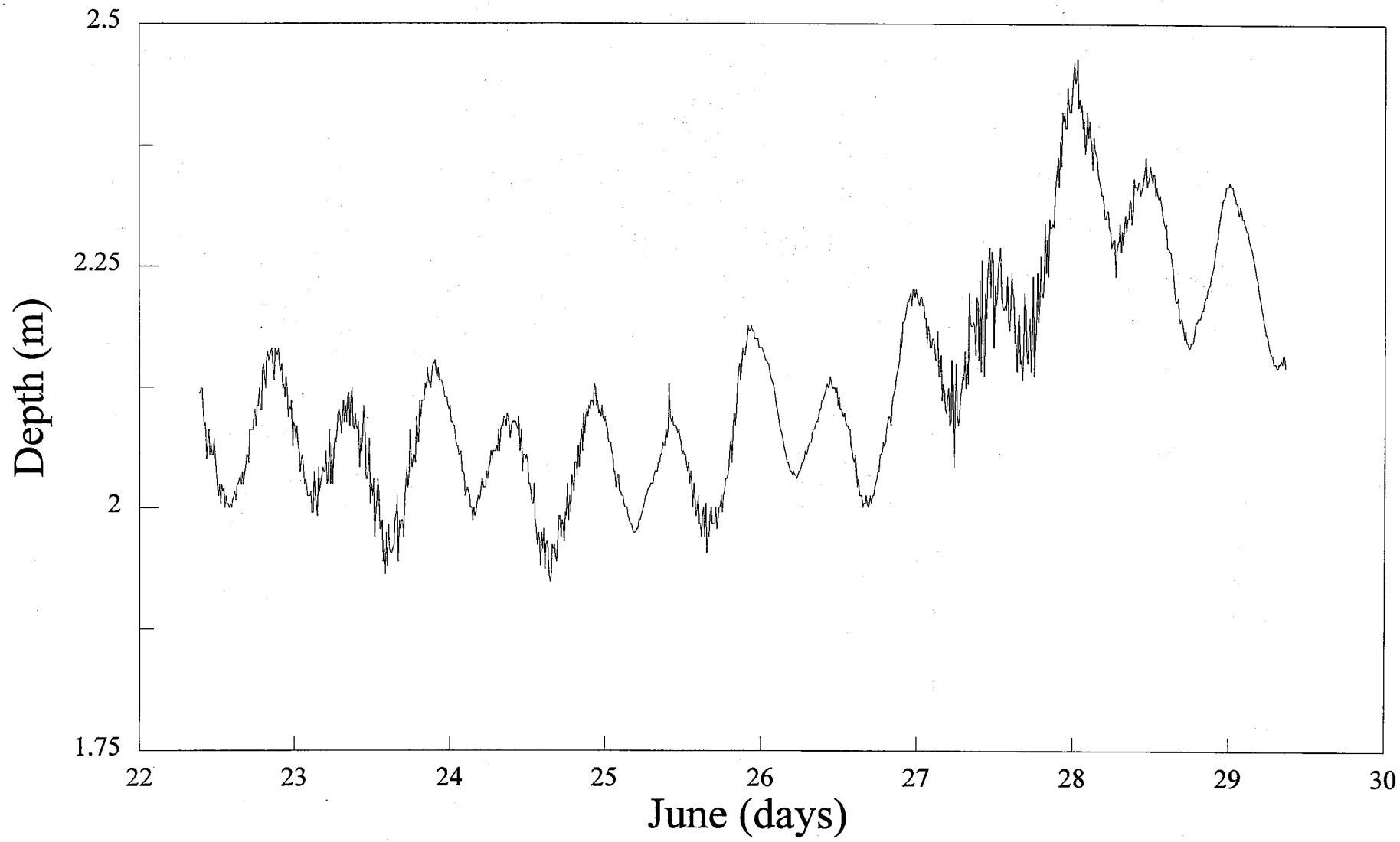
Temperature vs. Time

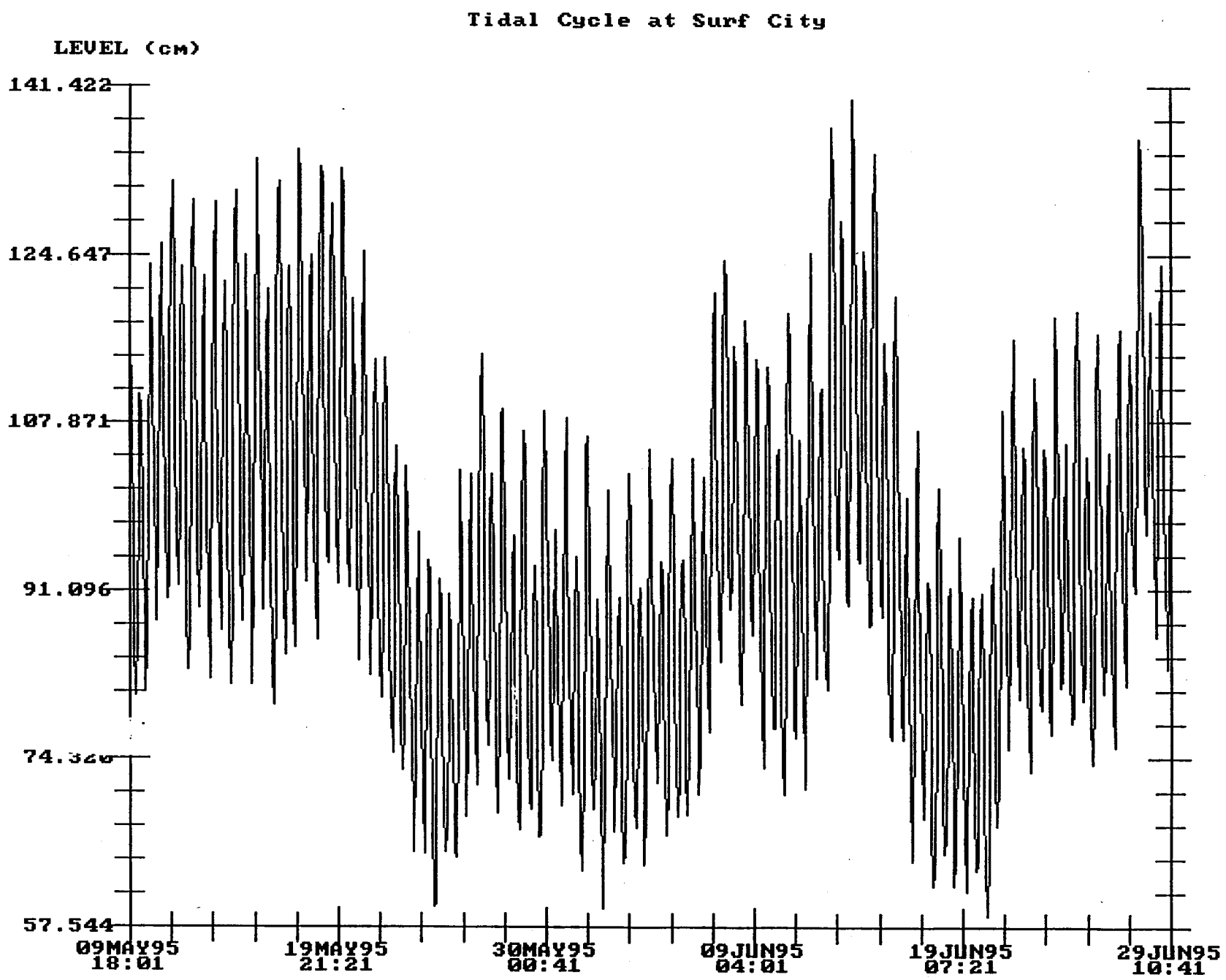
Cedar Creek 137

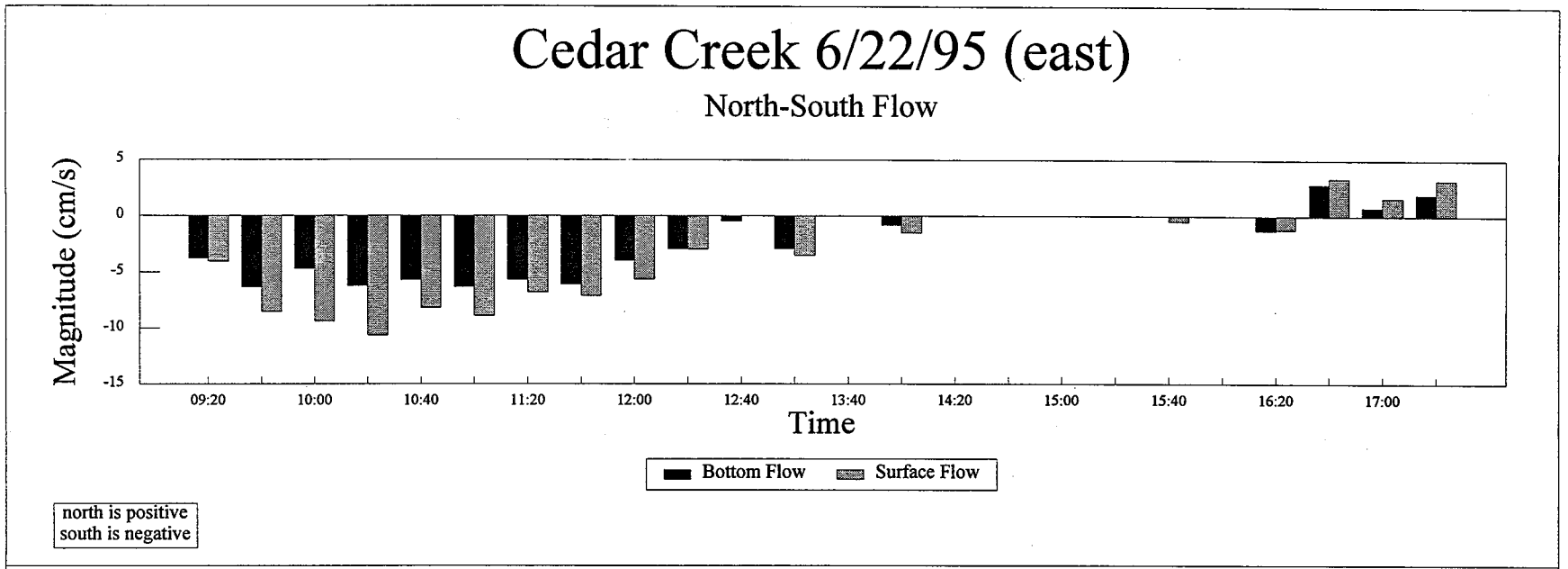


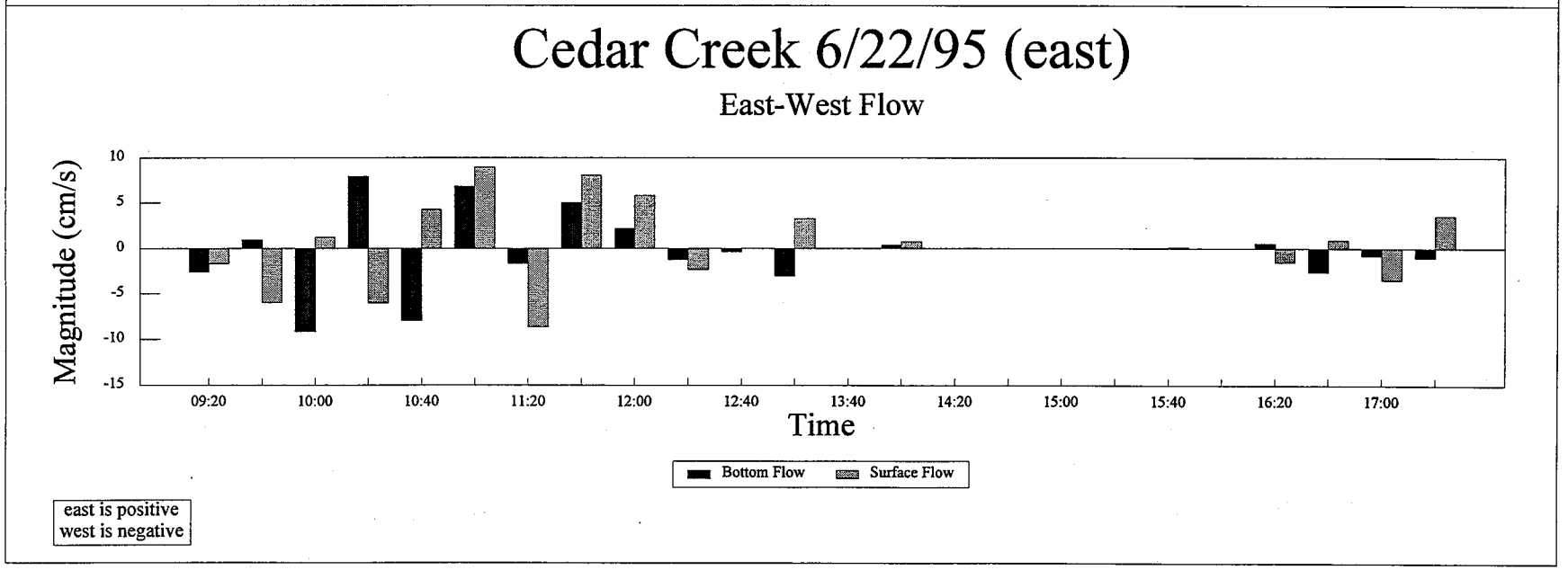
Depth vs. Time

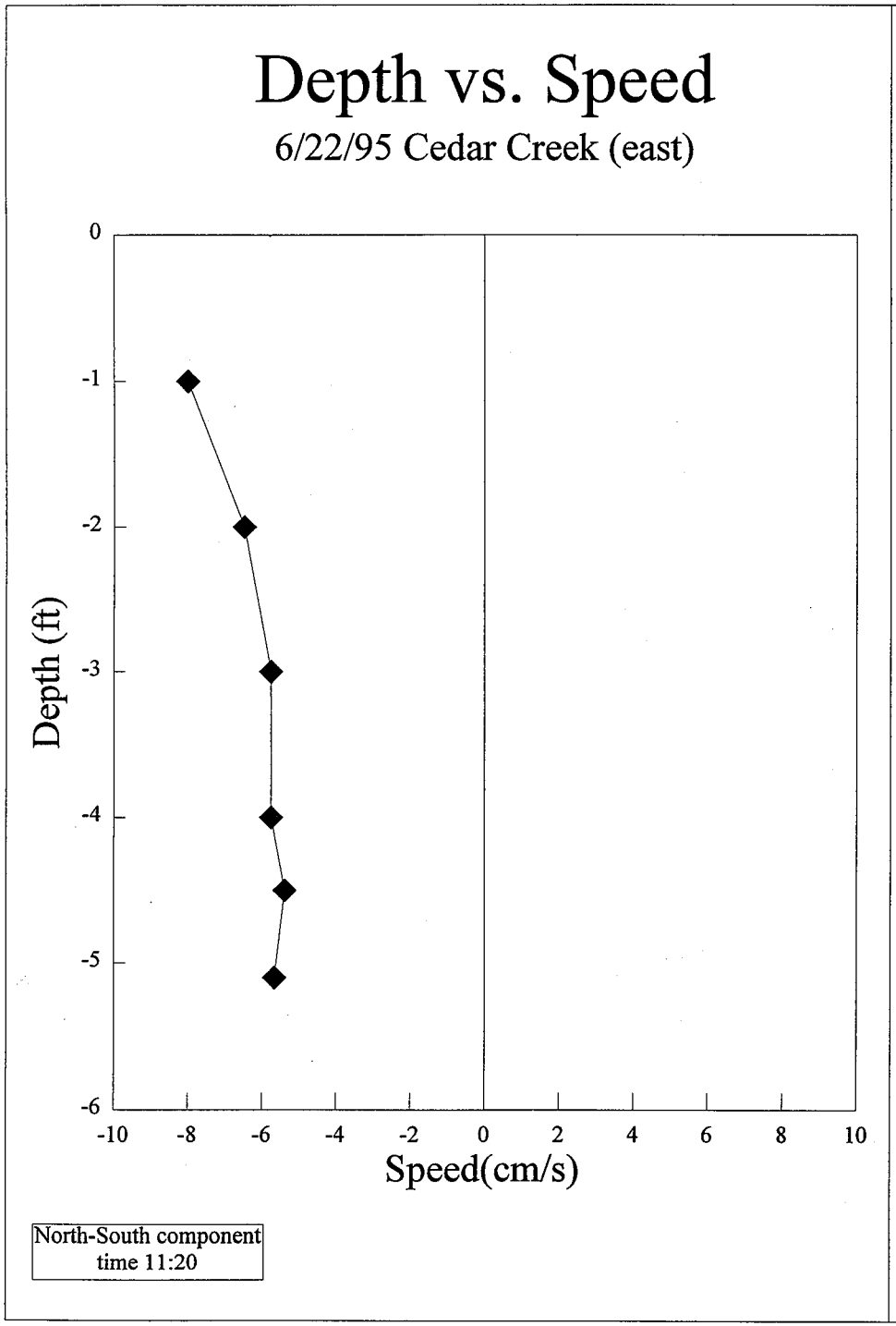
Cedar Creek 137

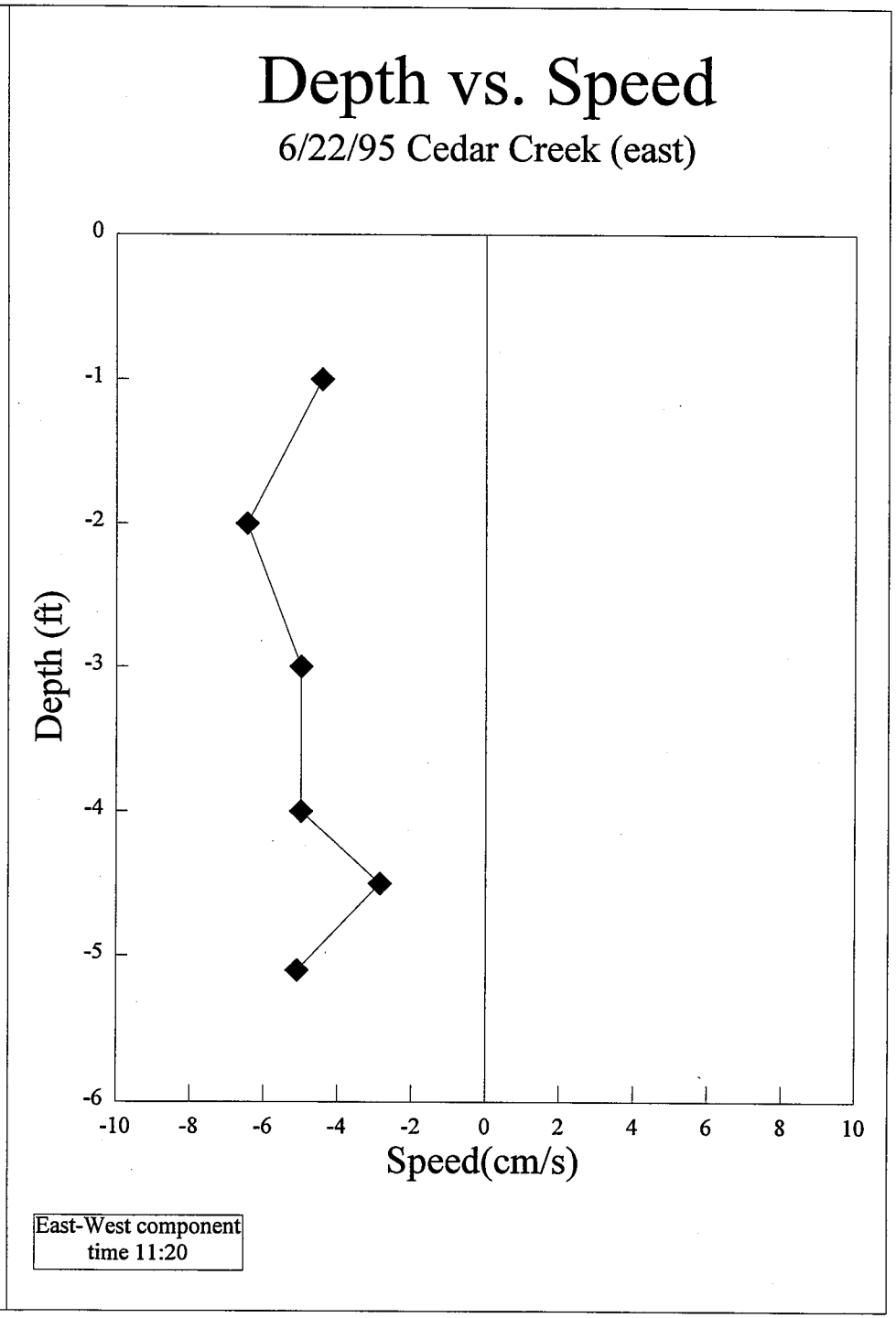



Tidal Cycle at Surf City
LEVEL (cm)
141.422
124.647
107.871
91.096
74.320
57.544
09MAY95 18:01
19MAY95 21:21
30MAY95 00:41
09JUN95 04:01
19JUN95 07:21
29JUN95 10:41


Cedar Creek 6/22/95 (east)
North-South Flow
Magnitude (cm/s)
5
0
-5
-10
-15
09:20
10:00
10:40
11:20
12:00
12:40
13:40
14:20
15:00
15:40
16:20
17:00
Time
Bottom Flow
Surface Flow
north is positive
south is negative

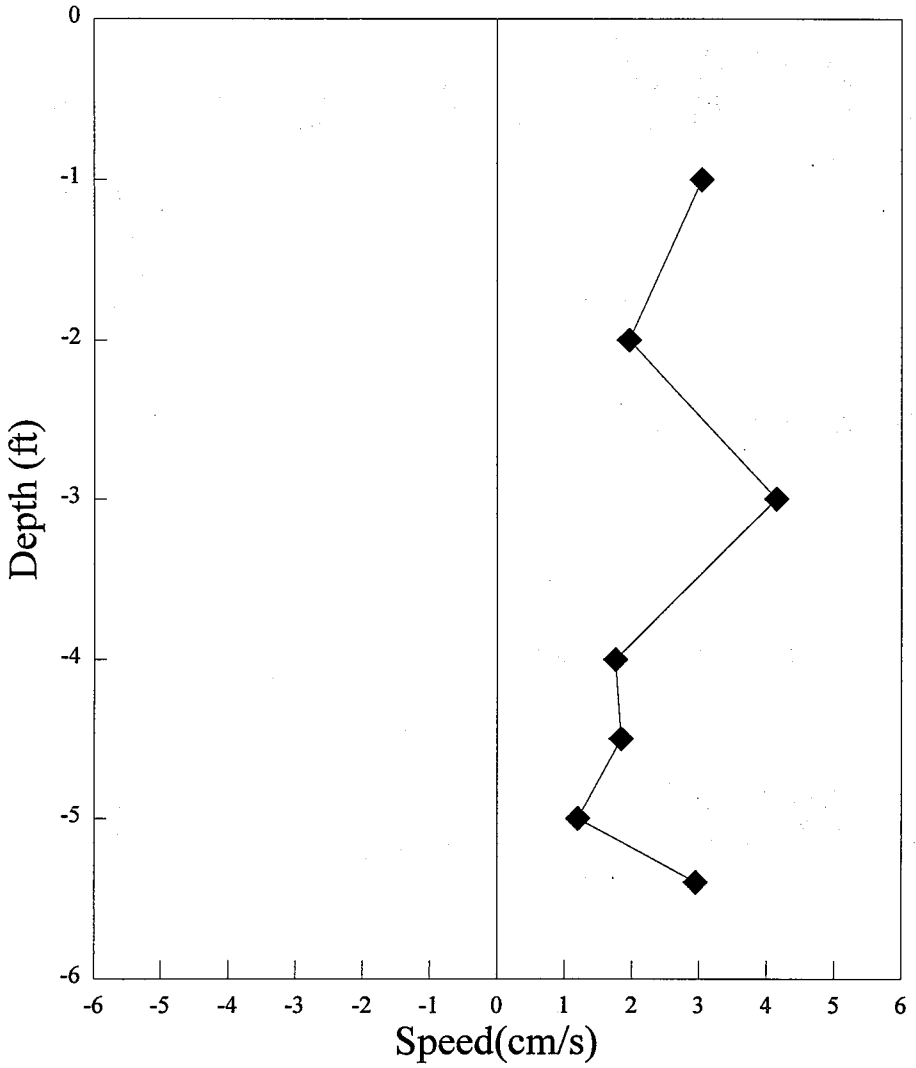

Cedar Creek 6/22/95 (east)
East-West Flow
Magnitude (cm/s)
10
5
0
-5
-10
-15
09:20
10:00
10:40
11:20
12:00
12:40
13:40
14:20
15:00
15:40
16:20
17:00
Time
Bottom Flow
Surface Flow
east is positive
west is negative


Depth vs. Speed
6/22/95 Cedar Creek (east)
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-10
-8
-6
-4
-2
0
2
4
6
8
10
Speed(cm/s)
North-South component
time 11:20


Depth vs. Speed
6/22/95 Cedar Creek (east)
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-10
-8
-6
-4
-2
0
2
4
6
8
10
Speed(cm/s)
East-West component
time 11:20

Depth vs. Speed

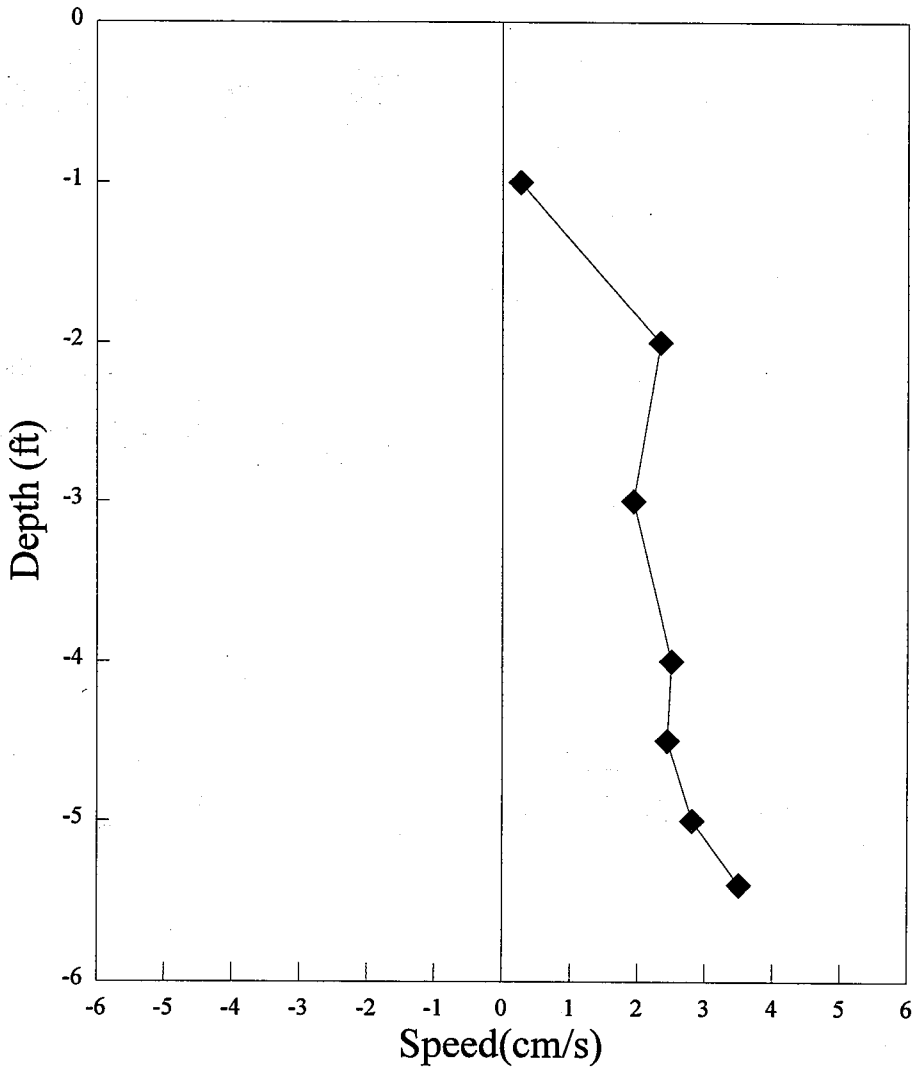
6/22/95 Cedar Creek (east)



North-South component
time 17:20

Depth vs. Speed

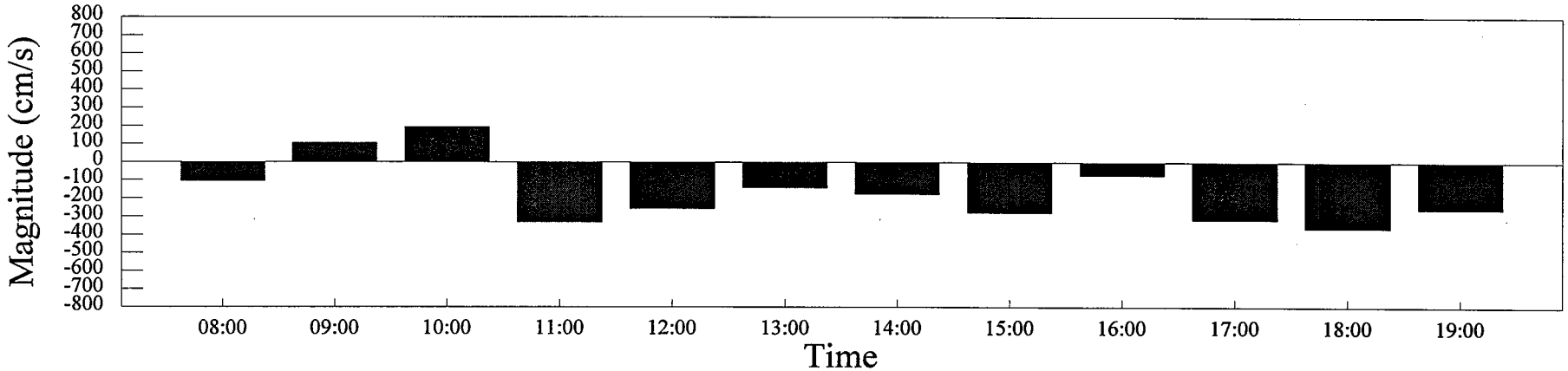
6/22/95 Cedar Creek (east)



East-West component
time 17:20

Wind Velocities 6/22/95

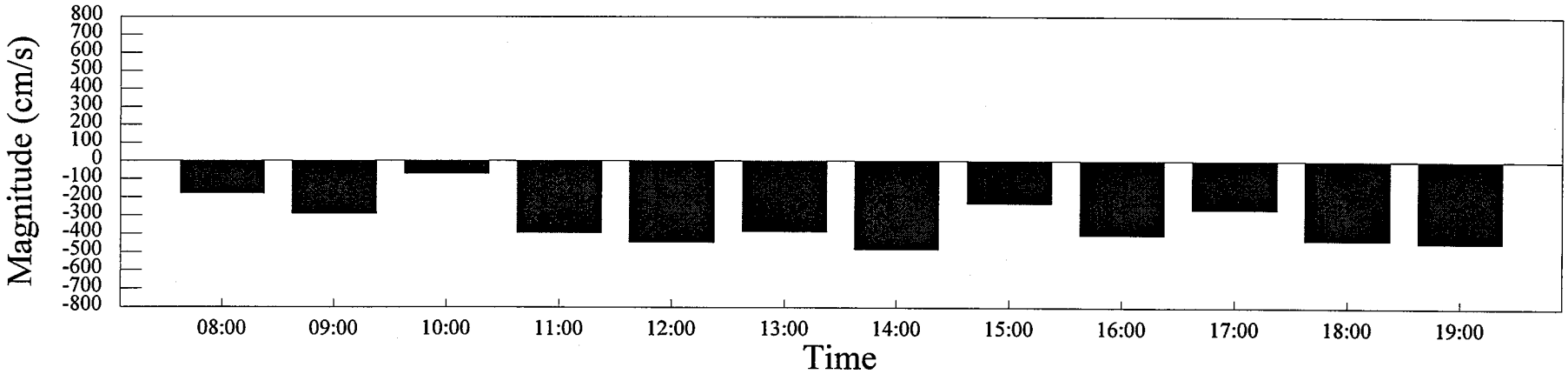
North-South



north is positive
south is negative

Wind Velocities 6/22/95

East-West

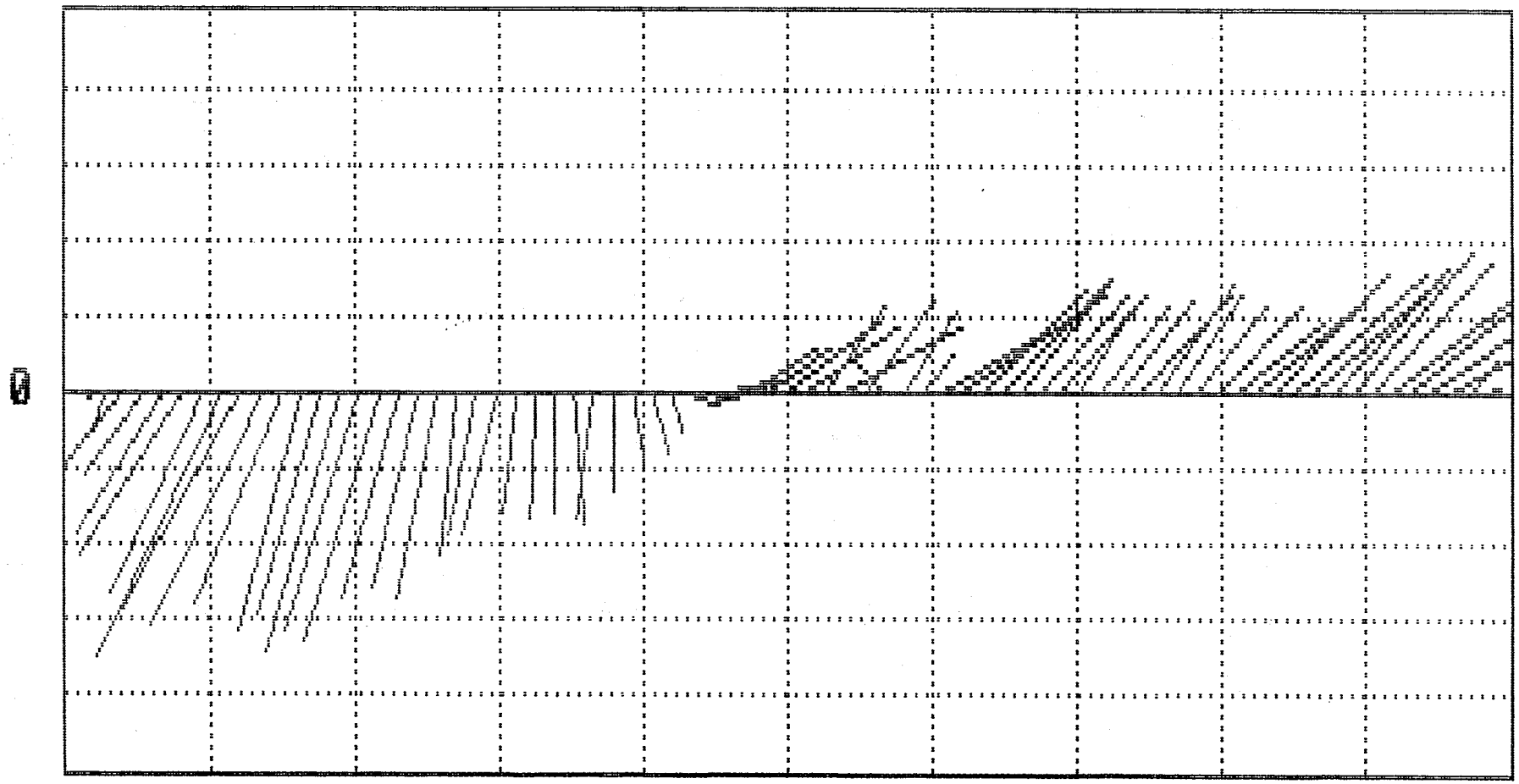


east is positive
west is negative

CEDAR CREEK

InterOcean Systems, Inc.
METER137
Samples averaged : 1

Model S4 Current Meter #05191137
File : CKJUN137.S4B
Mean : 145.63

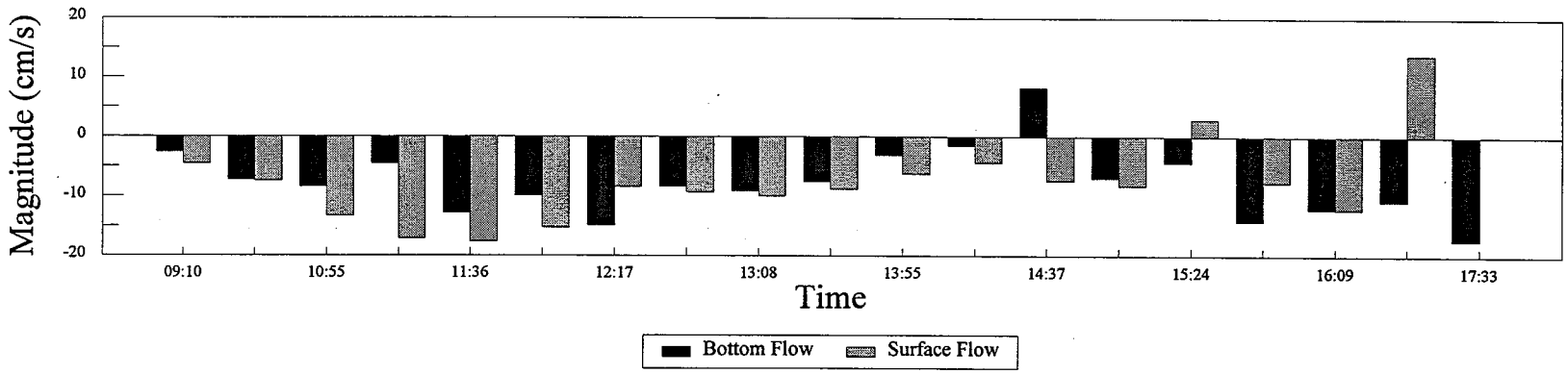


Samples 121 - 195 5.0cm/s/div

6/22/95 08:47:00 6/22/95 21:07:00

Cedar Creek 6/22/95 (west)

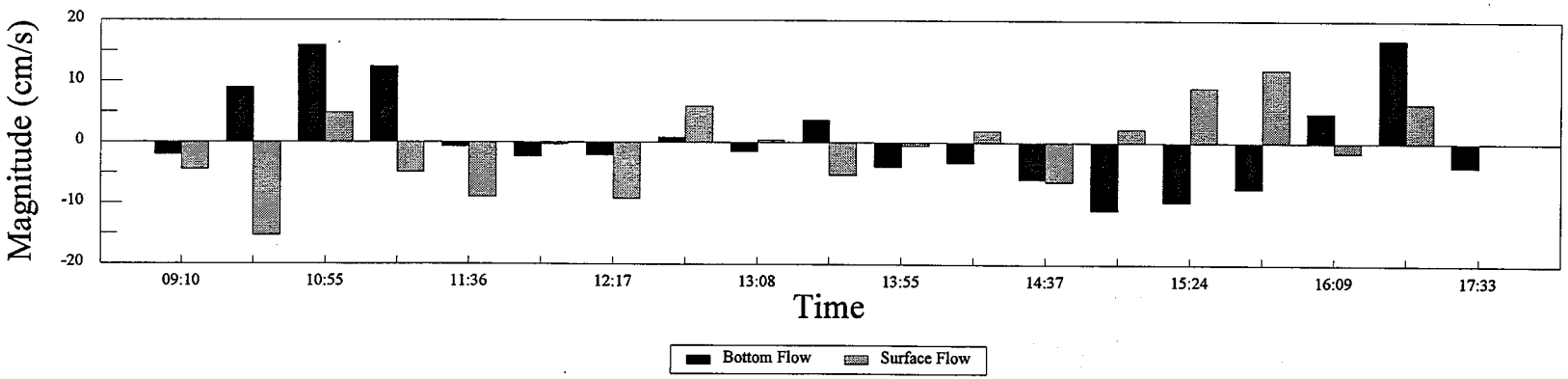
North-South Flow



north is positive
south is negative

Cedar Creek 6/22/95 (west)

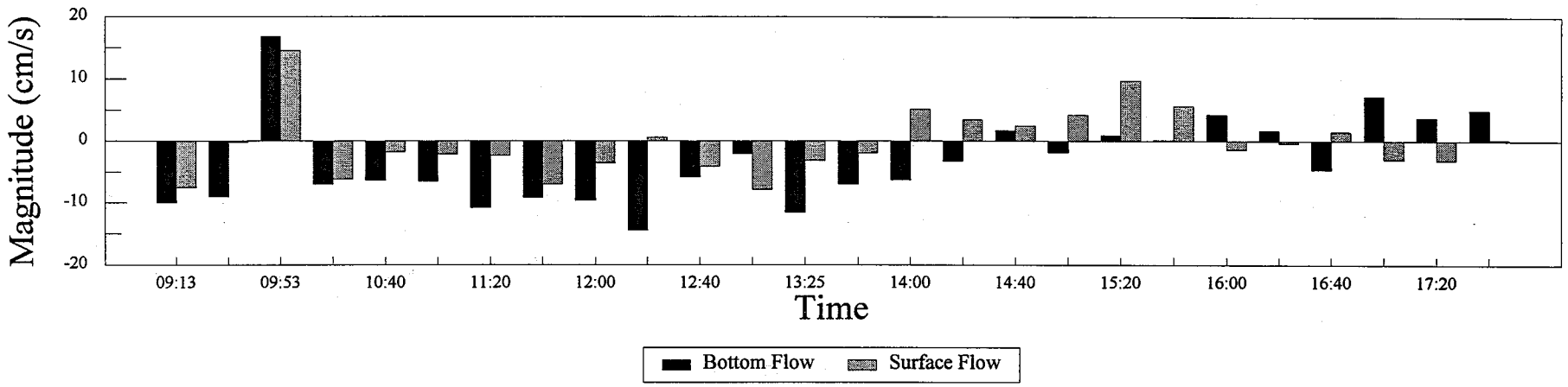
East-West Flow



east is positive
west is negative

Cedar Creek 6/22/95 (center)

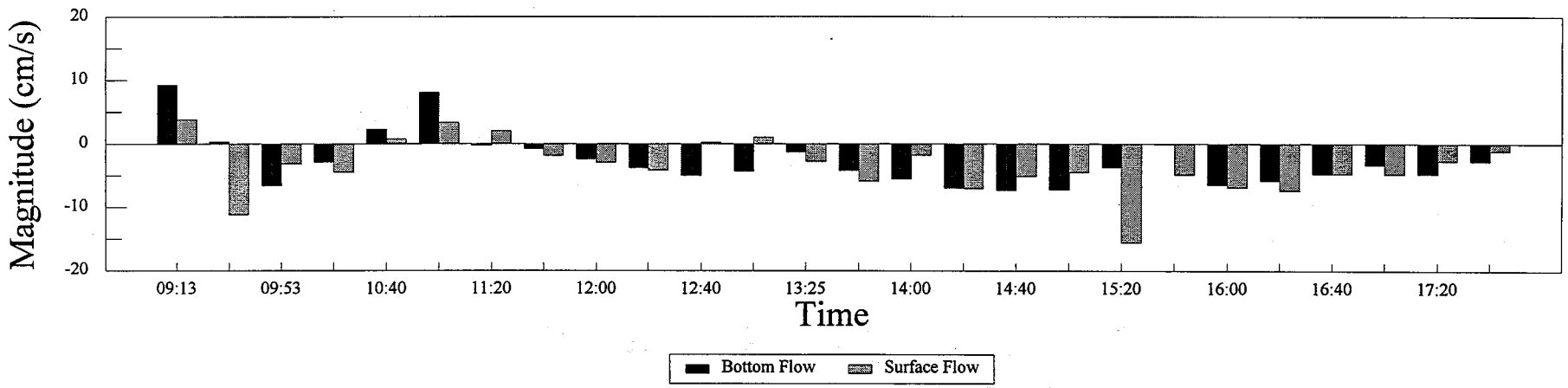
North-South Flow



north is positive
south is negative

Cedar Creek 6/22/95 (center)

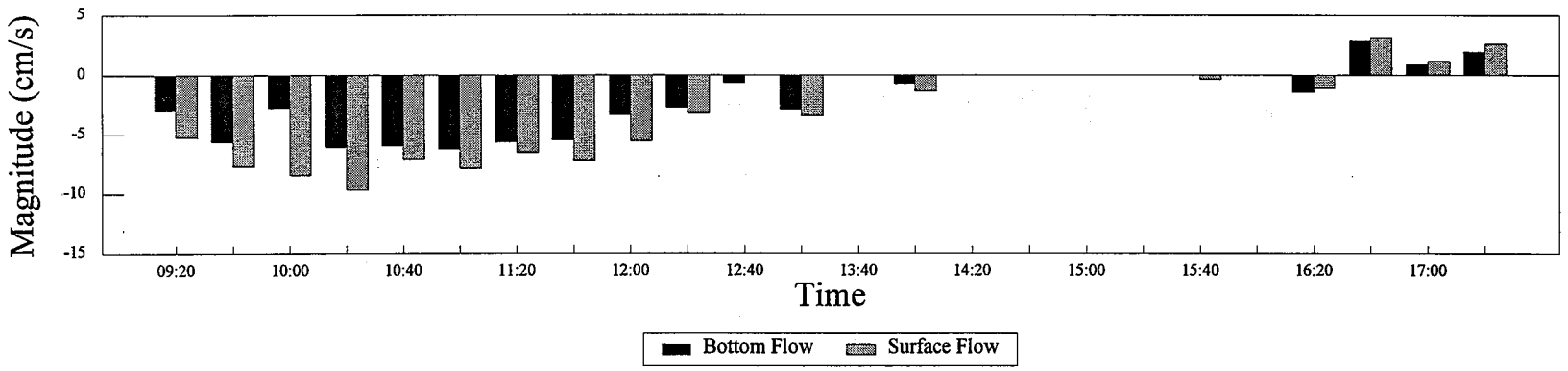
East-West Flow



east is positive
west is negative

Cedar Creek 6/22/95 (east)

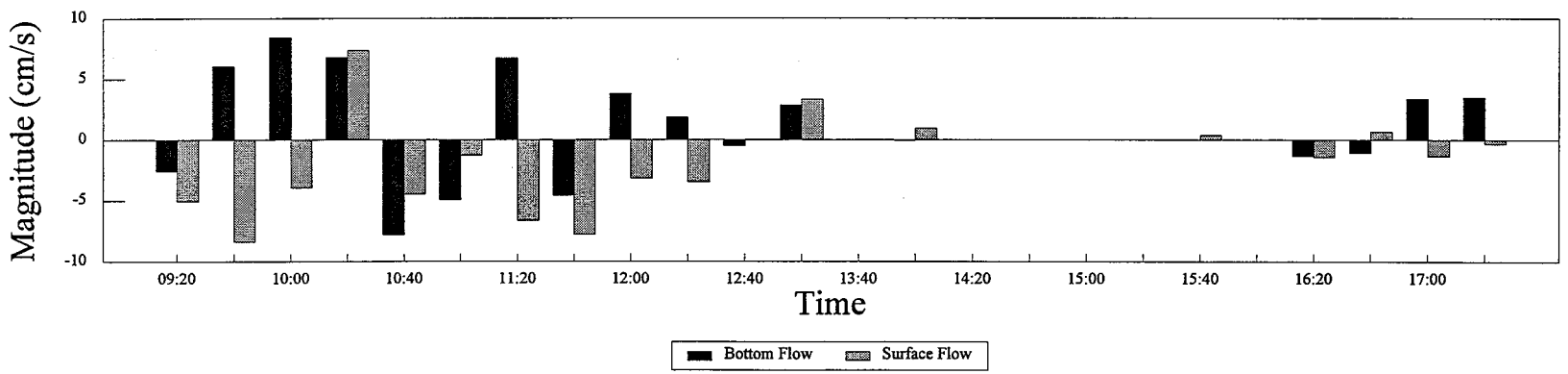
North-South Flow



north is positive
south is negative

Cedar Creek 6/22/95 (east)

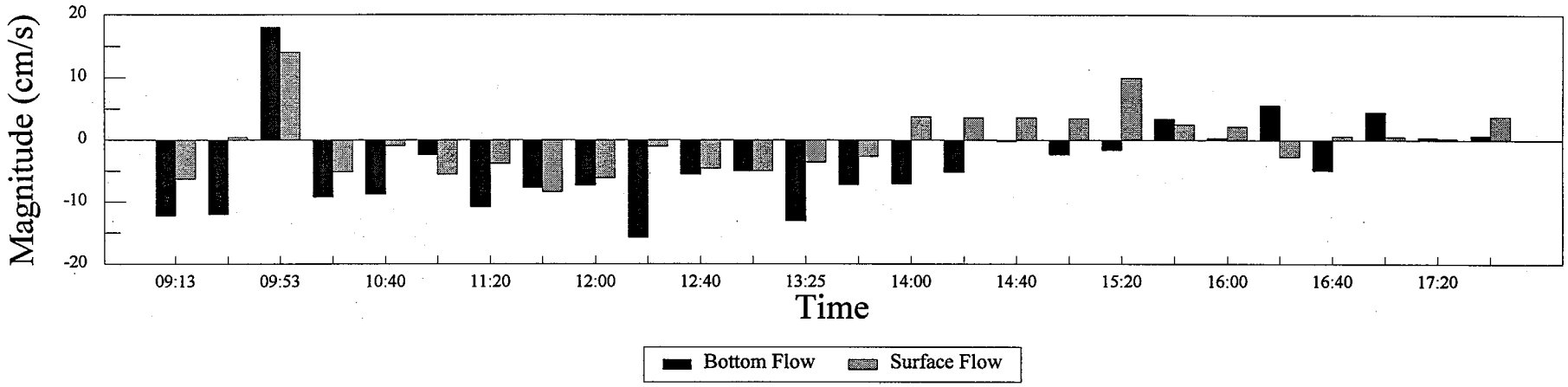
East-West Flow



east is positive
west is negative

Cedar Creek 6/22/95 (center)

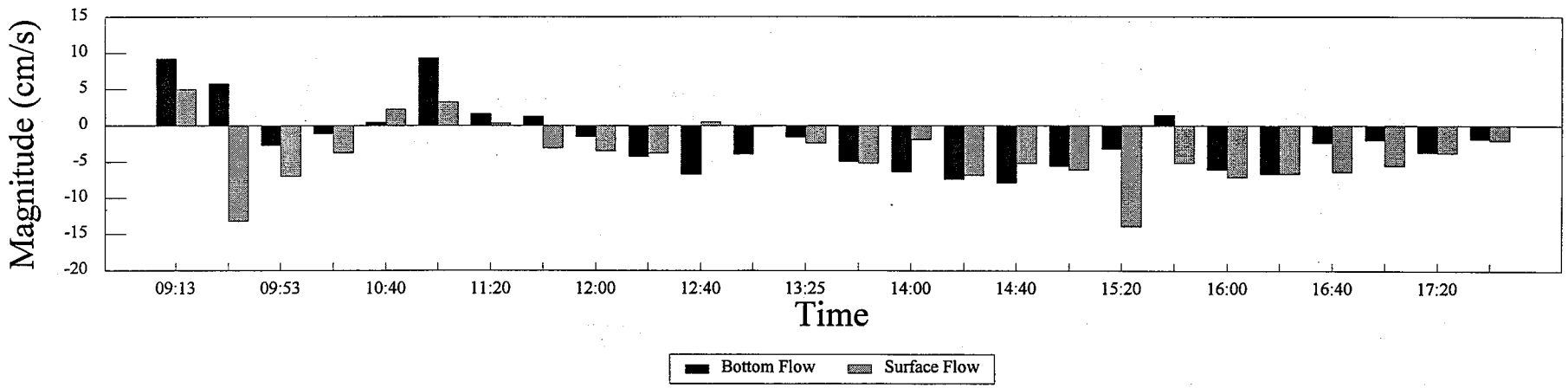
North-South Flow



north is positive
south is negative

Cedar Creek 6/22/95 (center)

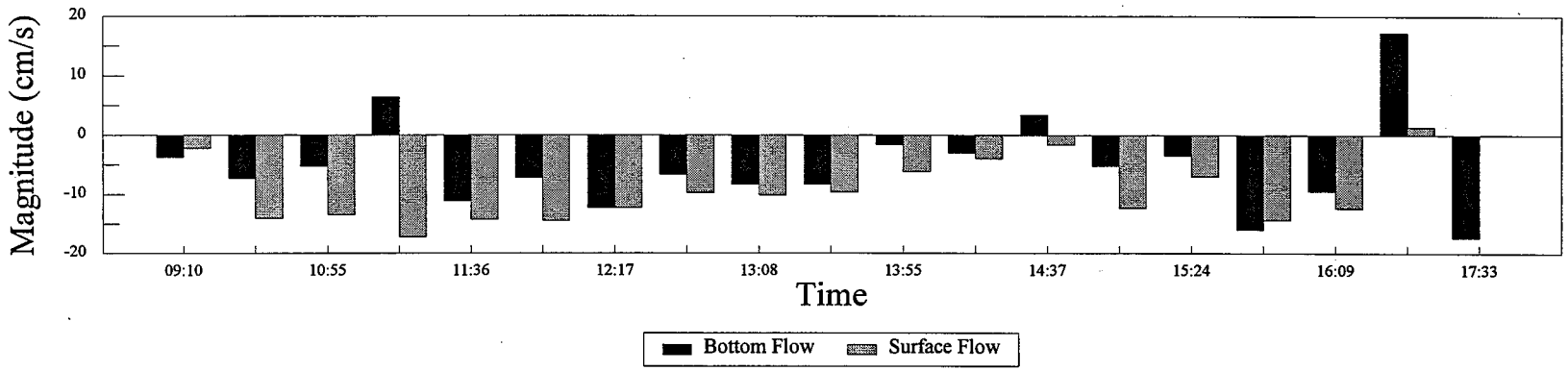
East-West Flow



east is positive
west is negative

Cedar Creek 6/22/95 (west)

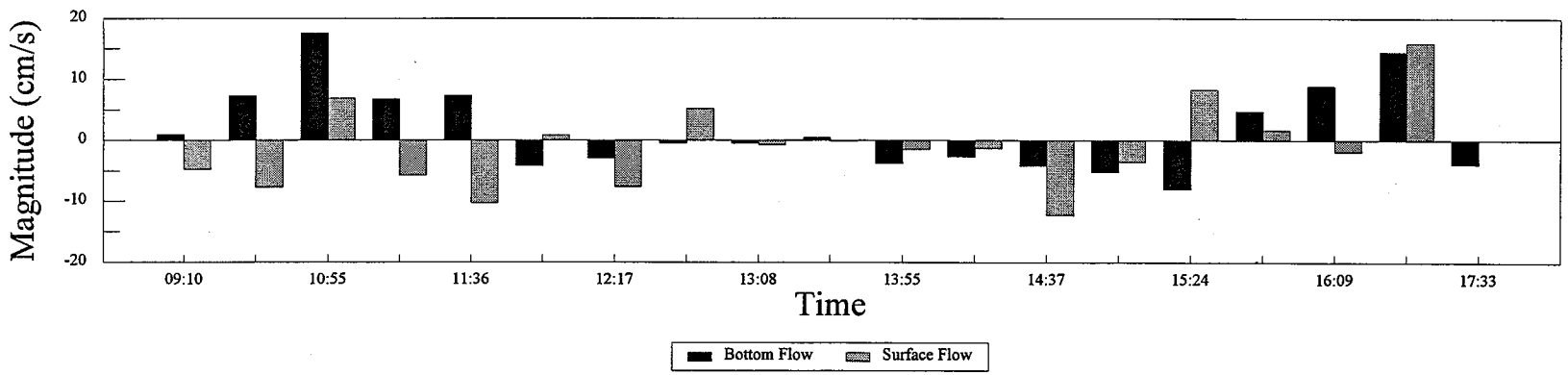
North-South Flow



north is positive
south is negative

Cedar Creek 6/22/95 (west)

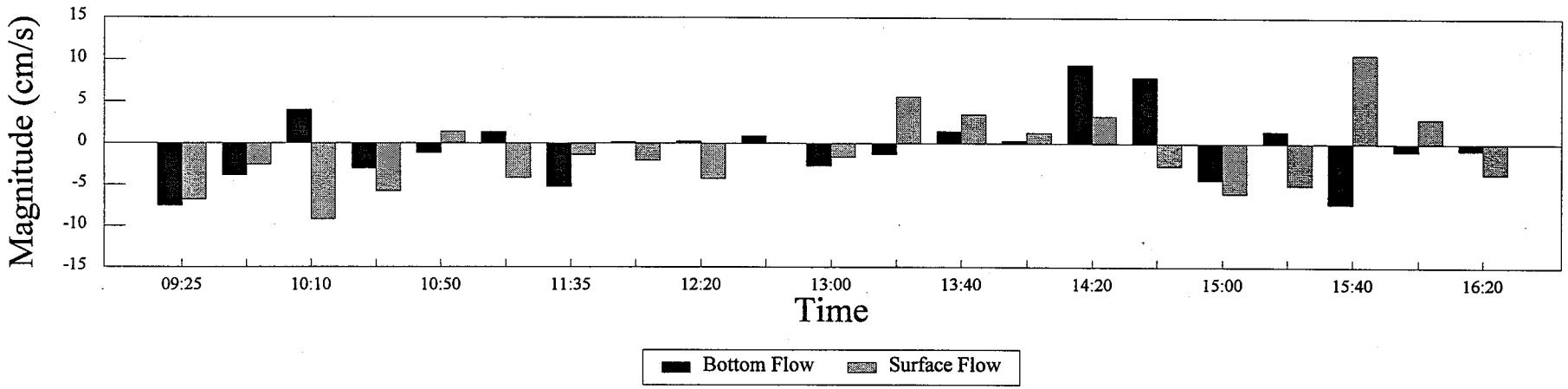
East-West Flow



east is positive
west is negative

Silver Bay 6/29/95

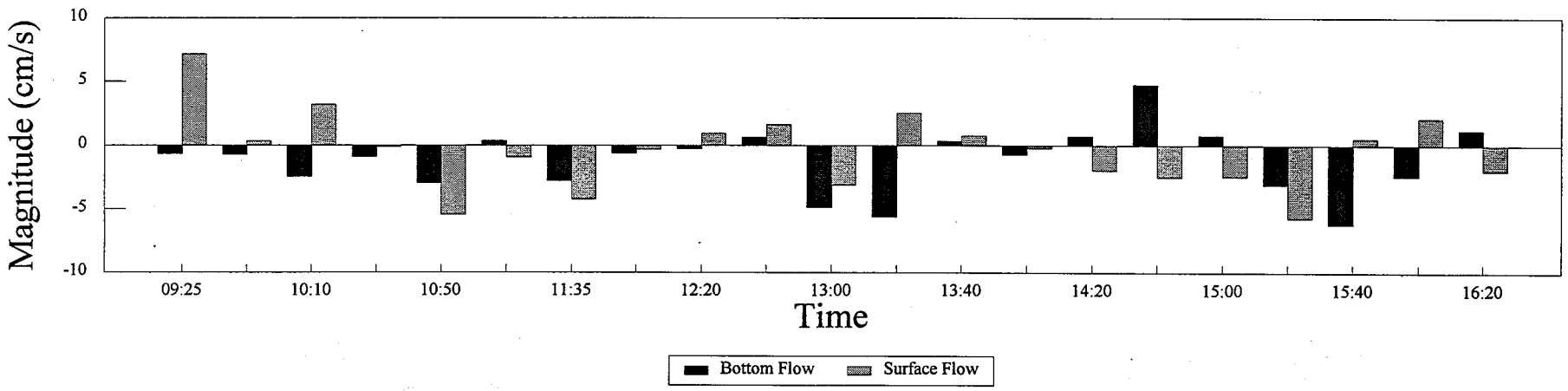
North-South Flow



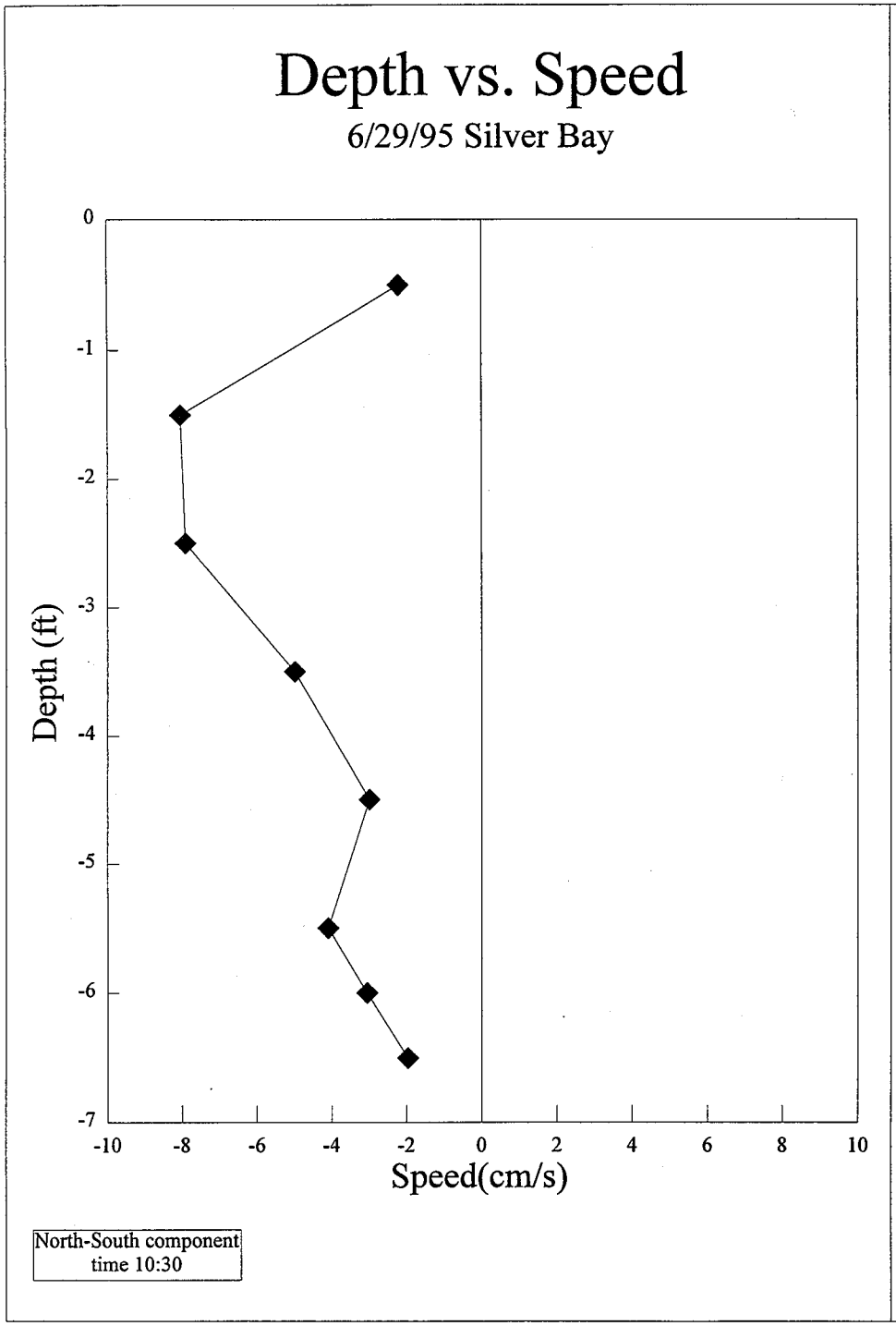
north is positive
south is negative

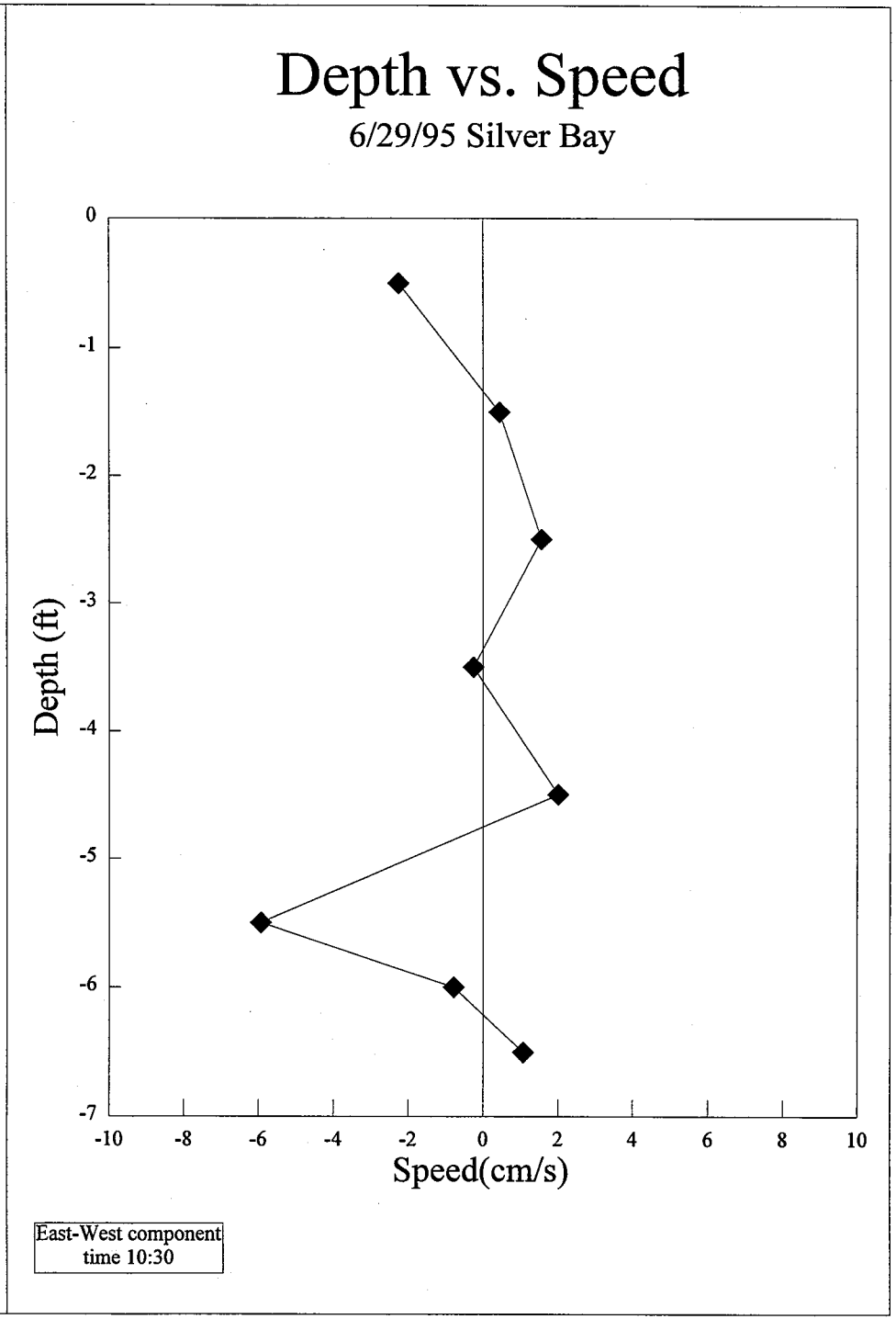
Silver Bay 6/29/95

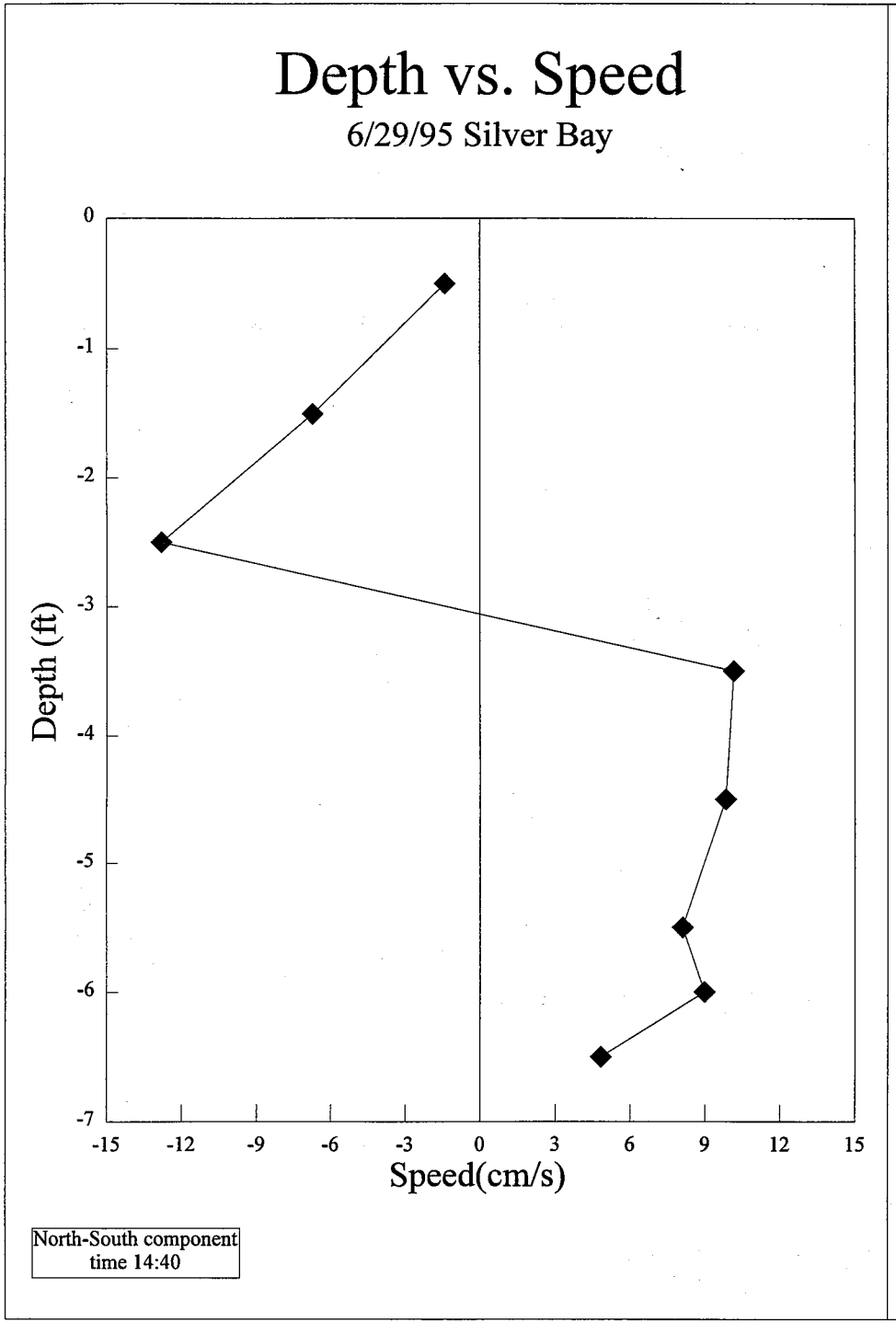
East-West Flow

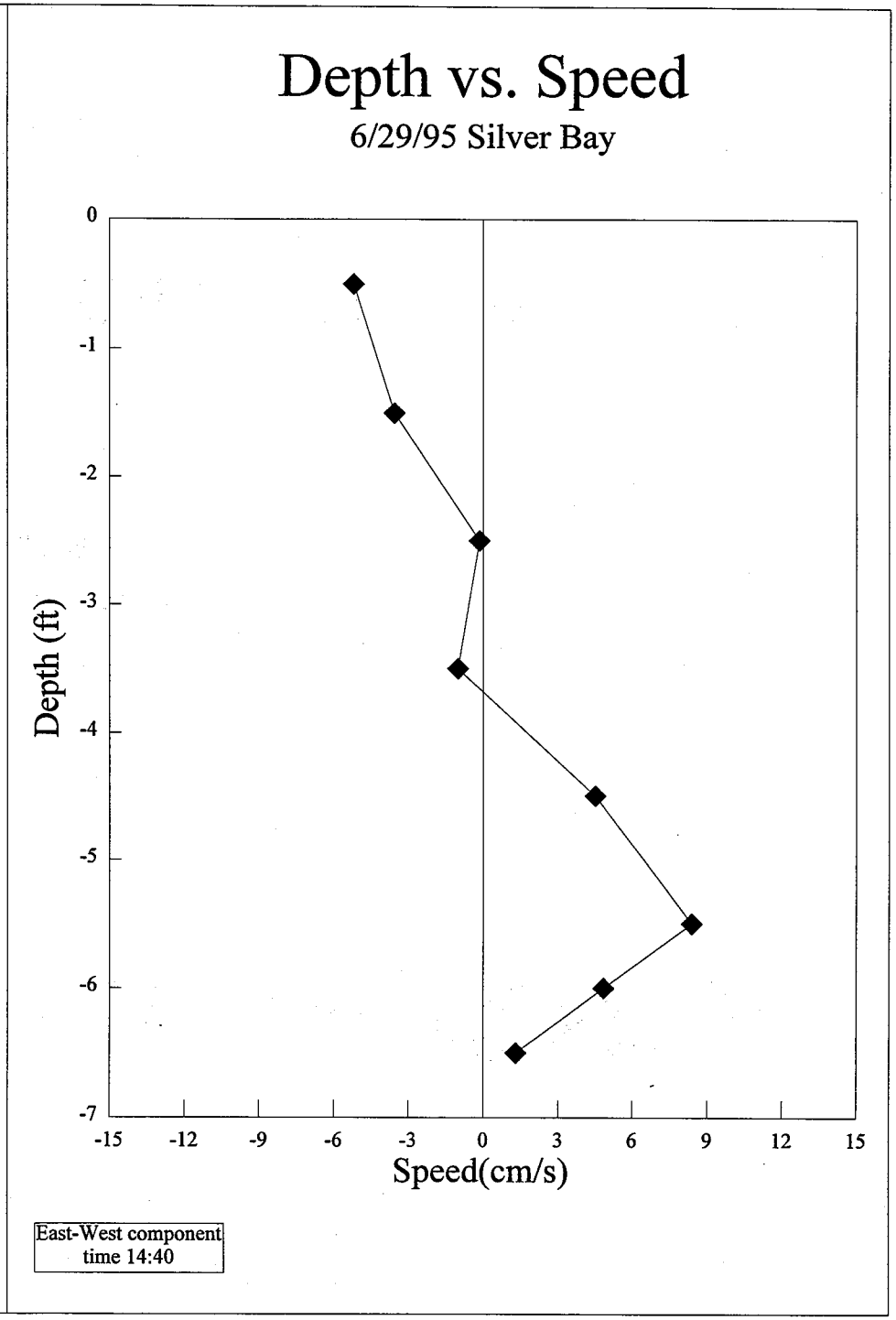


east is positive
west is negative


Depth vs. Speed
6/29/95 Silver Bay
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-7
-10
-8
-6
-4
-2
0
2
4
6
8
10
Speed(cm/s)
North-South component
time 10:30

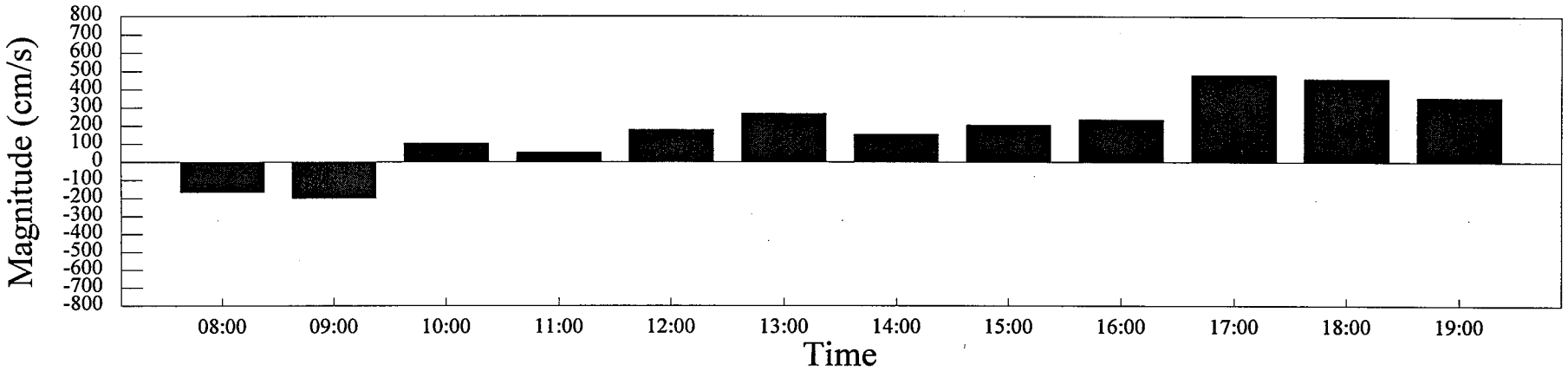

Depth vs. Speed
6/29/95 Silver Bay
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-7
-10
-8
-6
-4
-2
0
2
4
6
8
10
Speed(cm/s)
East-West component
time 10:30


Depth vs. Speed
6/29/95 Silver Bay
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-7
-15
-12
-9
-6
-3
0
3
6
9
12
15
Speed(cm/s)
North-South component
time 14:40


Depth vs. Speed
6/29/95 Silver Bay
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-7
-15
-12
-9
-6
-3
0
3
6
9
12
15
Speed(cm/s)
East-West component
time 14:40

Wind Velocities 6/29/95

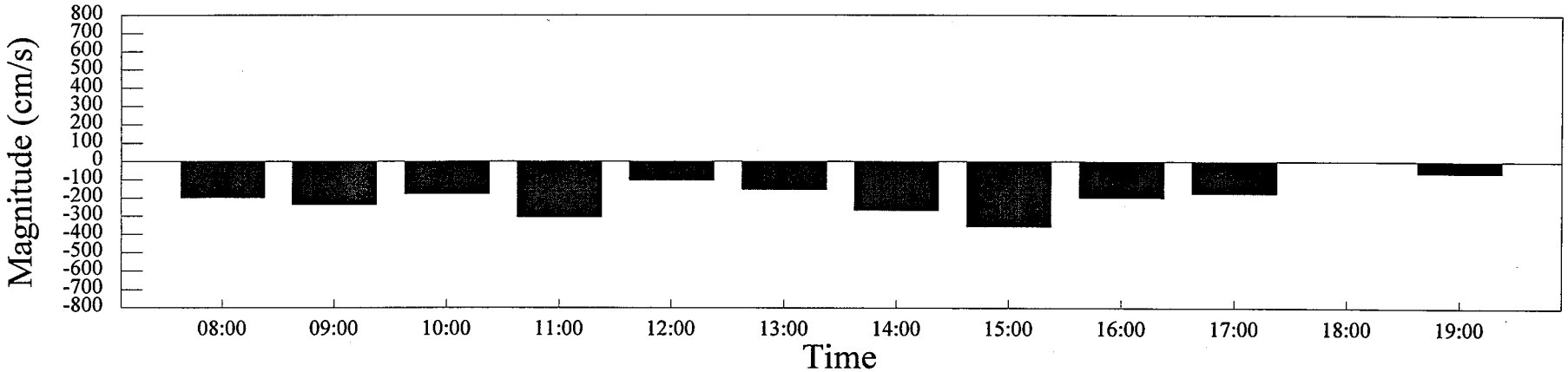
North-South



north is positive
south is negative

Wind Velocities 6/29/95

East-West

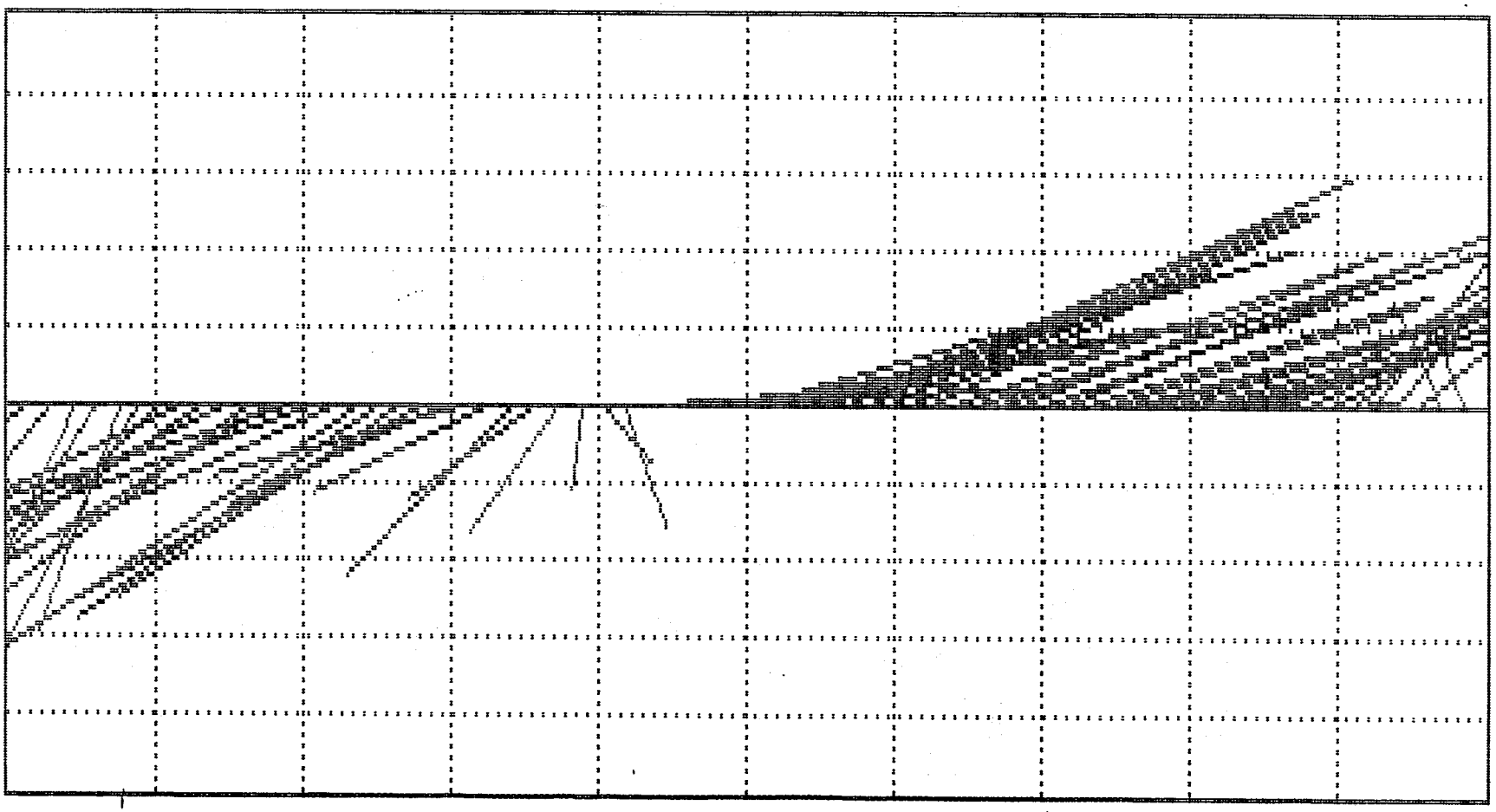


east is positive
west is negative

MANTOLOKING

InterOcean Systems, Inc.
METER237
Samples averaged : 1

Model S4 Current Meter #05451237
File : JUN237.S4B
Mean : 90.75

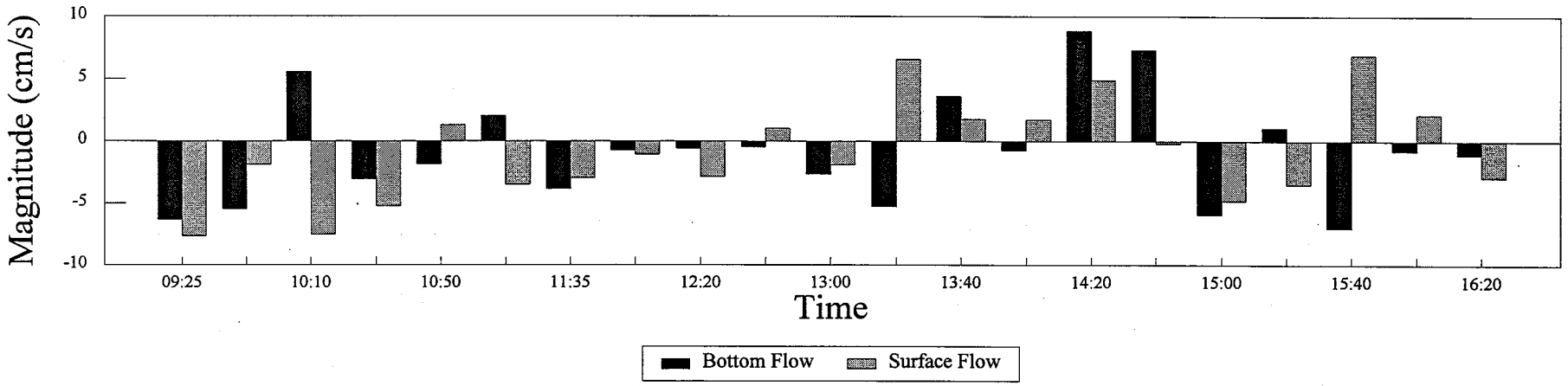


Samples 1127 - 1194 3.0cm/s/div

6/29/95 07:37:00 6/29/95 18:47:00

Silver Bay 6/29/95

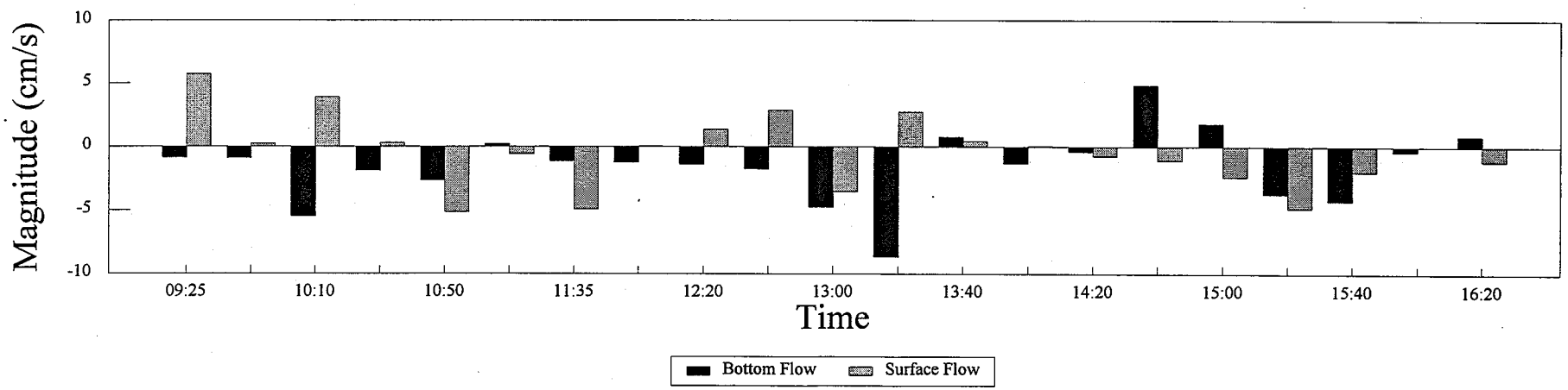
North-South Flow



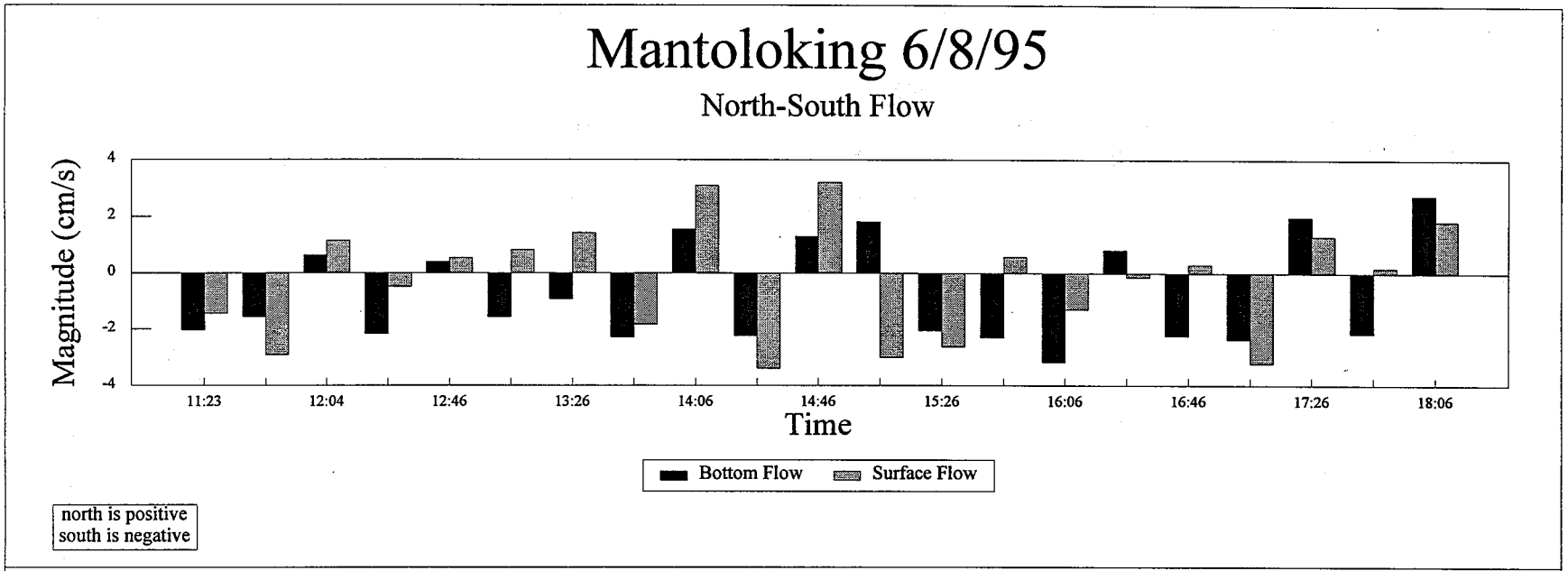
north is positive
south is negative

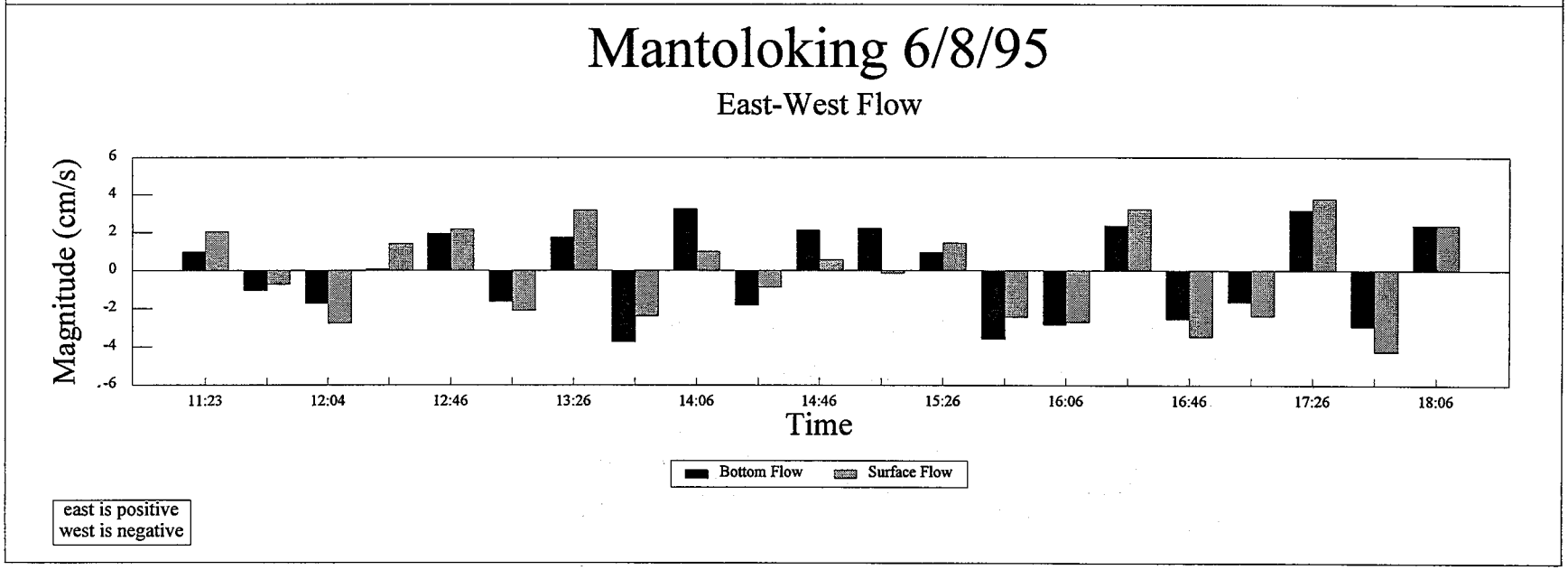
Silver Bay 6/29/95

East-West Flow



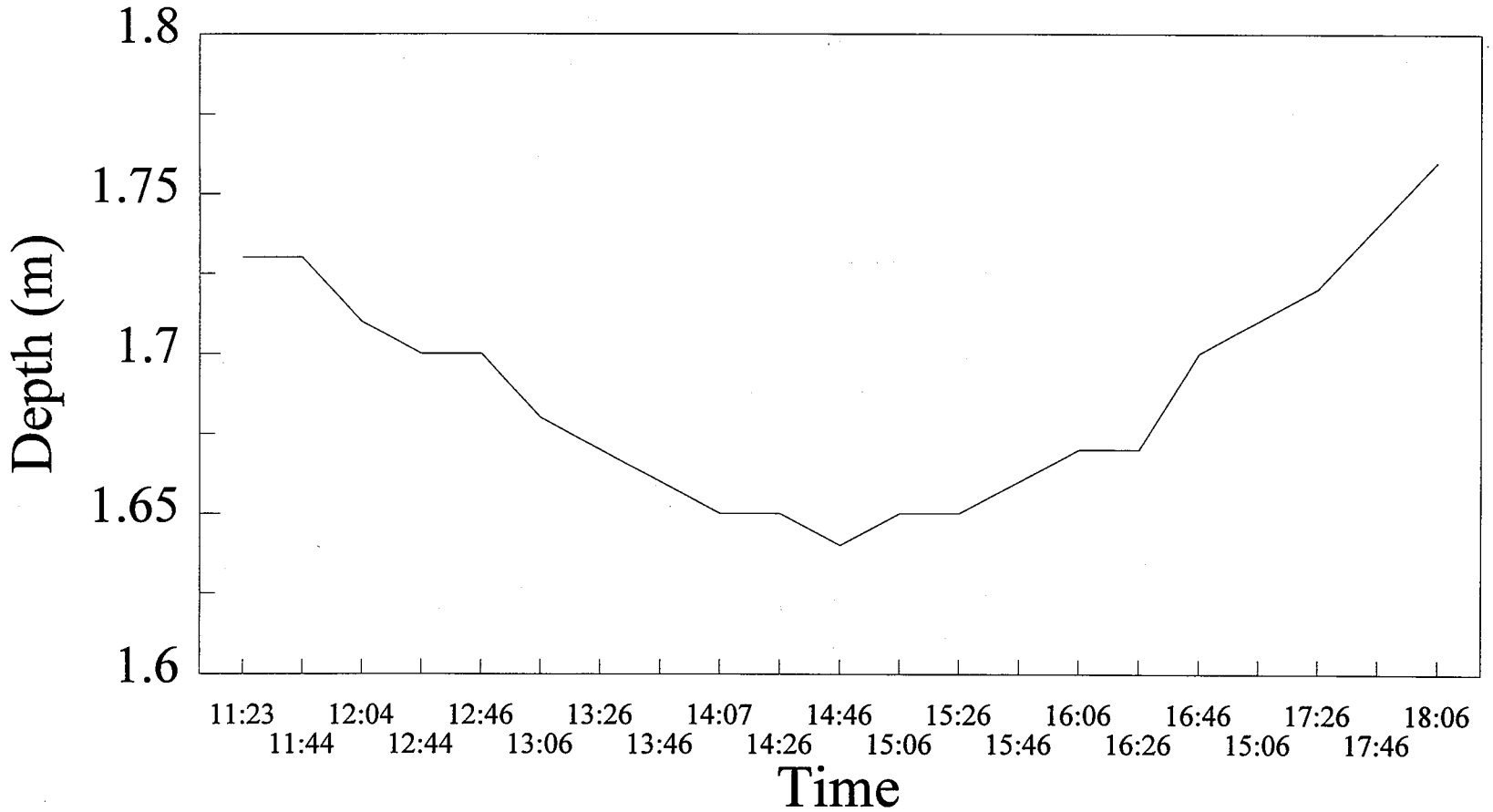
east is positive
west is negative


Mantoloking 6/8/95
North-South Flow
Magnitude (cm/s)
4
2
0
-2
-4
11:23
12:04
12:46
13:26
14:06
14:46
15:26
16:06
16:46
17:26
18:06
Time
Bottom Flow
Surface Flow
north is positive
south is negative


Mantoloking 6/8/95
East-West Flow
Magnitude (cm/s)
6
4
2
0
-2
-4
-6
11:23
12:04
12:46
13:26
14:06
14:46
15:26
16:06
16:46
17:26
18:06
Time
Bottom Flow
Surface Flow
east is positive
west is negative

Depth vs. Time

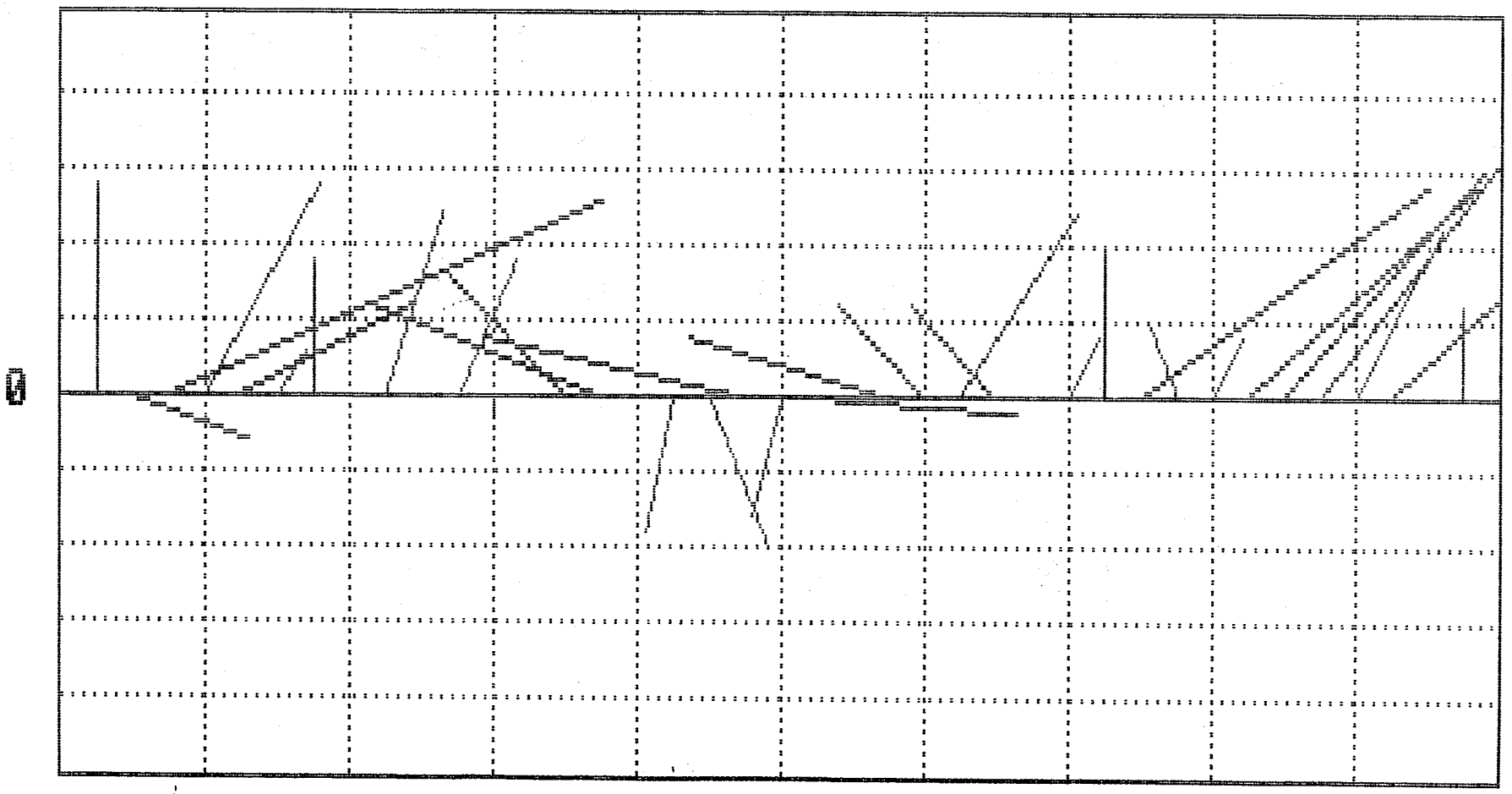
Mantoloking 6/8/95



MANTOLOKING

InterOcean Systems, Inc.
METER237
Samples averaged : 1

Model S4 Current Meter #05451237
File : MANT237.S4B
Mean : 20.02



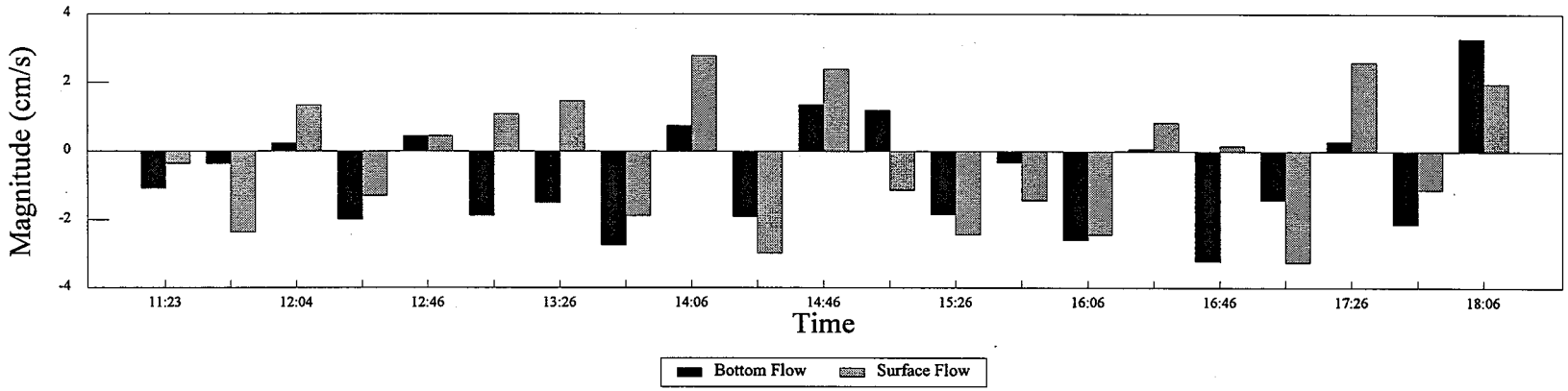
Samples 117 - 157 1.0cm/s/div

6/08/95 11:17:00

6/08/95 17:57:00

Mantoloking 6/8/95

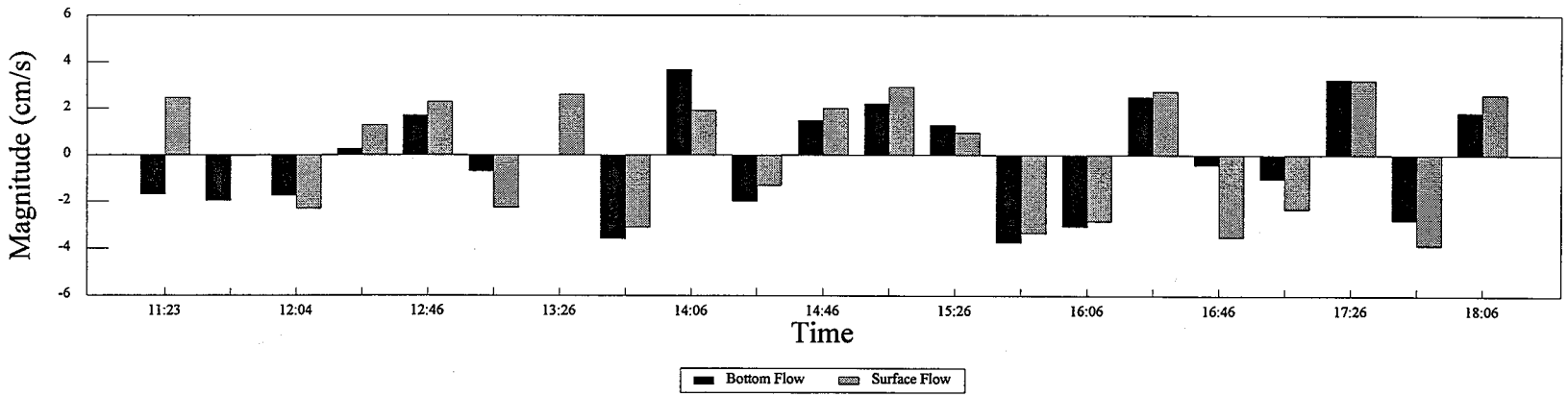
North-South Flow



north is positive
south is negative

Mantoloking 6/8/95

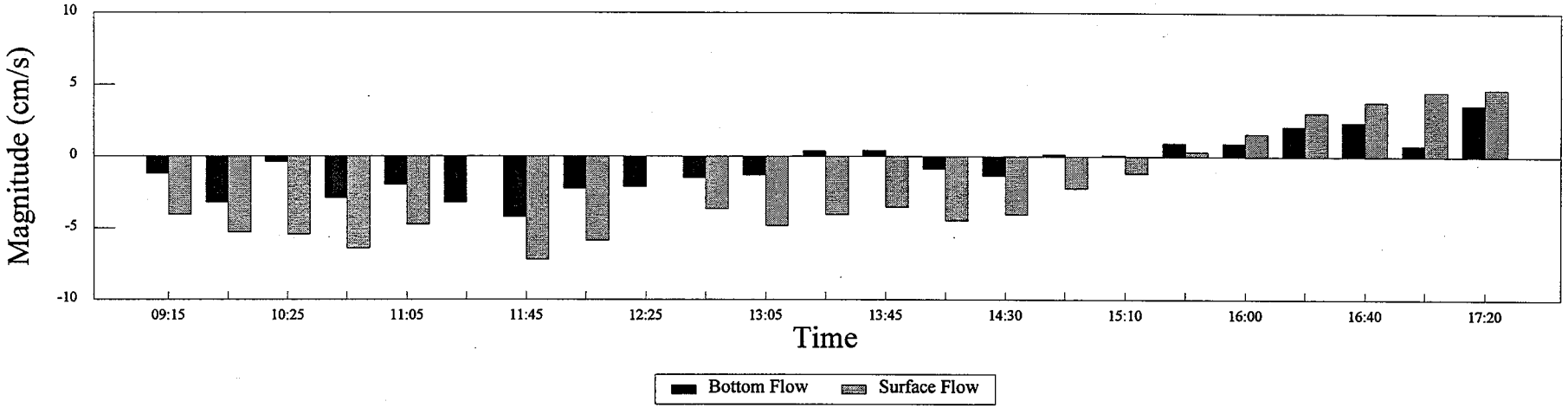
East-West Flow



east is positive
west is negative

Surf City 6/8/95

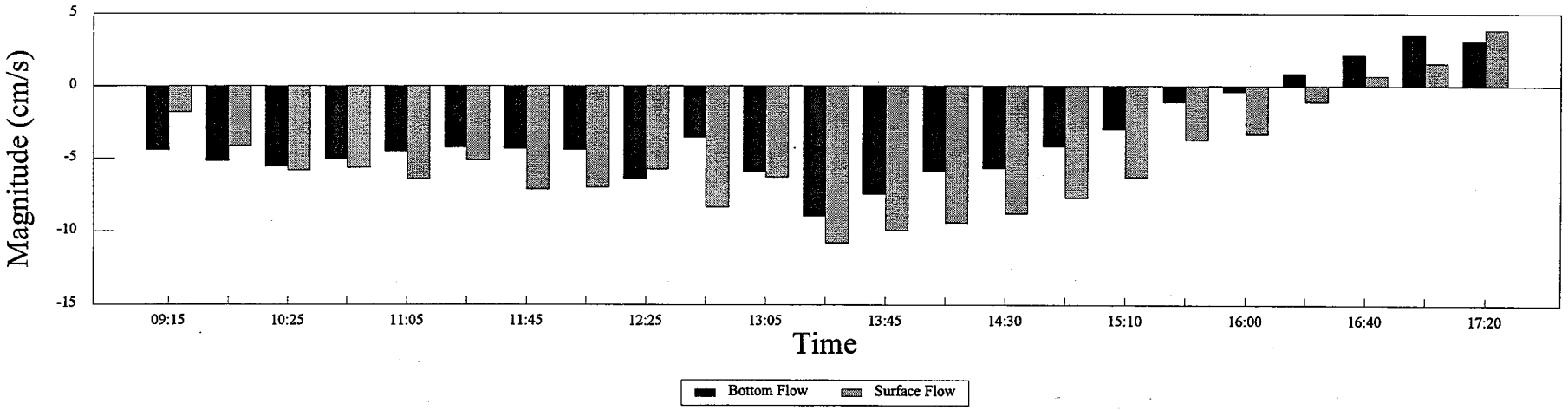
North-South Flow



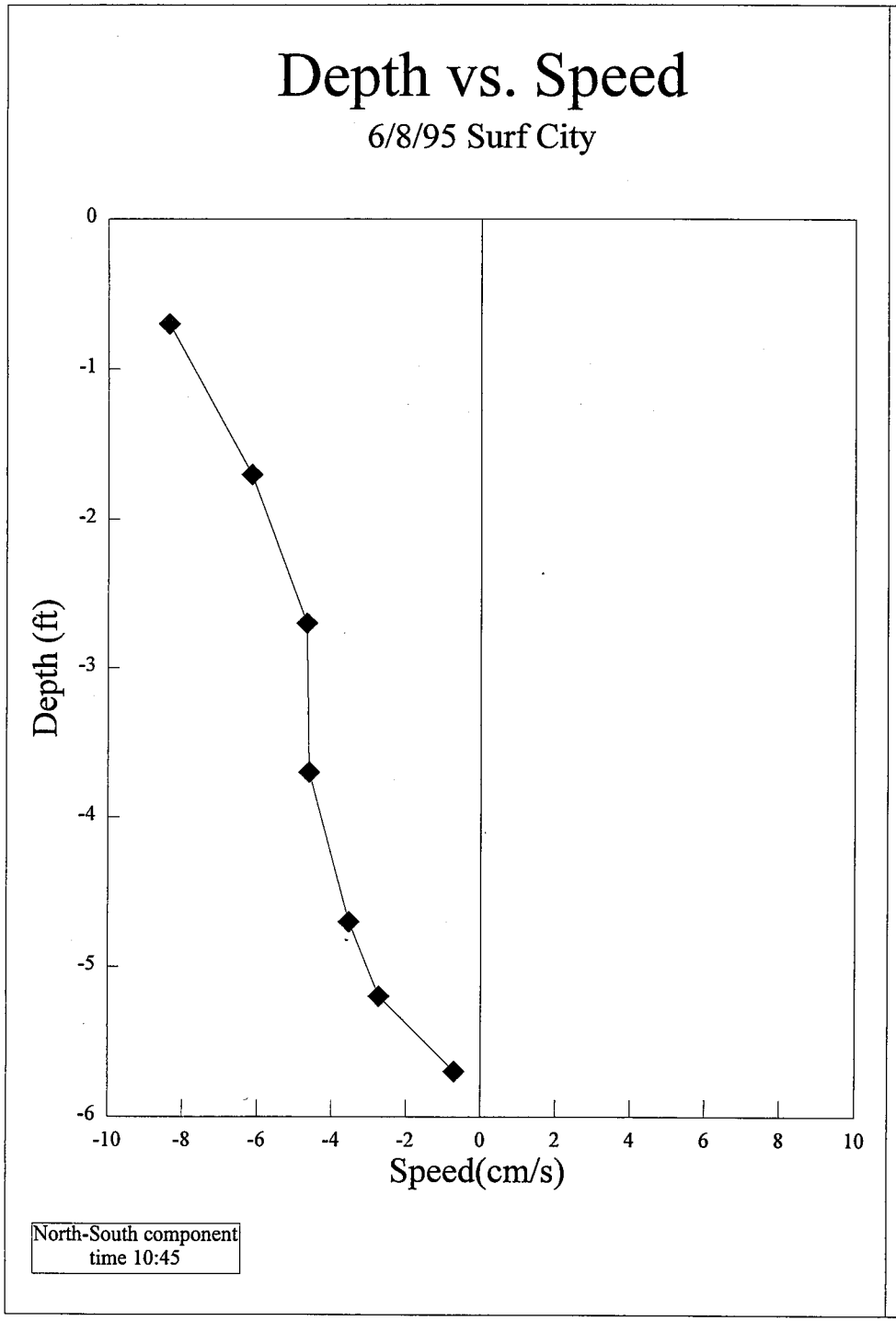
north is positive
south is negative

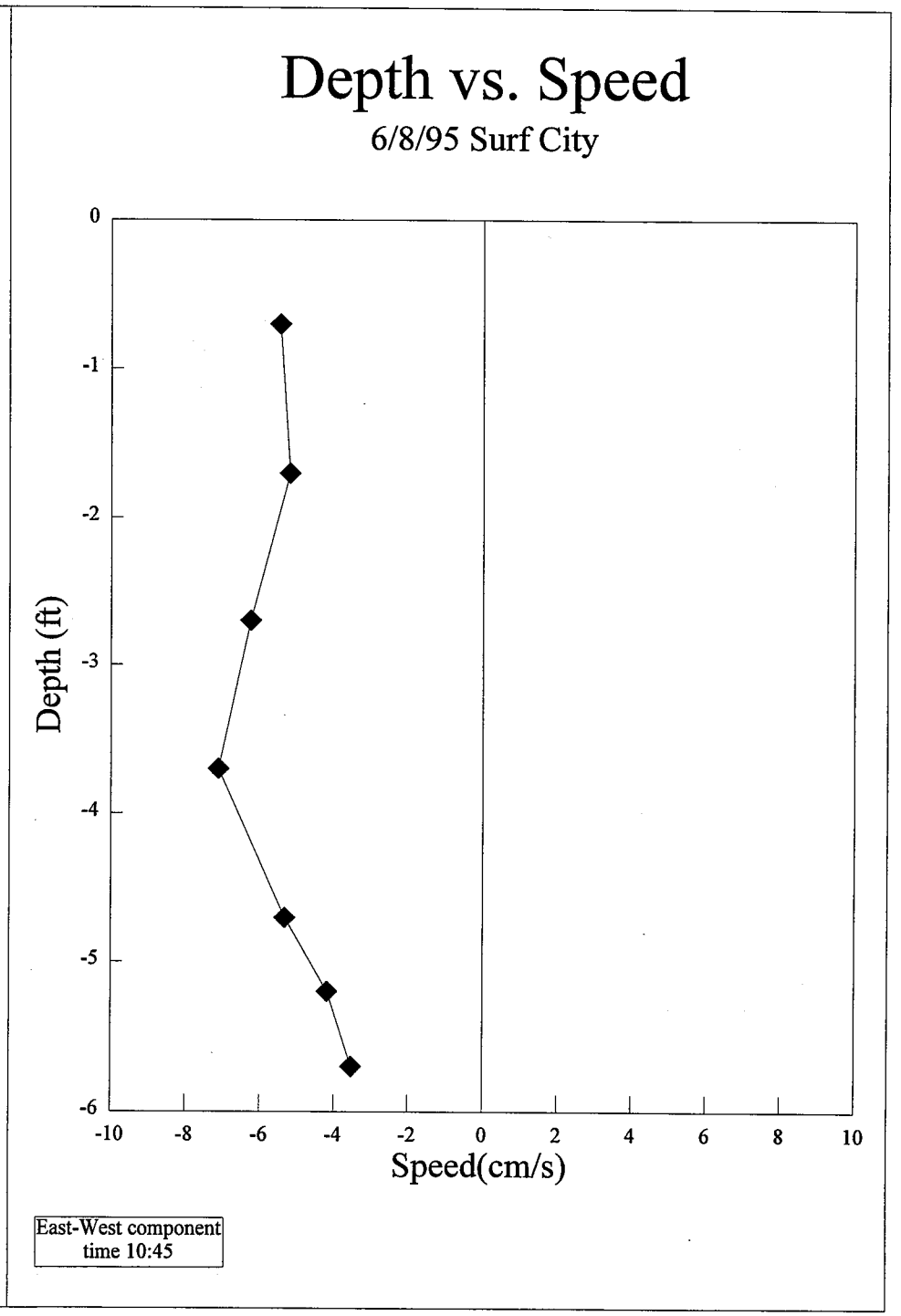
Surf City 6/8/95

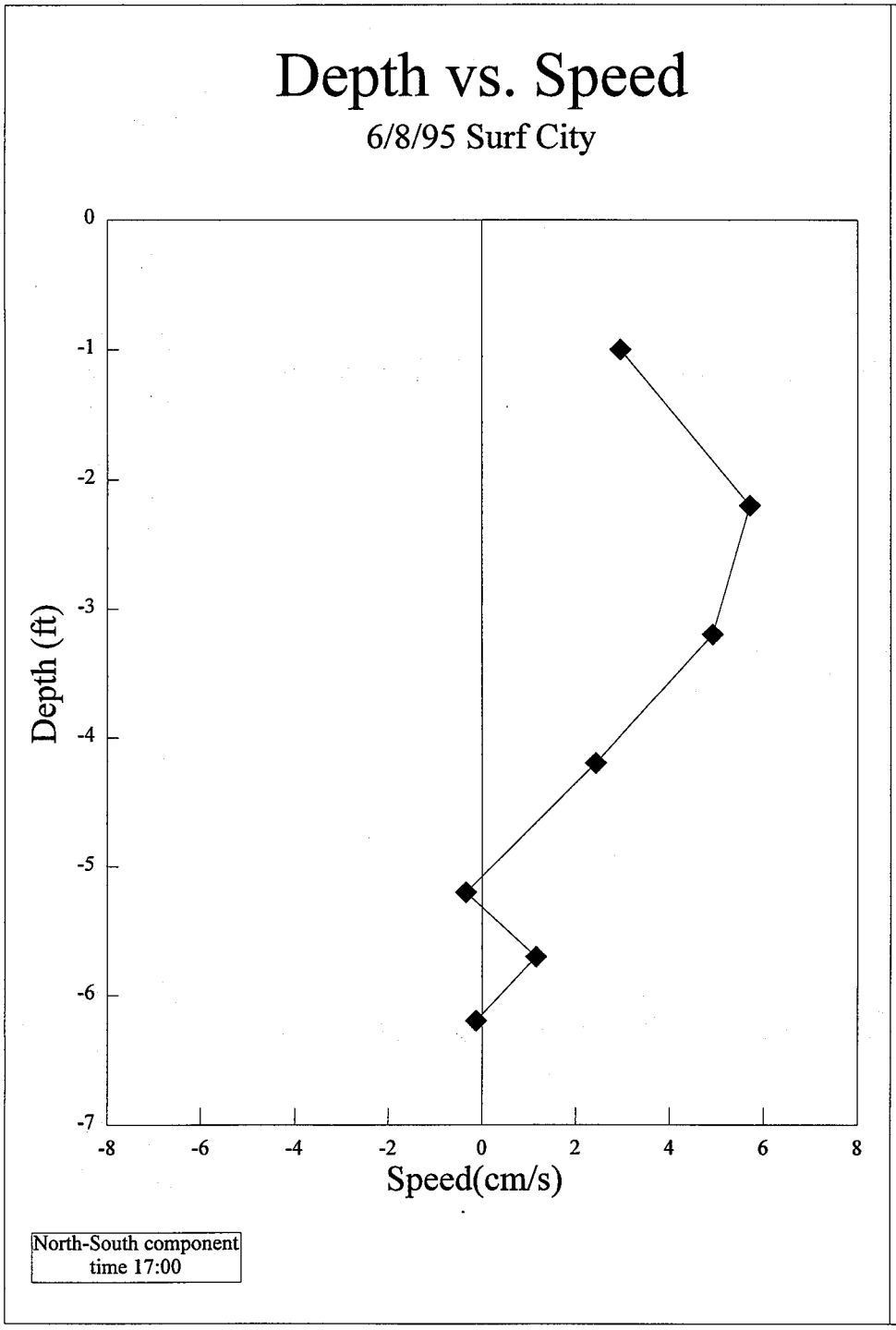
East-West Flow

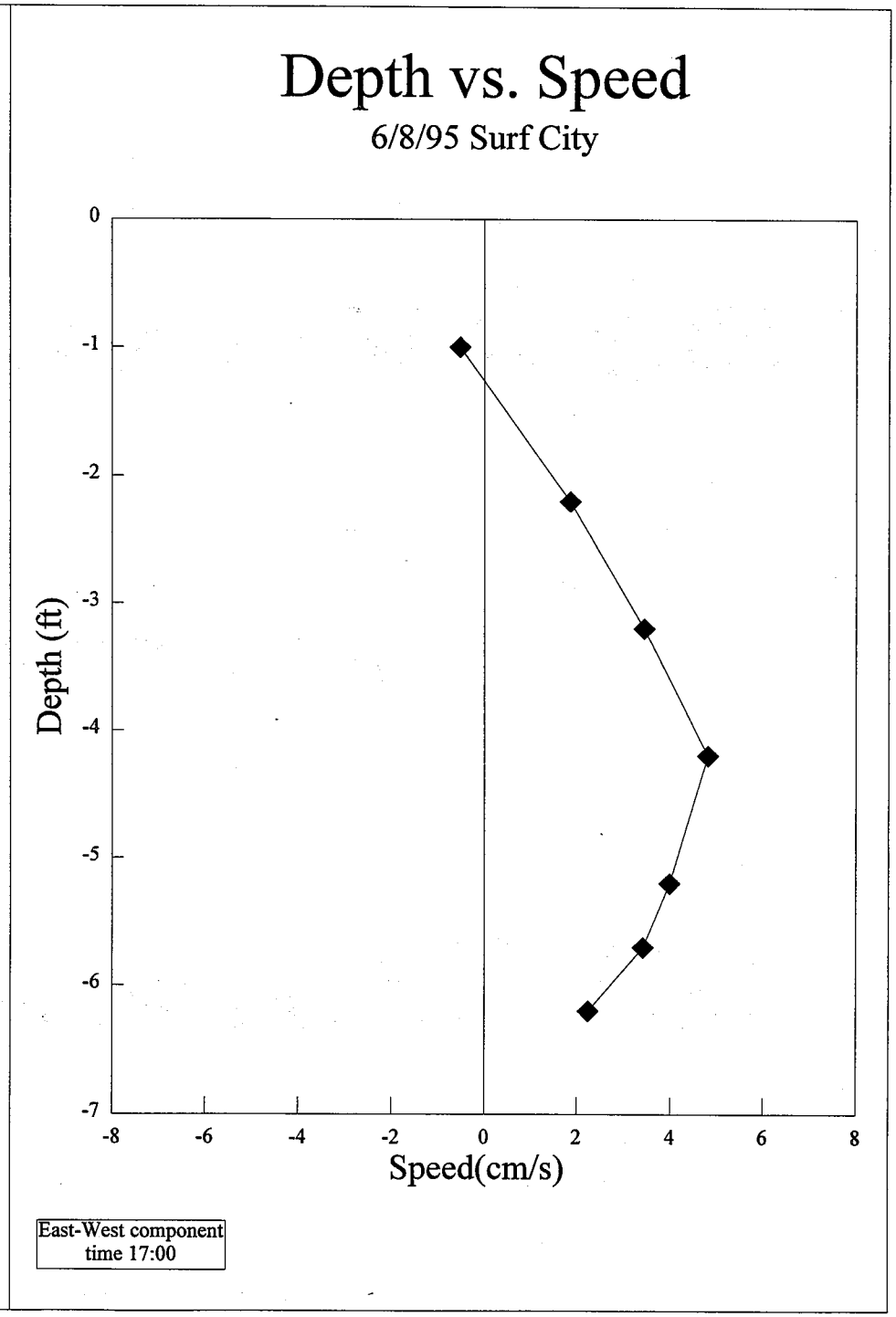


east is positive
west is negative


Depth vs. Speed
6/8/95 Surf City
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-10
-8
-6
-4
-2
0
2
4
6
8
10
Speed(cm/s)
North-South component
time 10:45

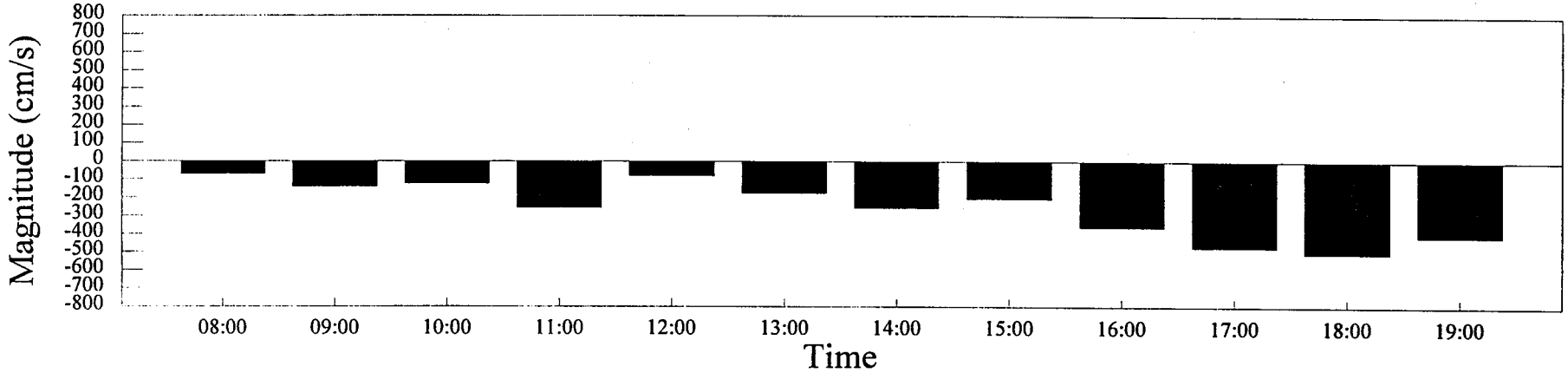

Depth vs. Speed
6/8/95 Surf City
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-10
-8
-6
-4
-2
0
2
4
6
8
10
Speed(cm/s)
East-West component
time 10:45


Depth vs. Speed
6/8/95 Surf City
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-7
-8
-6
-4
-2
0
2
4
6
8
Speed(cm/s)
North-South component
time 17:00


Depth vs. Speed
6/8/95 Surf City
Depth (ft)
0
-1
-2
-3
-4
-5
-6
-7
-8
-6
-4
-2
0
2
4
6
8
Speed(cm/s)
East-West component
time 17:00

Wind Velocities 6/8/95

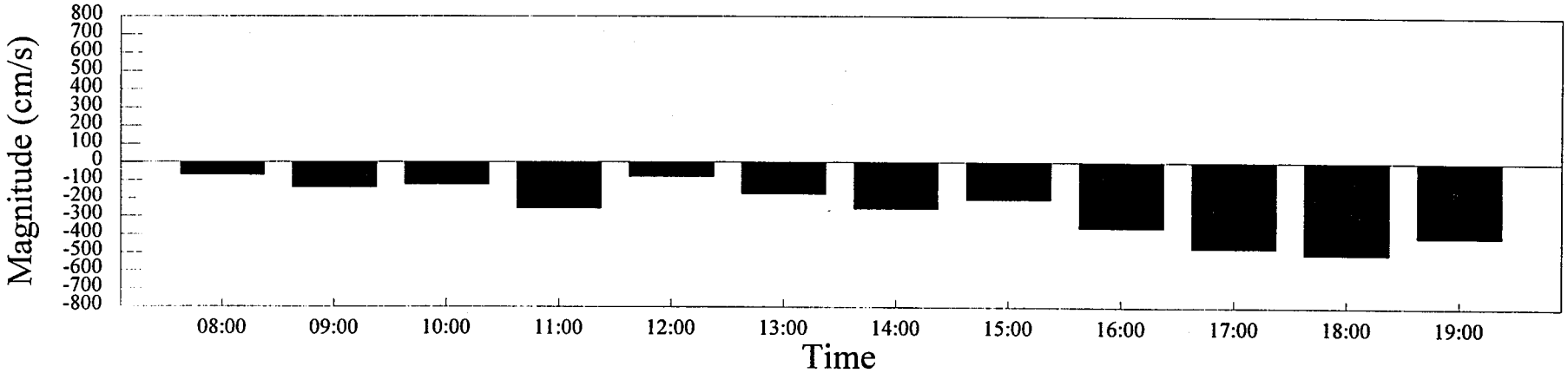
North-South



north is positive
south is negative

Wind Velocities 6/8/95

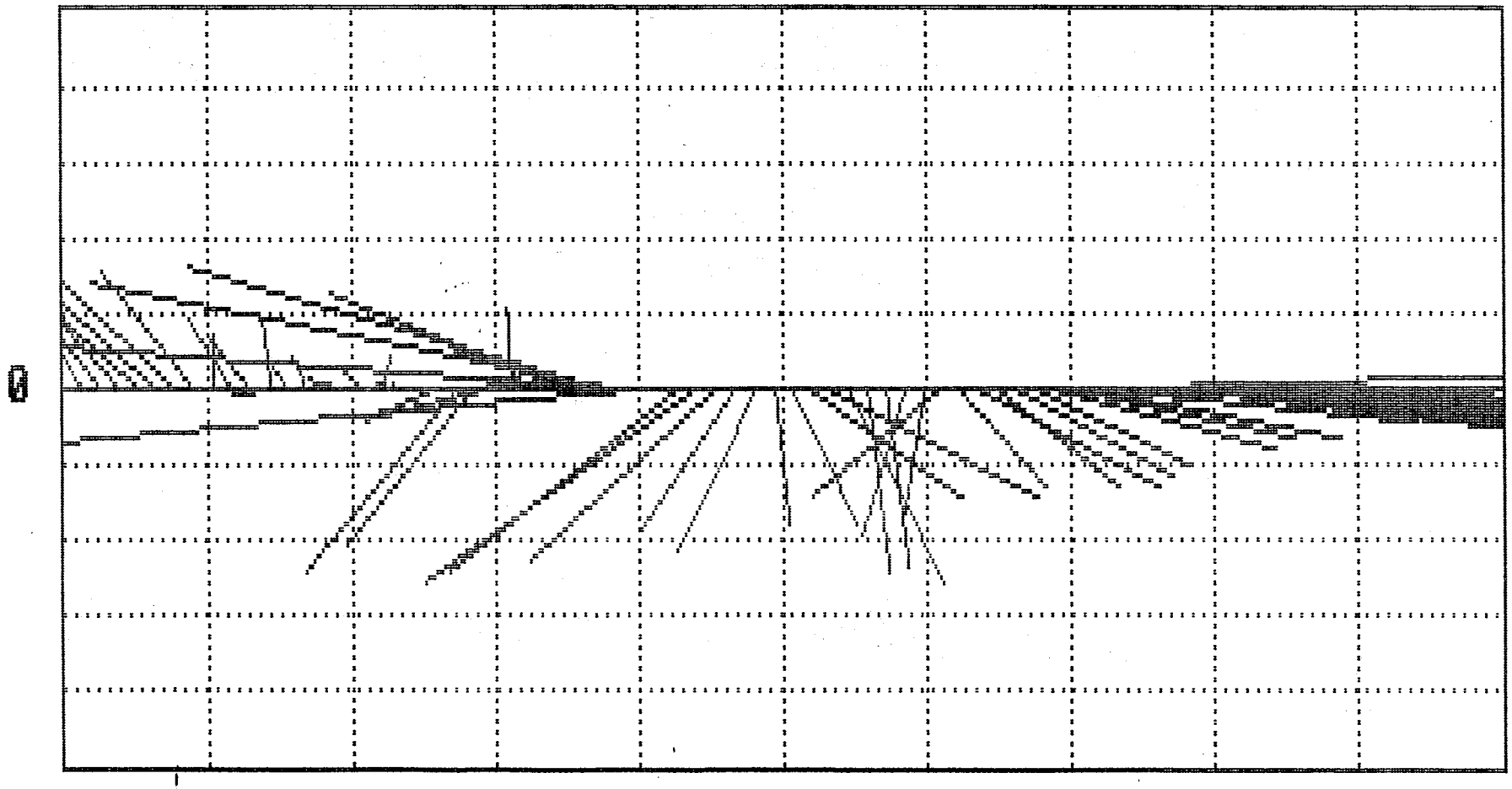
East-West



east is positive
west is negative

SURF CITY

InterOcean Systems, Inc. Model S4 Current Meter #05451239
METER239 File : JUN239.S4B
Samples averaged : 1 Mean : 128.75

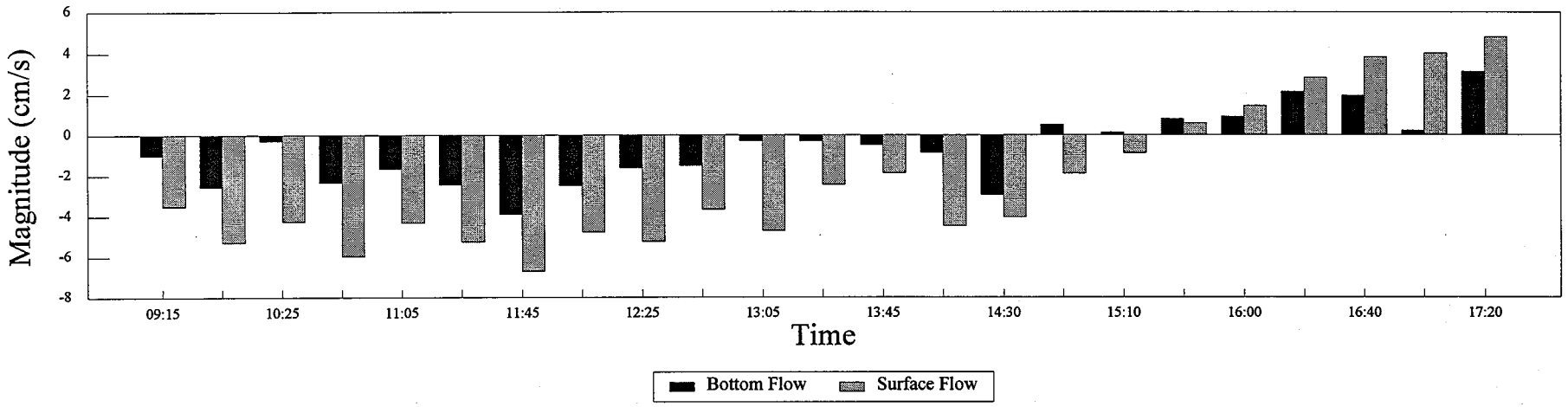


Samples 103 - 180 4.0cm/s/div

6/08/95 08:37:00 6/08/95 21:27:00

Surf City 6/8/95

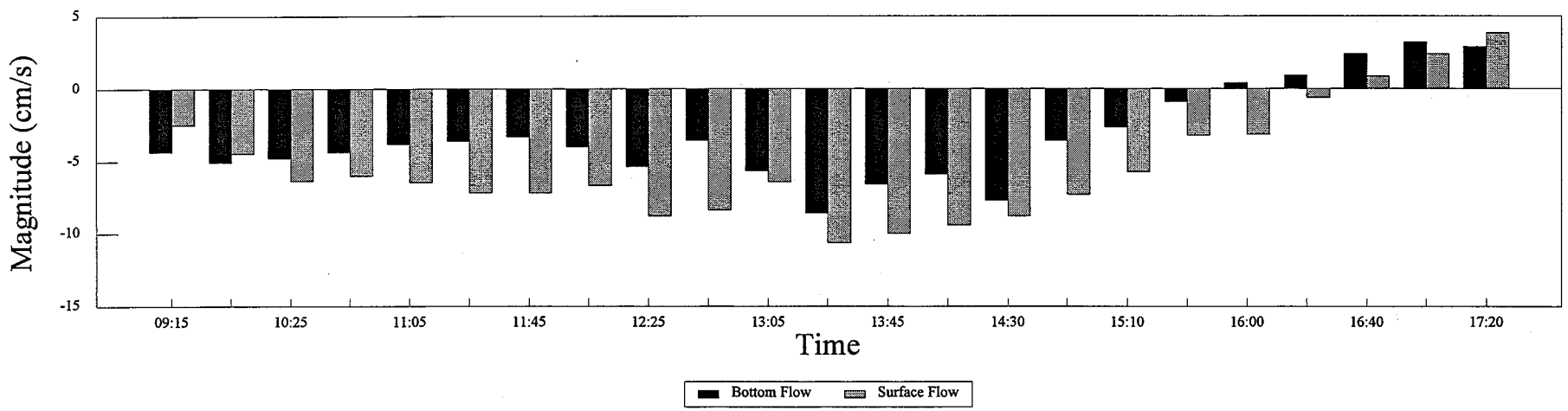
North-South Flow



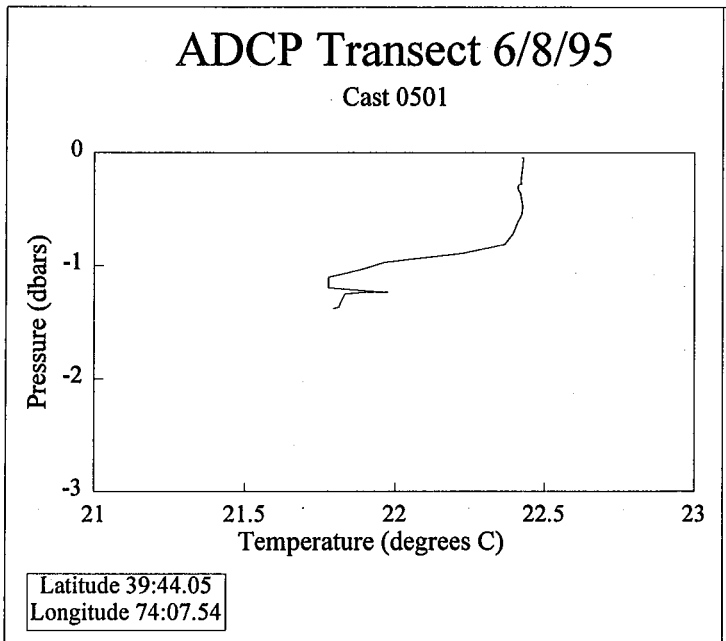
north is positive
south is negative

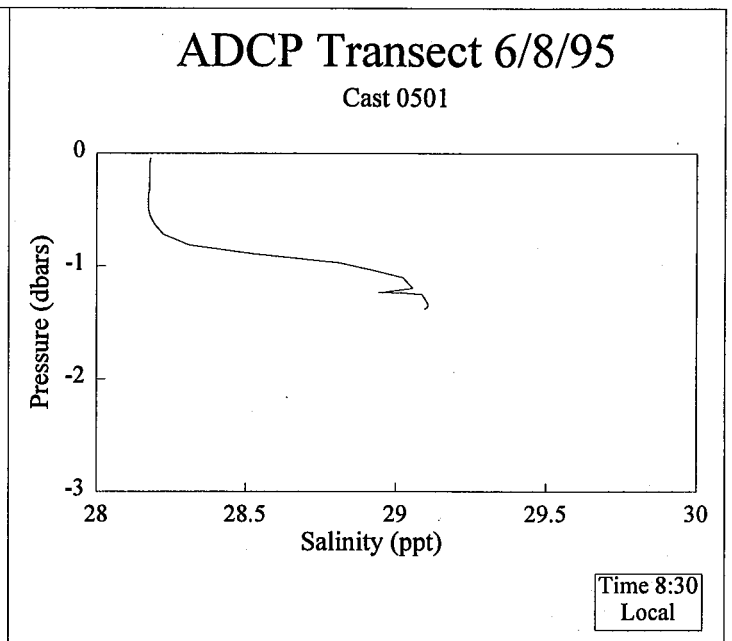
Surf City 6/8/95

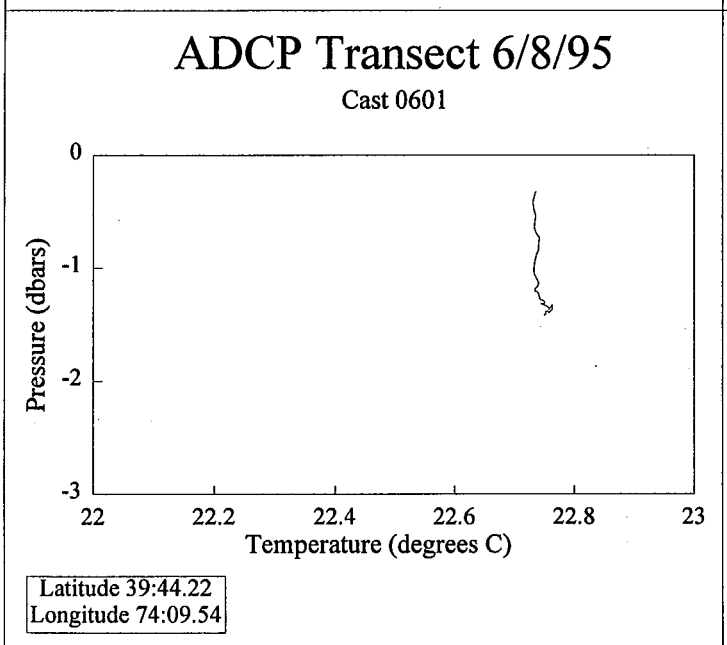
East-West Flow

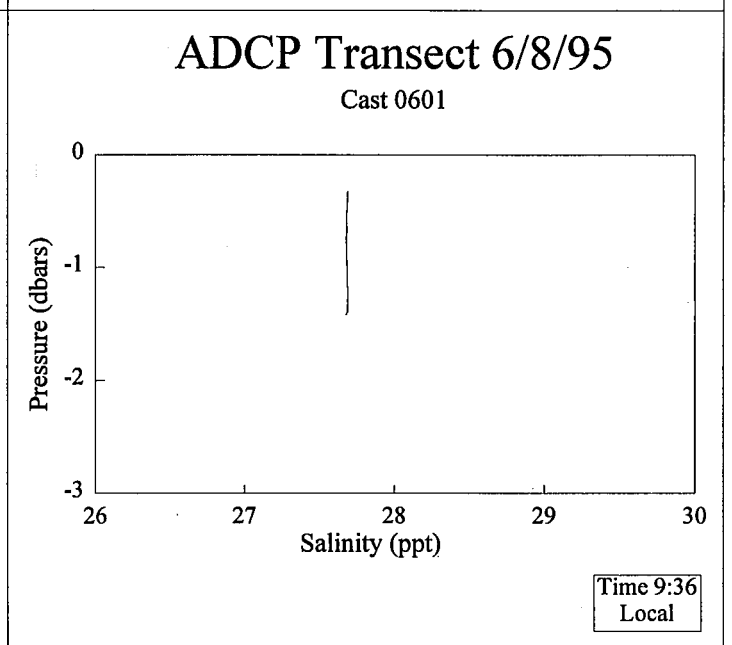


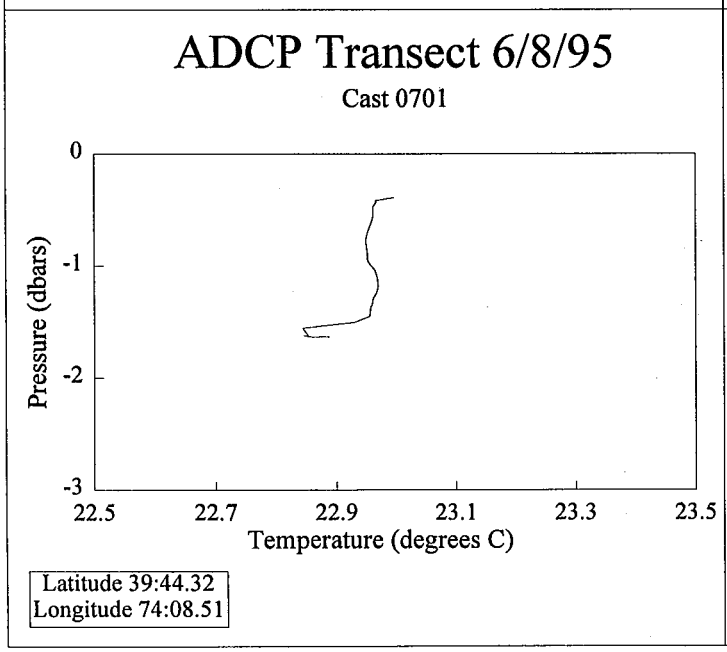
east is positive
west is negative

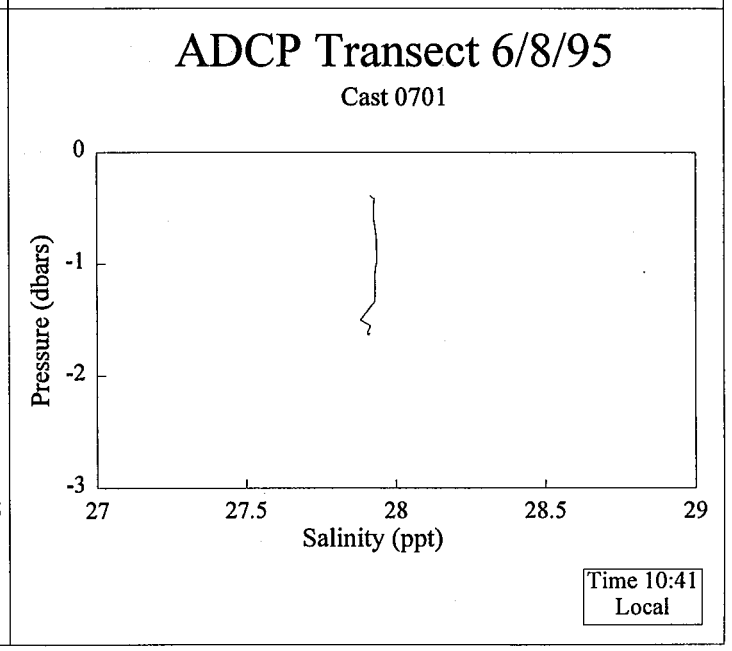

ADCP Transect 6/8/95
Cast 0501
Pressure (dbars)
0
-1
-2
-3
21
21.5
22
22.5
23
Temperature (degrees C)
Latitude 39:44.05
Longitude 74:07.54


ADCP Transect 6/8/95
Cast 0501
Pressure (dbars)
0
-1
-2
-3
28
28.5
29
29.5
30
Salinity (ppt)
Time 8:30
Local


ADCP Transect 6/8/95
Cast 0601
Pressure (dbars)
0
-1
-2
-3
22
22.2
22.4
22.6
22.8
23
Temperature (degrees C)
Latitude 39:44.22
Longitude 74:09.54

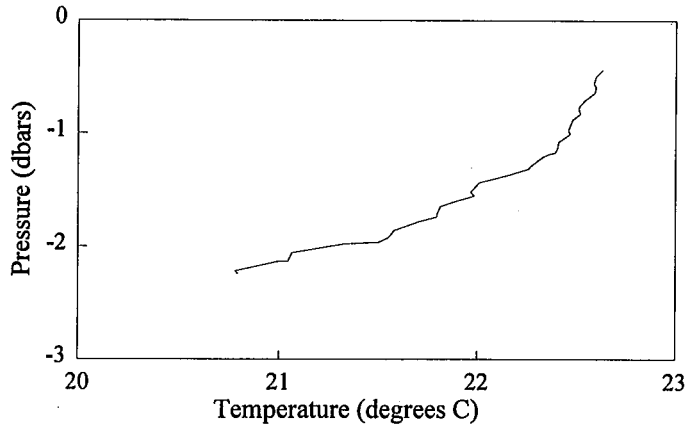

ADCP Transect 6/8/95
Cast 0601
Pressure (dbars)
0
-1
-2
-3
26
27
28
29
30
Salinity (ppt)
Time 9:36
Local


ADCP Transect 6/8/95
Cast 0701
Pressure (dbars)
0
-1
-2
-3
22.5
22.7
22.9
23.1
23.3
23.5
Temperature (degrees C)
Latitude 39:44.32
Longitude 74:08.51


ADCP Transect 6/8/95
Cast 0701
Pressure (dbars)
0
-1
-2
-3
27
27.5
28
28.5
29
Salinity (ppt)
Time 10:41
Local

ADCP Transect 6/8/95

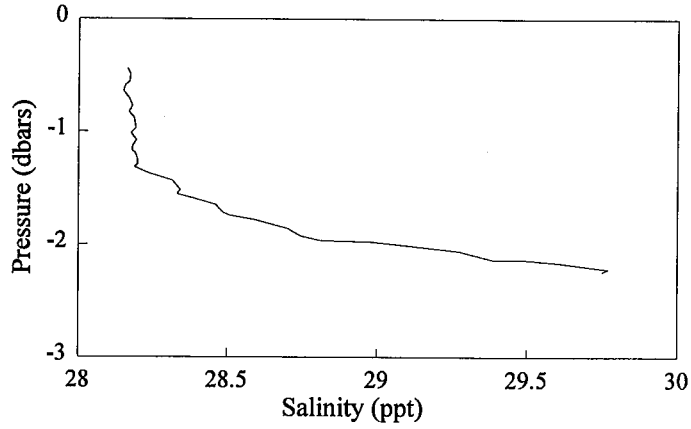
Cast 0801



Latitude 39:45.45
Longitude 74:10.11

ADCP Transect 6/8/95

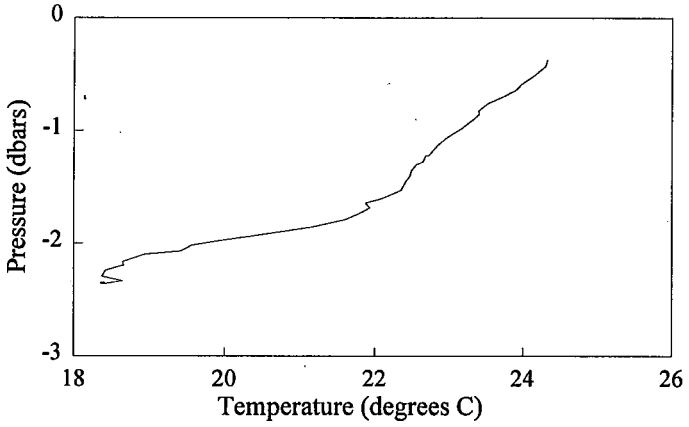
Cast 0801



Time 11:23
Local

ADCP Transect 6/8/95

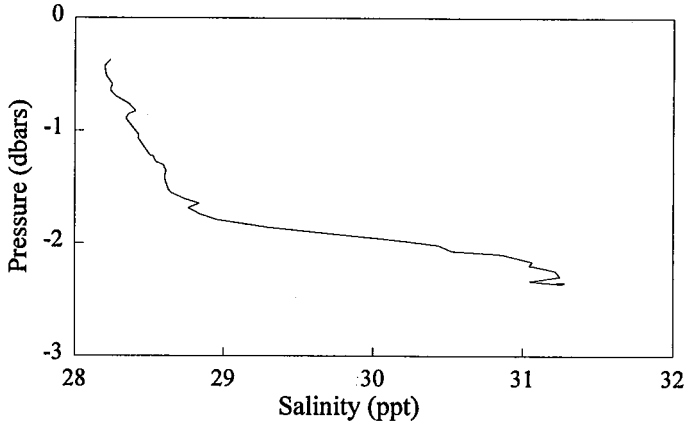
Cast 0901



Latitude 39:47.27
Longitude 74:09.56

ADCP Transect 6/8/95

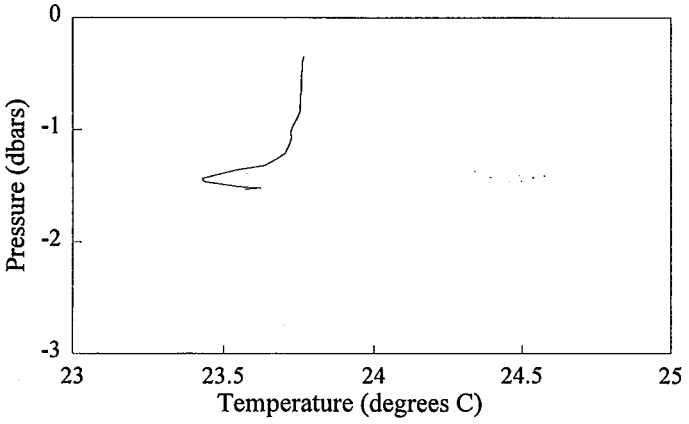
Cast 0901



Time 12:15
Local

ADCP Transect 6/8/95

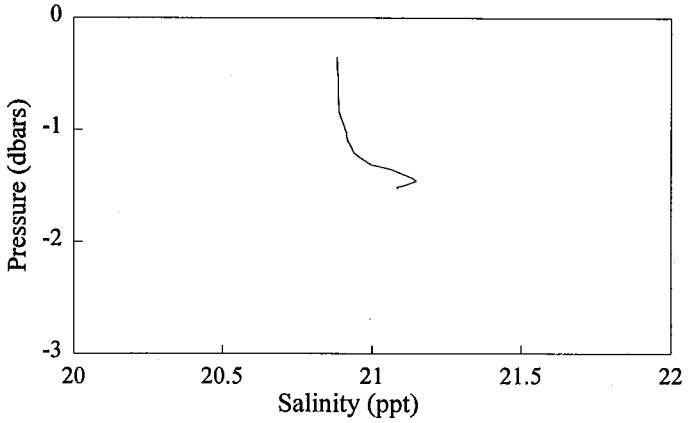
Cast 1001



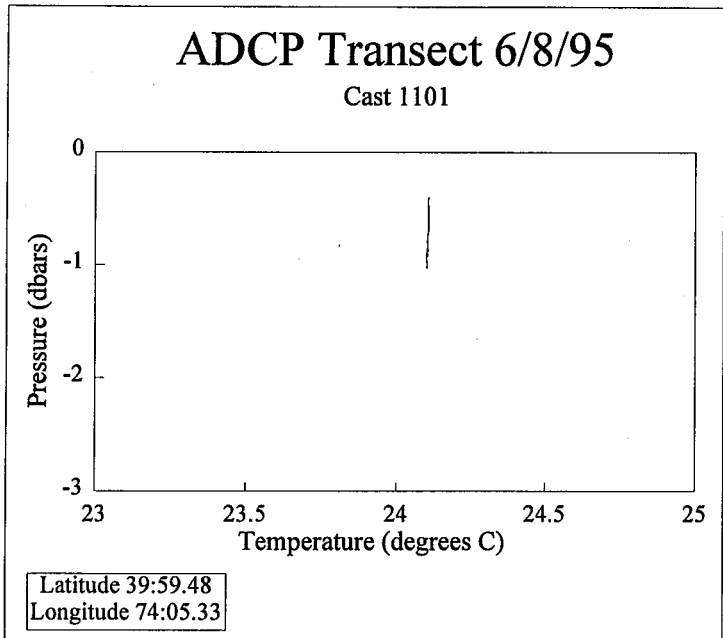
Latitude 39:59.35
Longitude 74:06.22

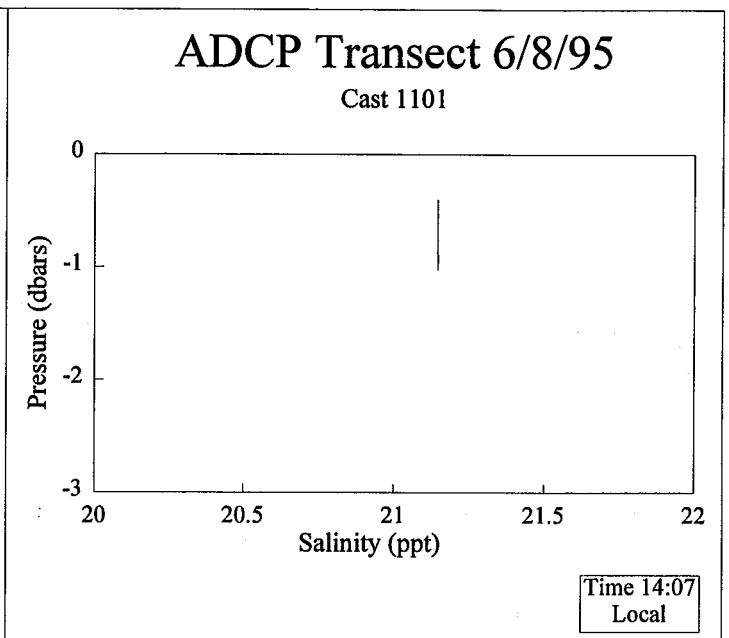
ADCP Transect 6/8/95

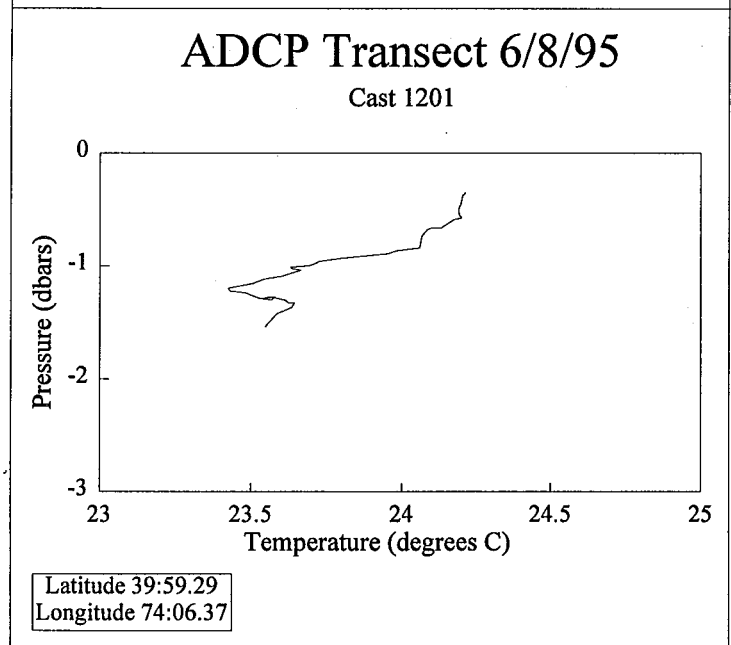
Cast 1001

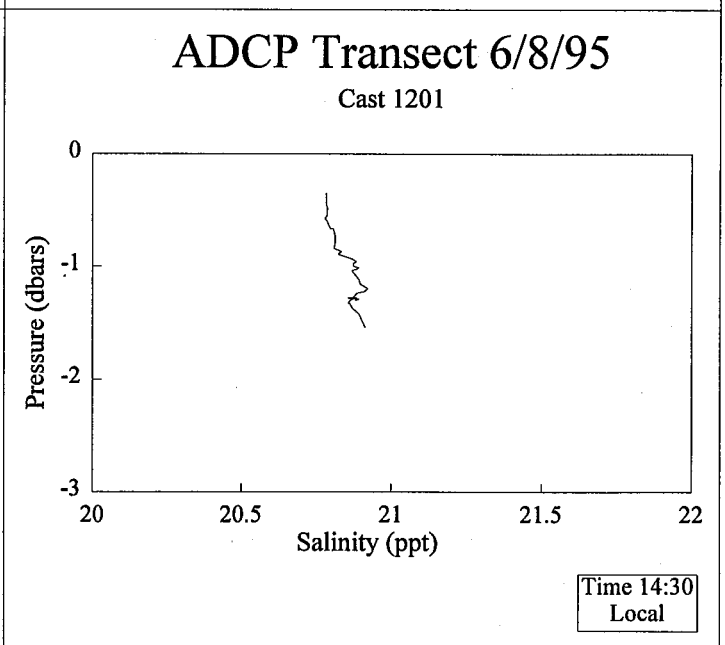


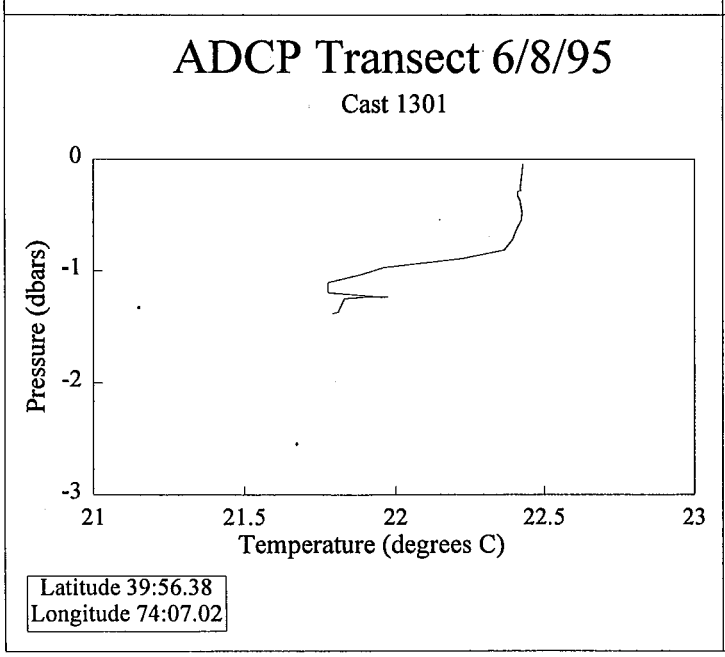
Time 13:35
Local

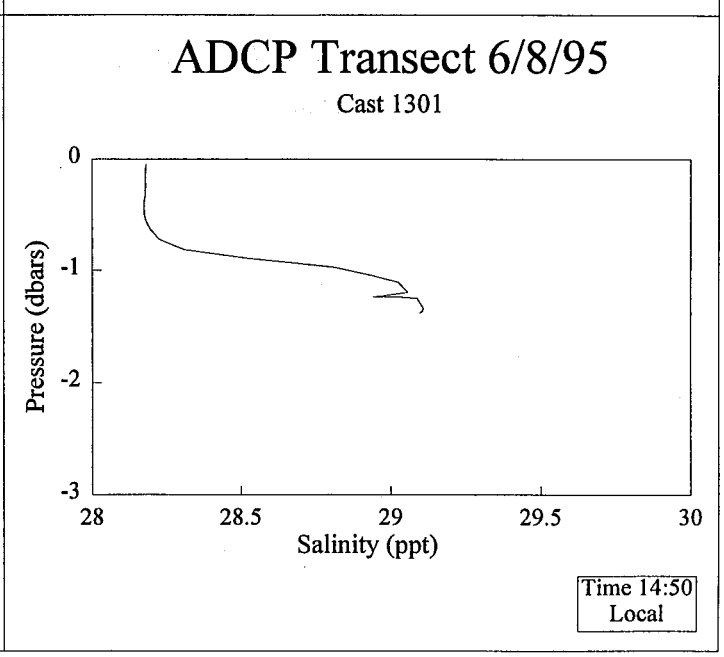

ADCP Transect 6/8/95
Cast 1101
Pressure (dbars)
0
-1
-2
-3
23
23.5
24
24.5
25
Temperature (degrees C)
Latitude 39:59.48
Longitude 74:05.33

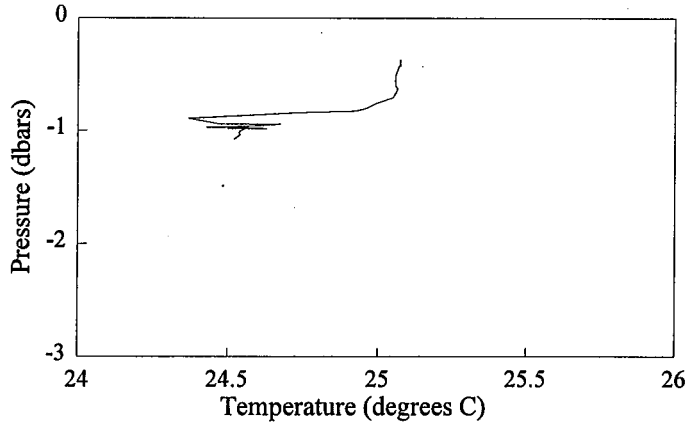

ADCP Transect 6/8/95
Cast 1101
Pressure (dbars)
0
-1
-2
-3
20
20.5
21
21.5
22
Salinity (ppt)
Time 14:07
Local

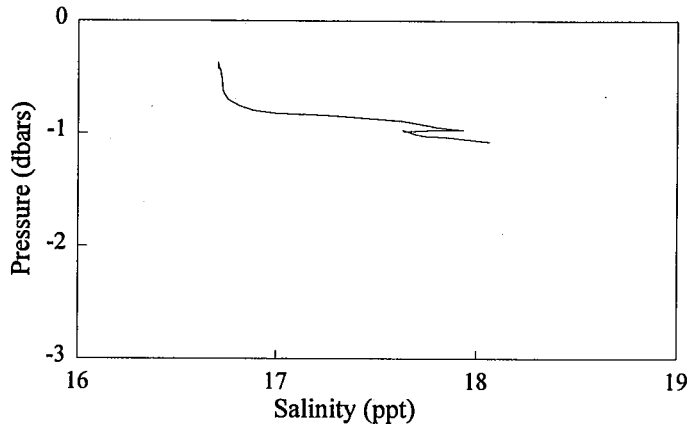

ADCP Transect 6/8/95
Cast 1201
Pressure (dbars)
0
-1
-2
-3
23
23.5
24
24.5
25
Temperature (degrees C)
Latitude 39:59.29
Longitude 74:06.37

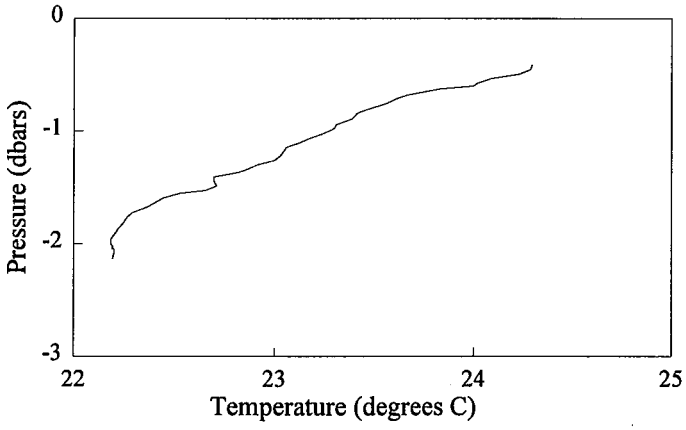

ADCP Transect 6/8/95
Cast 1201
Pressure (dbars)
0
-1
-2
-3
20
20.5
21
21.5
22
Salinity (ppt)
Time 14:30
Local

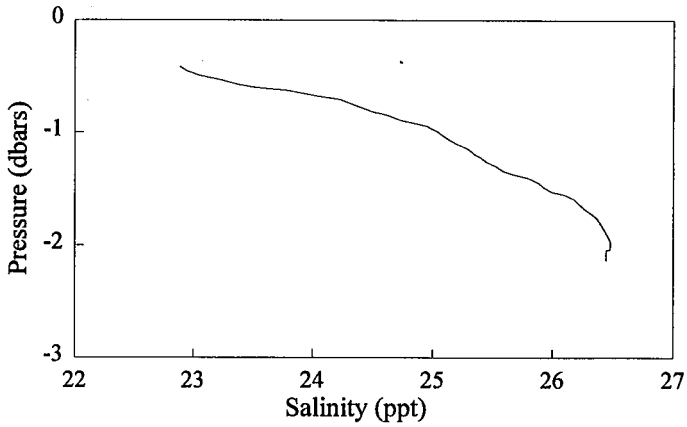

ADCP Transect 6/8/95
Cast 1301
Pressure (dbars)
0
-1
-2
-3
21
21.5
22
22.5
23
Temperature (degrees C)
Latitude 39:56.38
Longitude 74:07.02

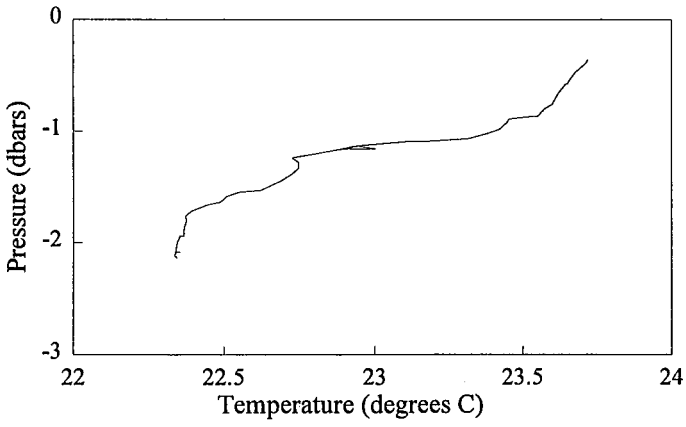

ADCP Transect 6/8/95
Cast 1301
Pressure (dbars)
0
-1
-2
-3
28
28.5
29
29.5
30
Salinity (ppt)
Time 14:50
Local

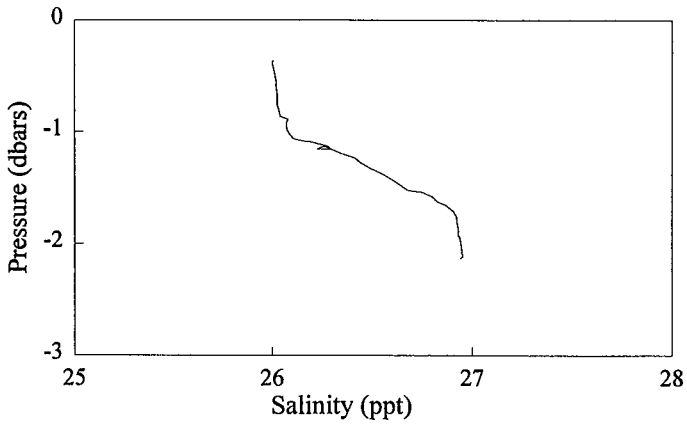

ADCP Transect 6/8/95
Cast 1401
Pressure (dbars)
0
-1
-2
-3
24
24.5
25
25.5
26
Temperature (degrees C)
Latitude 39:55.55
Longitude 74:07.03


ADCP Transect 6/8/95
Cast 1401
Pressure (dbars)
0
-1
-2
-3
16
17
18
19
Salinity (ppt)
Time 15:16
Local


ADCP Transect 6/8/95
Cast 1501
Pressure (dbars)
0
-1
-2
-3
22
23
24
25
Temperature (degrees C)
Latitude 39:53.54
Longitude 74:07.15

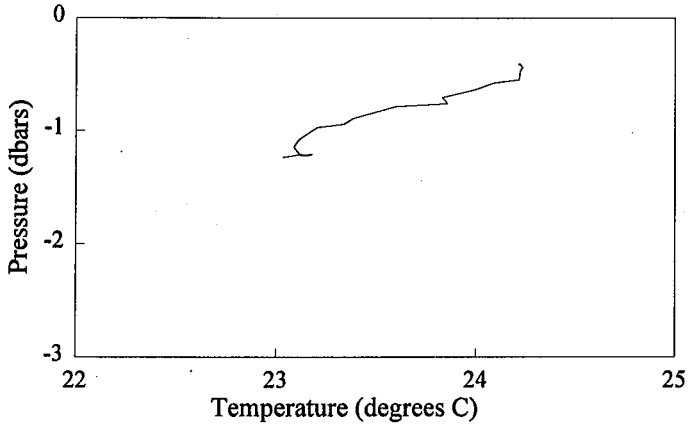

ADCP Transect 6/8/95
Cast 1501
Pressure (dbars)
0
-1
-2
-3
22
23
24
25
26
27
Salinity (ppt)
Time 15:27
Local


ADCP Transect 6/8/95
Cast 1601
Pressure (dbars)
0
-1
-2
-3
22
22.5
23
23.5
24
Temperature (degrees C)
Latitude 39:51.42
Longitude 74:07.22


ADCP Transect 6/8/95
Cast 1601
Pressure (dbars)
0
-1
-2
-3
25
26
27
28
Salinity (ppt)
Time 15:37
Local

ADCP Transect 6/8/95

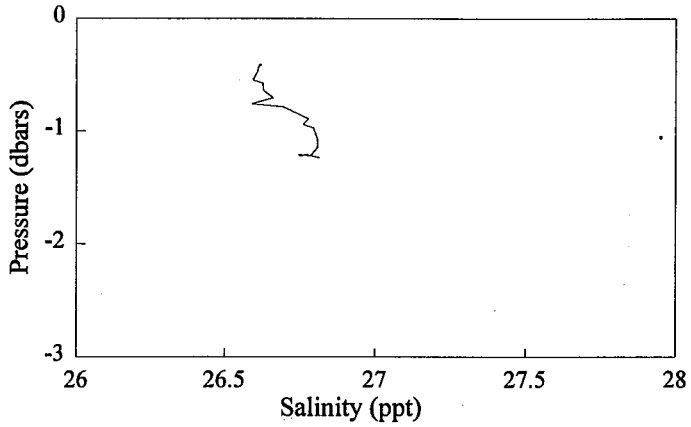
Cast 1701



Latitude 39:51.41
Longitude 74:07.36

ADCP Transect 6/8/95

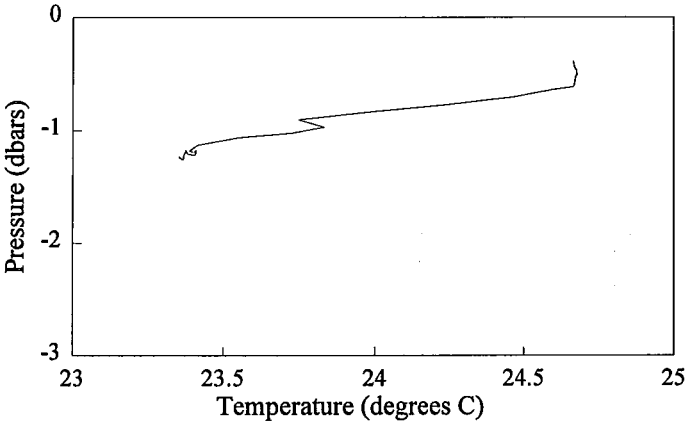
Cast 1701



Time 15:43
Local

ADCP Transect 6/8/95

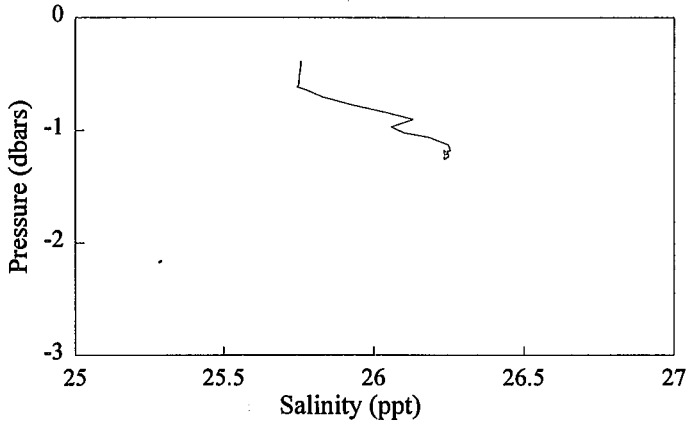
Cast 1801



Latitude 39:51.40
Longitude 74:06.11

ADCP Transect 6/8/95

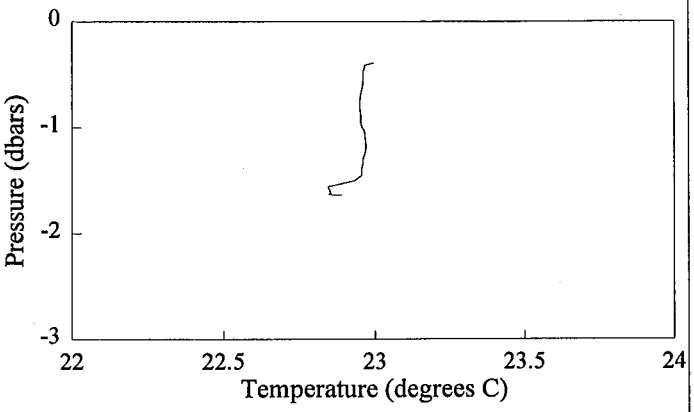
Cast 1801



Time 16:15
Local

ADCP Transect 6/8/95

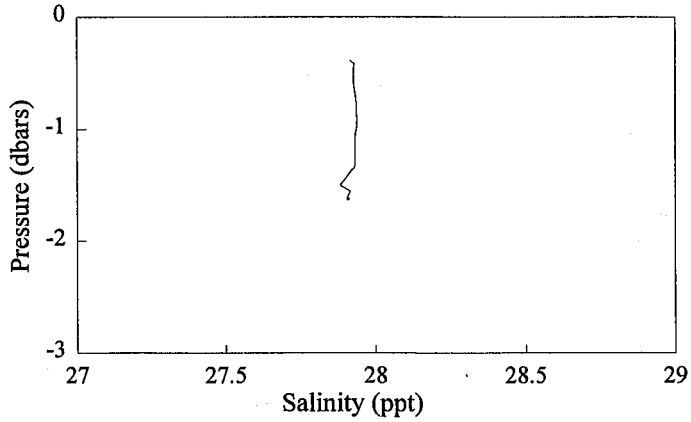
Cast 1901



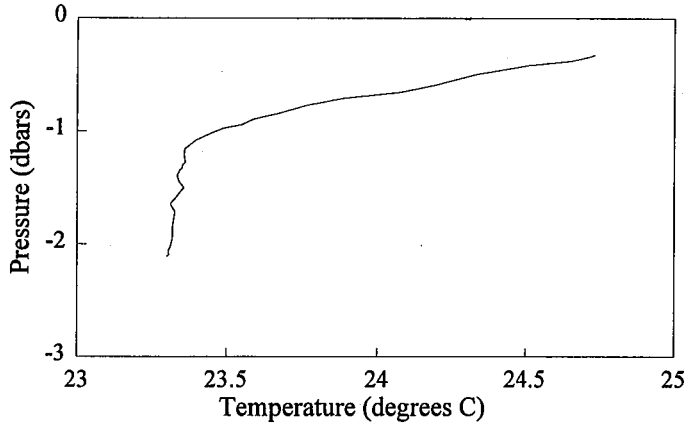
Latitude 39:49.21
Longitude 74:08.49

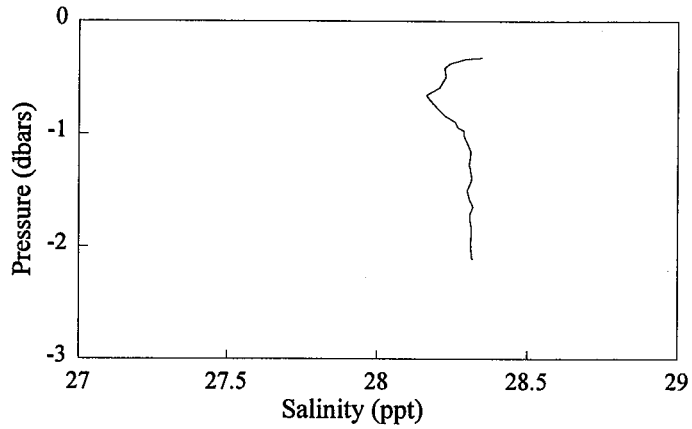
ADCP Transect 6/8/95

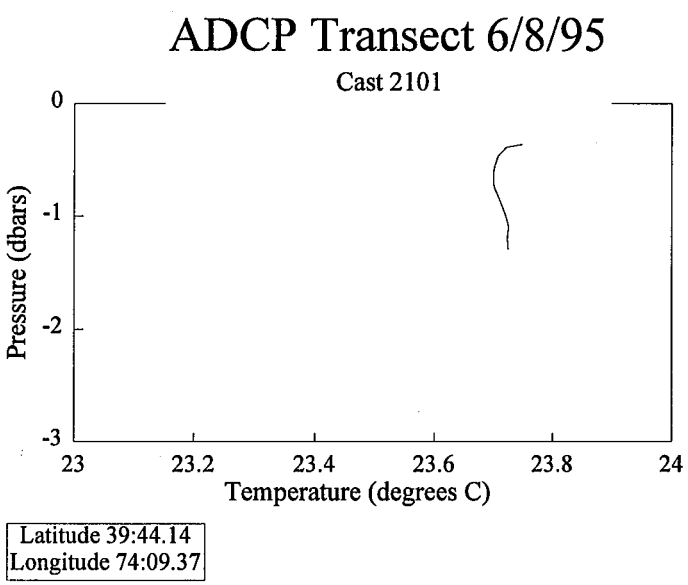
Cast 1901

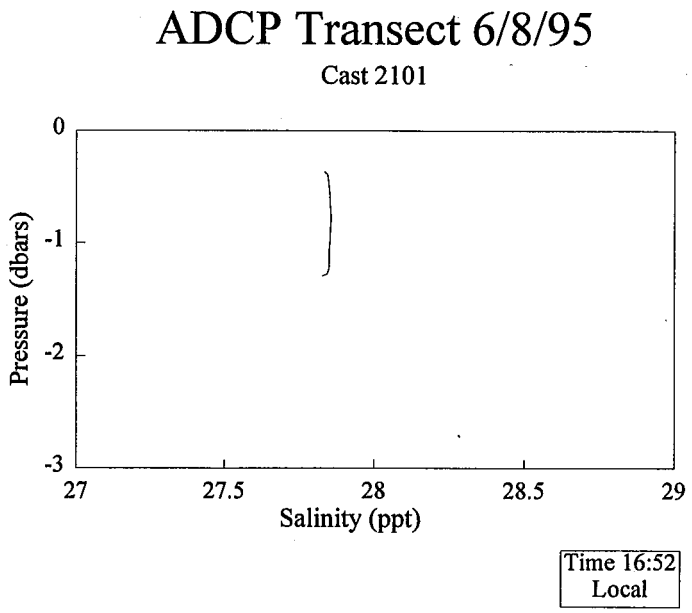


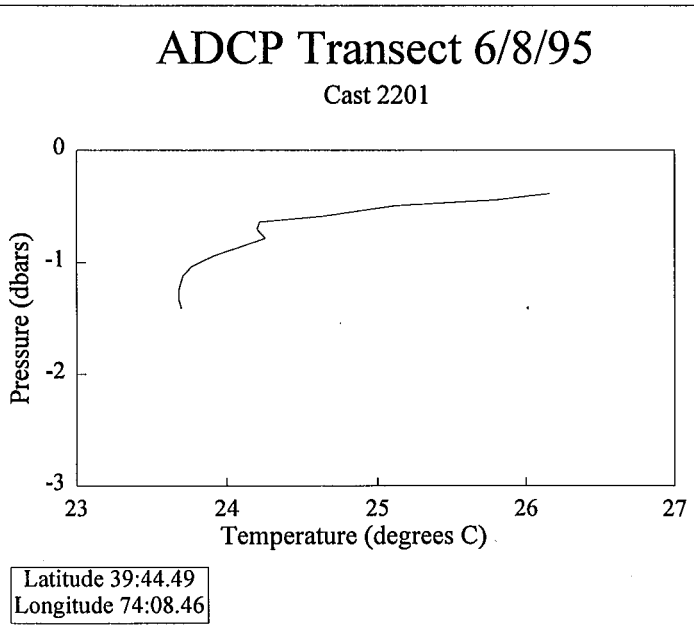
Time 16:26
Local

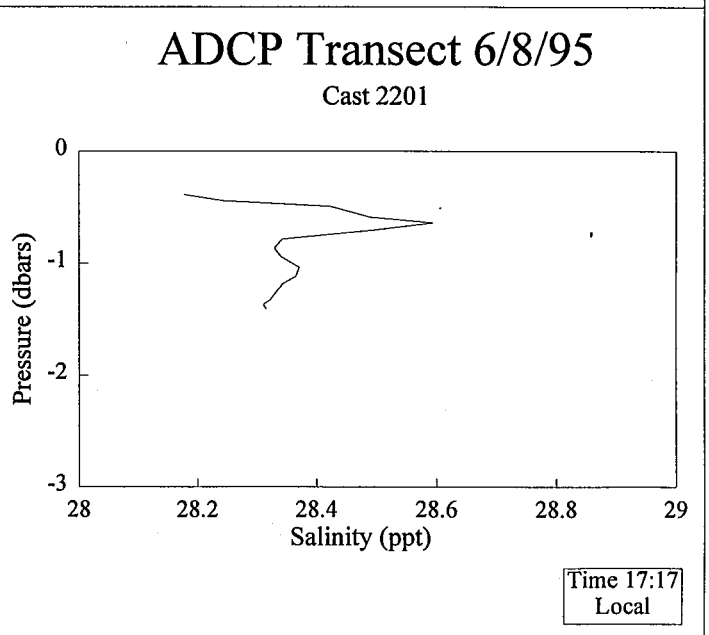

ADCP Transect 6/8/95
Cast 2001
Pressure (dbars)
0
-1
-2
-3
23
23.5
24
24.5
25
Temperature (degrees C)
Latitude 39:44.50
Longitude 74:09.01


ADCP Transect 6/8/95
Cast 2001
Pressure (dbars)
0
-1
-2
-3
27
27.5
28
28.5
29
Salinity (ppt)
Time 16:40
Local


ADCP Transect 6/8/95
Cast 2101
Pressure (dbars)
0
-1
-2
-3
23
23.2
23.4
23.6
23.8
24
Temperature (degrees C)
Latitude 39:44.14
Longitude 74:09.37


ADCP Transect 6/8/95
Cast 2101
Pressure (dbars)
0
-1
-2
-3
27
27.5
28
28.5
29
Salinity (ppt)
Time 16:52
Local

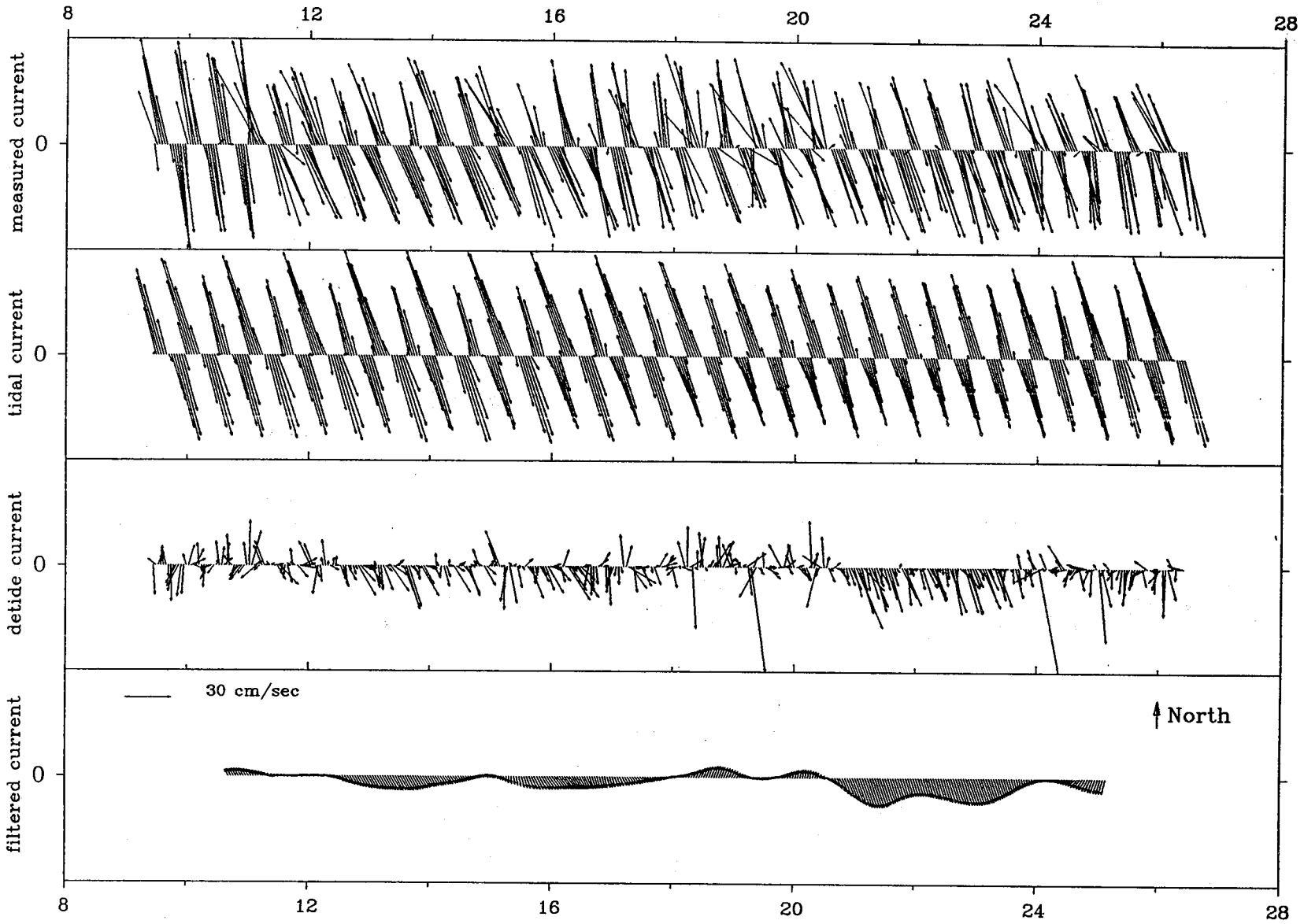

ADCP Transect 6/8/95
Cast 2201
Pressure (dbars)
0
-1
-2
-3
23
24
25
26
27
Temperature (degrees C)
Latitude 39:44.49
Longitude 74:08.46


ADCP Transect 6/8/95
Cast 2201
Pressure (dbars)
0
-1
-2
-3
28
28.2
28.4
28.6
28.8
29
Salinity (ppt)
Time 17:17
Local

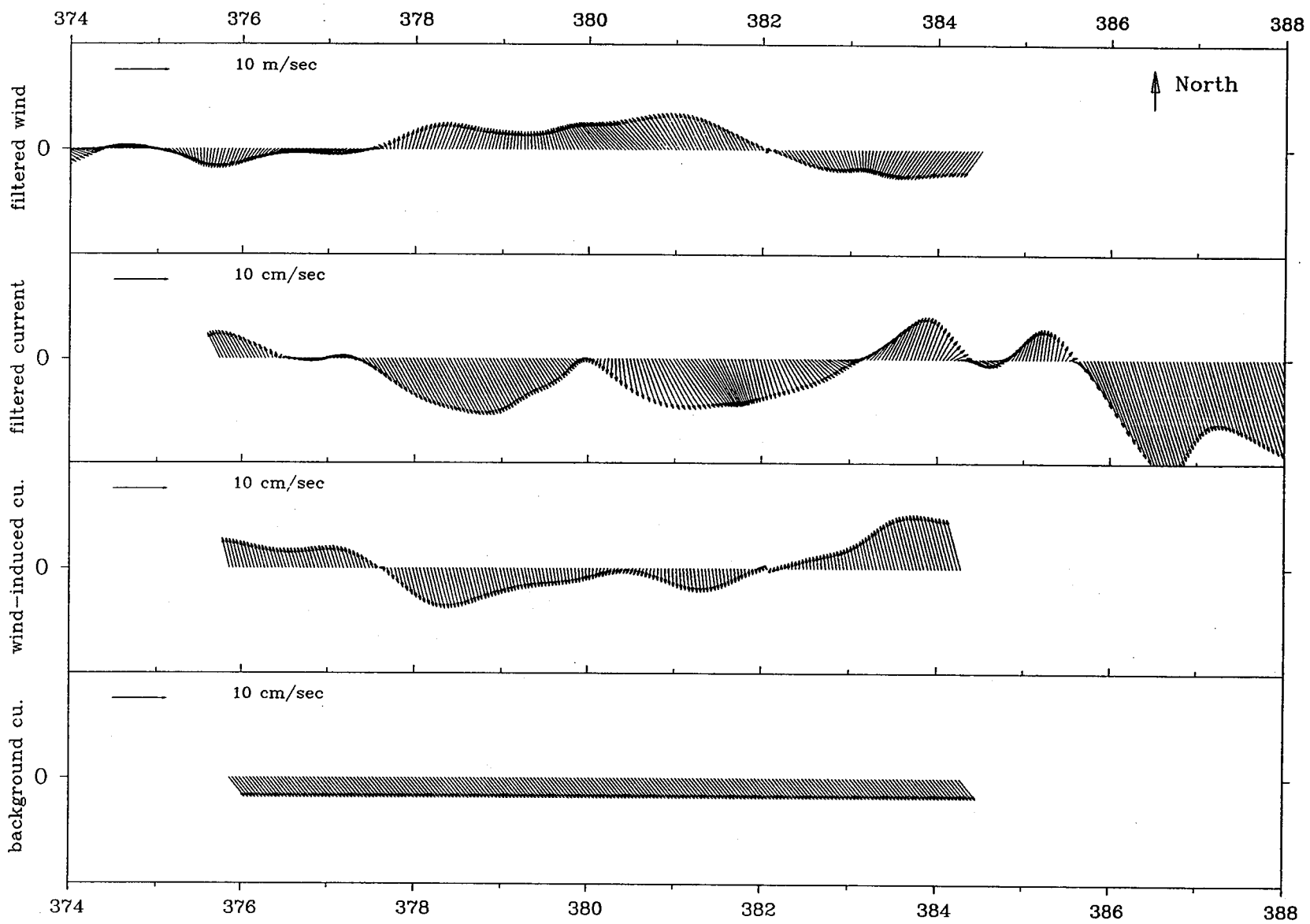
Appendix E

Time Series Analysis Results

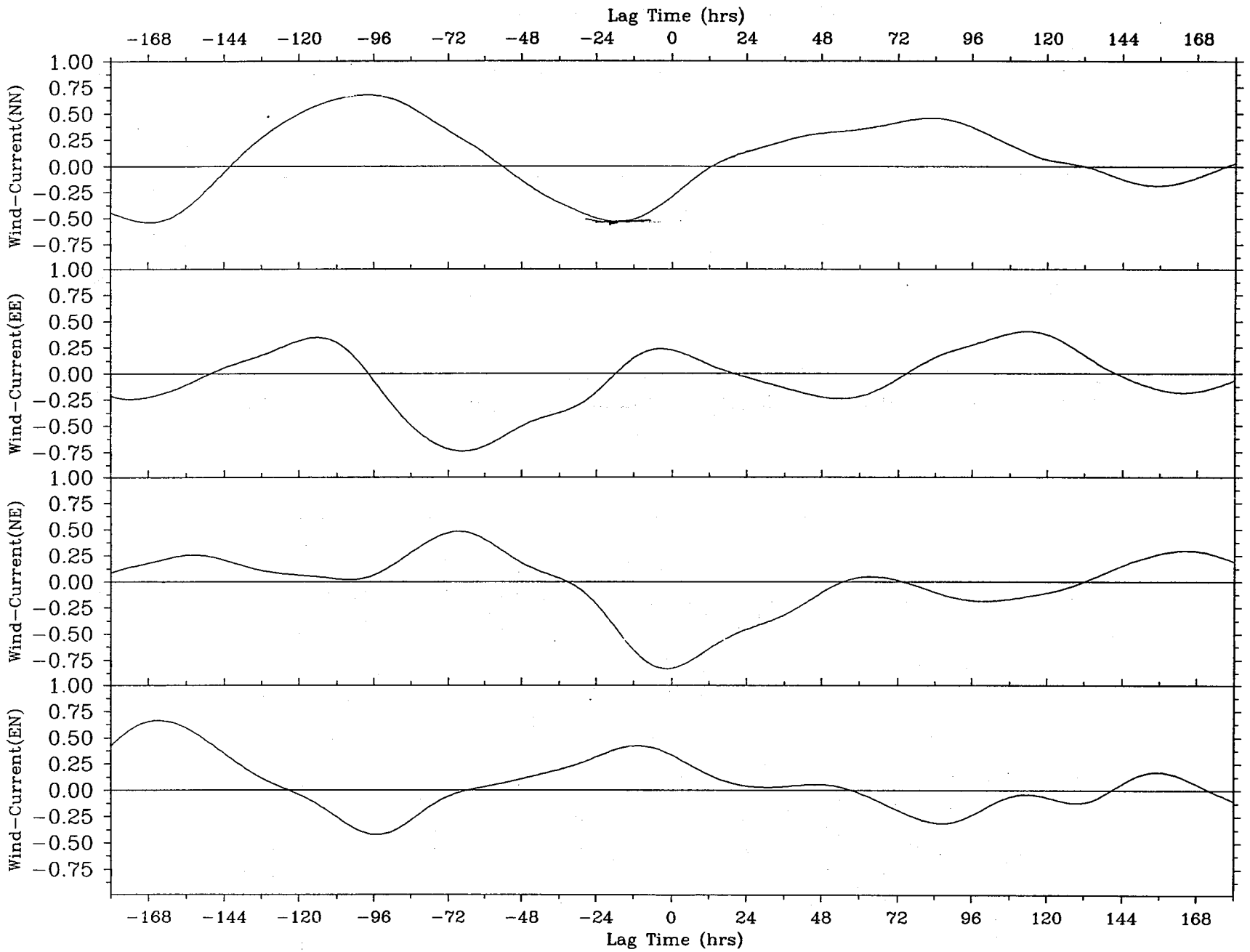
BARNEGAT INLET (January)



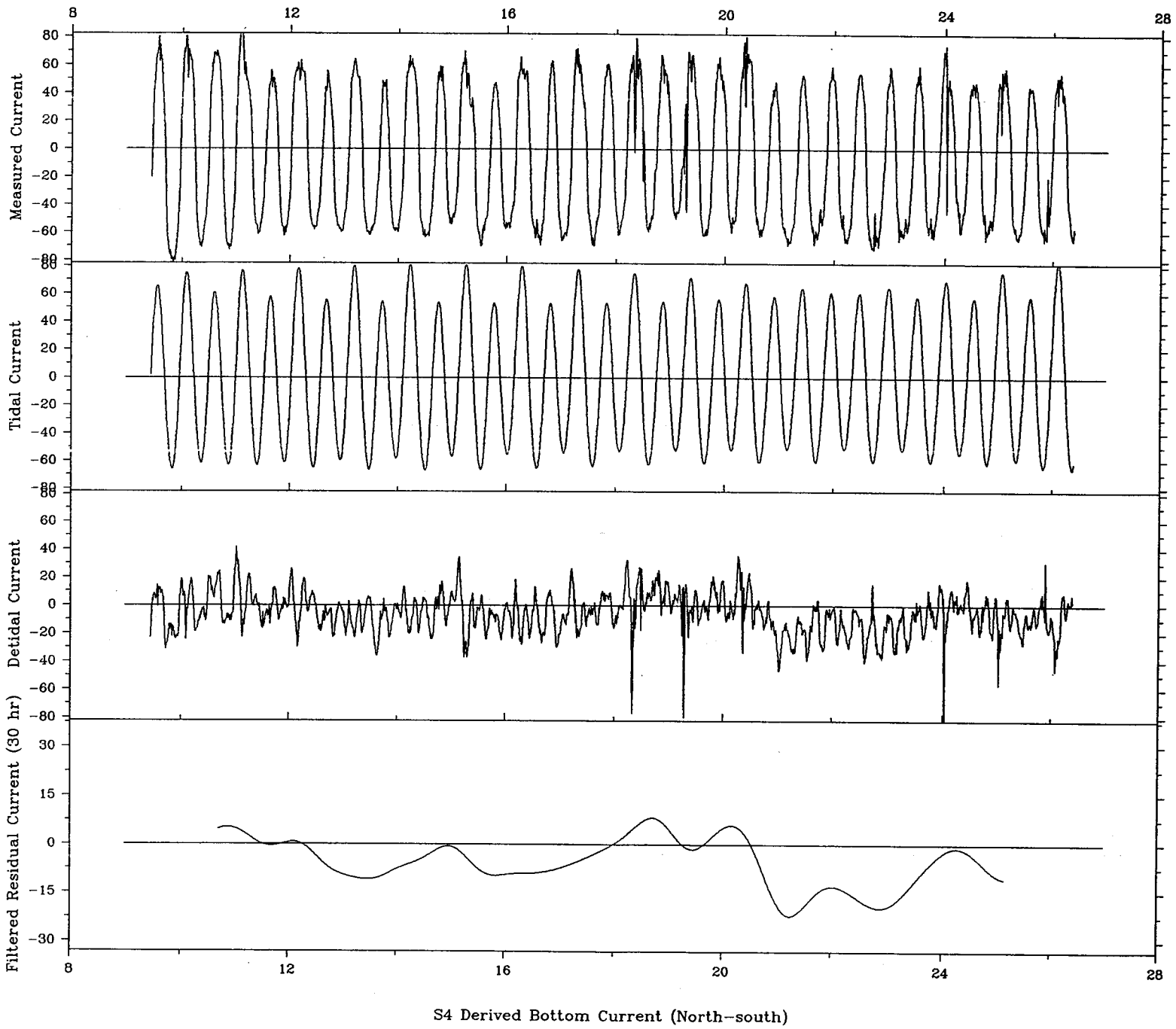
Time series of current

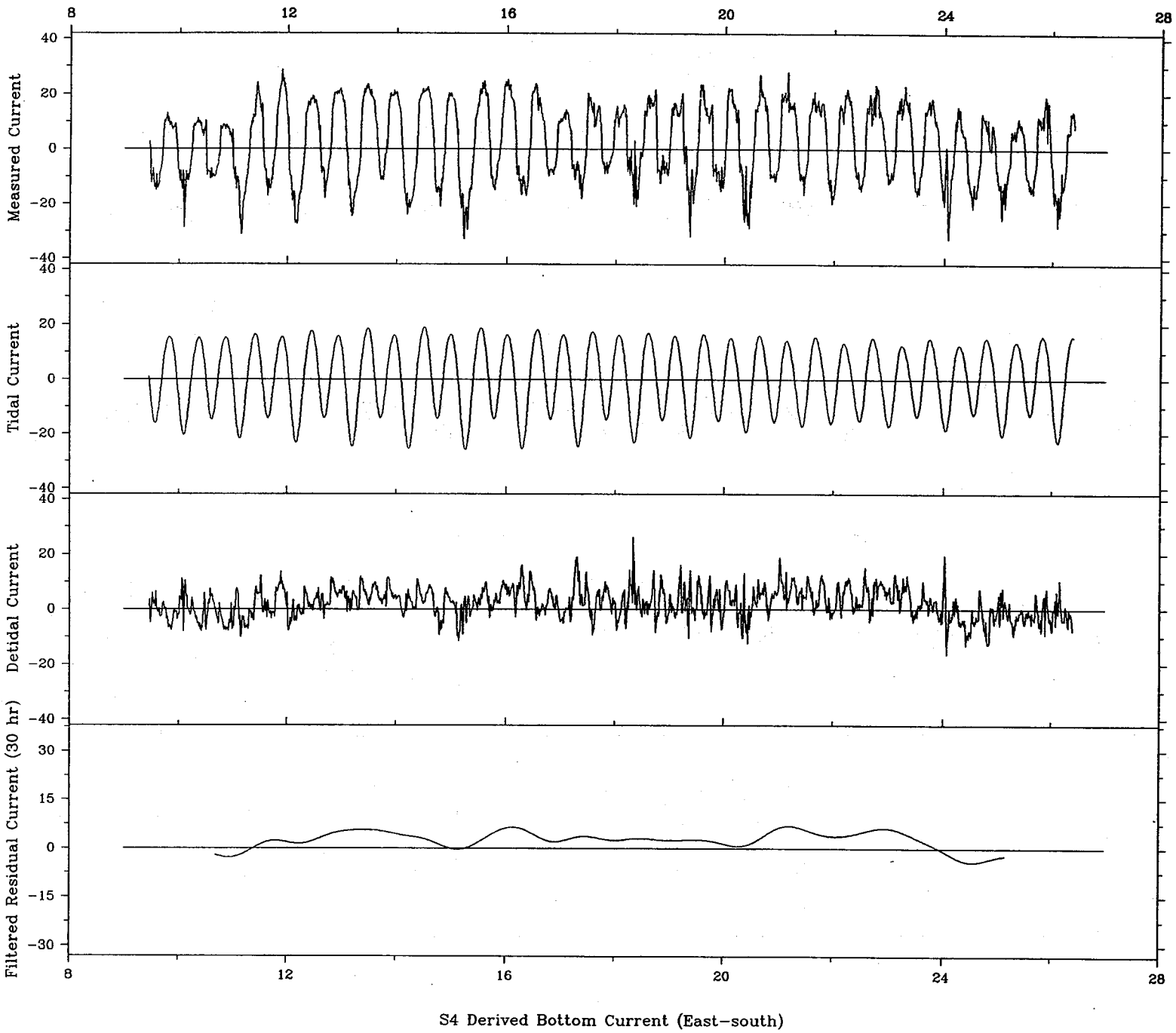


Time series of current and wind

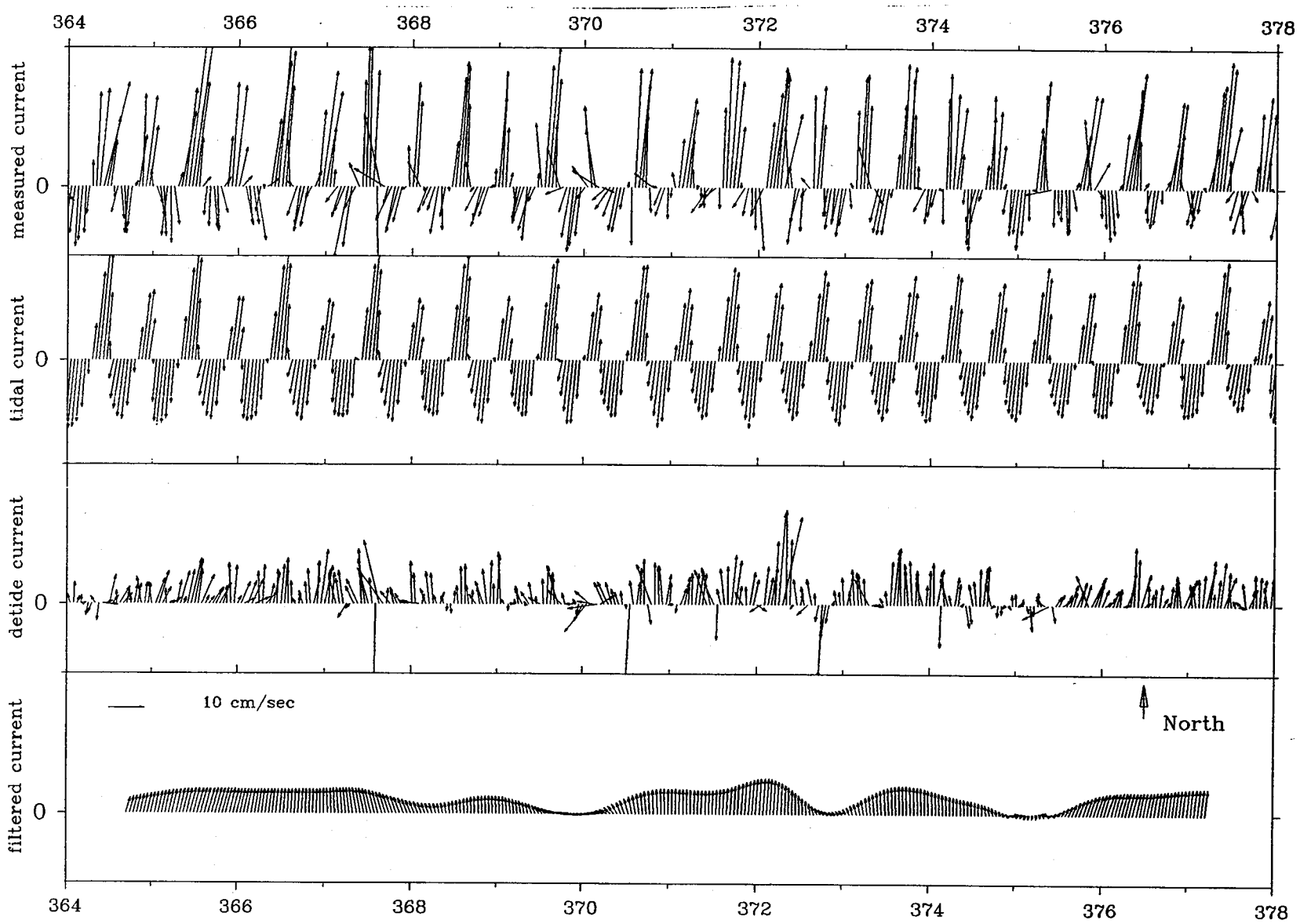


Cross-correlation(Wind,Current)

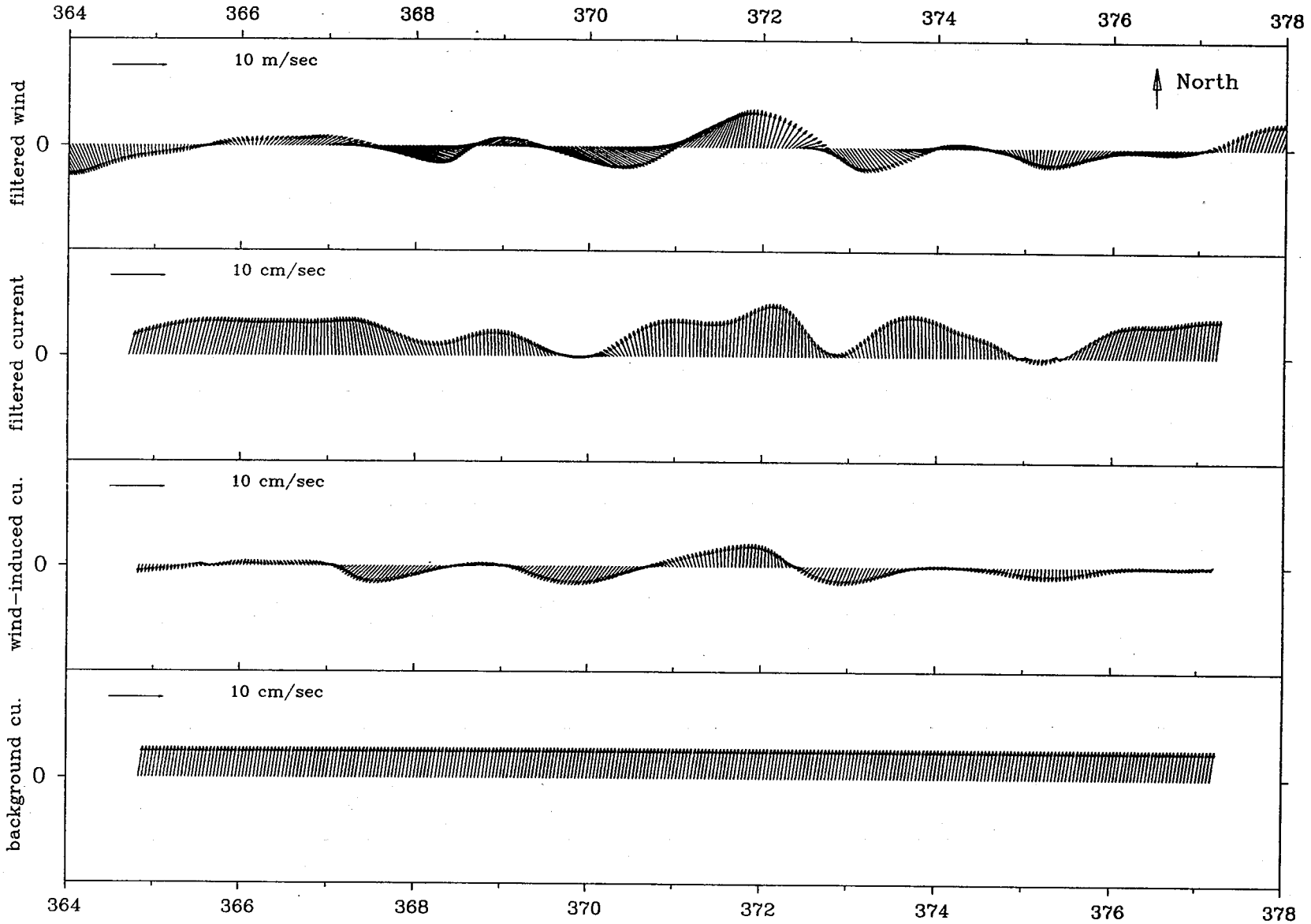

Measured Current
Tidal Current
Detidal Current
Filtered Residual Current (30 hr)
S4 Derived Bottom Current (North-south)


Measured Current
Tidal Current
Detidal Current
Filtered Residual Current (30 hr)
S4 Derived Bottom Current (East-south)
8
12
16
20
24
28
40
20
0
-20
-40
30
15
-15
-30

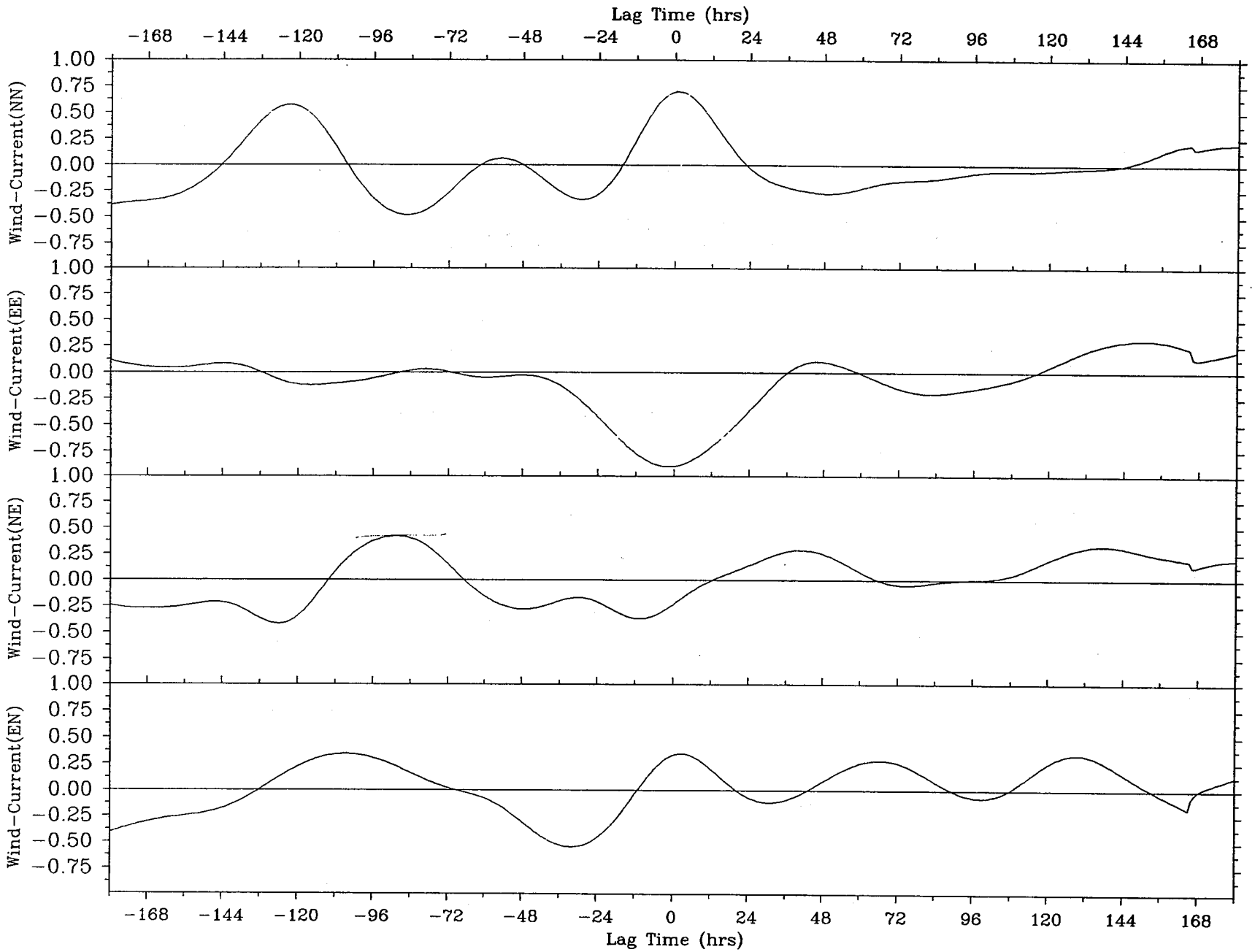
LOVELADIES (January)



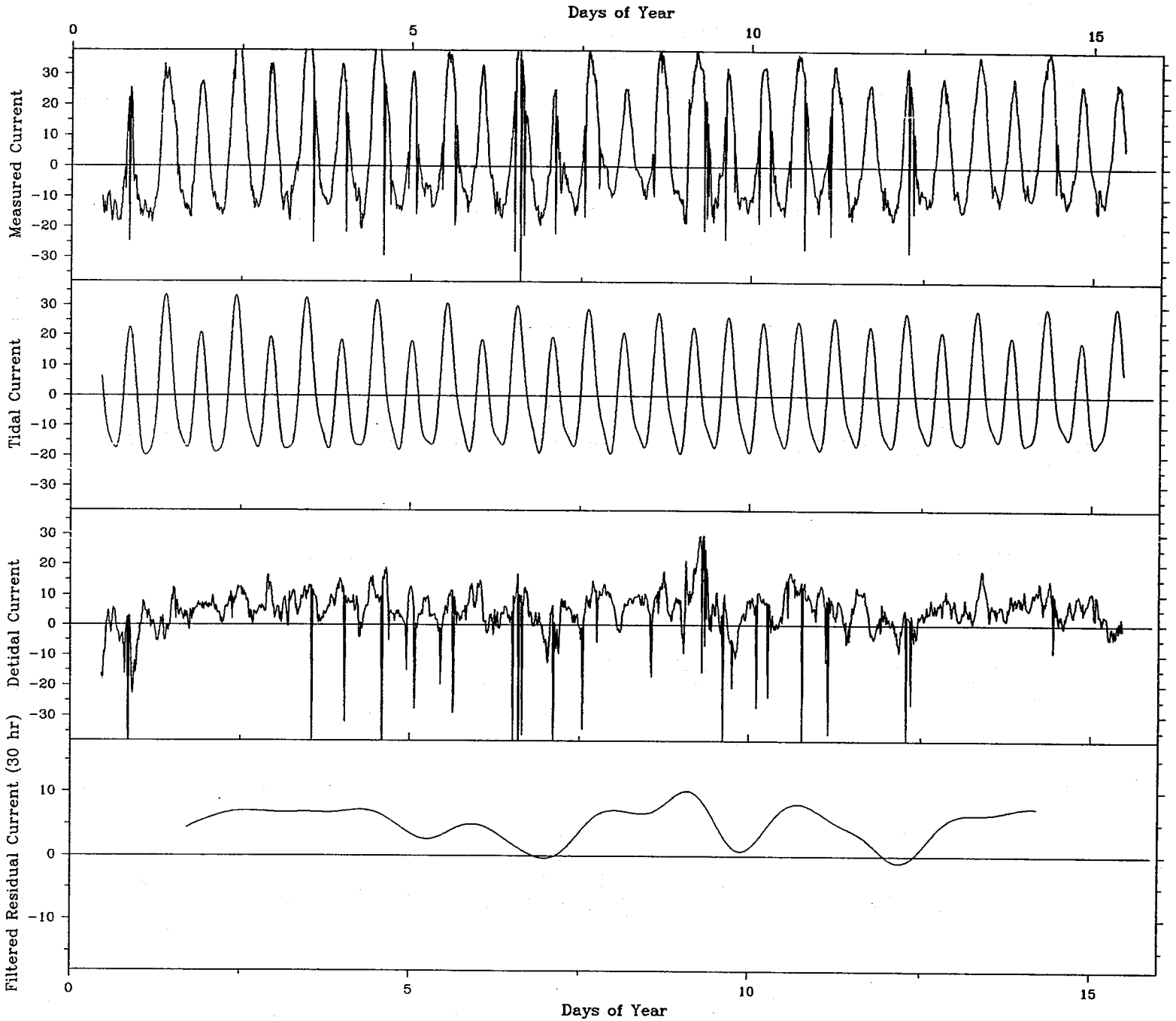
Time series of current and wind



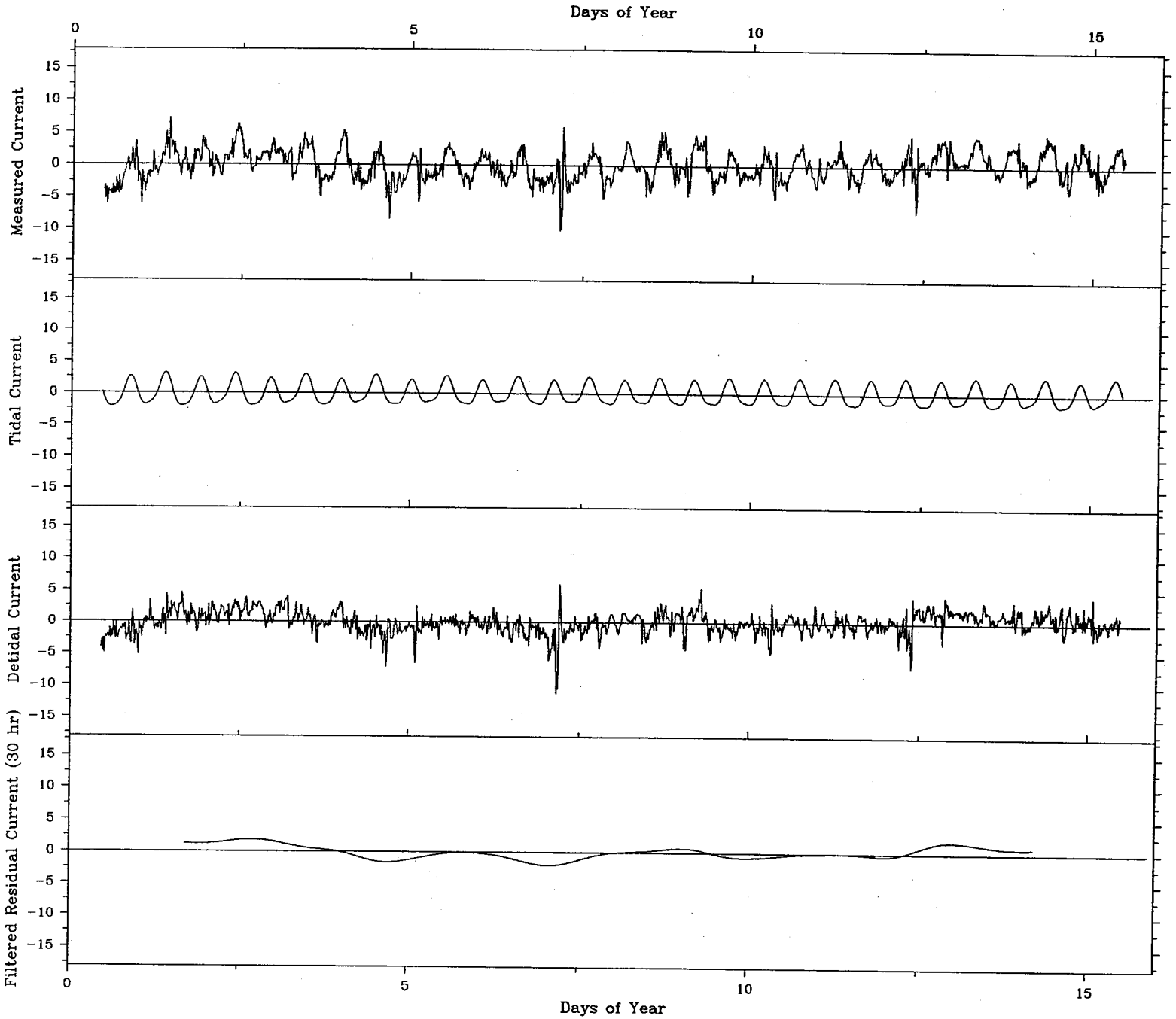
Time series of current and wind



Cross−correlation(Wind,Current)

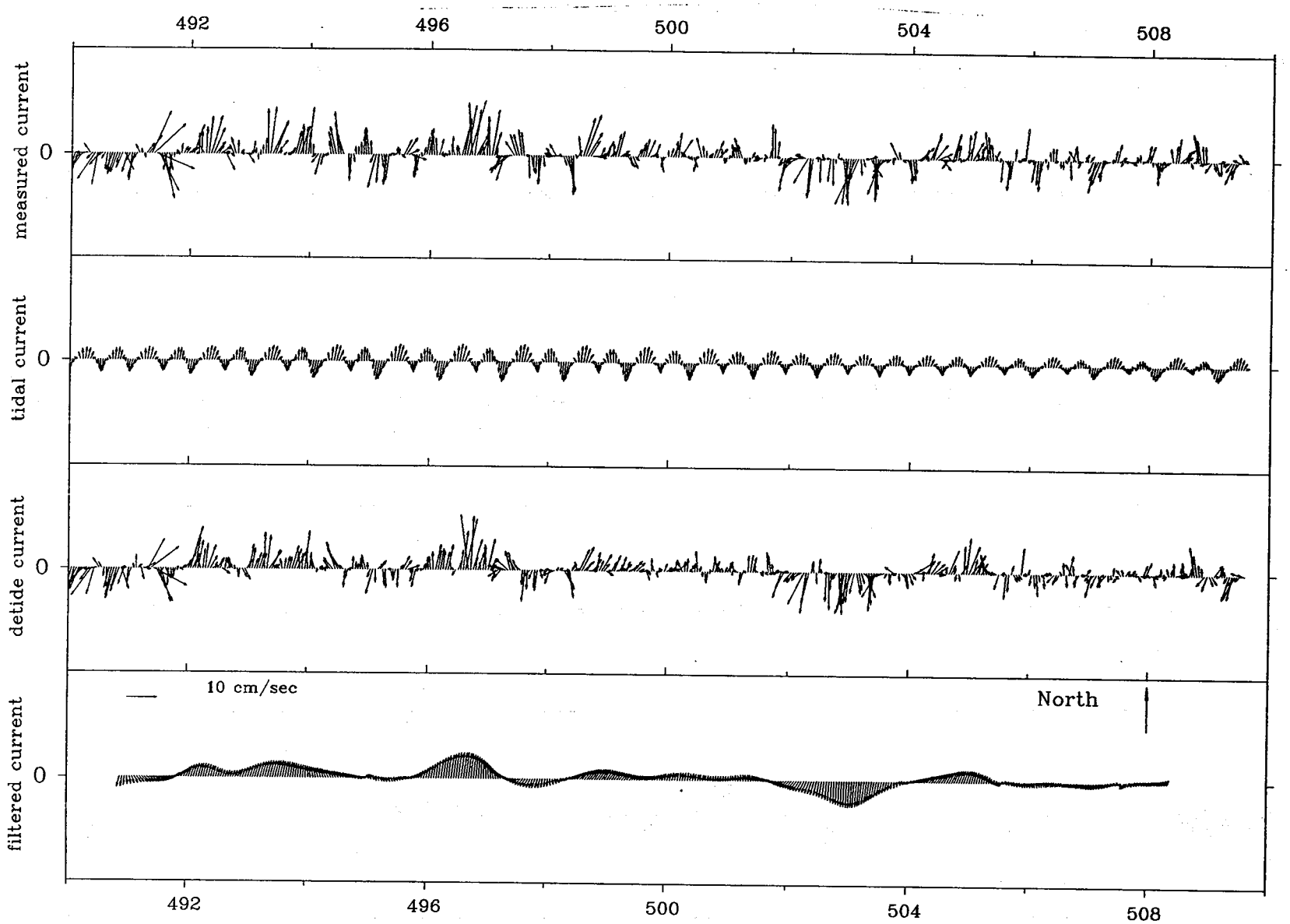


S4 Derived Bottom Current (North-south)

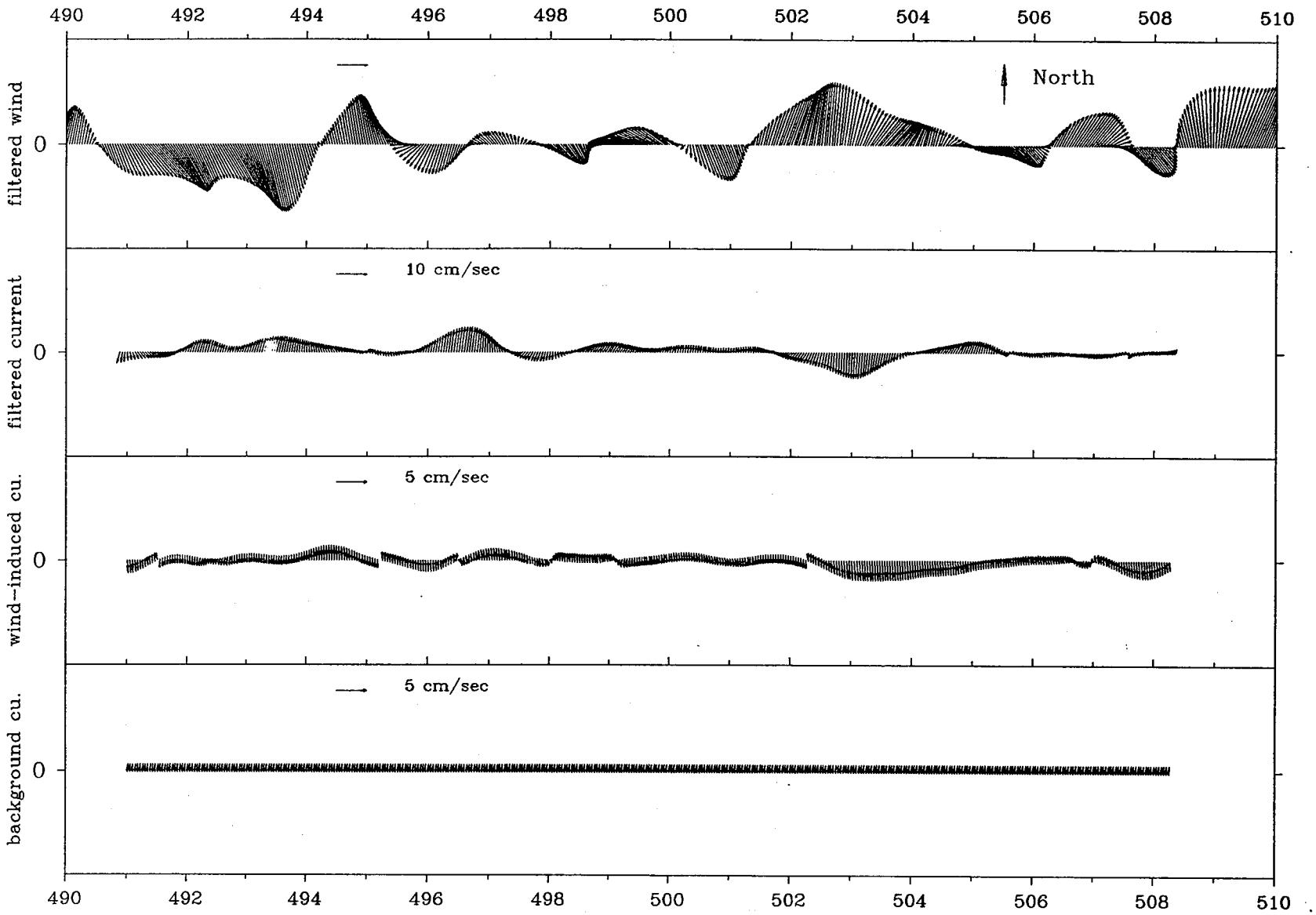


S4 Derived Bottom Current (East-west)

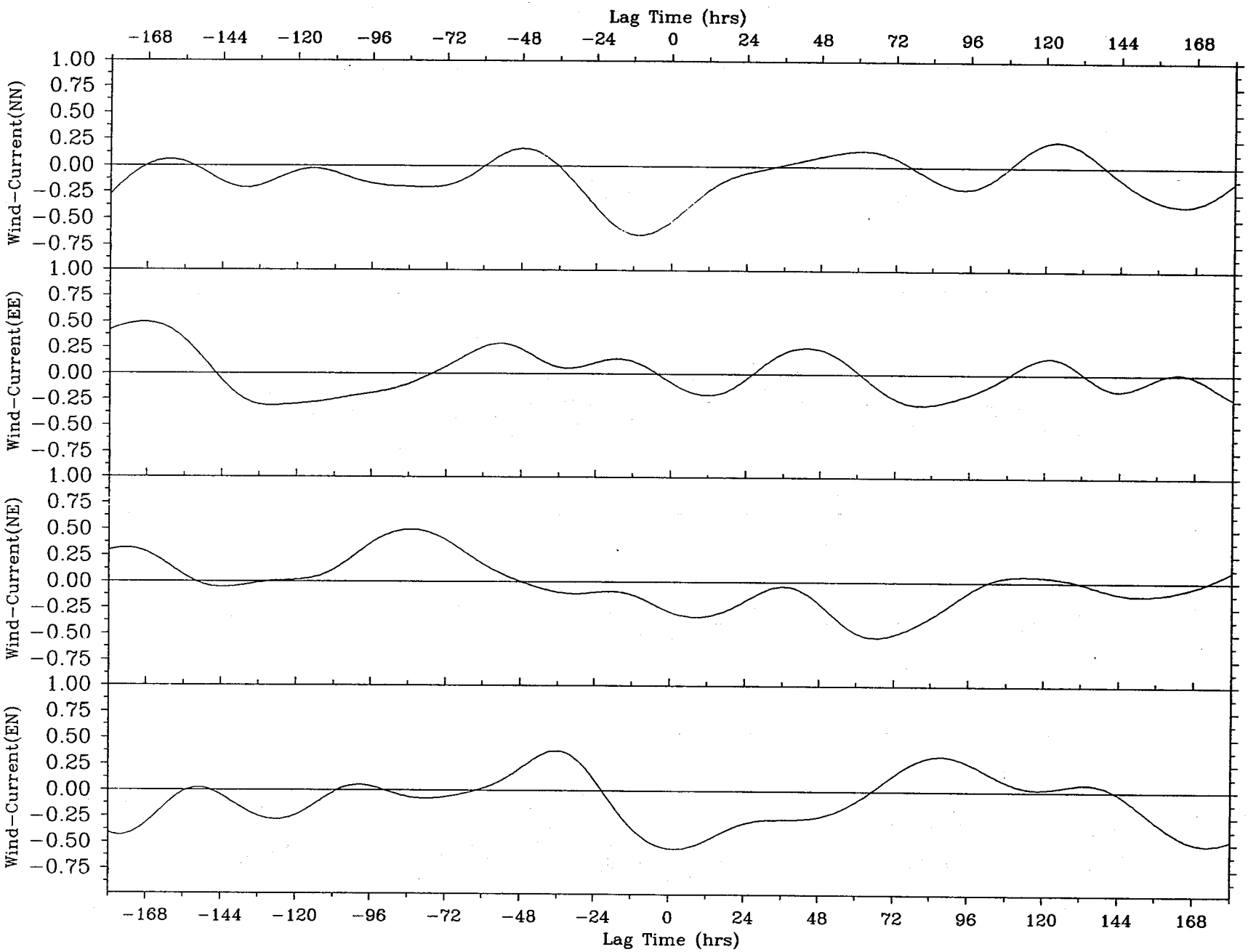
SILVER BAY (May)



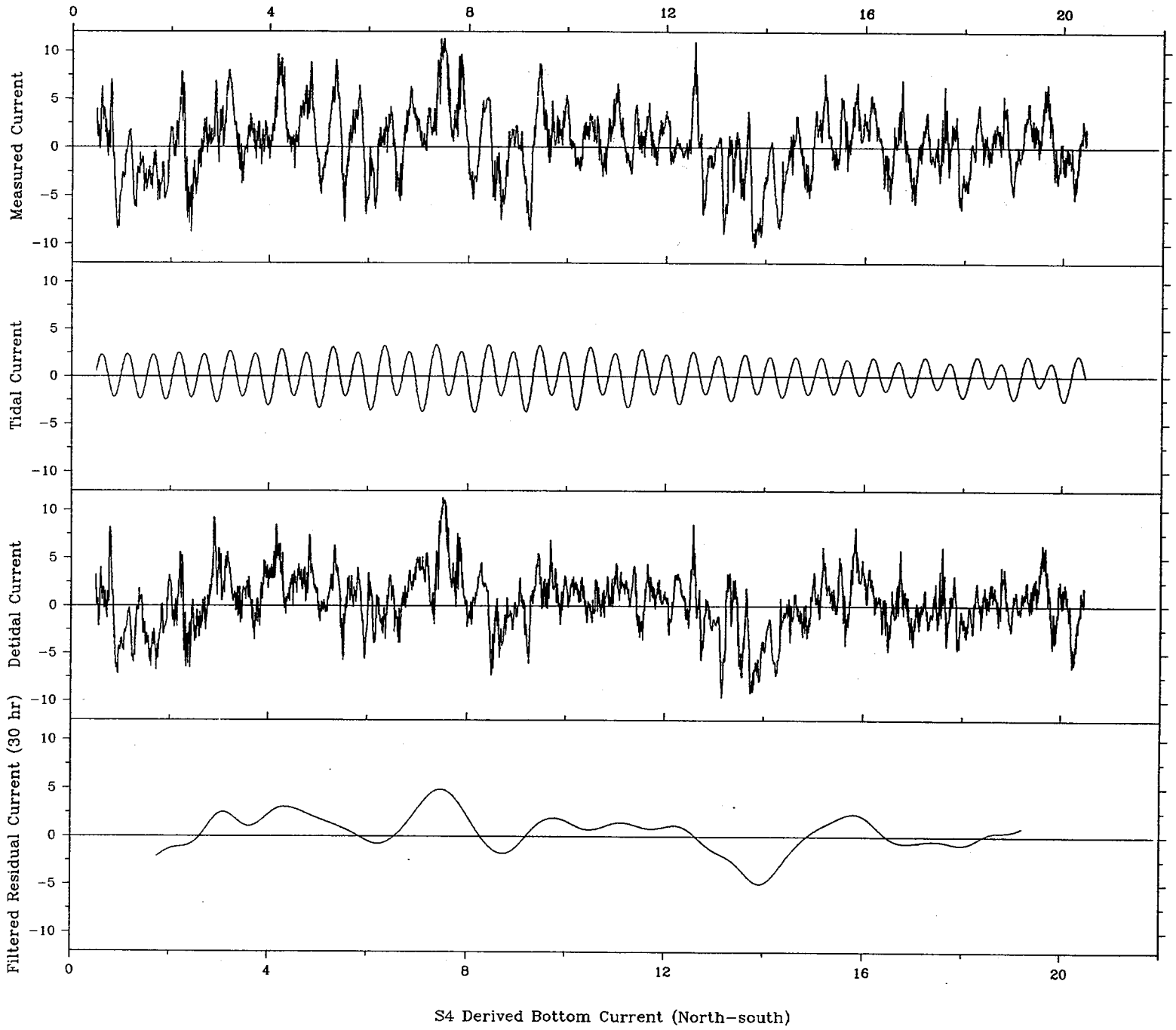
Time series of current

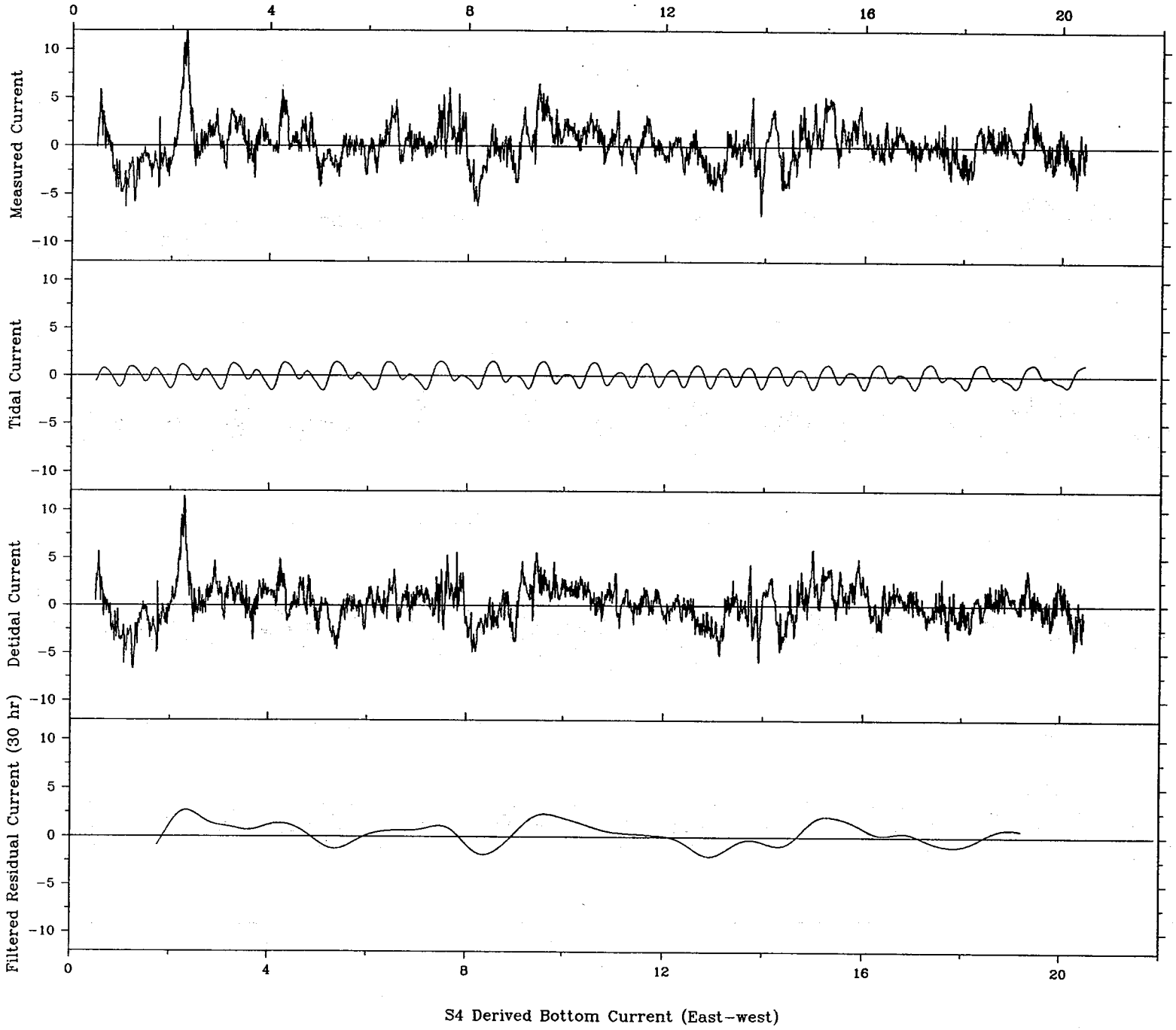


Time series of current and wind

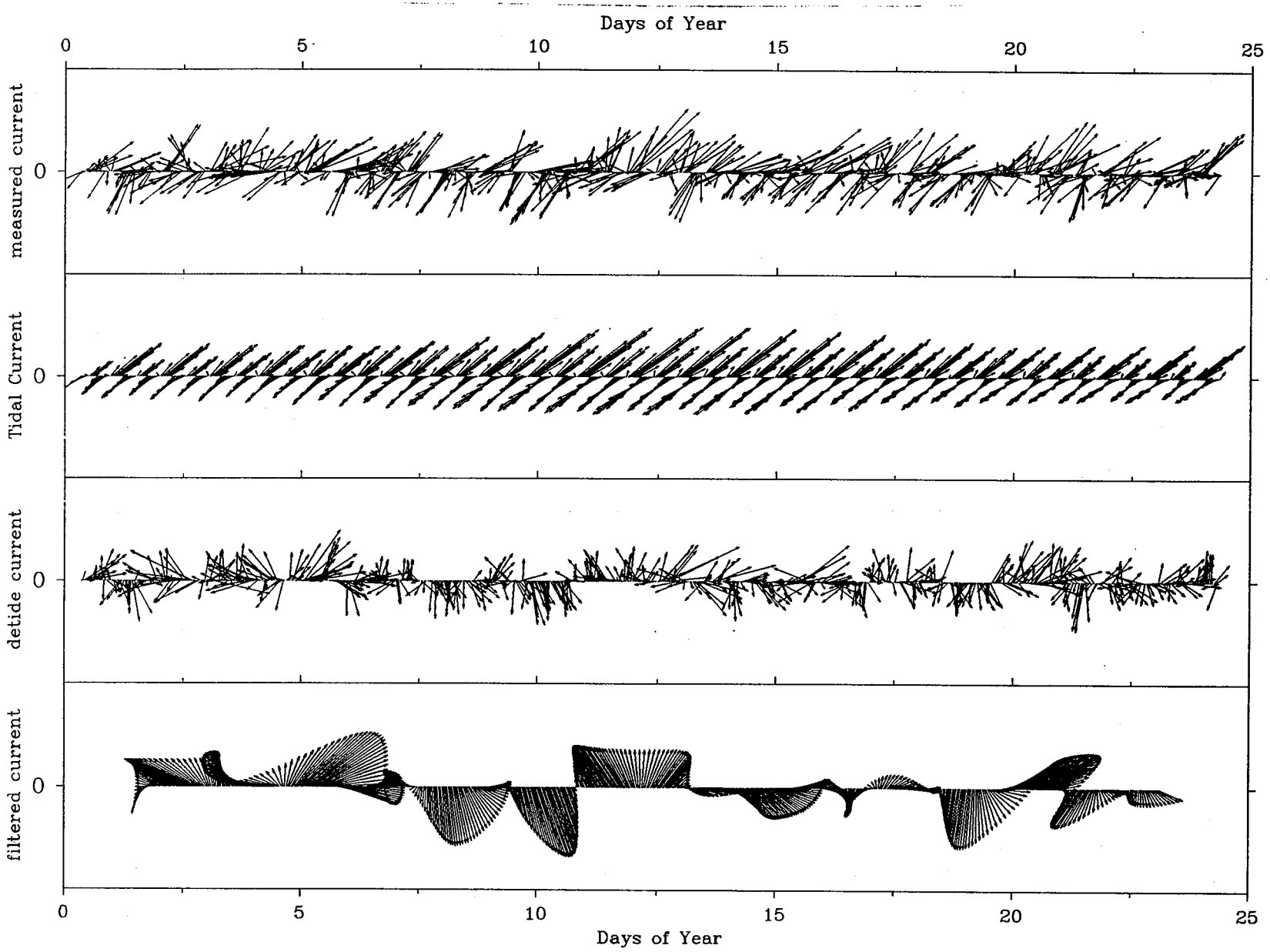


Cross-correlation(Wind,Current)

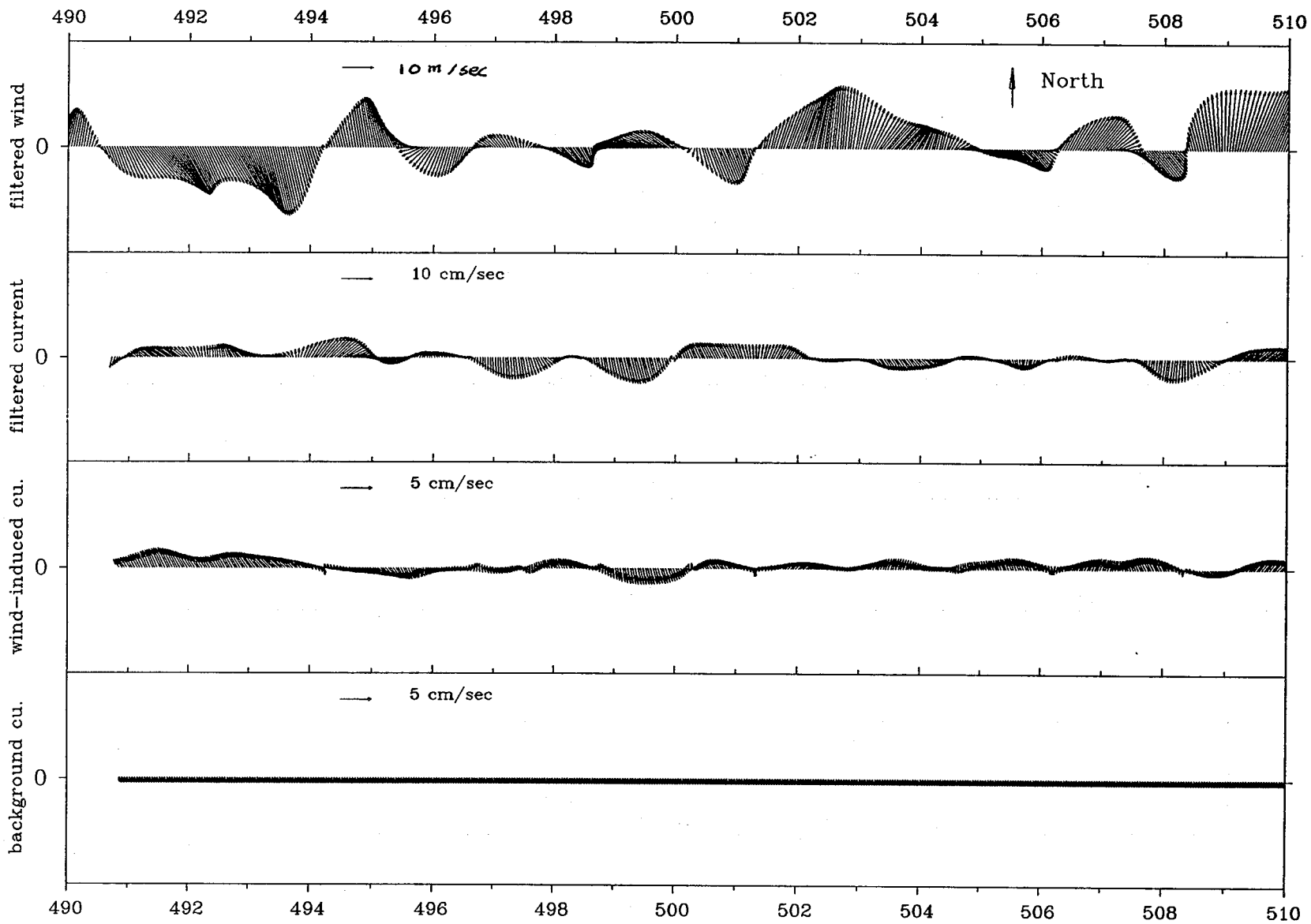

Measured Current
Tidal Current
Detidal Current
Filtered Residual Current (30 hr)
10
5
0
−5
−10
0
4
8
12
16
20
S4 Derived Bottom Current (North−south)


Measured Current
Tidal Current
Detidal Current
Filtered Residual Current (30 hr)
10
5
0
-5
-10
0
4
8
12
16
20
S4 Derived Bottom Current (East-west)

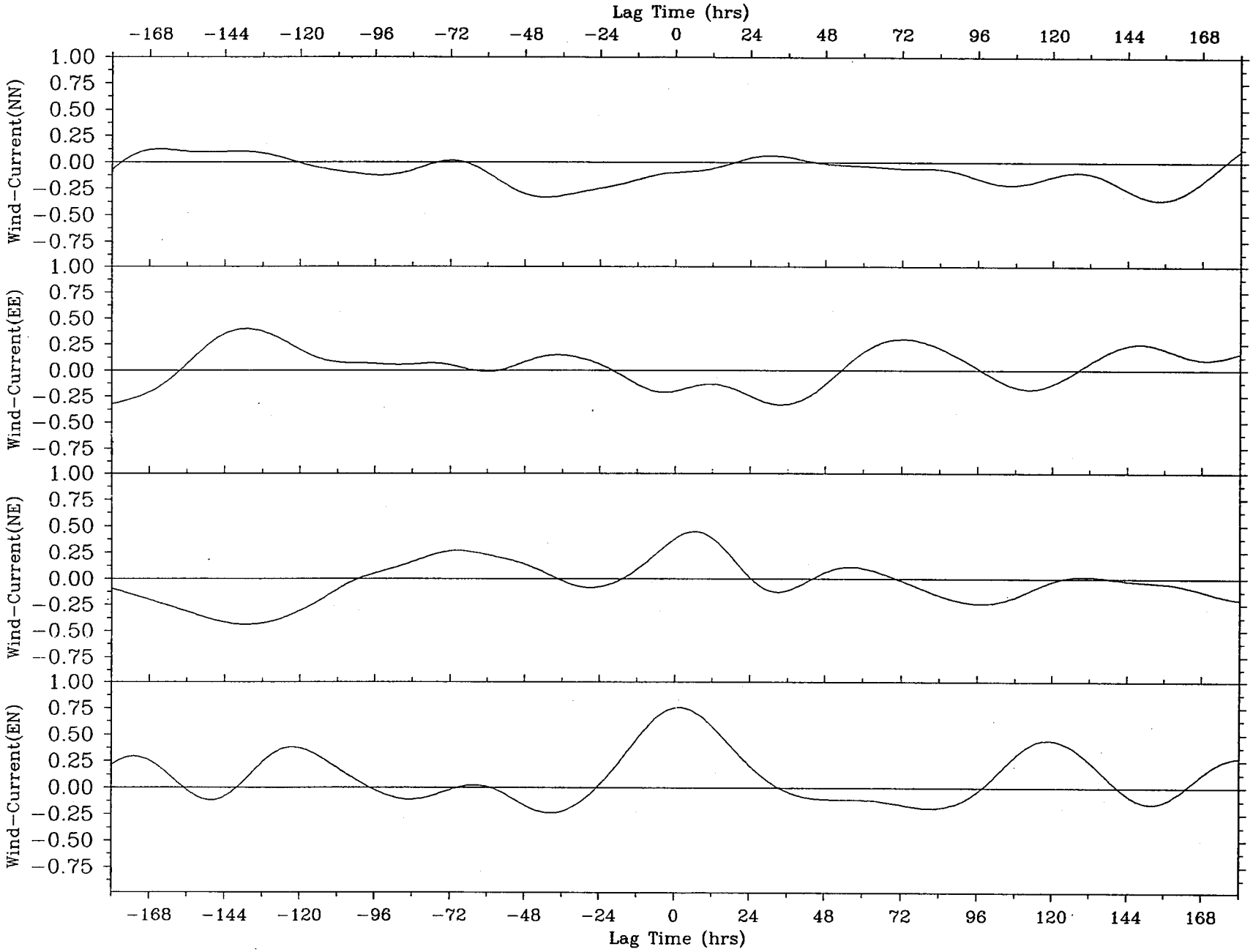
SURF CITY (May)



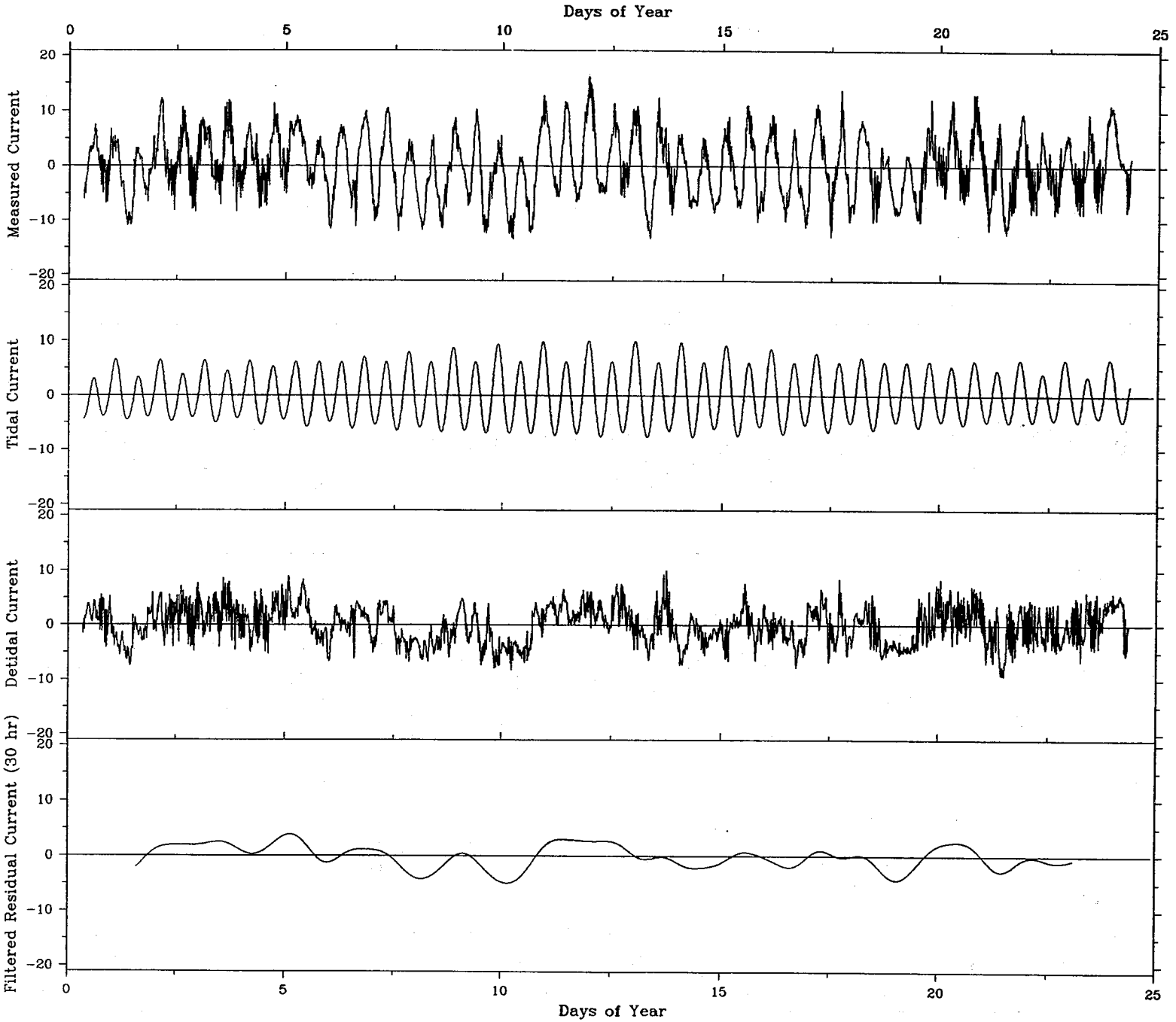
Time series of current constituents



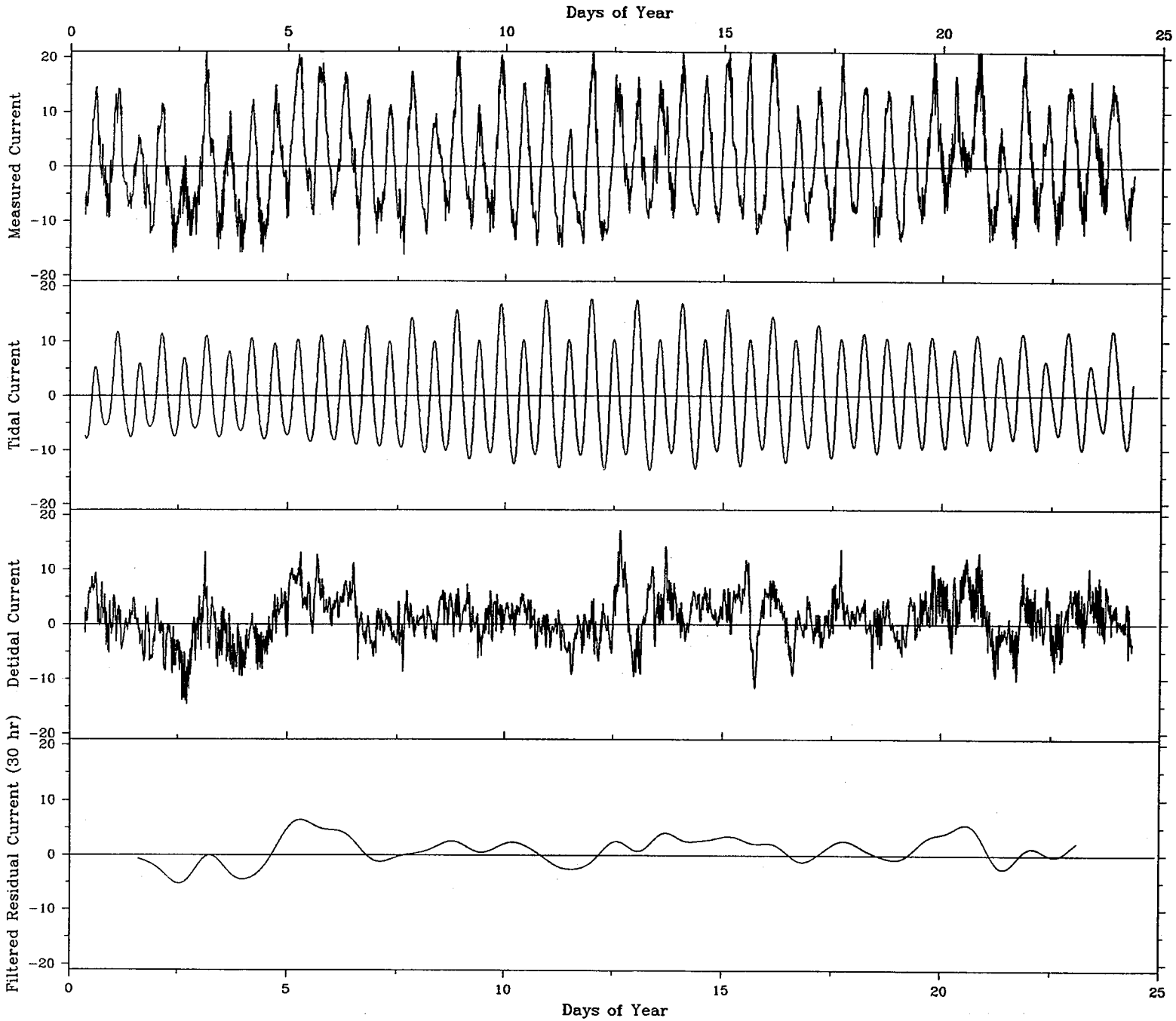
Time series of current and wind



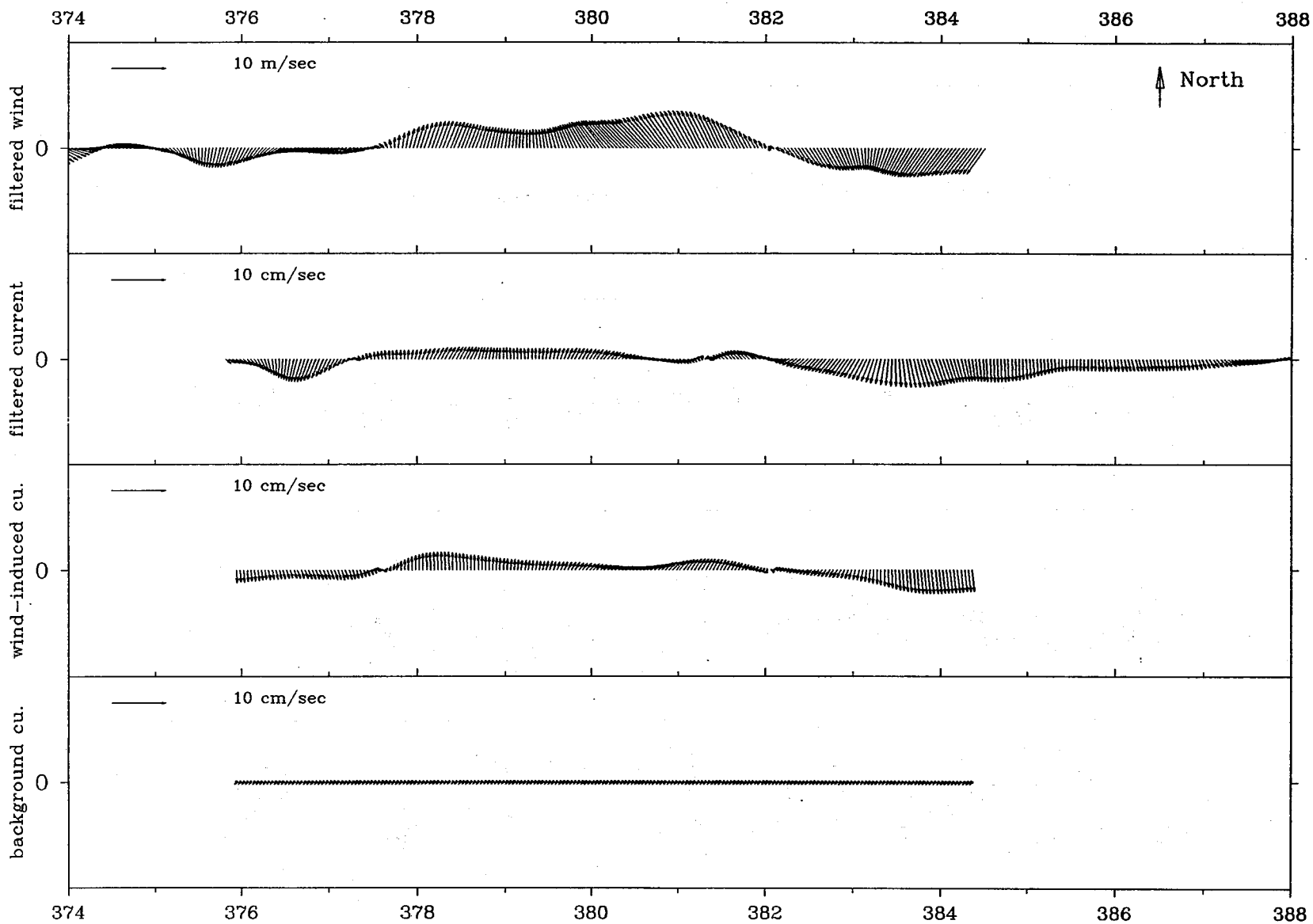
Cross−correlation(Wind,Current)



S4 Derived Bottom Current (North-south)

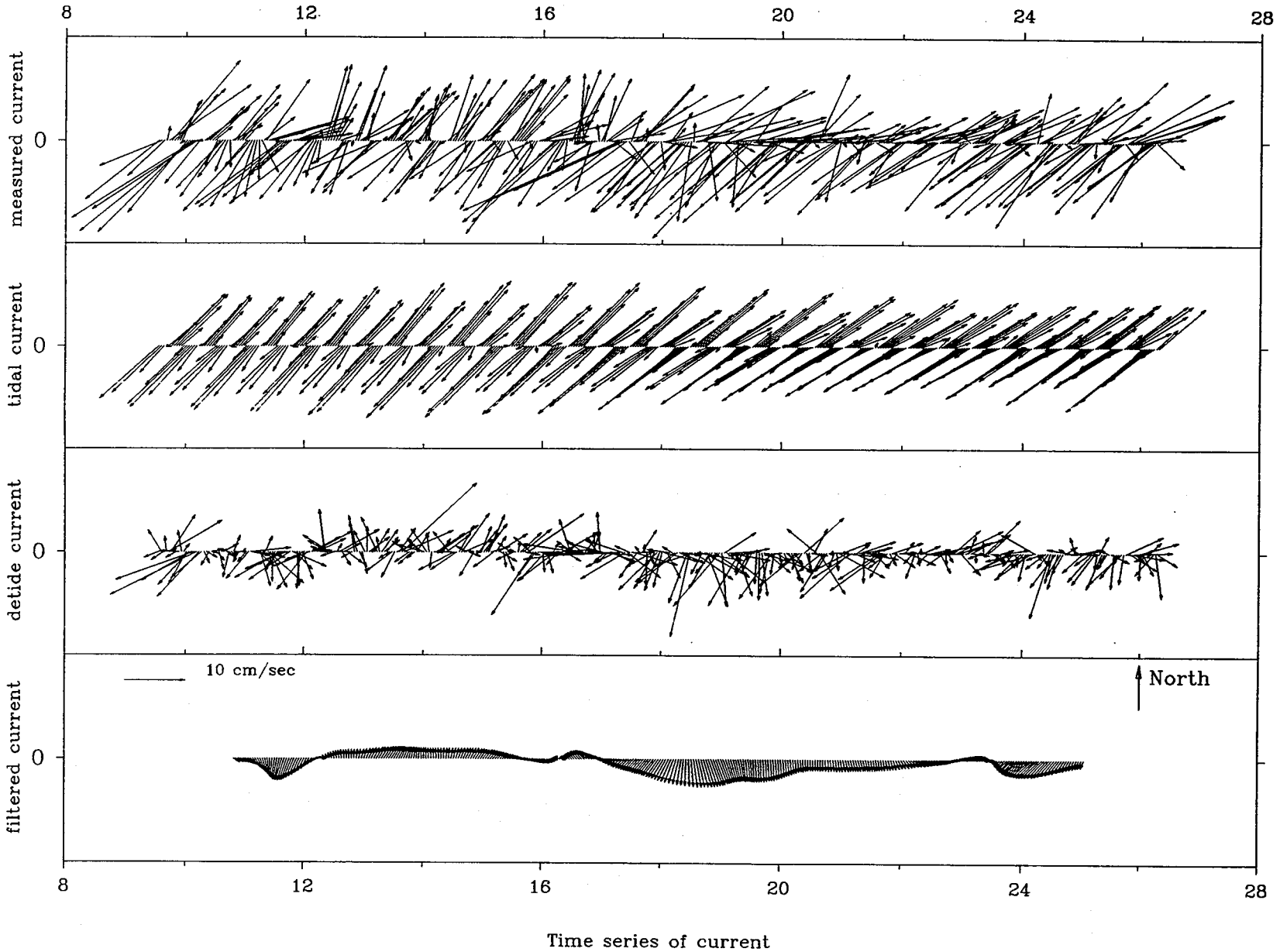


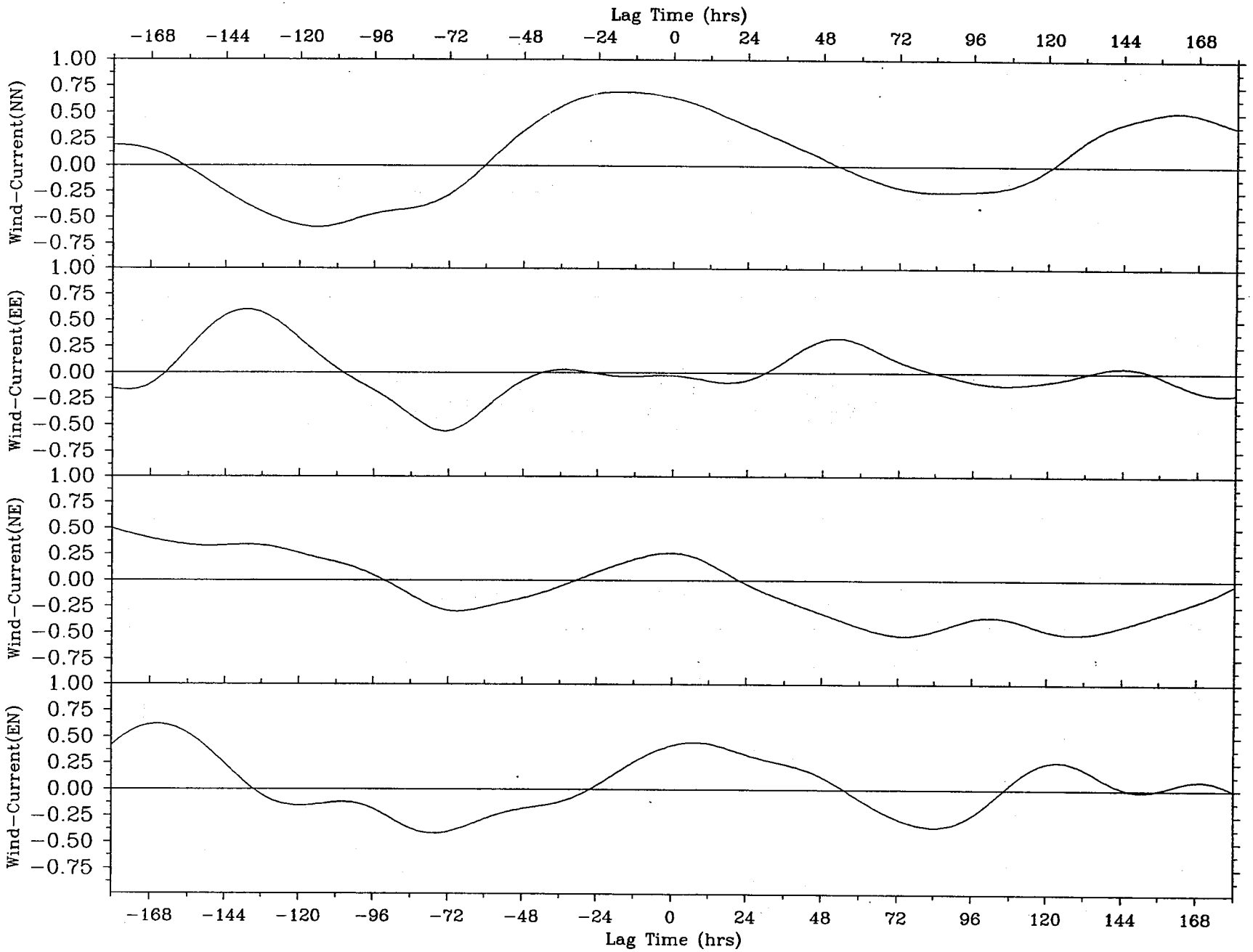
S4 Derived Bottom Current (East−west)



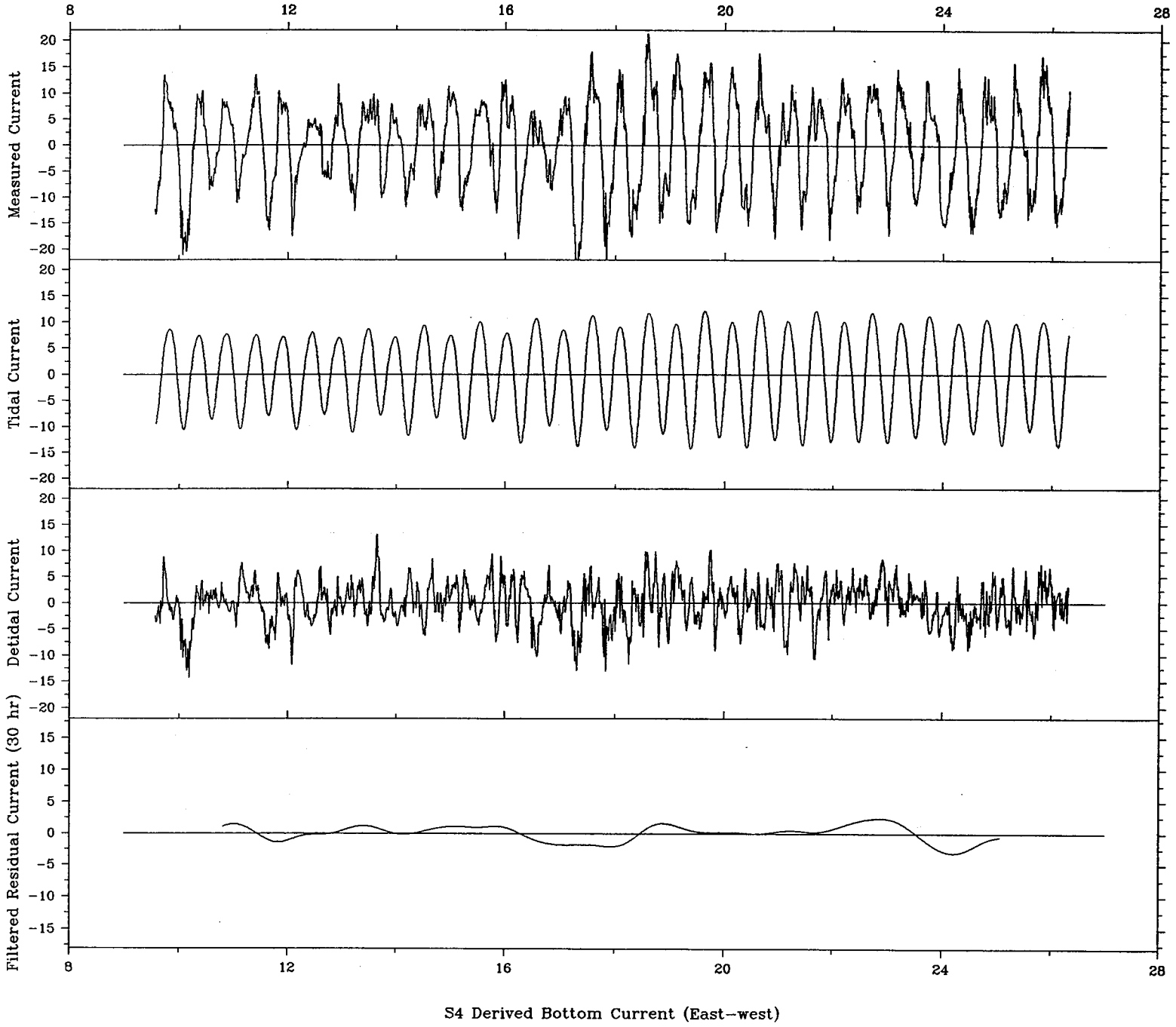
Time series of current and wind

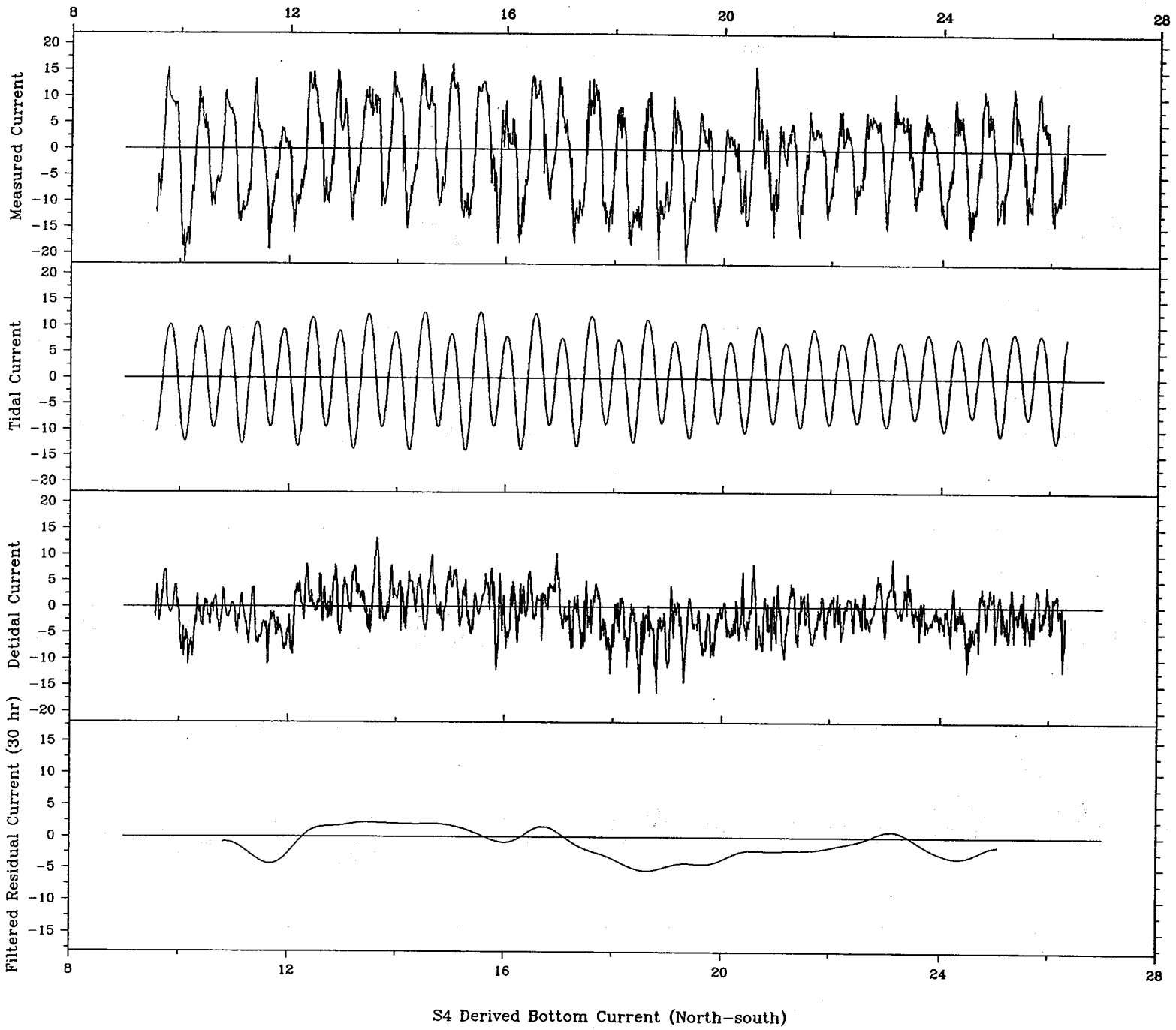
MANTOLOKING (January)



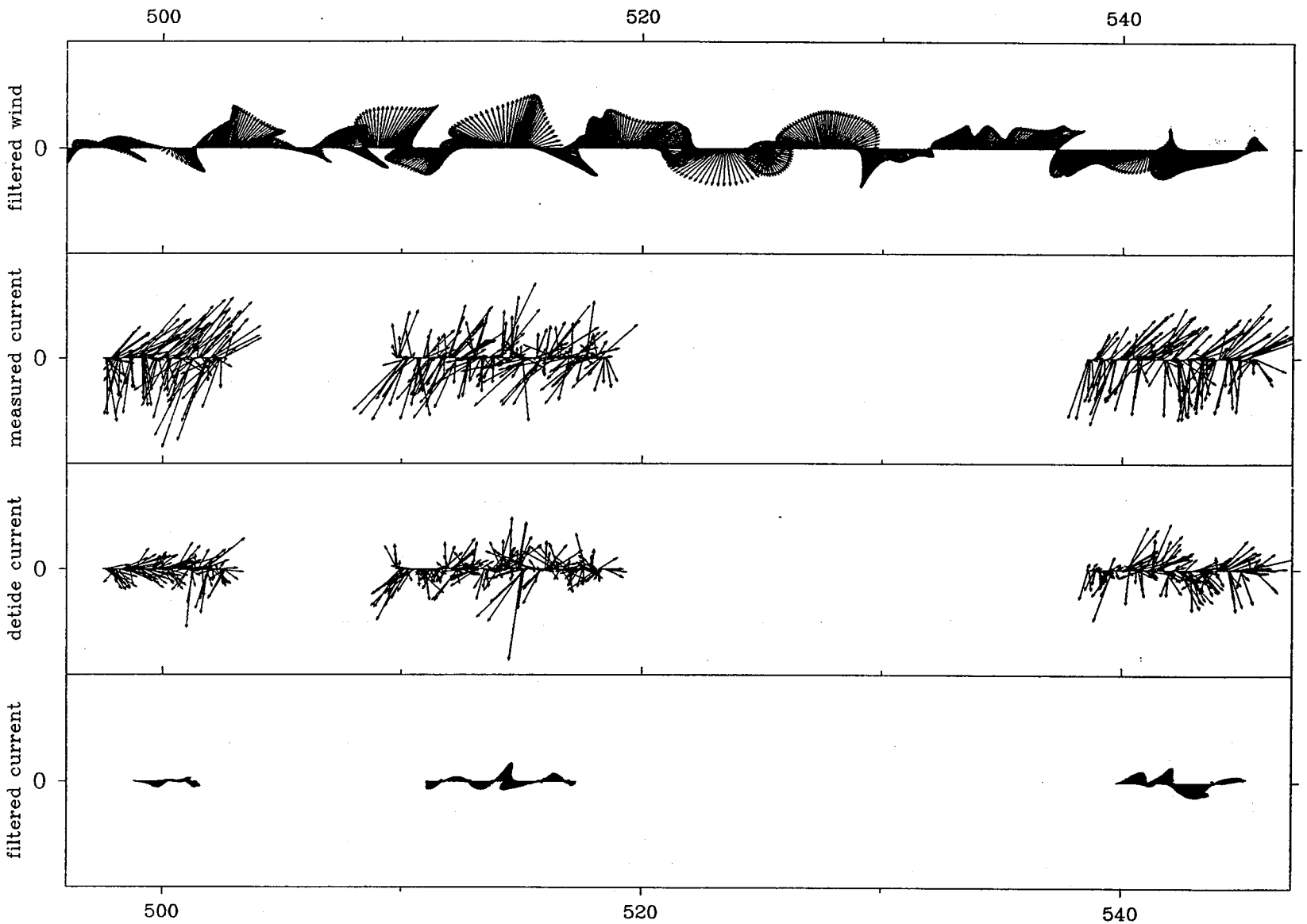


Cross−correlation(Wind,Current)

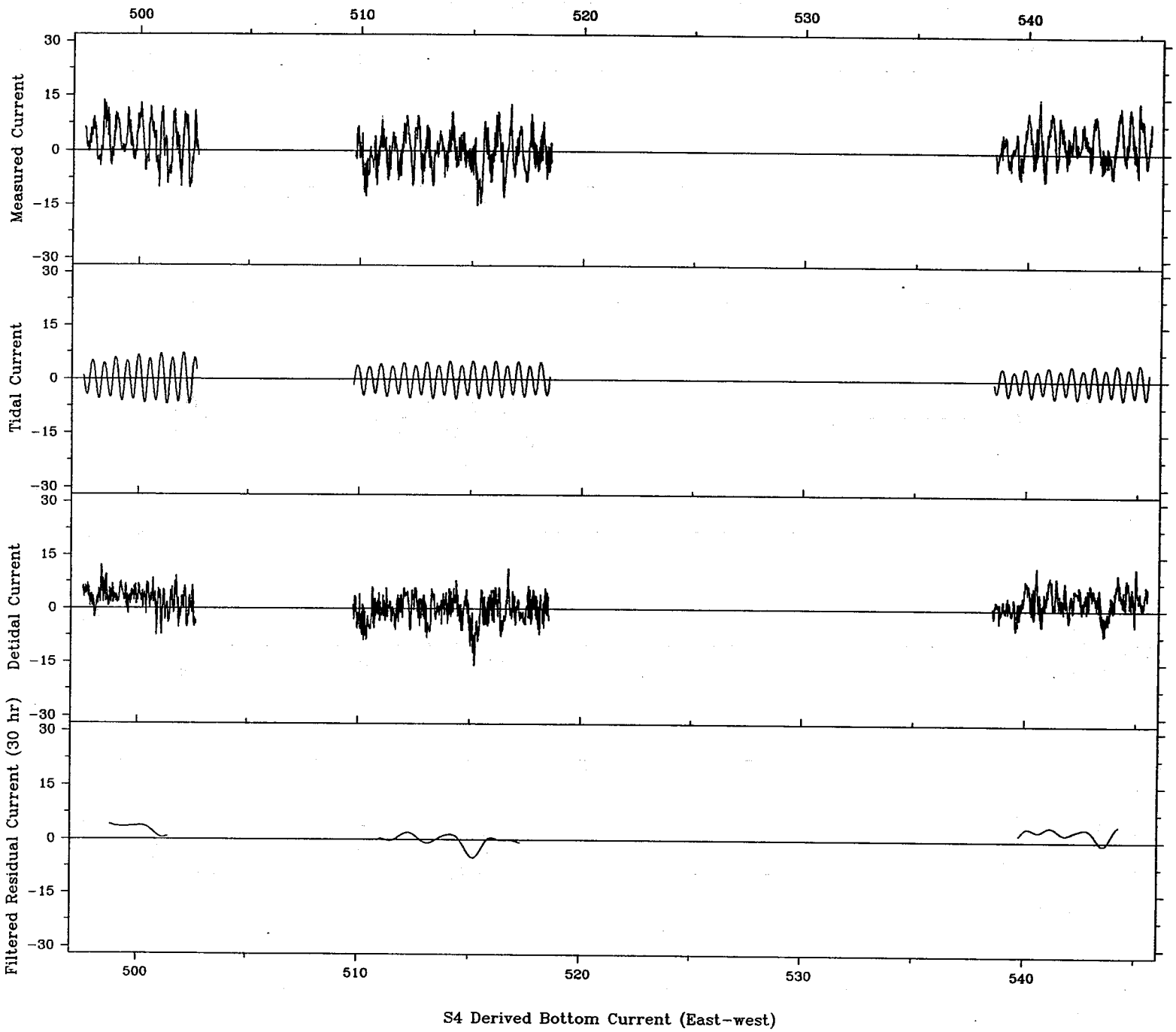

Measured Current
Tidal Current
Detidal Current
Filtered Residual Current (30 hr)
S4 Derived Bottom Current (East–west)
8
12
16
20
24
28
20
15
10
5
0
−5
−10
−15
−20

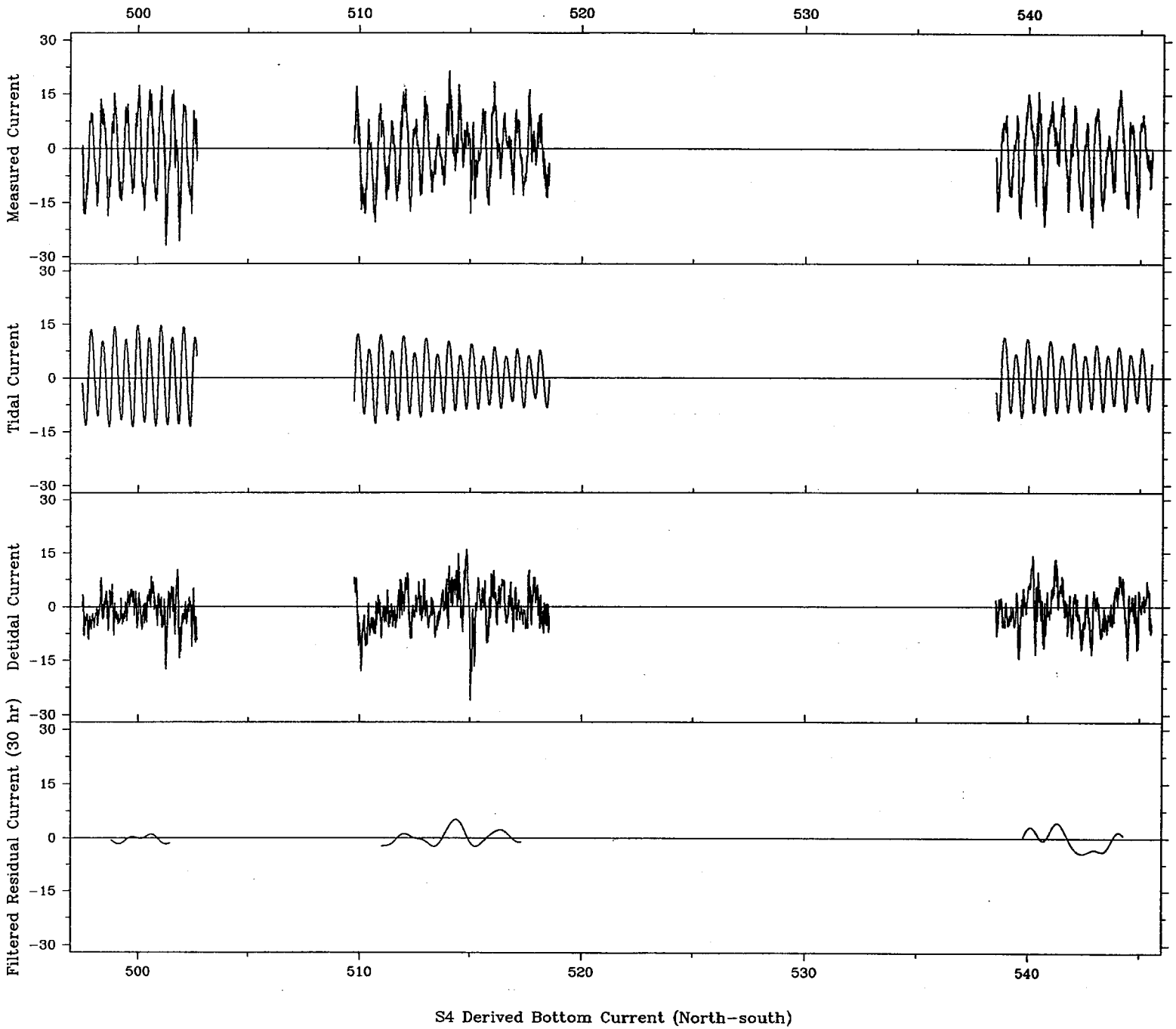

Measured Current
Tidal Current
Detidal Current
Filtered Residual Current (30 hr)
S4 Derived Bottom Current (North-south)

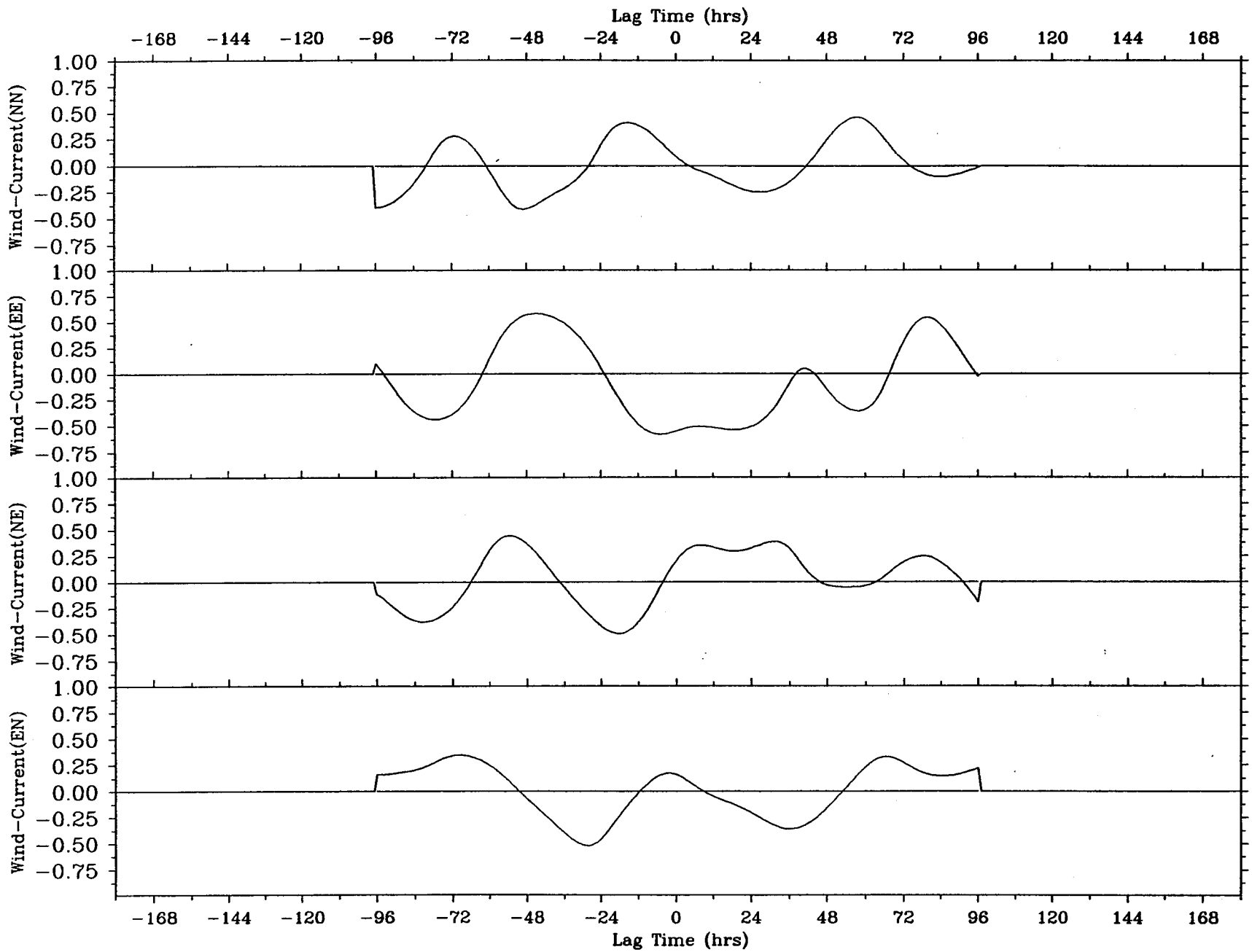
CEDAR CREEK (May/June)



Time series of current and wind


500
510
520
530
540
30
15
0
-15
-30
Measured Current
Tidal Current
Detidal Current
Filtered Residual Current (30 hr)
S4 Derived Bottom Current (East-west)


500
510
520
530
540
30
15
0
-15
-30
Measured Current
Tidal Current
Detidal Current
Filtered Residual Current (30 hr)
S4 Derived Bottom Current (North-south)



Cross-correlation(Wind,Current)