JAB-10733-TM6
UC-703

PROCESSED SEISMIC MOTION RECORDS FROM LITTLE SKULL MOUNTAIN, NEVADA

EARTHQUAKE of JUNE 29, 1992

RECORDED AT

STATIONS IN SOUTHERN NEVADA

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DISCLAIMER

Prepared for
The U.S. Department of Energy
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Prepared by
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LITTLE SKULL MOUNTAIN, NEVADA
EARTHQUAKE OF 29 JUNE 1992

Background

As part of the contract with the U.S. Department of Energy, Nevada Field Office (DOE/NV), URS/John A. Blume & Associates, Engineers (URS/Blume) maintains a network of seismographs in southern Nevada to monitor the ground motion generated by the underground nuclear explosions (UNEs) at the Nevada Test Site (NTS). The seismographs are located in the communities surrounding the NTS and the Las Vegas valley. When these seismographs are not used for monitoring the UNE generated motions, a limited number of seismographs are maintained for monitoring motion generated by other than UNEs (e.g. motion generated by earthquakes, wind, blast). During the subject earthquake of June 29, 1992, a total of 20 of these systems recorded the earthquake motions. Due to the potential benefit of these data for the scientific community, DOE/NV authorizes the release of these records.

Description of Equipment

Three types of seismographs are used in the monitoring program. They are L-7 velocity meter manufactured by the Precision Instrument Company (L-7B system) and by Develco, Inc. (L-7D system); PDR-1 by Kinemetrics; and PDAS-100 by Teledyne Geotech.

L-7 Velocity Meter: It is a continuously recording velocity seismograph which records the motion on an analog magnetic tape. It has a recording capability of 5 continuous days.

PDR-1: The acceleration signal is converted to a digital form and recorded on a digital cassette tape. The system is set to trigger on a short-term average (STA) and long-term average (LTA) threshold. It has a pre-event memory of about 5 seconds and has a recording capability of approximately 20 minutes.

PDAS-100: The acceleration signal is converted to a digital form and recorded on a random access memory (RAM) within the system. The system is set to trigger on a short-term average (STA) and long-term average (LTA) threshold. The selectable pre-event memory is set for 20 seconds and has a recording capability of approximately 20 minutes.

Earthquake Parameters

The earthquake appeared to have occurred under the Little Skull Mountain about 10 km northeast of Lathrop Wells, Nevada. The National Earthquake Information Center has estimated the earthquake magnitude as 5.6 M_B. The U.S. National Seismic Network determined that the type of faulting is primarily normal faulting on a northeasterly striking plane. The earthquake was felt by many of the people in the communities surrounding the NTS and Las Vegas, about 115 km from the epicenter.

The earthquake parameters obtained from various sources are:

Epicenter:	36.718 N, 116.289 W
Depth:	9 Km
Magnitude:	5.6 M_B (body-wave magnitude)
Date:	29 June 1992
Origin time:	Day 181 Hr 10 Min 14 Sec 22 (GMT)
Local time:	3:14 a.m. (PDT)

Seismic Recordings

The subject earthquake was recorded at 20 ground stations. The stations that recorded the motion in area around the NTS are shown on Figure 1. Those in the Las Vegas valley are detailed in Figure 2. Table 1 tabulates the system type, location, geodetic coordinates and distance from the epicenter for each station. At several selected sites, the station was monitored by a secondary system. When both systems recorded the motion, the system numbers are designated A and B.

Conversion and Processing

The records obtained from the earthquake were retrieved and converted from field data to a computer compatible format for processing. The processing was performed using URS/Blume's standard signal processing as described in Reference 1.

In general, the processing is performed in three phases:

In Phase 1 (DP1), the seismic signal is converted from field data to a computer compatible format using special interface equipment. The data are scaled to an engineering unit (cm/sec^2 or cm/sec). The resulting plots are checked for any error and reviewed for additional processing requirements.

In Phase 2 (DP2), the records are processed using noise reduction techniques. The techniques include baseline correction, cosine tapering and application of low-pass and high-pass filtering using the Order 4, Butterworth filter. For ground stations, the data are generally band-pass filtered from .1 to 33Hz. Fourier amplitude spectra are generated before and after the DP2 processing. The corrected acceleration, velocity and displacement time histories are generated using numerical differentiation and integration. The pseudo relative velocity spectrum (PSRV) of 49 periods and 5 percent of critical damping is computed. The 49 periods are equally spaced on a logarithmic scale from 0.05 to 6.072 seconds.

In the final phase (DPF), the records are arranged for long-term preservation and for report preparation. The final product contains data plots in chronological order of data processing; original recording, uncorrected and corrected Fourier amplitude spectra, corrected acceleration, velocity, displacement and PSRV.

Results

Table 2 tabulates the uncorrected peak acceleration or velocity, corrected peak acceleration, velocity and displacement values and any data processing comments. The data are written in the data format which are compatible with the standard tape format for CSMIP strong-motion data tapes [Ref. 2]. Table 3 summaries the standard data format.

The data are available on 8MM tape, ASCII format (record length=80, blocksize=2000). Table 4 gives examples of VAX/VMS commands on how the data tape was created and how to retrieve the data files.

Acknowledgment

The network of seismographs in southern Nevada to monitor the ground motion generated by the UNEs at the NTS is maintained by the staff of electronic technicians consisting of Ray Bradley, Don Morgan, Robert Stewart, Lori Forrester and Jim Graham. The seismic records conversion and processing staff includes Vickie Ross, Stephanie Miller, Rosemarie Musso, Ben Gacula and Cory Lieber.

References

1. Lum, P. K., "Overview of Seismic Signal Conversion and Processing Operations", URS/John A. Blume & Associates, Engineers, San Francisco, JAB-10733-TM3, March 1991.

2. Shakal, A. F. and Huang, M. J., "Standard Tape Format for CSMIP Strong-Motion Data Tapes", California Department of Conservation, Division of Mines and Geology, Office of Strong Motion Studies, Report OSMS 85-03, December 1985.

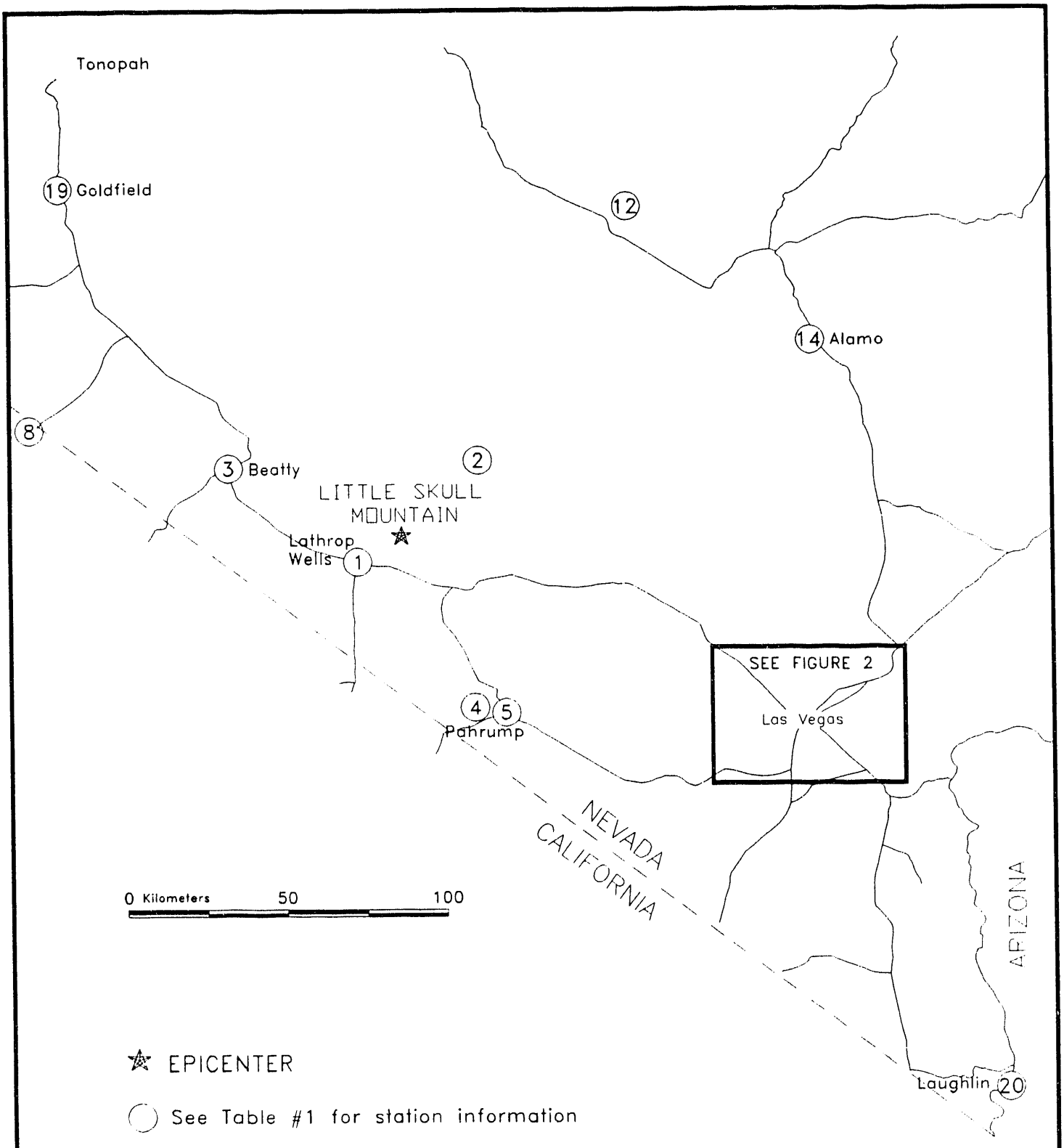

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FIGURE 1: STATIONS RECORDING THE LITTLE SKULL MT., NEVADA EARTHQUAKE OF 6/29/92 IN SOUTHERN NEVADA

N

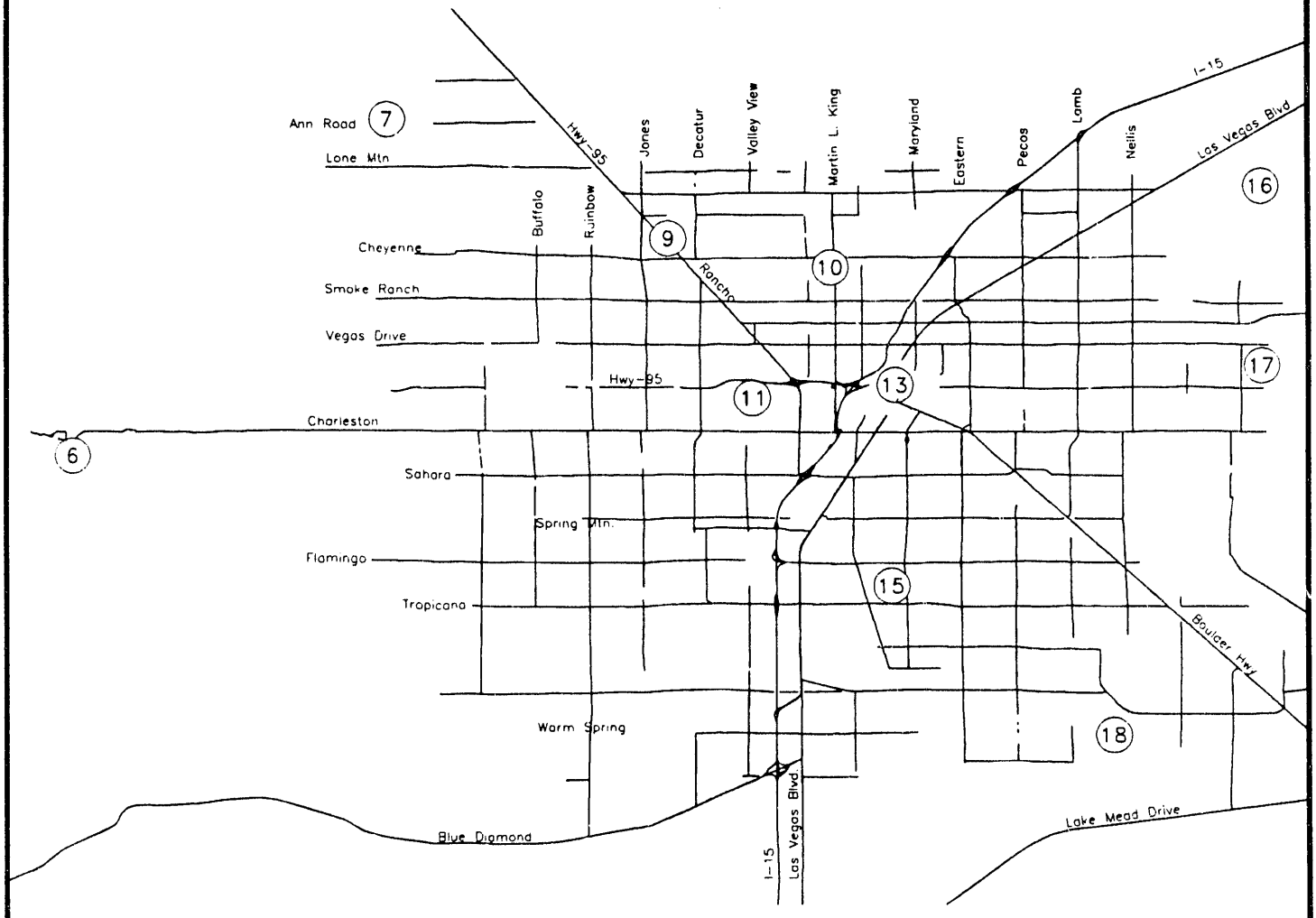

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FIGURE 2: STATIONS RECORDING THE LITTLE SKULL MT., NEVADA EARTHQUAKE OF 6/29/92 IN LAS VEGAS VALLEY

TABLE 1: LOCATIONS OF THE RECORDING STATIONS

Station No.	System Type	Location	Coordinates		Distance from Epicenter (Km)
1A 1B	PDR-1 PDAS-100	Lathrop Wells	116.40W	36.64N	15
2A 2B	PDR-1 PDAS-100	Nevada Test Site	116.06W	36.93N	30
3	PDR-1	Beatty	116.76W	36.91N	49
4	PDAS-100	Pahrump Site 2	116.07W	36.23N	58
5	PDR-1	Pahrump Site 1	115.98W	36.21N	62
6	PDR-1	Las Vegas	115.41W	36.15N	99
7	PDR-1	Las Vegas	115.31W	36.26N	99
8	PDR-1	Death Valley	117.34W	37.03N	102
9	PDR-1	Las Vegas	115.22W	36.22N	109
10	PDR-1	Las Vegas	115.16W	36.21N	113
11	L-7	Las Vegas	115.19W	36.17N	114
12	PDR-1	Tempiute	115.63W	37.65N	117
13	PDR-1	Las Vegas	115.14W	36.17N	117
14A 14B	PDR-1 PDAS-100	Alamo	115.12W	37.27N	118
15A 15B	L-7 PDR-1	Las Vegas	115.14W	36.11N	121
16	PDAS-100	Las Vegas	115.02W	36.24N	123
17	PDR-1	Las Vegas	115.02W	36.18N	126
18	PDR-1	Las Vegas	115.07W	36.06N	130
19	PDR-1	Goldfield	117.23W	37.71N	139
20	PDAS-100	Laughlin	114.58W	35.15N	232

TABLE 2: PEAK AMPLITUDES

Station No.	Comp	<-- Uncorrected --> Accel. (cm/sec²)	Velocity (cm/sec)	<------- Corrected -------> Accel. (cm/sec²)	Velocity (cm/sec)	Disp (cm)	Comments
1 A	DOWN	85.097	0.000	84.485	-2.465	0.455	
1 A	NORTH	133.153	0.000	132.736	4.234	0.524	
1 A	WEST	-205.720	0.000	-204.277	11.247	0.773	
1 B	DOWN	81.519	0.000	80.697	-2.405	0.429	
1 B	NORTH	129.151	0.000	128.704	-4.114	-0.471	
1 B	WEST	-210.499	0.000	-208.734	11.477	-0.825	
2 A	DOWN	-65.351	0.000	-66.300	2.567	0.267	
2 A	NORTH	-118.222	0.000	-118.275	5.044	-0.499	
2 A	WEST	88.490	0.000	89.243	-4.609	-0.576	
2 B	DOWN	-68.666	0.000	-68.179	2.615	0.252	
2 B	NORTH	-116.522	0.000	-116.673	5.053	-0.497	
2 B	WEST	88.534	0.000	88.807	-4.642	-0.623	
3	DOWN	-35.887	0.000	-33.004	-0.669	-0.191	
3	NORTH	-36.328	0.000	-35.931	-1.069	-0.109	
3	WEST	-60.028	0.000	-60.592	-2.065	0.183	
4	DOWN	15.056	0.000	15.120	-0.558	0.160	
4	NORTH	-18.694	0.000	-18.631	1.055	0.193	
4	WEST	21.013	0.000	20.999	1.263	-0.232	
5	DOWN	-10.772	0.000	-11.009	0.423	-0.170	
5	NORTH	-15.724	0.000	-15.785	0.833	-0.199	
5	WEST	14.829	0.000	14.812	0.744	-0.147	
6	DOWN	-5.395	0.000	-5.505	0.218	-0.116	
6	NORTH	7.633	0.000	7.631	0.266	-0.080	
6	WEST	-8.377	0.000	-8.173	0.309	-0.134	
7	DOWN	-4.762	0.000	-4.746	0.326	-0.159	
7	NORTH	-6.994	0.000	-7.039	0.524	0.119	
7	WEST	-5.386	0.000	-5.345	0.364	-0.125	
8	DOWN	8.558	0.000	8.602	-0.305	0.084	
8	NORTH	12.056	0.000	12.101	-0.521	-0.092	
8	WEST	12.676	0.000	12.637	0.432	-0.084	
9	DOWN	-2.585	0.000	-2.570	-0.273	-0.074	Short Record
9	NORTH	-4.007	0.000	-3.987	-0.412	0.085	Short Record
9	WEST	-6.322	0.000	-6.288	-0.511	0.088	Short Record
10	DOWN	5.416	0.000	5.408	0.369	-0.140	
10	NORTH	8.895	0.000	8.896	-0.768	-0.192	
10	WEST	8.952	0.000	8.961	-0.914	-0.311	
11	DOWN	0.000	0.337	4.951	0.330	-0.136	
11	NORTH	0.000	0.369	10.842	0.371	0.156	Clipped
11	WEST	0.000	0.270	8.521	0.324	0.164	Clipped
12	DOWN	15.078	0.000	15.126	0.905	0.110	
12	NORTH	9.597	0.000	9.622	-0.822	0.128	
12	WEST	19.789	0.000	19.704	0.796	-0.111	

TABLE 2: PEAK AMPLITUDES (CONT'D)

Station No.	Comp	<-- Uncorrected --> Accel. (cm/sec^2)	Velocity (cm/sec)	<------- Corrected -------> Accel. (cm/sec^2)	Velocity (cm/sec)	Disp (cm)	Comments
13	DOWN	-3.561	0.000	-3.546	0.396	-0.163	
13	NORTH	7.431	0.000	7.427	0.779	0.292	
13	WEST	-7.946	0.000	-7.929	1.169	0.312	
14 A	DOWN	-9.442	0.000	-9.412	0.831	-0.142	
14 A	NORTH	-15.456	0.000	-15.448	1.322	-0.306	
14 A	WEST	16.787	0.000	16.795	-1.877	0.250	
14 B	DOWN	-9.768	0.000	-9.769	0.820	-0.143	
14 B	NORTH	-15.393	0.000	-15.391	-1.343	-0.279	
14 B	WEST	16.528	0.000	16.523	-1.869	0.260	
15 A	DOWN	0.000	-0.274	-3.104	-0.271	0.073	
15 A	NORTH	0.000	-0.388	-5.273	-0.390	-0.148	
15 A	WEST	0.000	-0.464	4.823	0.467	0.118	
15 B	DOWN	-3.321	0.000	-3.091	0.303	-0.108	
15 B	NORTH	-4.718	0.000	-4.722	0.514	-0.155	
15 B	WEST	5.703	0.000	5.669	0.626	0.146	
16	DOWN	4.825	0.000	4.817	-0.629	0.151	
16	NORTH	7.208	0.000	7.212	0.710	0.174	
16	WEST	9.178	0.000	9.188	-1.345	0.362	
17	DOWN	-2.283	0.000	-2.293	-0.163	0.109	
17	NORTH	-2.776	0.000	-2.718	-0.170	0.034	
17	WEST	-3.275	0.000	-3.258	0.267	0.118	
18	DOWN	3.543	0.000	-3.584	0.267	-0.097	
18	NORTH	5.644	0.000	5.637	-0.524	-0.129	
18	WEST	-7.757	0.000	7.665	-0.628	-0.134	
19	DOWN	2.341	0.000	2.319	0.228	0.074	
19	NORTH	5.894	0.000	5.861	-0.936	0.156	
19	WEST	5.584	0.000	5.585	-0.446	0.093	
20	DOWN	-3.781	0.000	-3.361	-0.113	0.050	
20	NORTH	-3.165	0.000	-3.158	-0.167	-0.065	
20	WEST	-3.435	0.000	-3.413	-0.172	-0.051	

TABLE 3: DATA FORMAT

Each station contains 3 data channels and contains the following 4 files:

		Units
Vol 1	Uncorrected acceleration	1000/g
Vol 2	Corrected acceleration	cm*100/sec^2
	Corrected velocity	cm*100/sec
	Corrected displacement	cm*100
Vol 3	Psudo Response Velocity	cm/sec
Vol 4	Fourier Amplitude Spectra	cm/sec

A typical station contains the following data:

Vol	Ch.	Line No.	No. of Lines	Format	Description
1	1	1-13	13	a80	Header of alphanumeric data.
		14-20	7	16i5	Header of 100 integer parameters.
		21-27	7	8f10.3	Header of 50 real-value parameters.
		28-..	many	8f10.0	.. points of t(i),a(i) pairs of acc. data.
		...	1	a80	/& --- End of data for Channel 1.
	2	(Repeat header, data and end-of-file mark for Channel 2)			
	3	(Repeat header, data and end-of-file mark for Channel 3)			
2	1	1-25	25	a80	Header of alphanumeric data.
		26-32	7	16i5	Header of 100 integer parameters.
		33-45	13	8f10.3	Header of 100 real-value parameters.
		46	1	a80	Acceleration header information.
		47-..	many	8f10.0	... points of a(i) of dt= .005 second.
		..	1	a80	Velocity header information.
		..	many	8f10.0	... points of v(i) of dt= .005 second.
		..	1	a80	Displacement header information.
		..	many	8f10.0	... points of d(i) of dt= .005 second.
		..	1	a80	/& --- End of data for Channel 1
	2	(Repeat header, data and end-of-file mark for Channel 2)			
	3	(Repeat header, data and end-of-file mark for Channel 3)			
3	1	1-30	30	a80	Header of alphanumeric data.
		31-37	7	16i5	Header of 100 integer parameters.
		38-50	13	8f10.3	Header of 100 real-value parameters.
		51	1	f10.3	Damping values (.05 pct of critical).
		52-64	13	8f10.3	49 periods at which PSRV are computed.
		65	1	a80	PSRV header information
		66-72	7	8e10.3	49 points of PSRV.
		..	1	a80	/& --- End of data for Channel 1
	2	(Repeat header, data and end-of-file mark for Channel 2)			
	3	(Repeat header, data and end-of-file mark for Channel 3)			
4	1	1-30	30	a80	Header of alphanumeric data.
		31-37	7	16i5	Header of 100 integer parameters.
		38-50	13	8f10.3	Header of 100 real-value parameters.
		51	1	a80	Fourier amplitude header information.
		52-..	7	8e10.3	.. points of Fourier amplitude data.
		..	1	a80	/& --- End of data for Channel 1
	2	(Repeat header, data and end-of-file mark for Channel 2)			
	3	(Repeat header, data and end-of-file mark for Channel 3)			

TABLE 4: READ / WRITE DATA ON 8MM ASCII FORMATTED TAPE

WRITE DATA ON ASCII FORMATTED 8MM TAPE

Below is an example to save files on 8MM ASCII formatted tape with record length=80, block size = 2000 using the VAX/VMS operating system utilities TWRITE:

```
$ INIT MUB0: EQ0422
$ MOUNT/NOASSIST/FOR/RECORD=80/BLOCK=2000  MUB0:
$ TWRITE/ASCII/RECORD=80/BLOCK=2000/OUTPUT=MUB0:  STATN1.V1
$ TWRITE/ASCII/RECORD=80/BLOCK=2000/OUTPUT=MUB0:  STATN1.V2
$ TWRITE/ASCII/RECORD=80/BLOCK=2000/OUTPUT=MUB0:  STATN1.V3
$ TWRITE/ASCII/RECORD=80/BLOCK=2000/OUTPUT=MUB0:  STATN1.V4
$ TWRITE/ASCII/RECORD=80/BLOCK=2000/OUTPUT=MUB0:  STATN2.V1
$ TWRITE/ASCII/RECORD=80/BLOCK=2000/OUTPUT=MUB0:  STATN2.V2
$ TWRITE/ASCII/RECORD=80/BLOCK=2000/OUTPUT=MUB0:  STATN2.V3
$ TWRITE/ASCII/RECORD=80/BLOCK=2000/OUTPUT=MUB0:  STATN2.V4

... etc.. (for all stations, each with v1,v2,v3 and v4 data)

$ EXIT
```

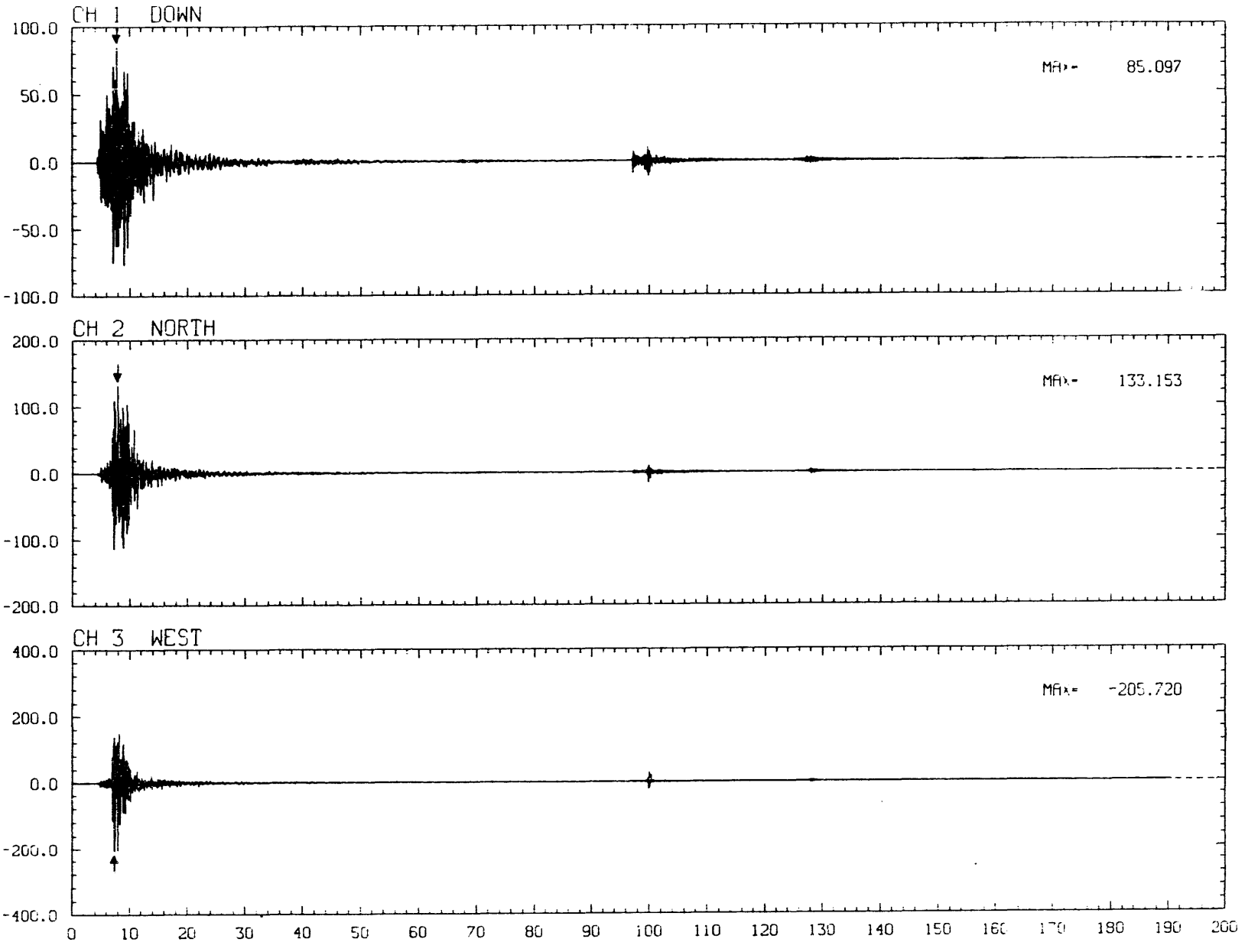
READ/RETRIEVE DATA FROM ASCII FORMATTED 8MM TAPE

Below is an example to read/retrive files from an 8MM ASCII formatted tape with record length=80, block size = 2000 using the VAX/VMS operating system utilities TREAD:

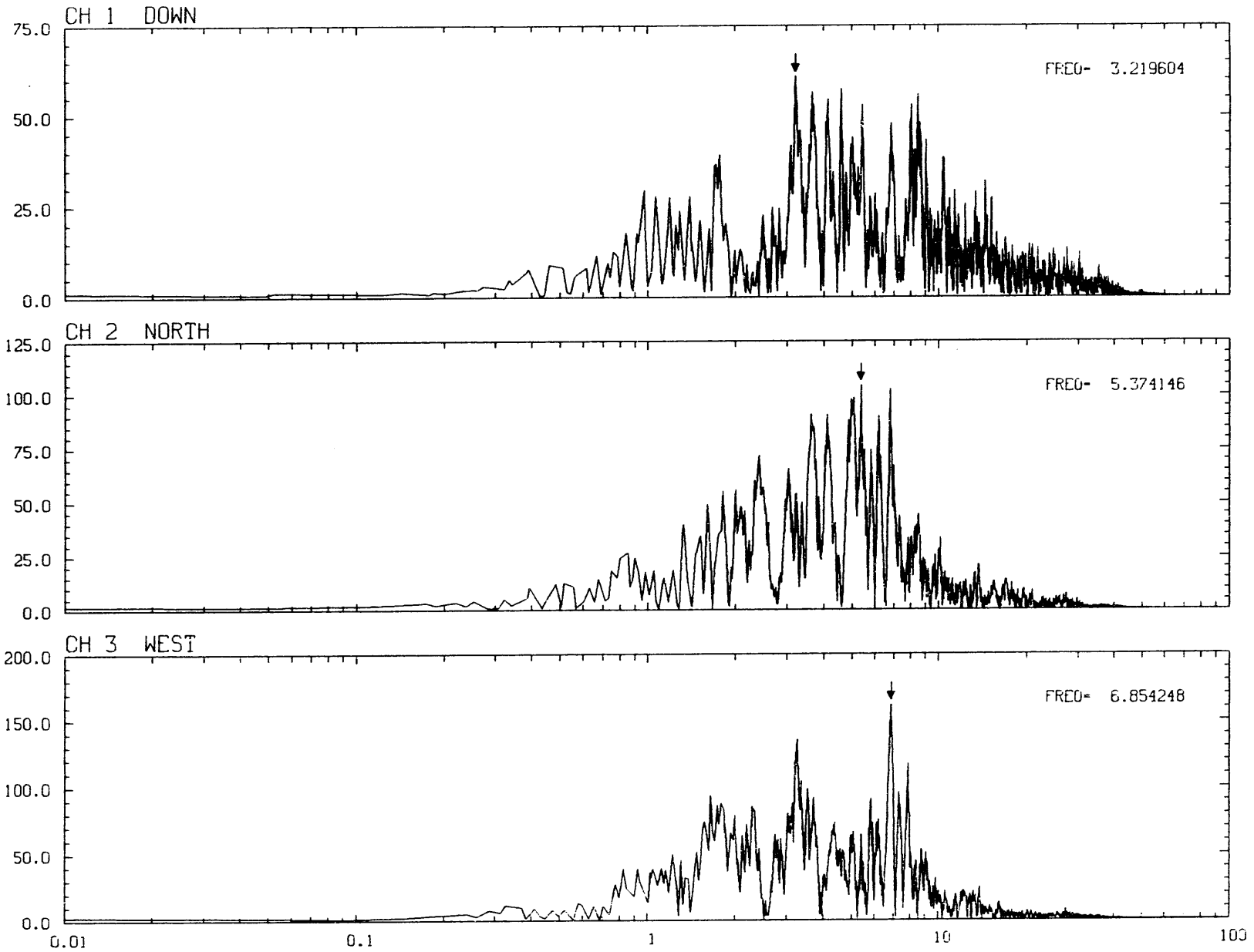
```
$ MOUNT/NOASSIST/FOR/RECORD=80/BLOCK=2000  MUB0:
$ TREAD/ASCII/RECORD=80/BLOCK=2000/INPUT=MUB0:  STATN1.V1
$ TREAD/ASCII/RECORD=80/BLOCK=2000/INPUT=MUB0:  STATN1.V2
$ TREAD/ASCII/RECORD=80/BLOCK=2000/INPUT=MUB0:  STATN1.V3
$ TREAD/ASCII/RECORD=80/BLOCK=2000/INPUT=MUB0:  STATN1.V4
$ TREAD/ASCII/RECORD=80/BLOCK=2000/INPUT=MUB0:  STATN2.V1
$ TREAD/ASCII/RECORD=80/BLOCK=2000/INPUT=MUB0:  STATN2.V2
$ TREAD/ASCII/RECORD=80/BLOCK=2000/INPUT=MUB0:  STATN2.V3
$ TREAD/ASCII/RECORD=80/BLOCK=2000/INPUT=MUB0:  STATN2.V4

... etc.. (for all stations, each with v1,v2,v3 and v4 data)

$ EXIT
```

STATION NO. 1 SYSTEM A

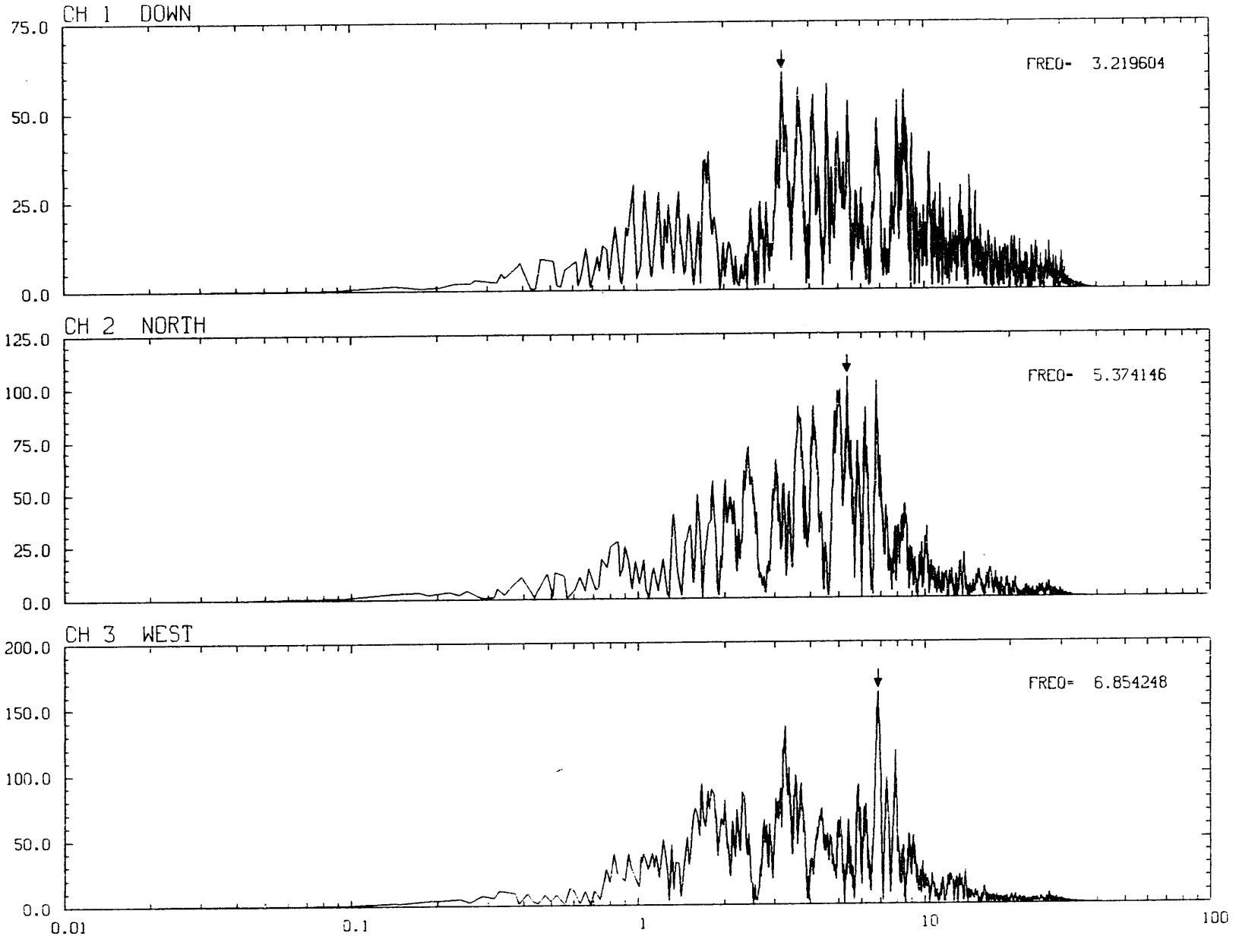
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM A
UNCORRECTED ACCELERATION TIME HISTORIES



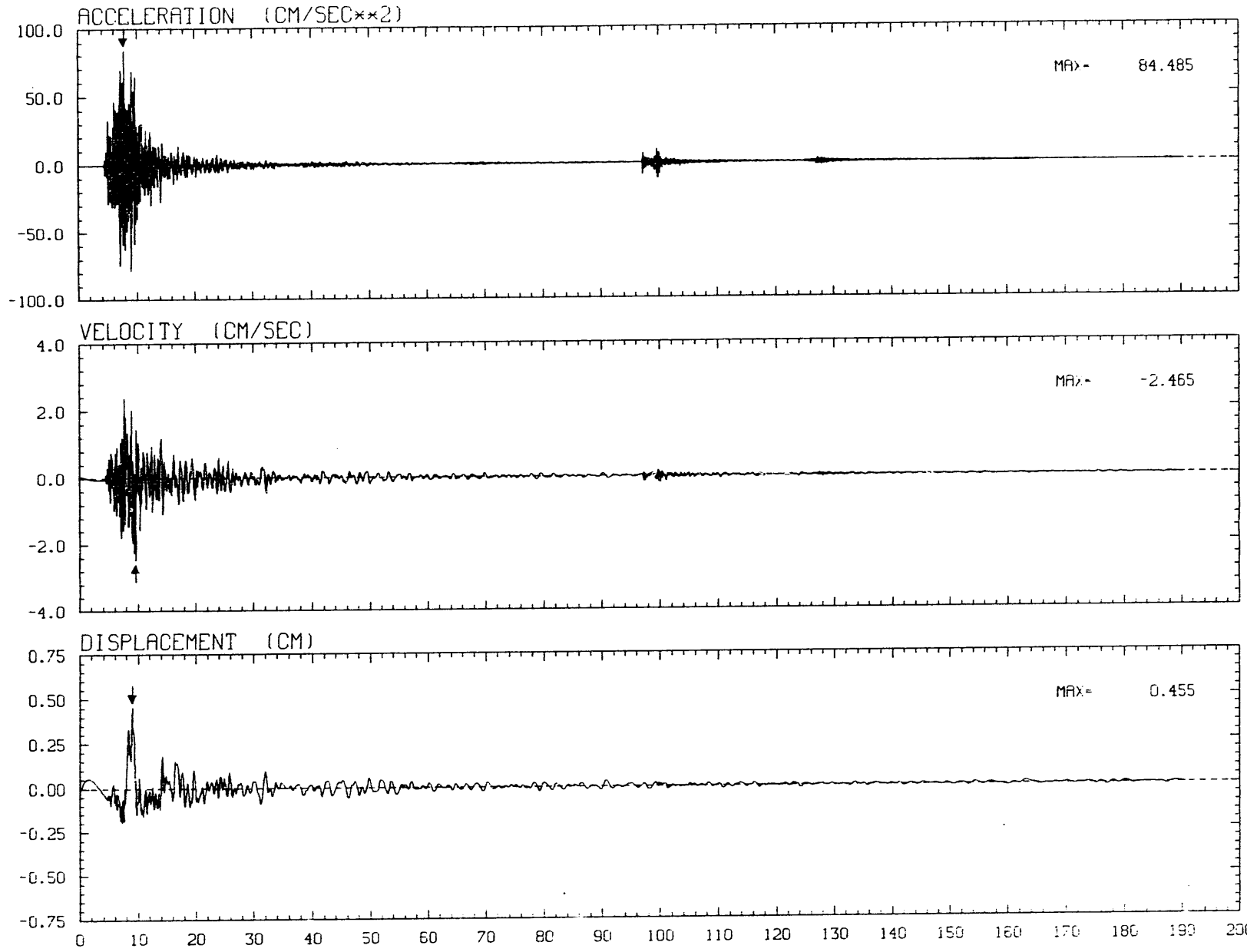
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM A
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



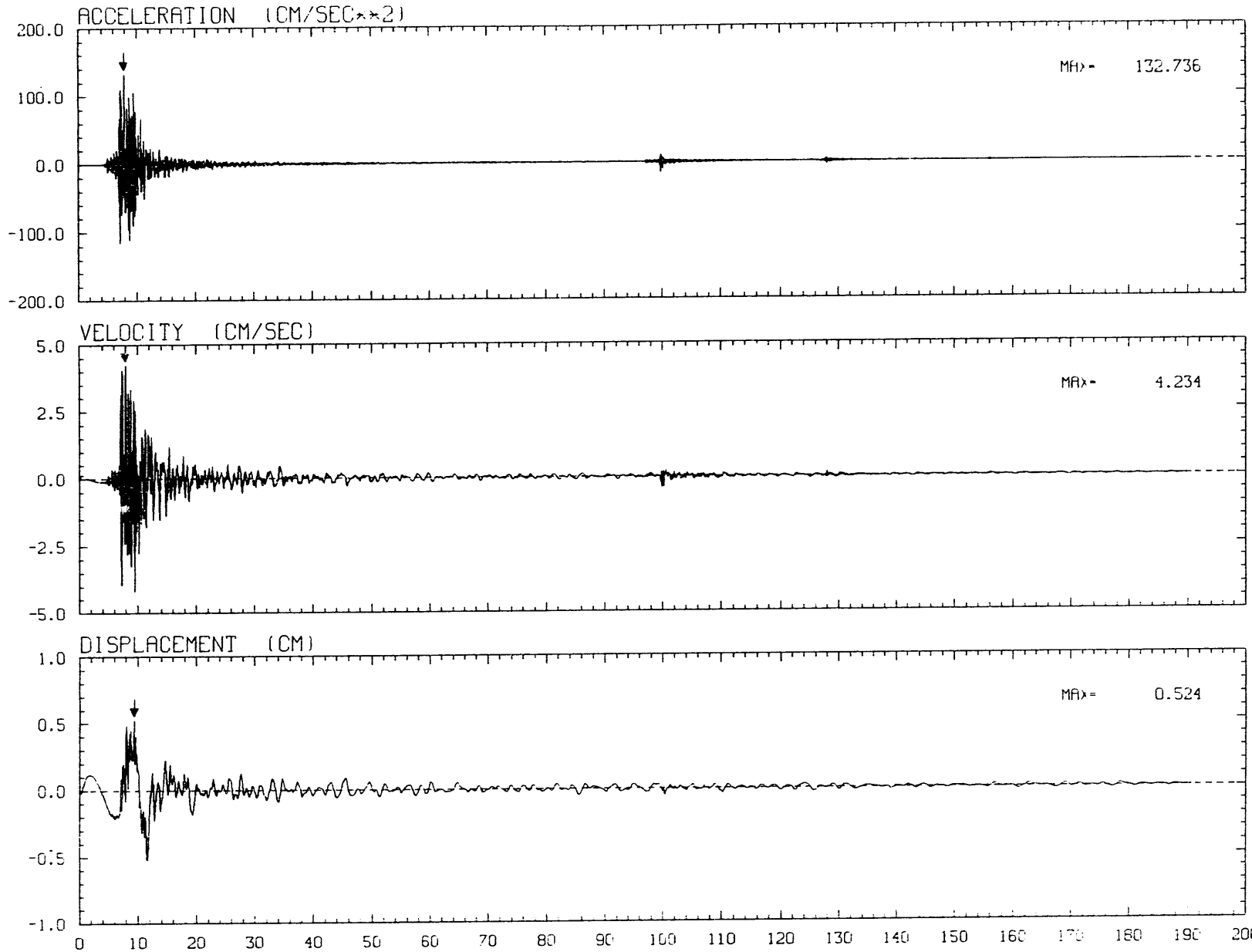
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM A
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



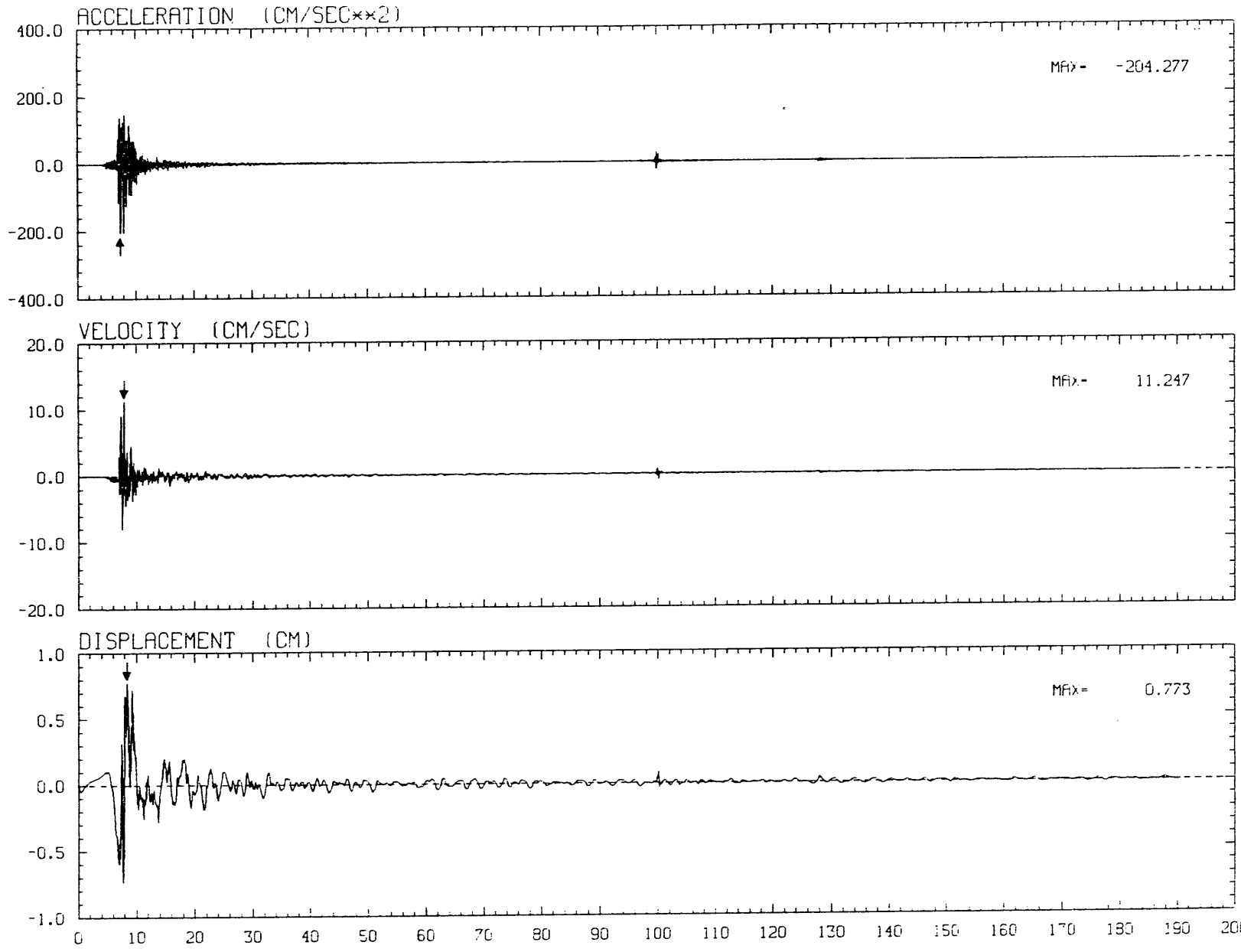
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM A CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM A CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

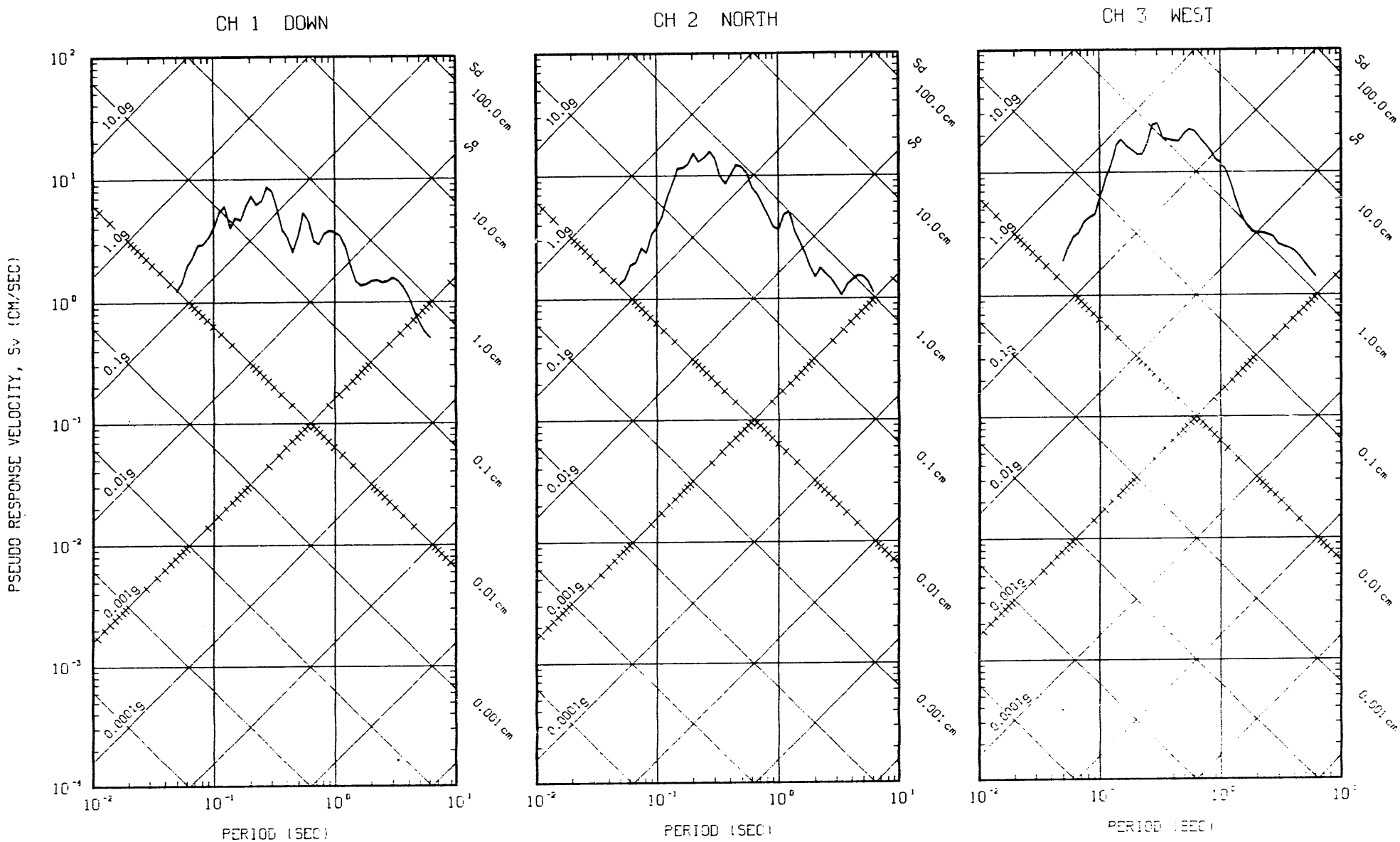


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM A CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



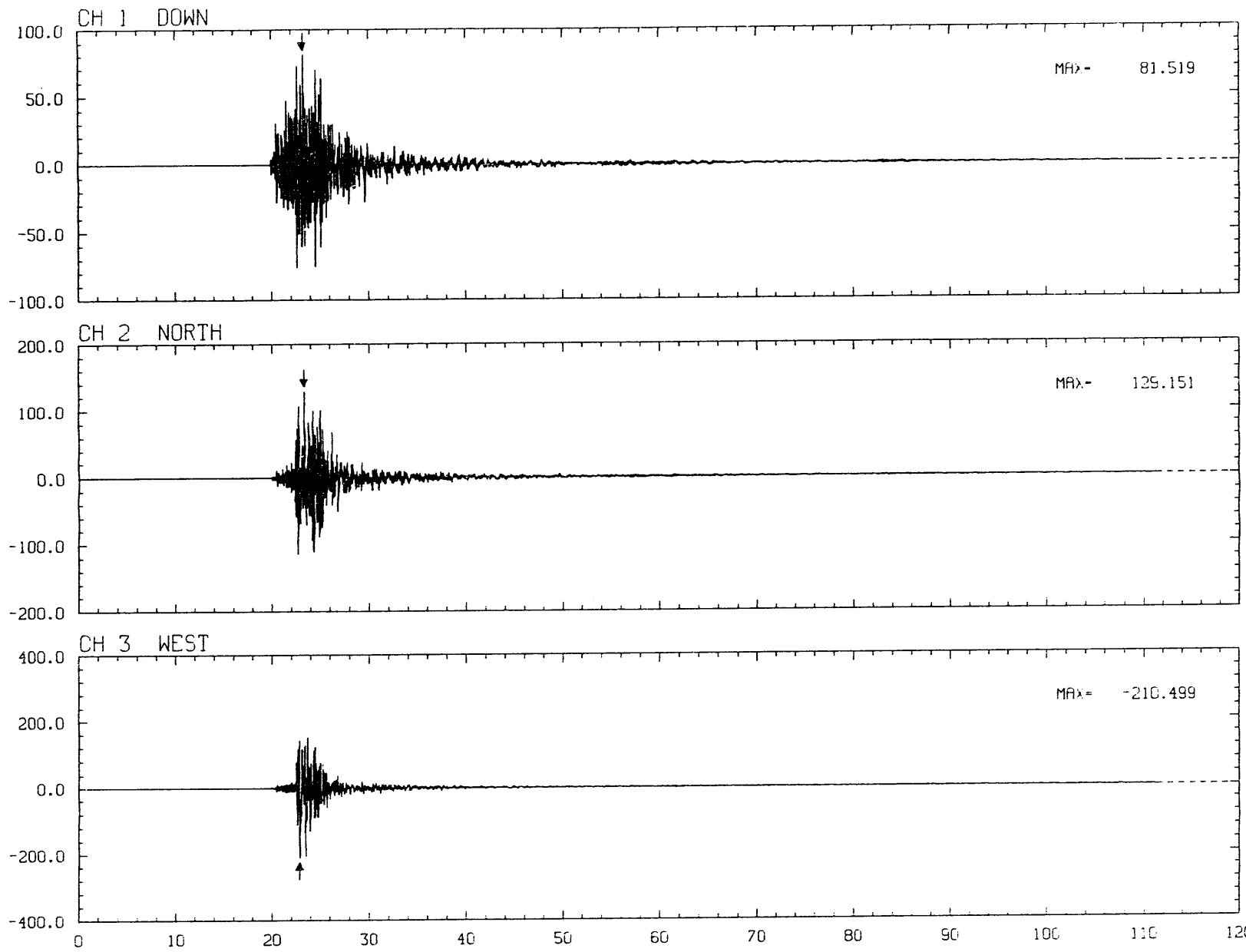
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM A

5 PCT JAMPED PESUDO VELOCITY RESPONSE SPECTRA

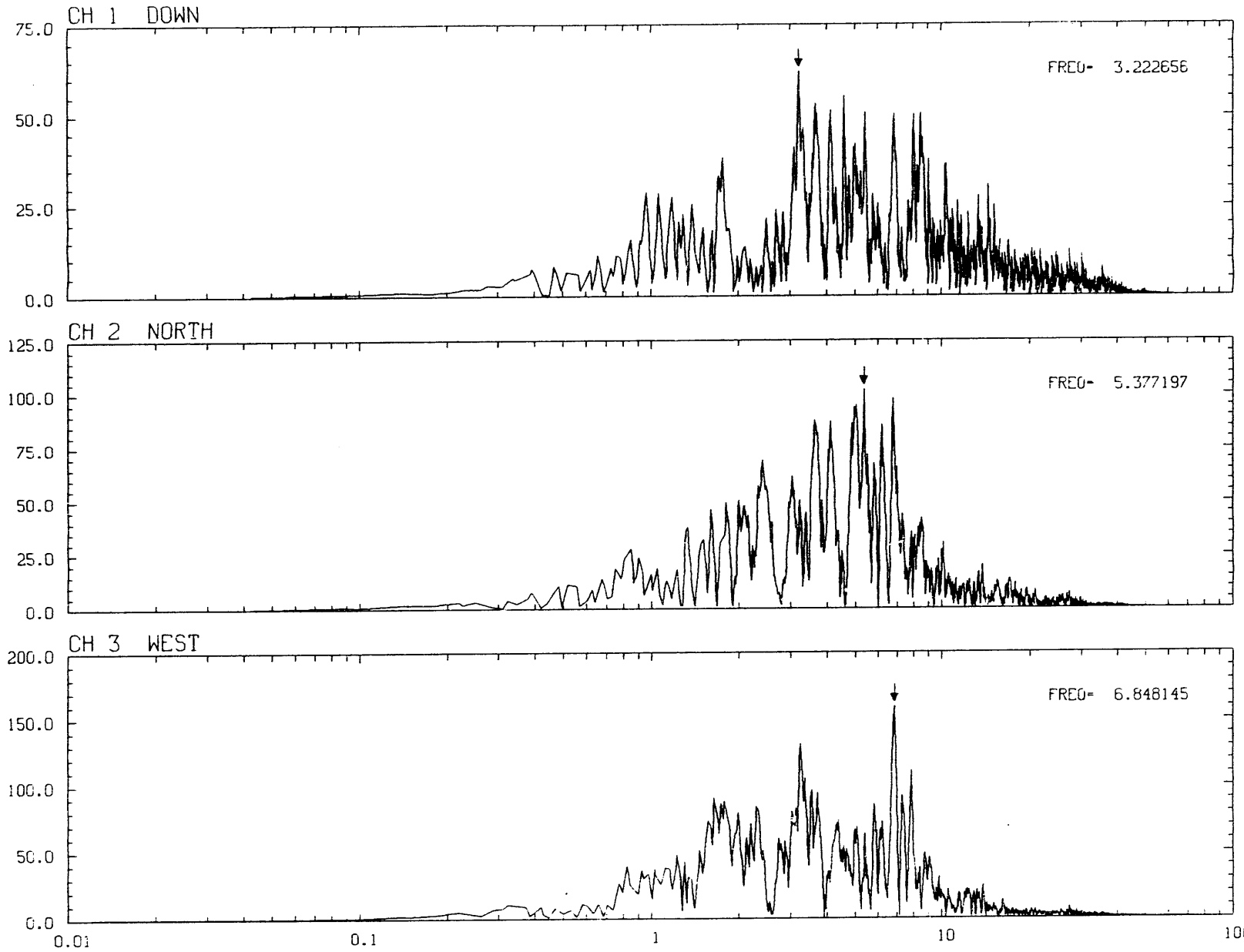


STATION NO. 1 SYSTEM B

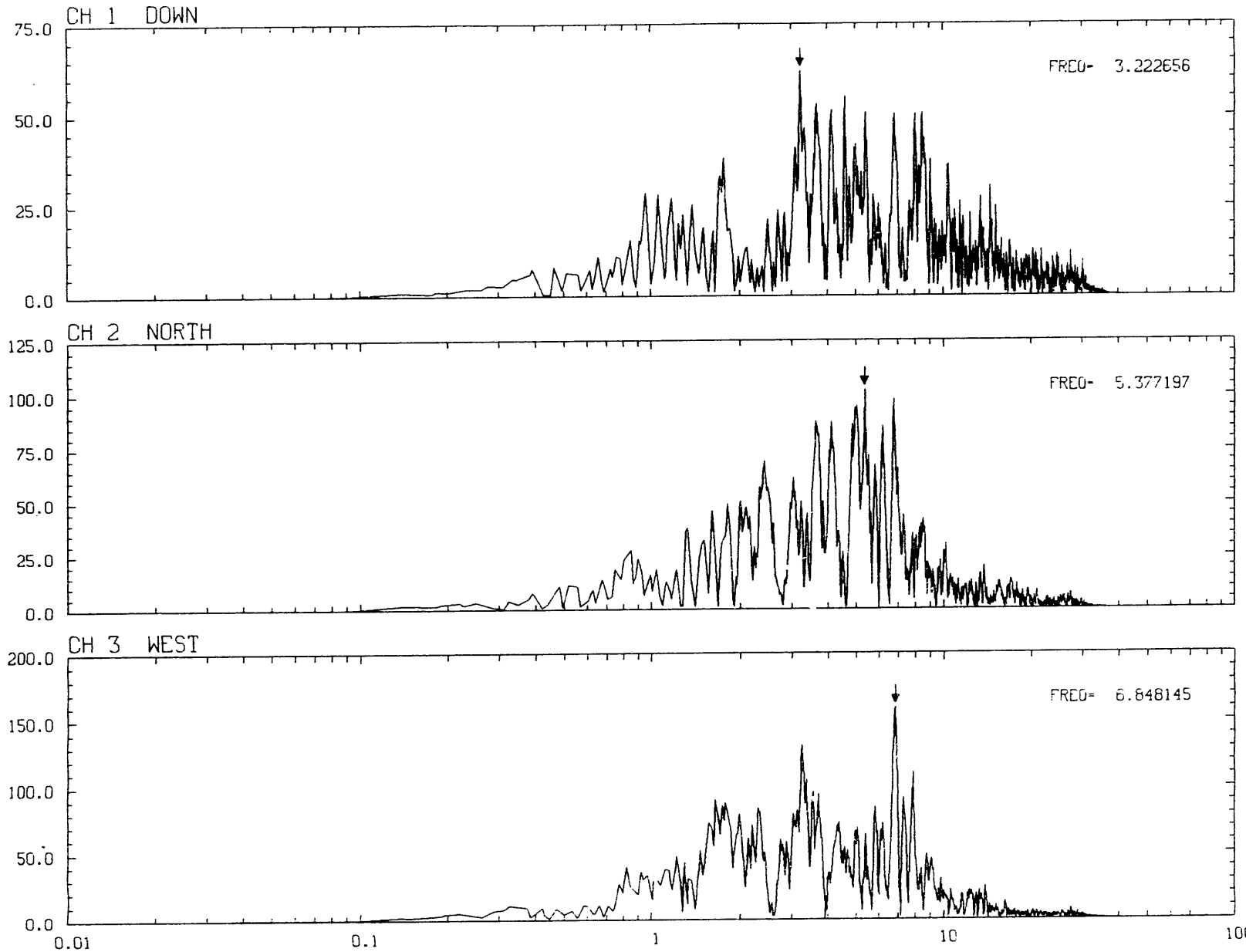
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM B
UNCORRECTED ACCELERATION TIME HISTORIES



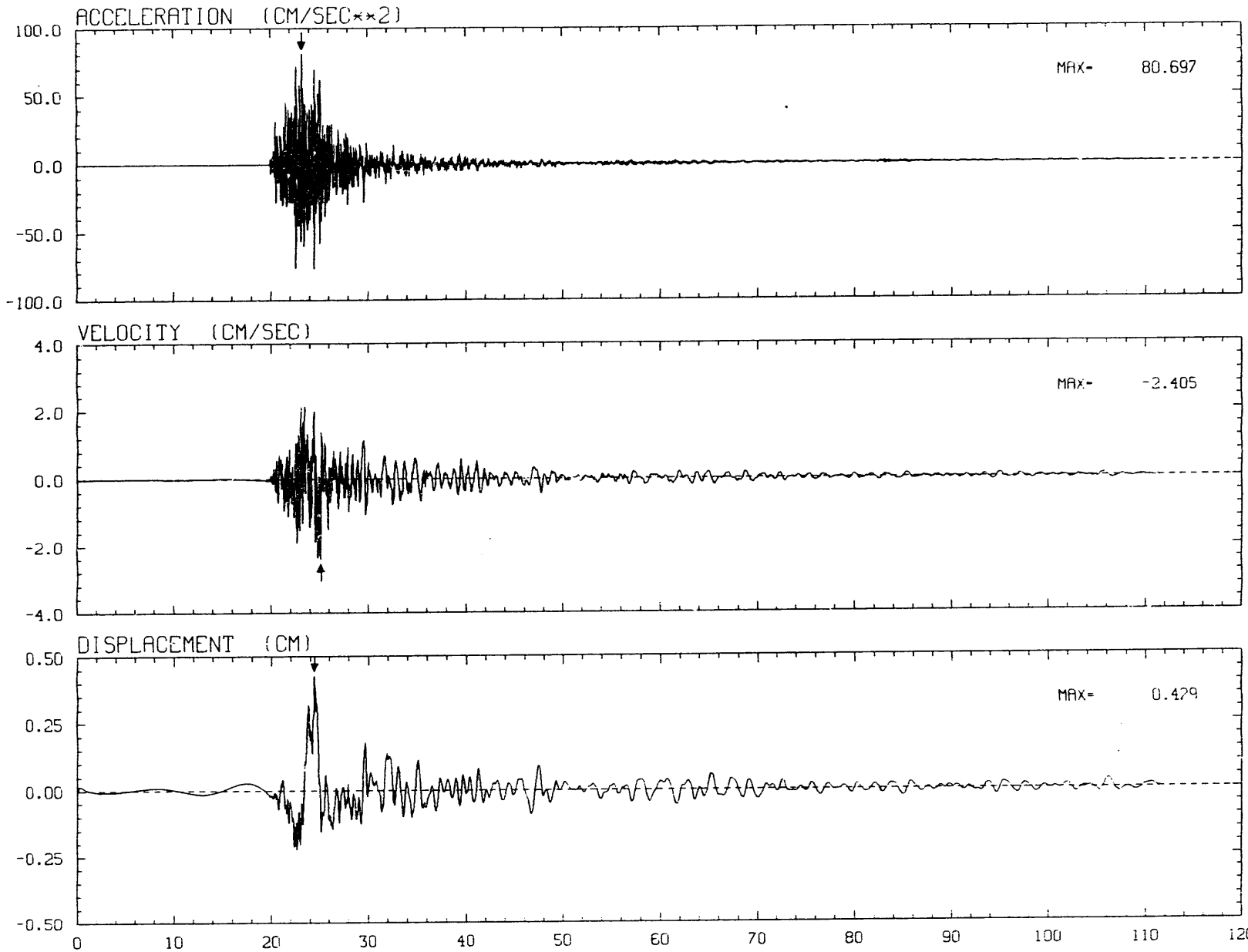
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM B
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



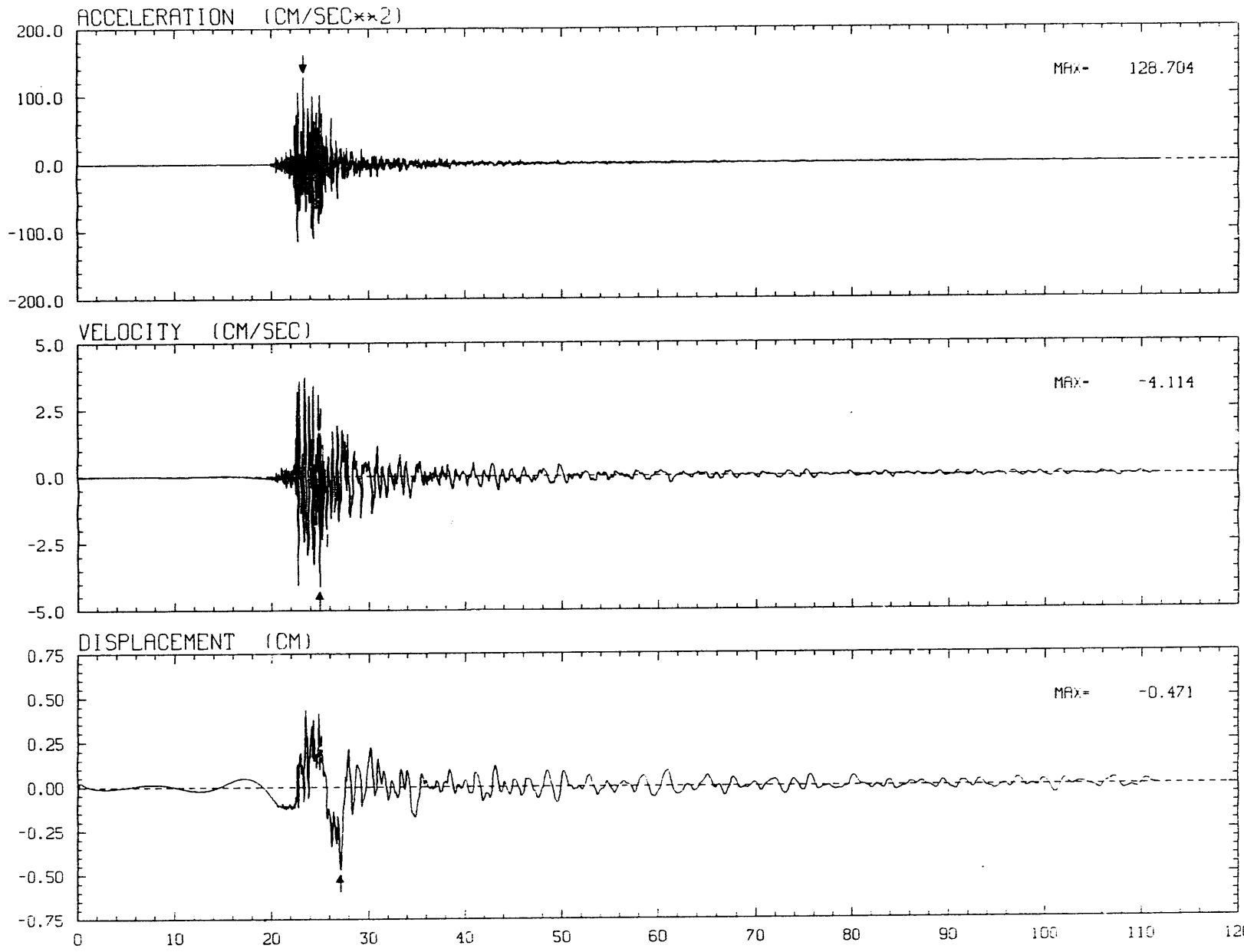
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM B
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



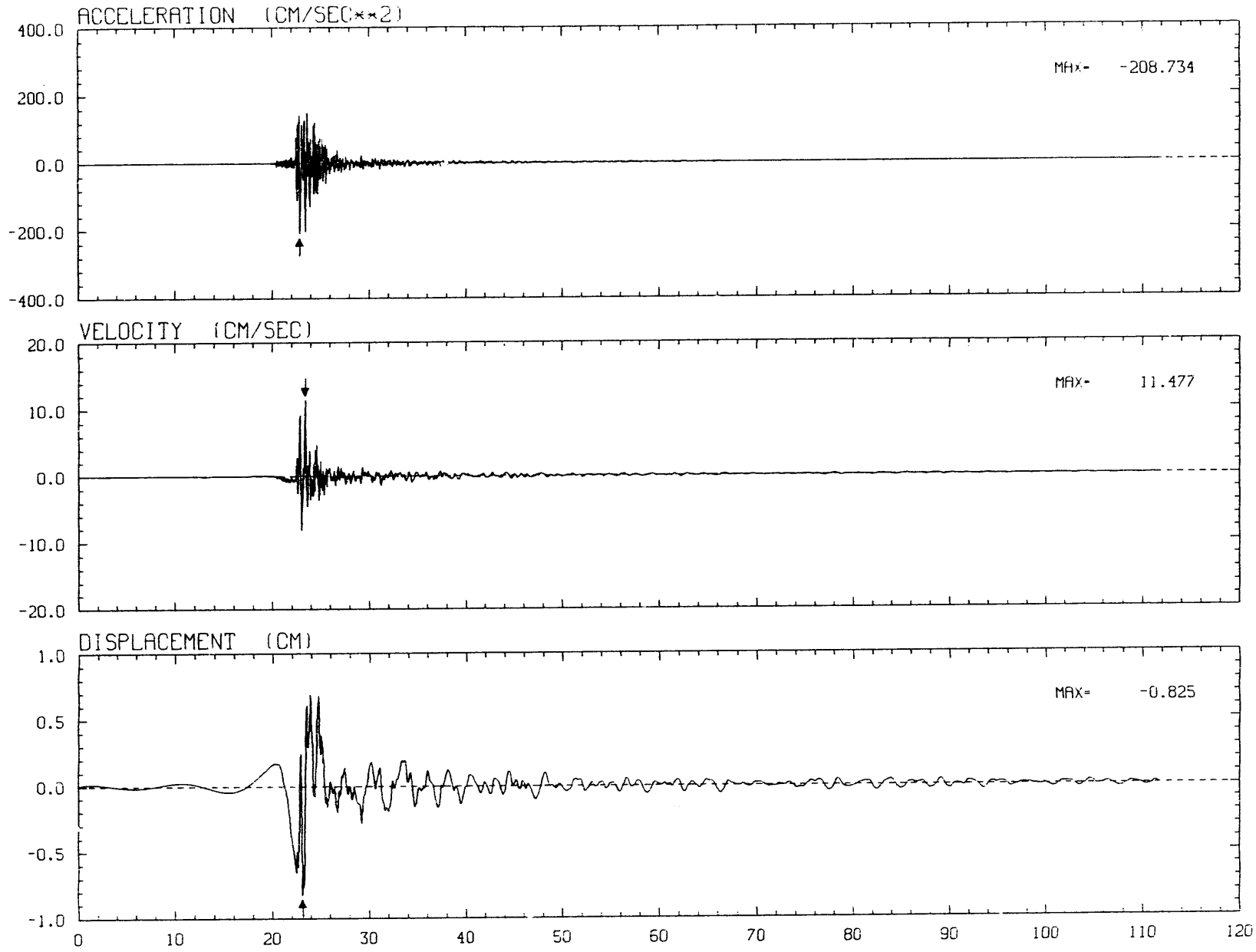
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM B CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM B CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

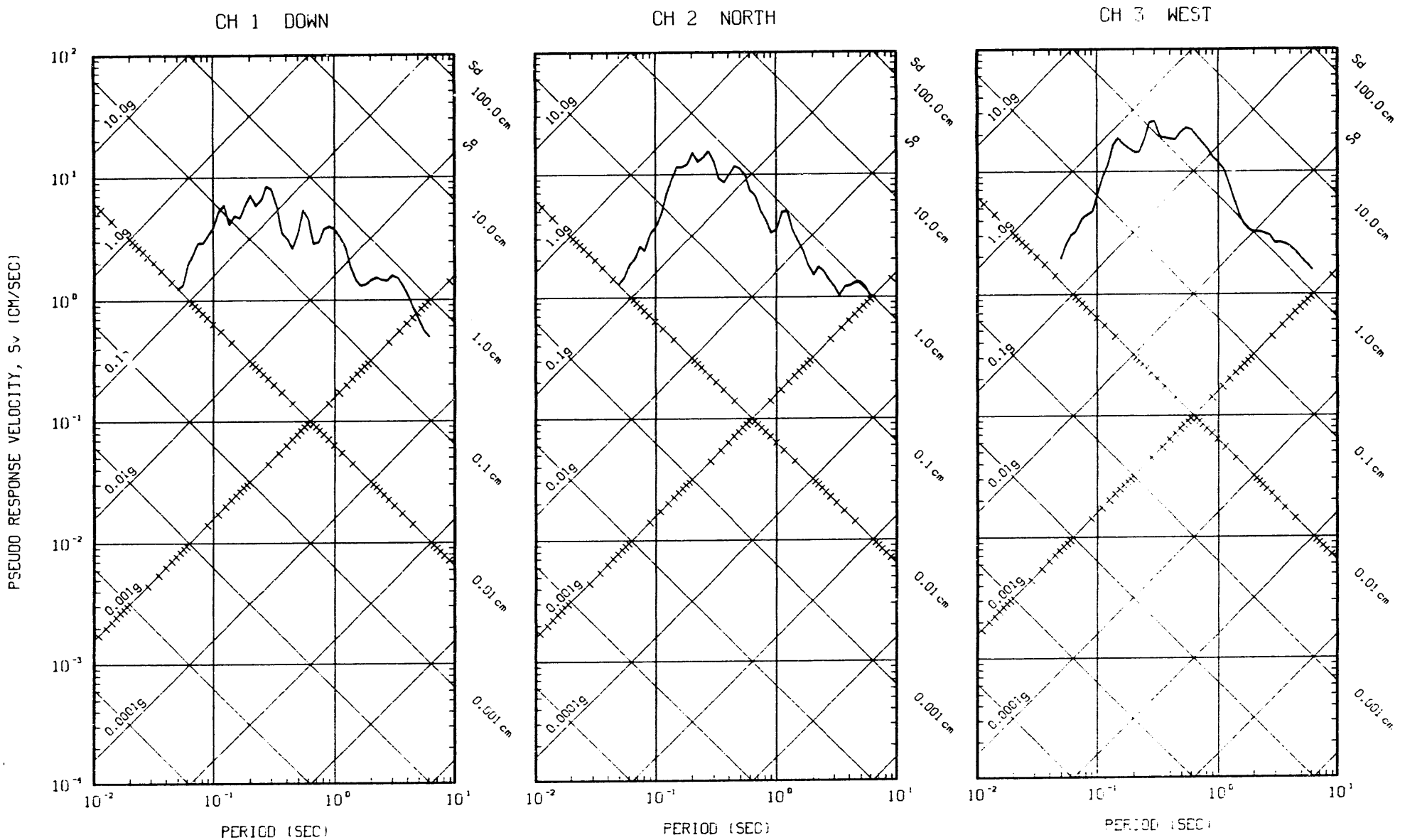


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM B CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



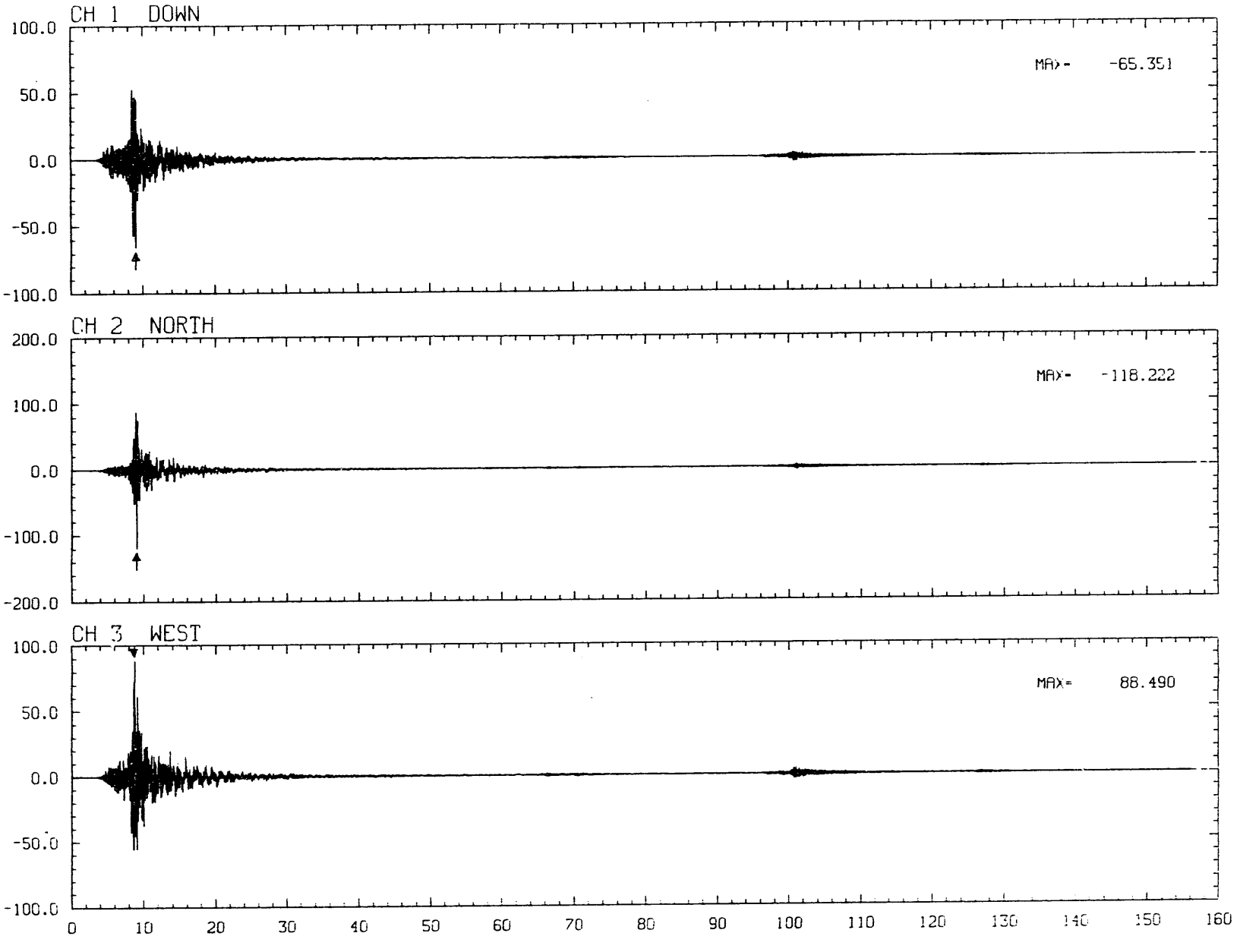
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 1 SYSTEM B

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

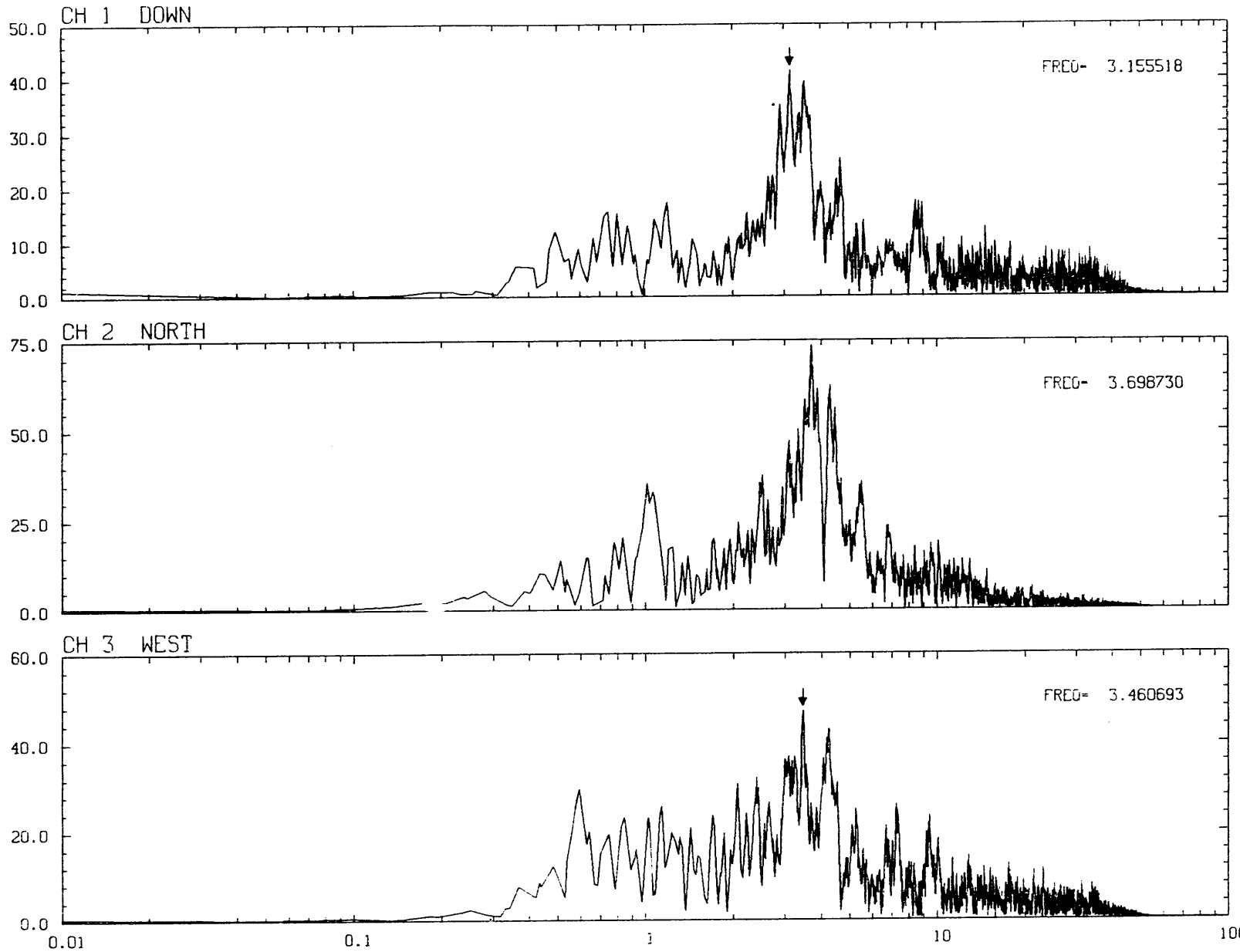


STATION NO. 2 SYSTEM A

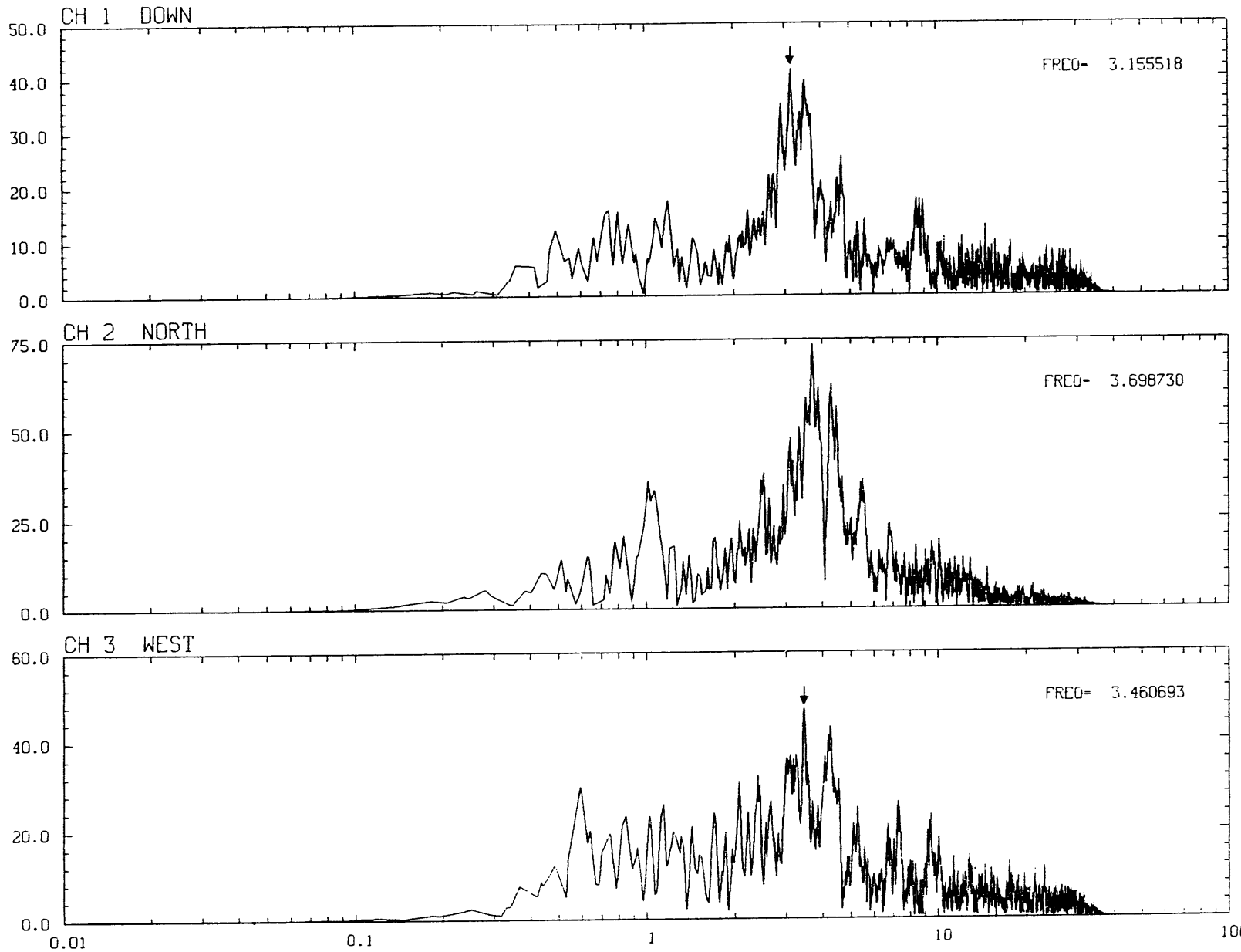
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM A
UNCORRECTED ACCELERATION TIME HISTORIES



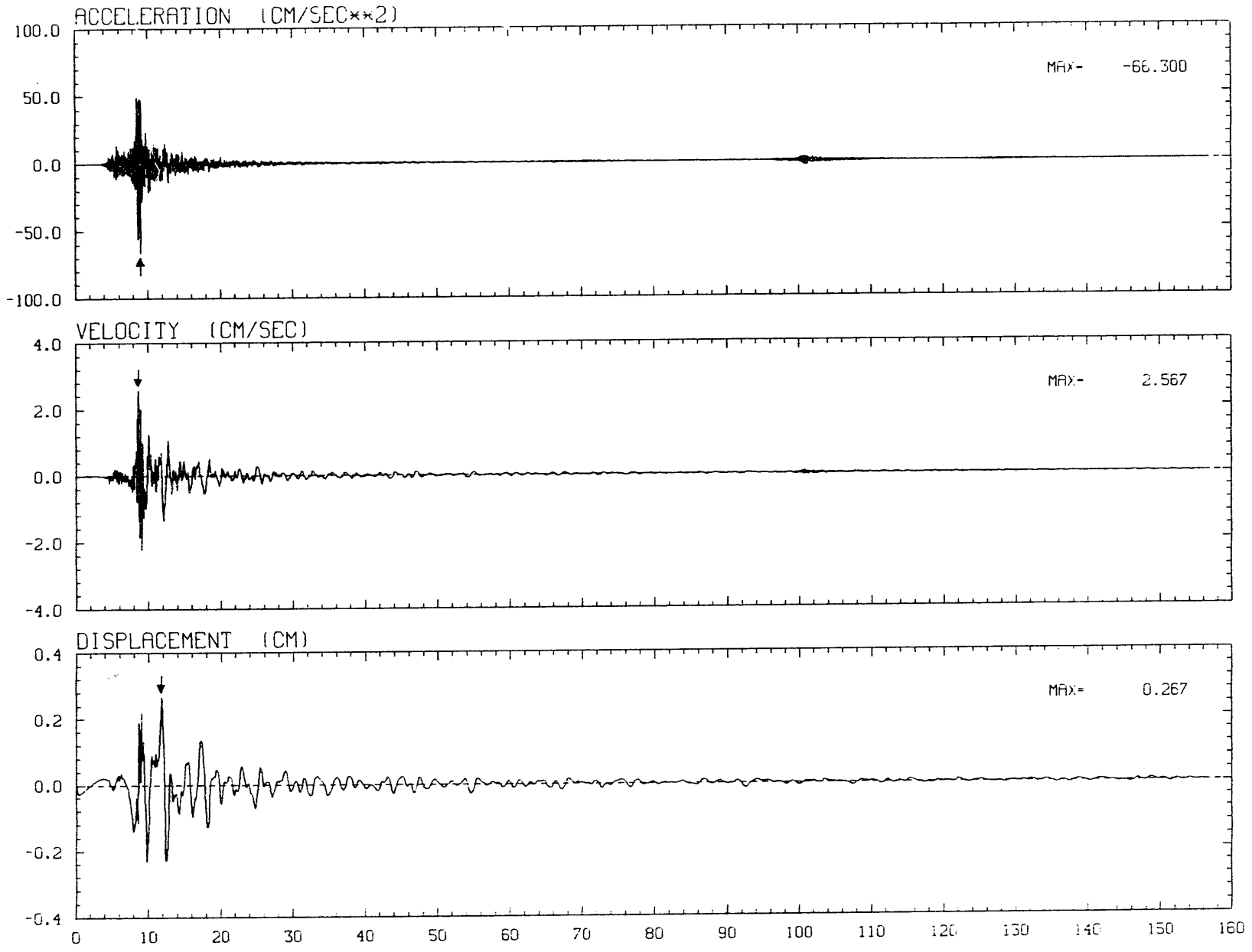
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM A
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



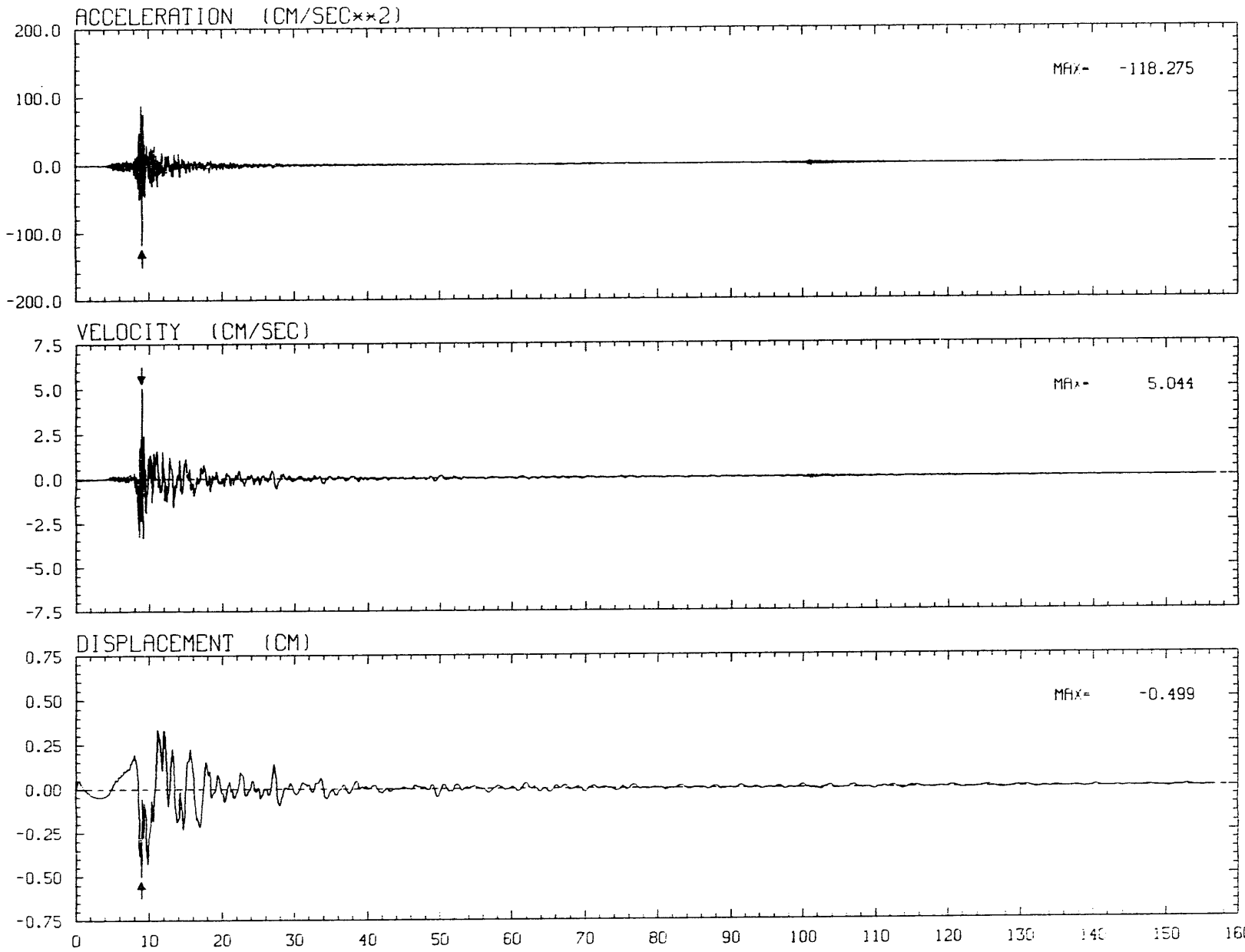
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM A
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



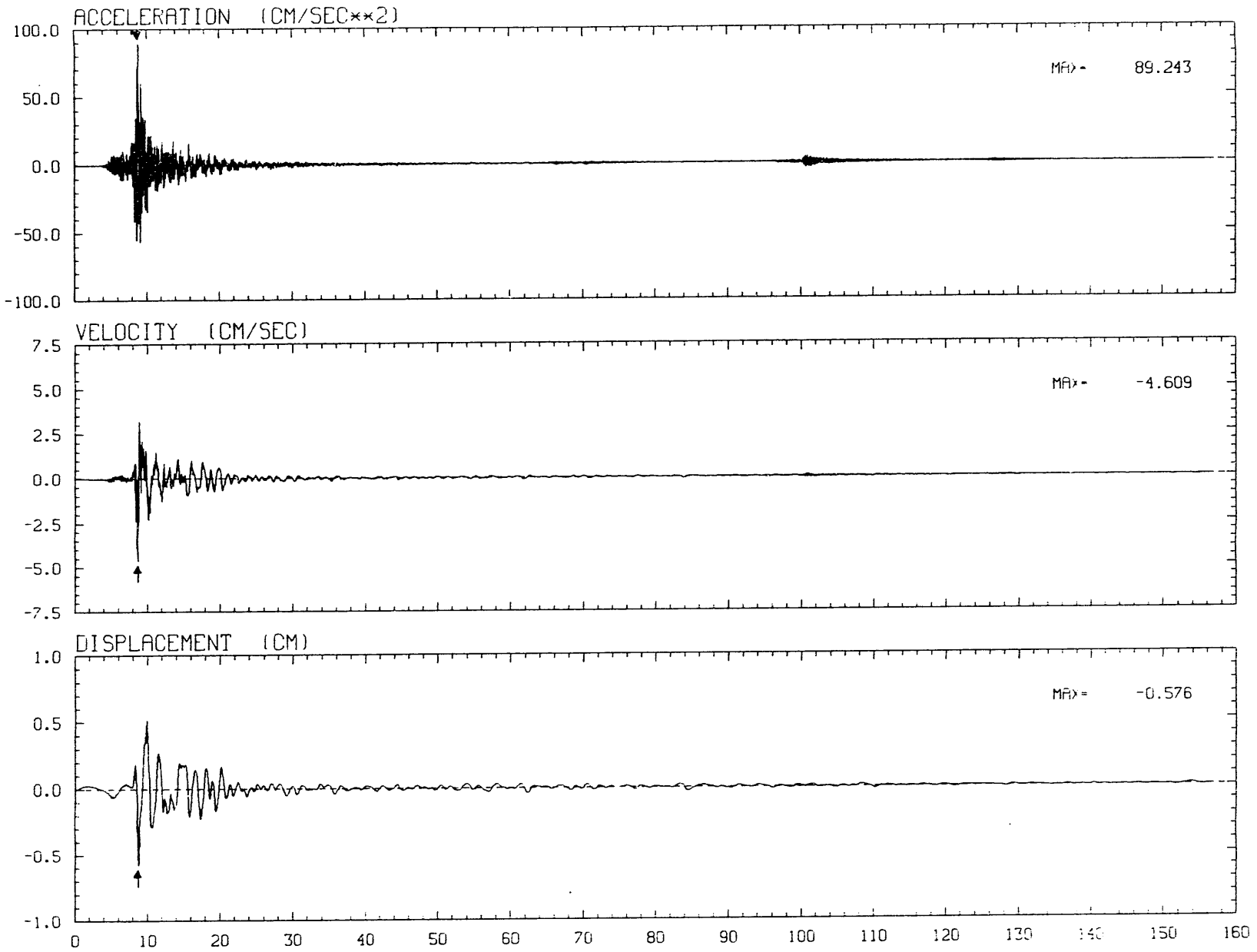
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM A CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM A CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

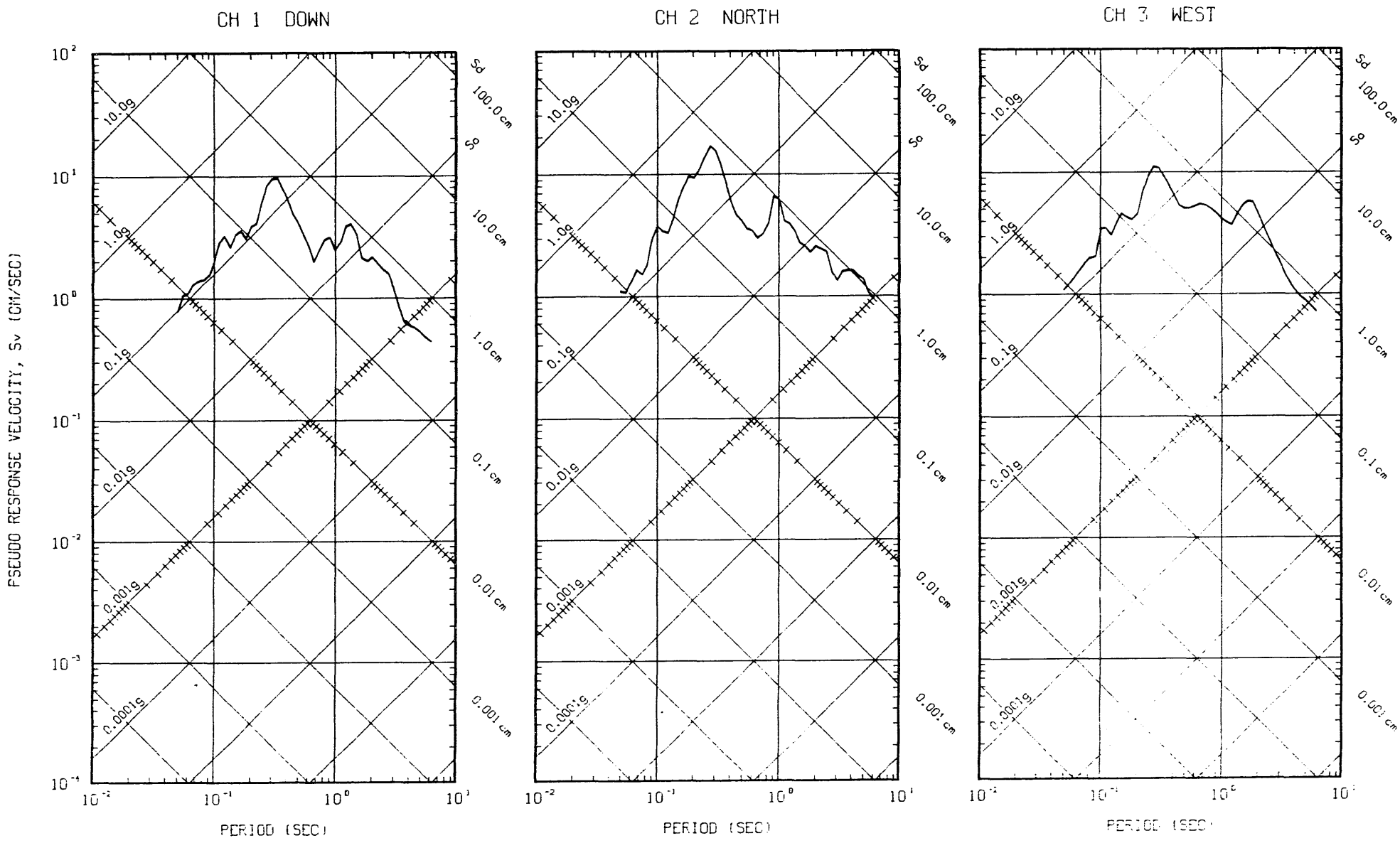


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM A CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



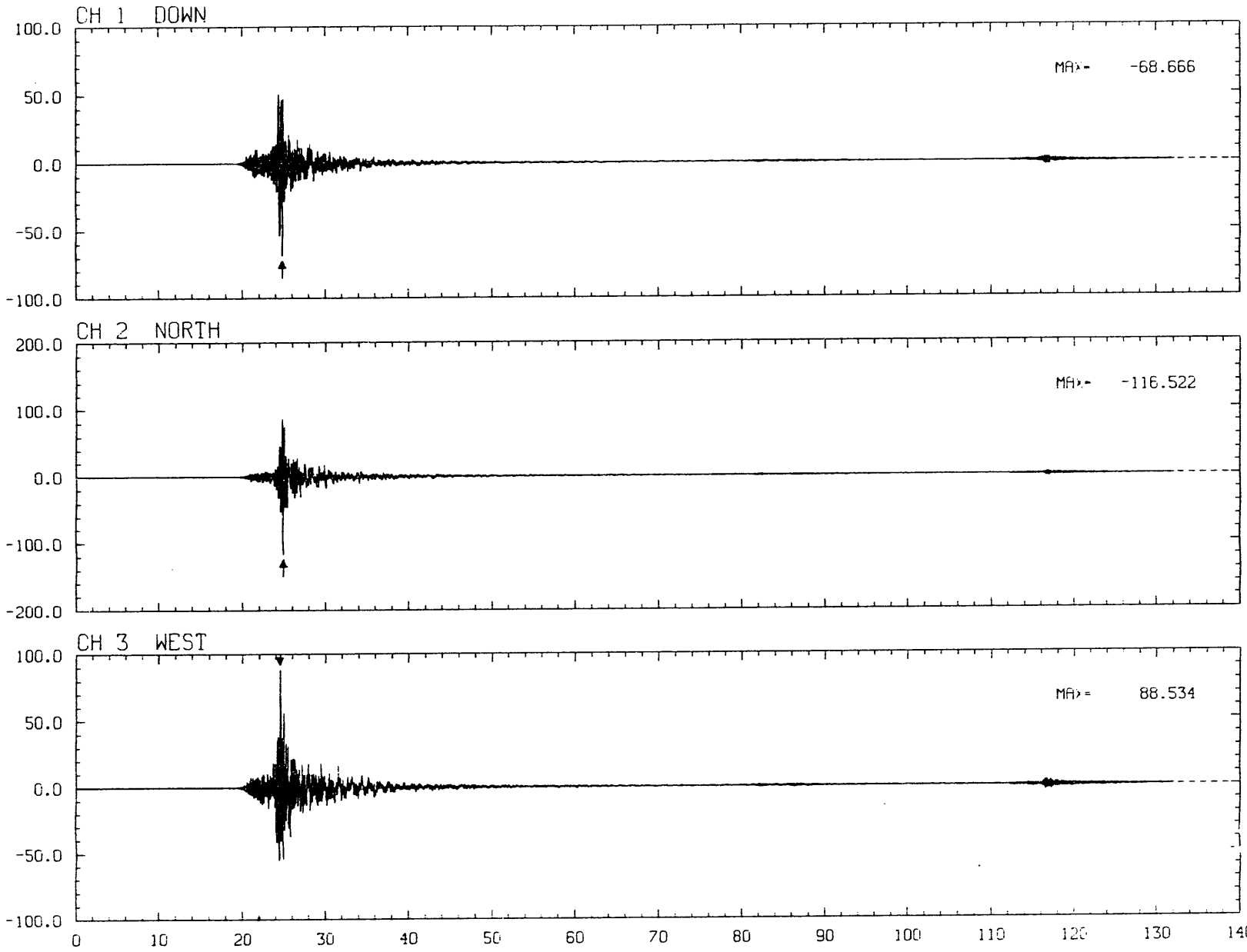
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM A

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

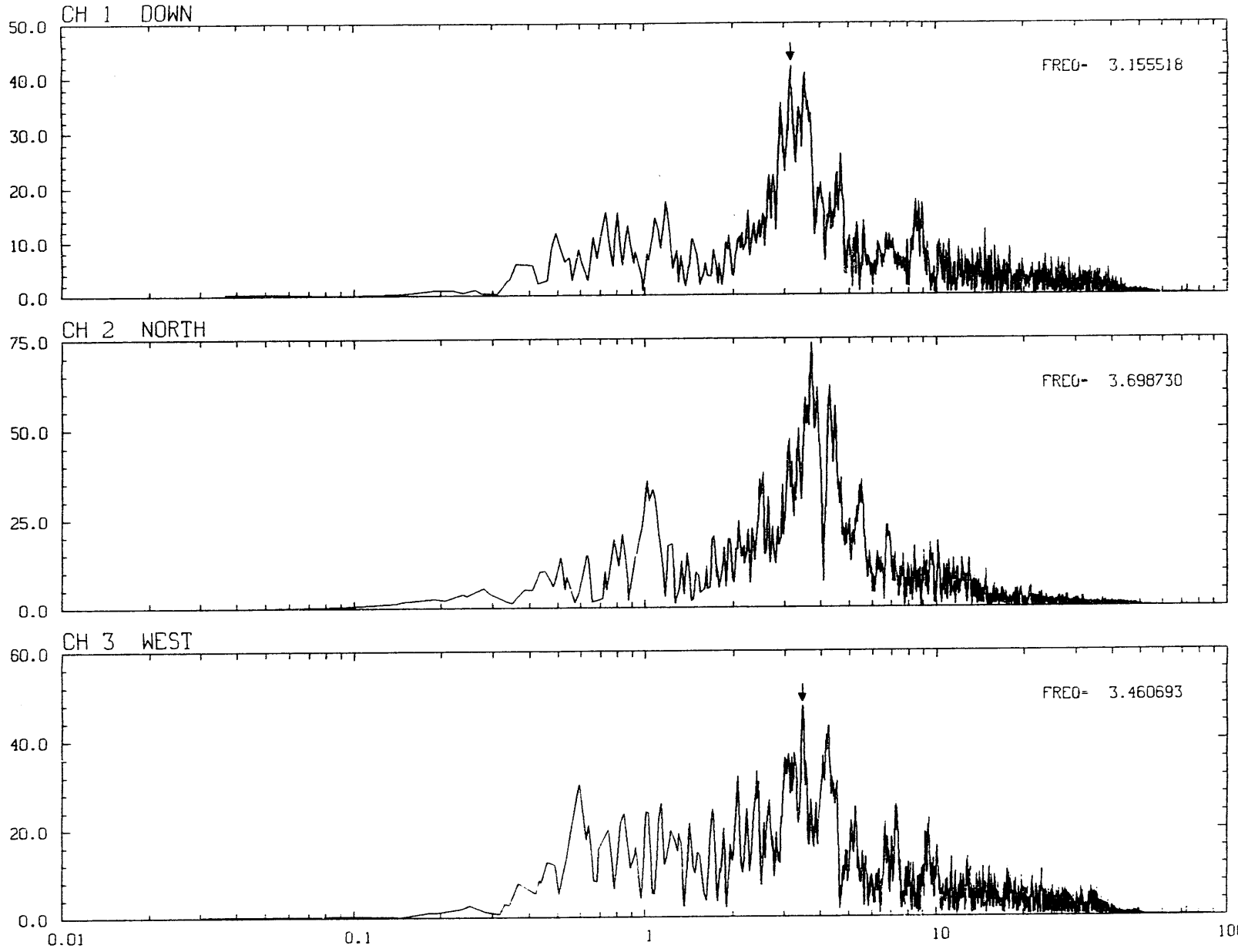


STATION NO. 2 SYSTEM B

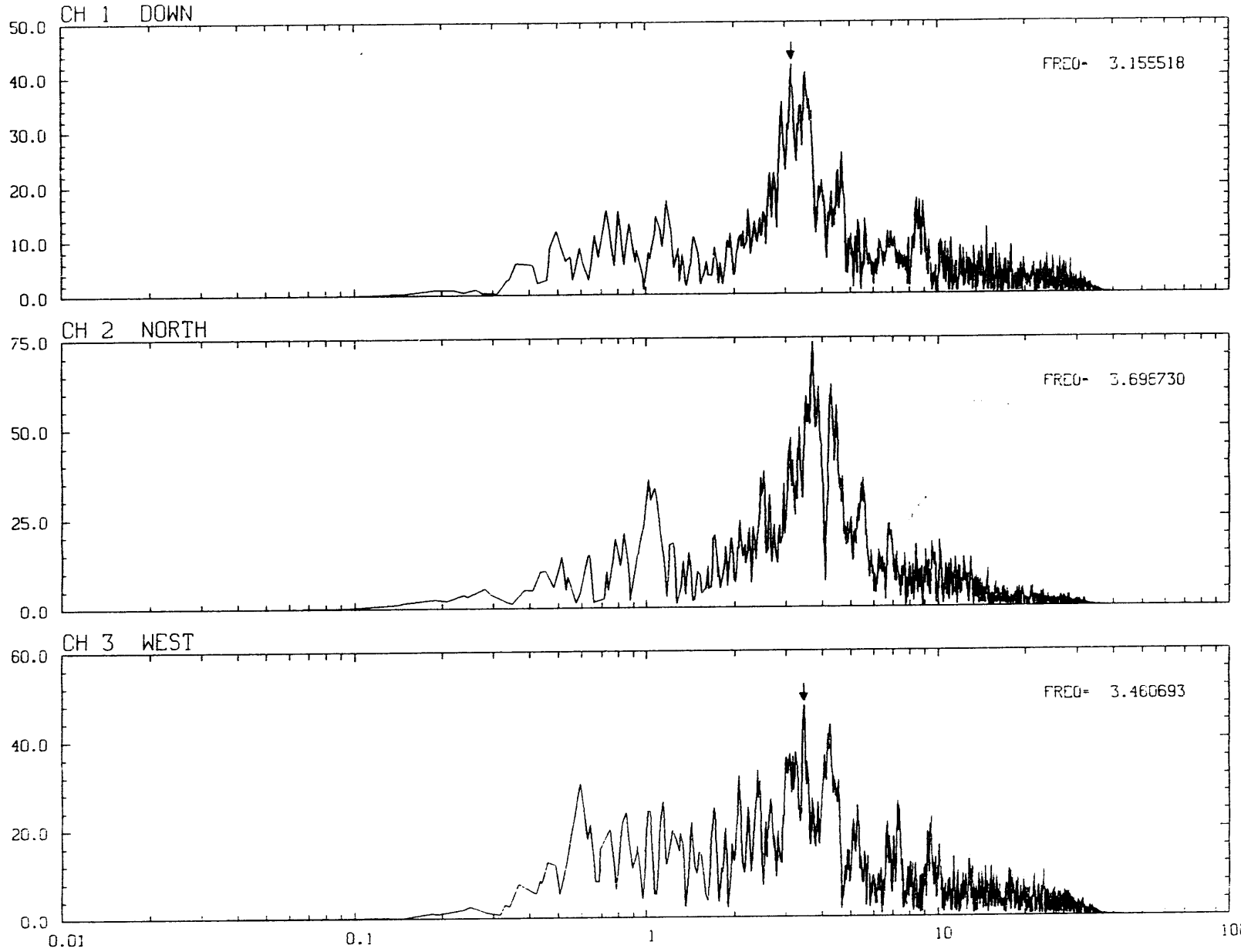
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM B
UNCORRECTED ACCELERATION TIME HISTORIES



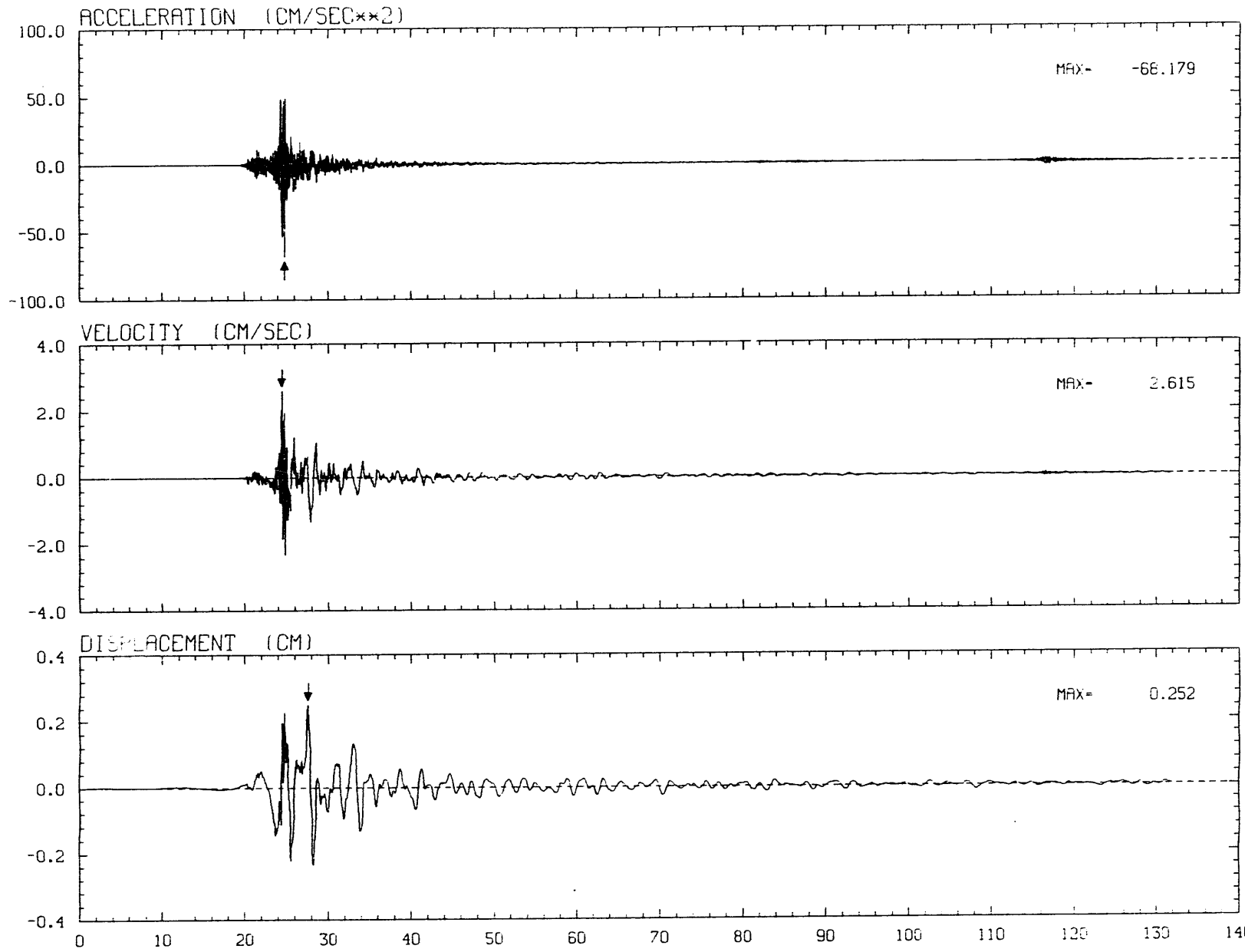
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM B
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



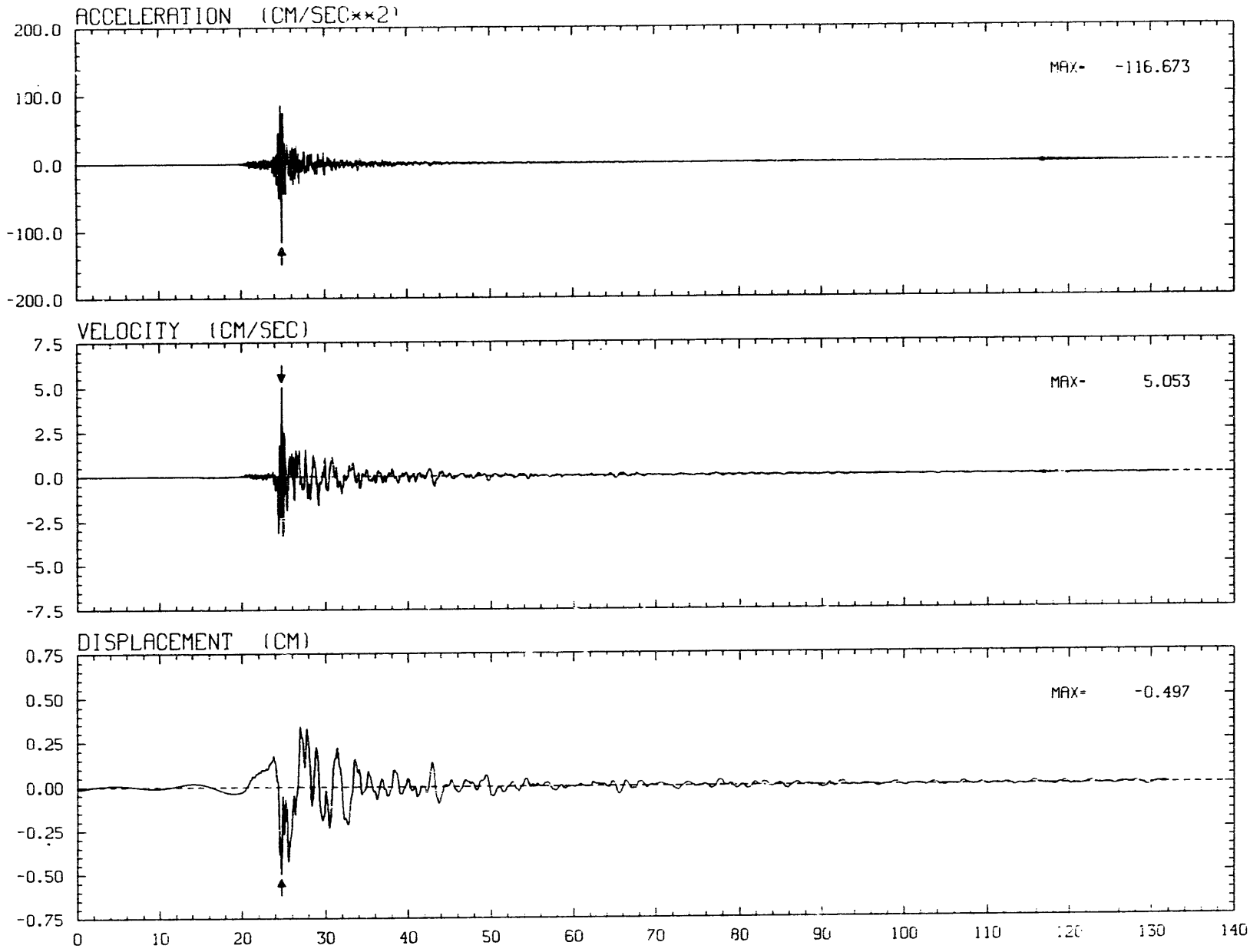
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM B
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



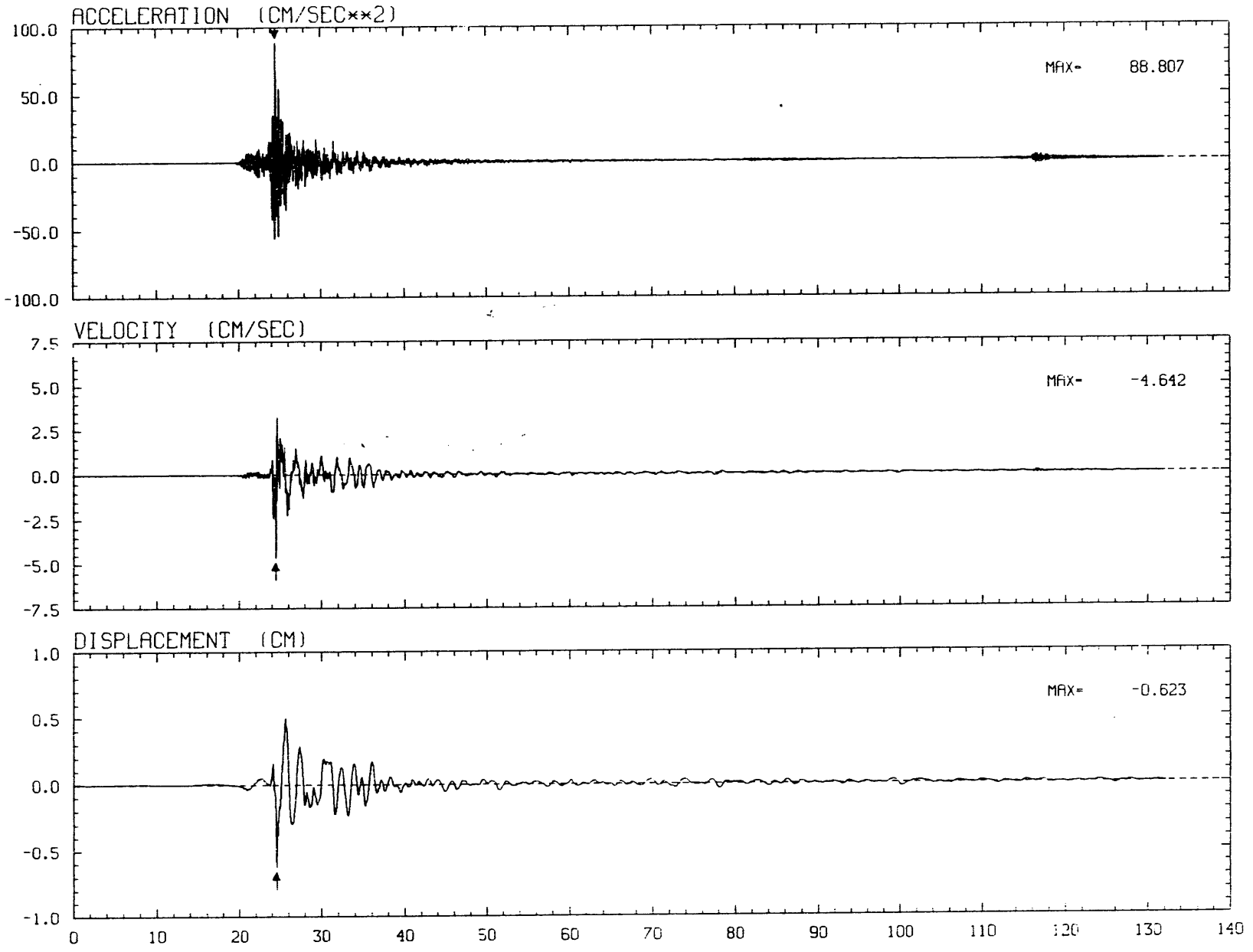
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM B CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM B CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

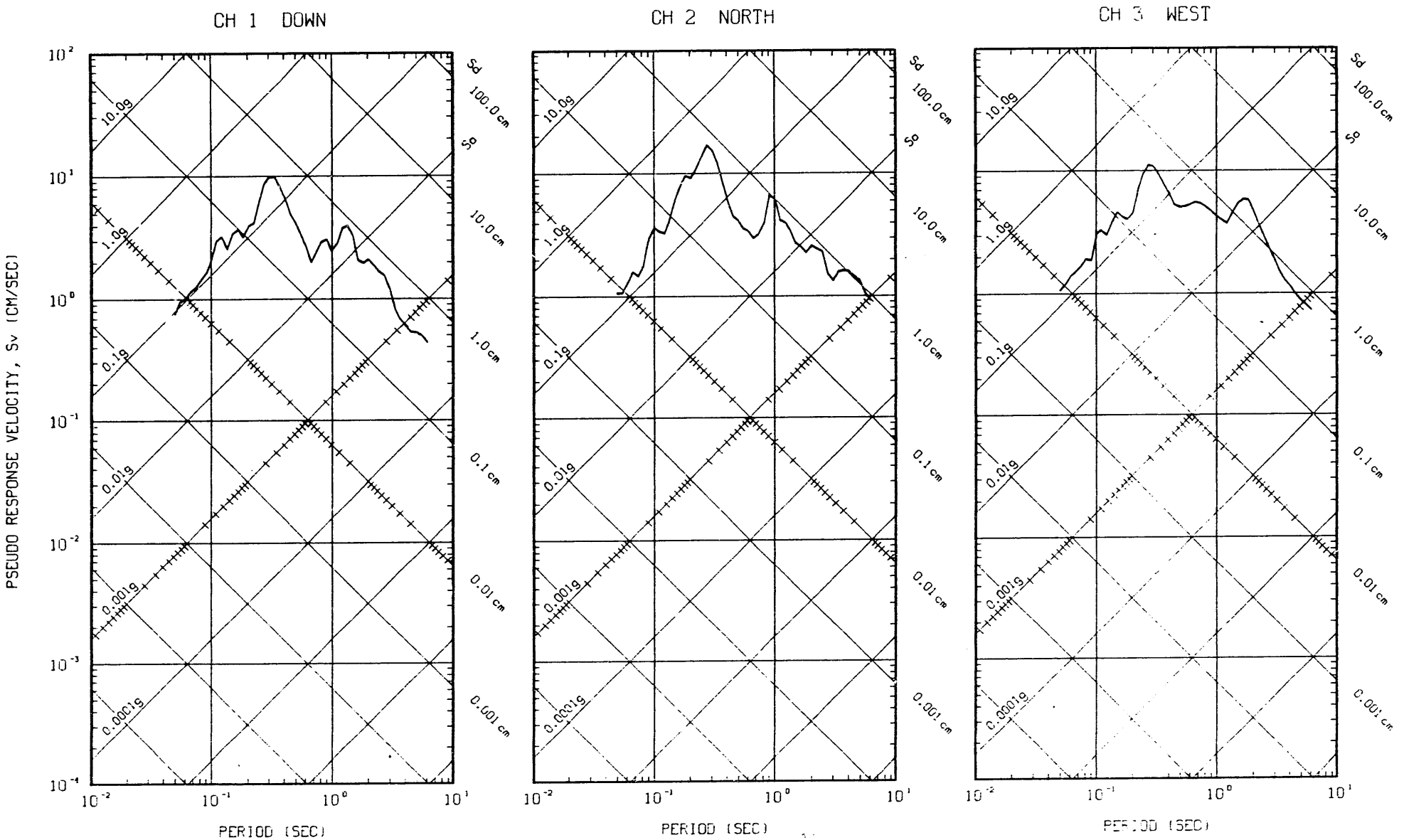


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM B CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 2 SYSTEM B

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

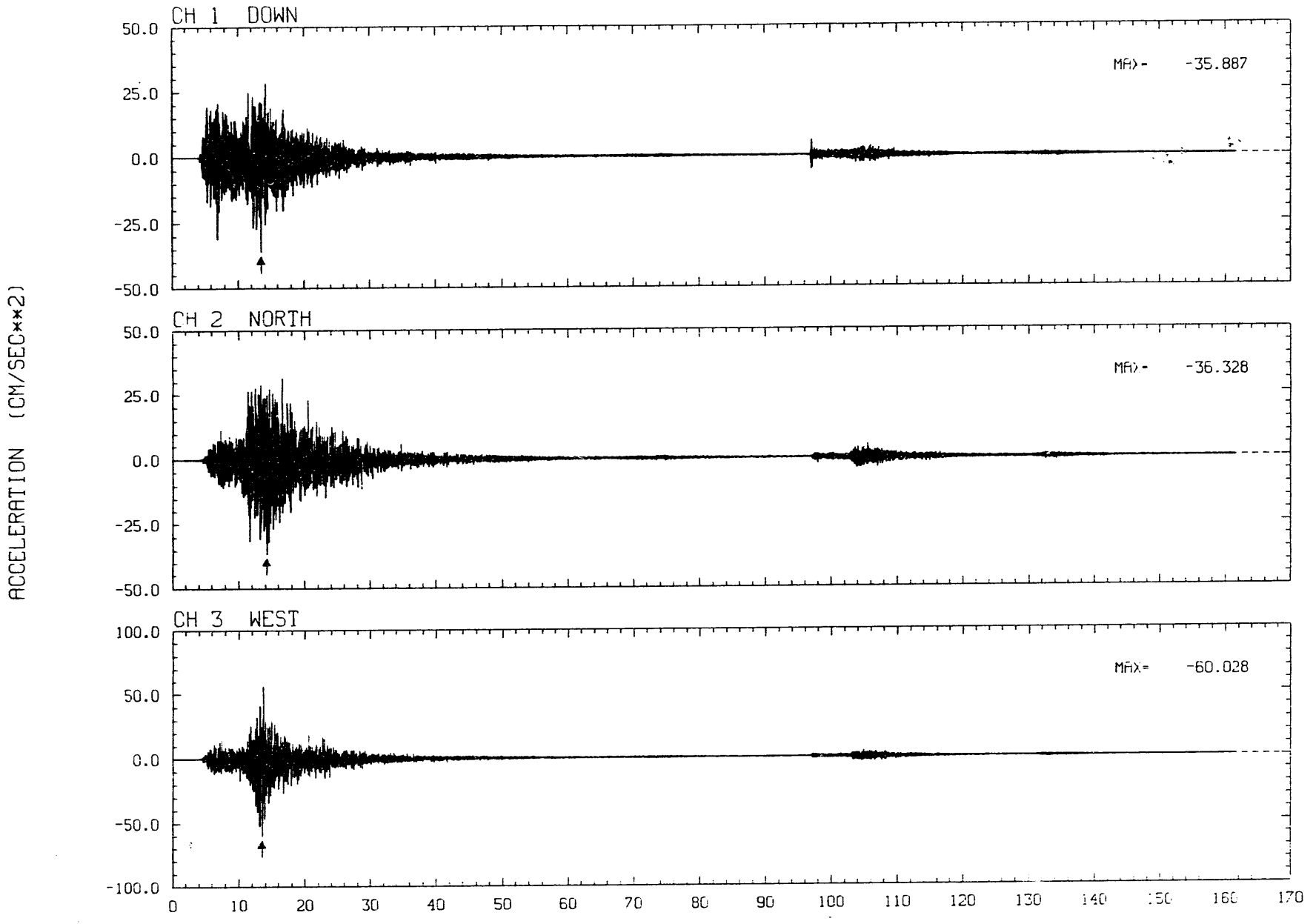


STATION NO. 3

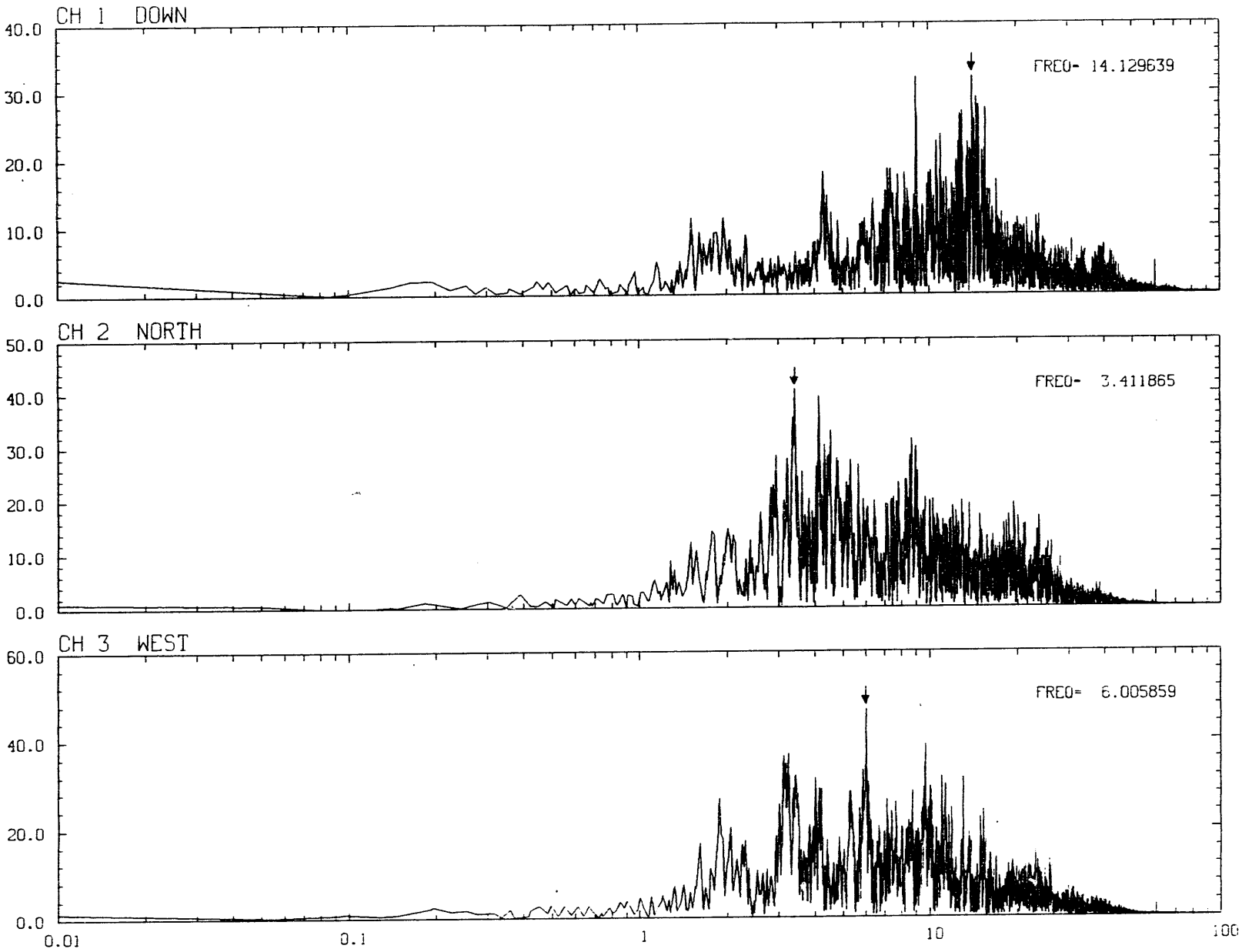
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

STATION NO. 3

UNCORRECTED ACCELERATION TIME HISTORIES



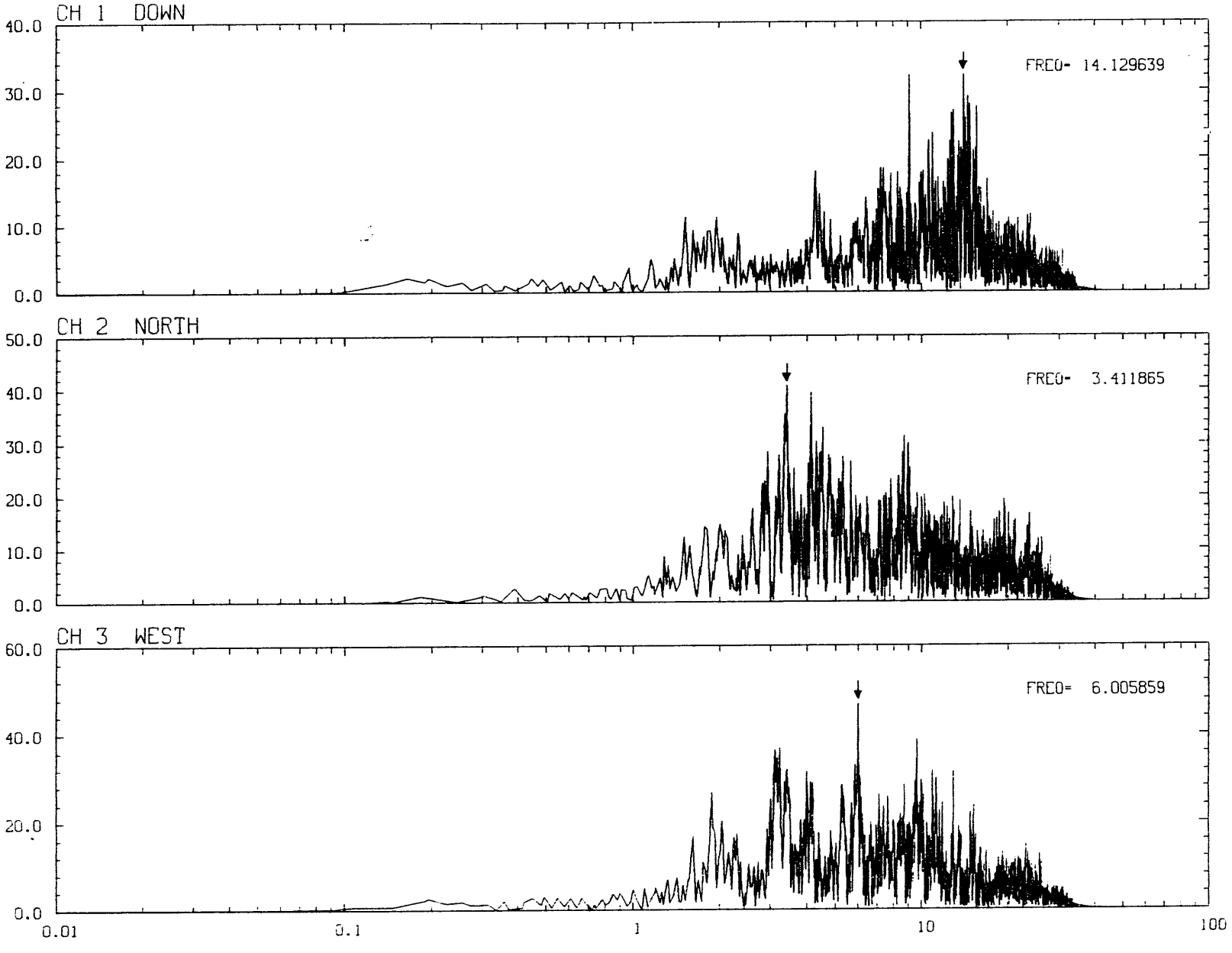
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 3
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



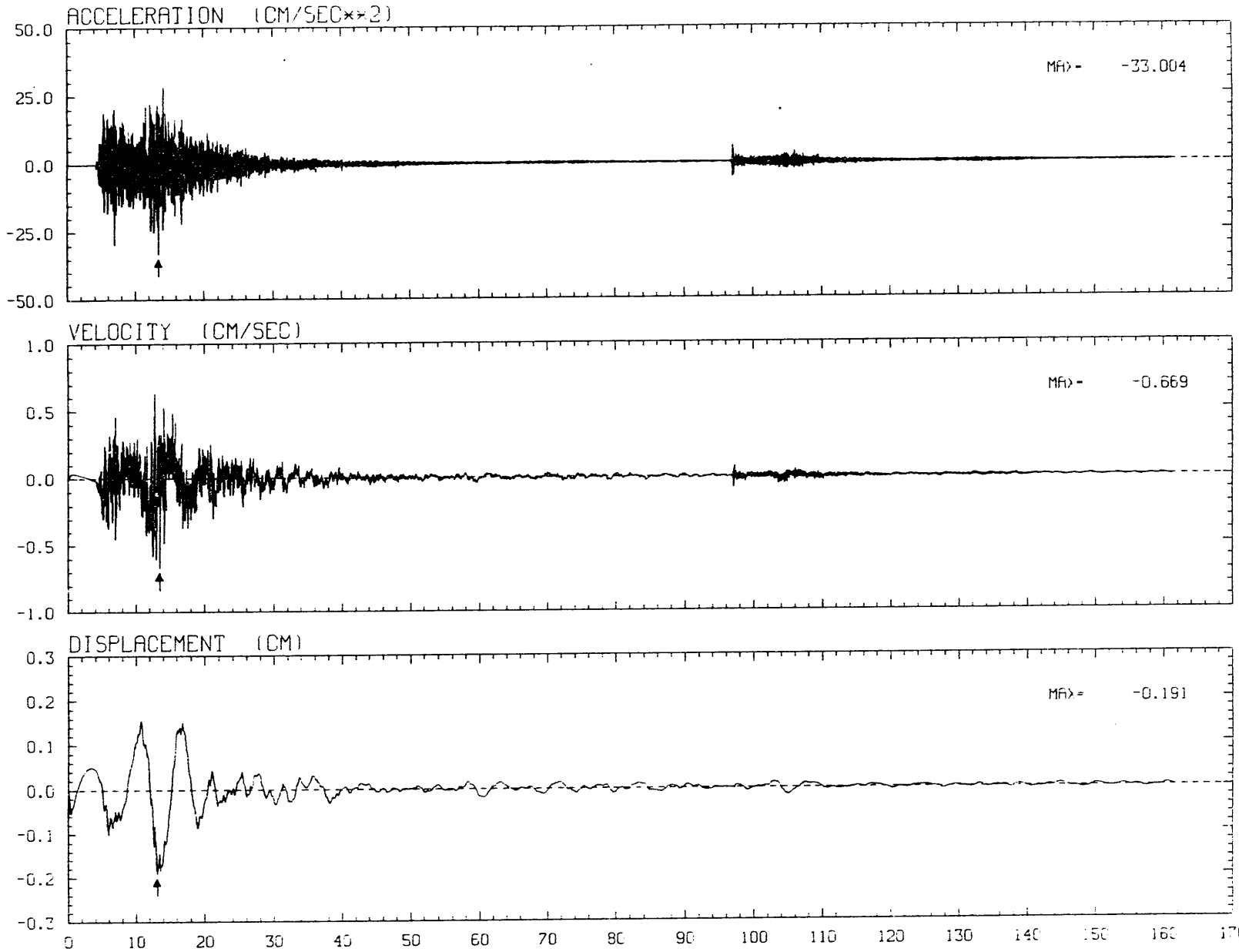
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

STATION NO. 3

CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



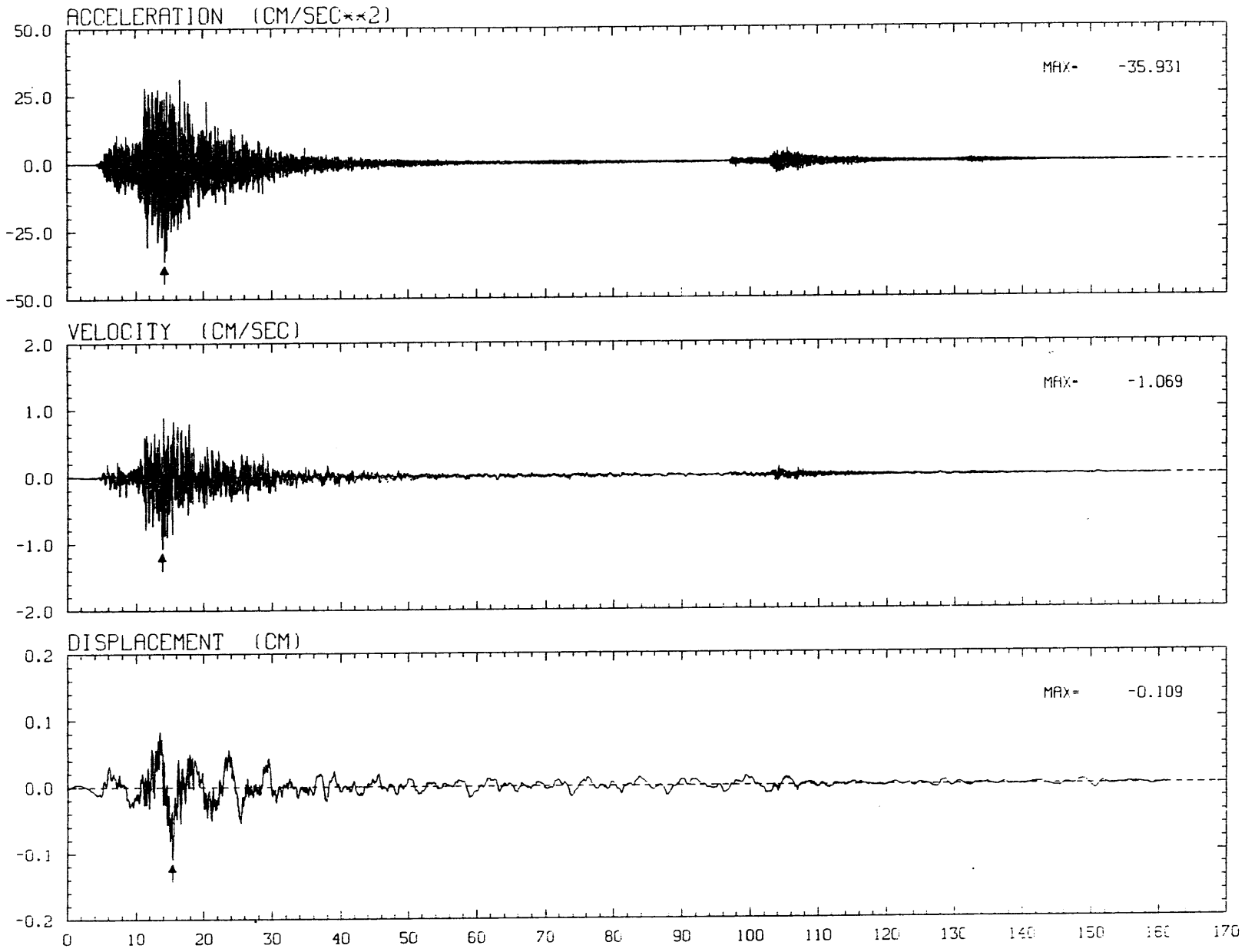
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 3 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



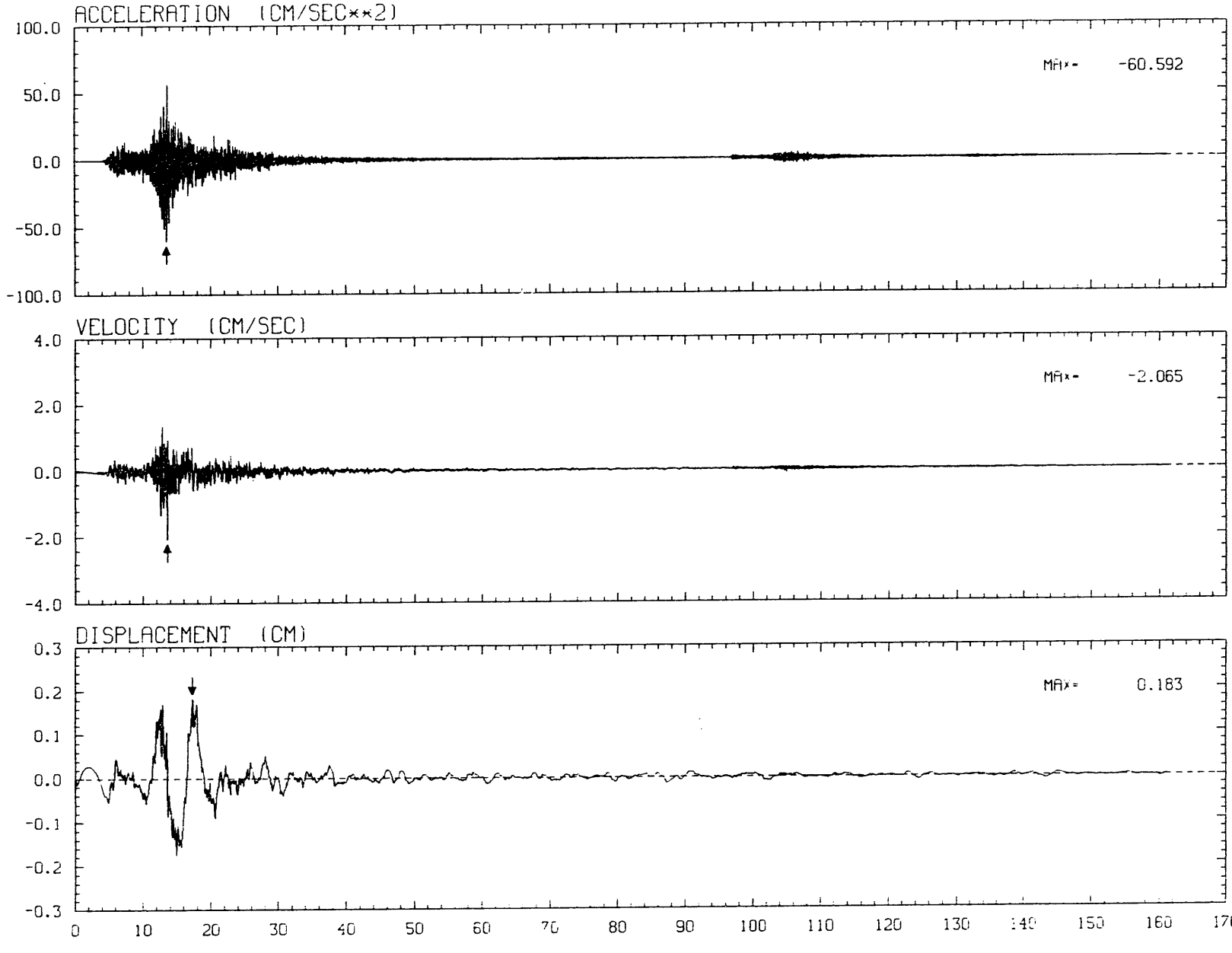
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

STATION NO. 3 CH 2 NORTH

CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

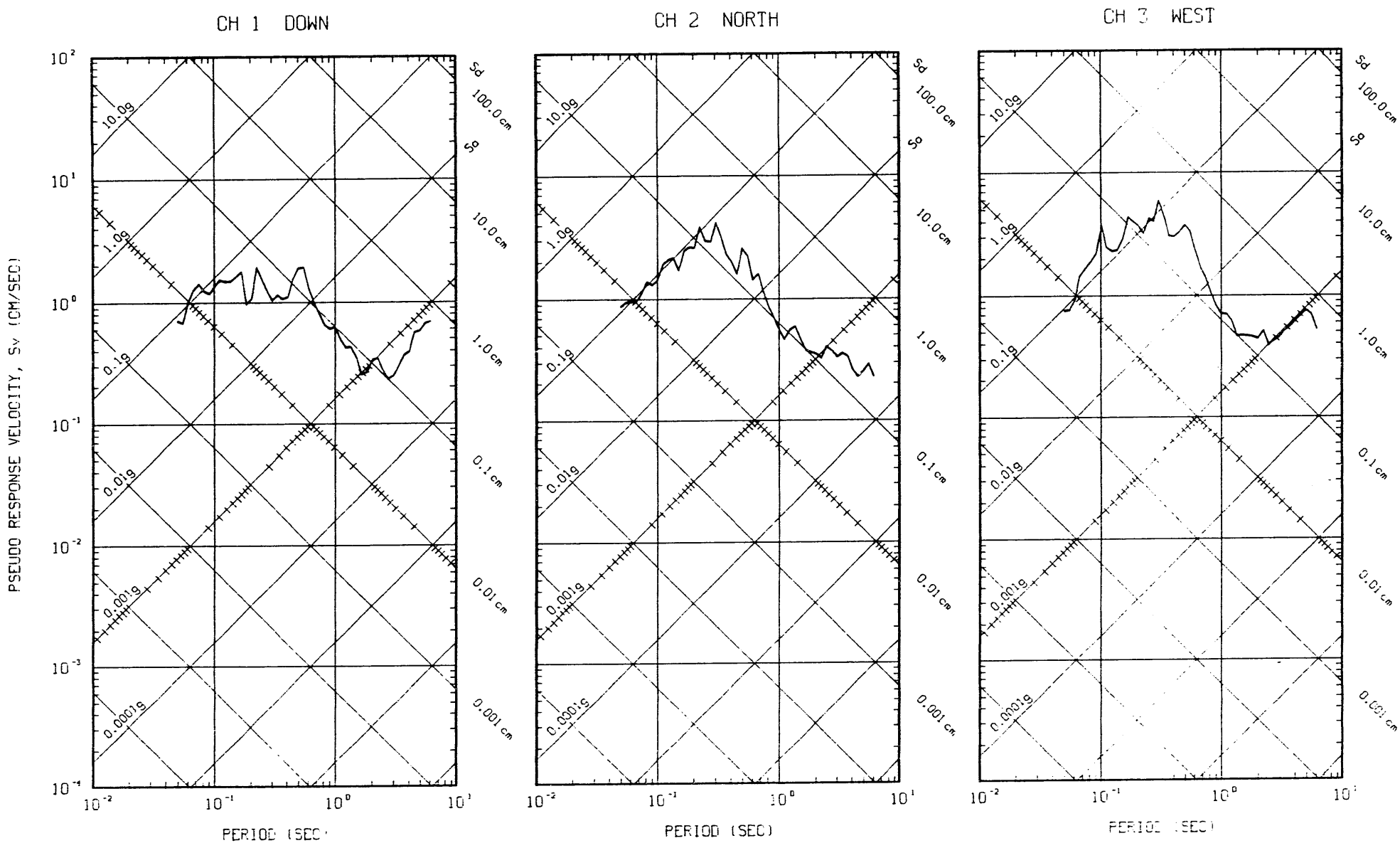


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 3 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



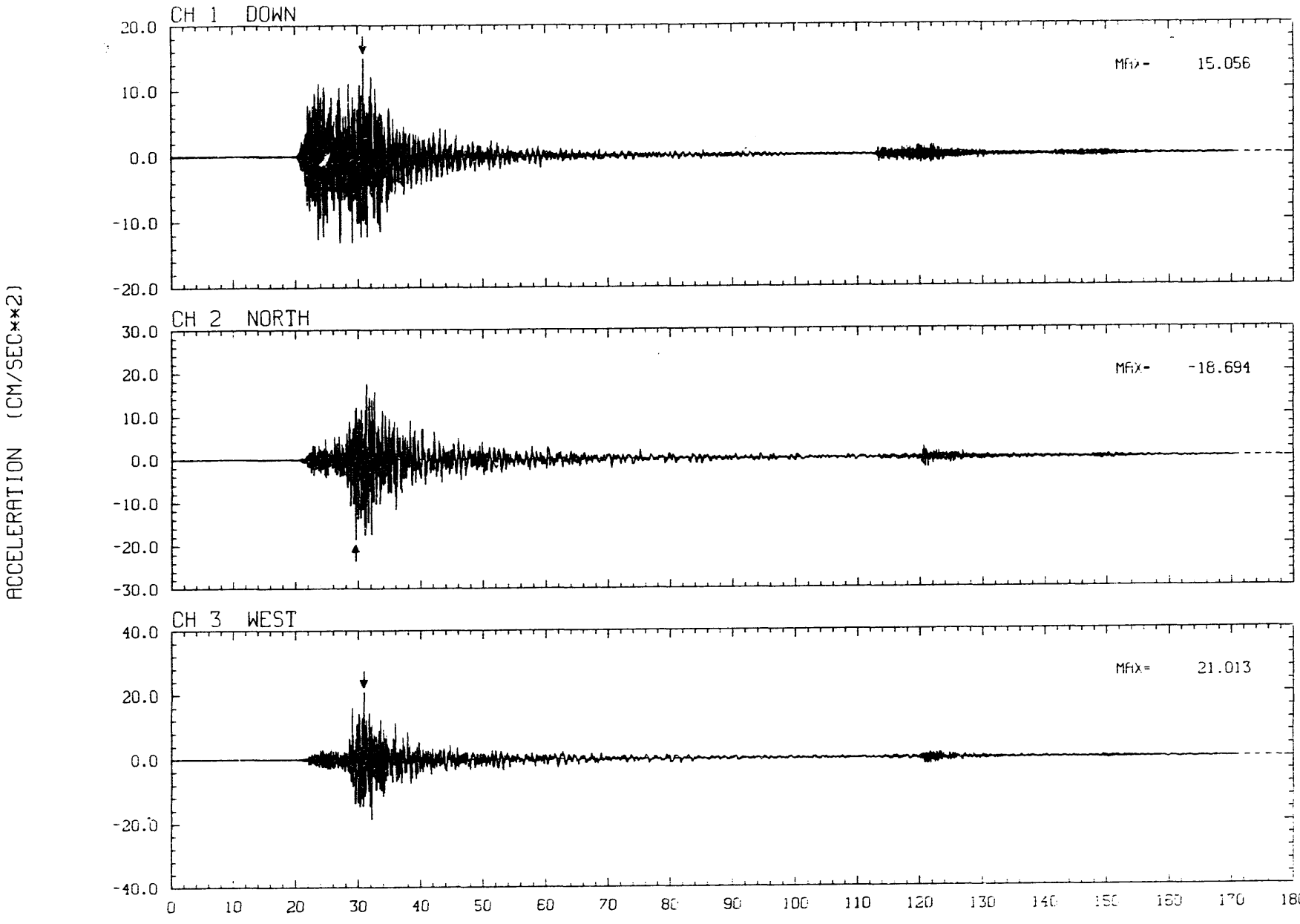
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 3

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

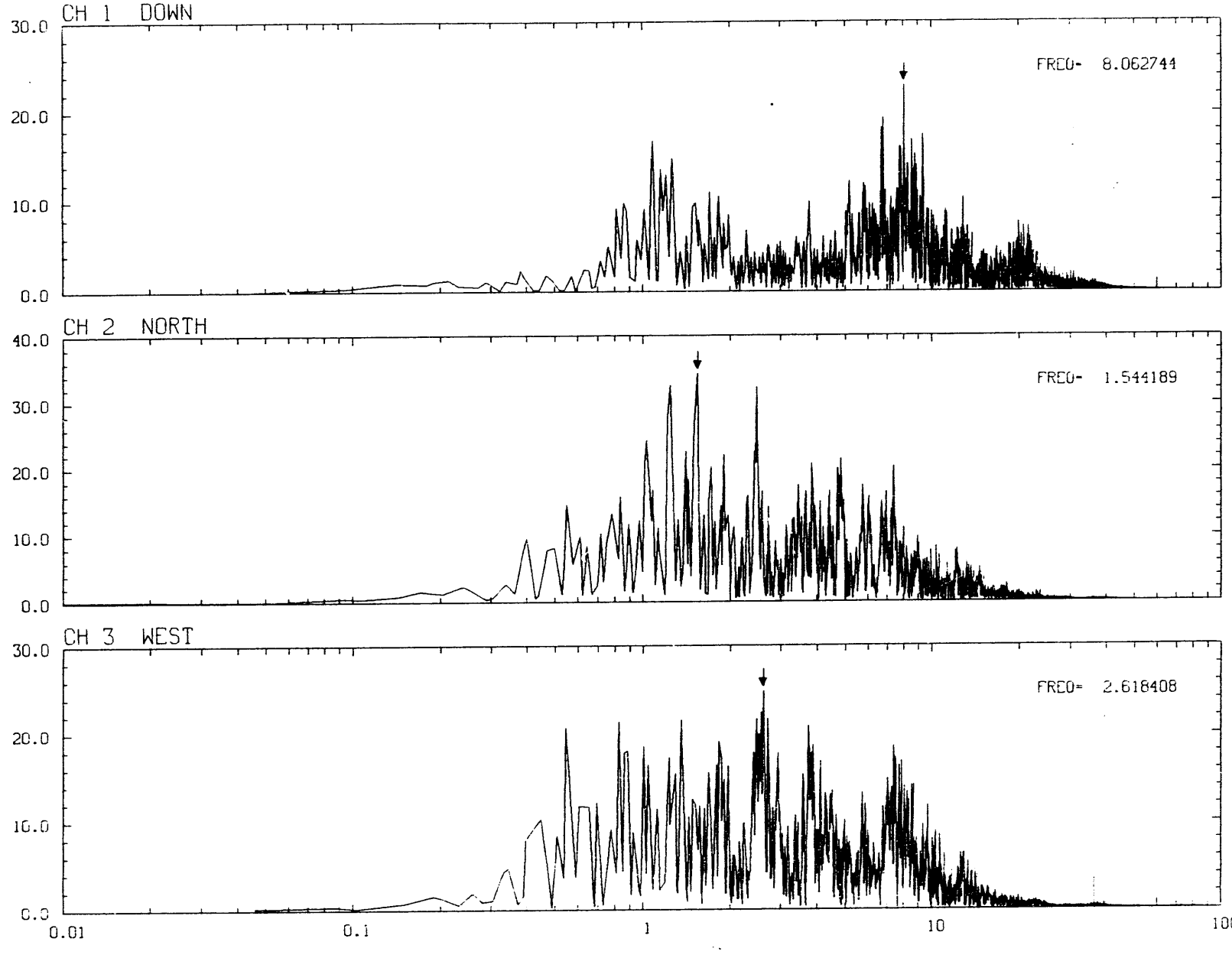


STATION NO. 4

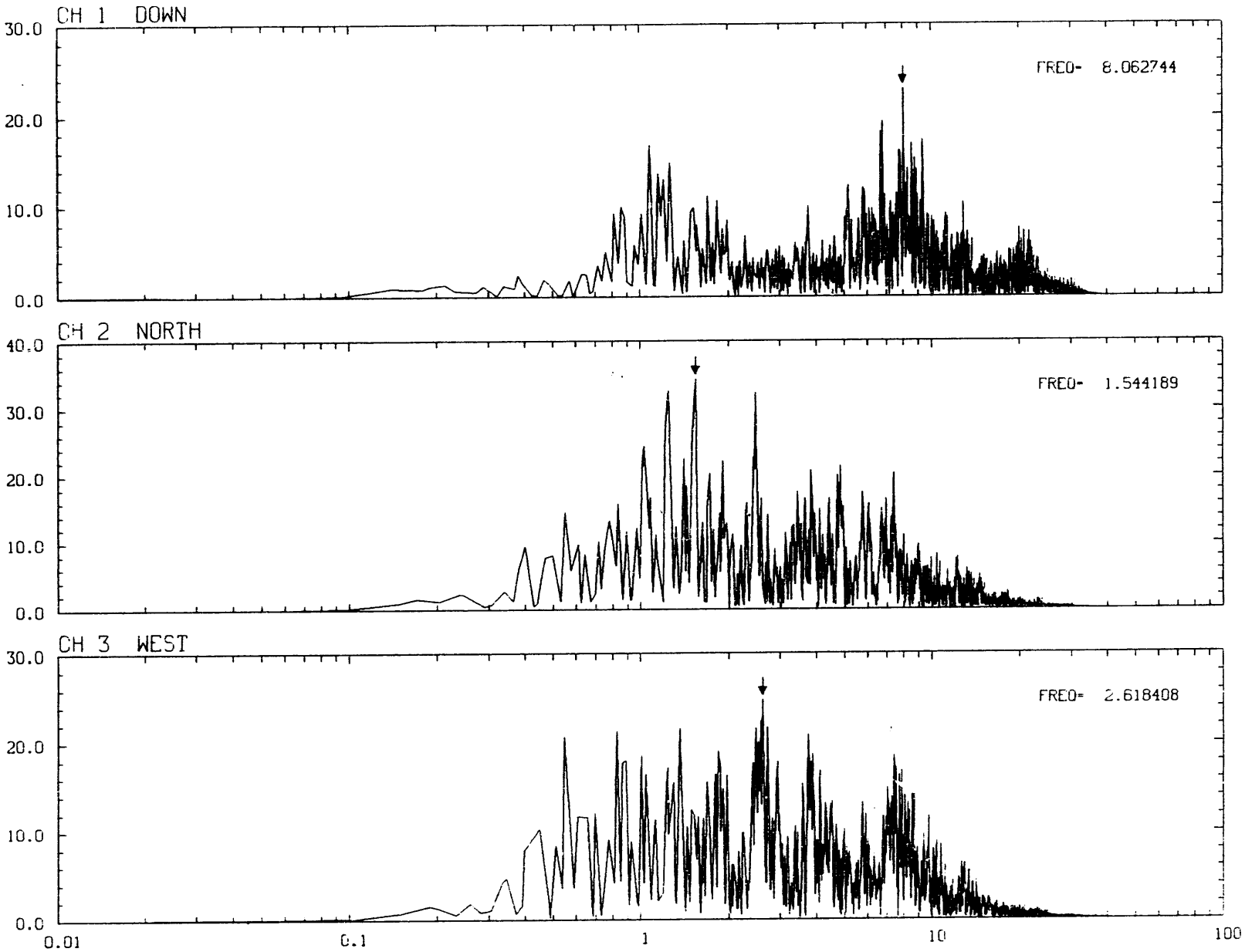
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 4
UNCORRECTED ACCELERATION TIME HISTORIES



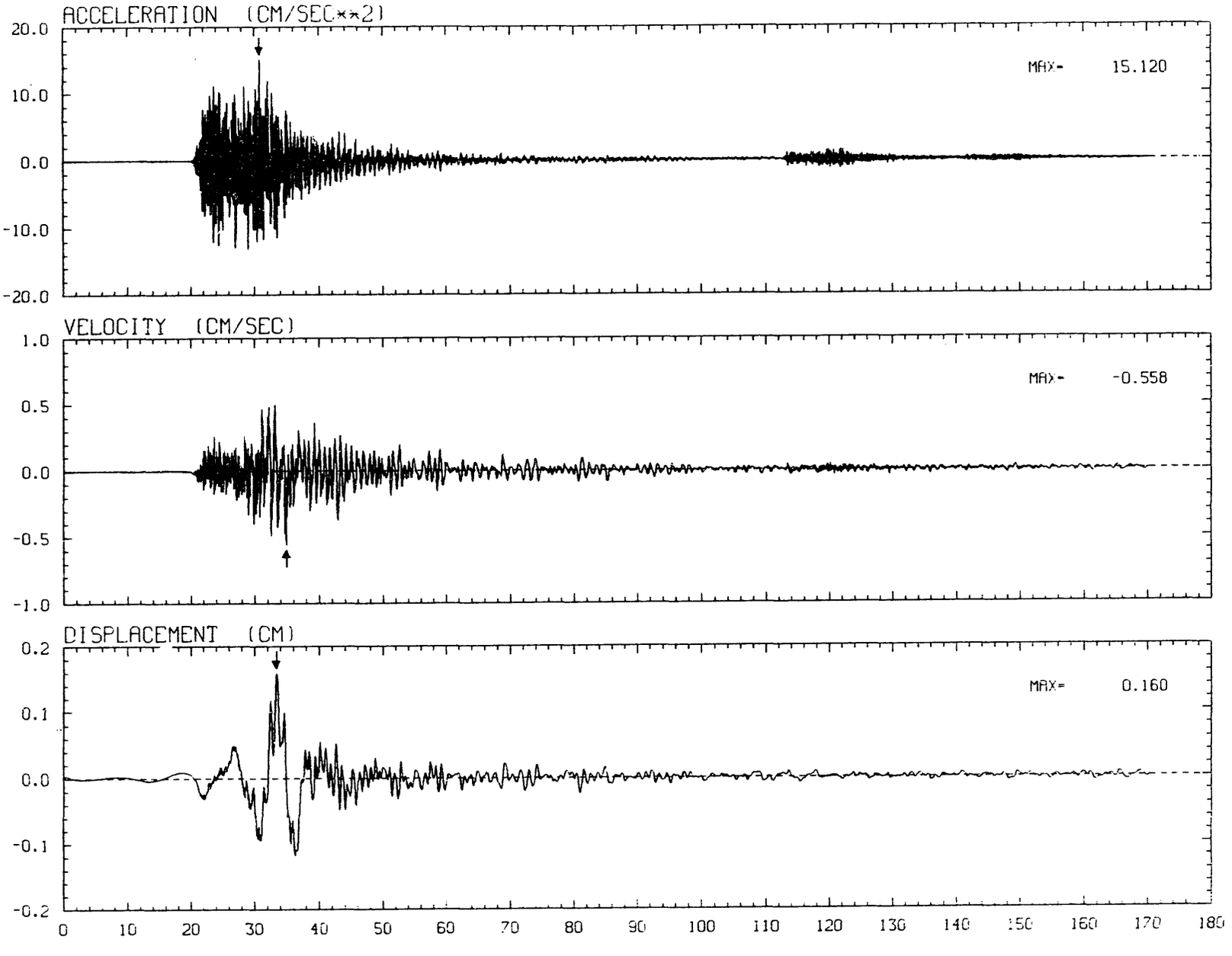
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 4
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



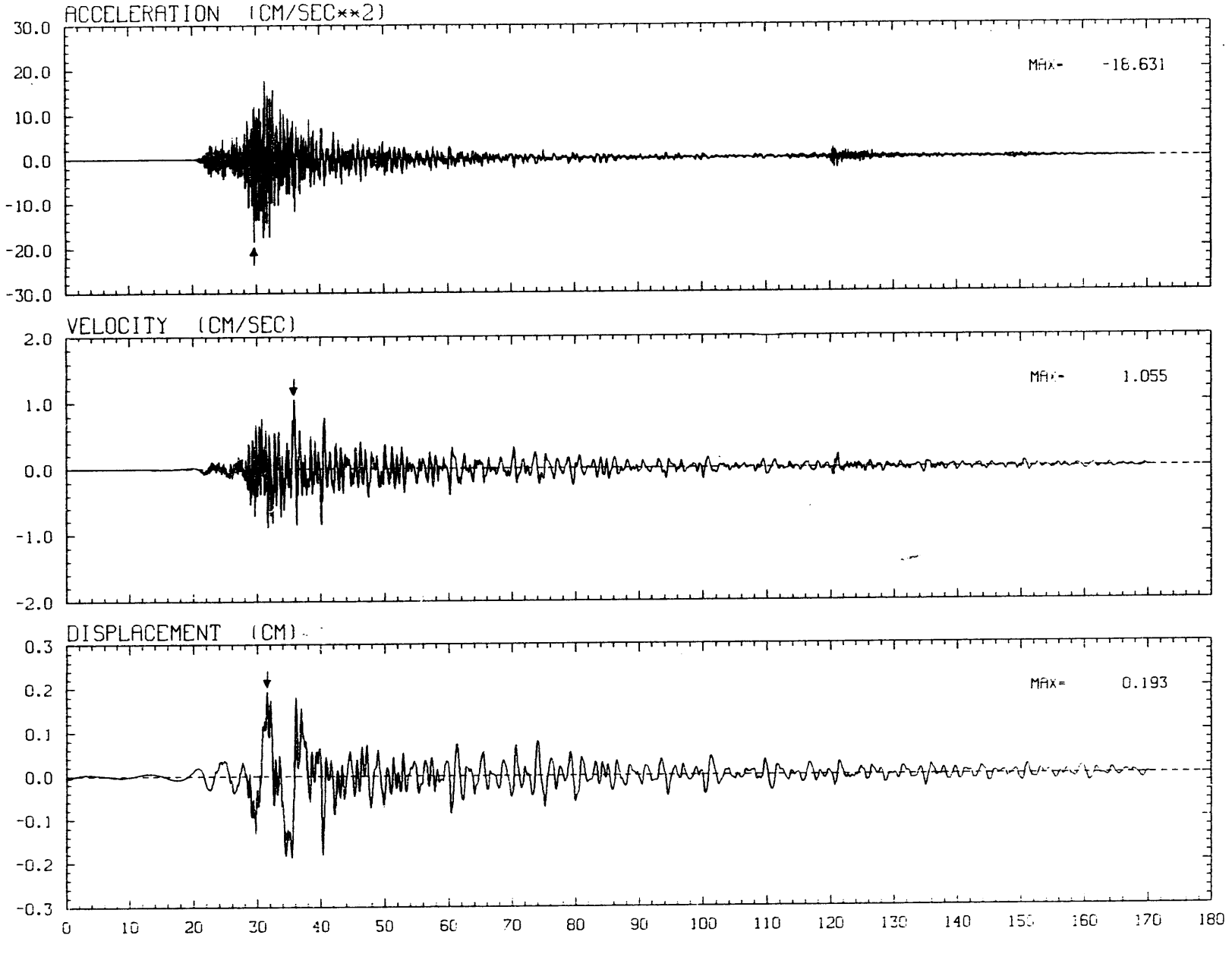
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 4
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



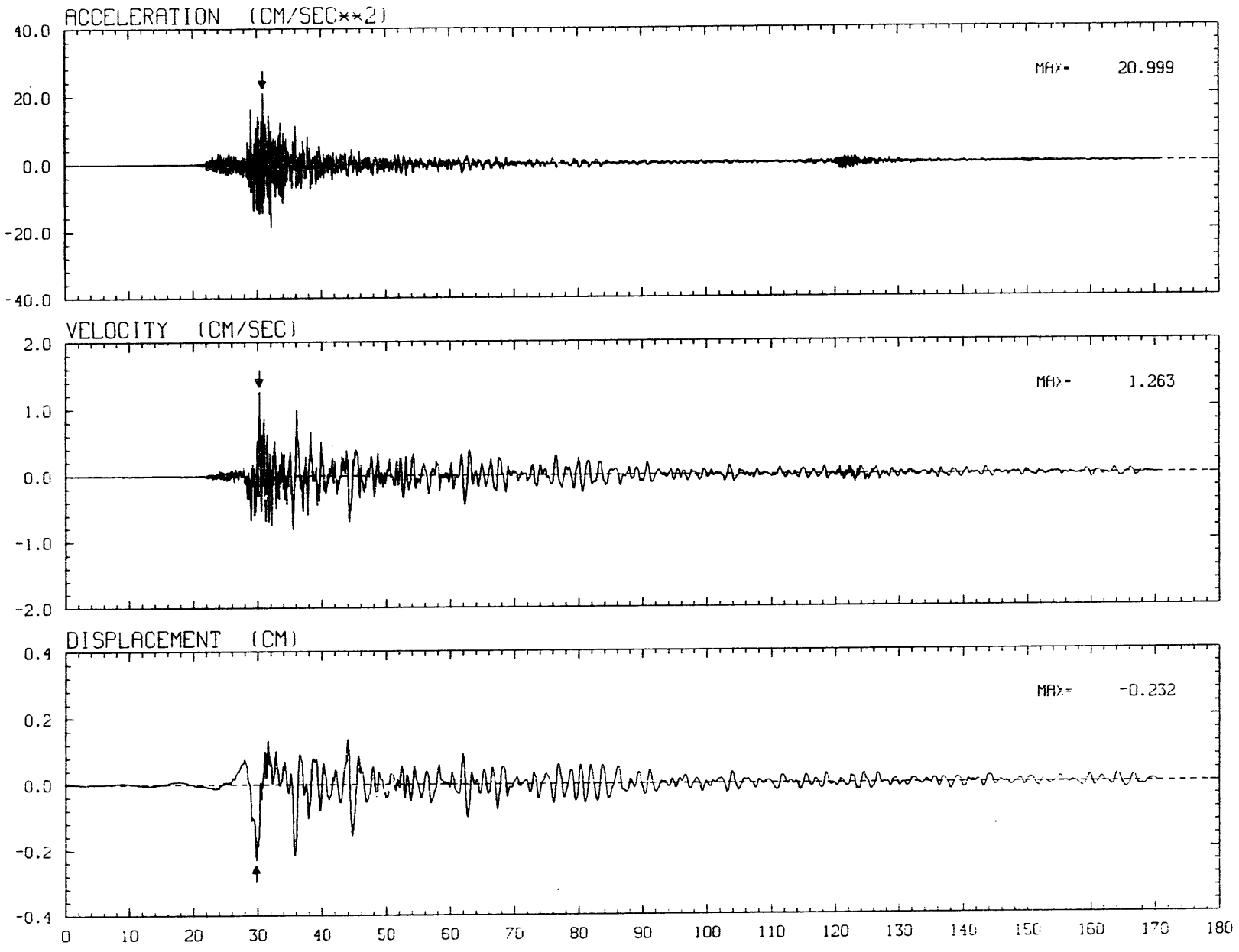
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 4 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 4 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

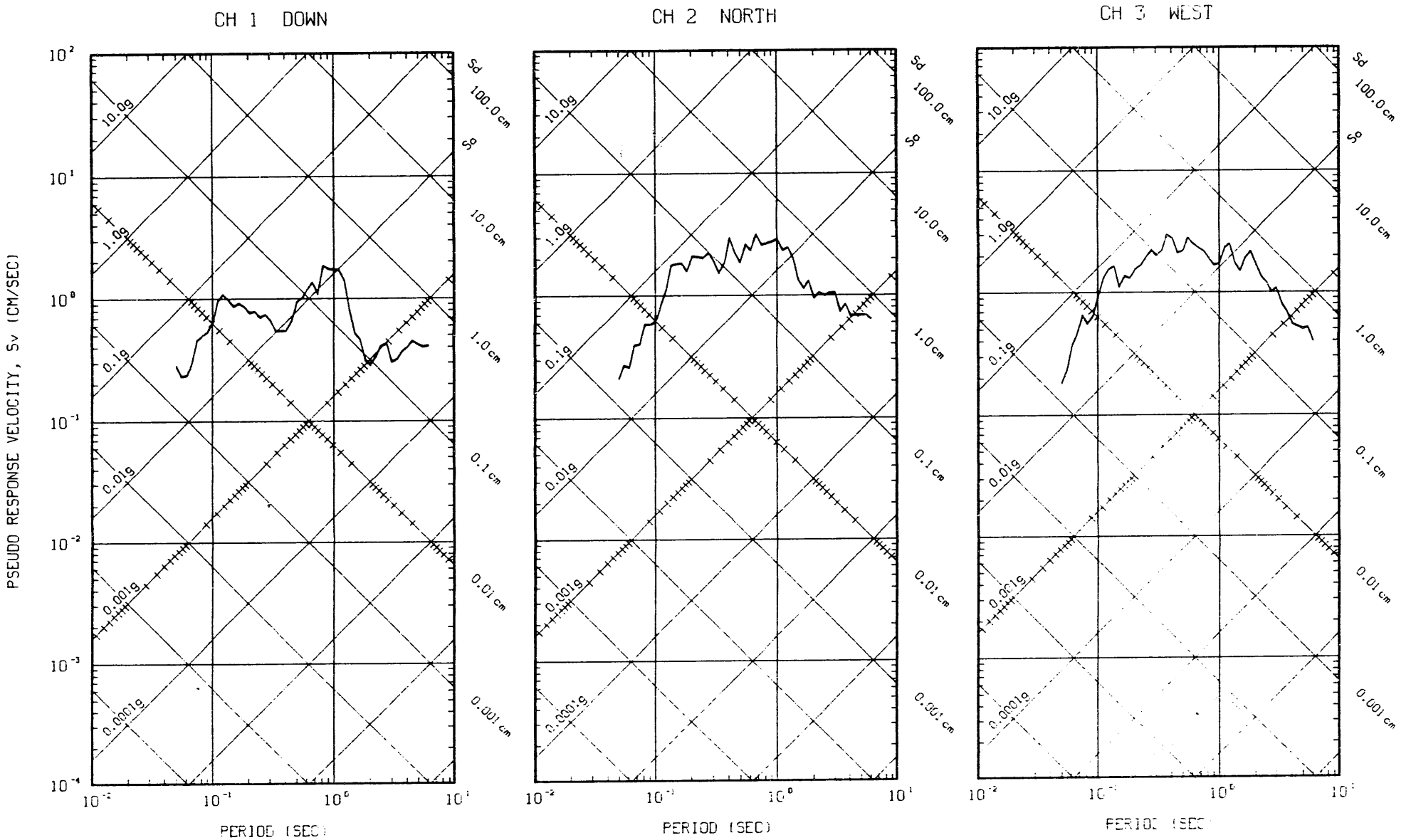


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 4 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



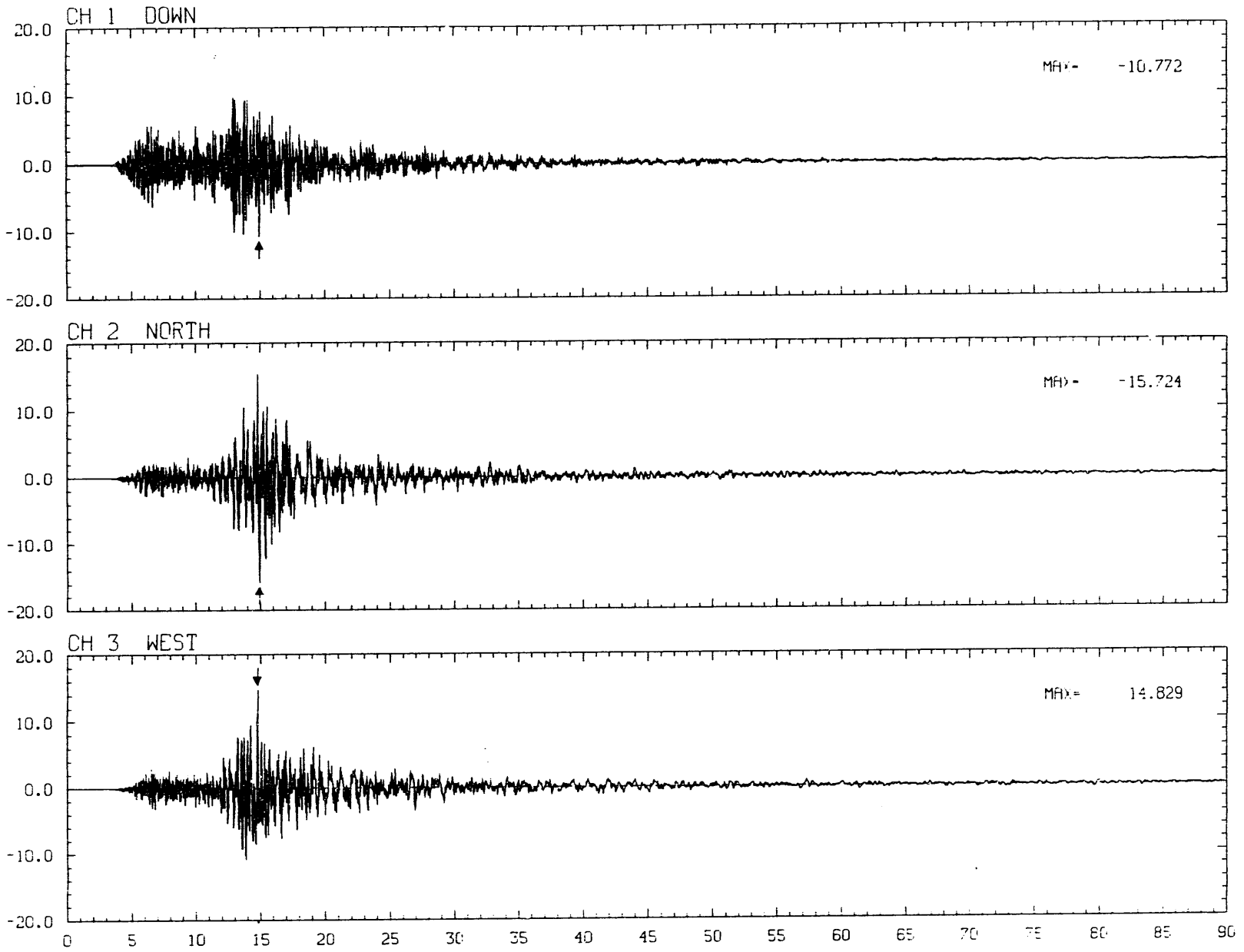
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 4

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

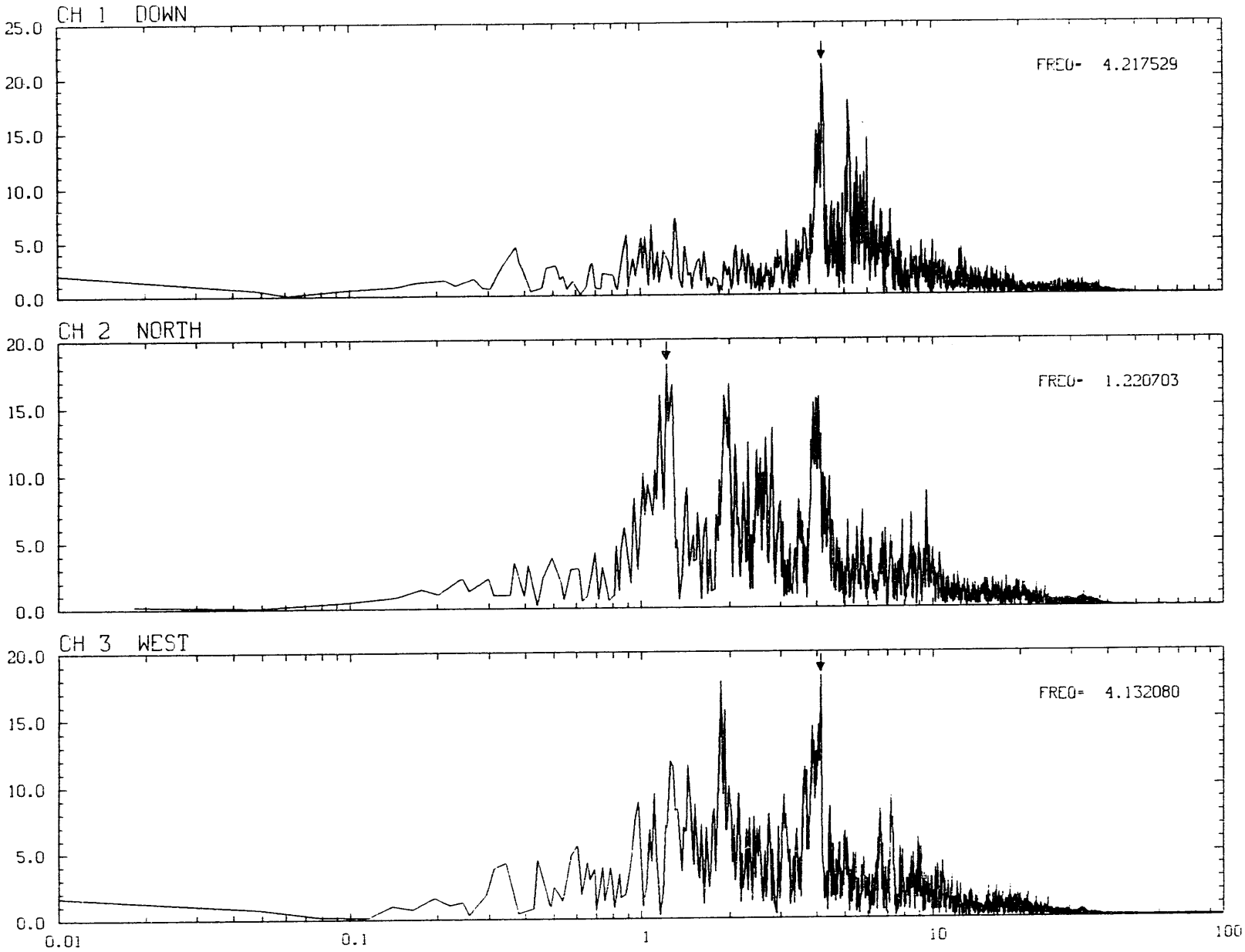


STATION NO. 5

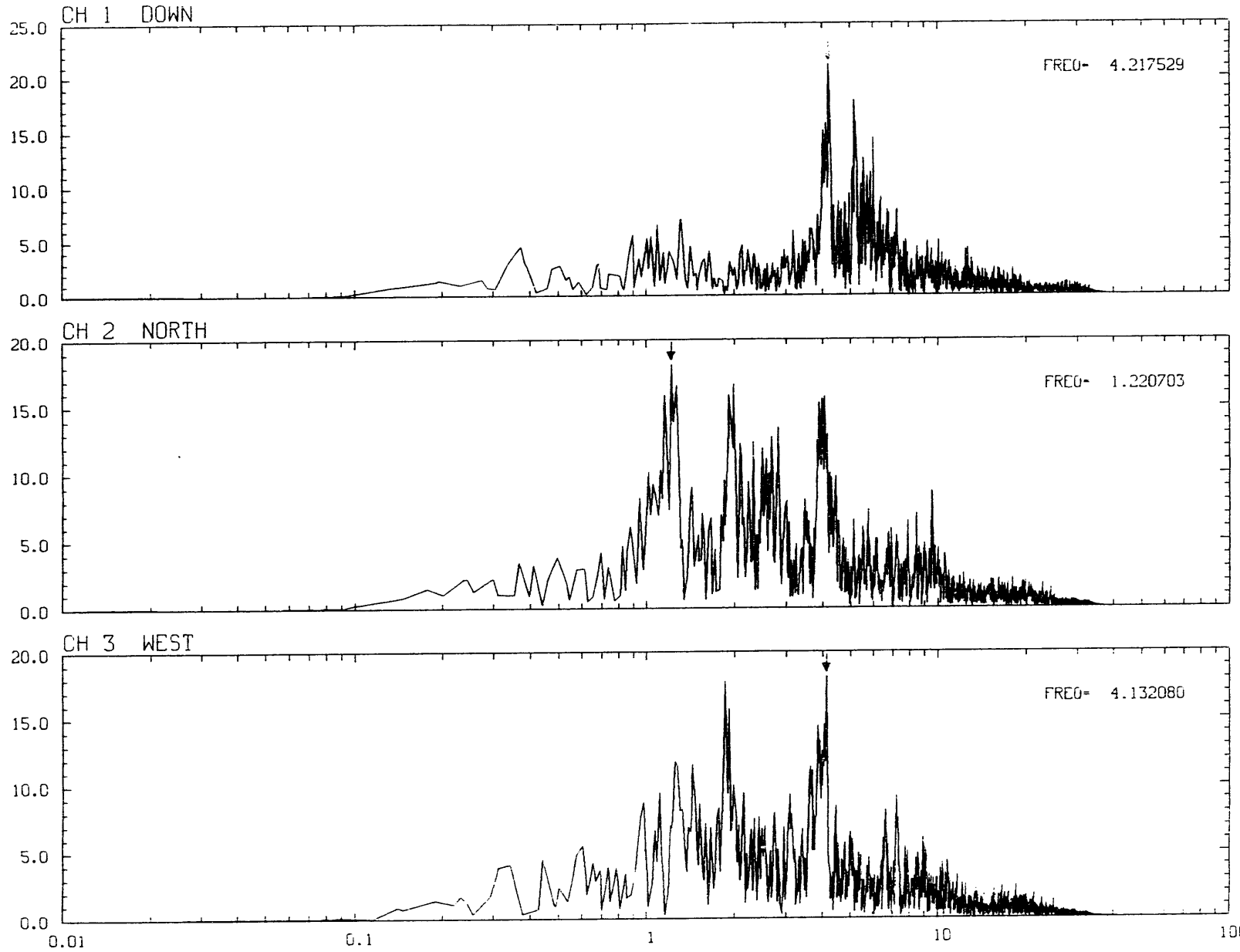
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 5
UNCORRECTED ACCELERATION TIME HISTORIES



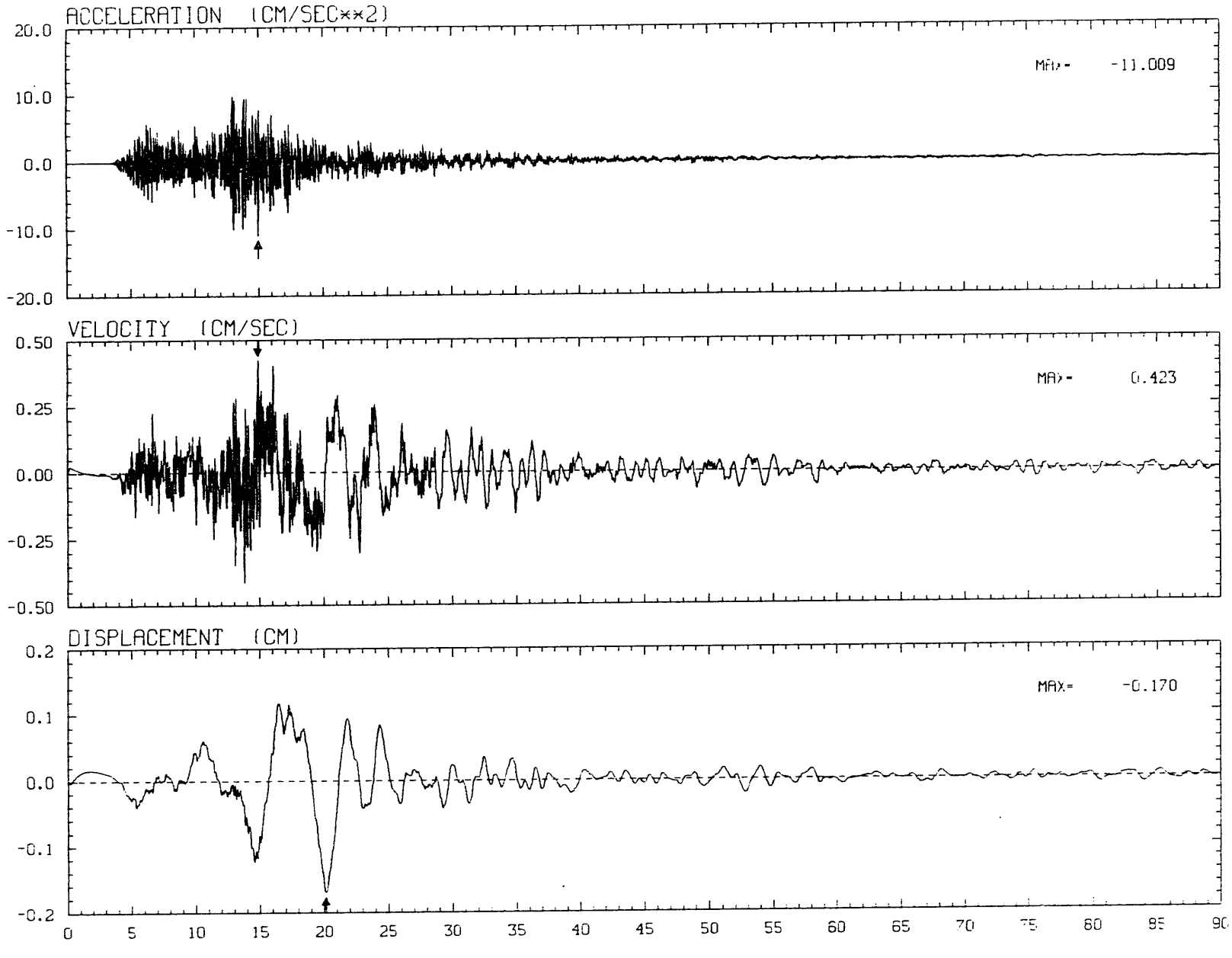
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 5
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



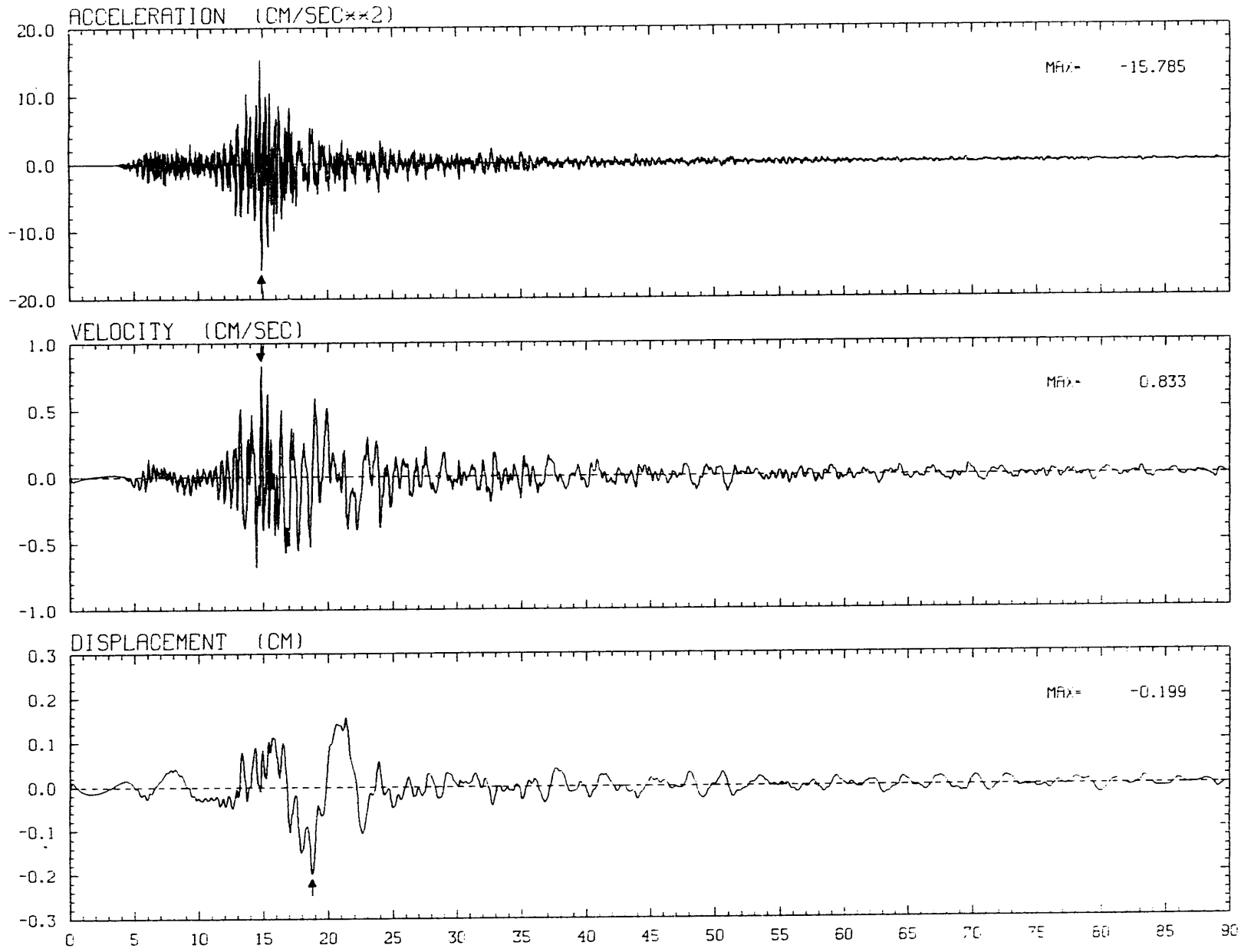
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 5
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



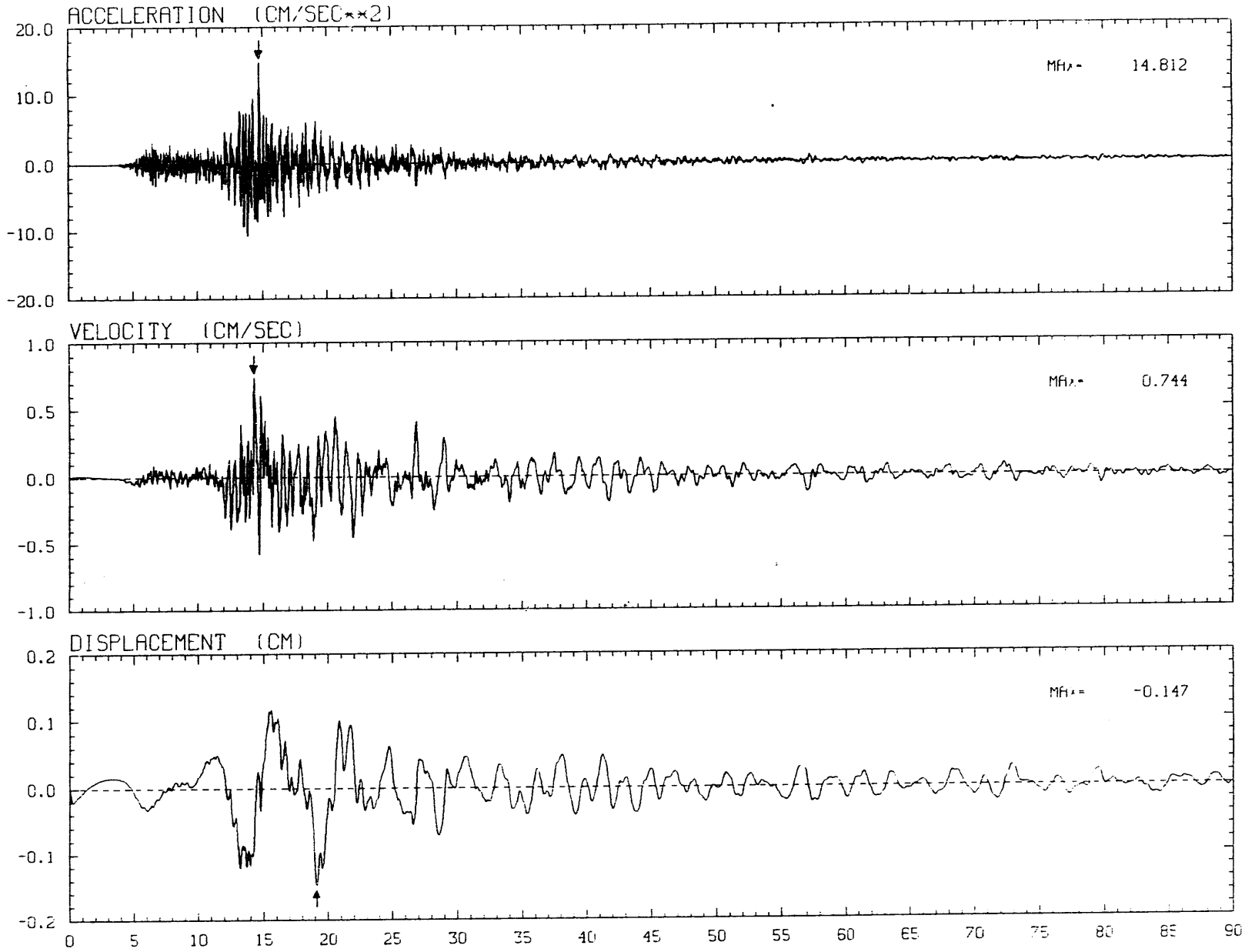
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 5 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 5 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

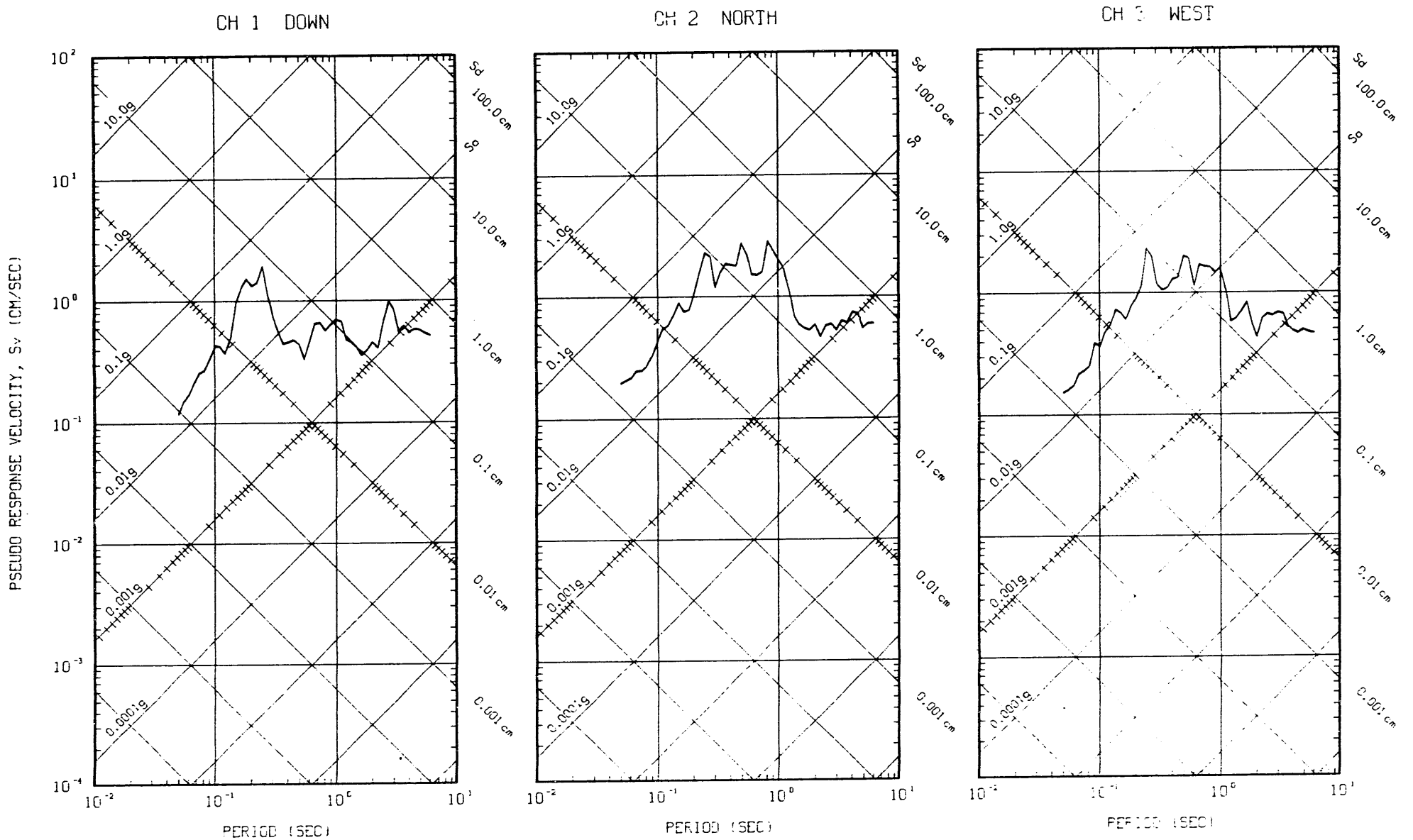


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 5 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



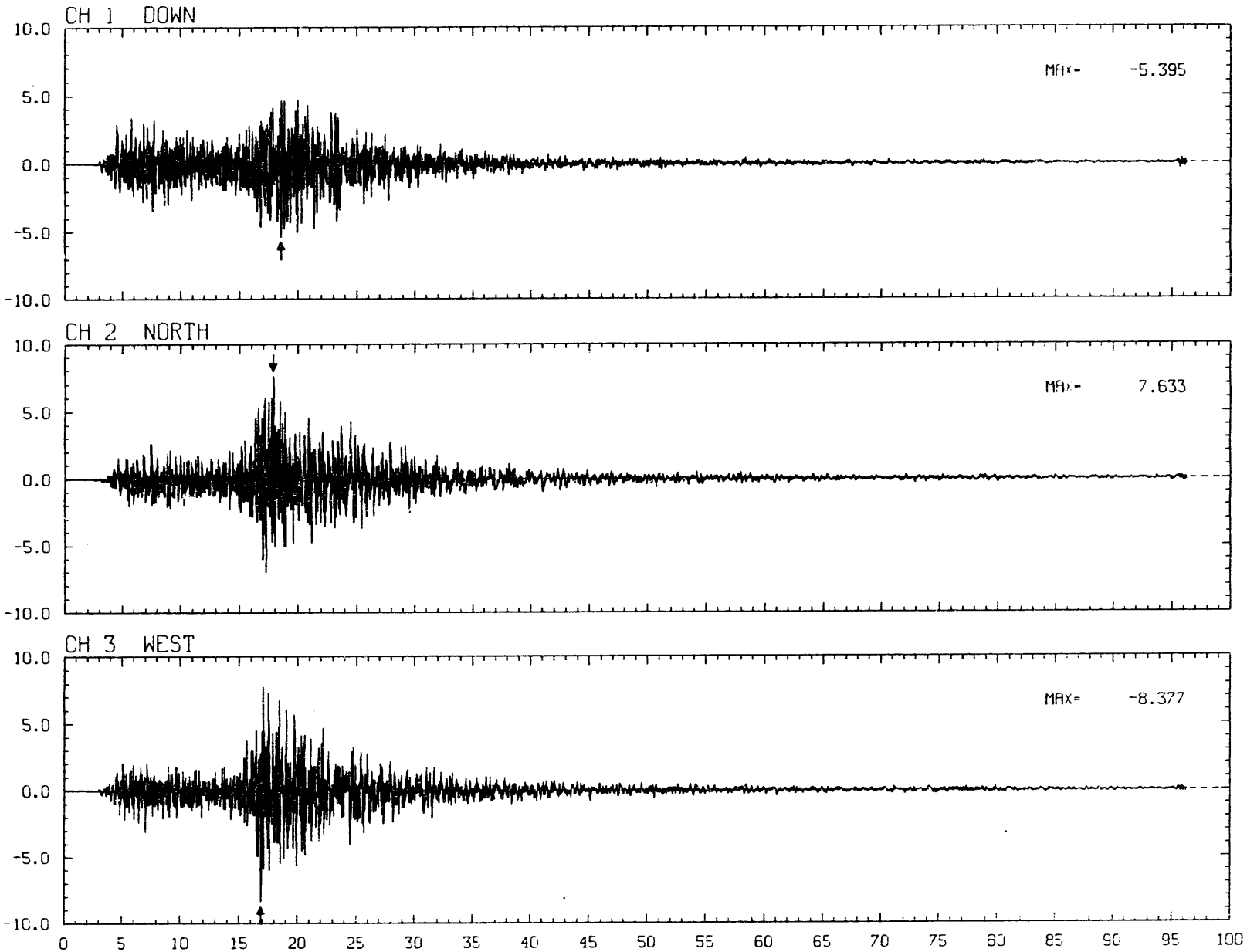
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 5

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

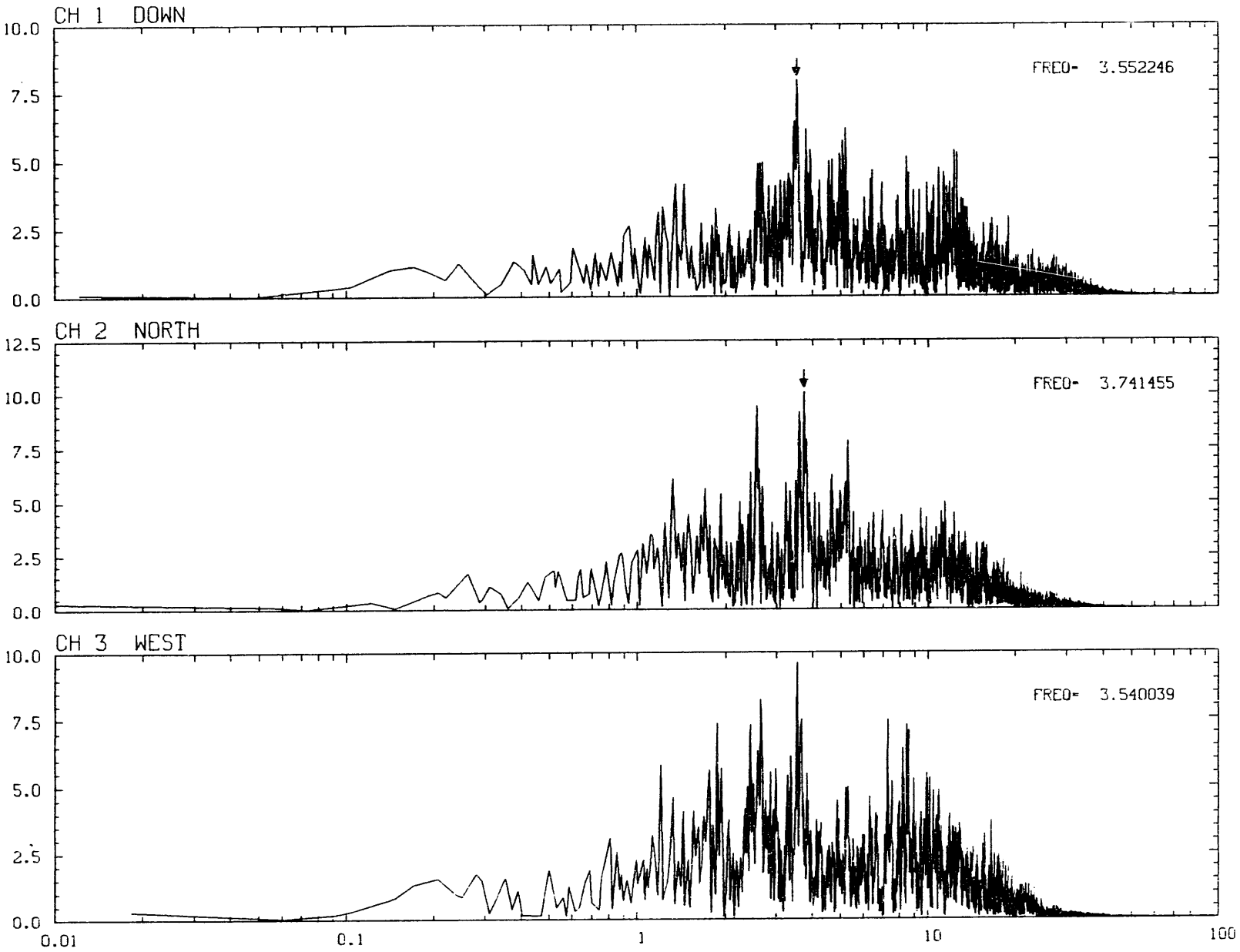


STATION NO. 6

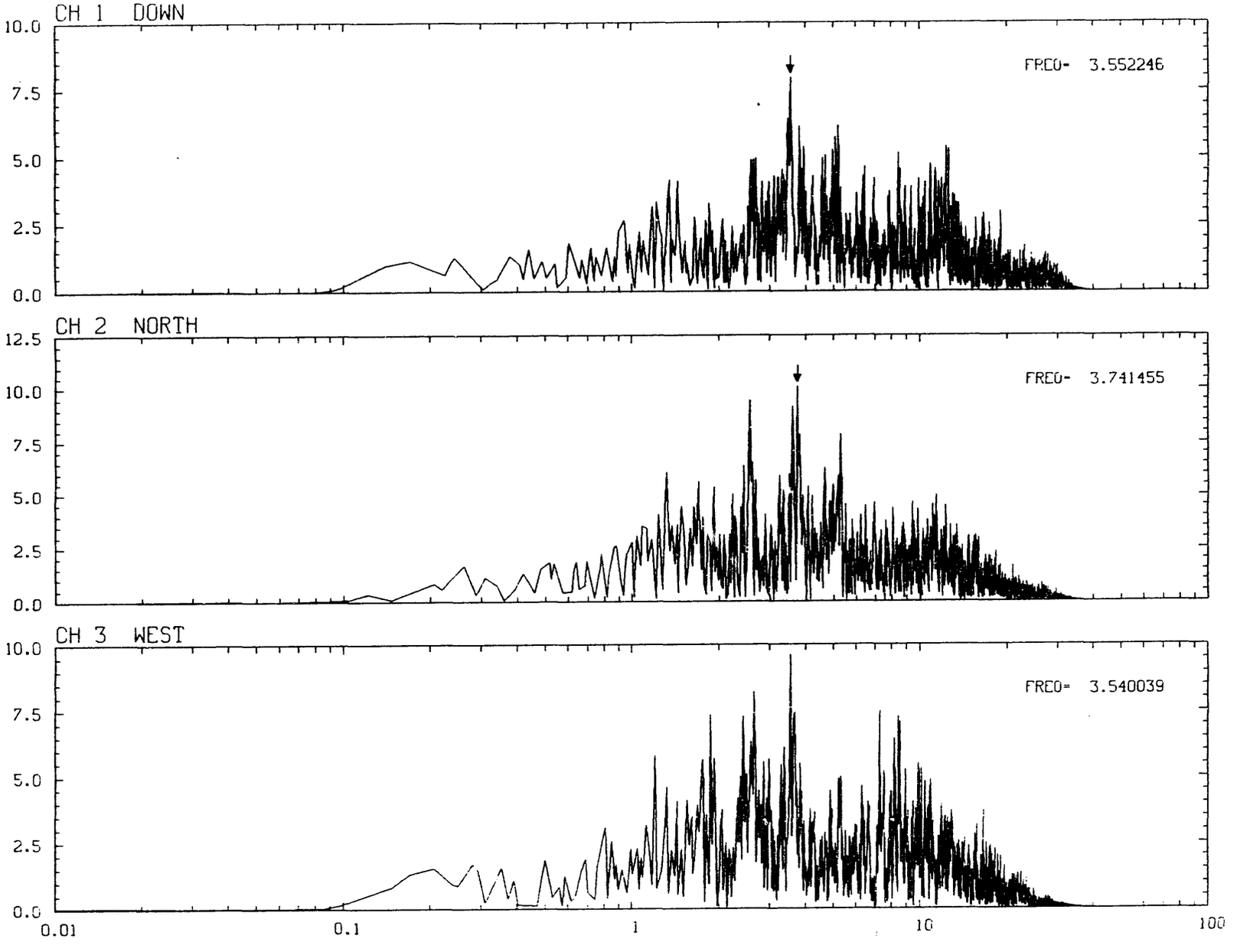
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 6
UNCORRECTED ACCELERATION TIME HISTORIES



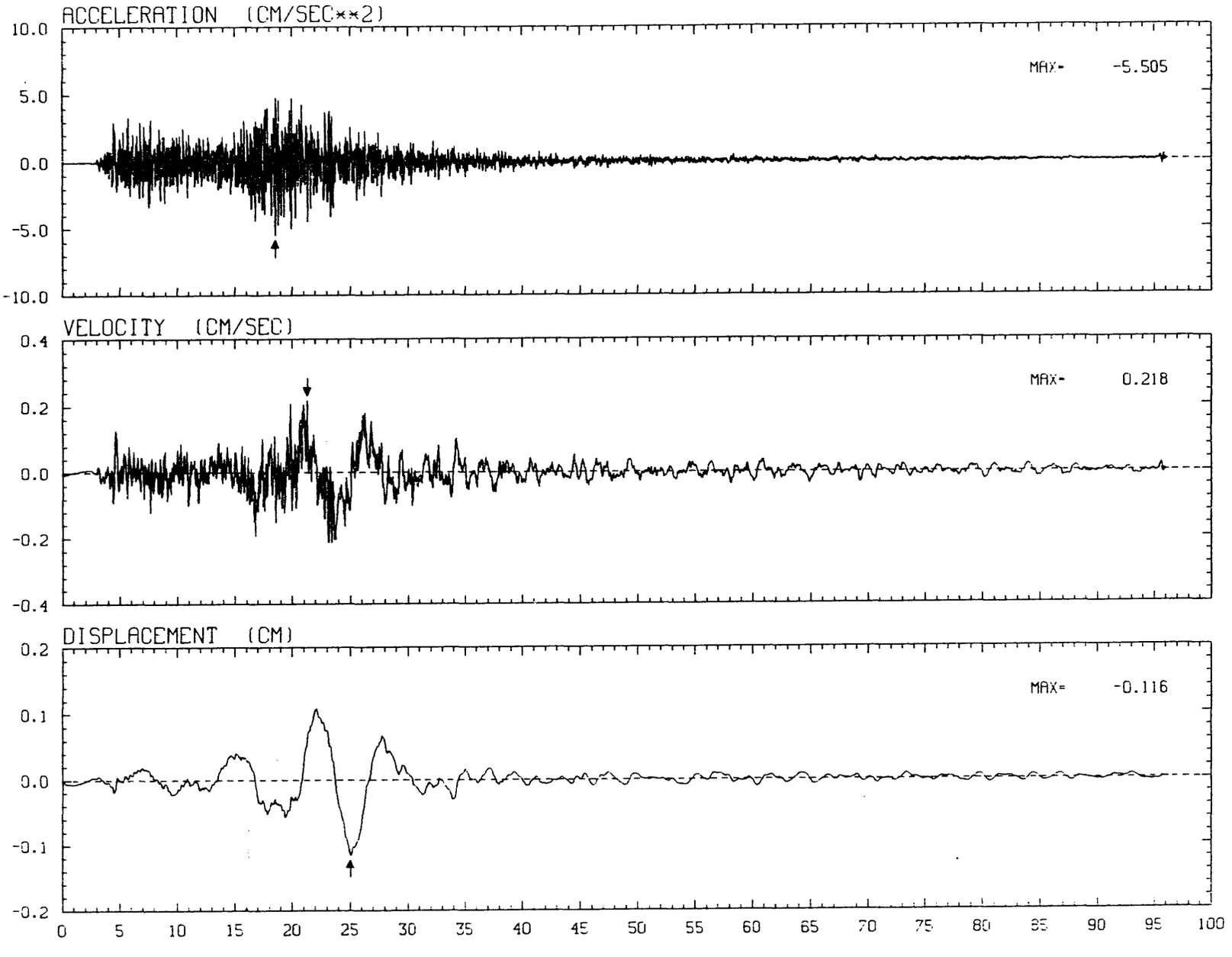
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 6
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 6
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



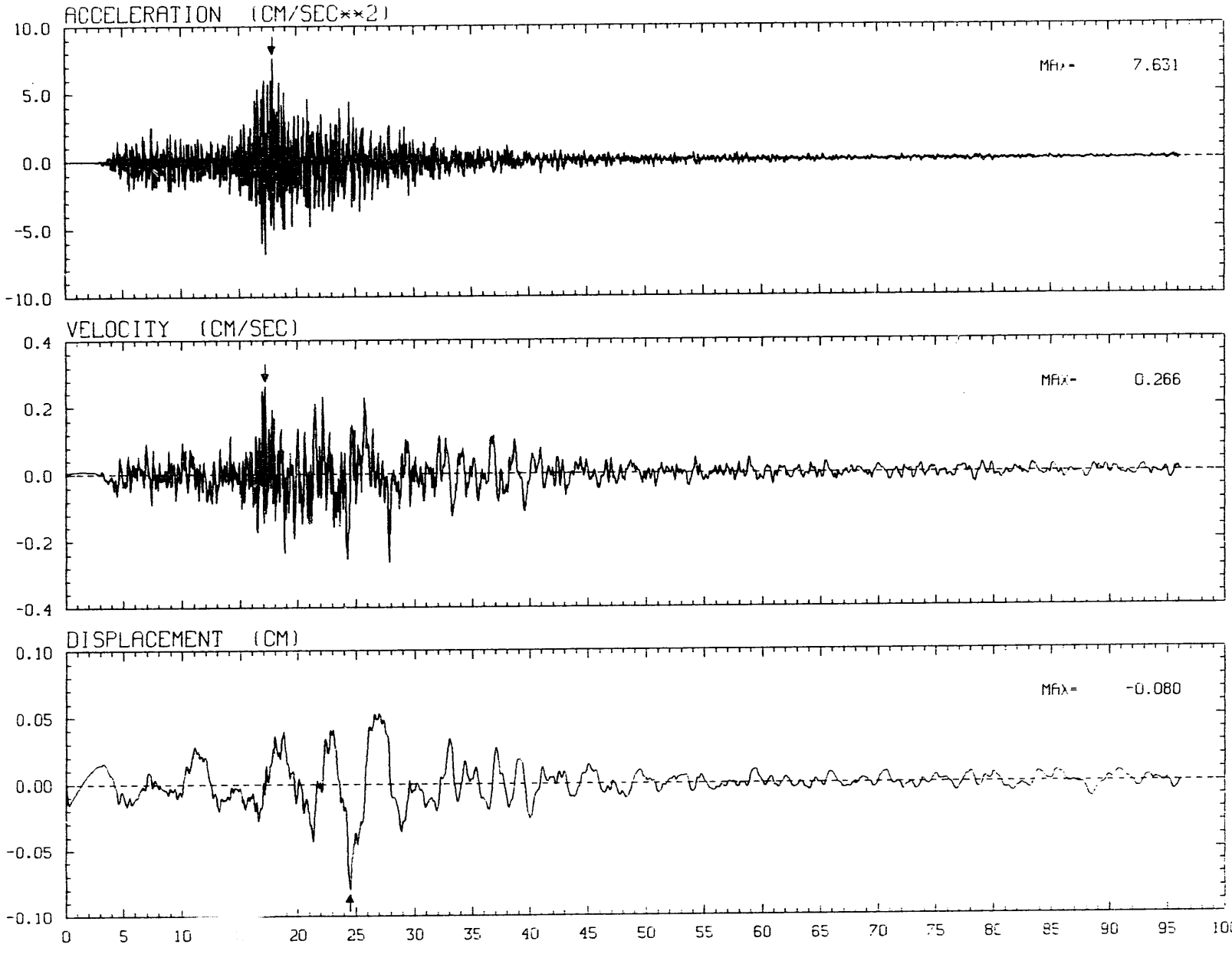
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 6 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



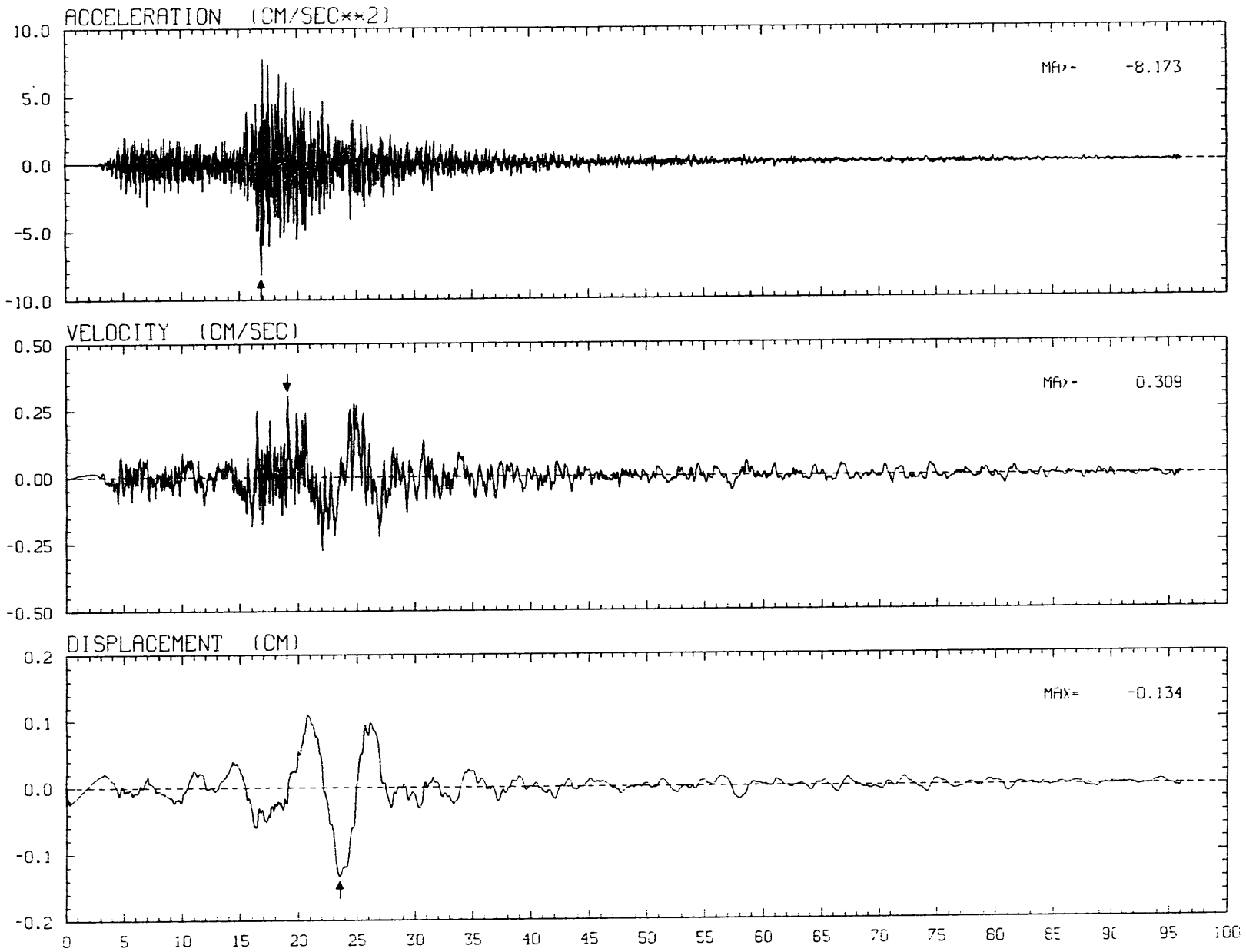
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

STATION NO. 6 CH 2 NORTH

CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

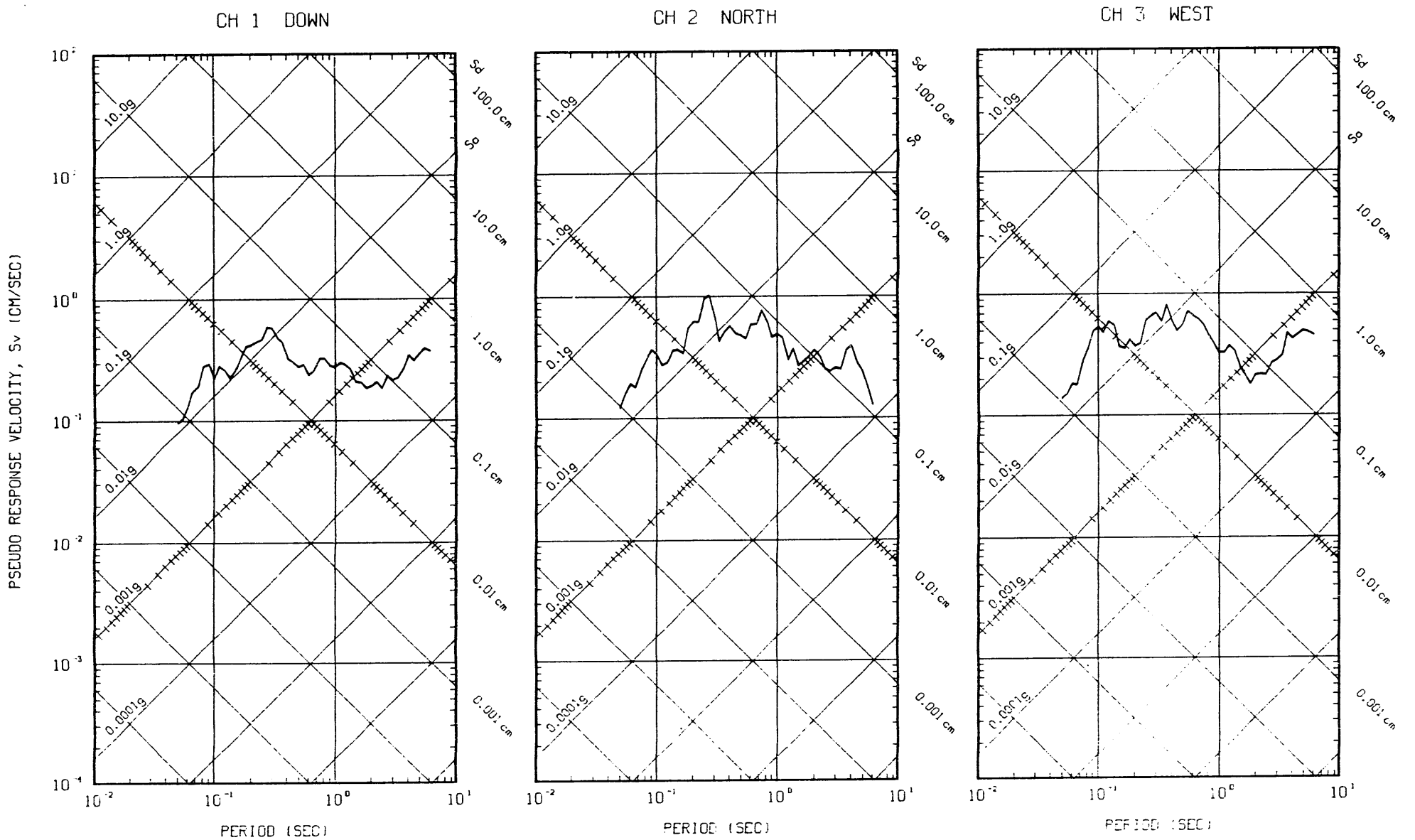


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 6 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



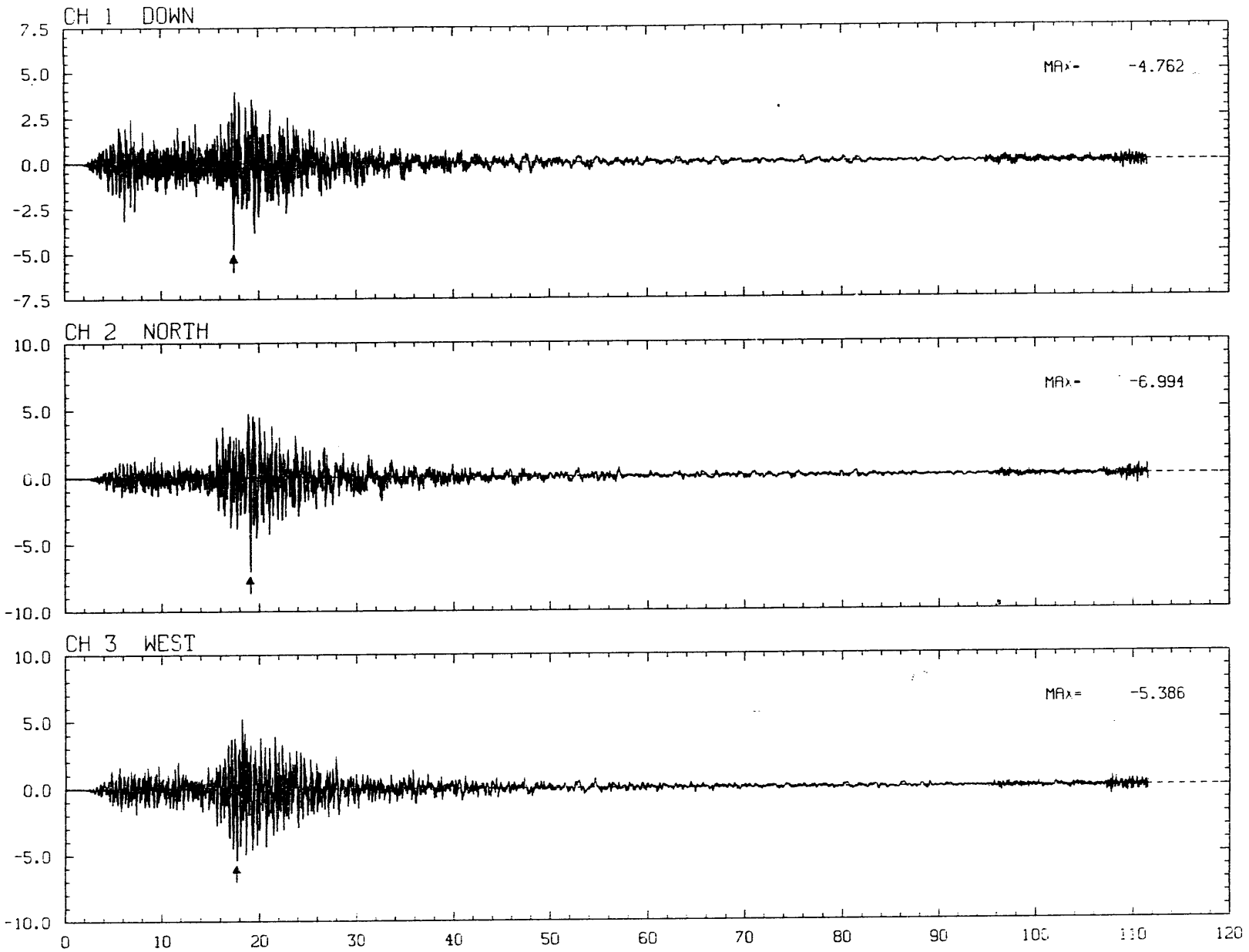
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 6

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

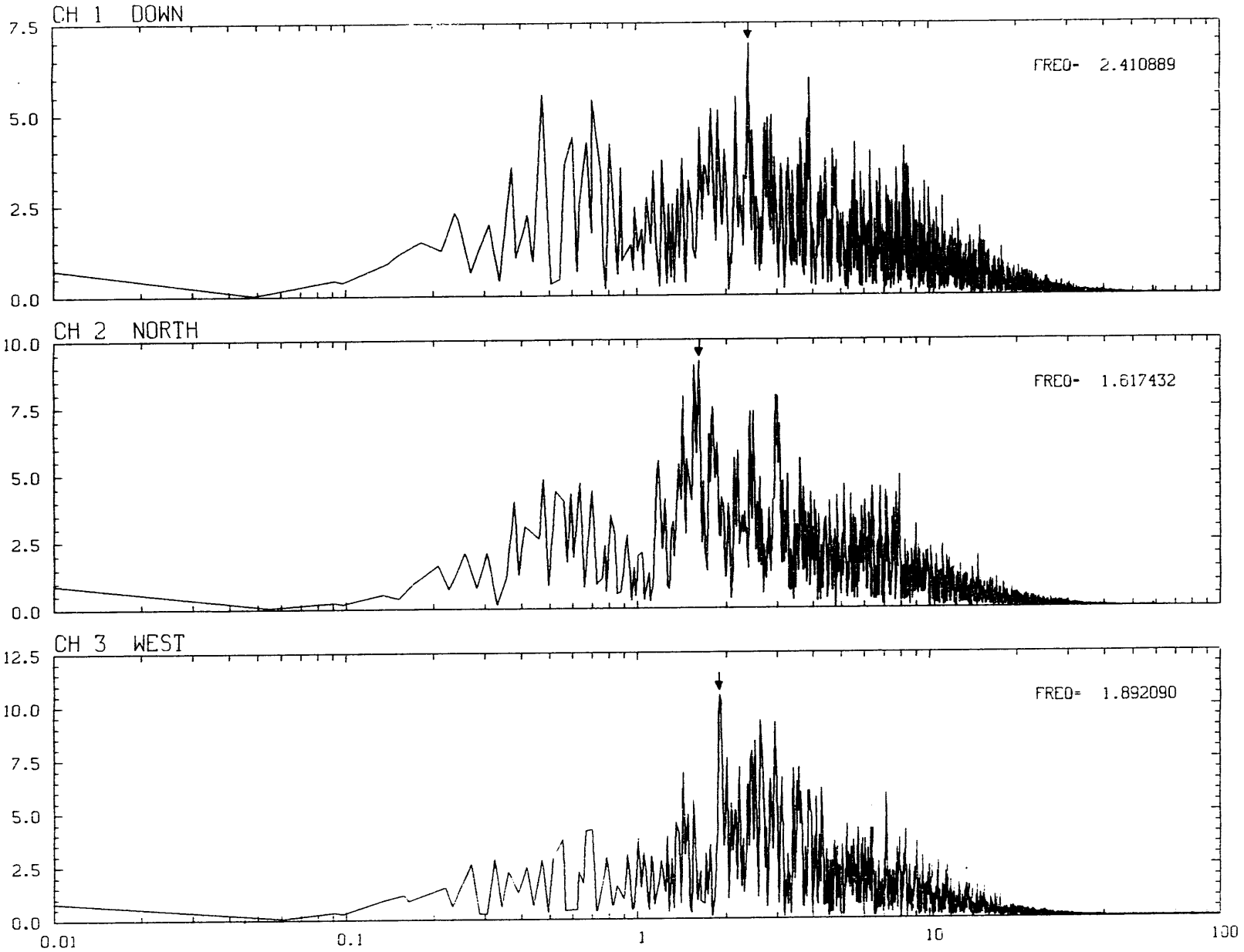


STATION NO. 7

LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 7
UNCORRECTED ACCELERATION TIME HISTORIES



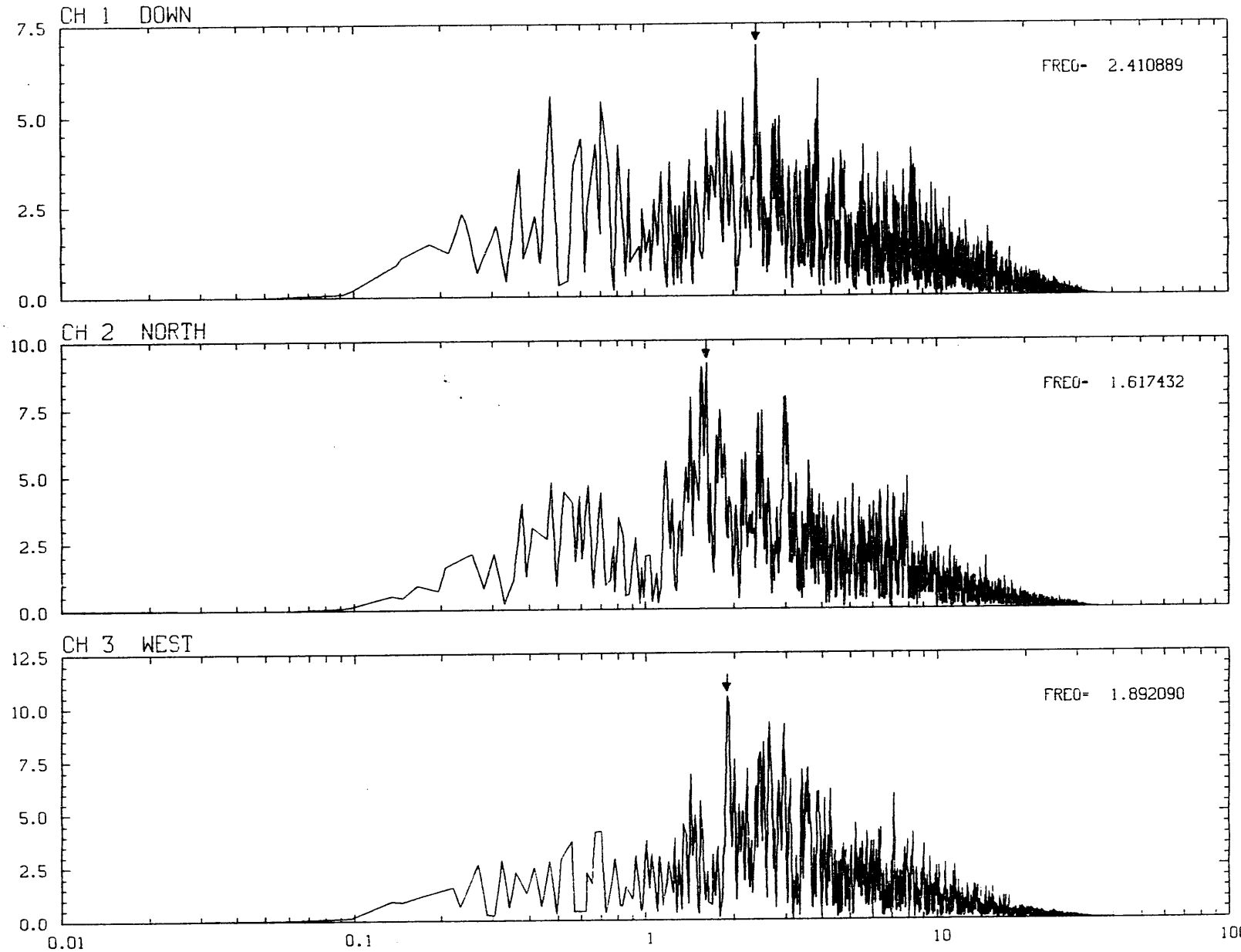
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 7
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



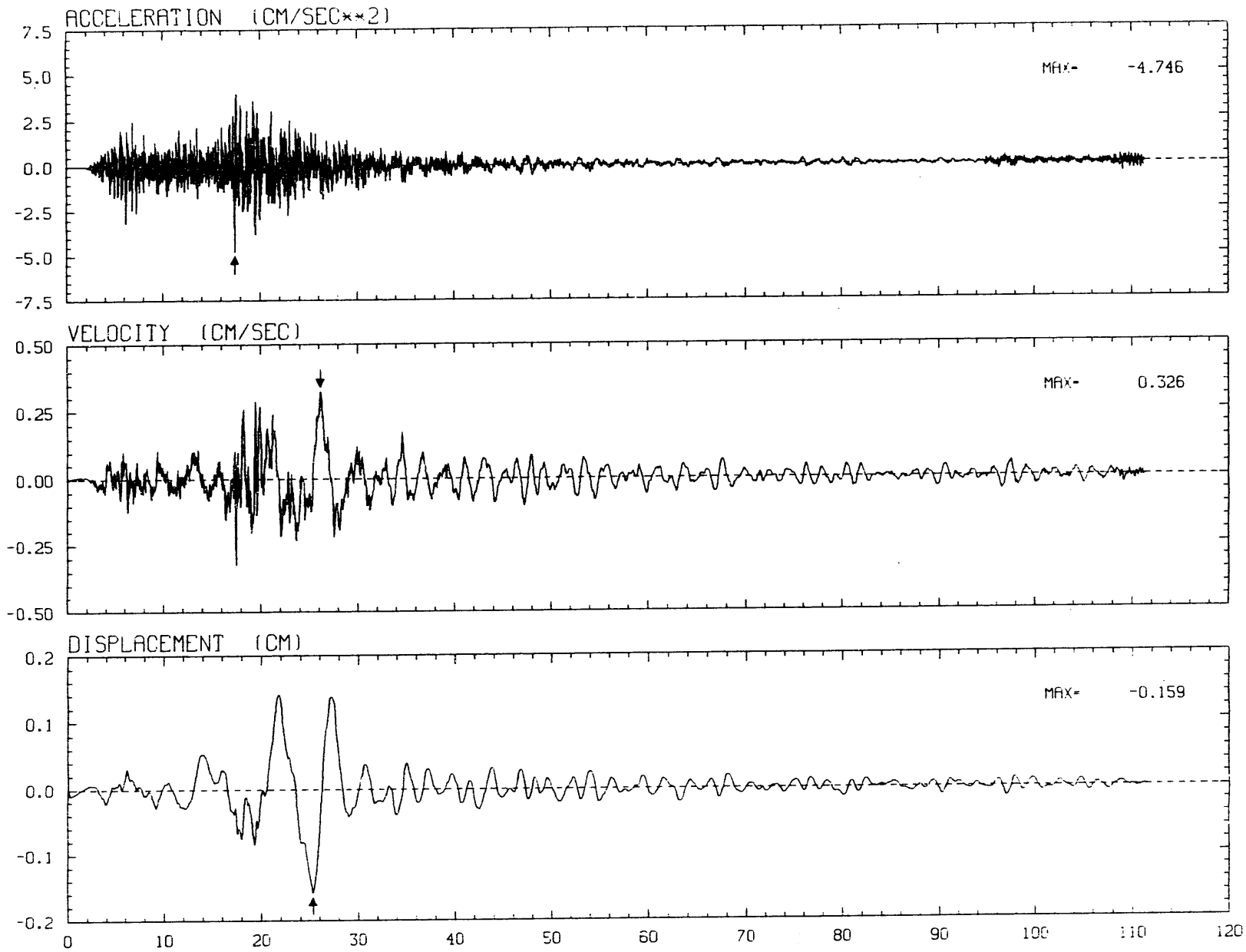
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

STATION NO. 7

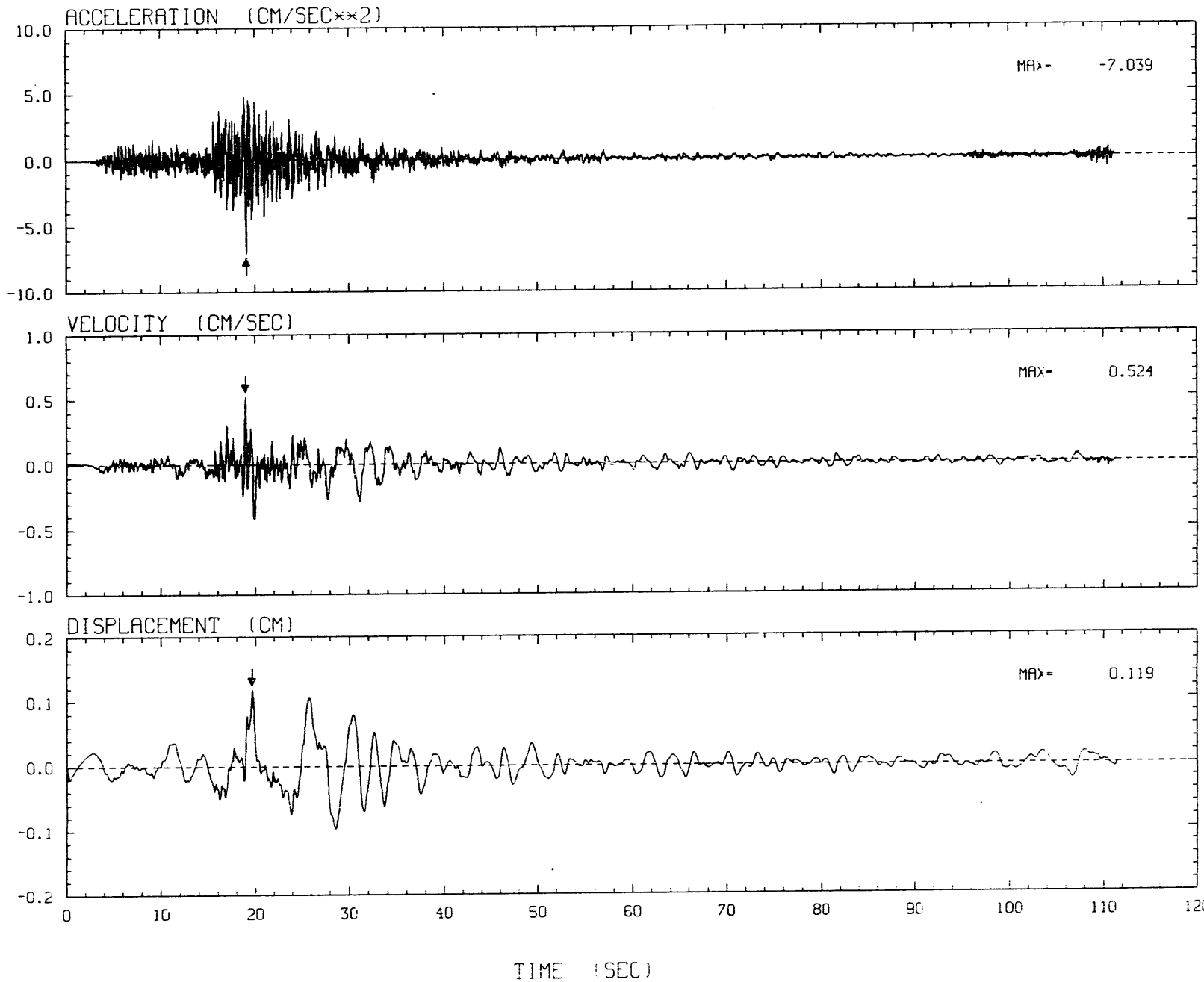
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



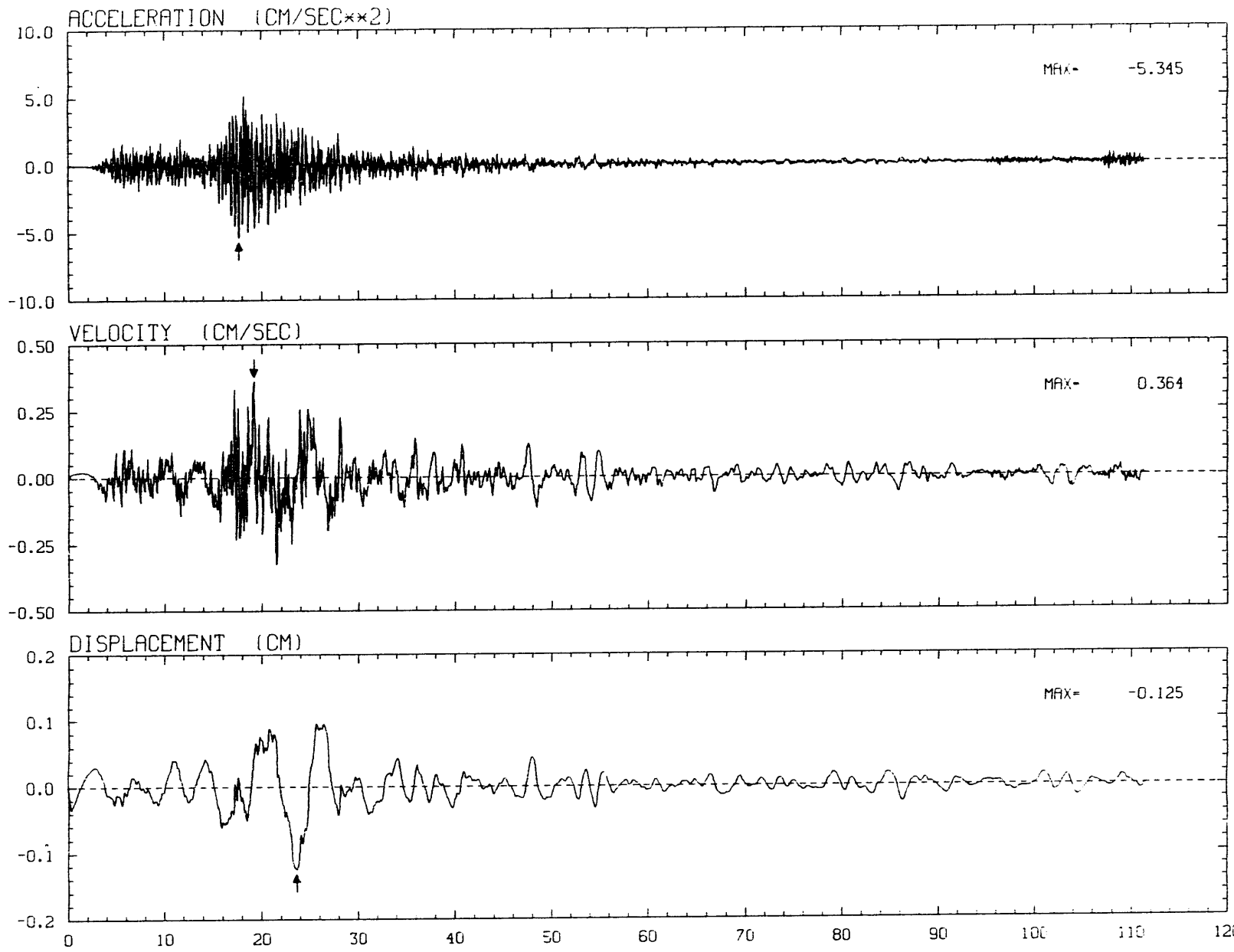
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 7 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 7 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

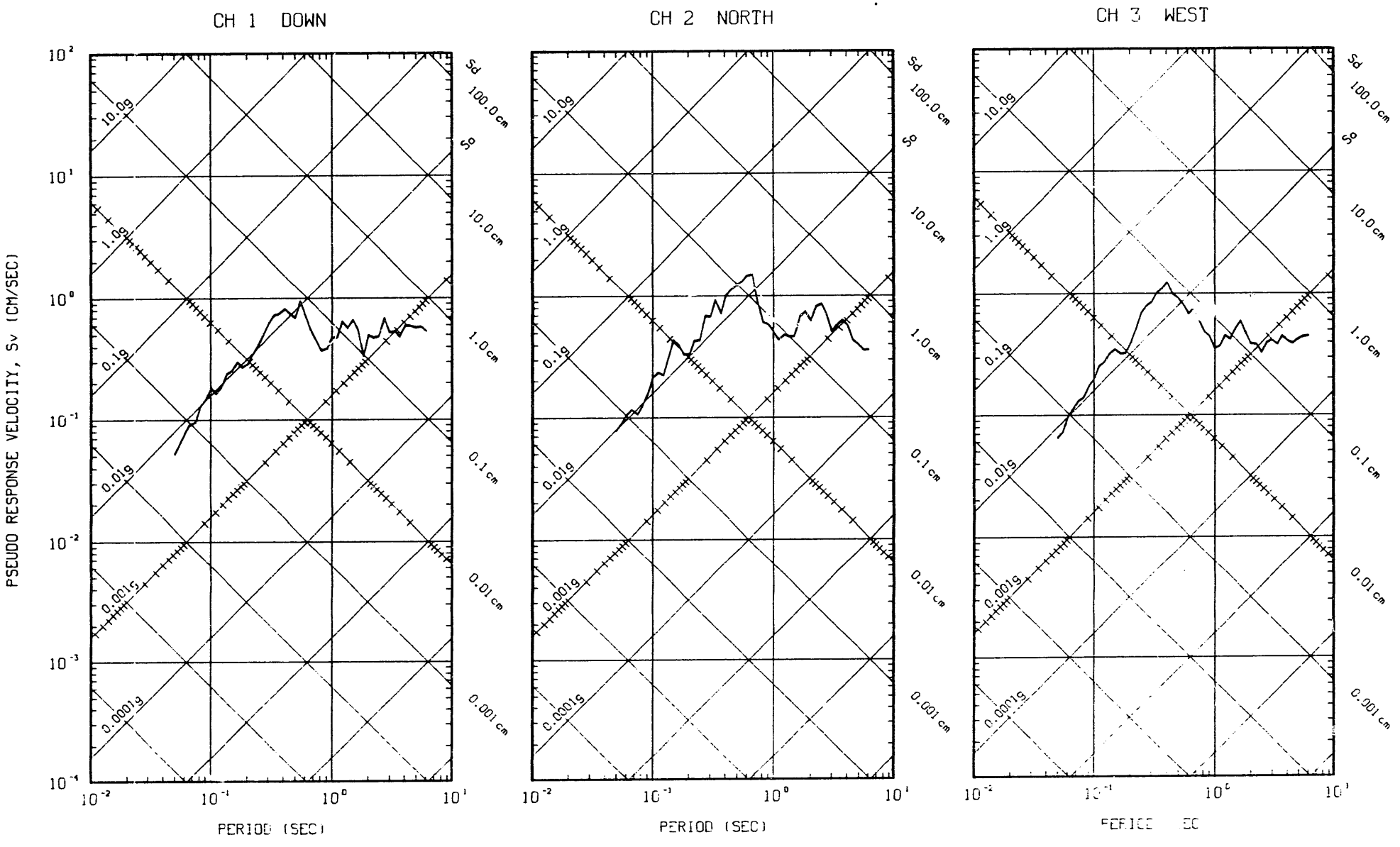


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 7 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



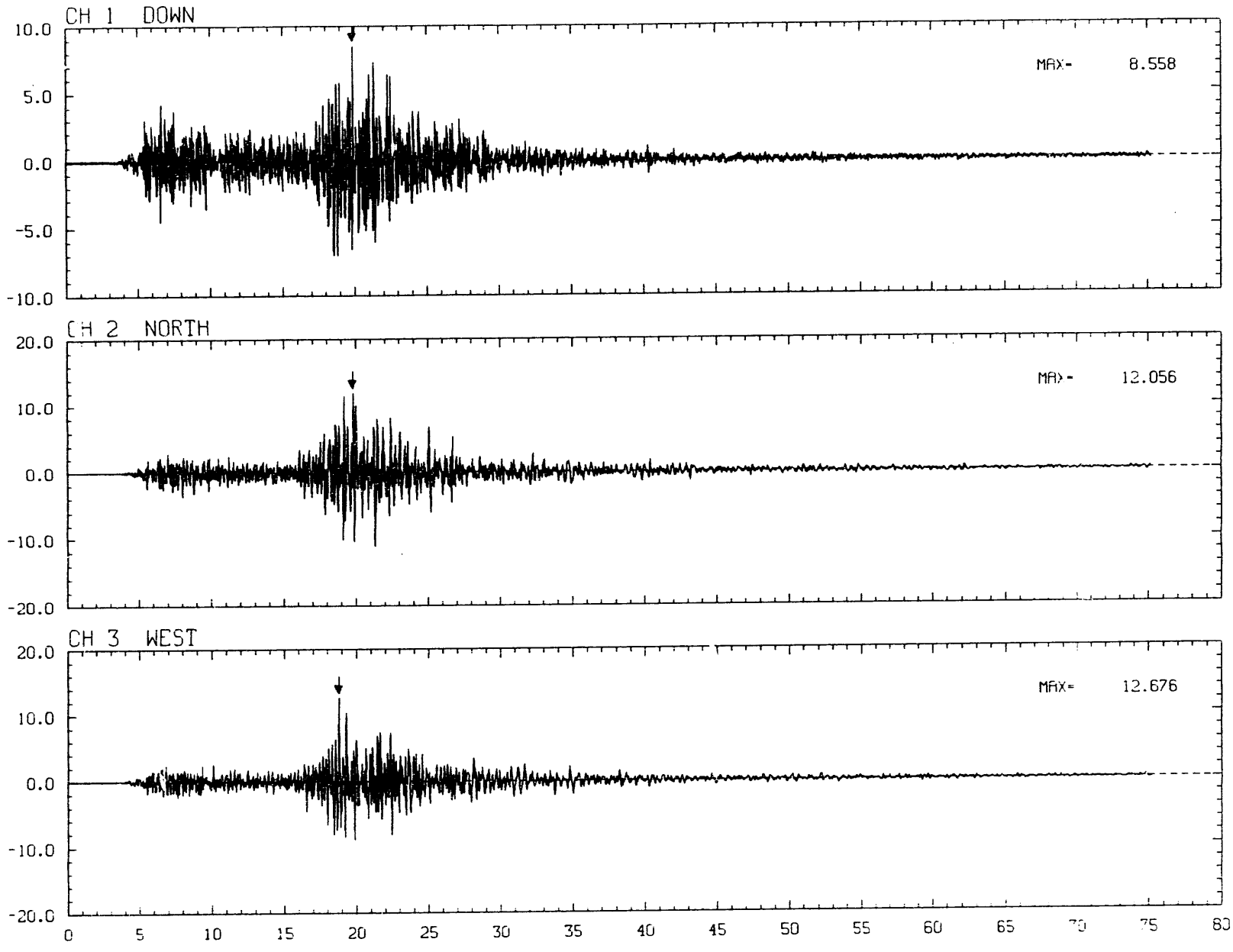
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 7

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

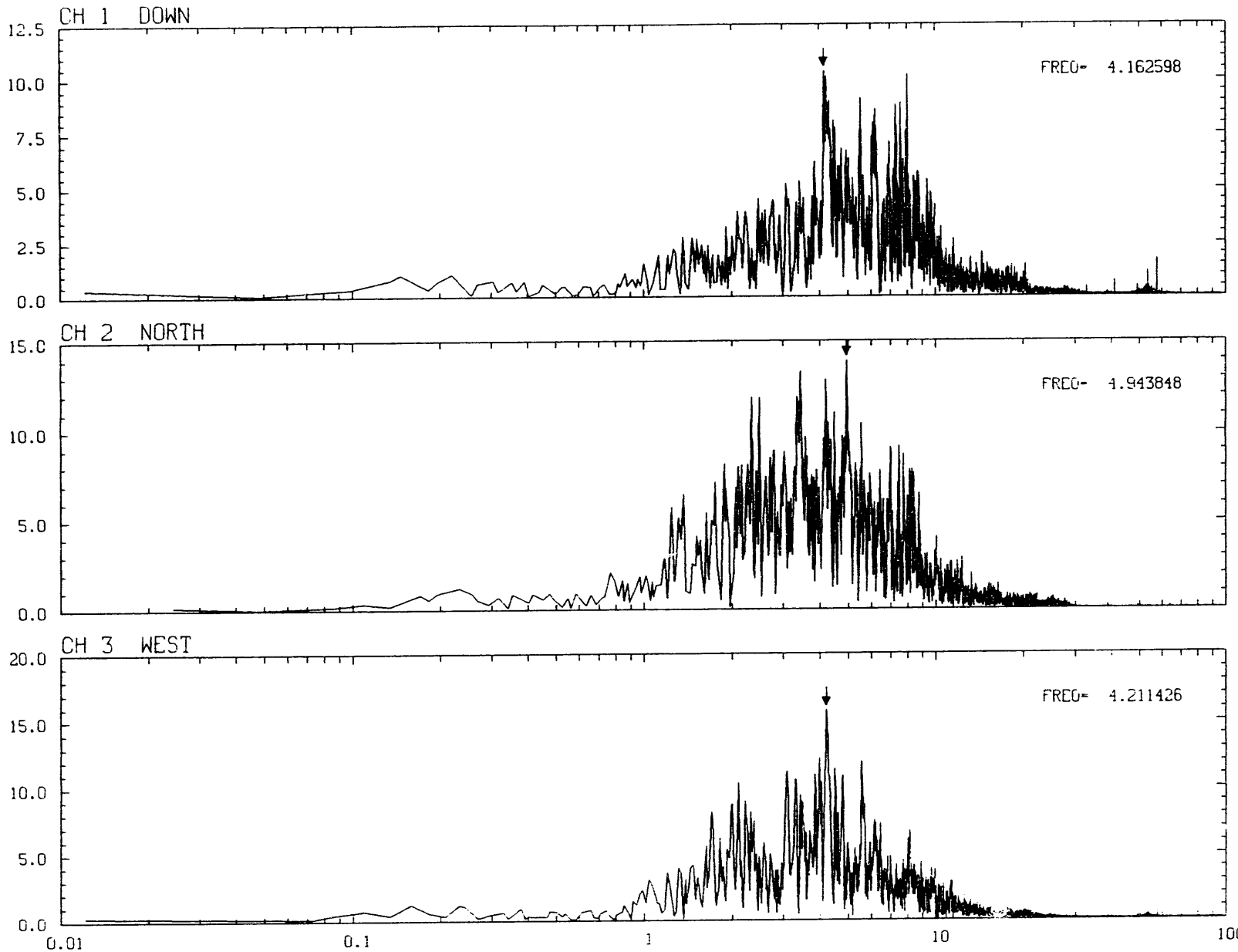


STATION NO. 8

LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 8
UNCORRECTED ACCELERATION TIME HISTORIES



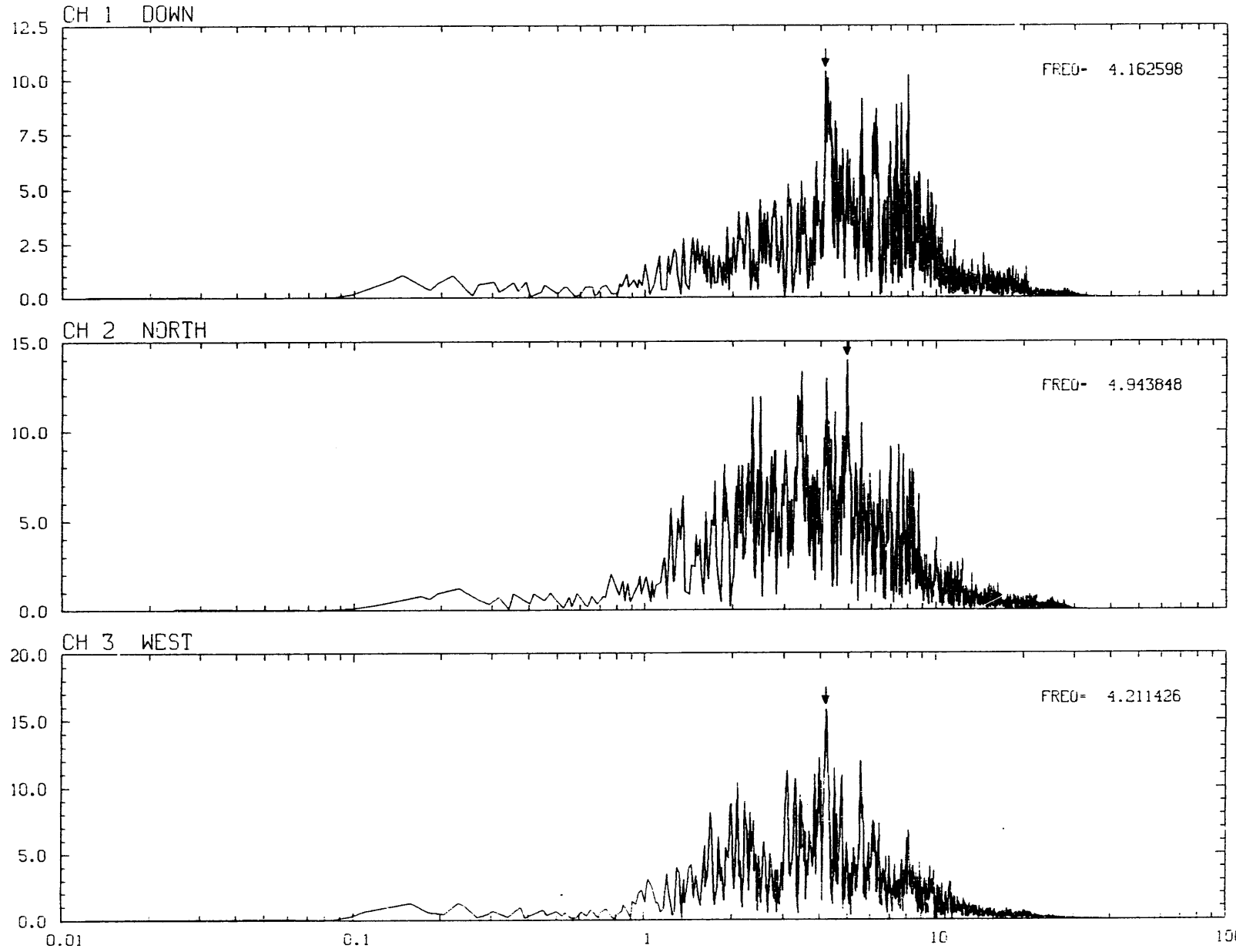
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 8
UNCORRECTED FOURIER AMPLITUDE SPECTR OF ACCELERATION



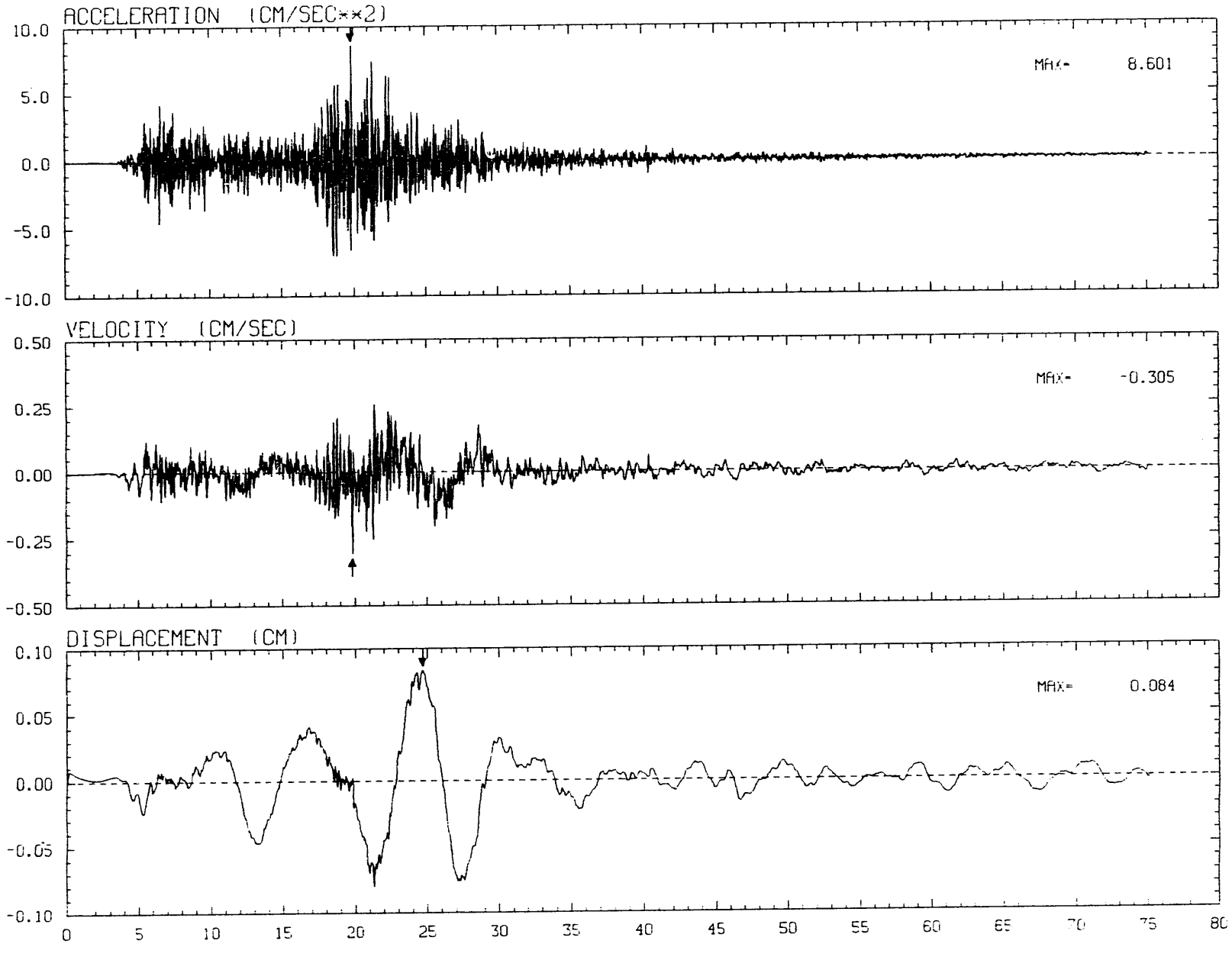
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

STATION NO. 8

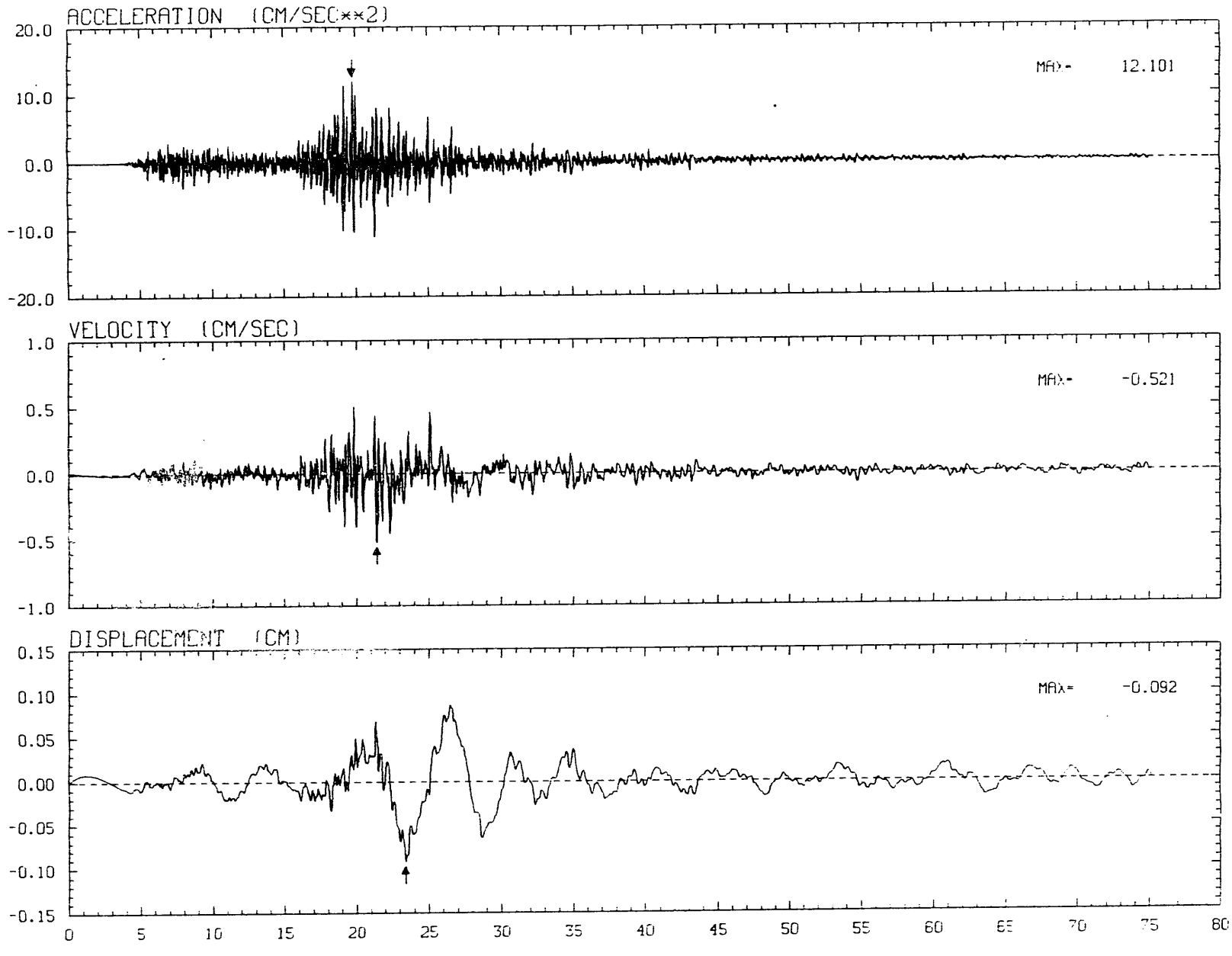
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



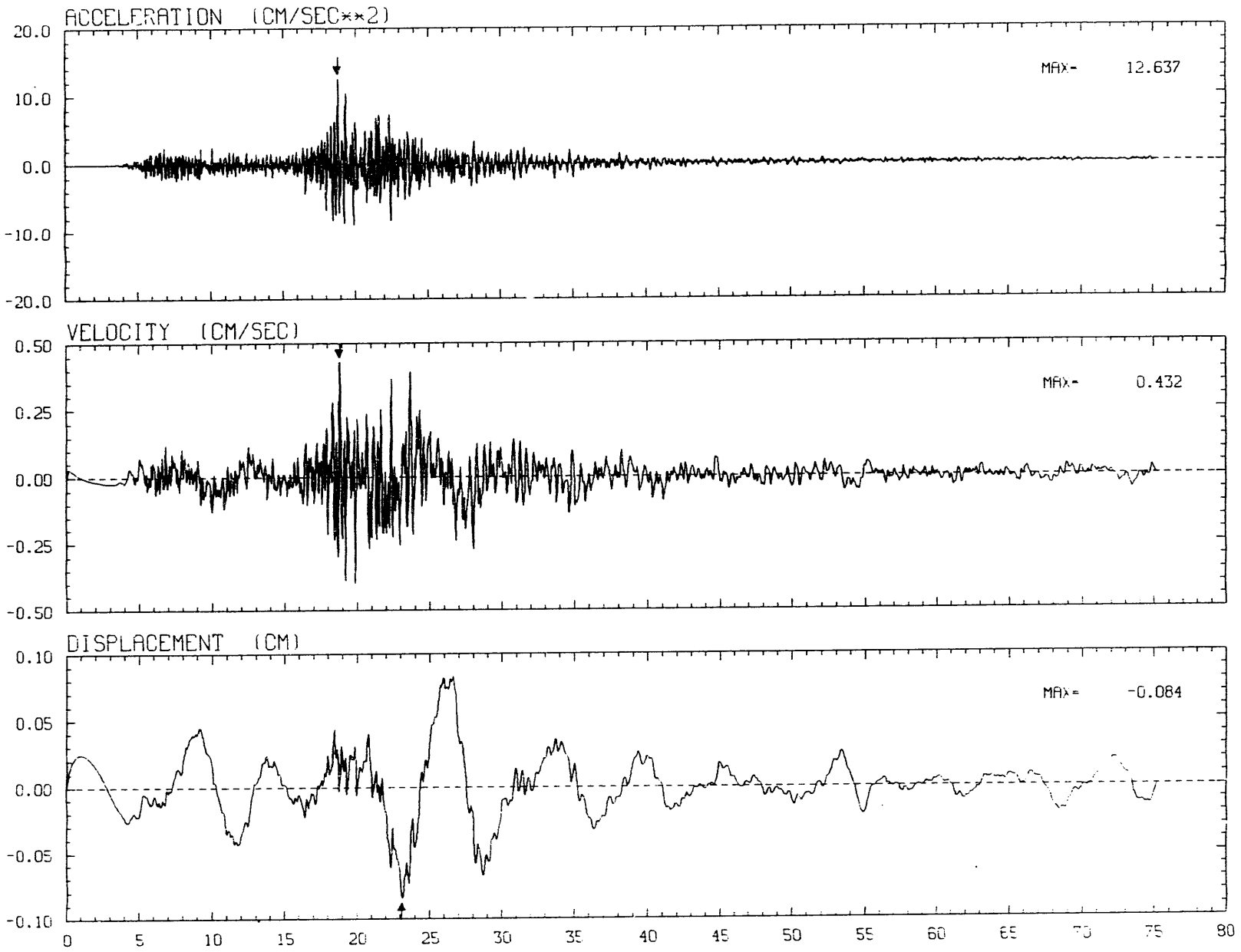
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 8 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 8 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

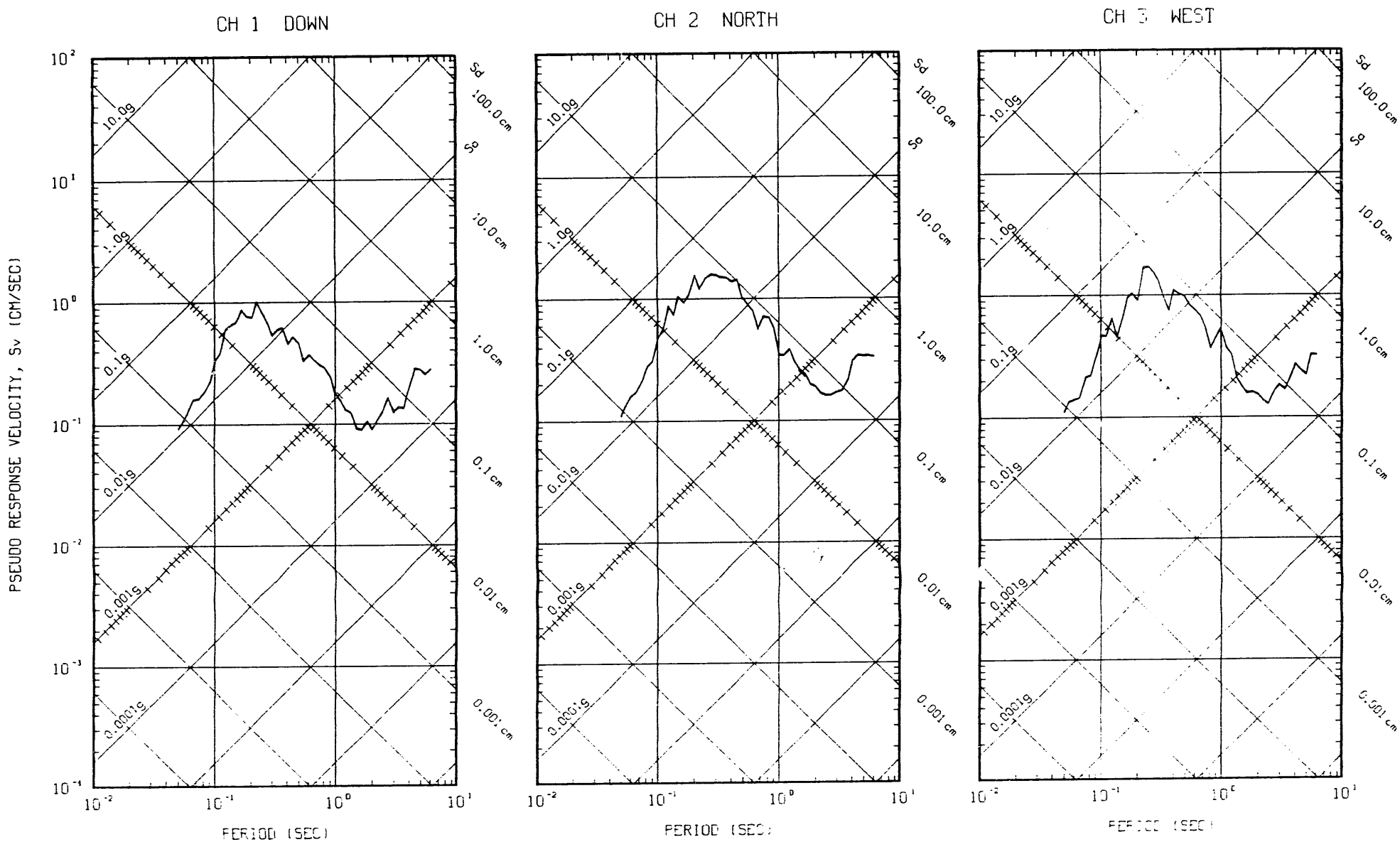


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 8 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



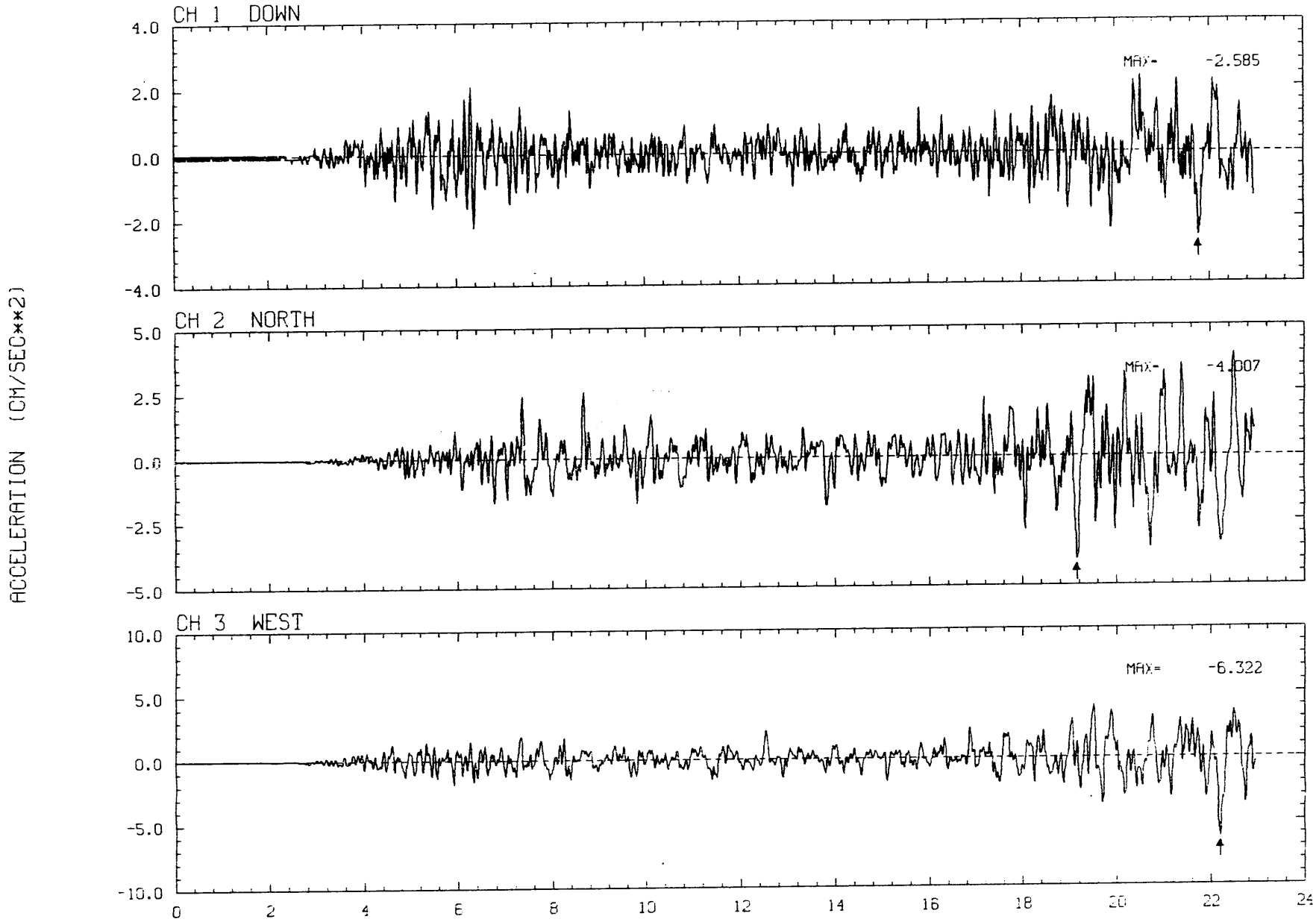
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 8

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

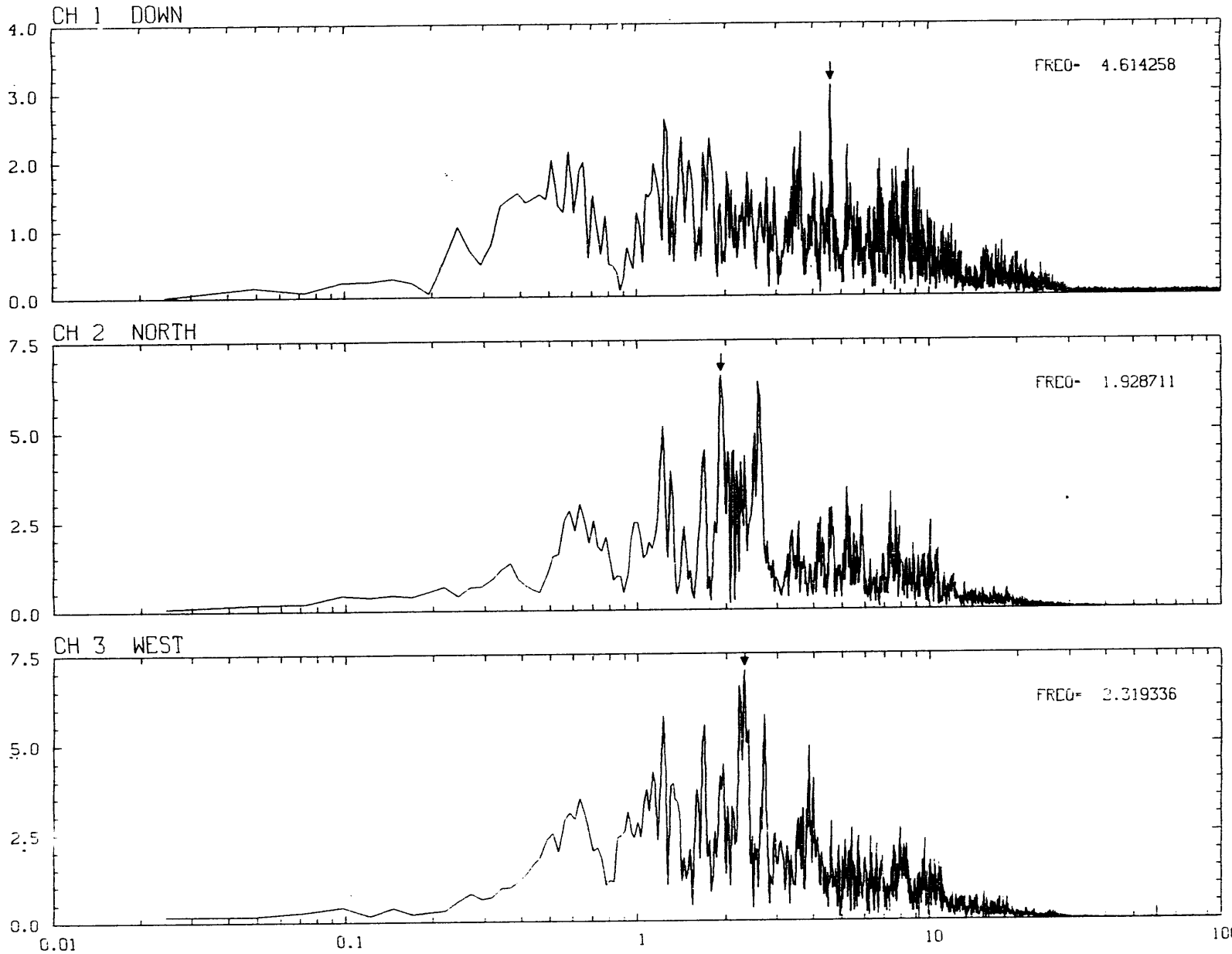


STATION NO. 9

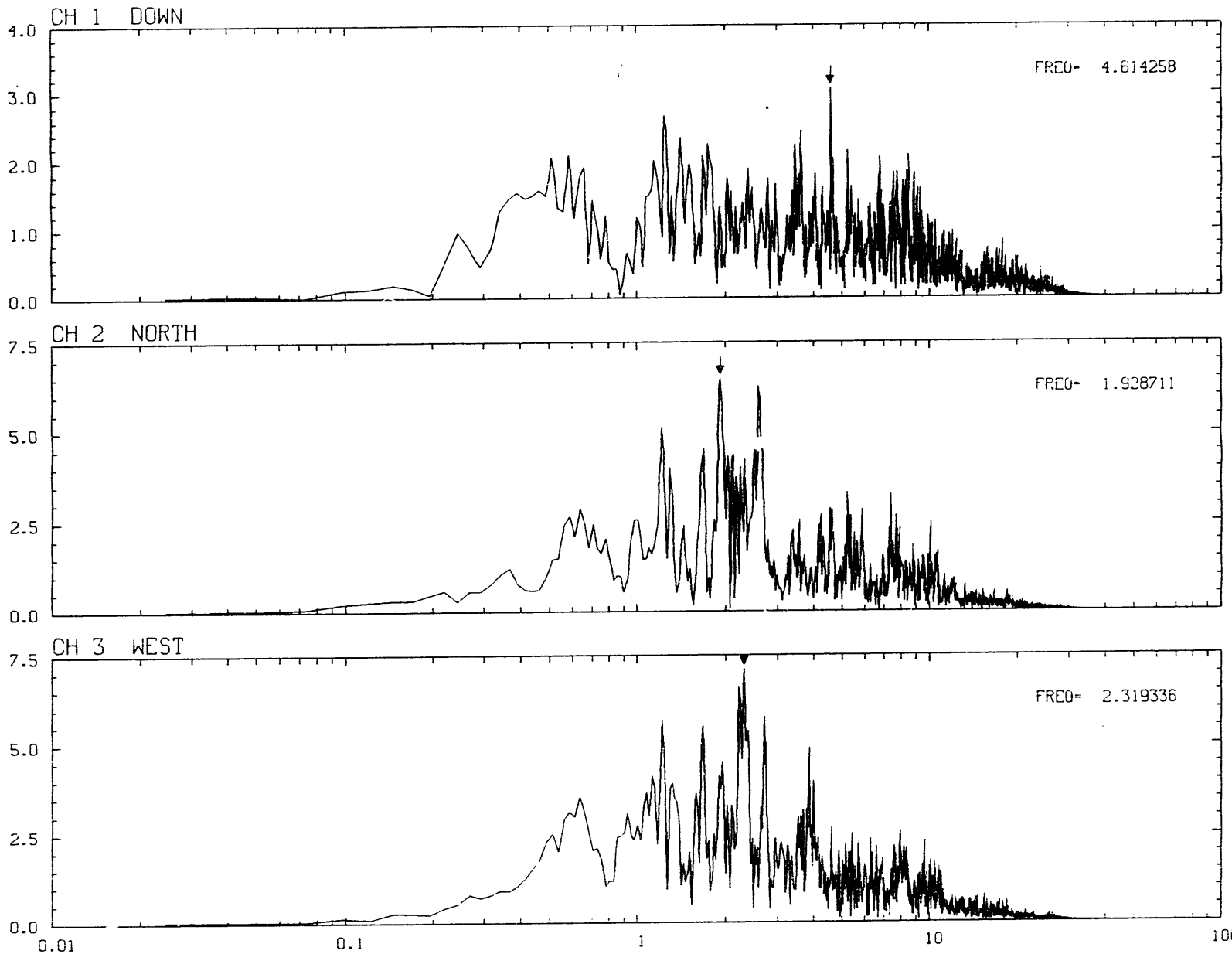
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 9
UNCORRECTED ACCELERATION TIME HISTORIES



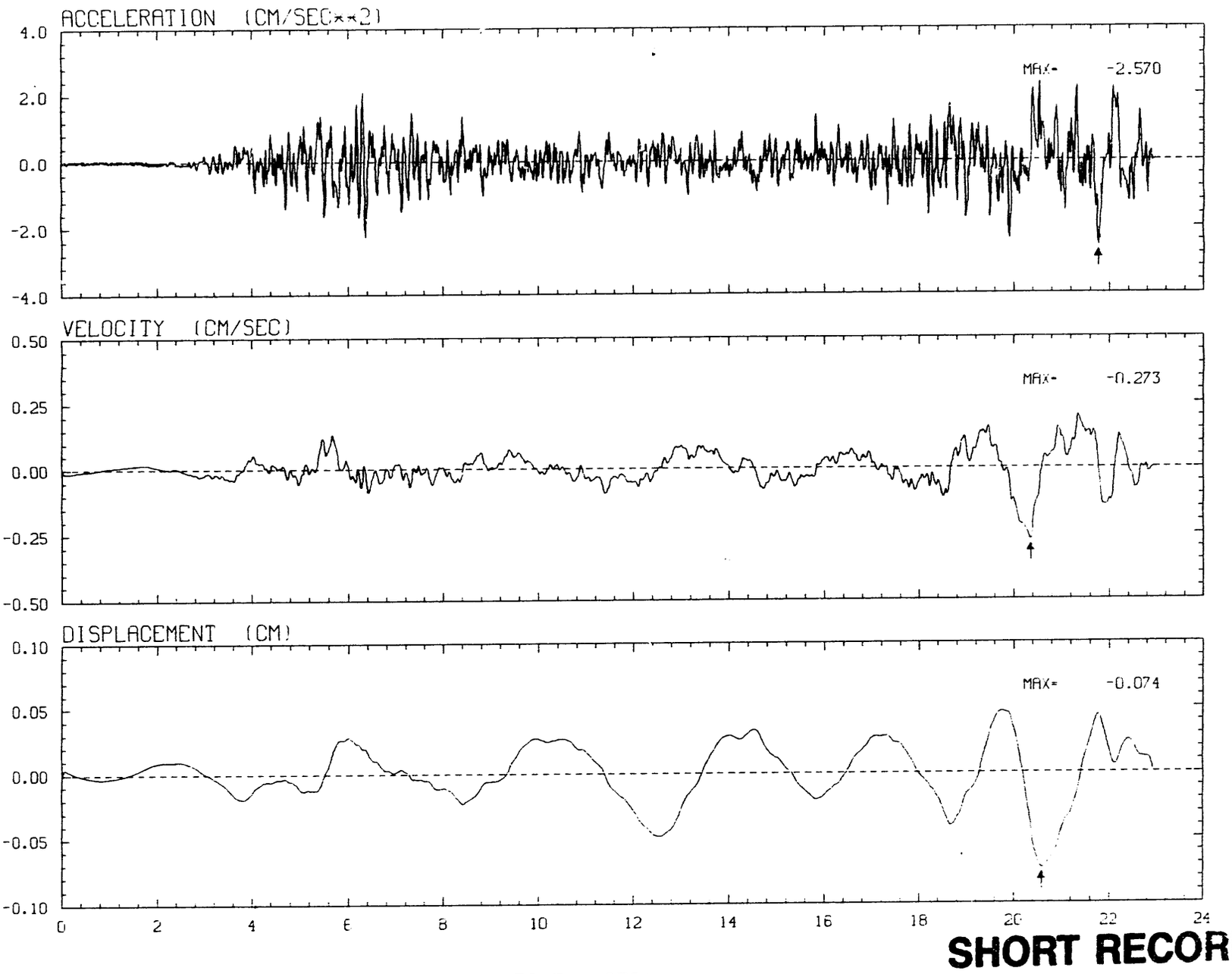
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 9
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 9
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 9 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

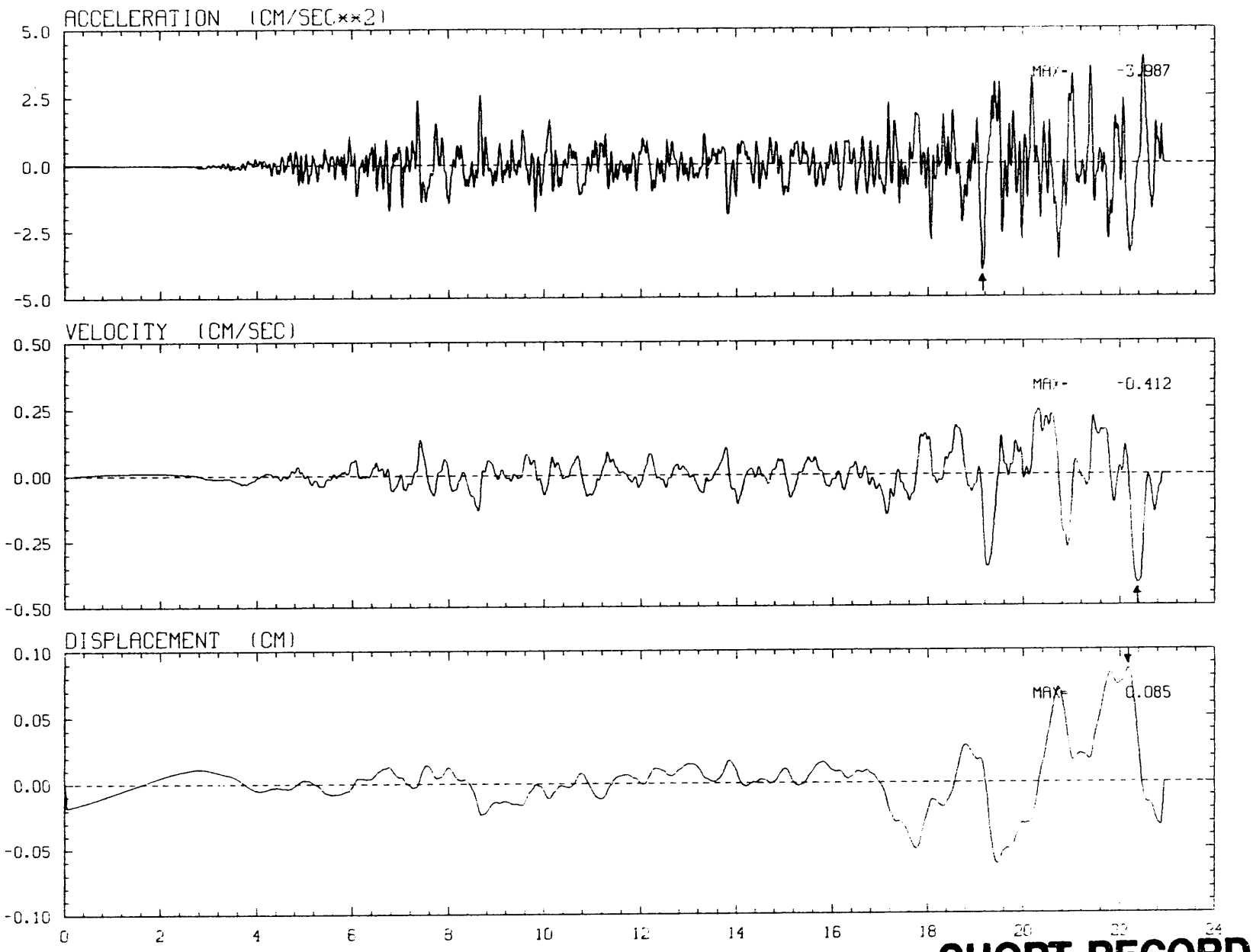


SHORT RECORD

LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

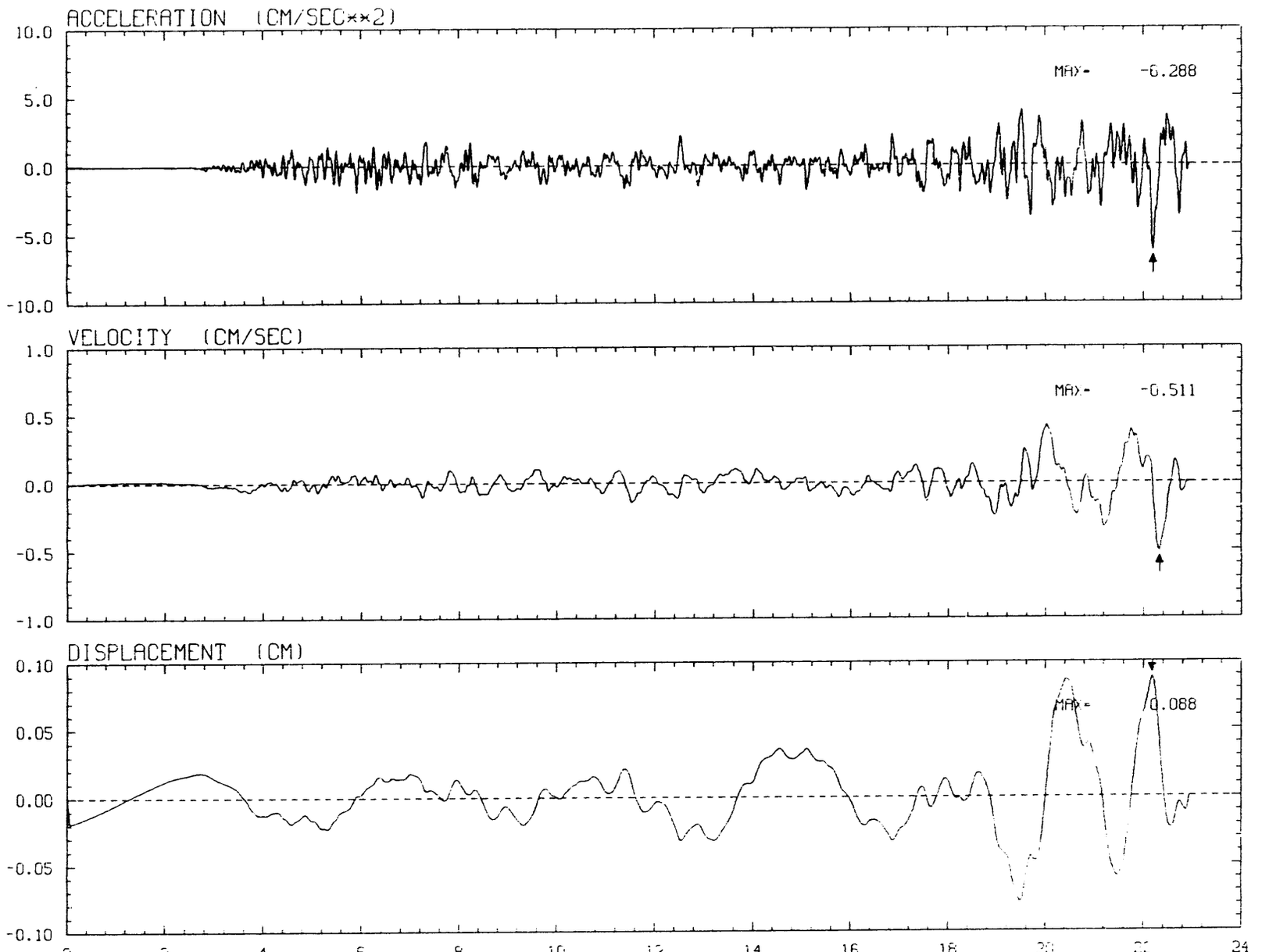
STATION NO. 9 CH 2 NORTH

CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



SHORT RECORD

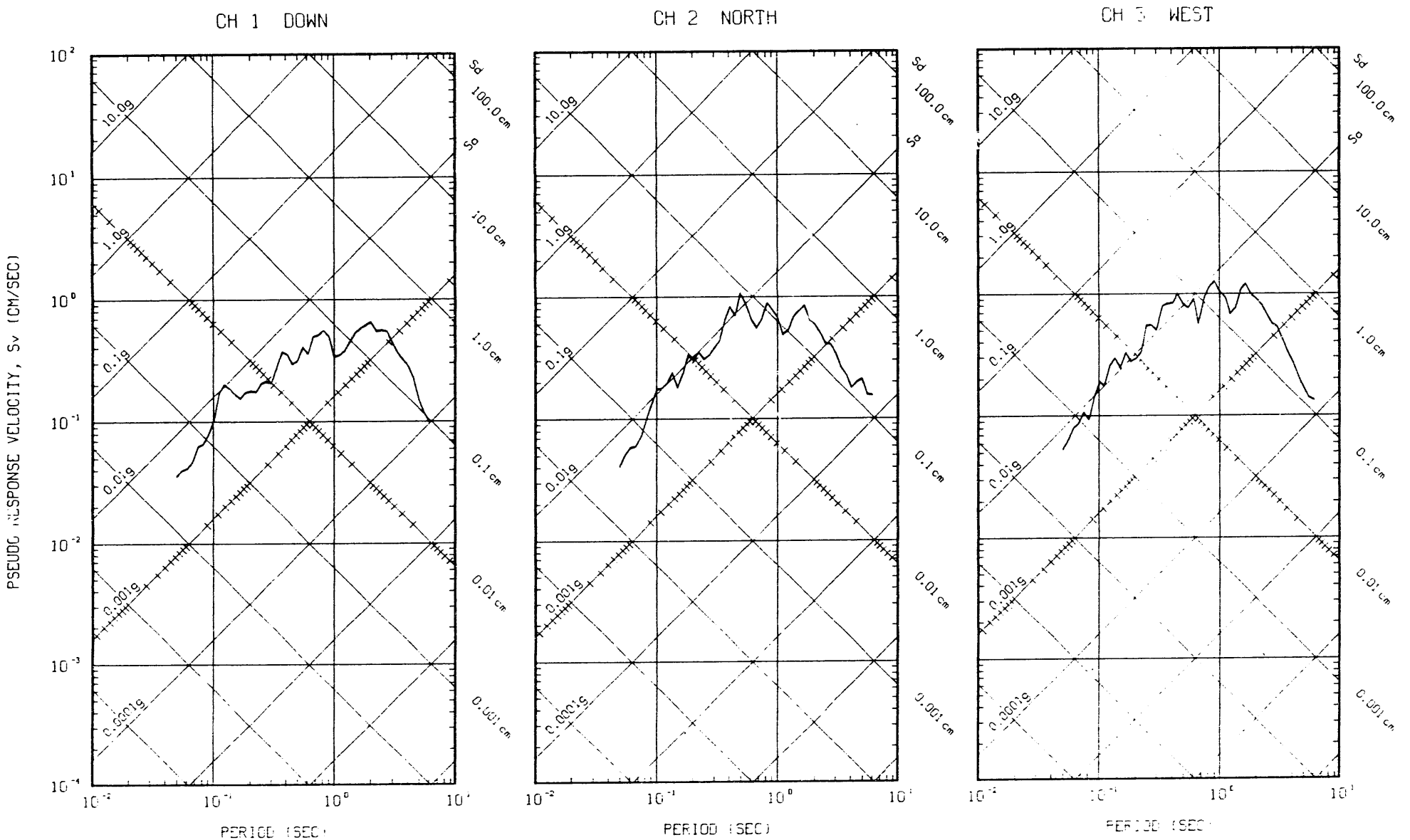
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 9 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



SHORT RECORD

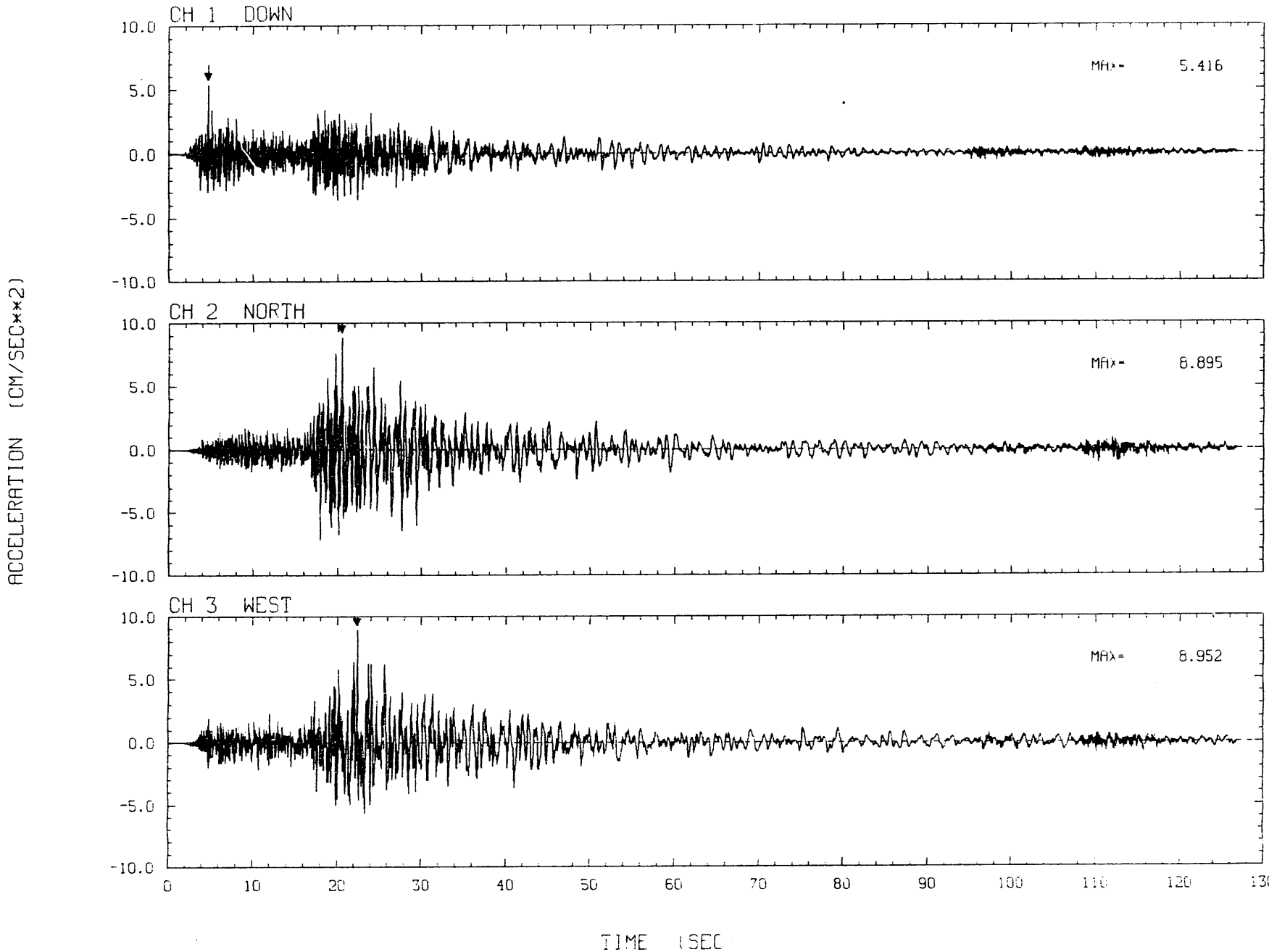
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 9

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

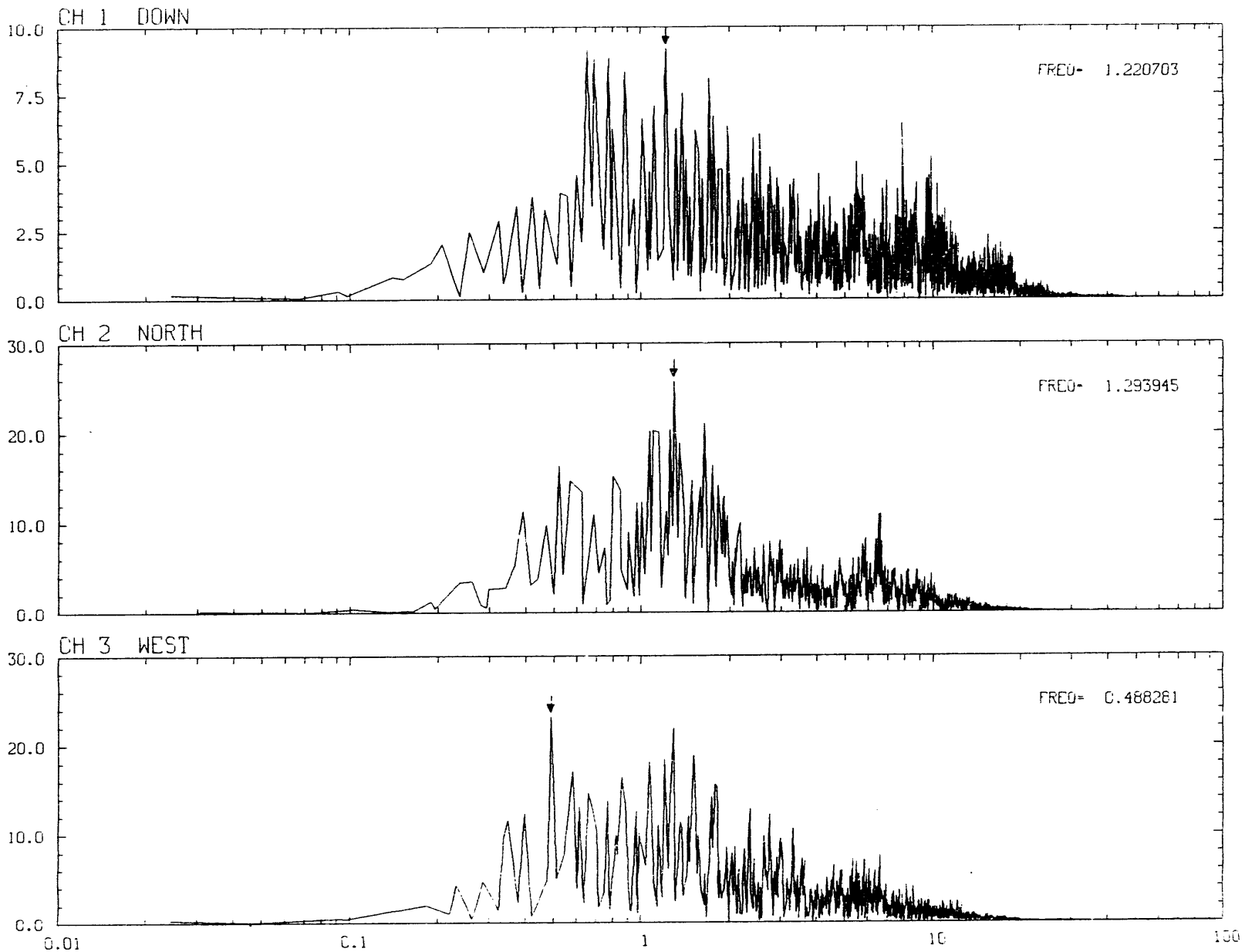


STATION NO. 10

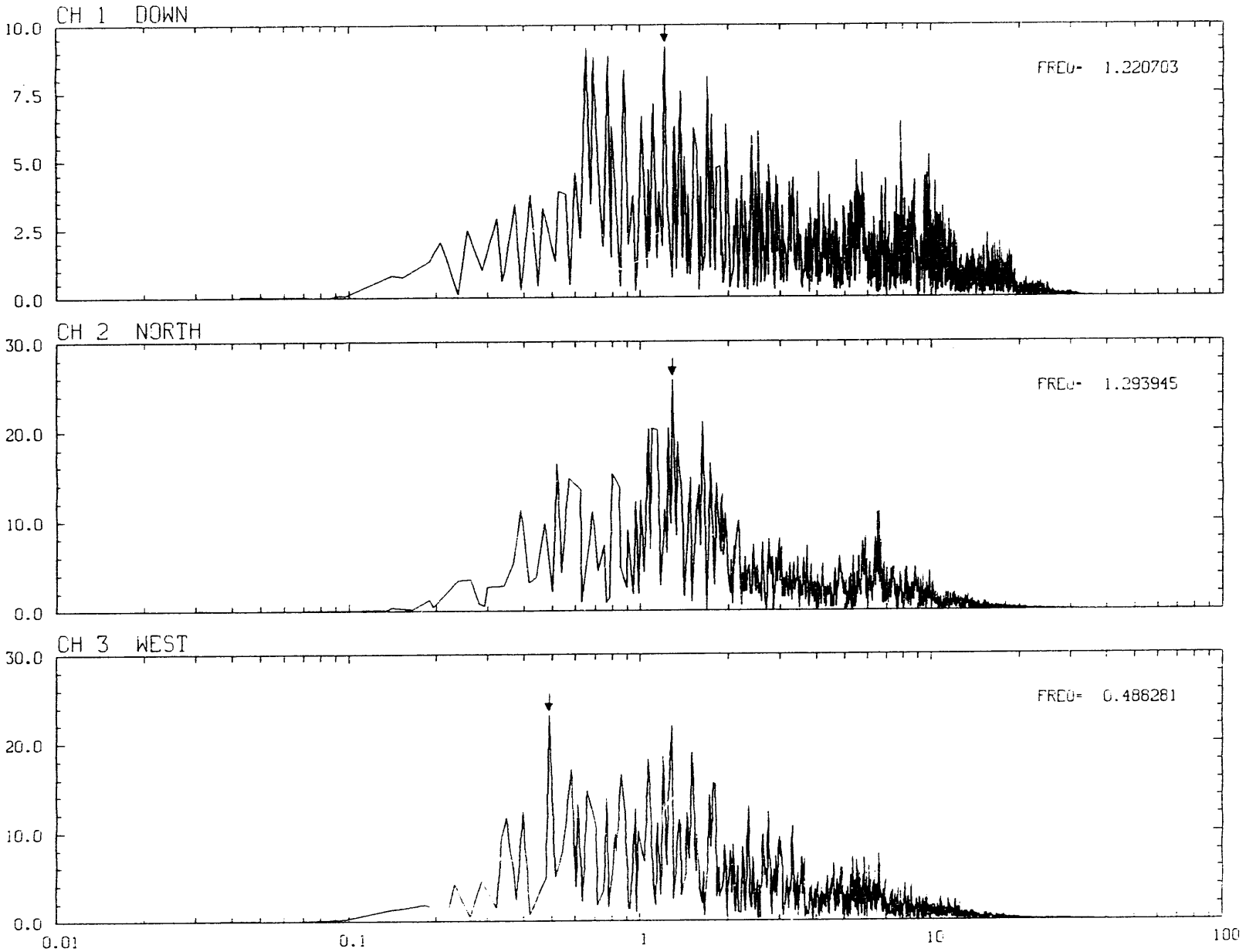
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 10
UNCORRECTED ACCELERATION TIME HISTORIES



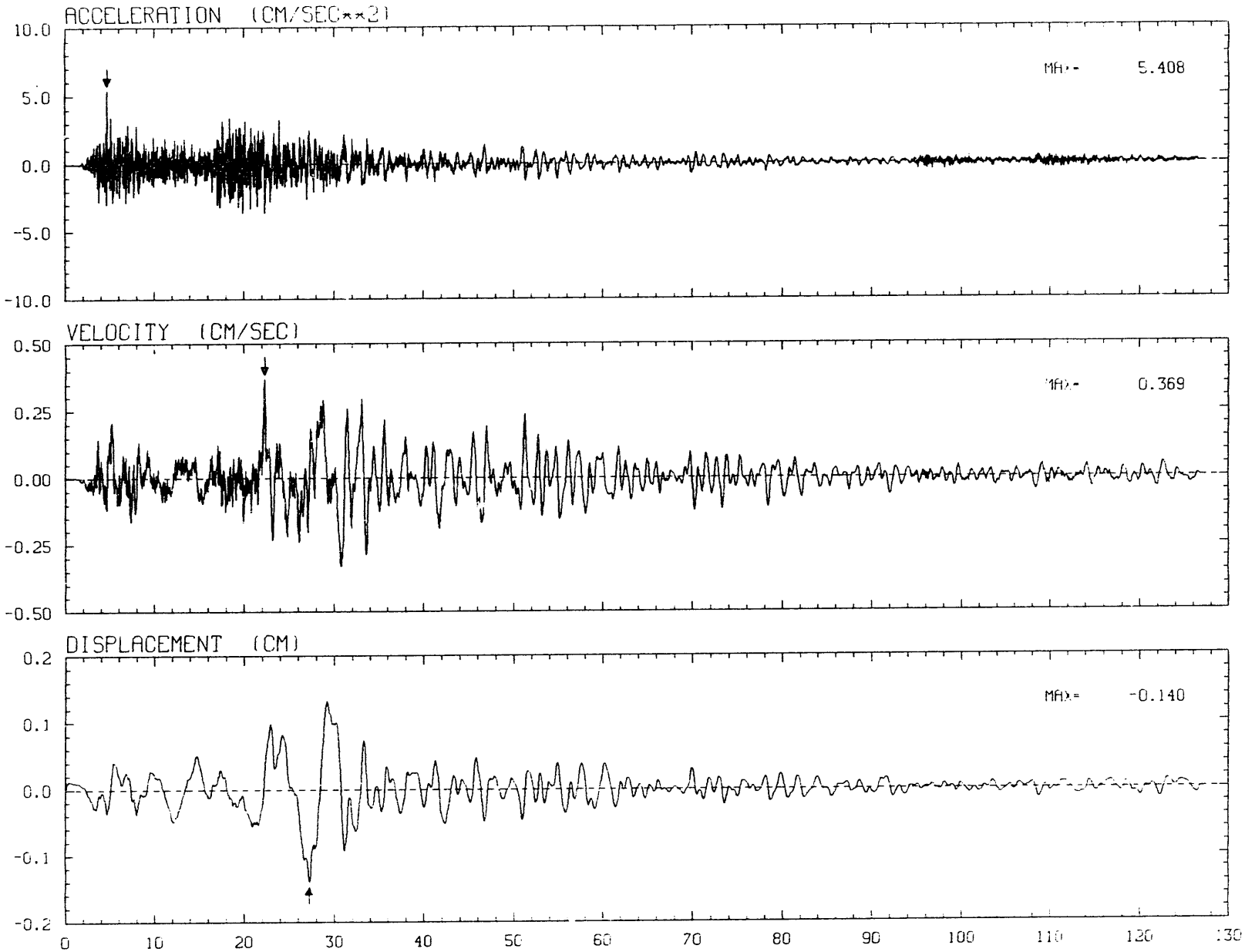
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 10
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



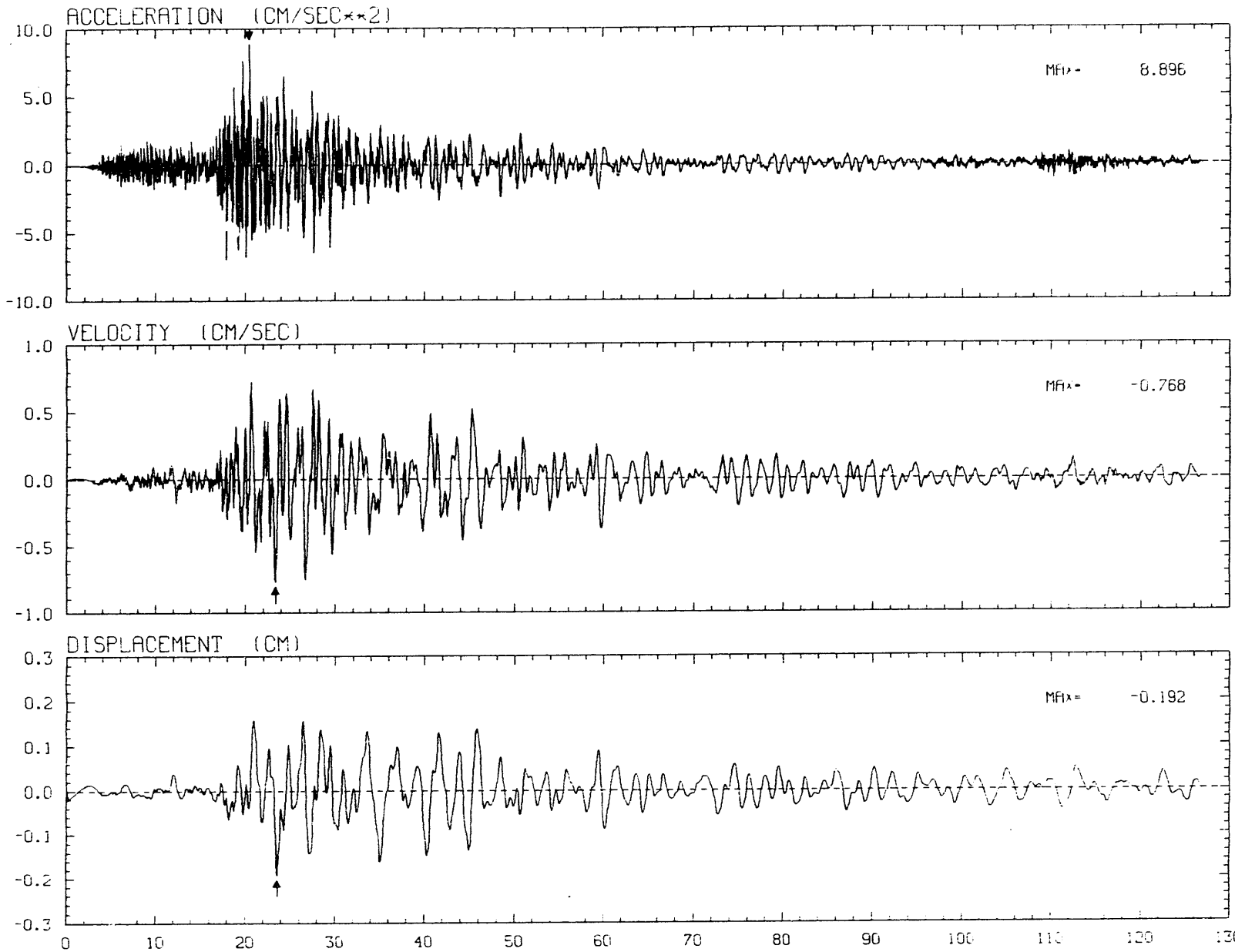
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 10
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



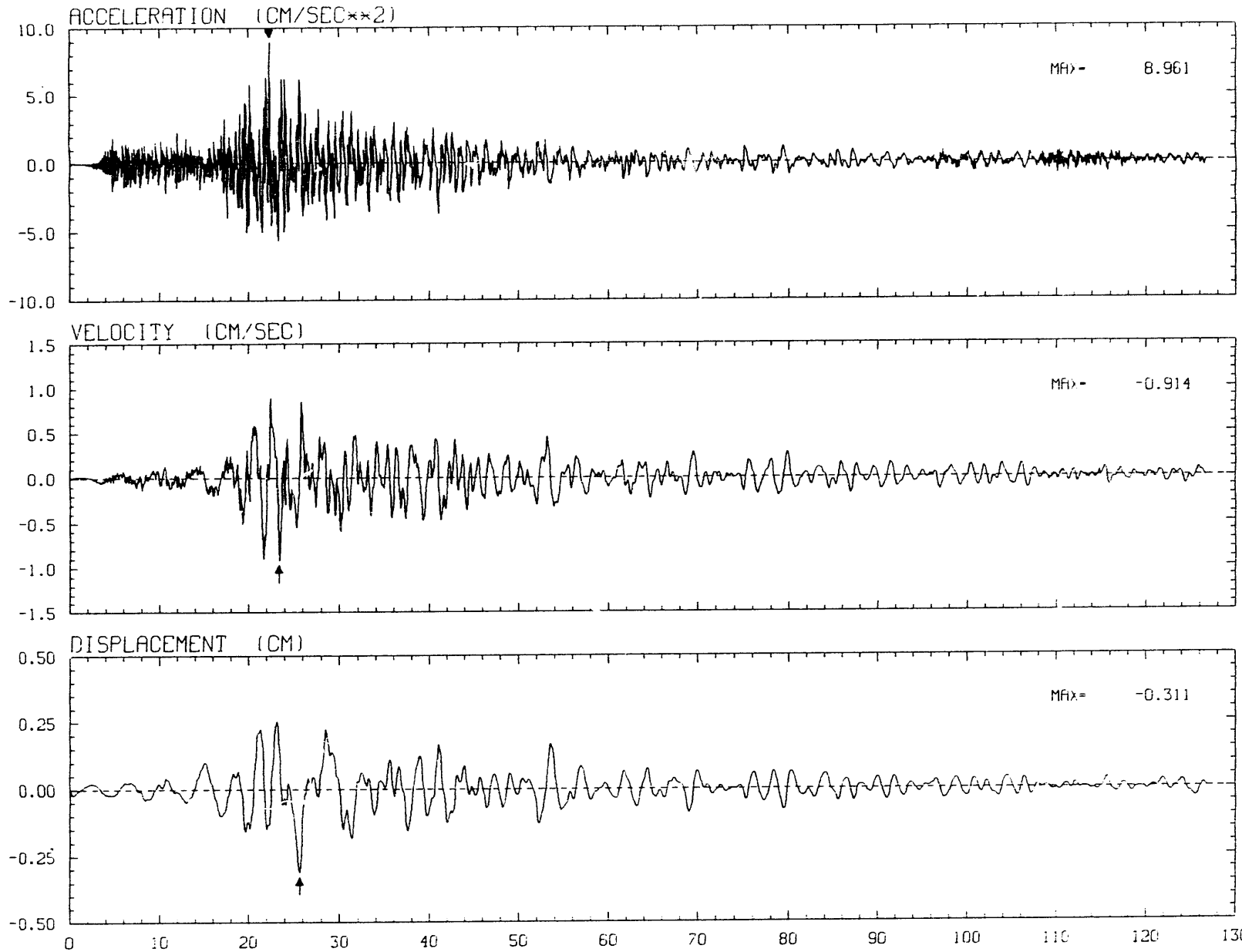
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 10 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 10 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

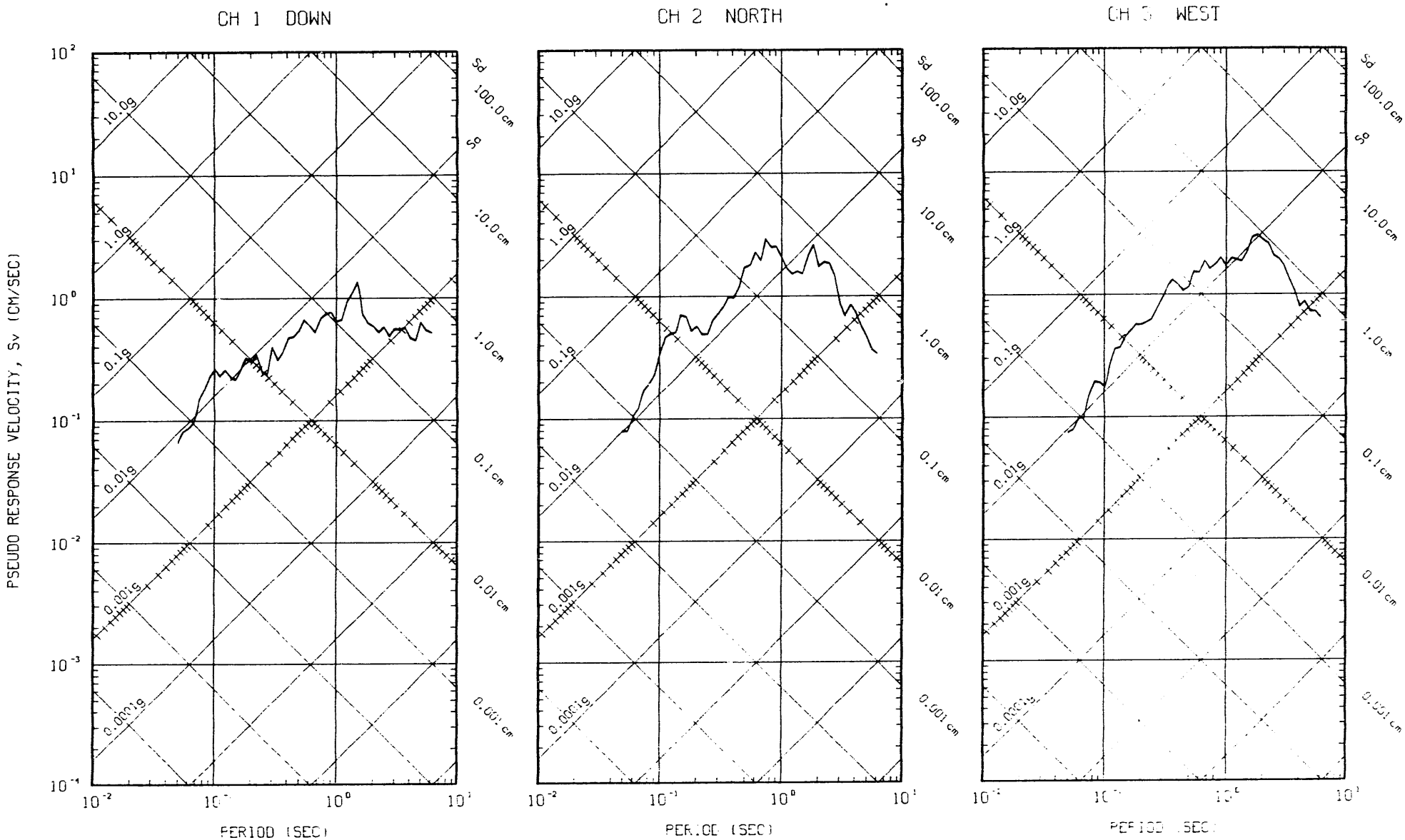


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 10 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



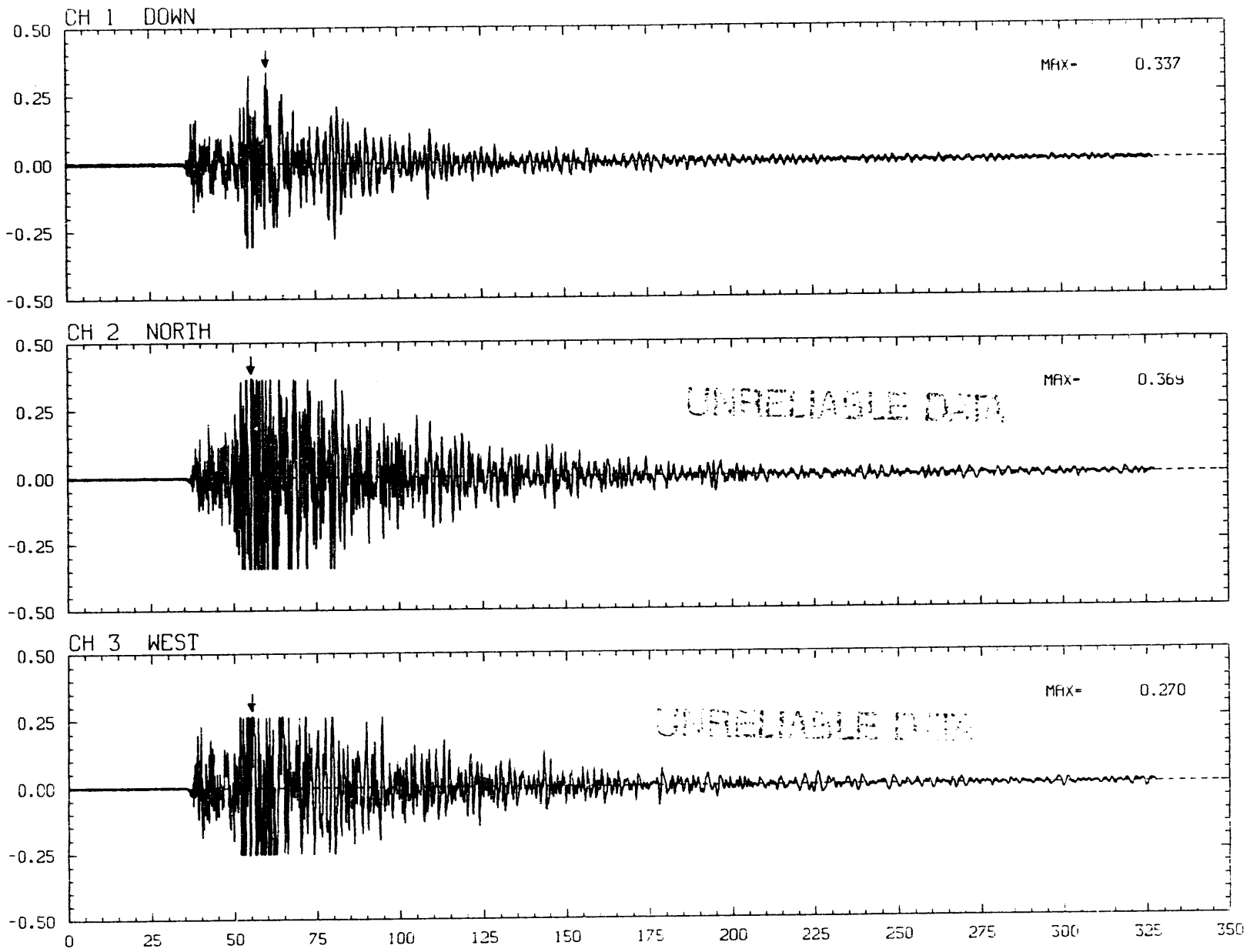
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 10

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

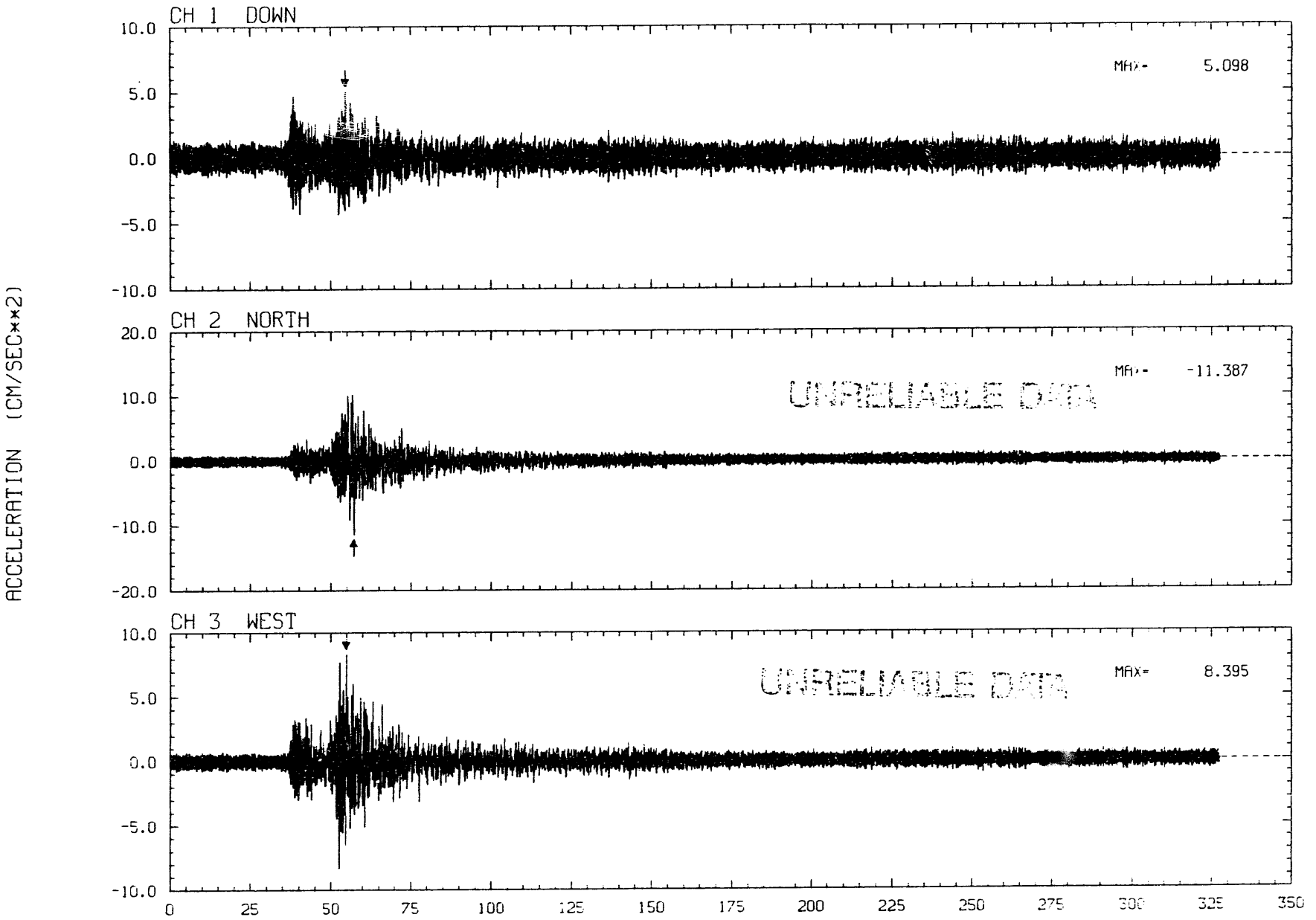


STATION NO. 11

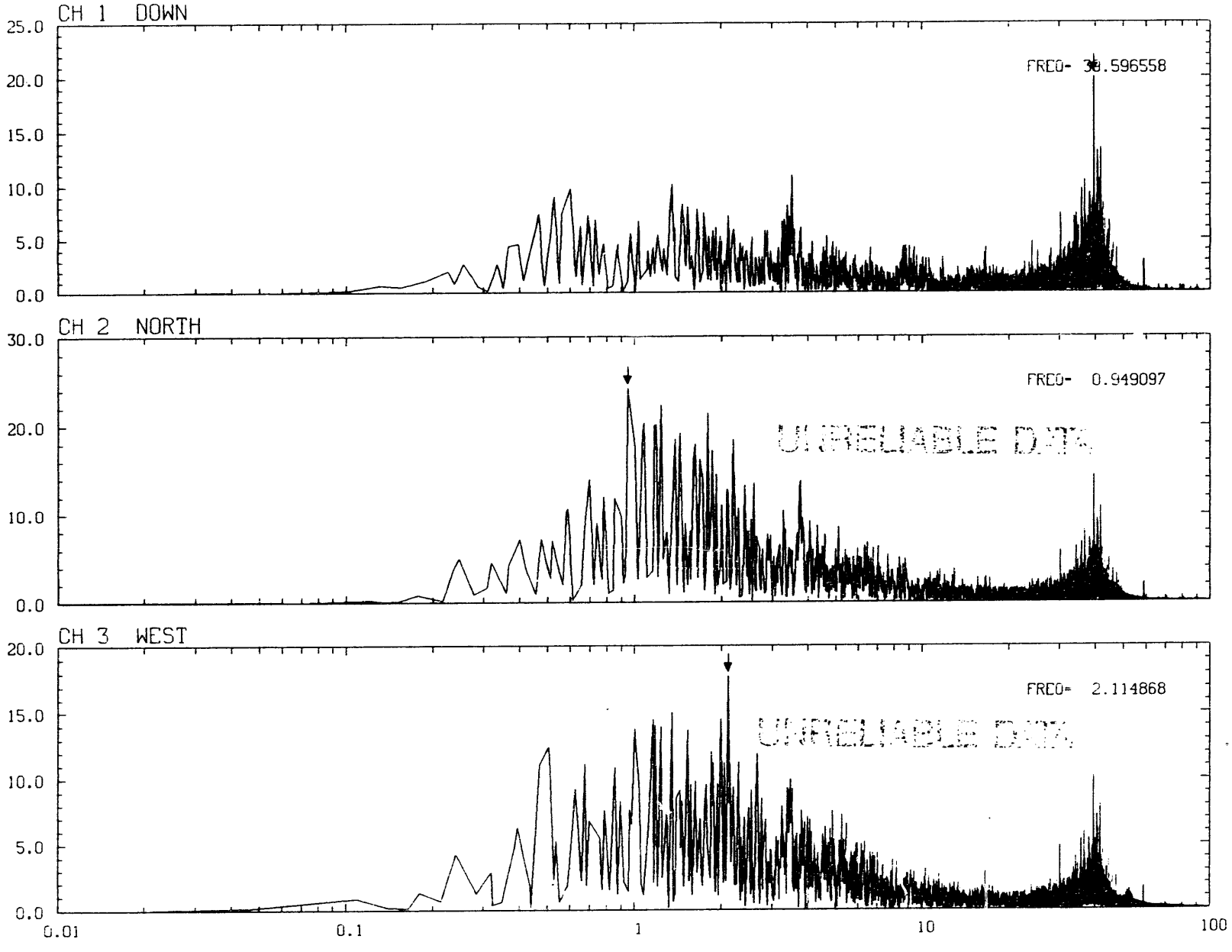
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 11
UNCORRECTED VELOCITY TIME HISTORIES



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 11
UNCORRECTED ACCELERATION TIME HISTORIES



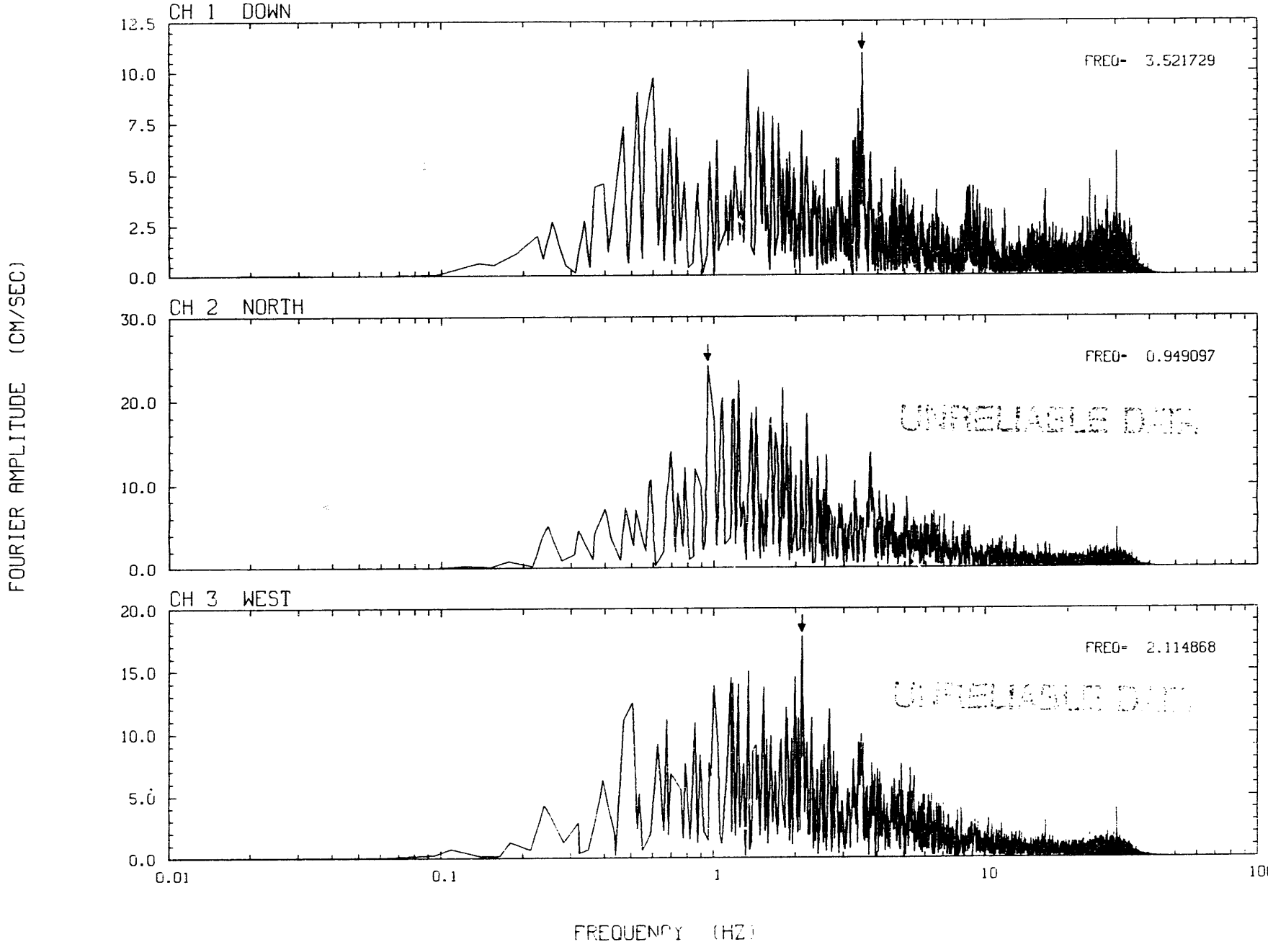
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 11
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



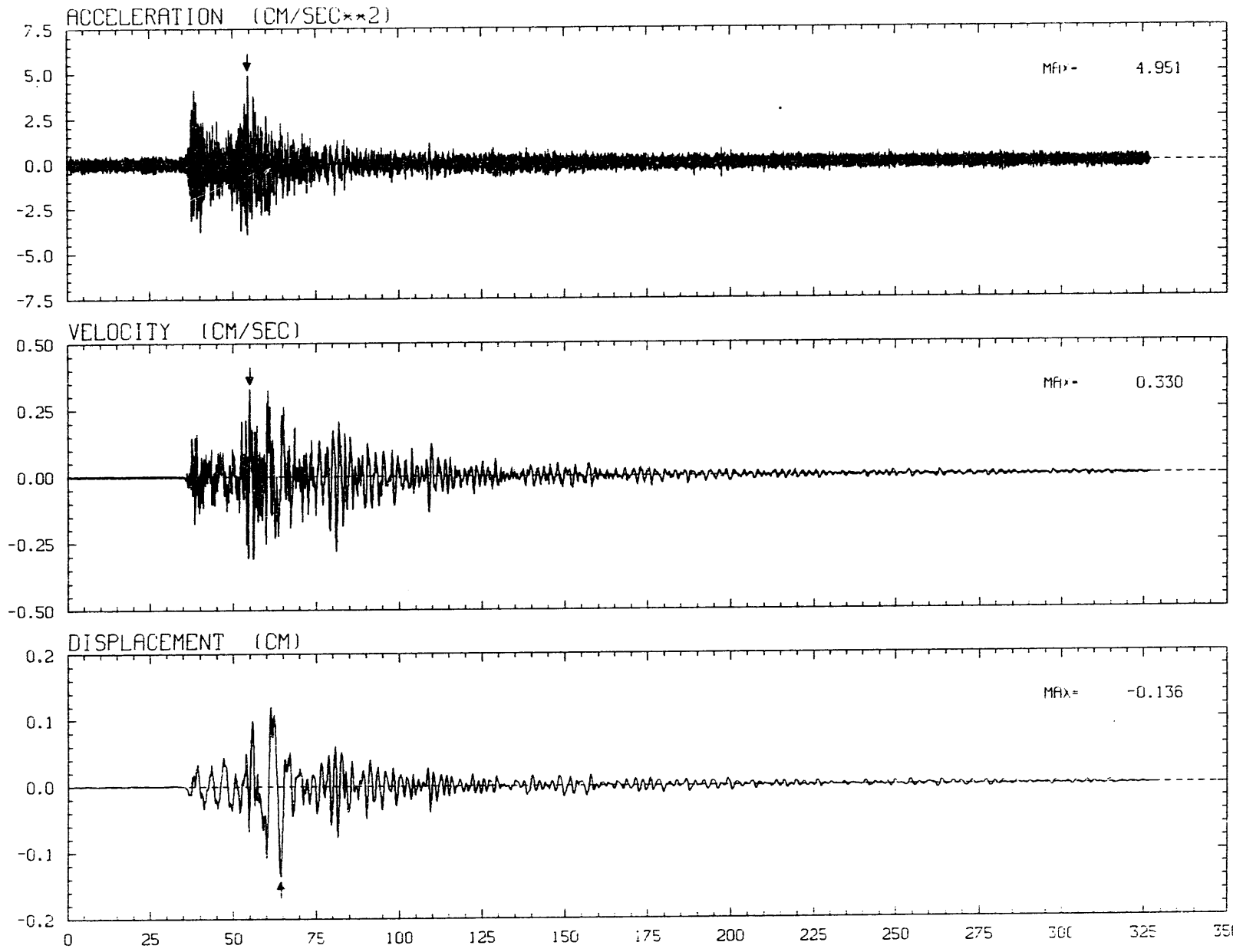
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

STATION NO. 11

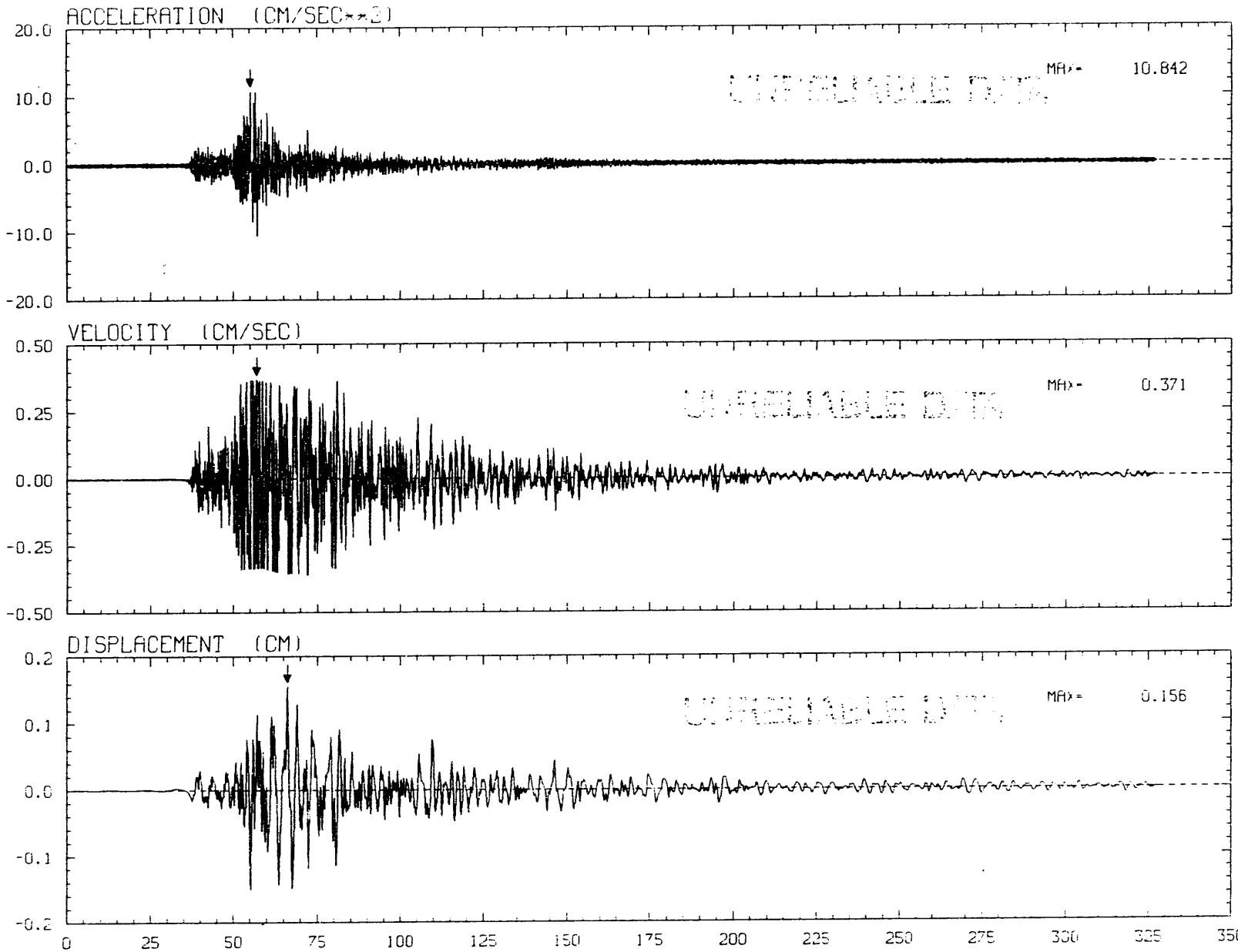
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



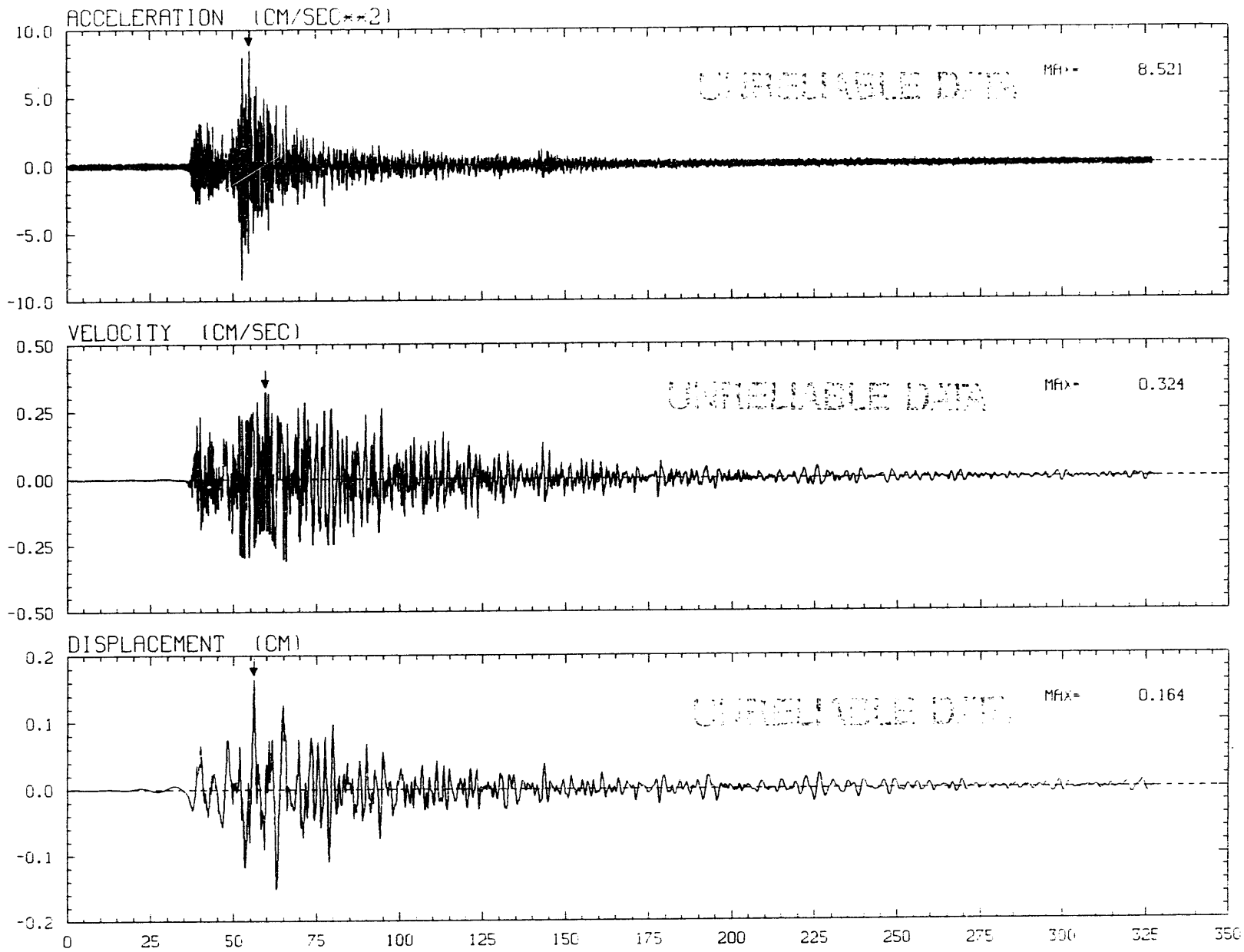
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 11 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 11 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

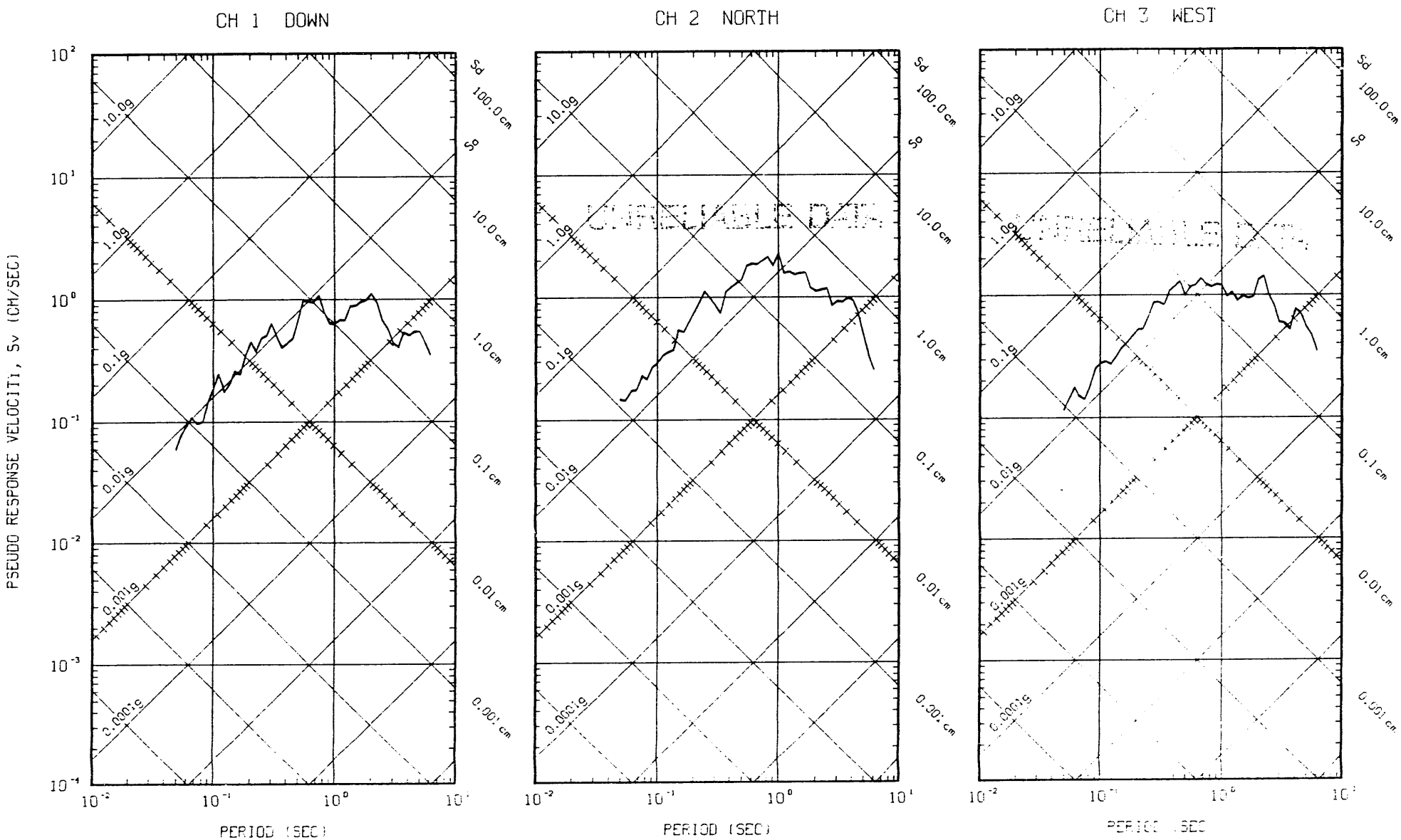


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 11 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



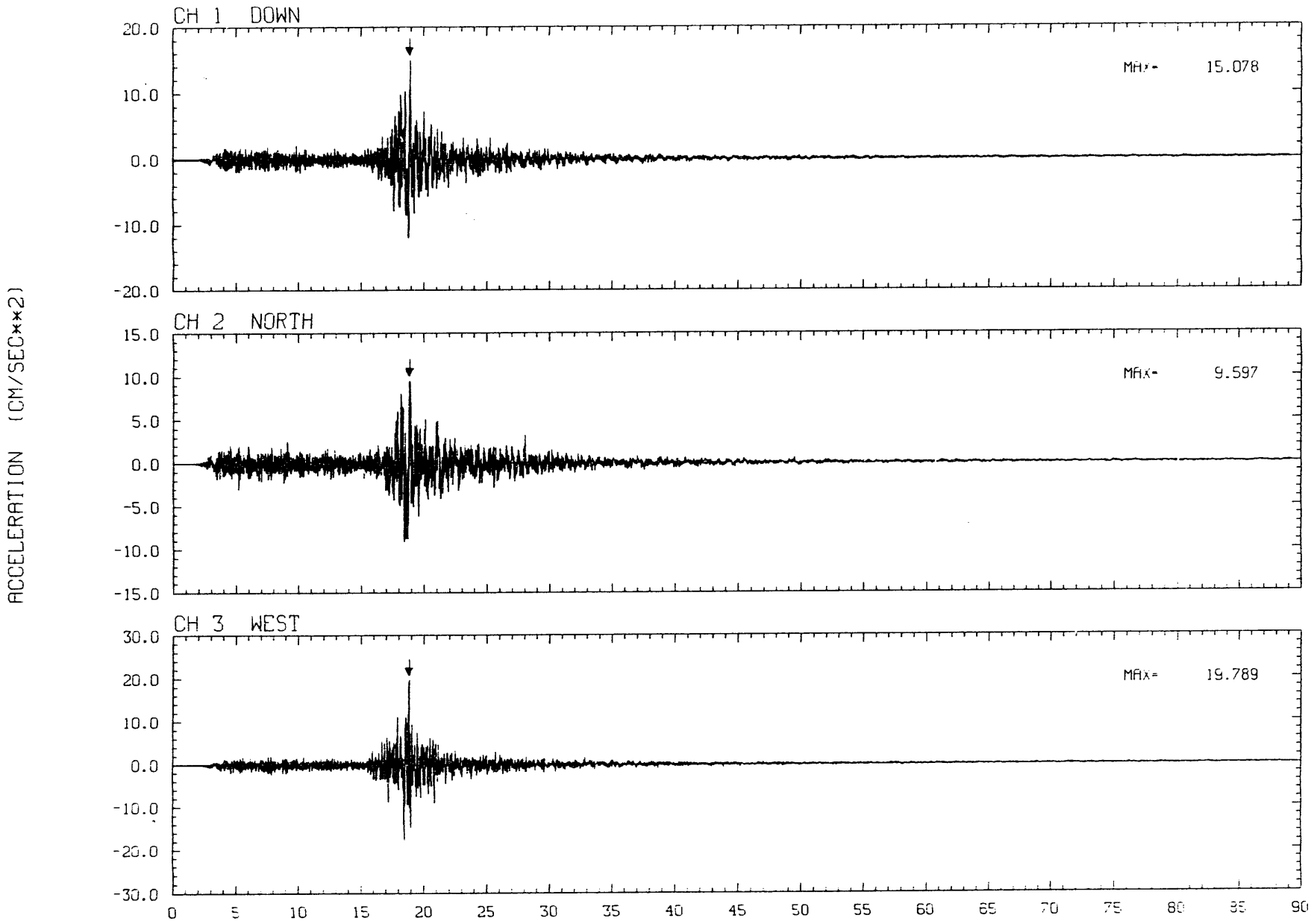
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 11

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

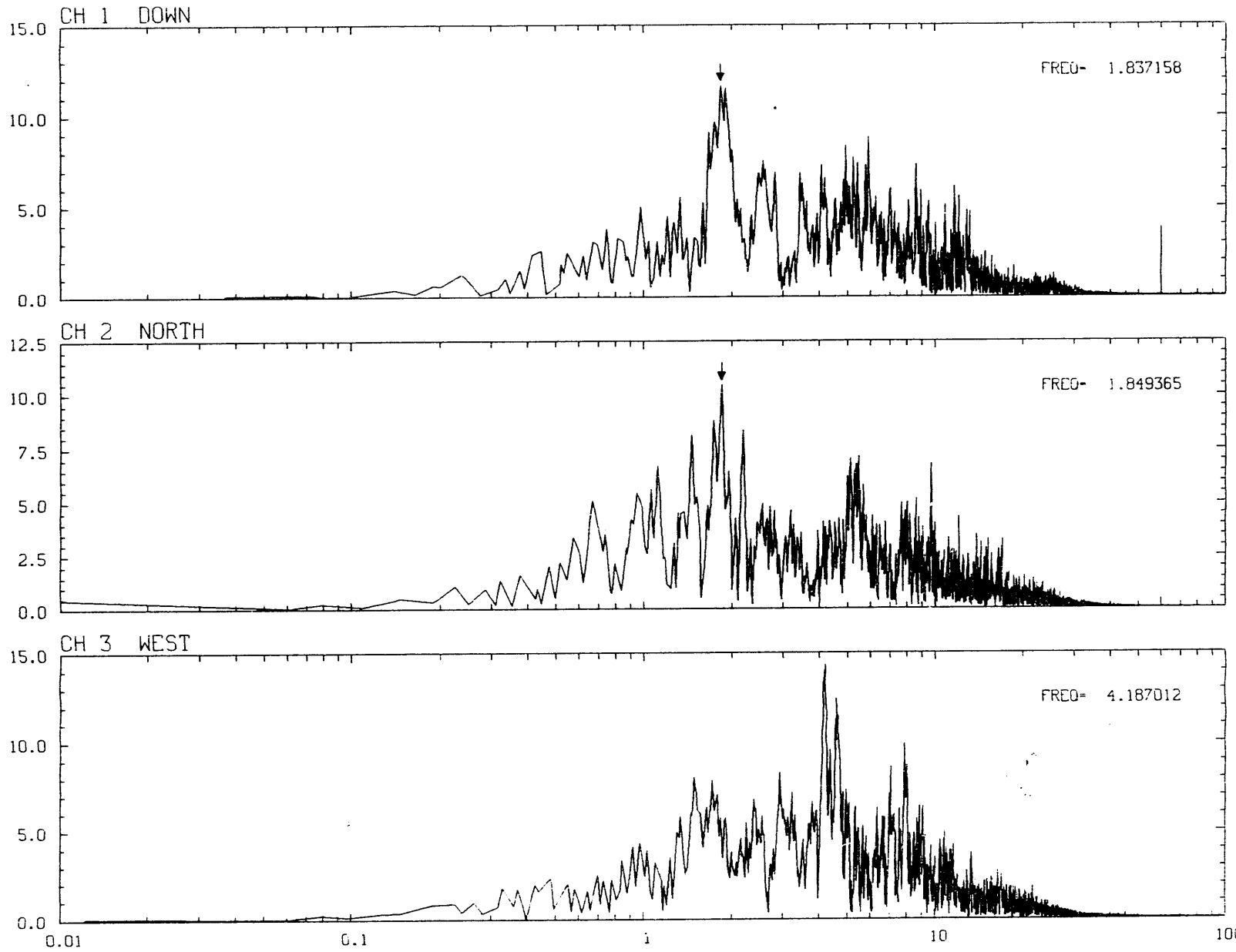


STATION NO. 12

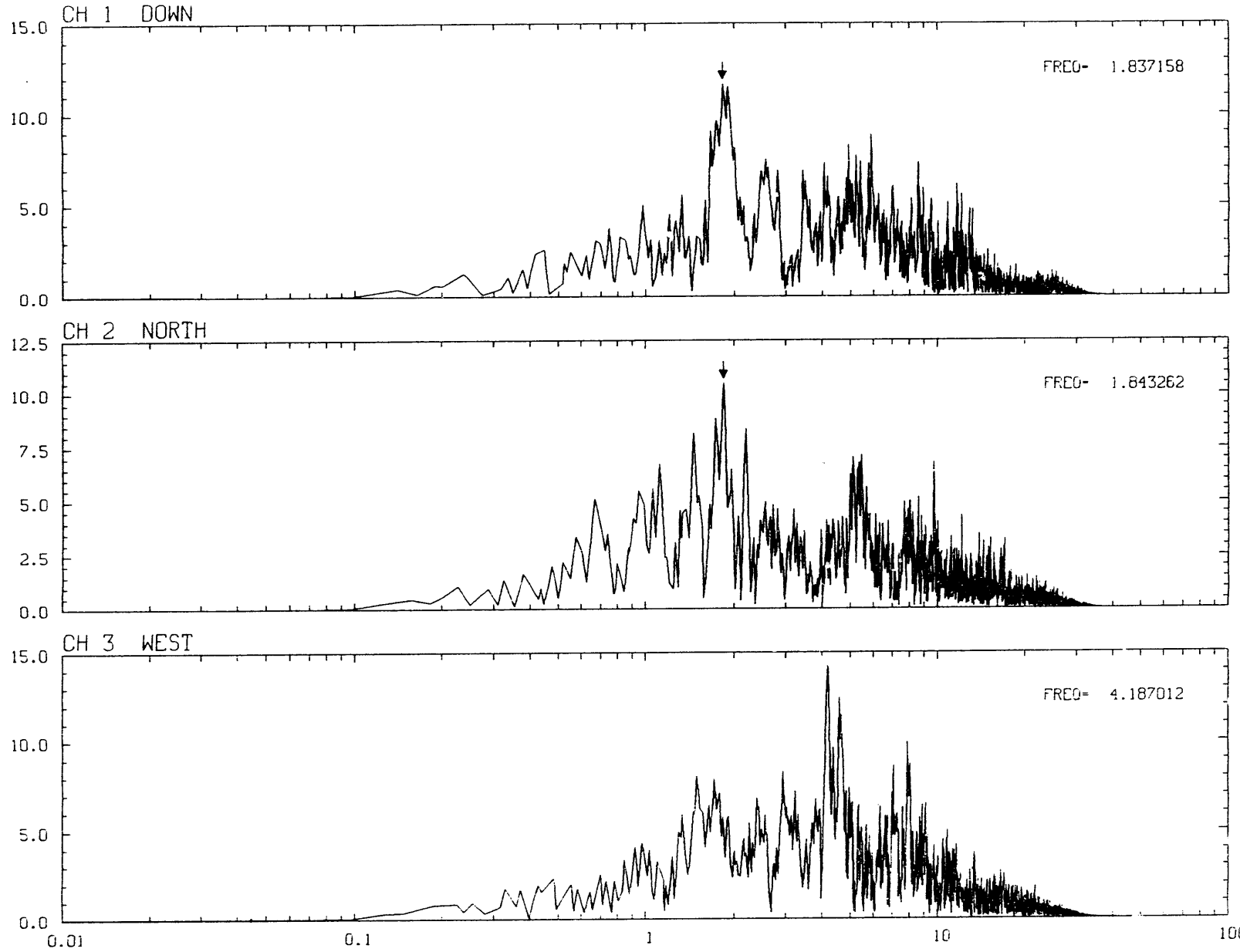
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 12
UNCORRECTED ACCELERATION TIME HISTORIES



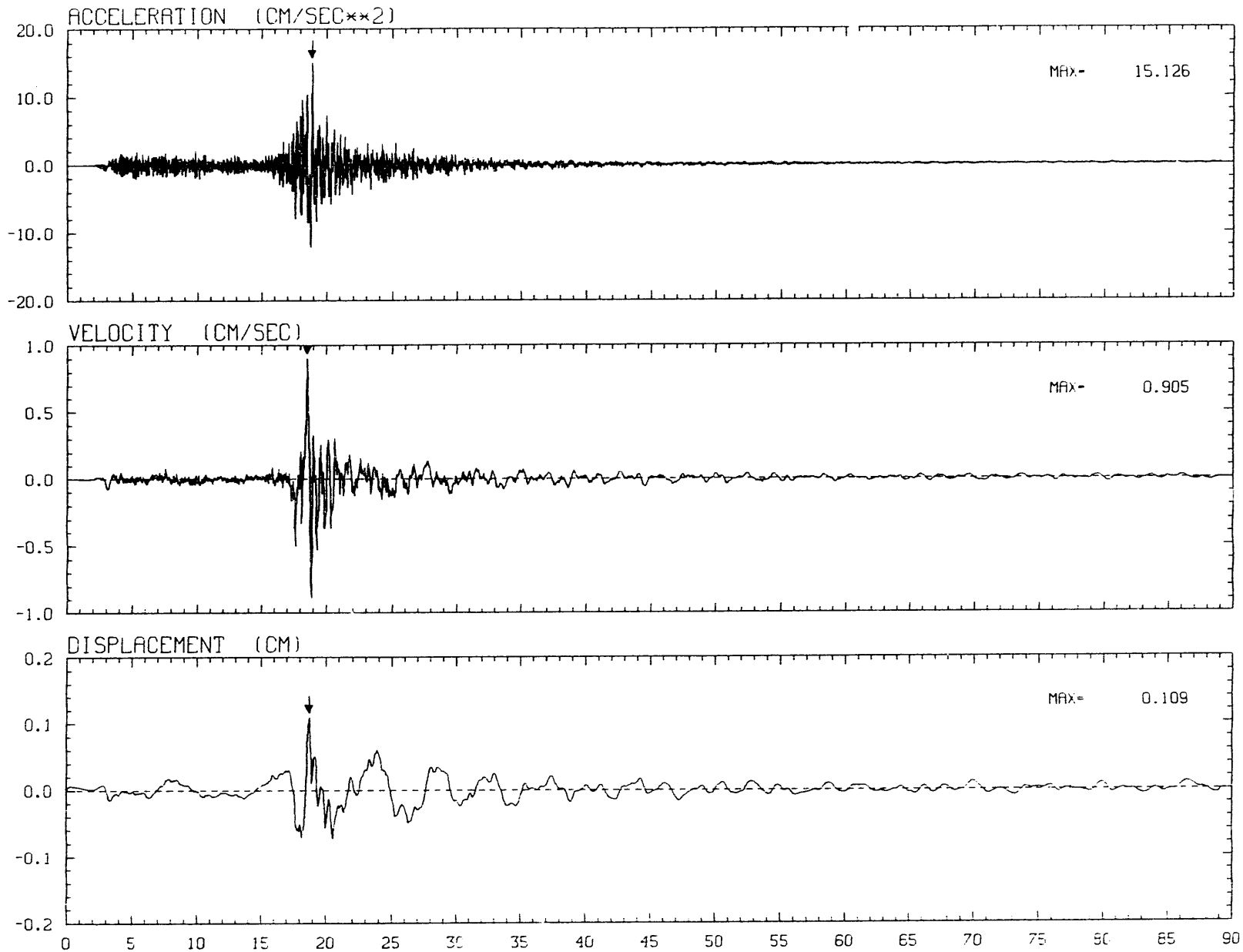
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 12
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



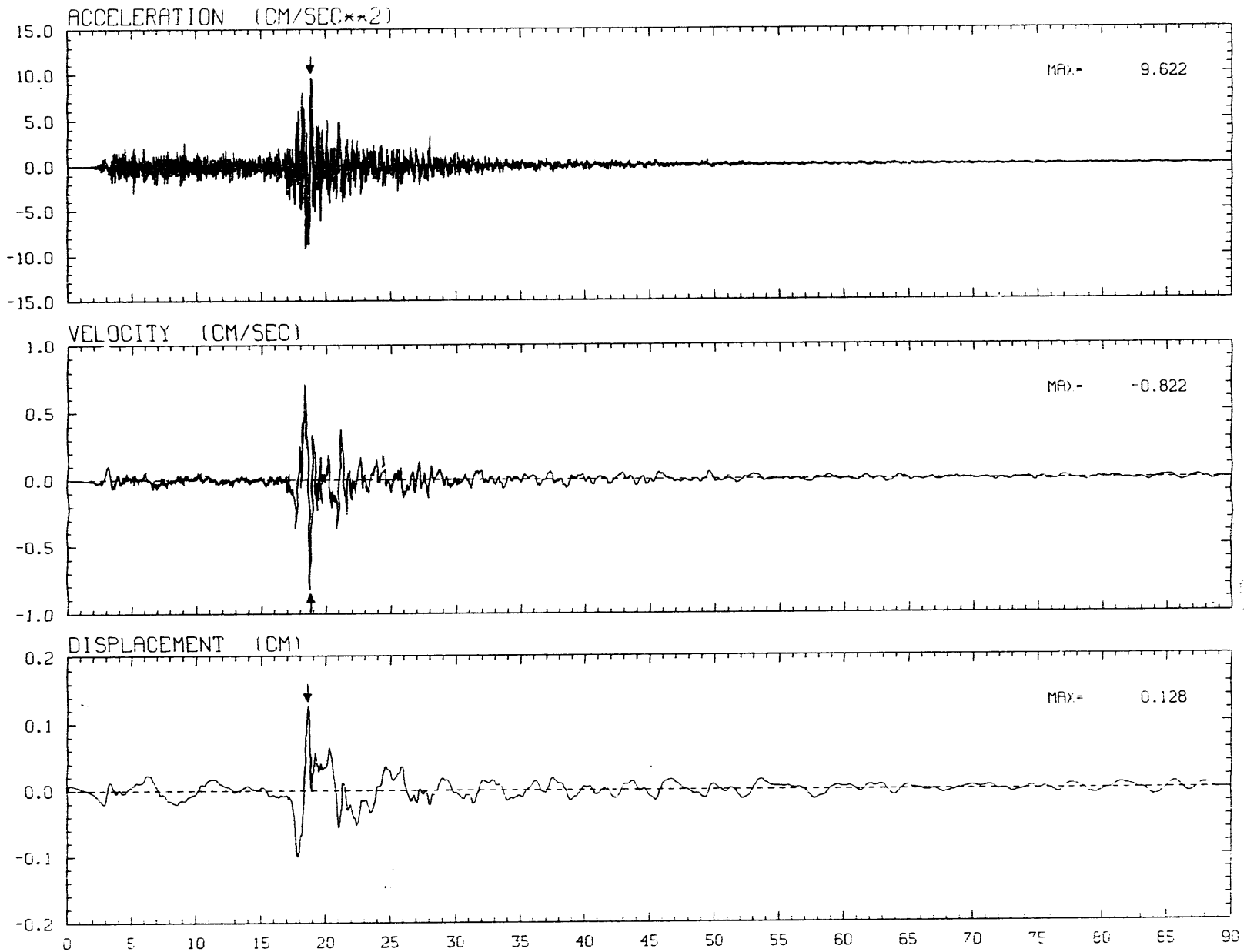
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 12
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



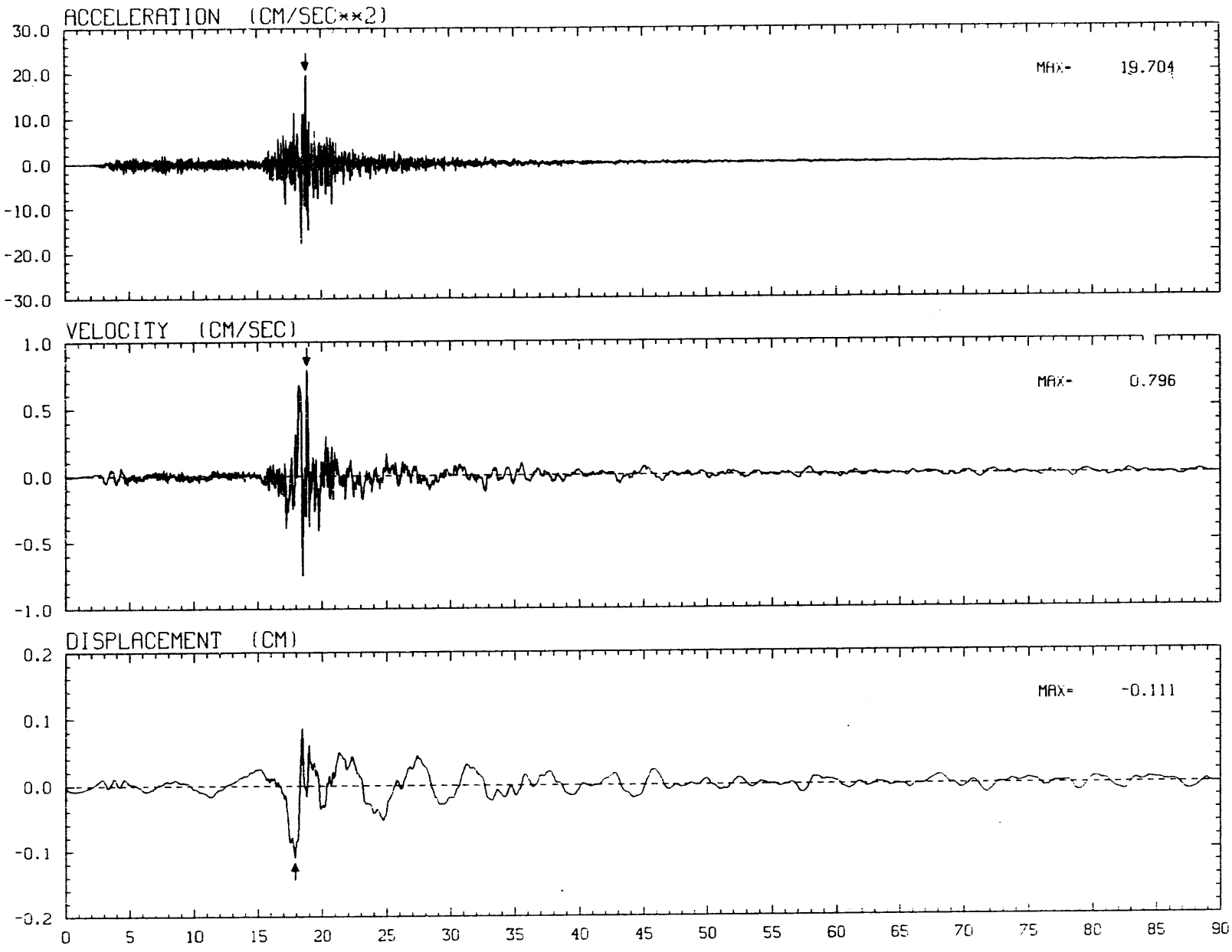
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 12 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 12 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

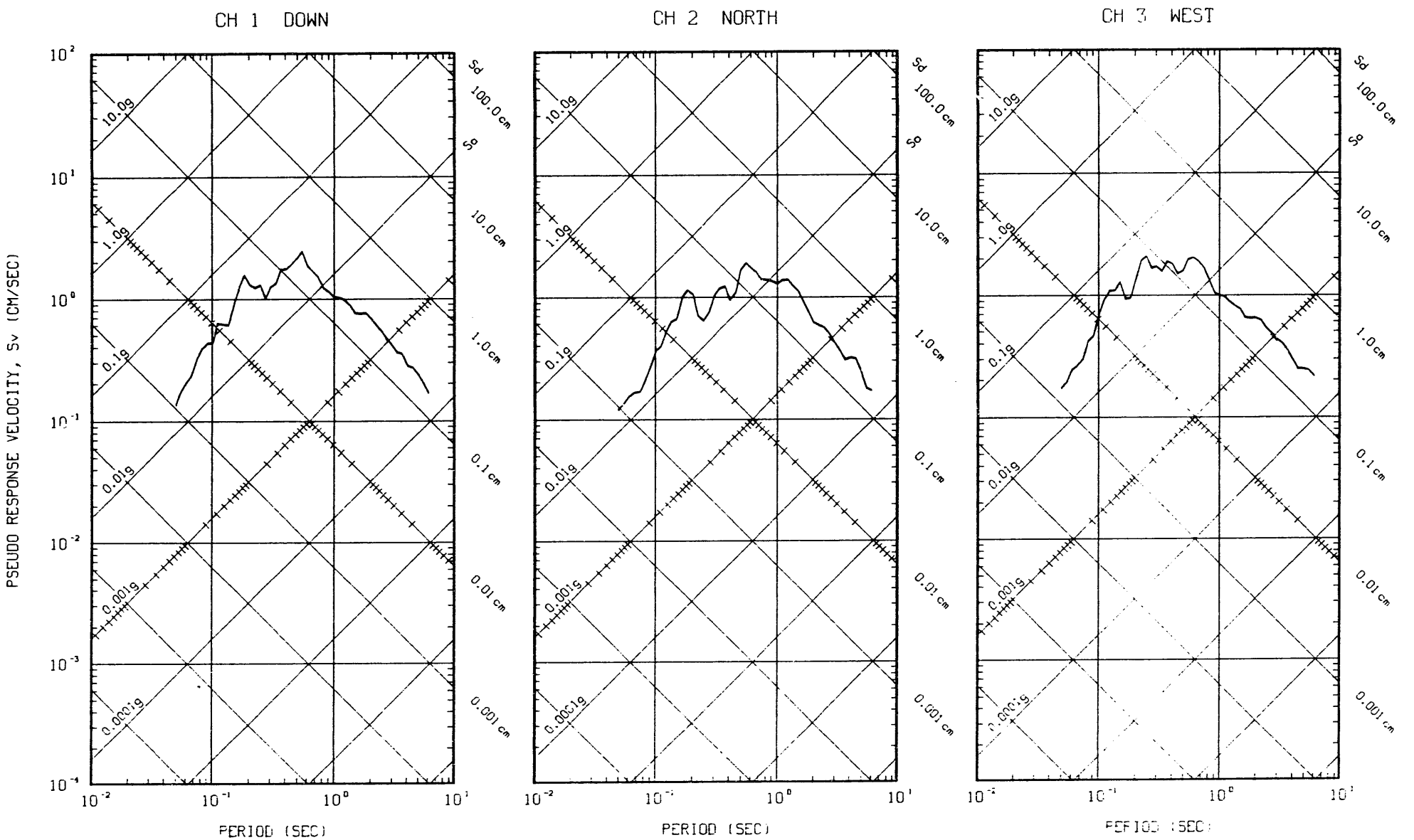


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 12 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



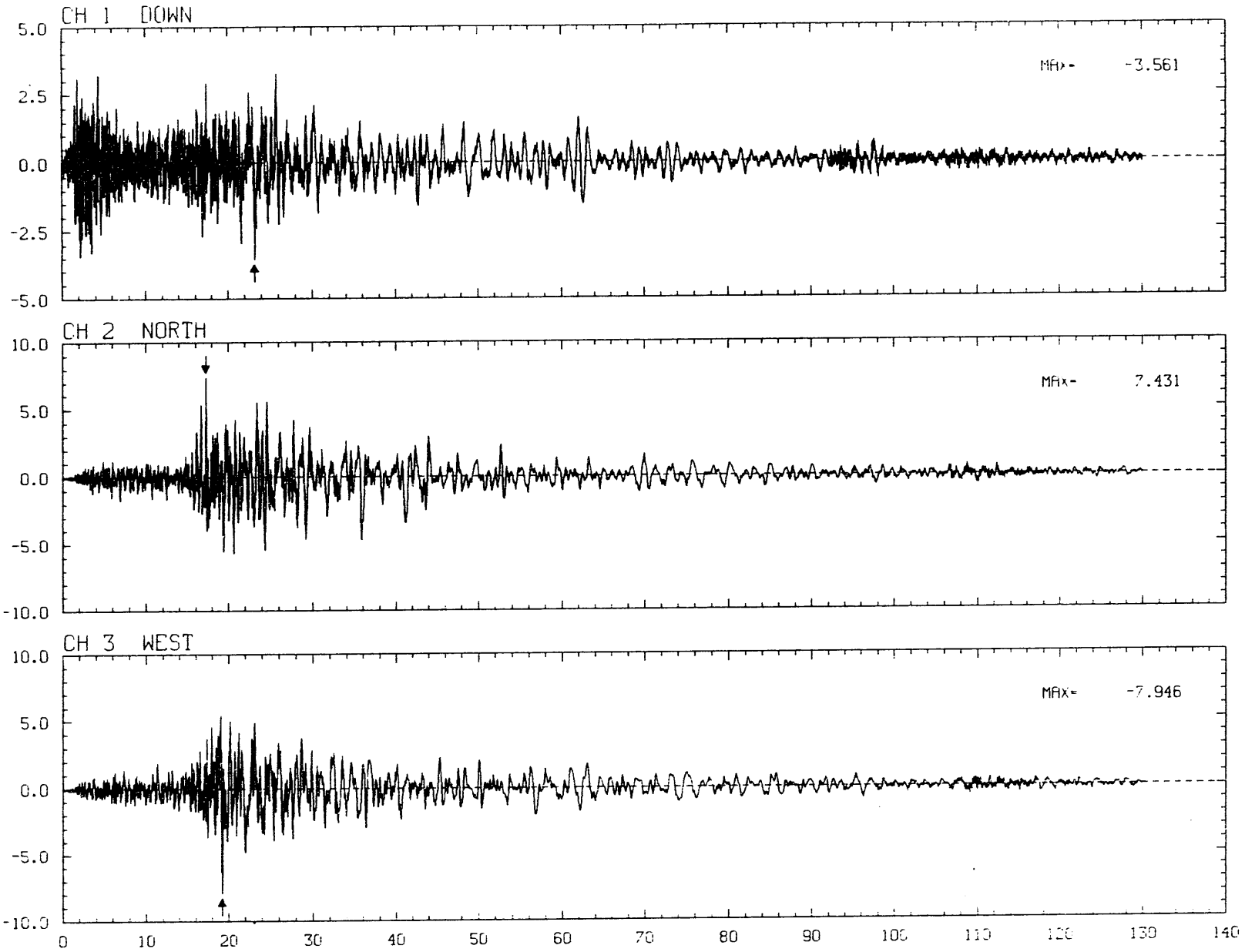
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 12

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

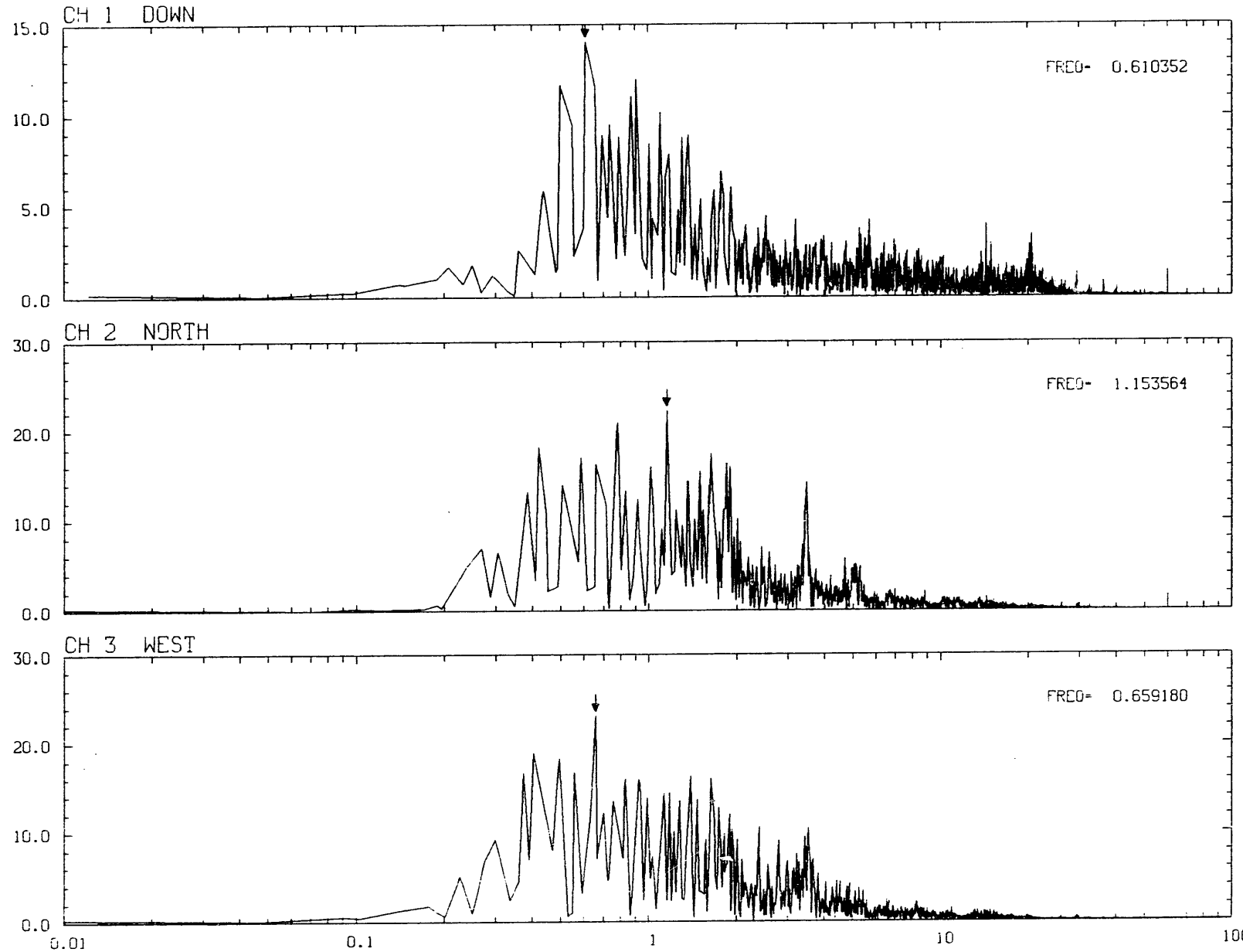


STATION NO. 13

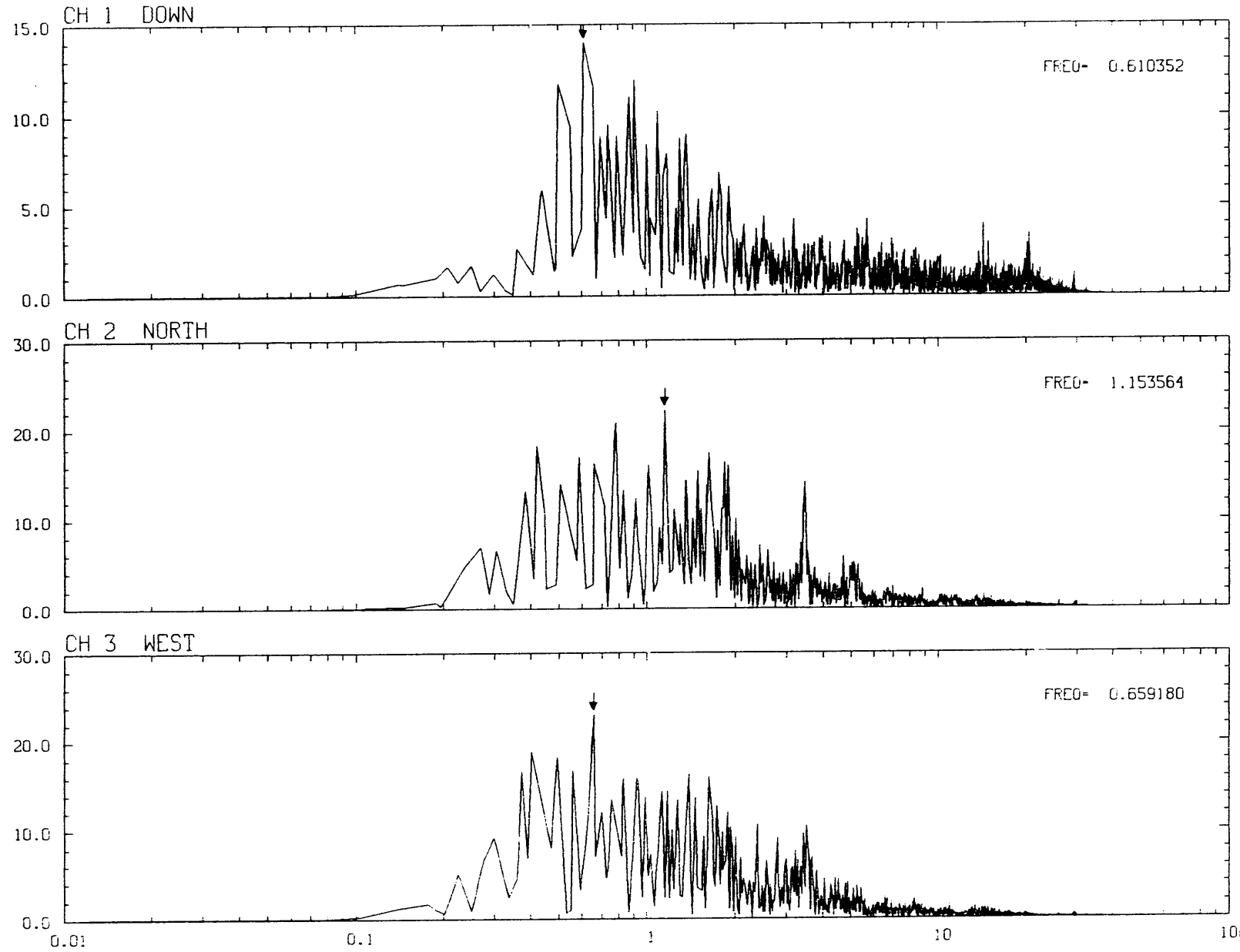
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 13
UNCORRECTED ACCELERATION TIME HISTORIES



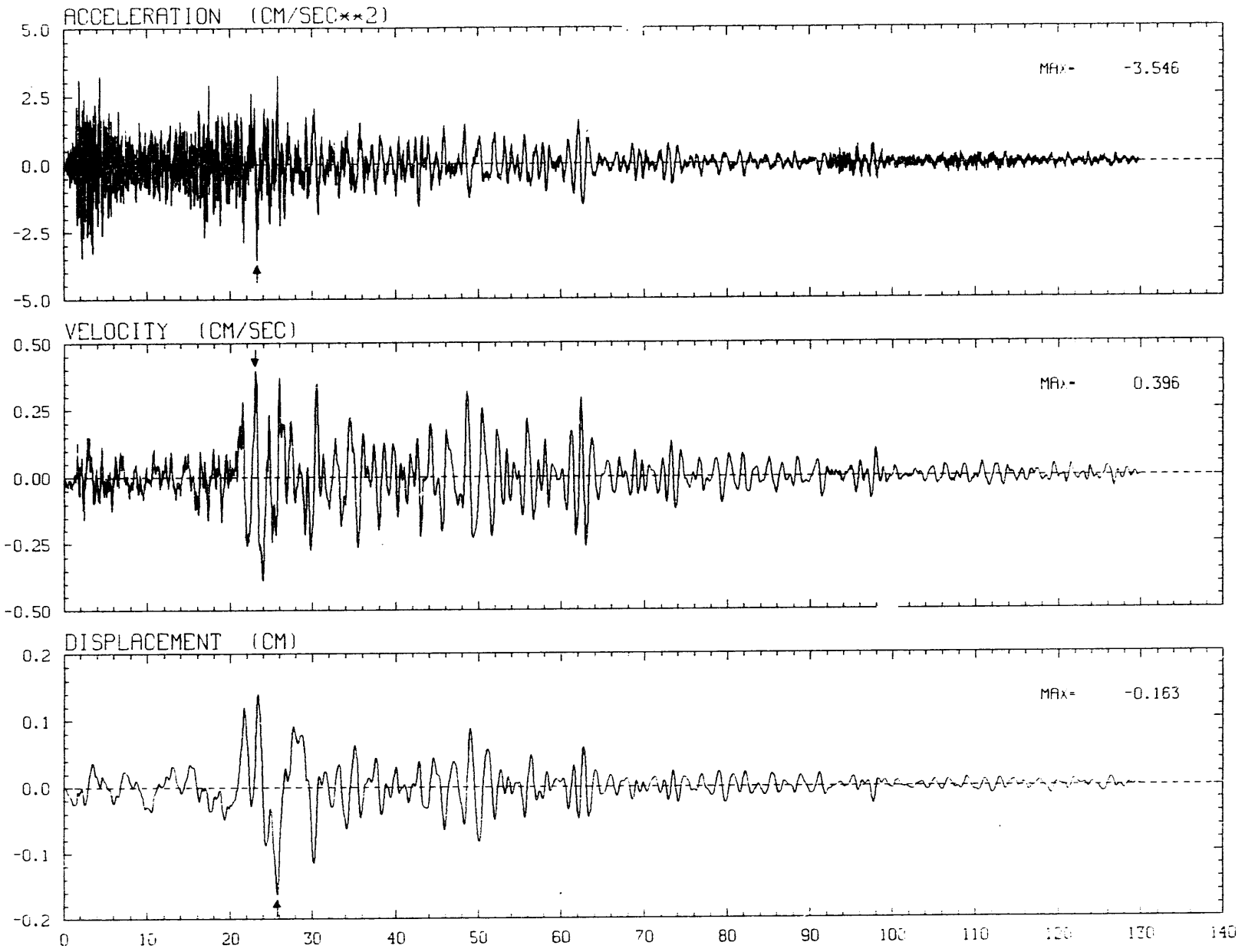
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 13
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



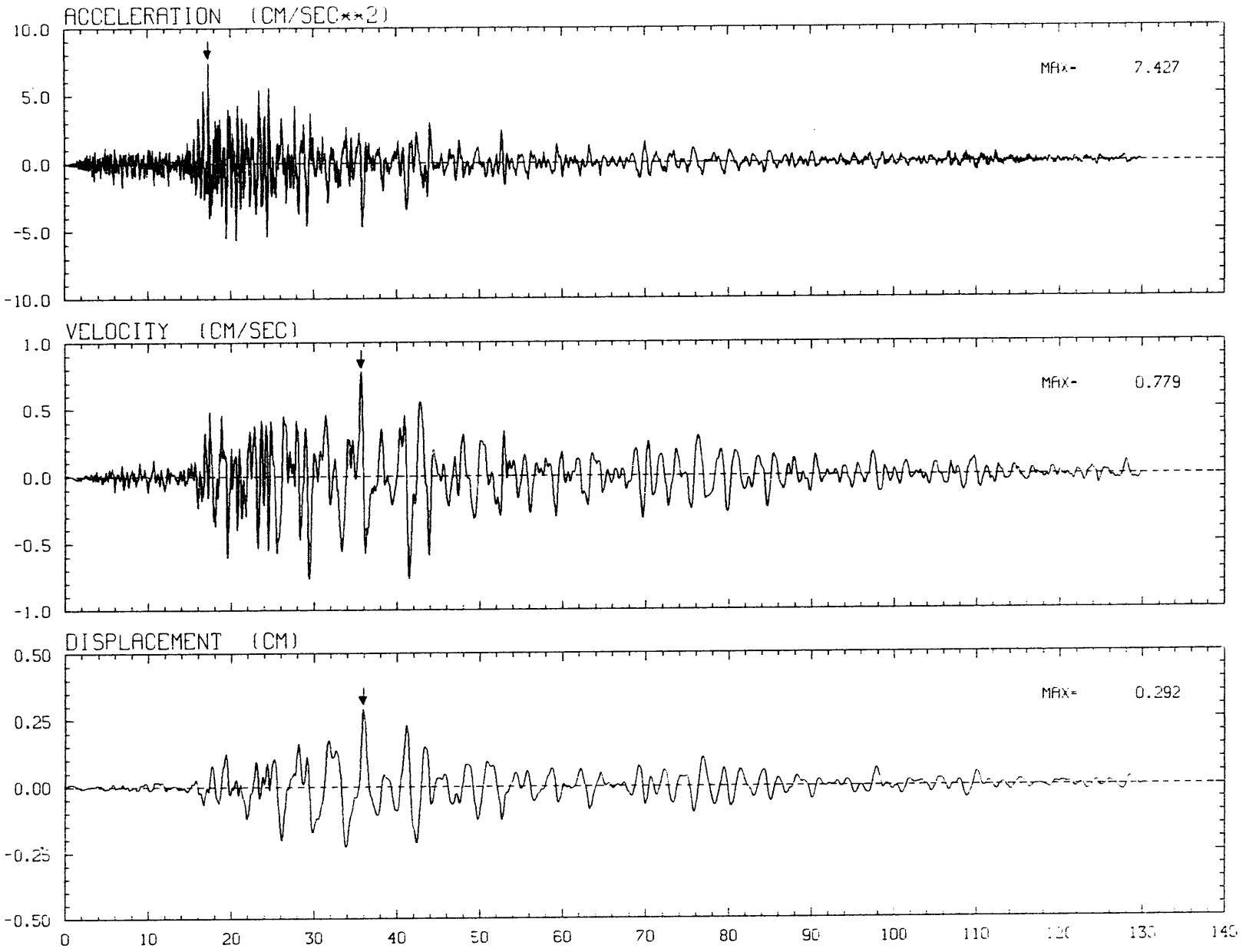
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 13
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



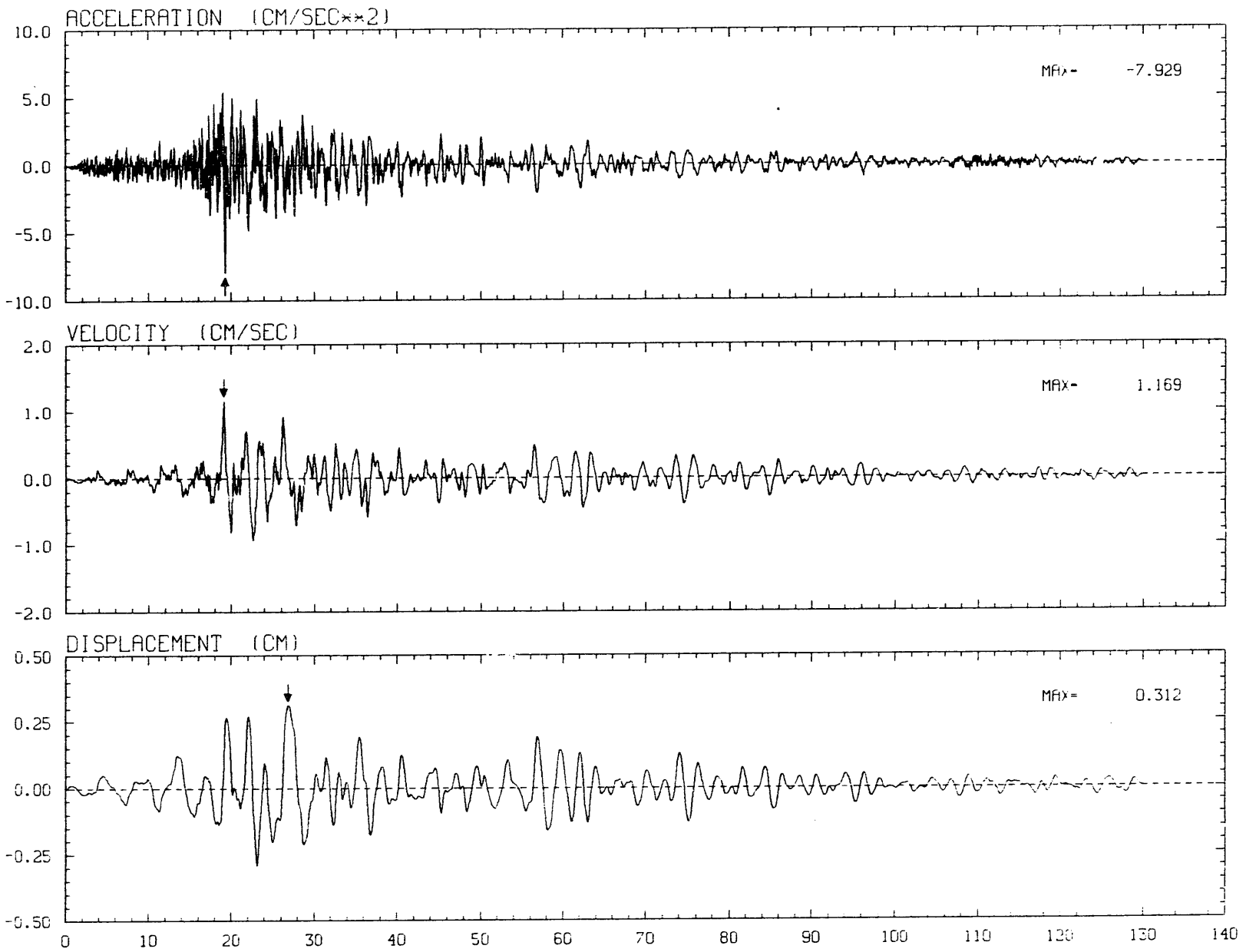
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 13 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 13 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

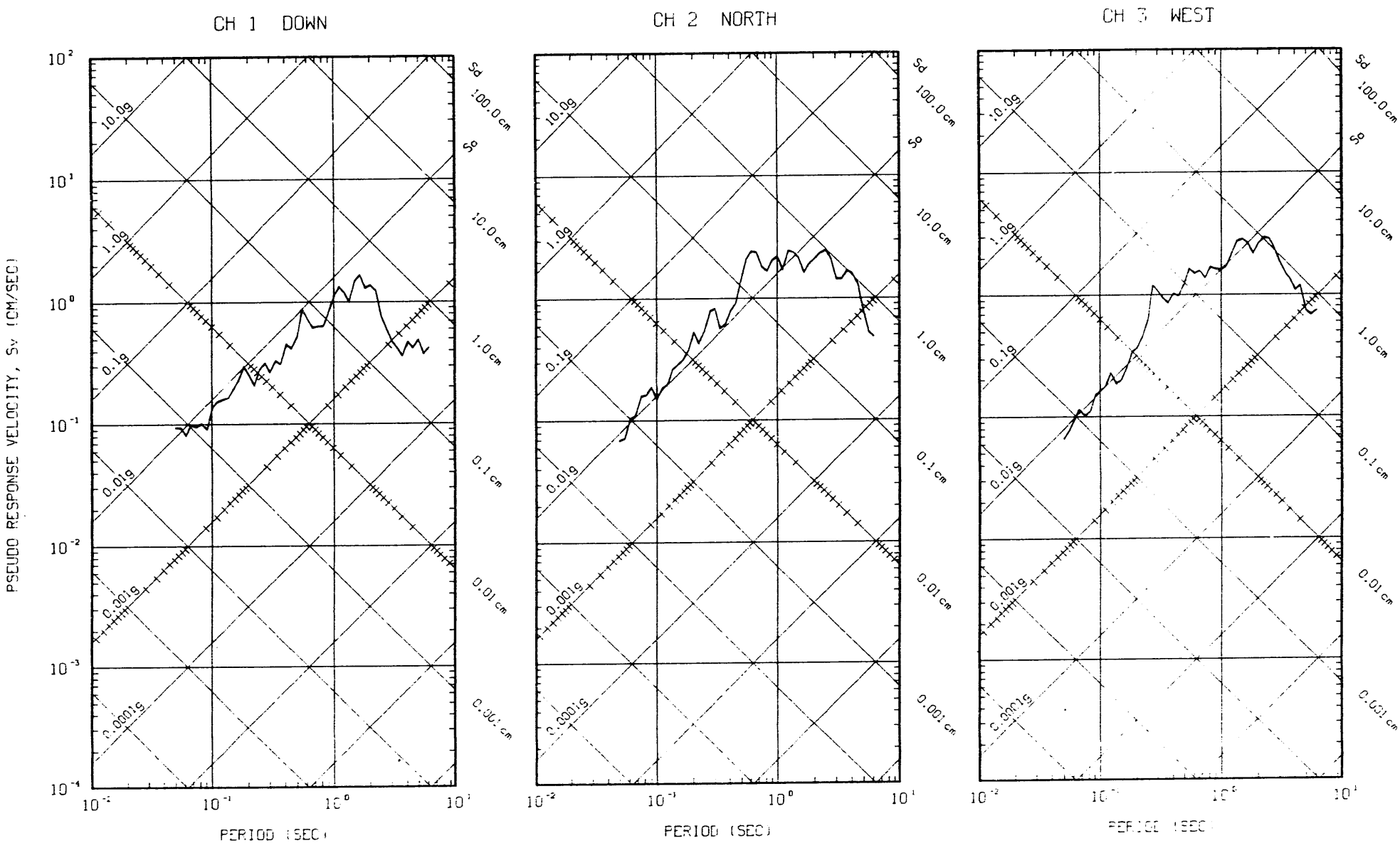


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 13 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY , DISPLACEMENT



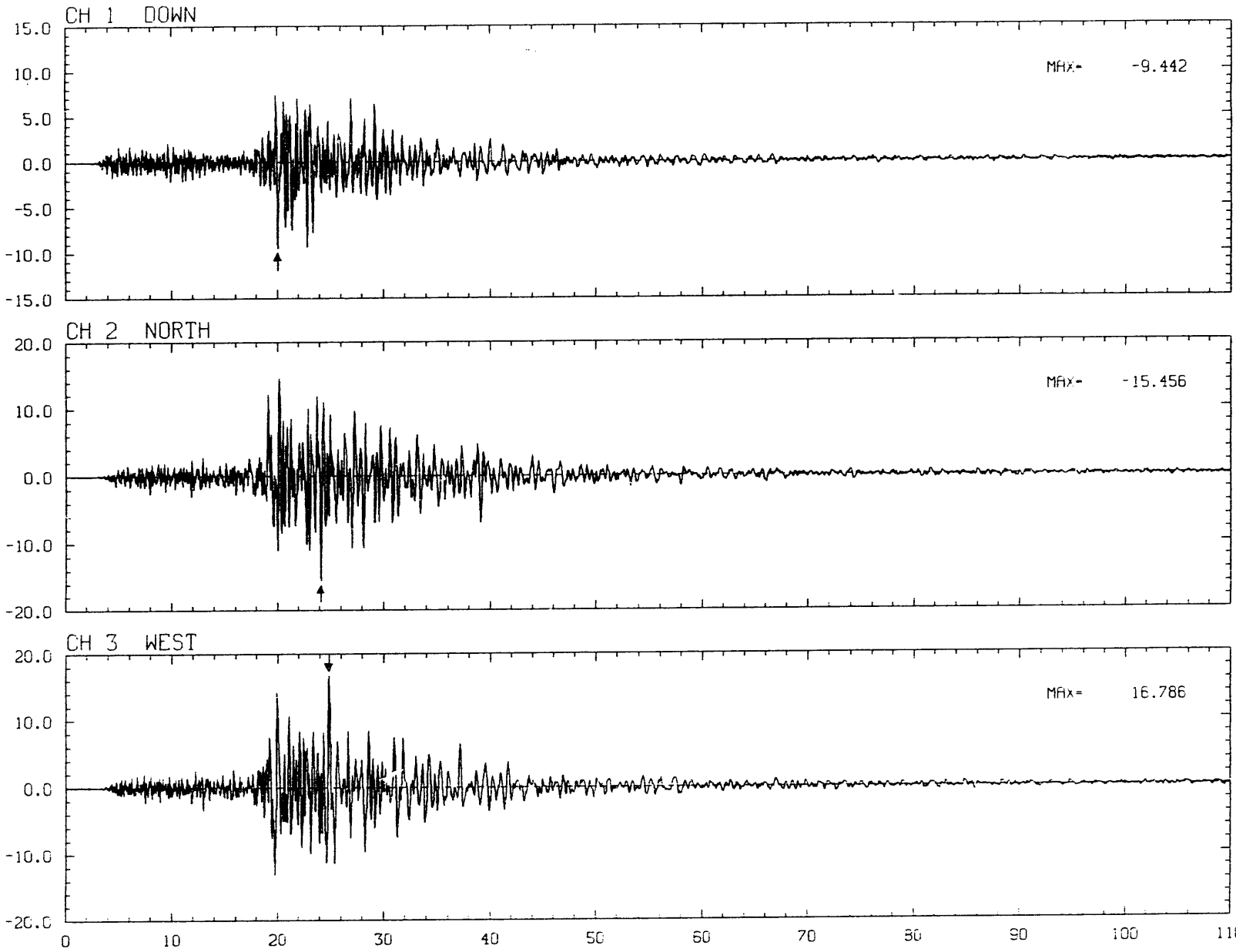
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 13

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

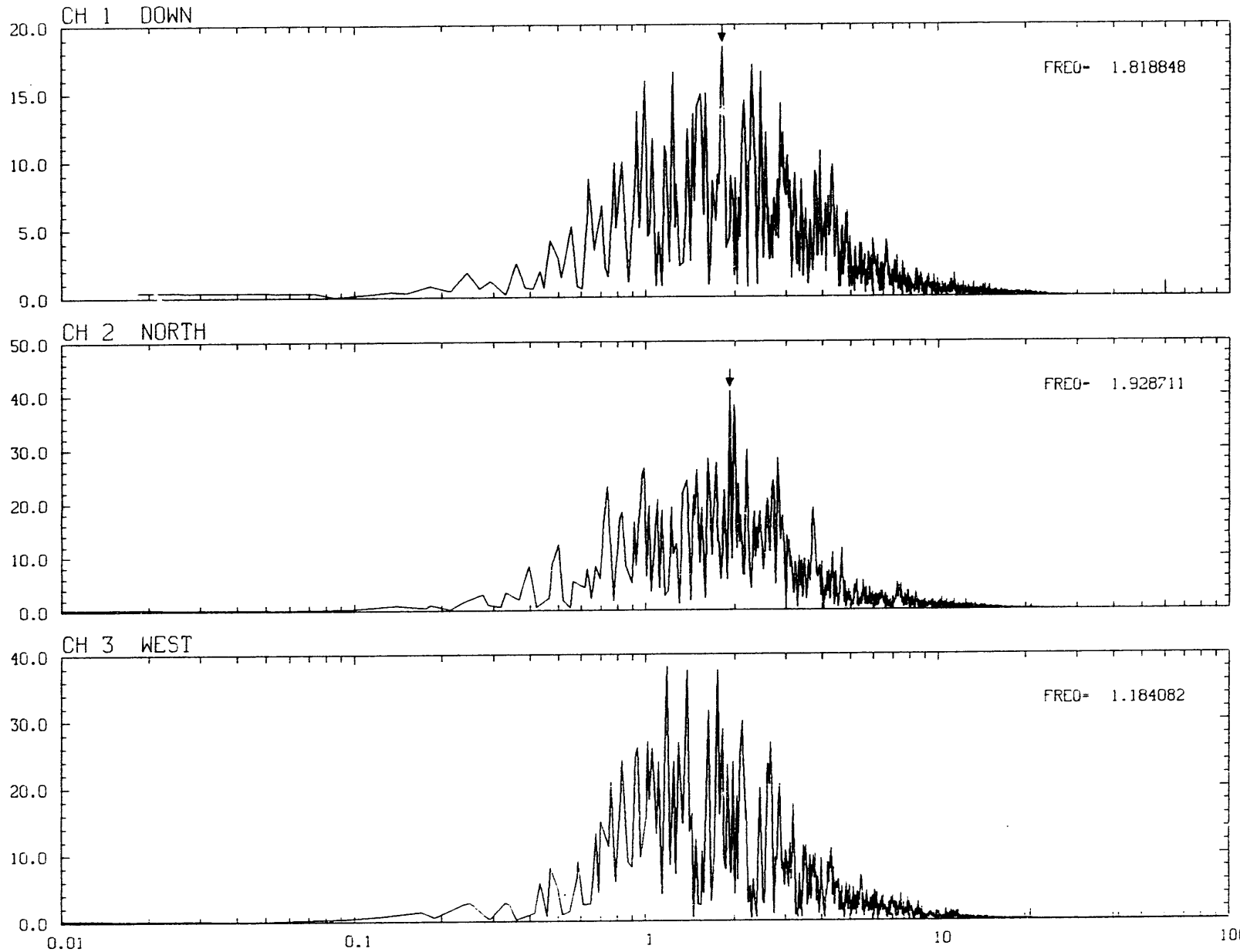


STATION NO. 14 SYSTEM A

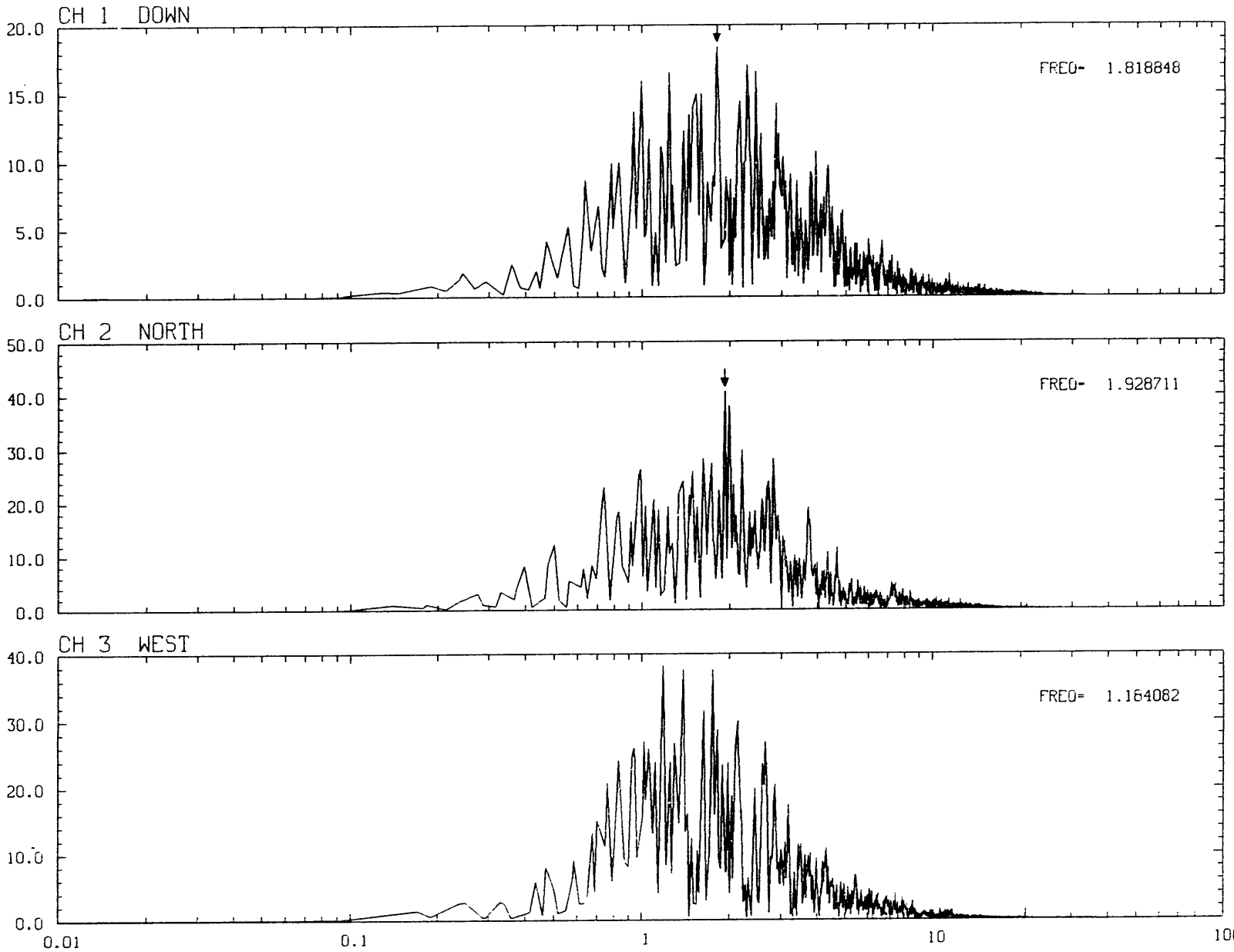
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM A
UNCORRECTED ACCELERATION TIME HISTORIES



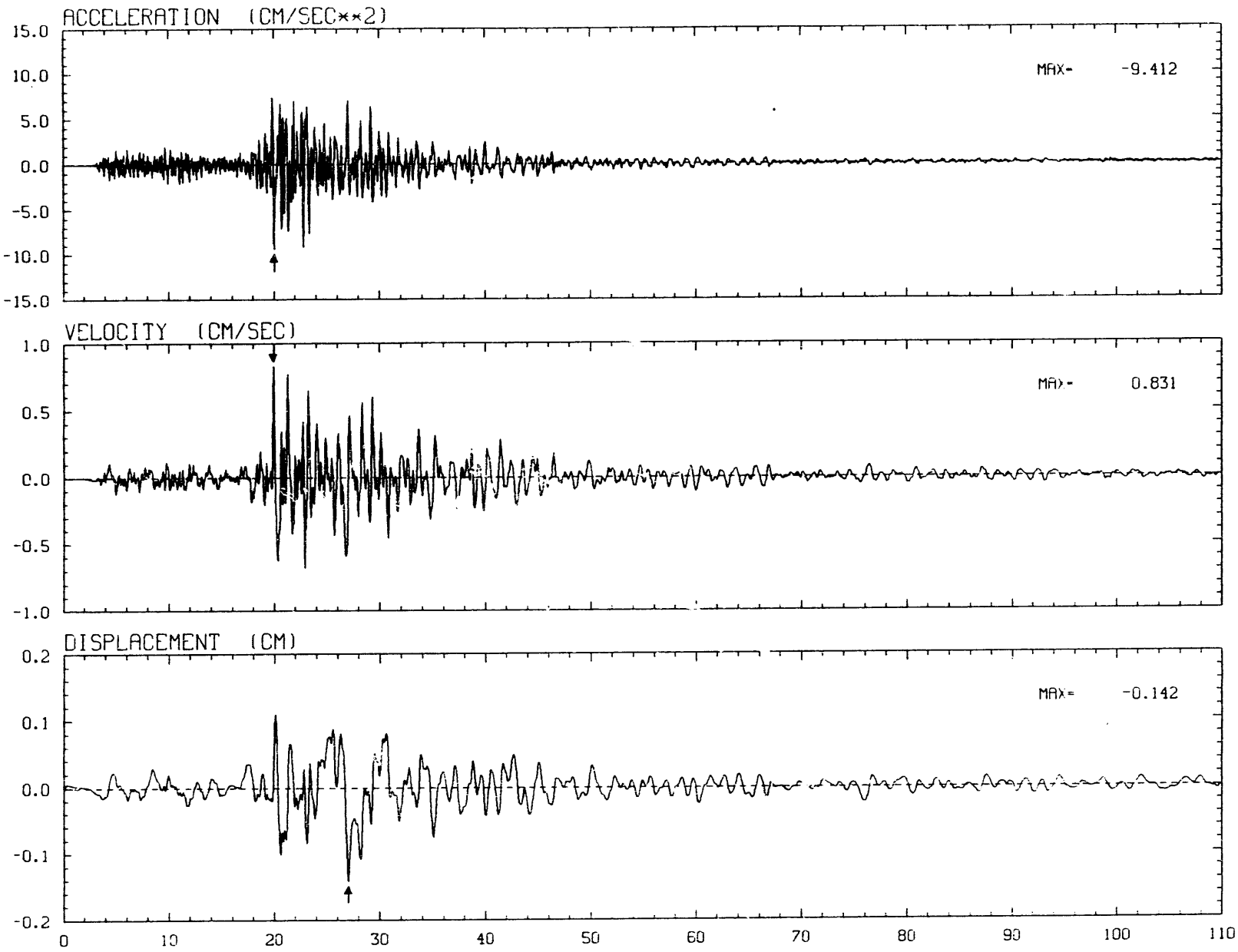
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM A
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



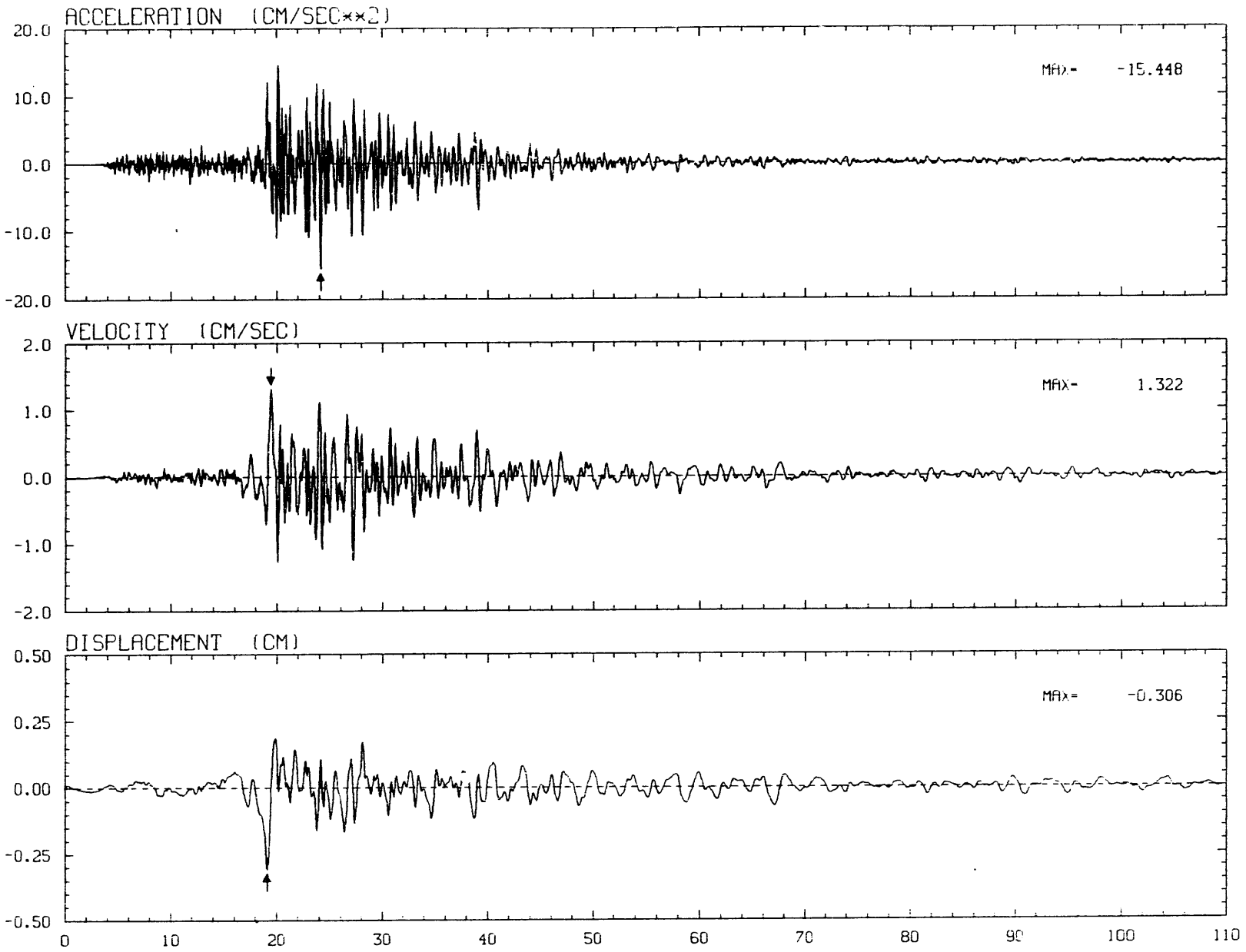
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM A
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



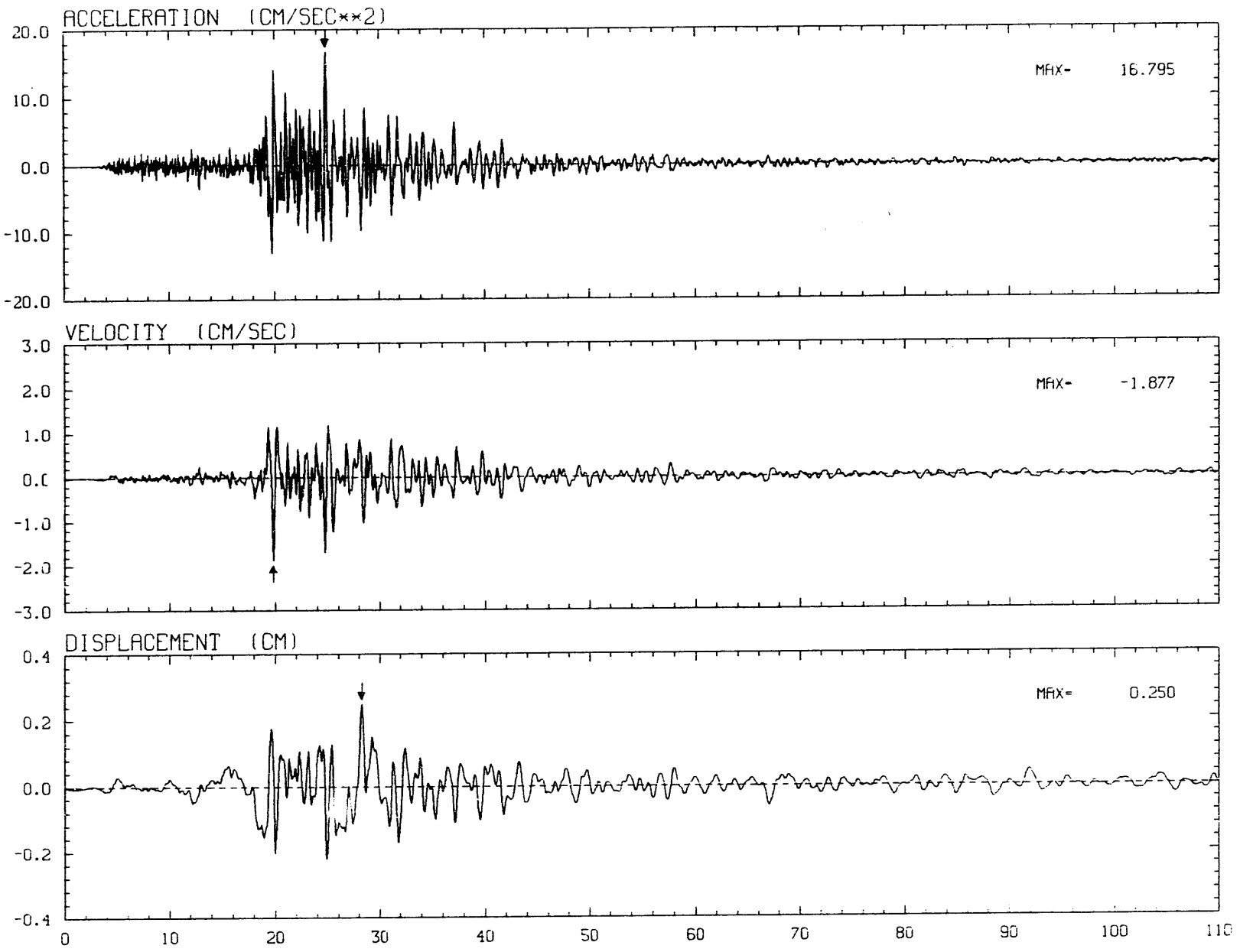
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM A CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM A CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

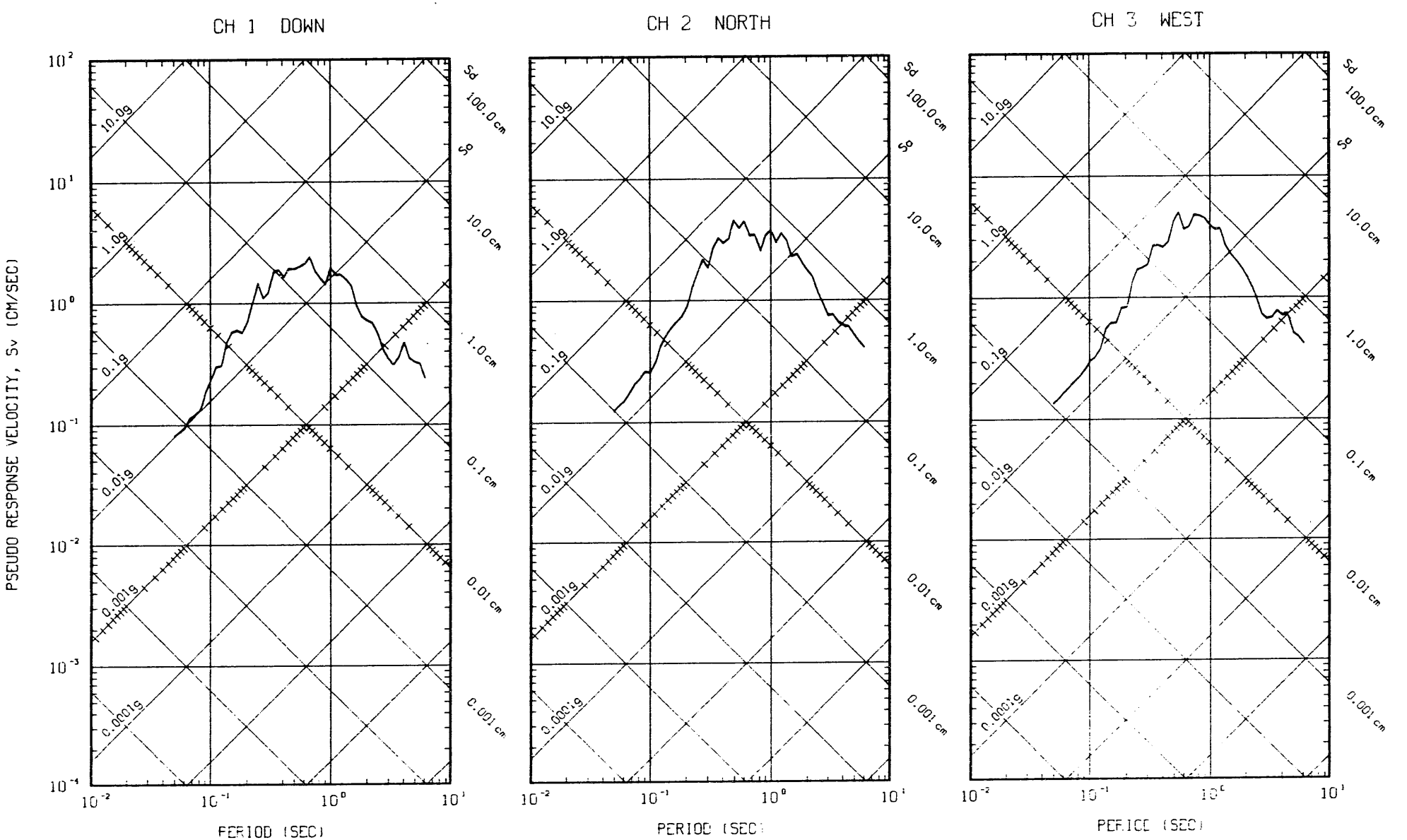


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM A CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



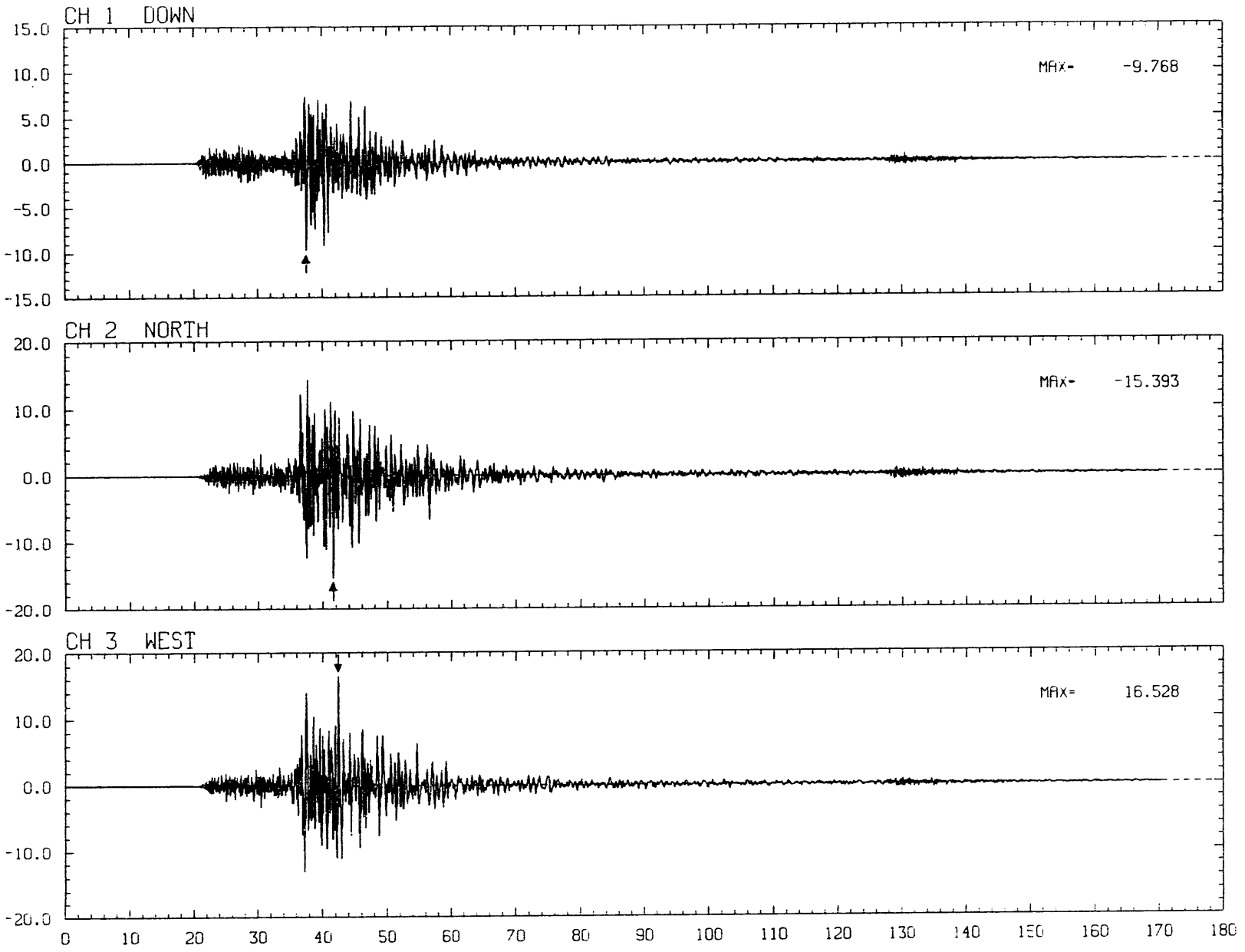
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM A

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

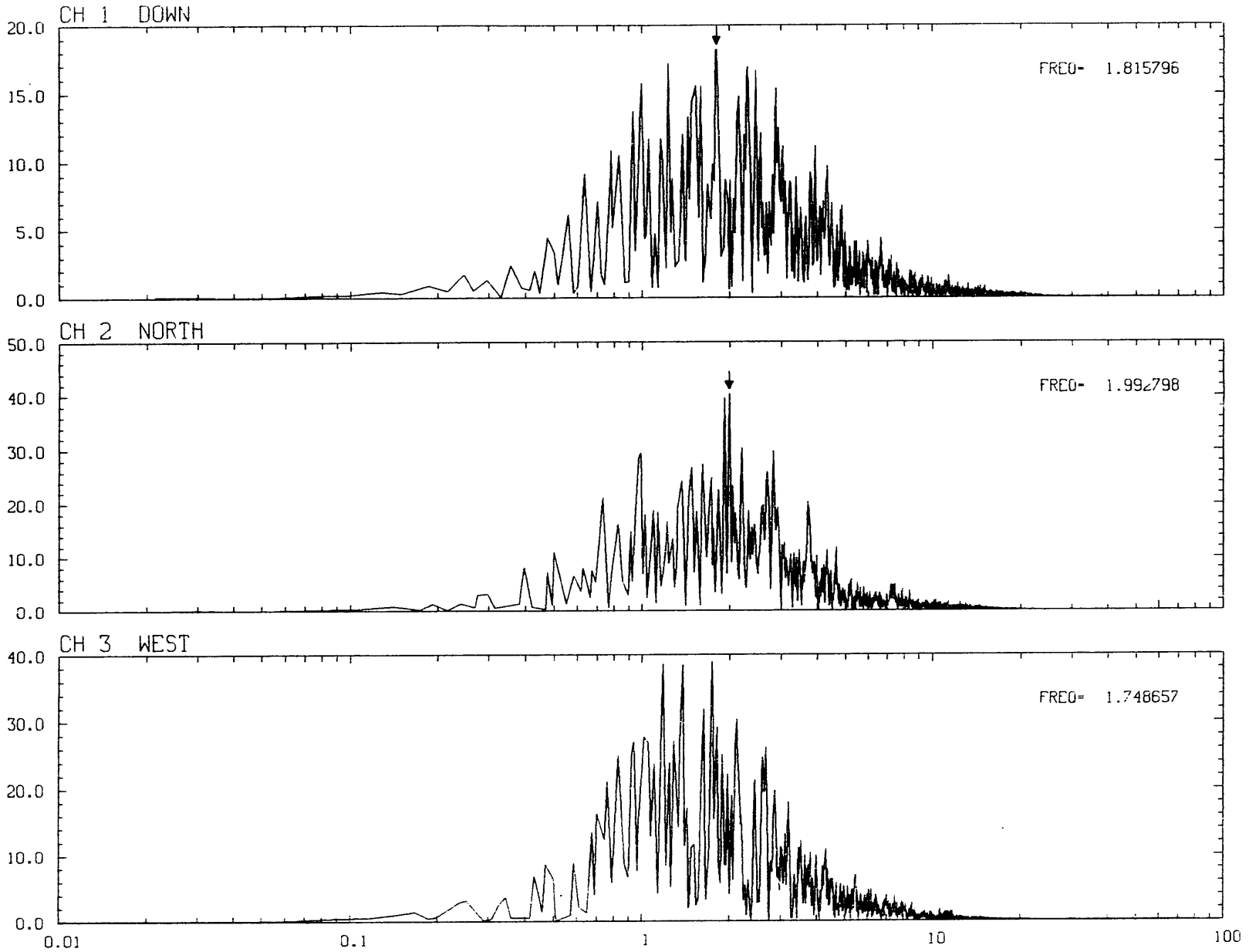


STATION NO. 14 SYSTEM B

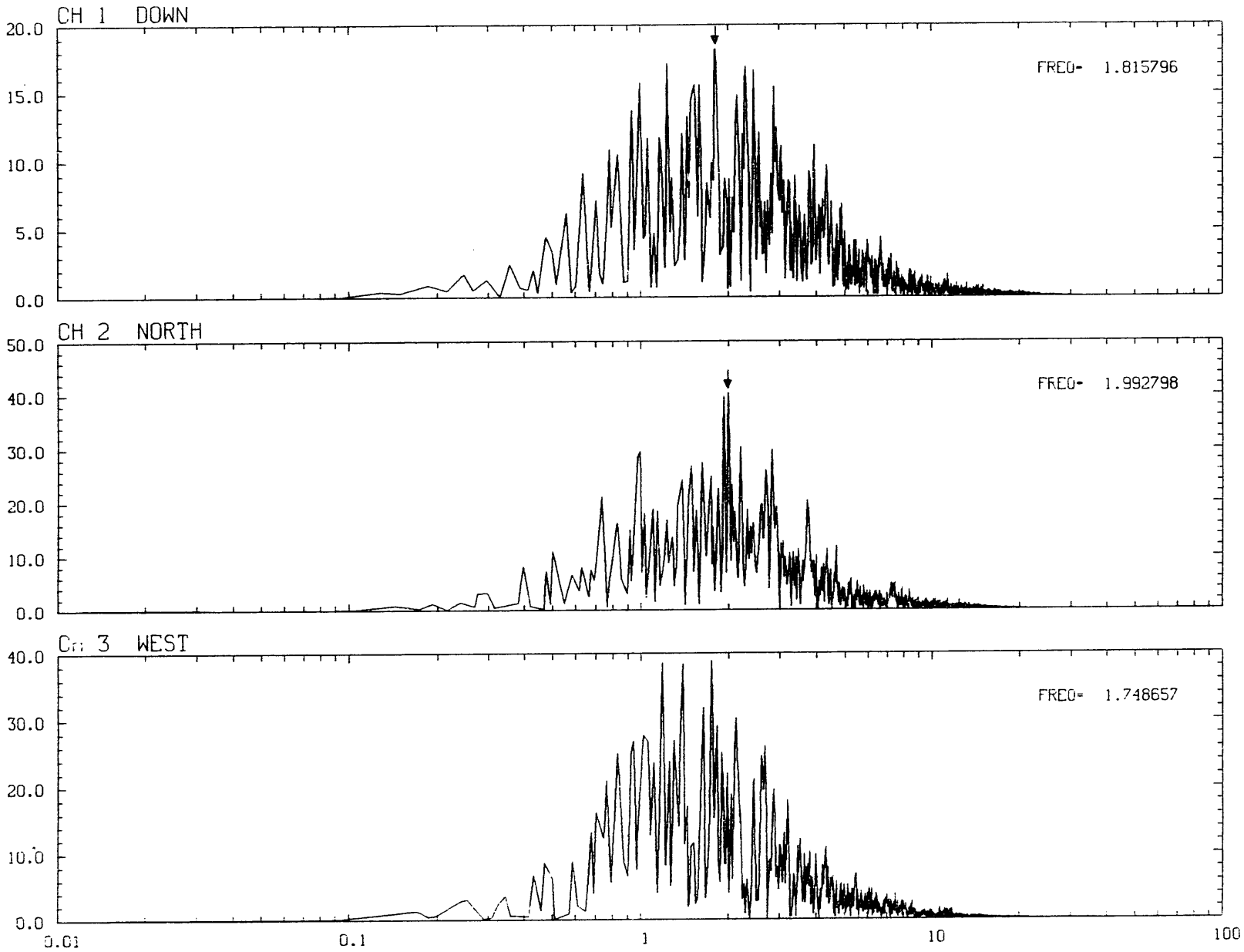
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM B
UNCORRECTED ACCELERATION TIME HISTORIES



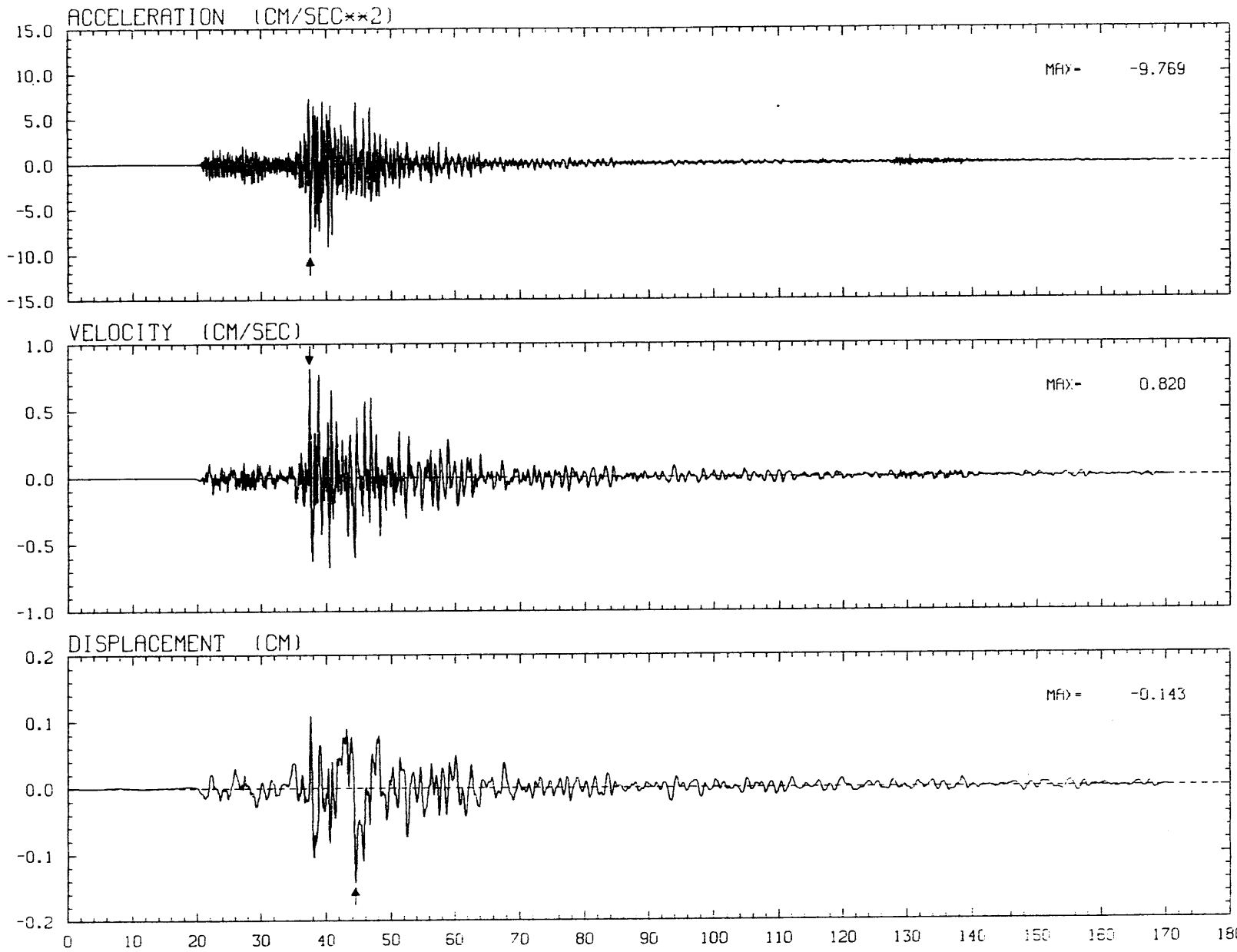
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM B
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



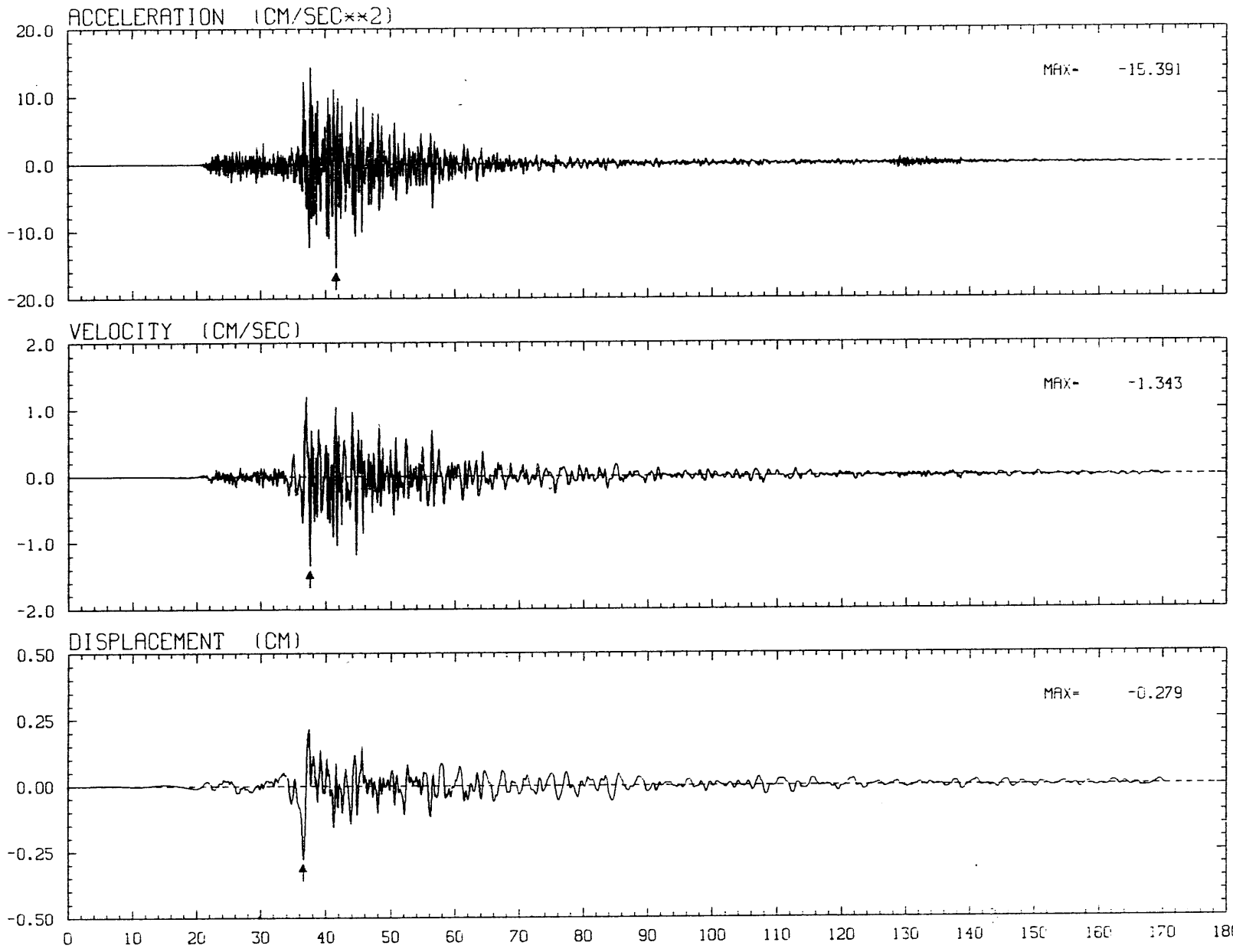
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM B
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



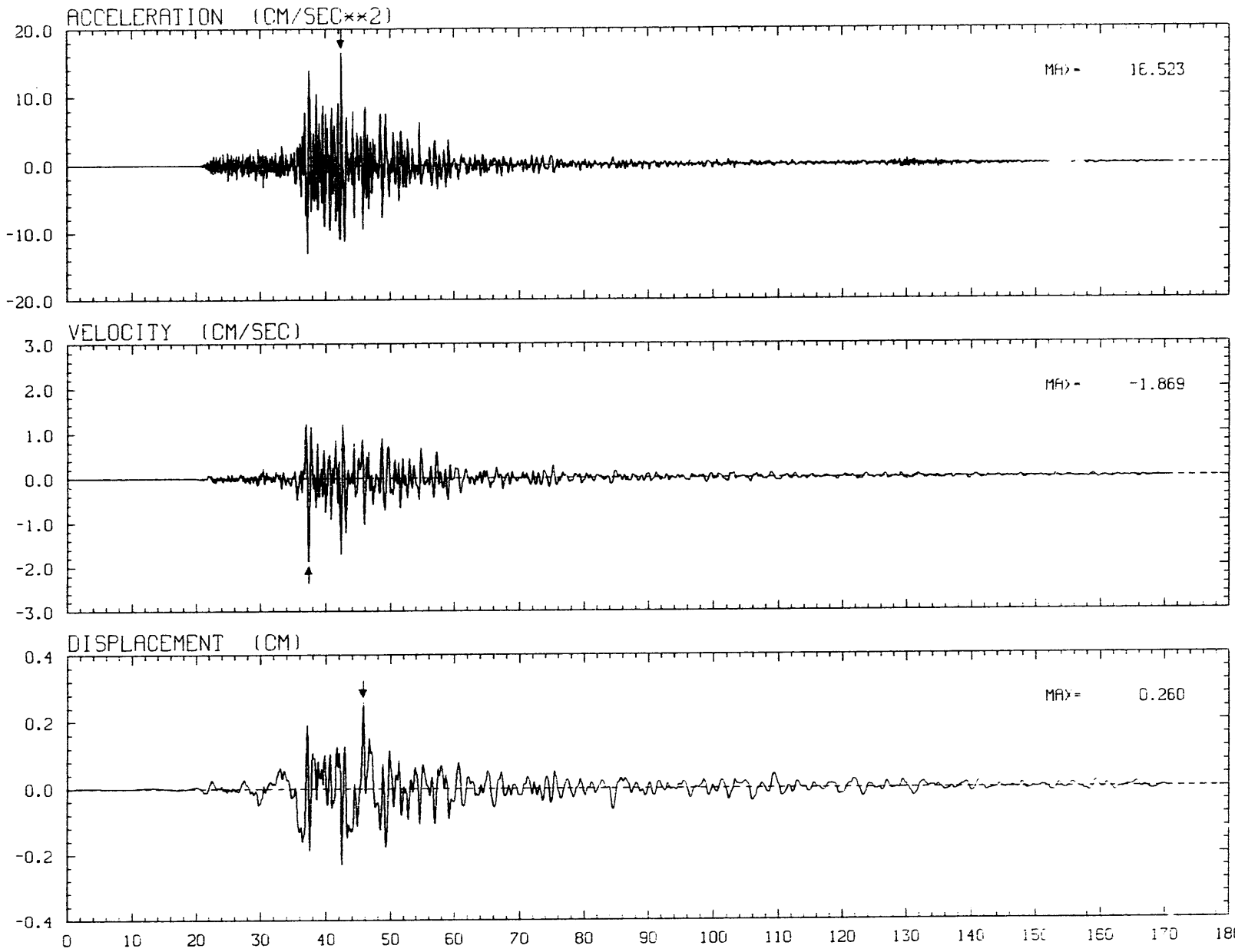
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM B CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM B CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

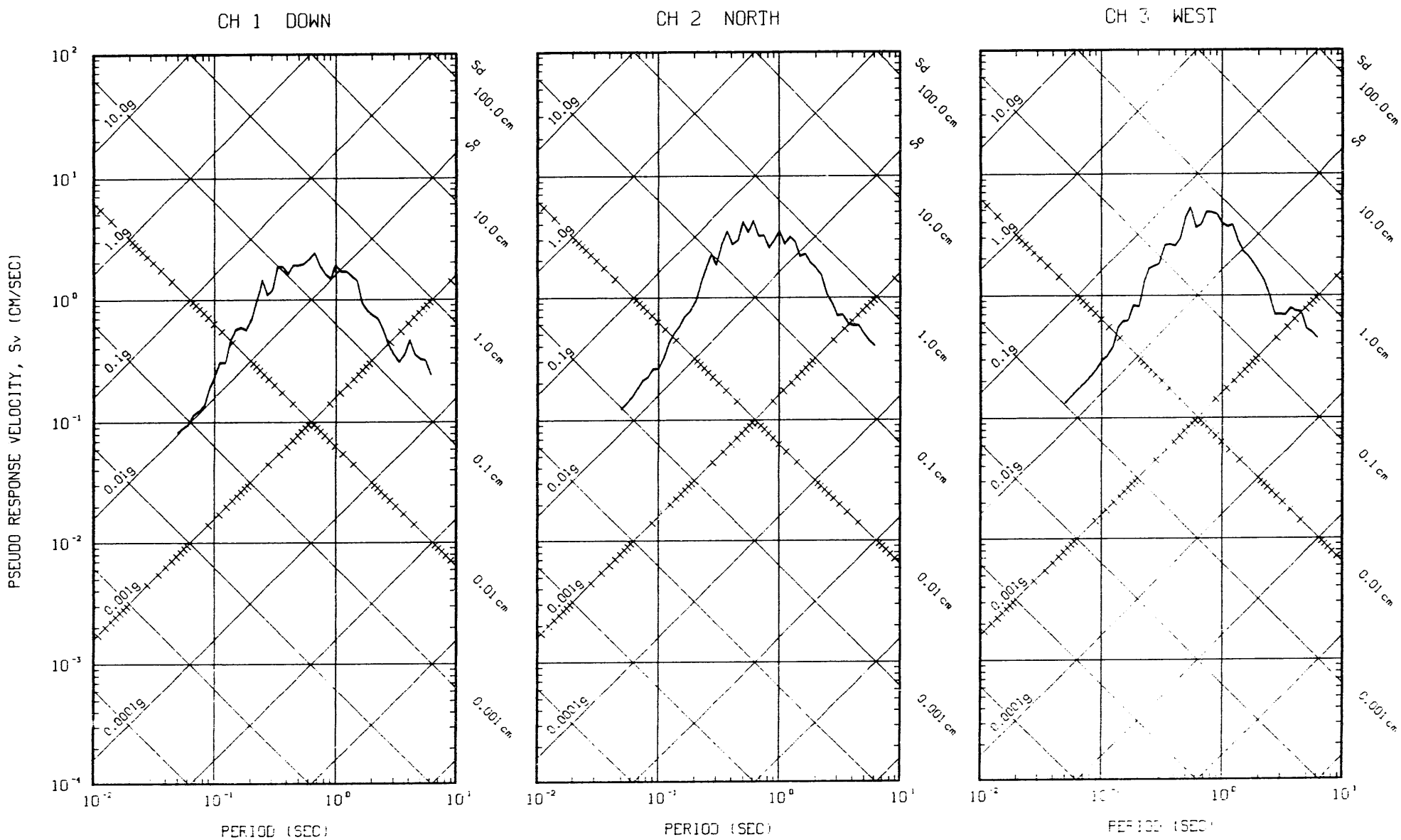


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM B CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



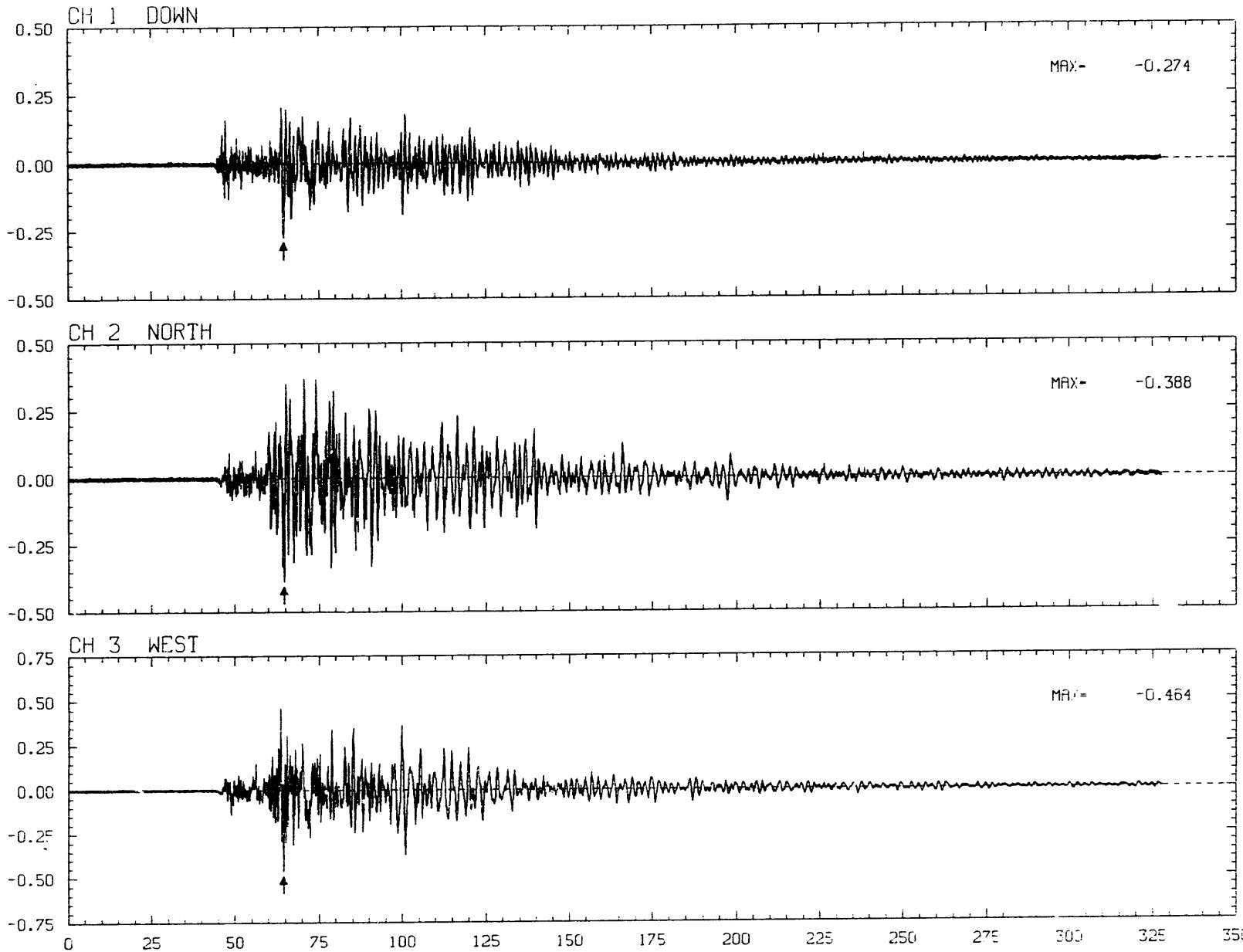
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 14 SYSTEM B

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

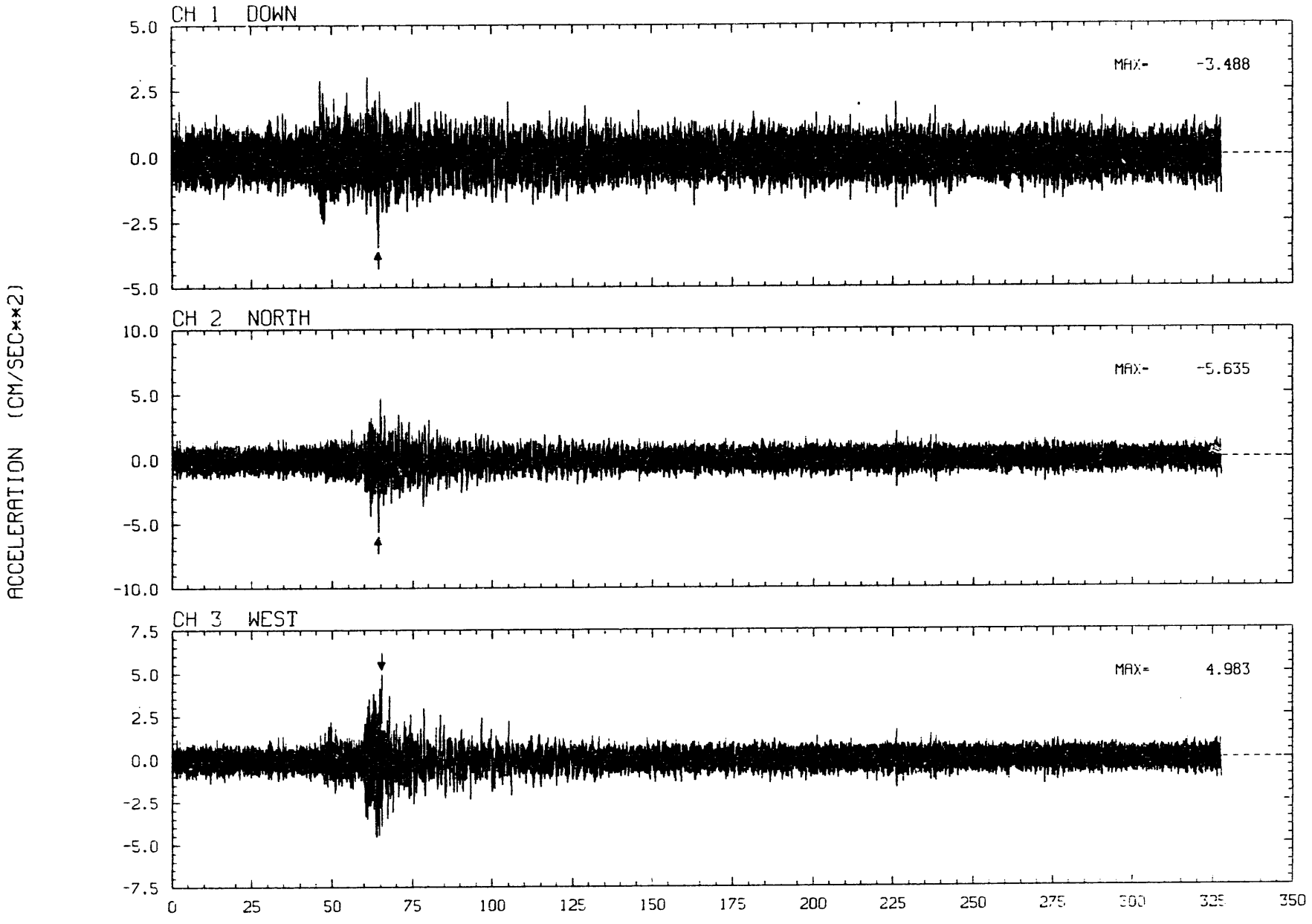


STATION NO. 15 SYSTEM A

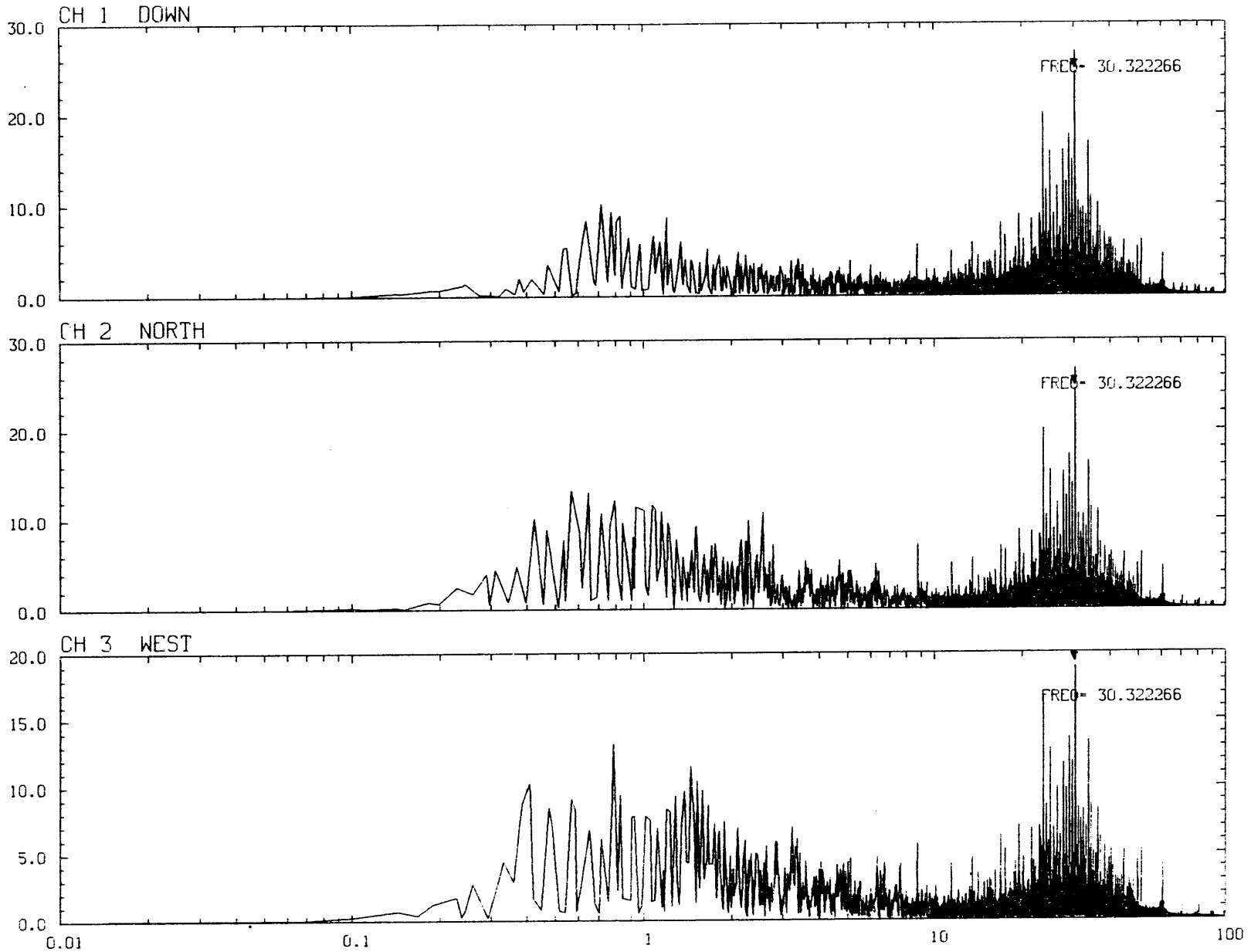
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM A
UNCORRECTED VELOCITY TIME HISTORIES



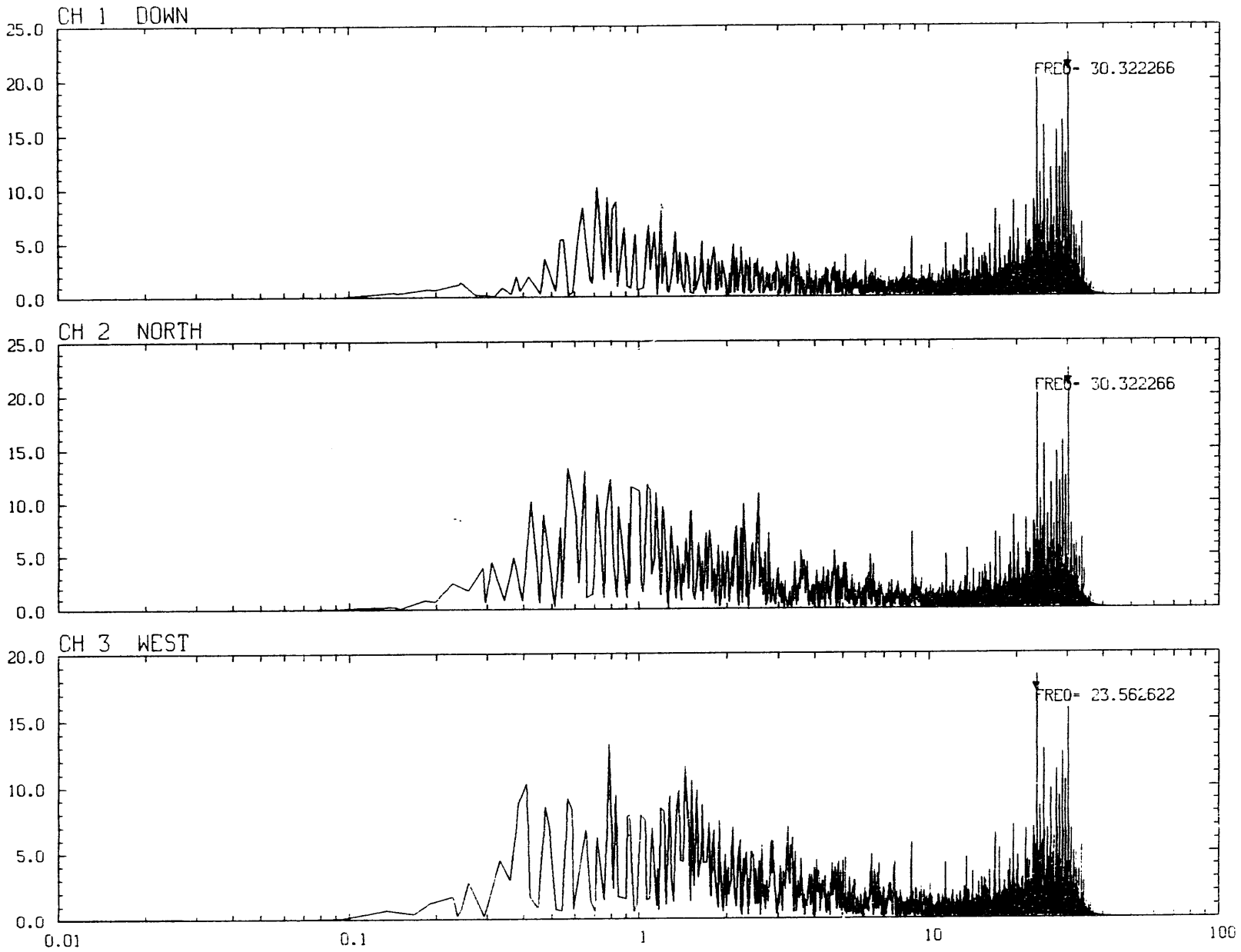
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM A
UNCORRECTED ACCELERATION TIME HISTORIES



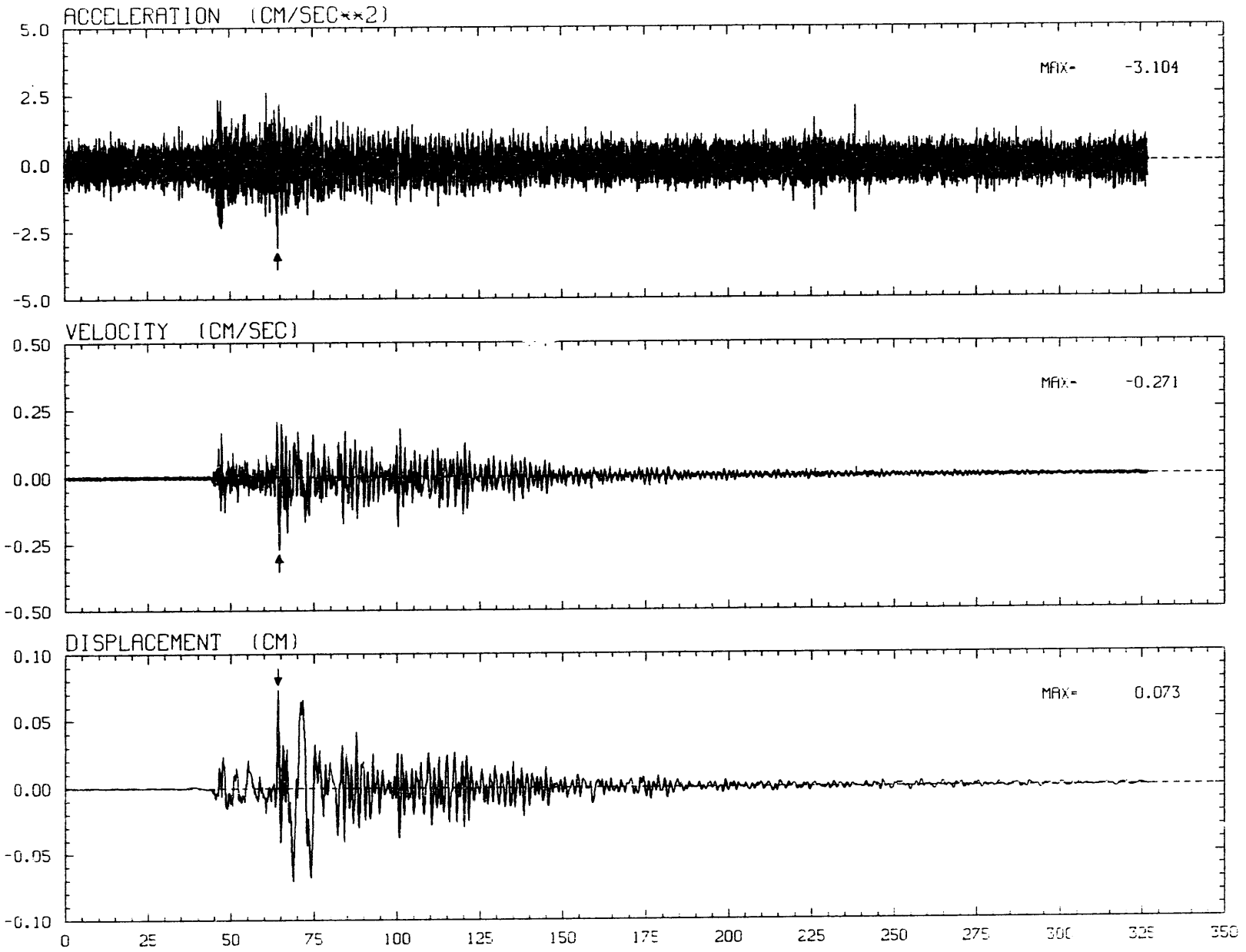
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM A
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



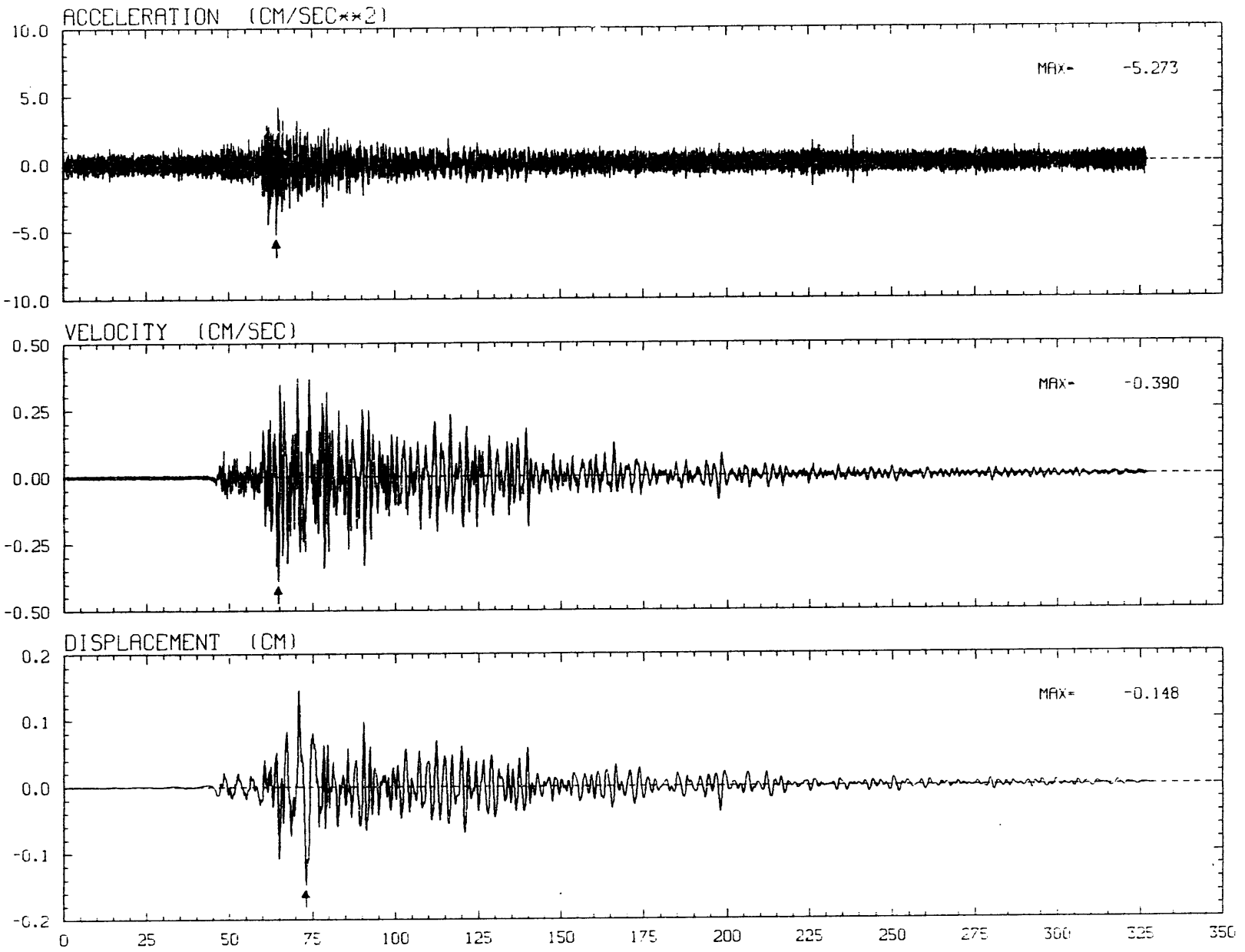
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM A
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



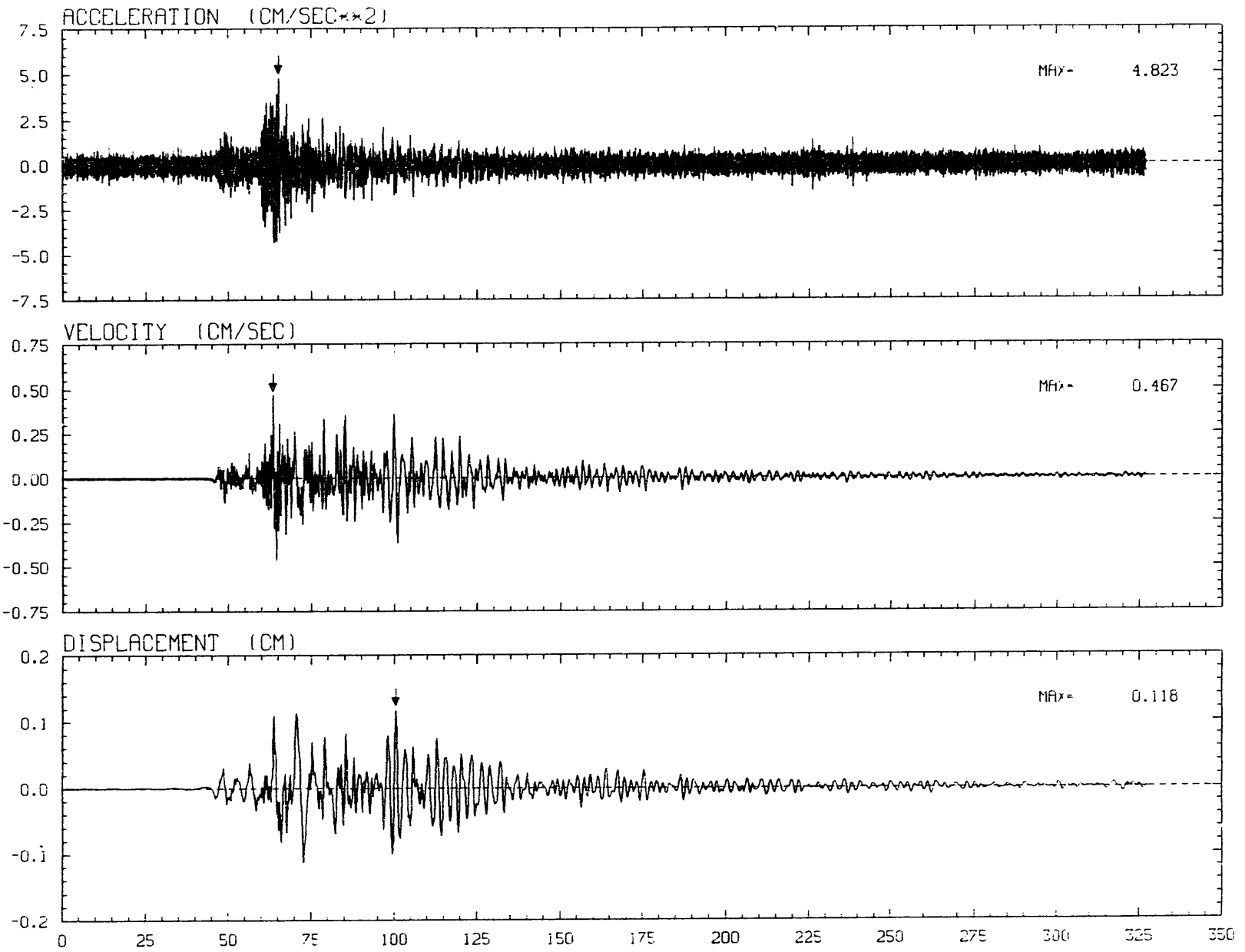
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM A CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM A CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

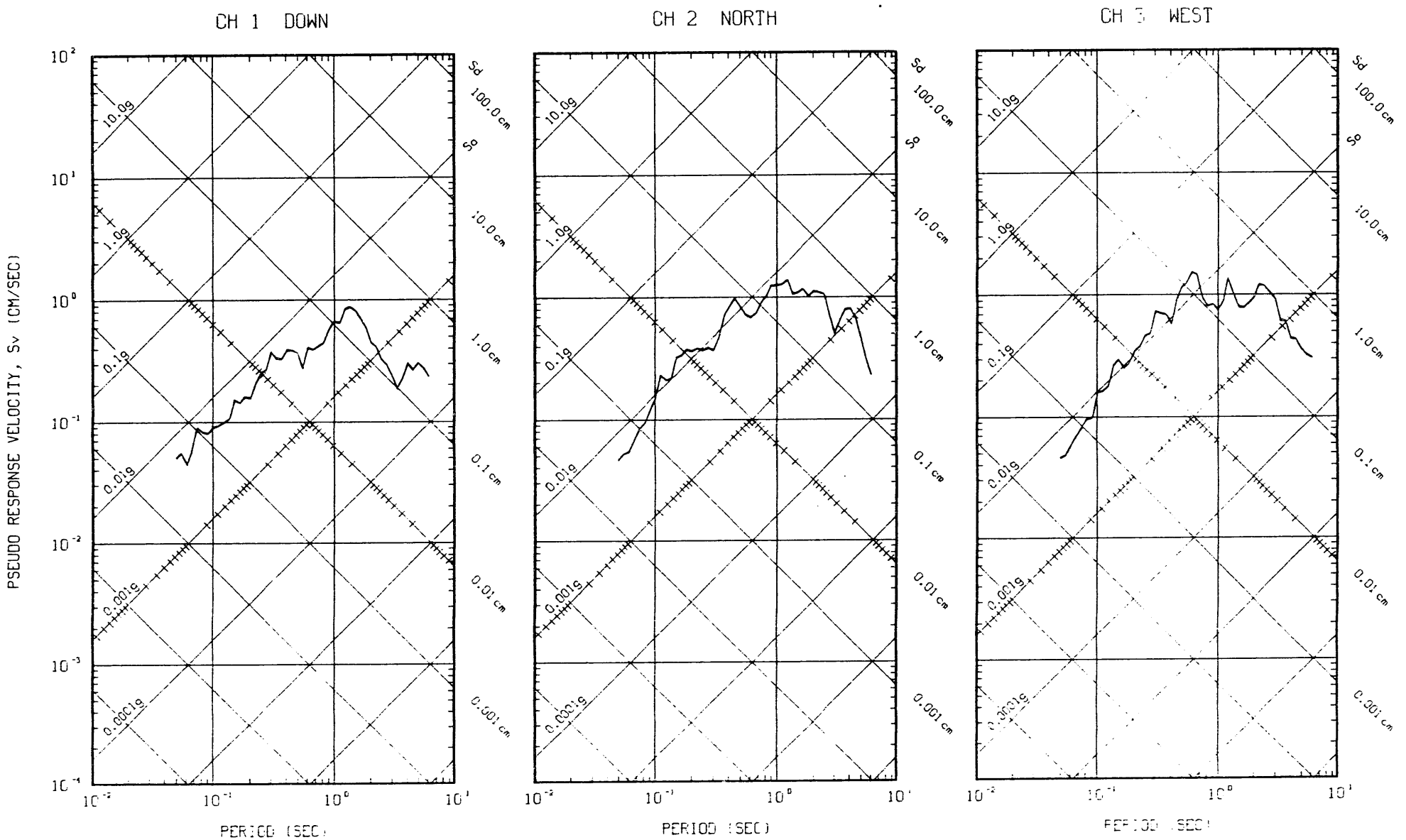


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM A CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



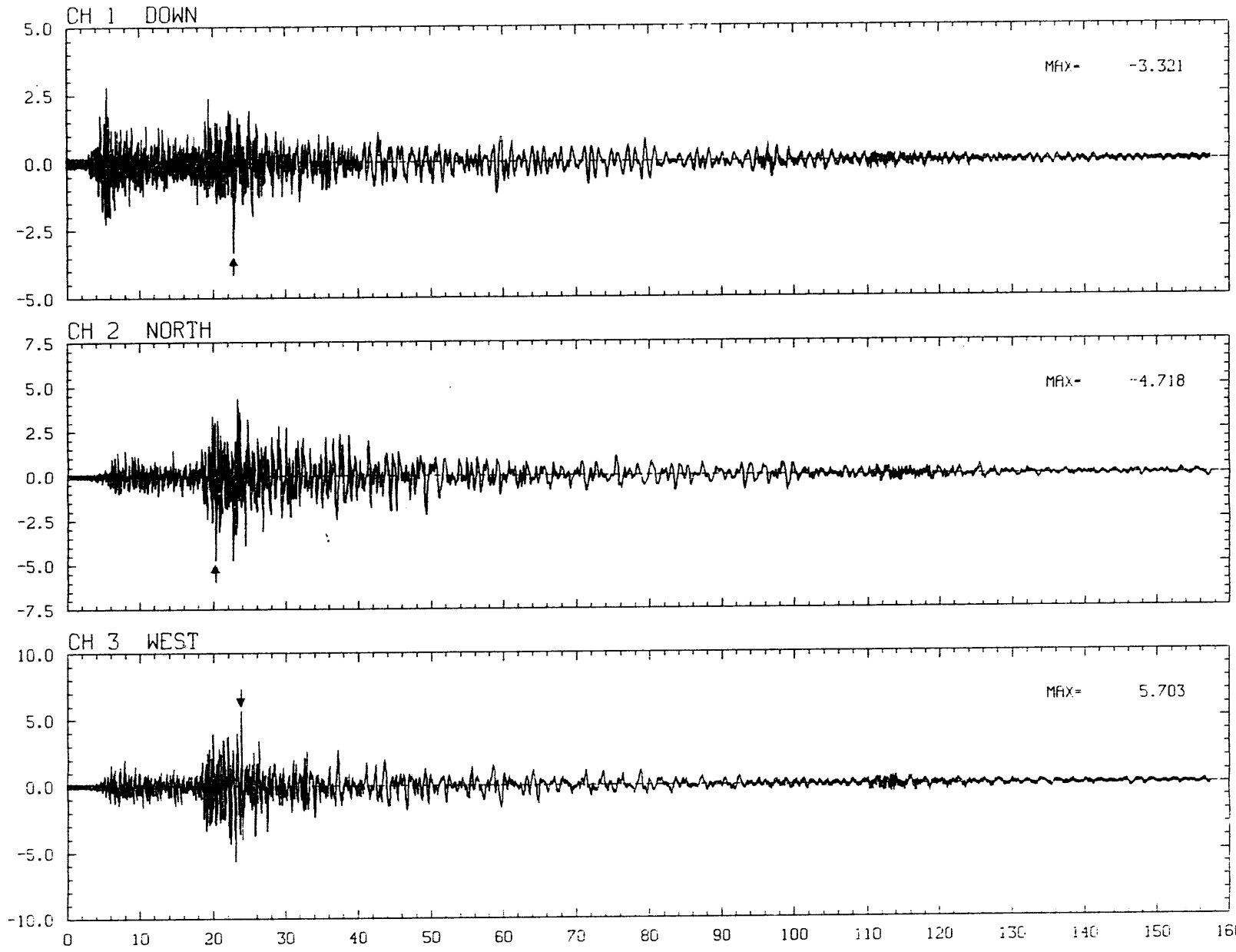
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM A

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

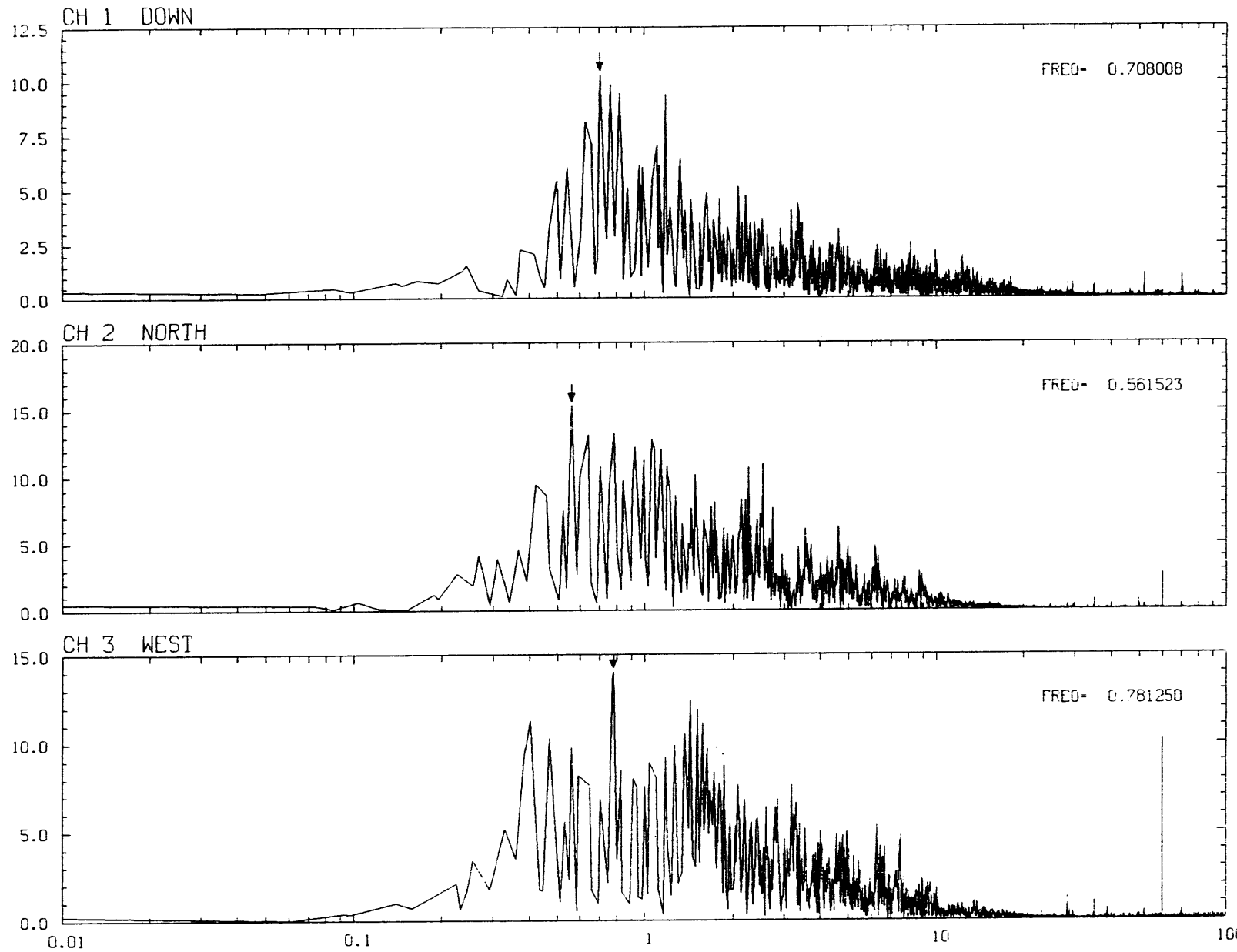


STATION NO. 15 SYSTEM B

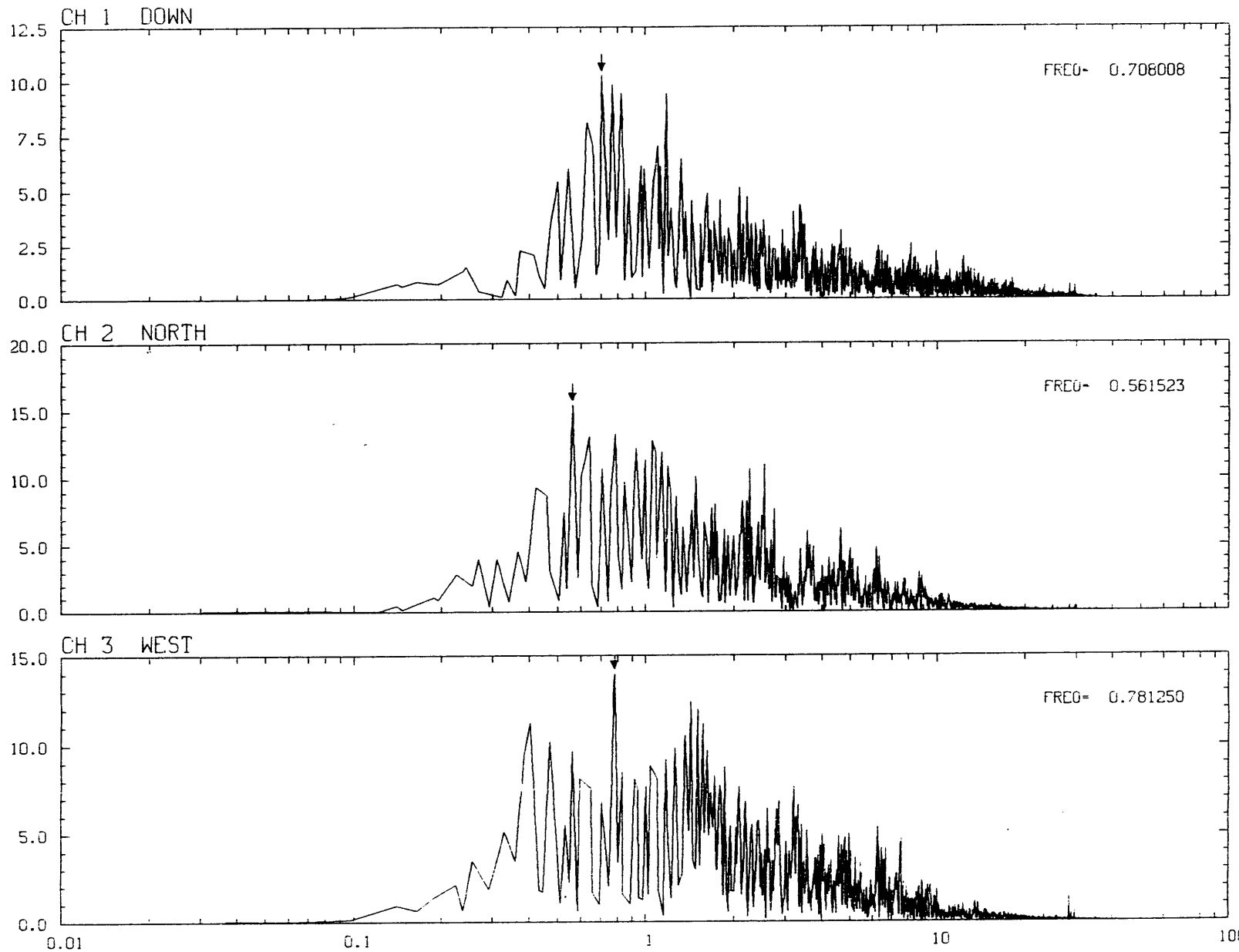
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM B
UNCORRECTED ACCELERATION TIME HISTORIES



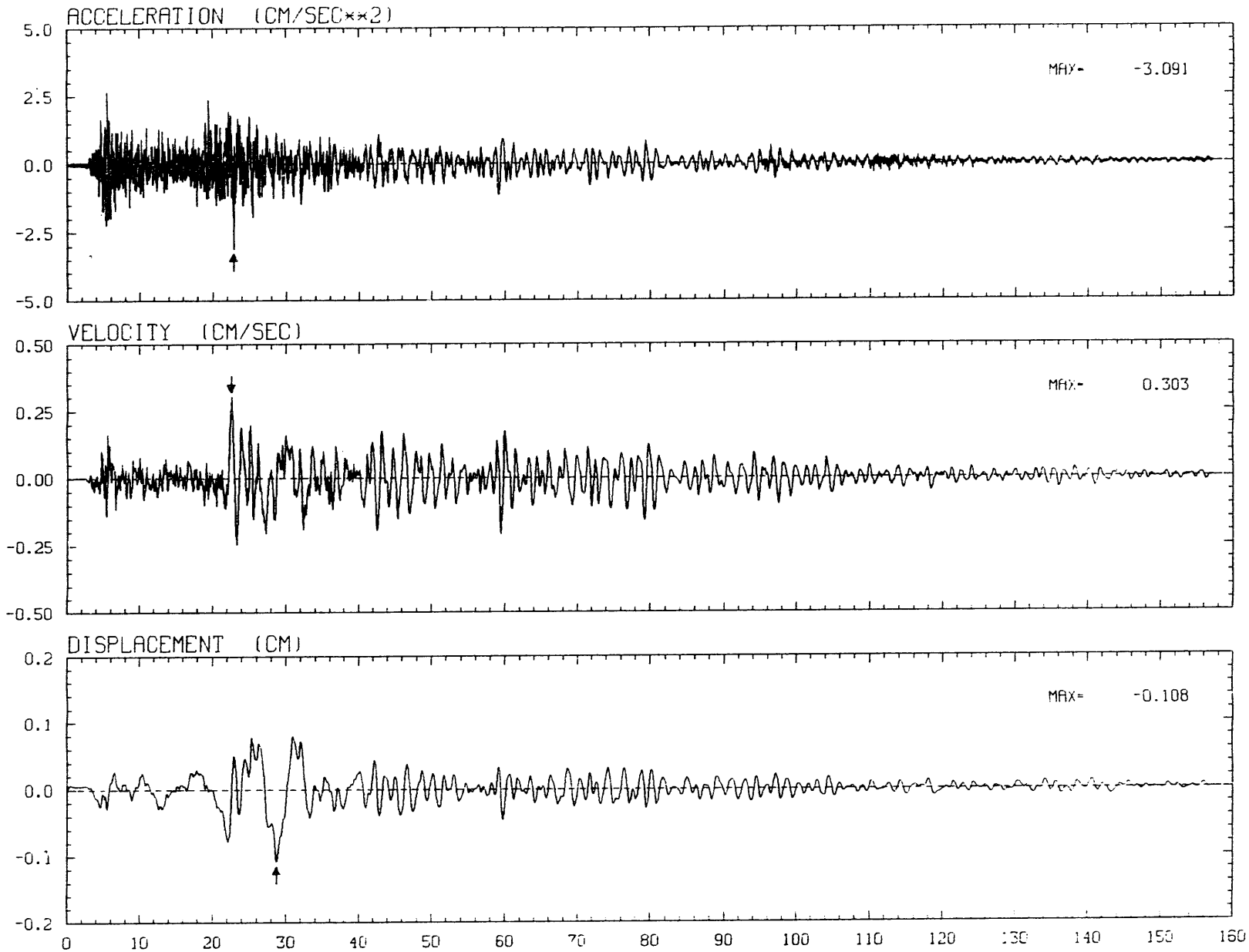
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM B
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



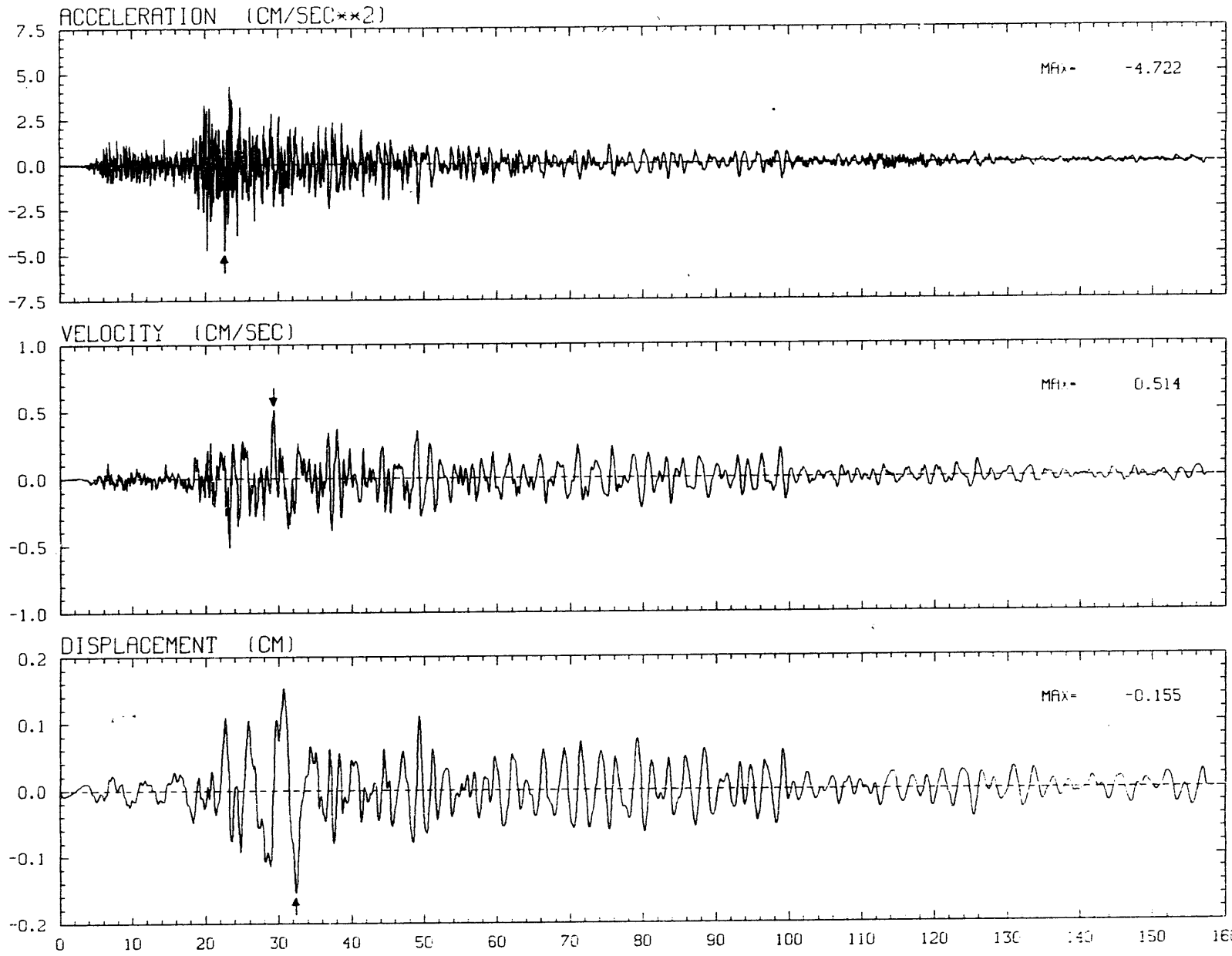
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM B
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



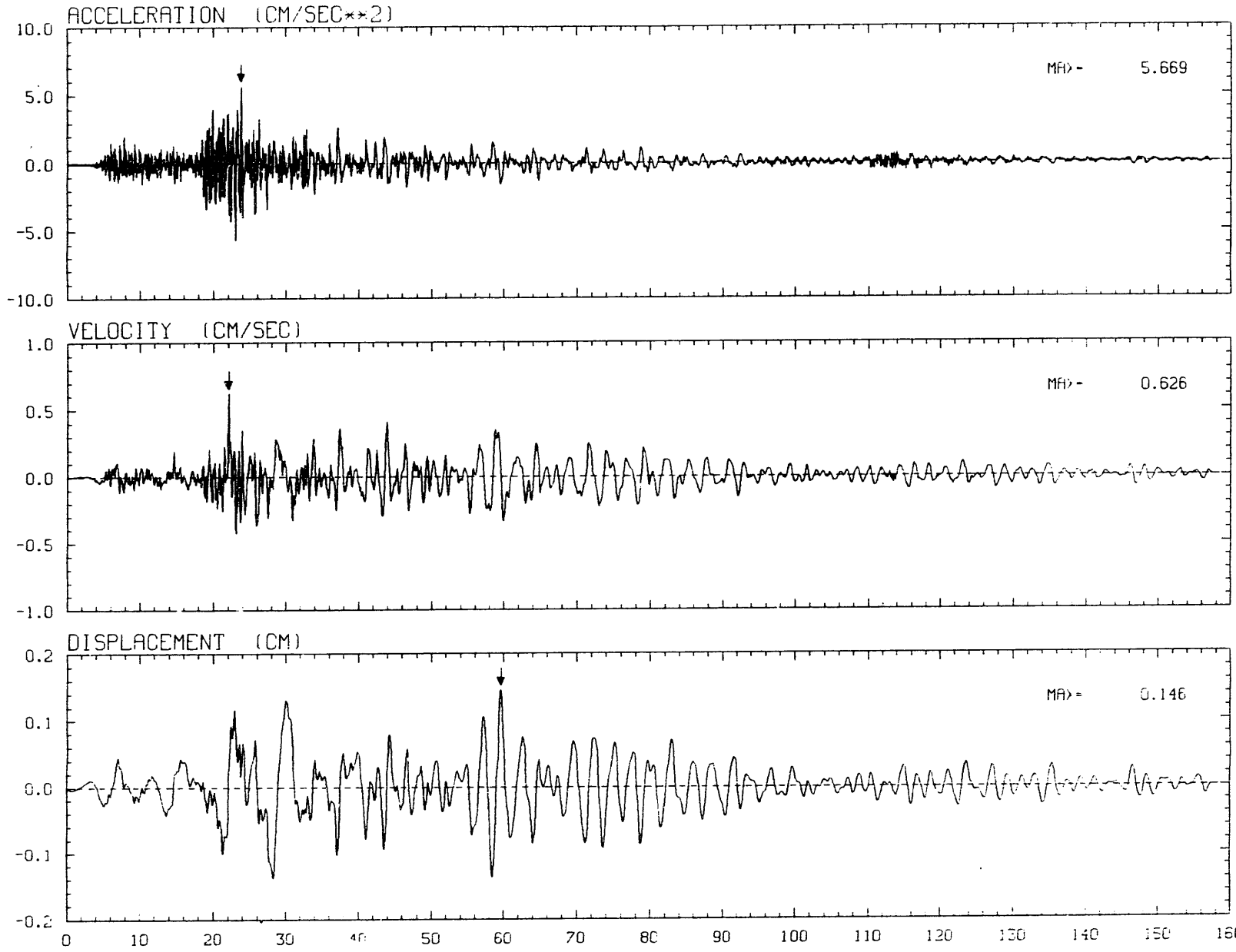
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM B CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM B CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

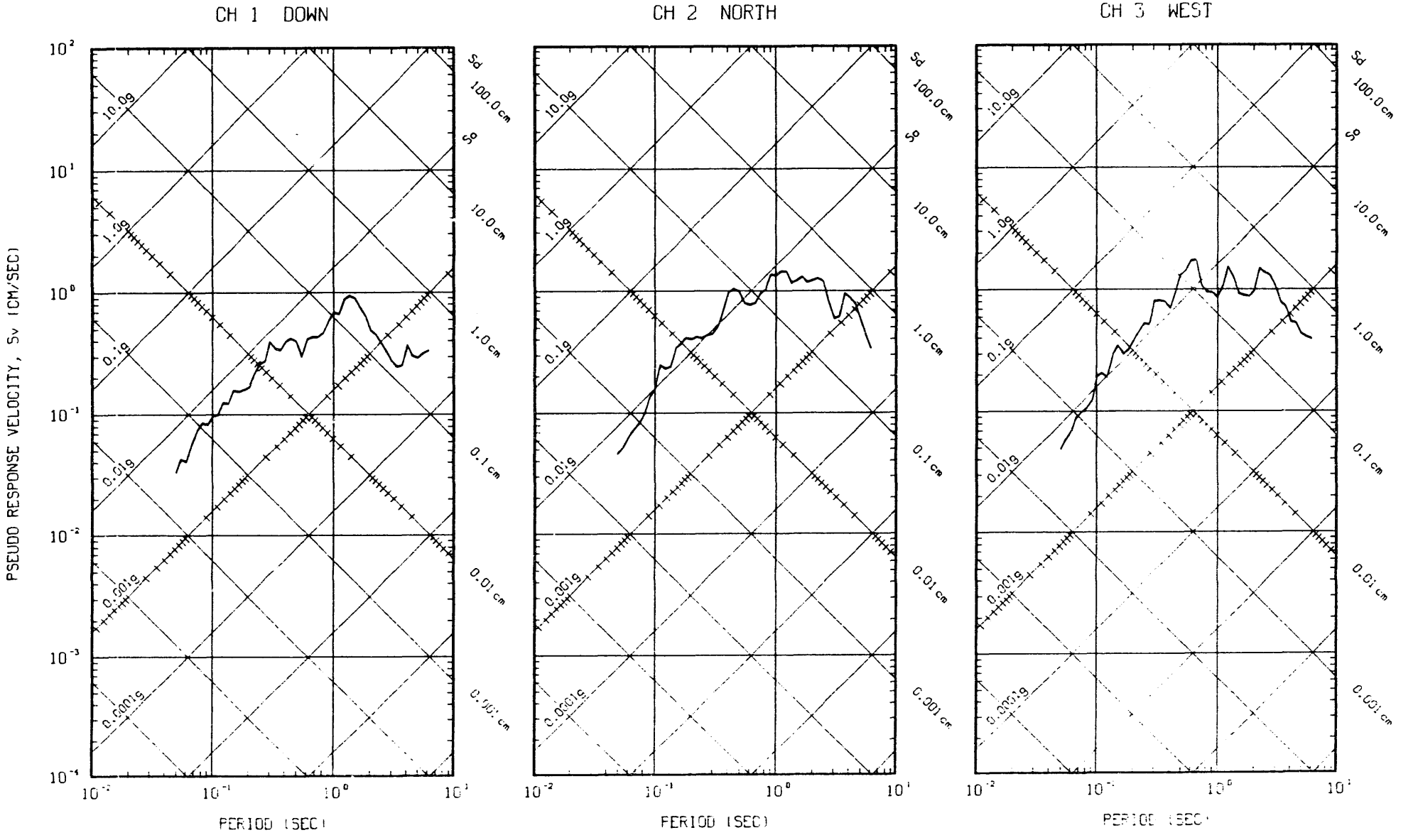


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM B CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



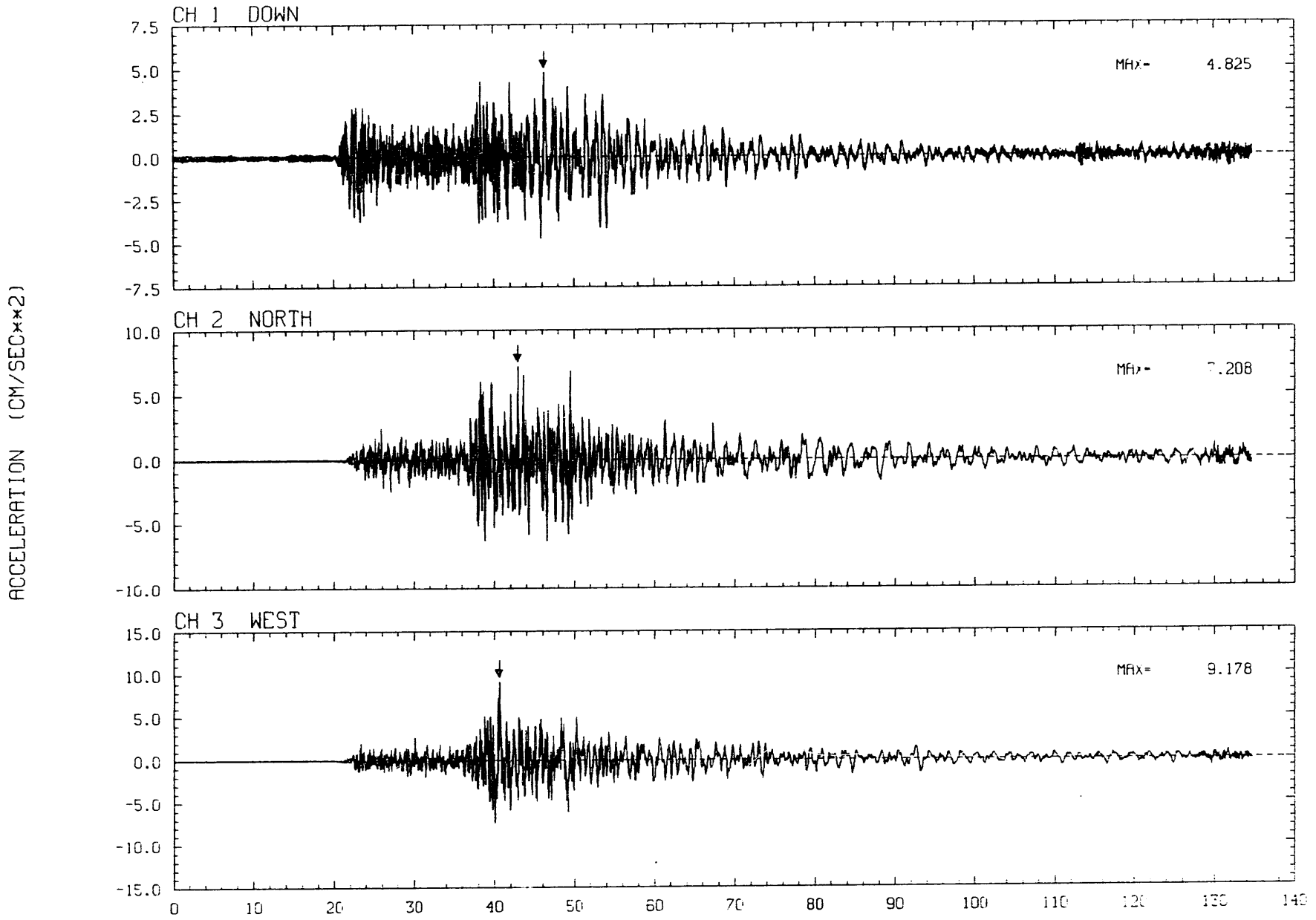
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 15 SYSTEM B

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

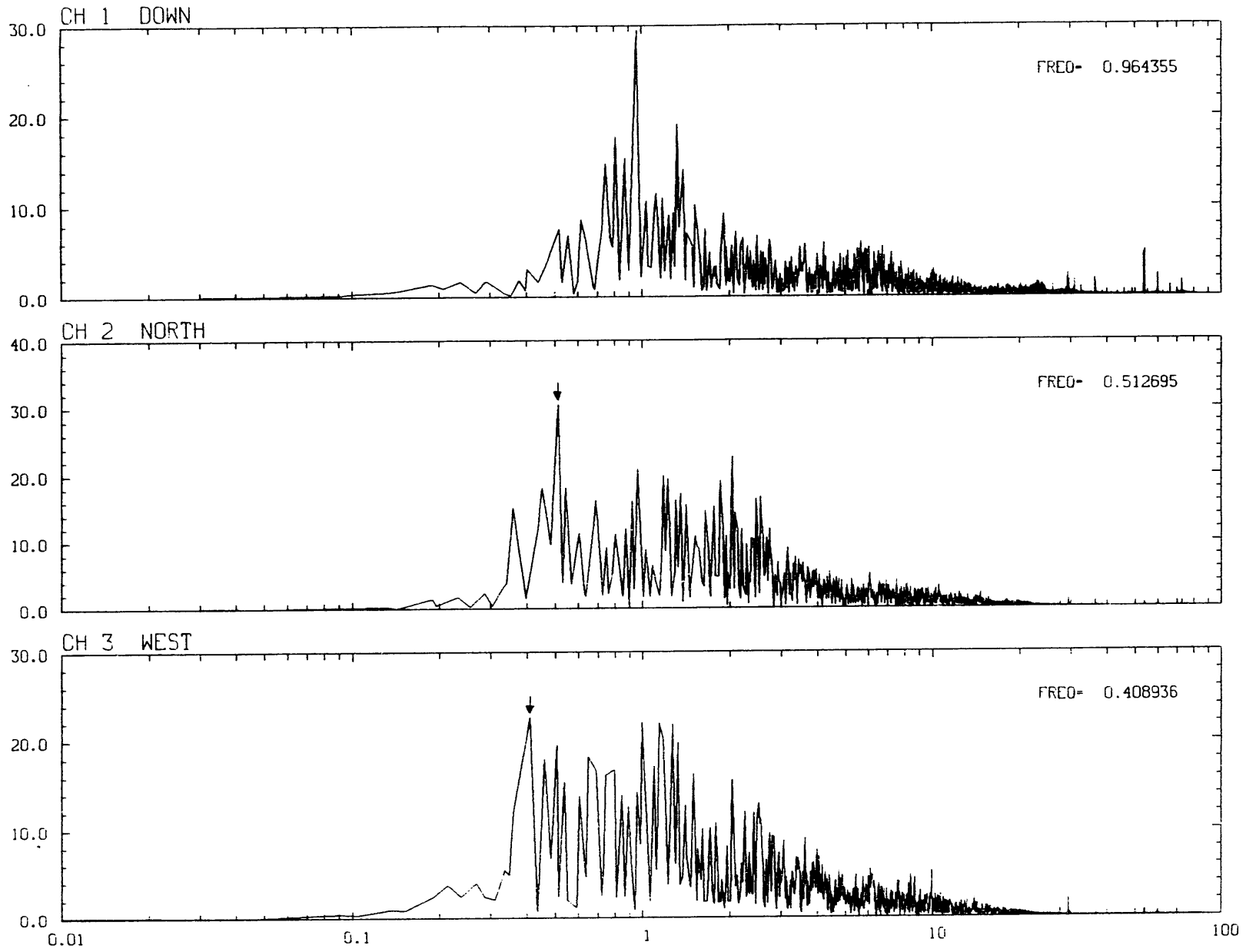


STATION NO. 16

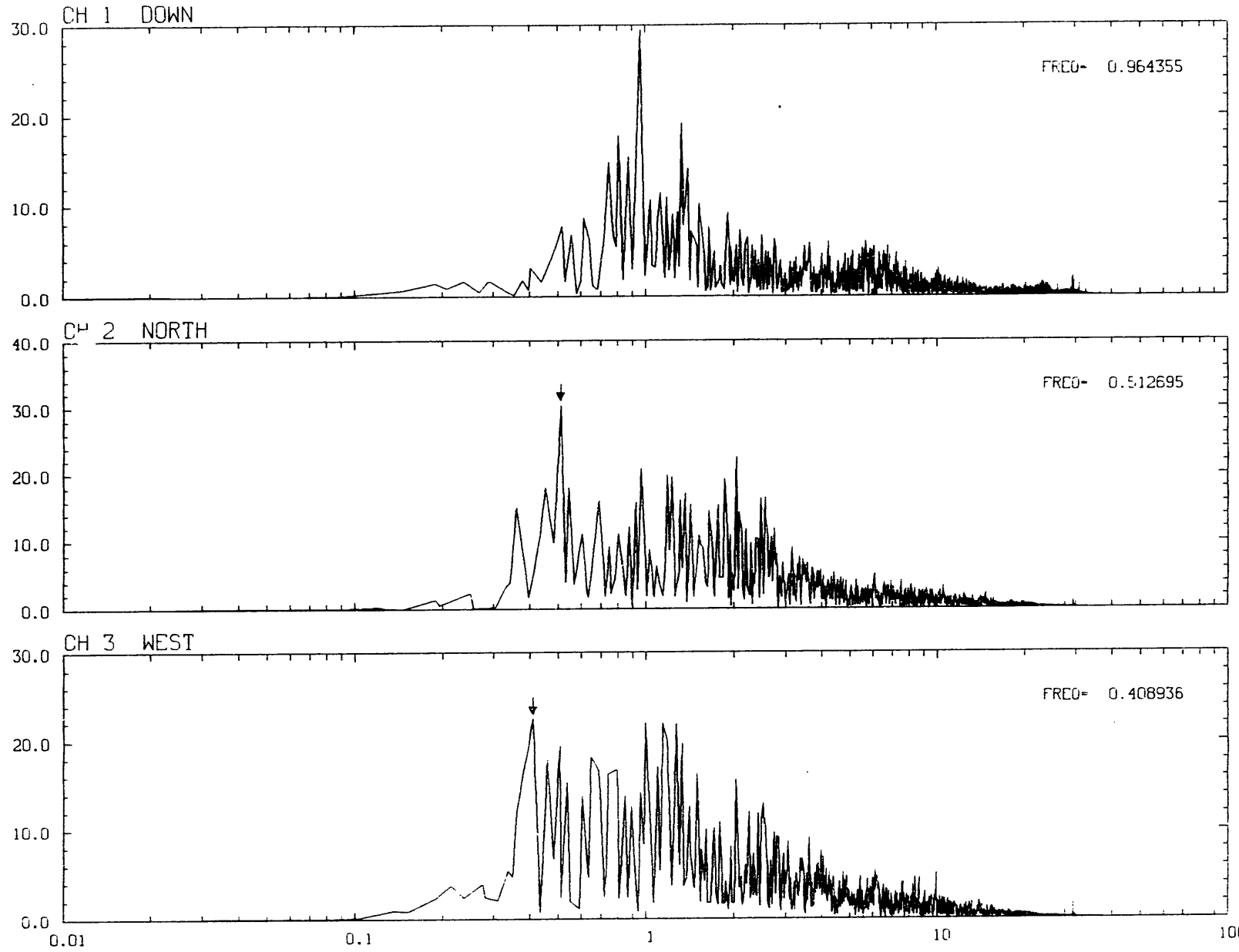
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 16
UNCORRECTED ACCELERATION TIME HISTORIES



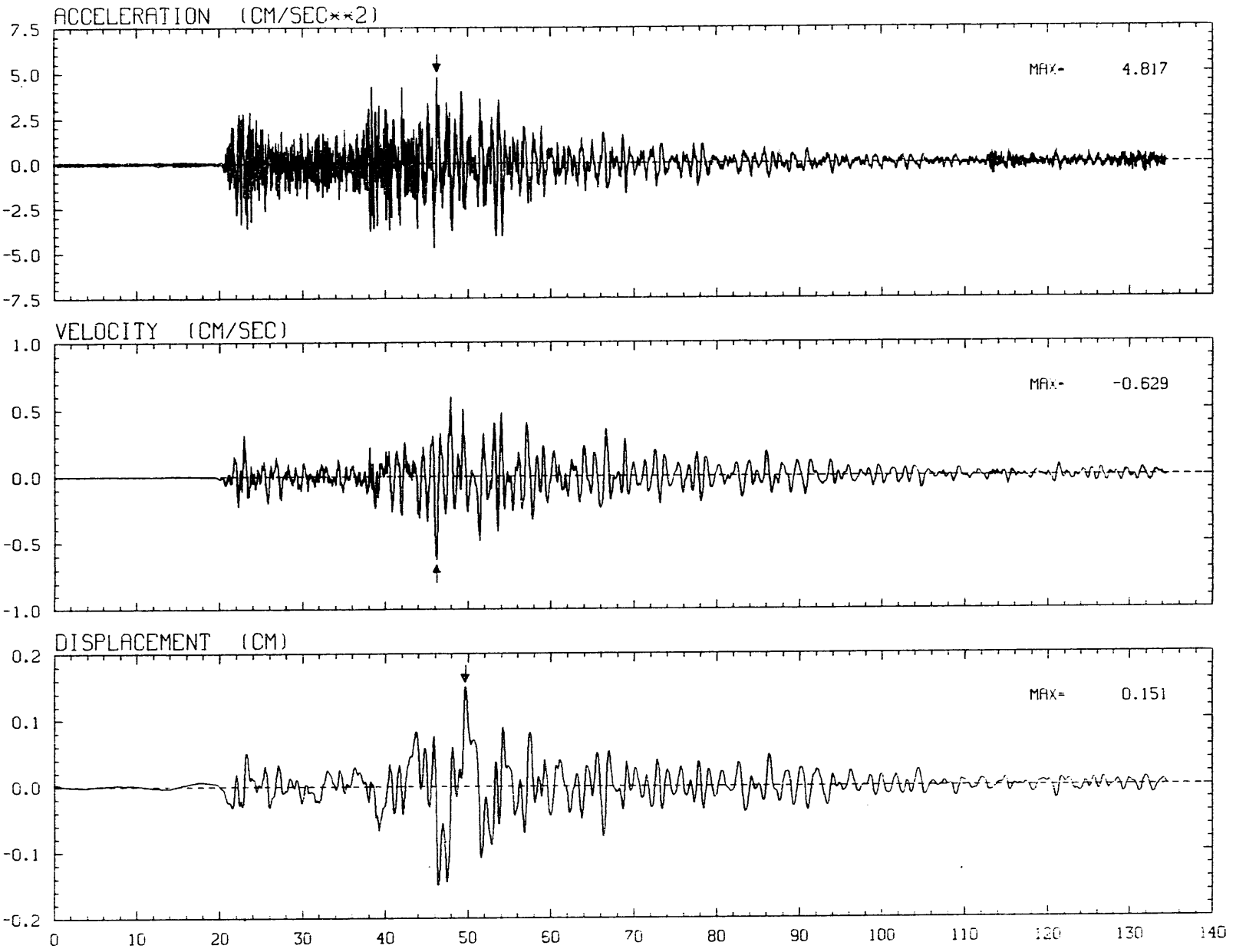
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 16
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



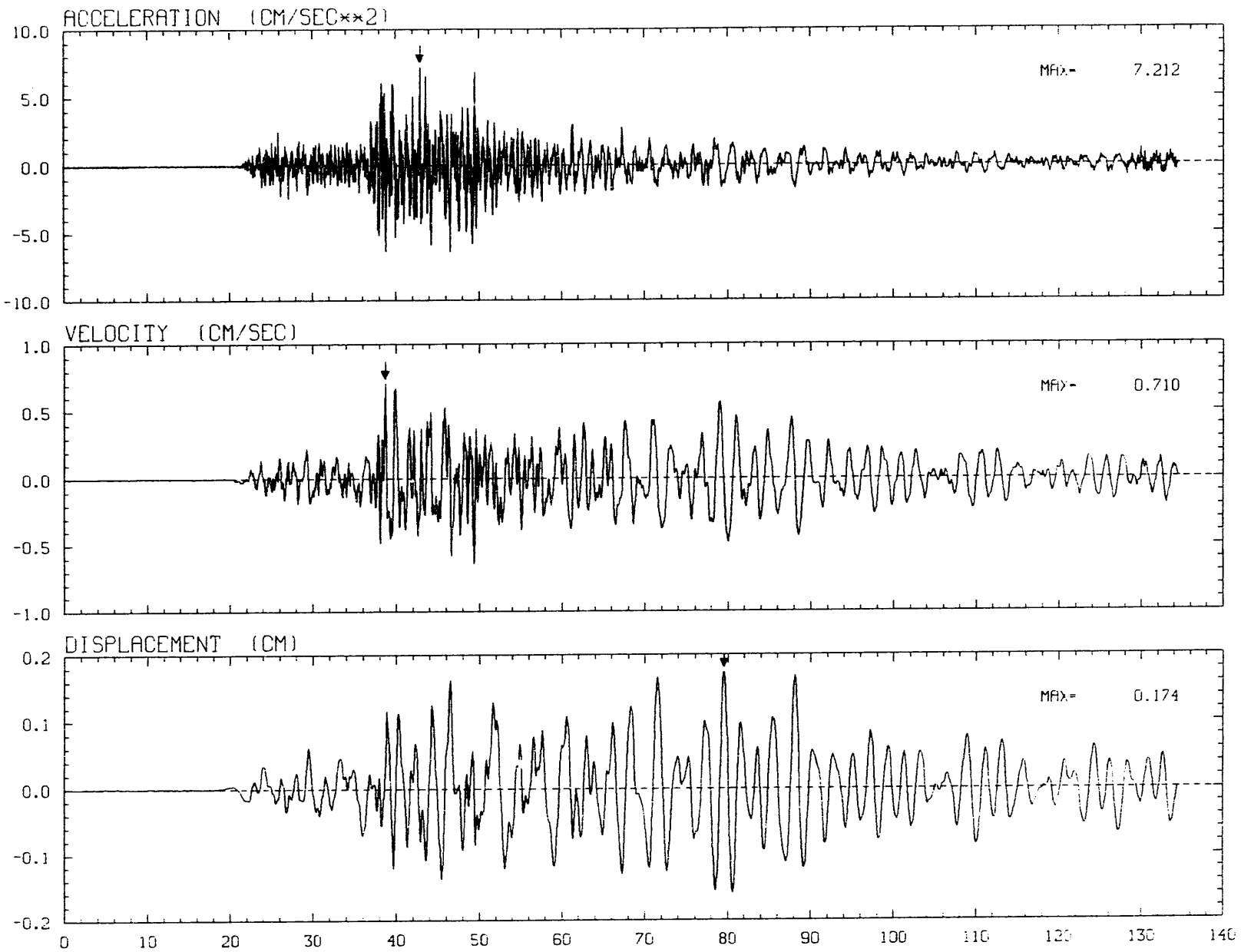
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 16
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



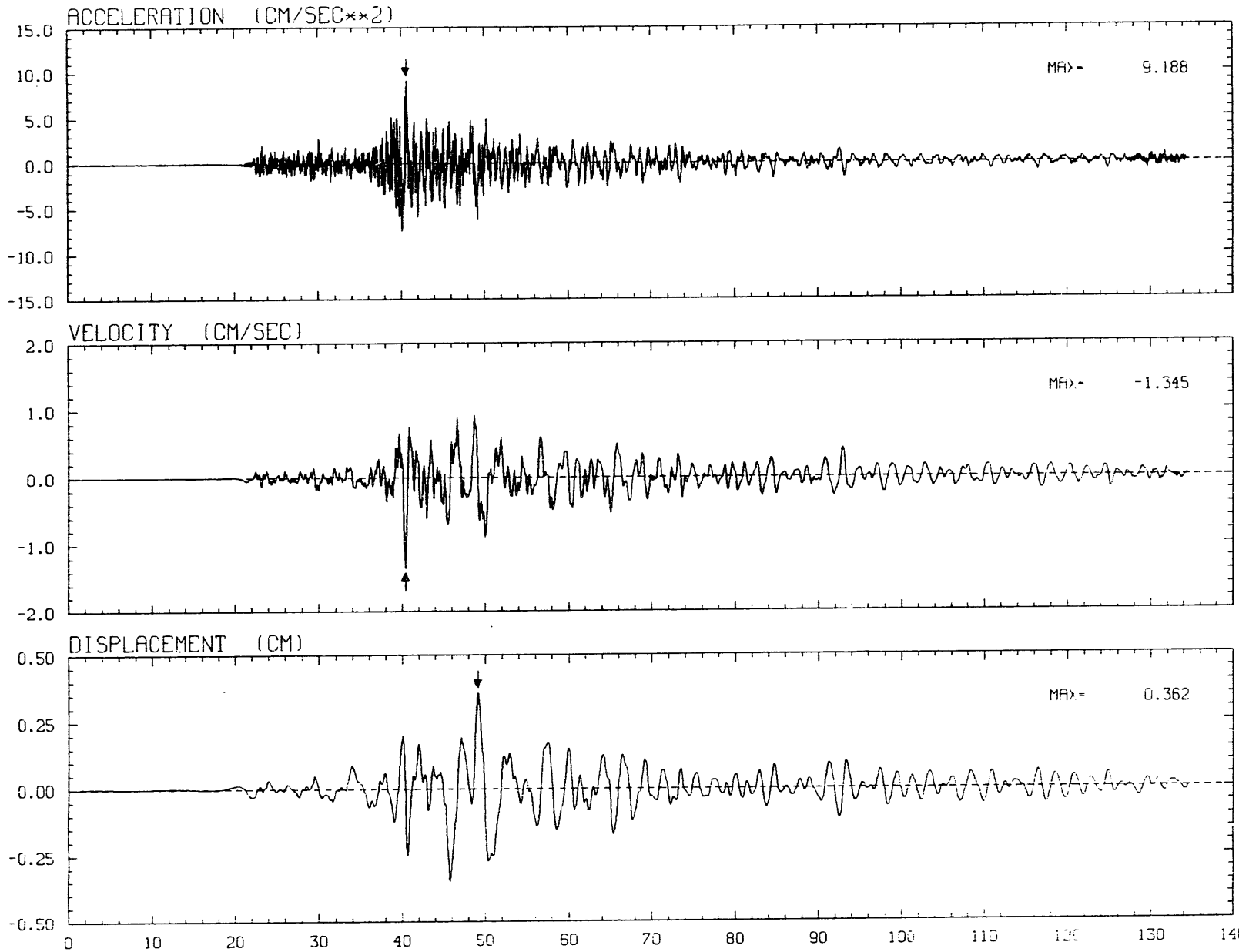
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 16 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 16 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

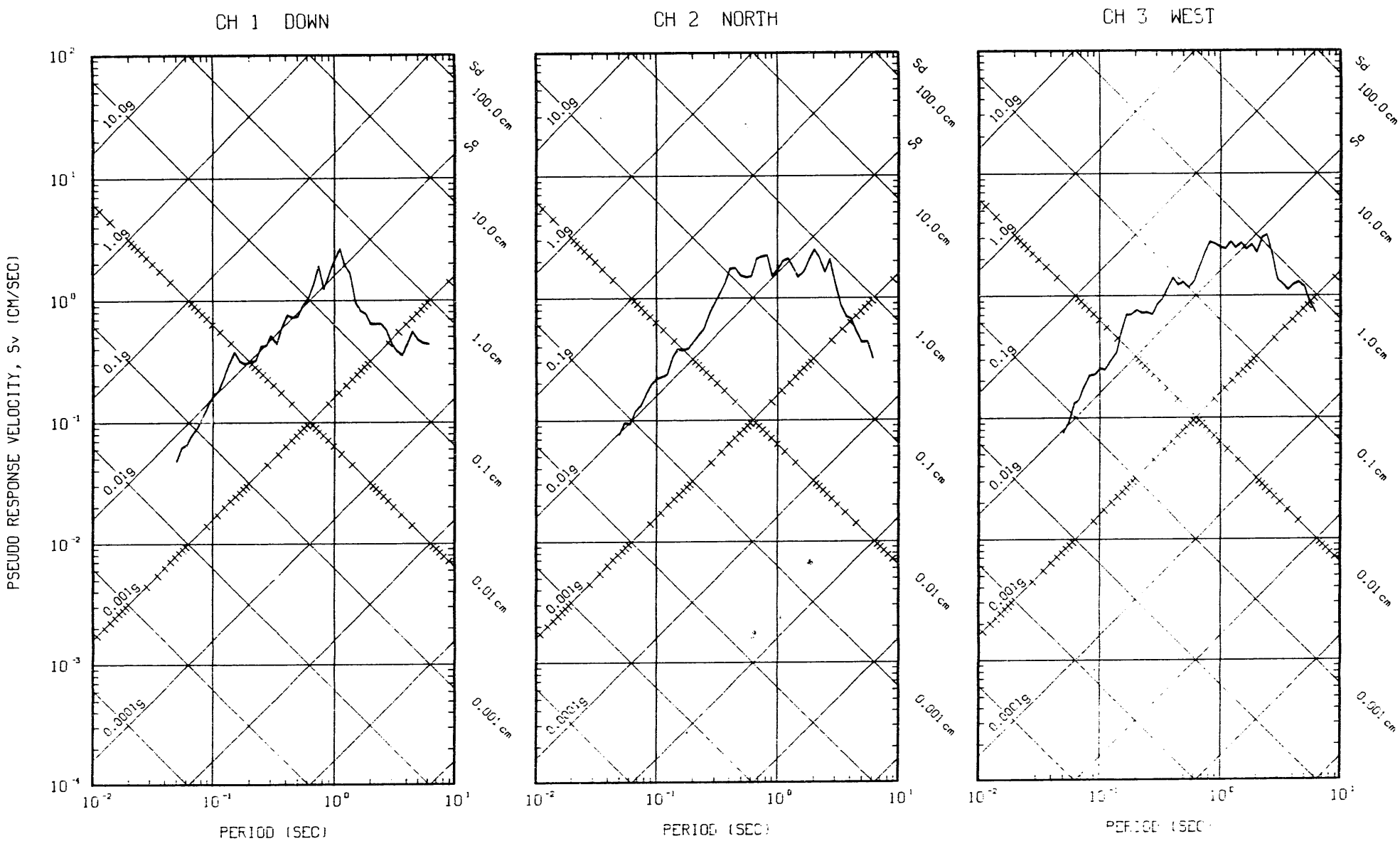


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 16 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



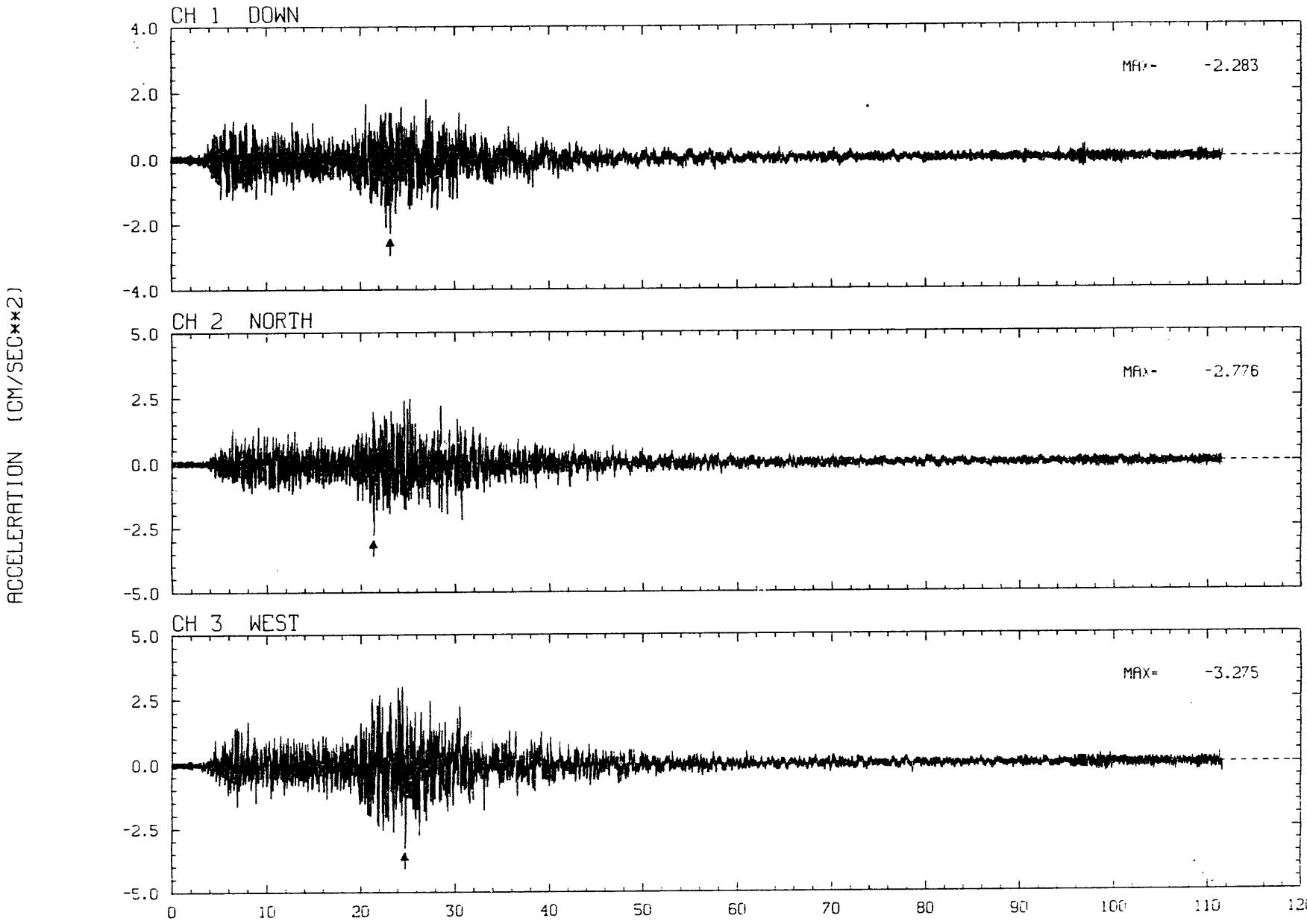
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 16

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

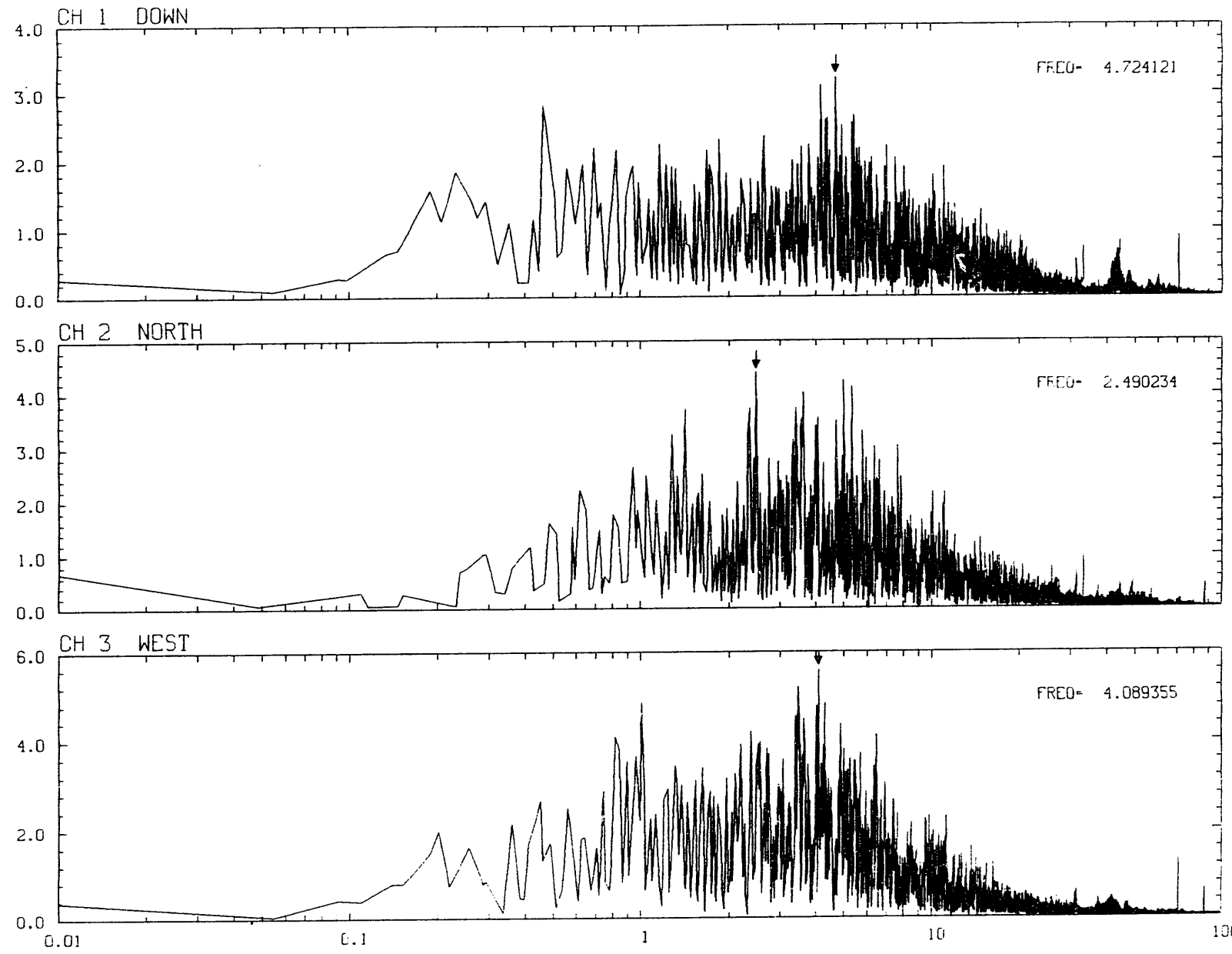


STATION NO. 17

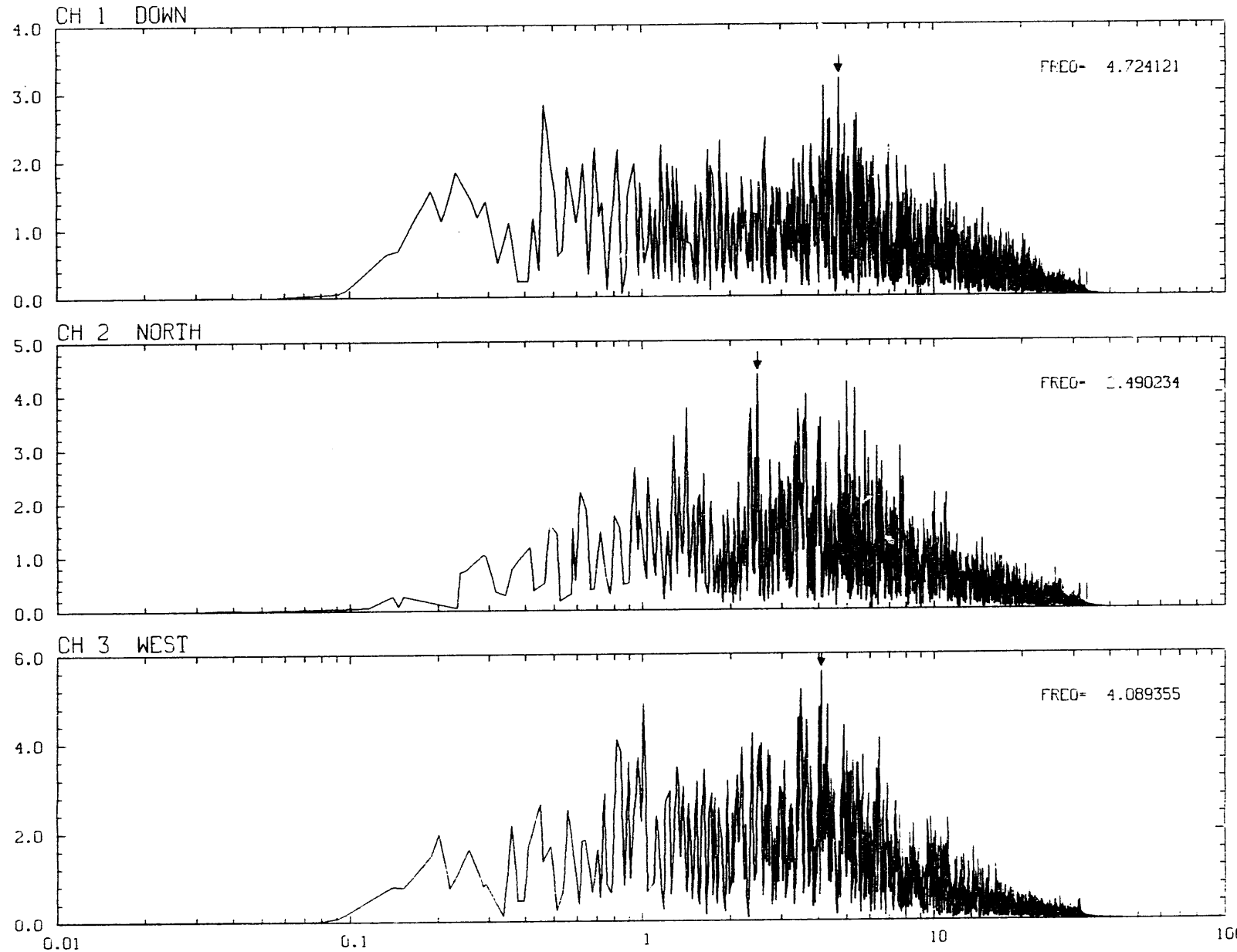
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 17
UNCORRECTED ACCELERATION TIME HISTORIES



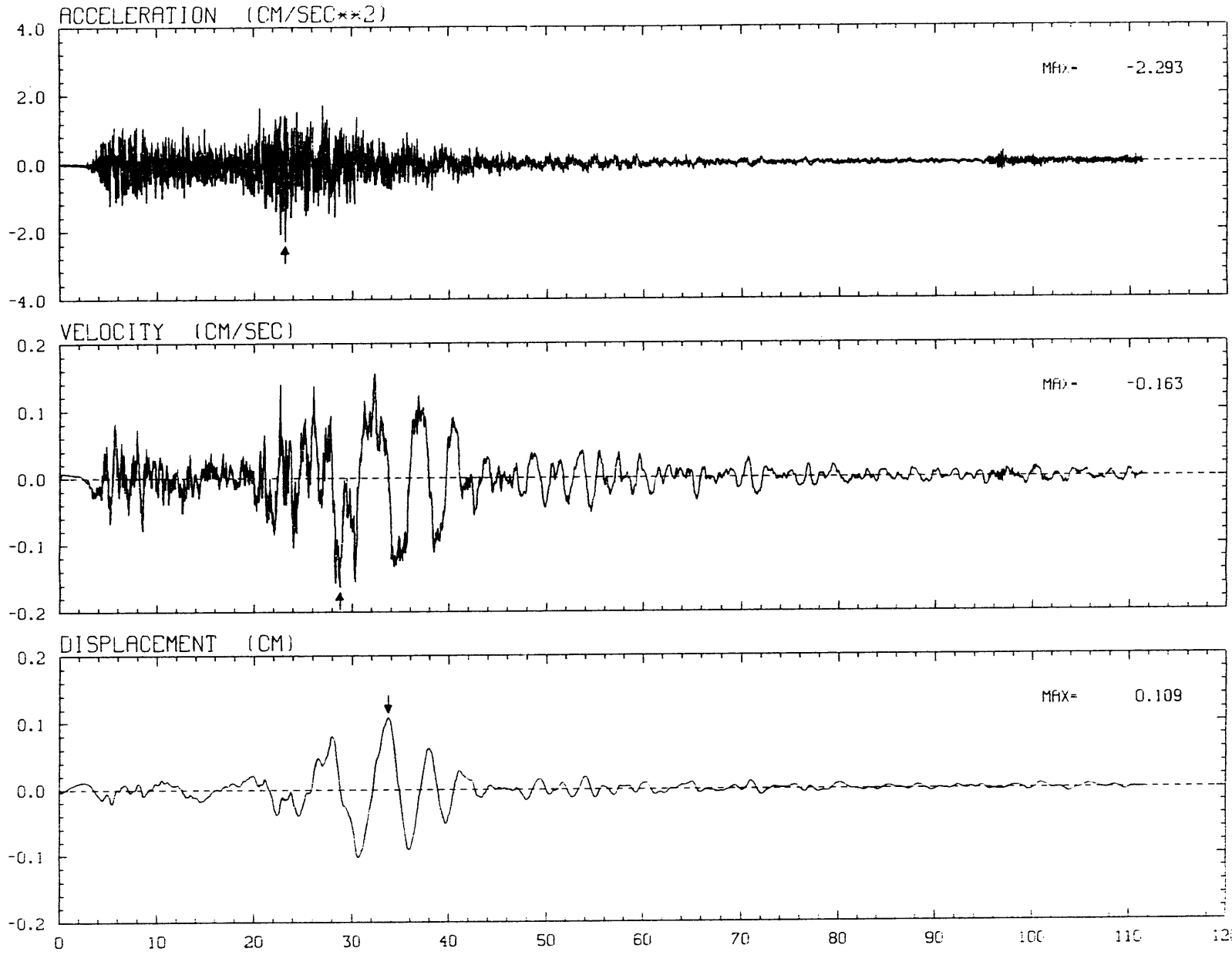
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 17
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



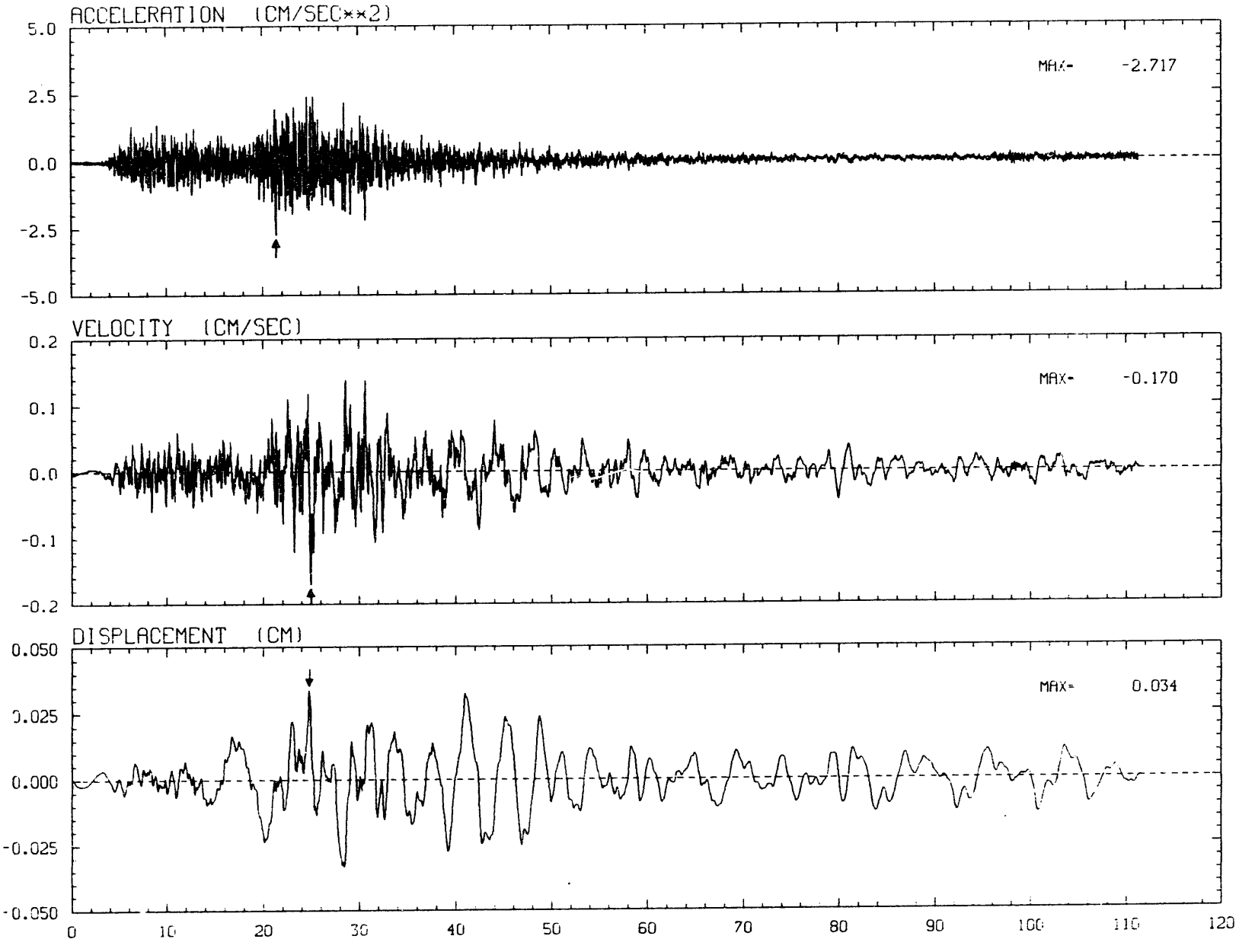
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 17
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



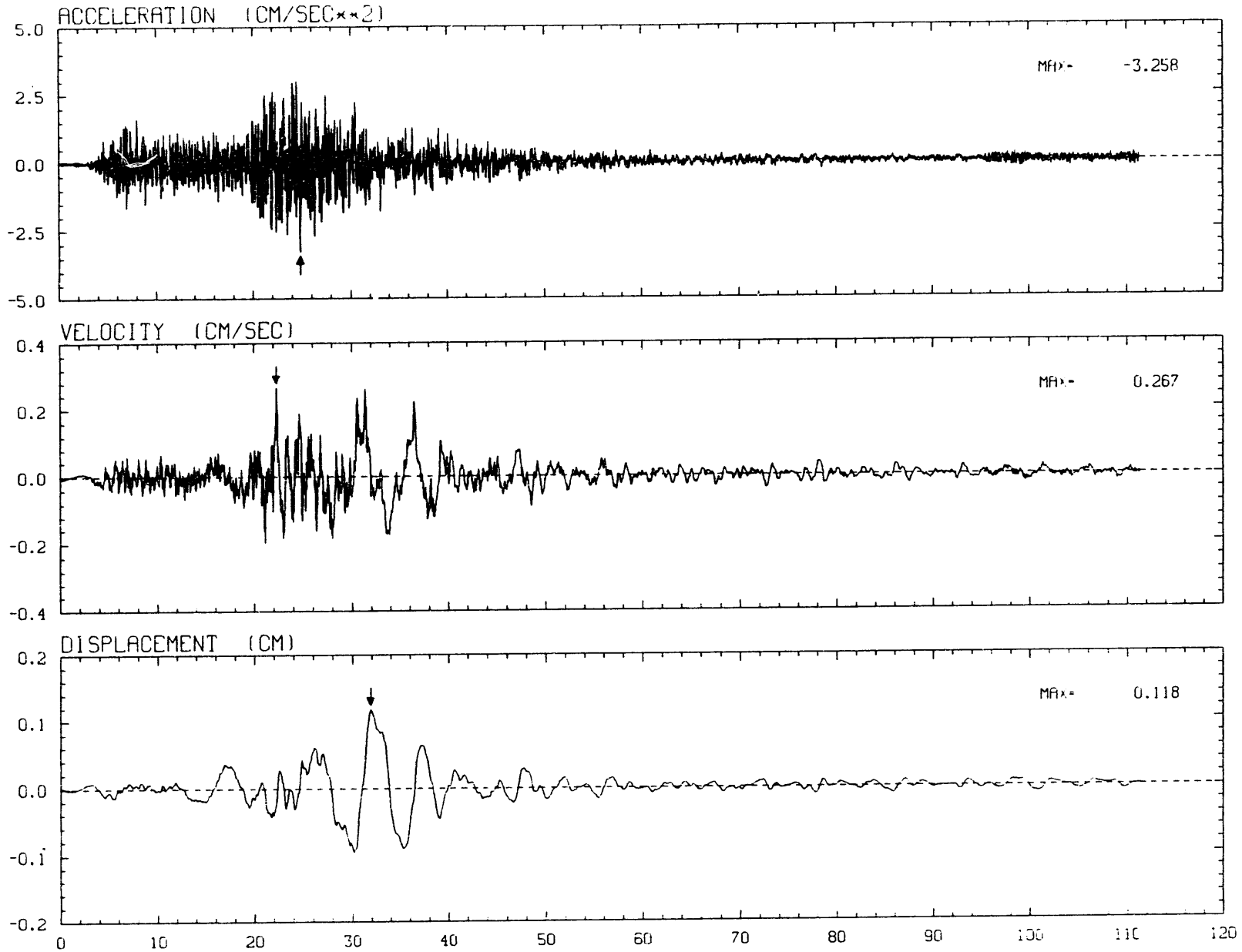
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 17 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 17 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

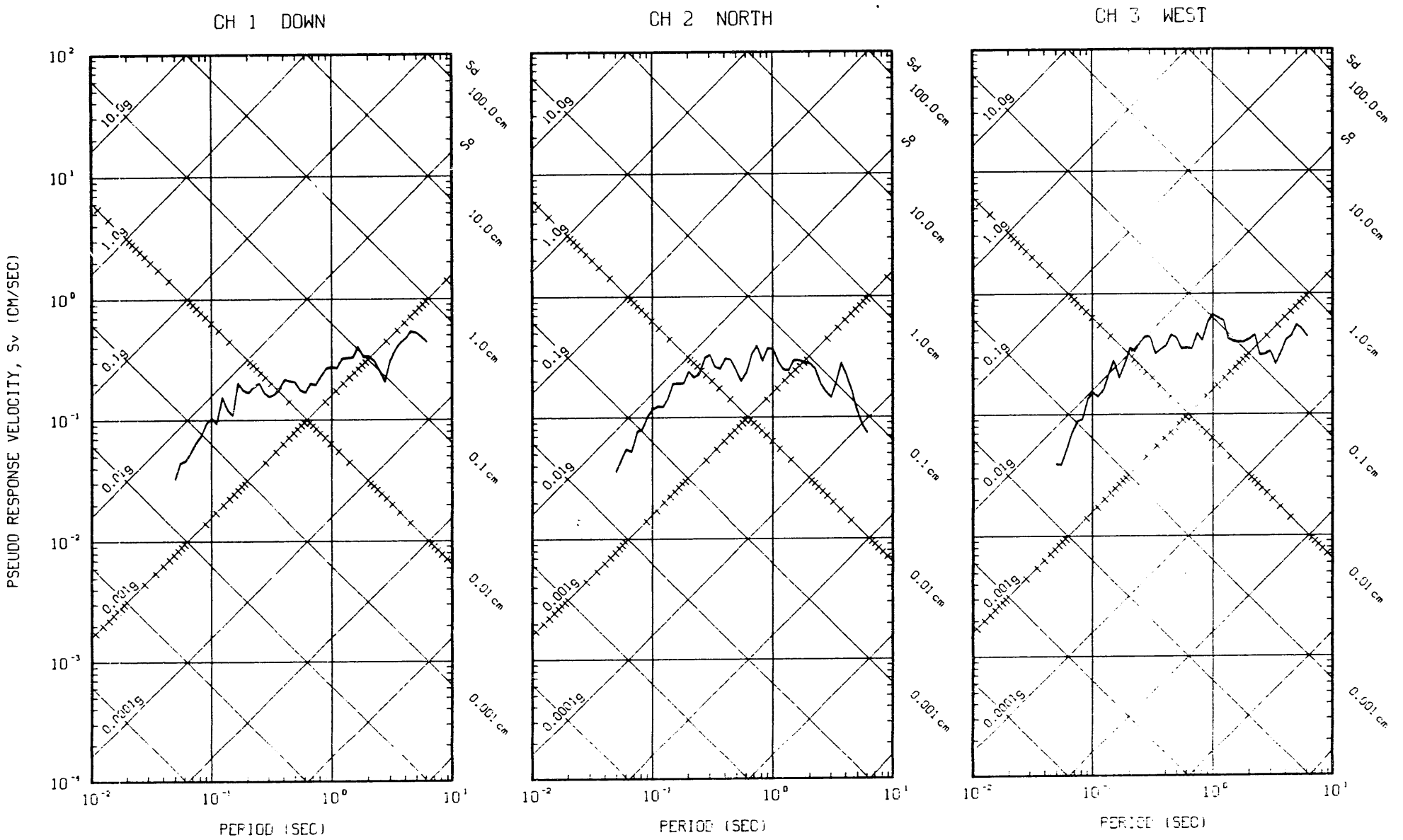


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 17 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



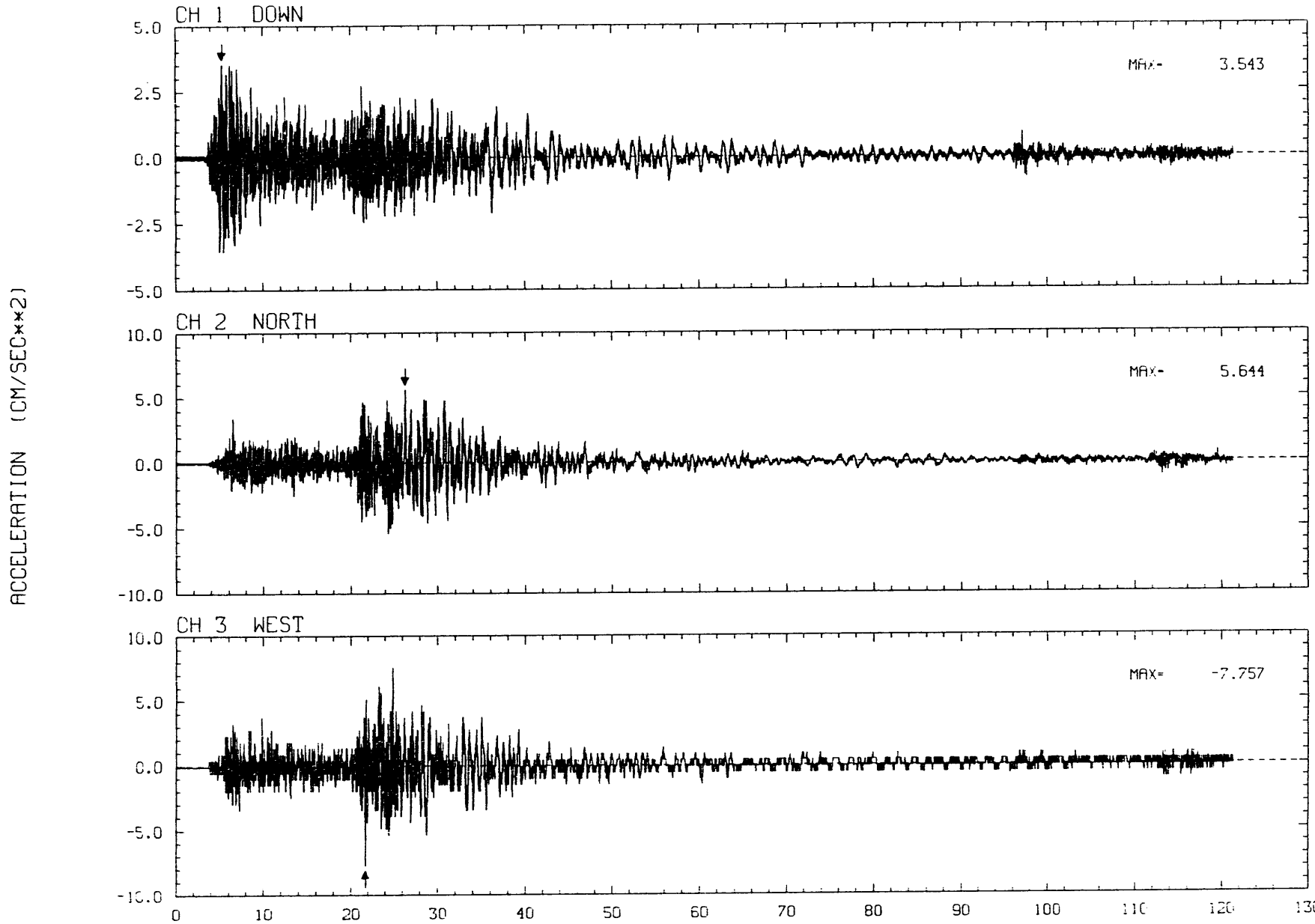
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 17

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

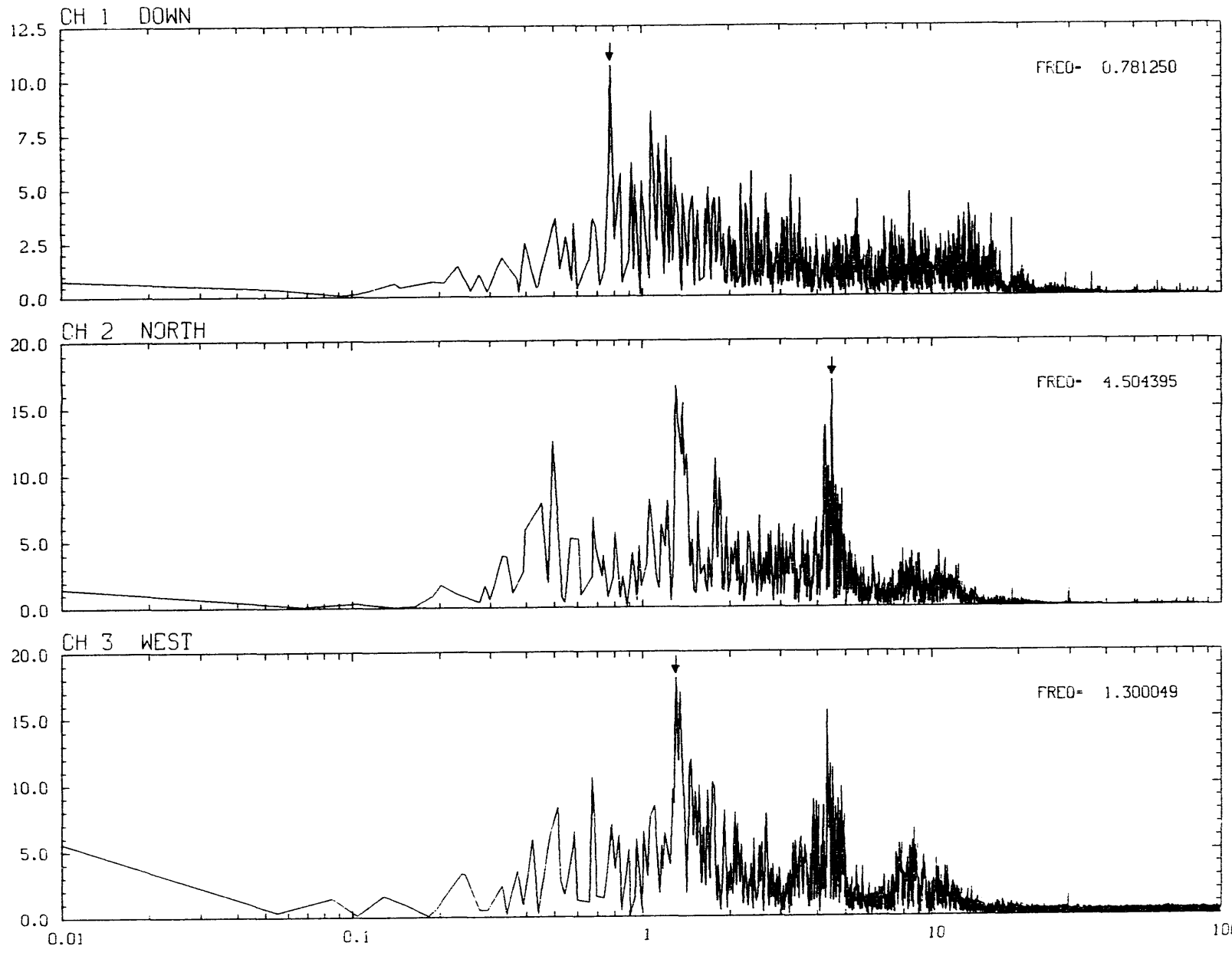


STATION NO. 18

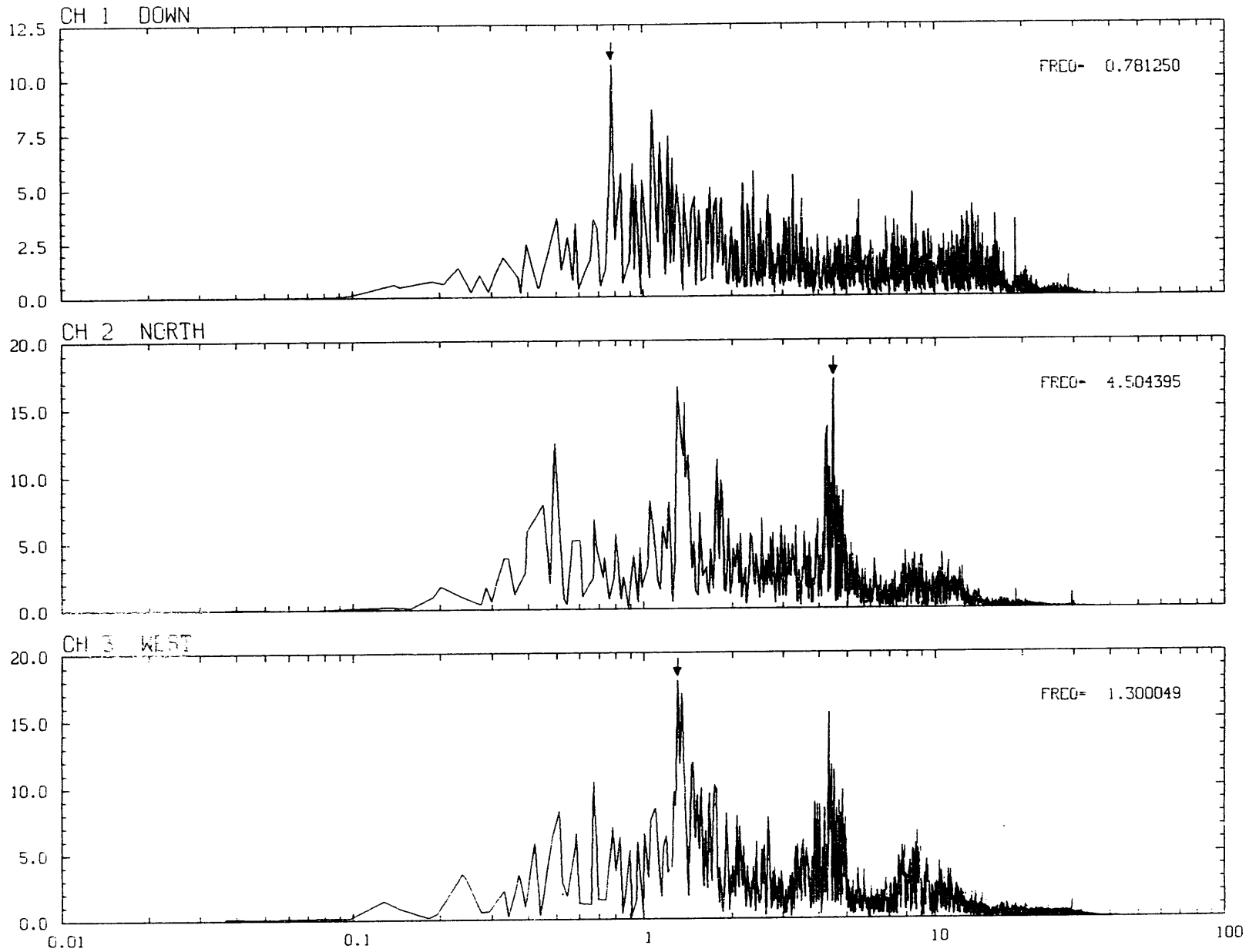
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 18
UNCORRECTED ACCELERATION TIME HISTORIES



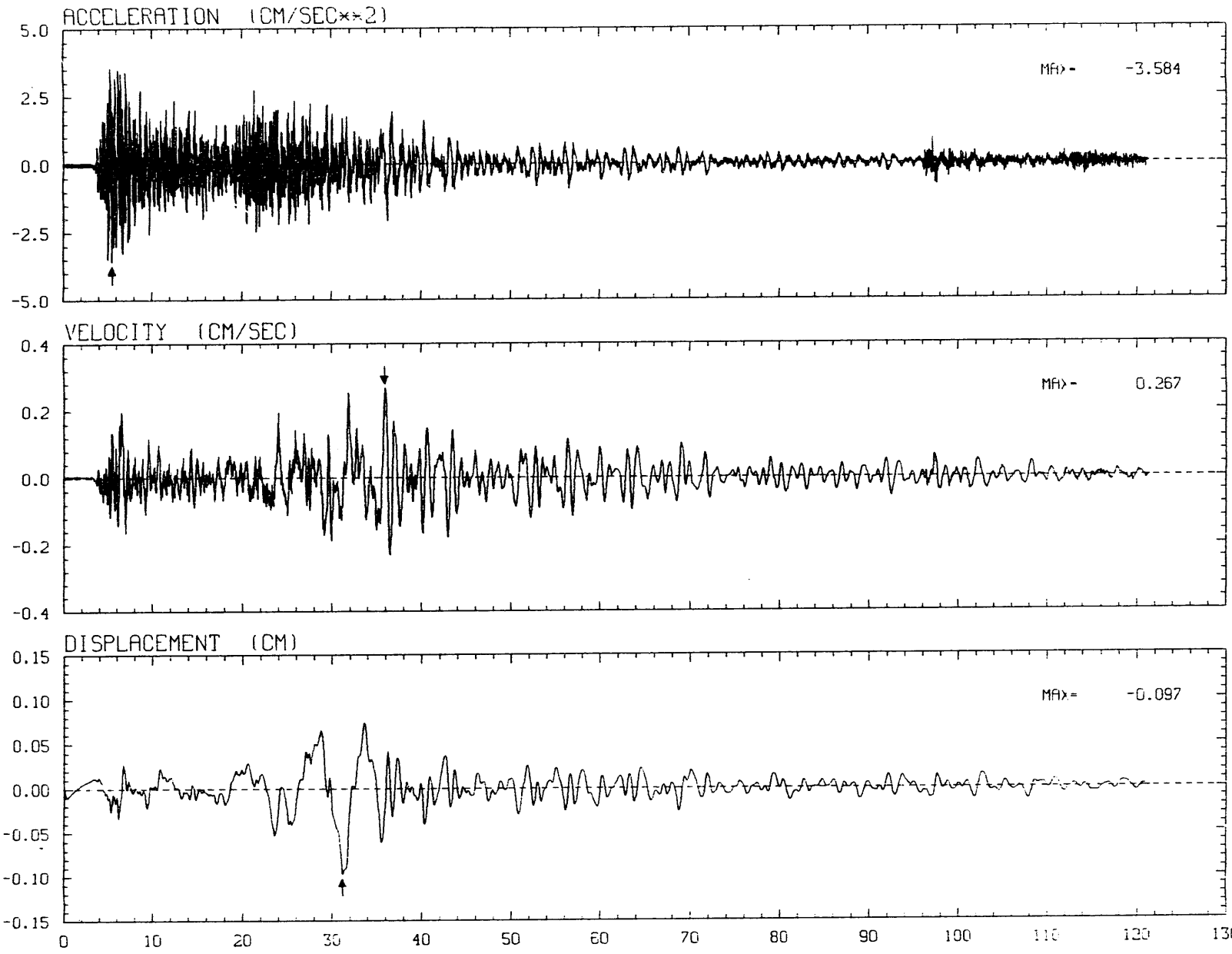
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 18
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



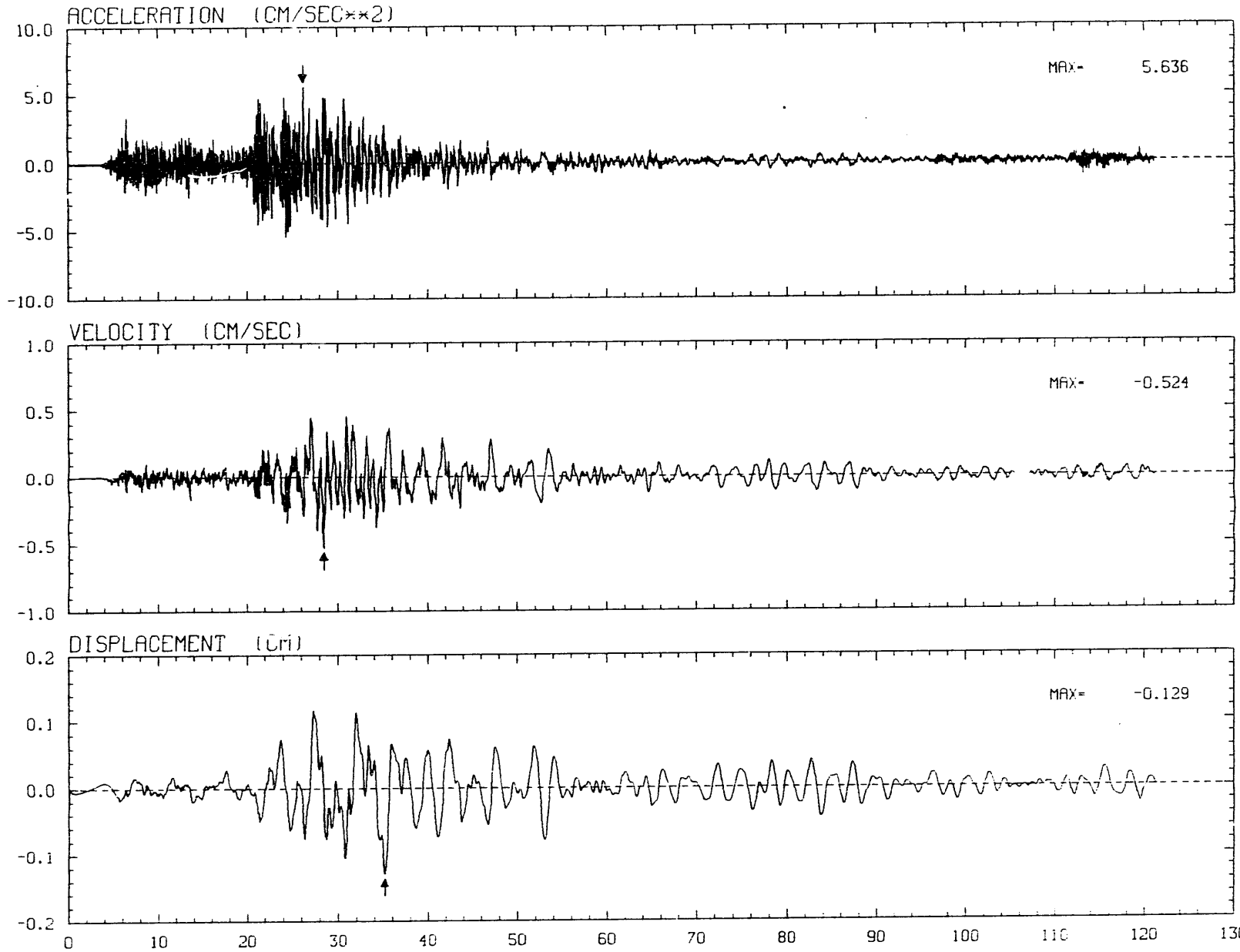
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 18
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



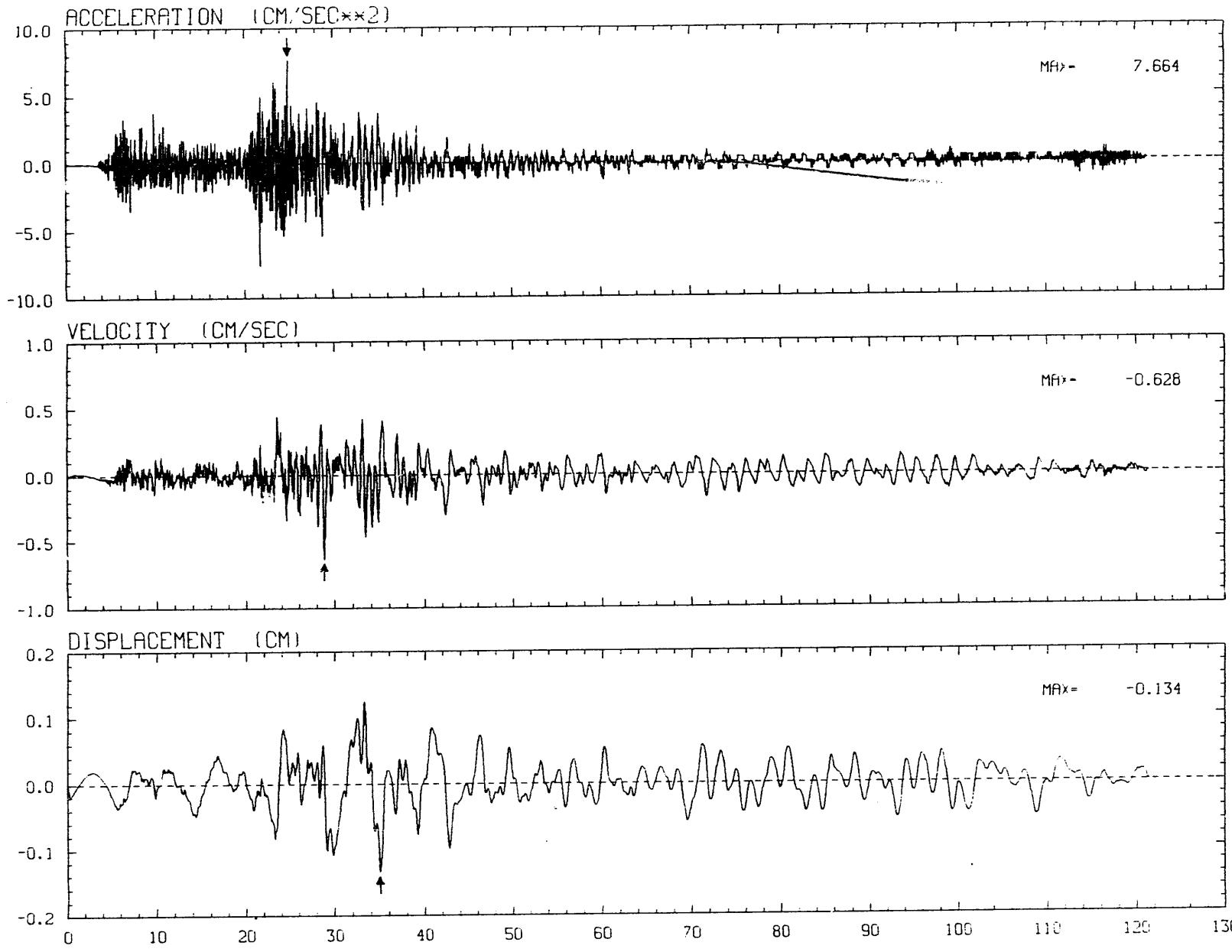
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 18 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 18 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

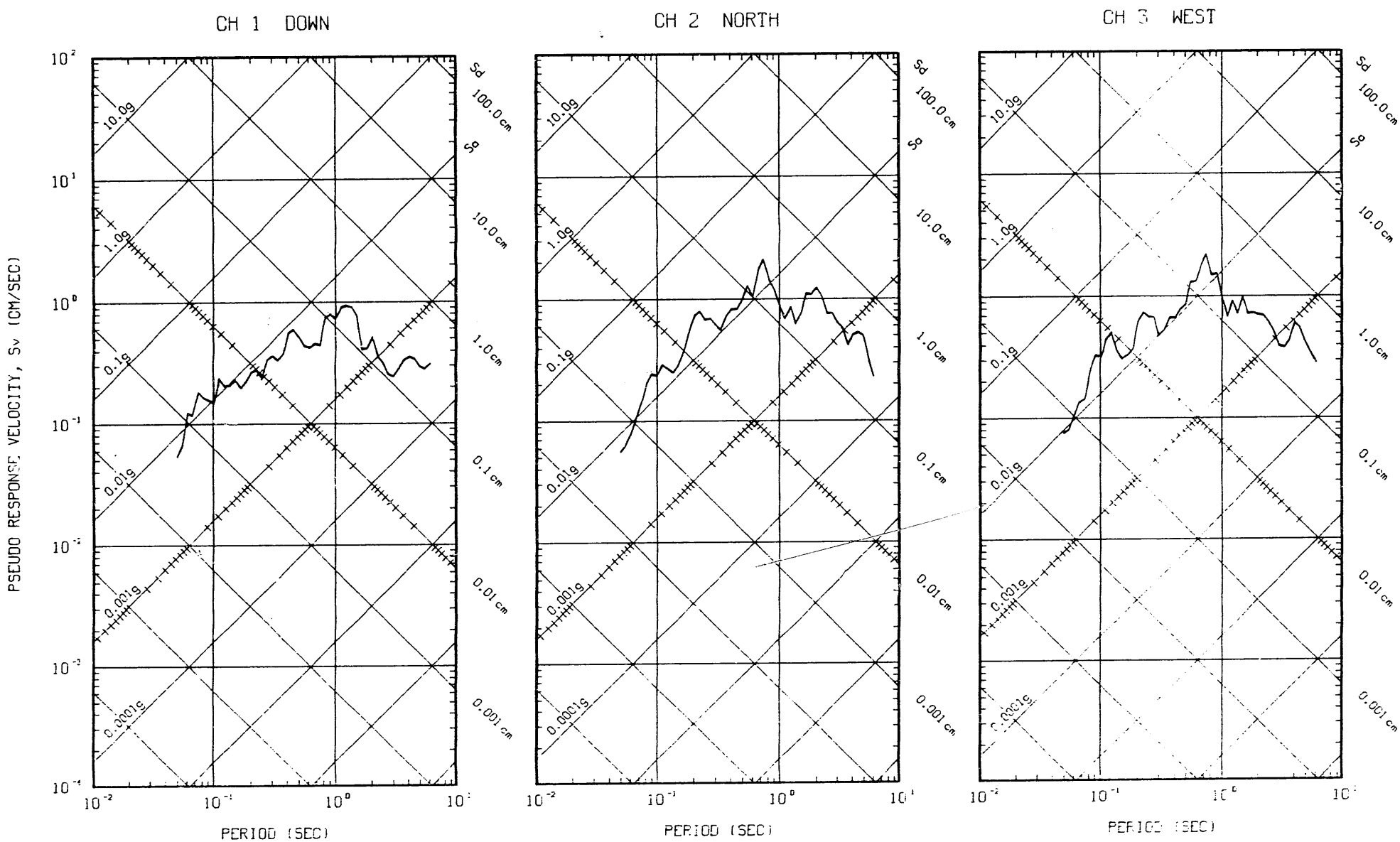


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 18 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



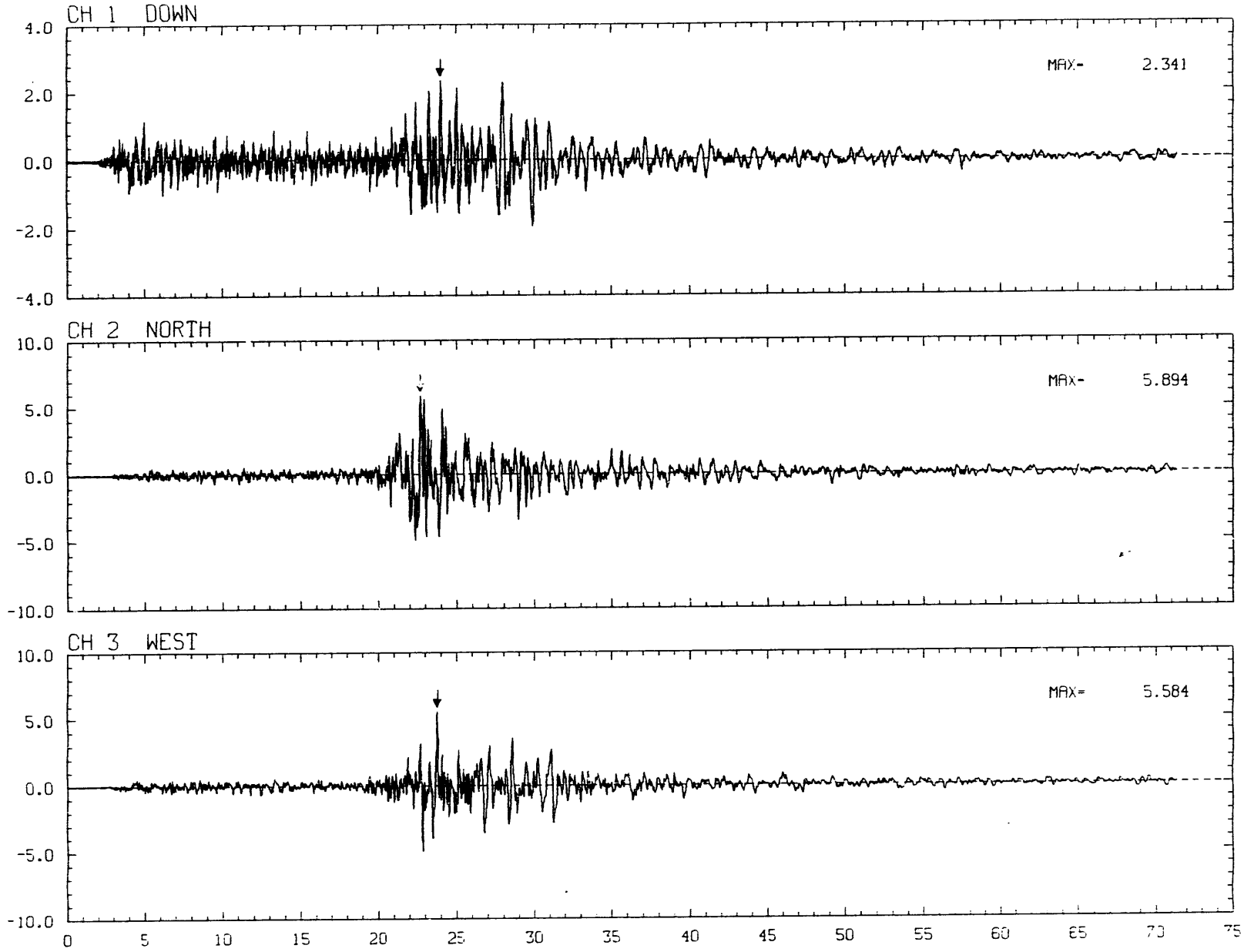
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 18

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA

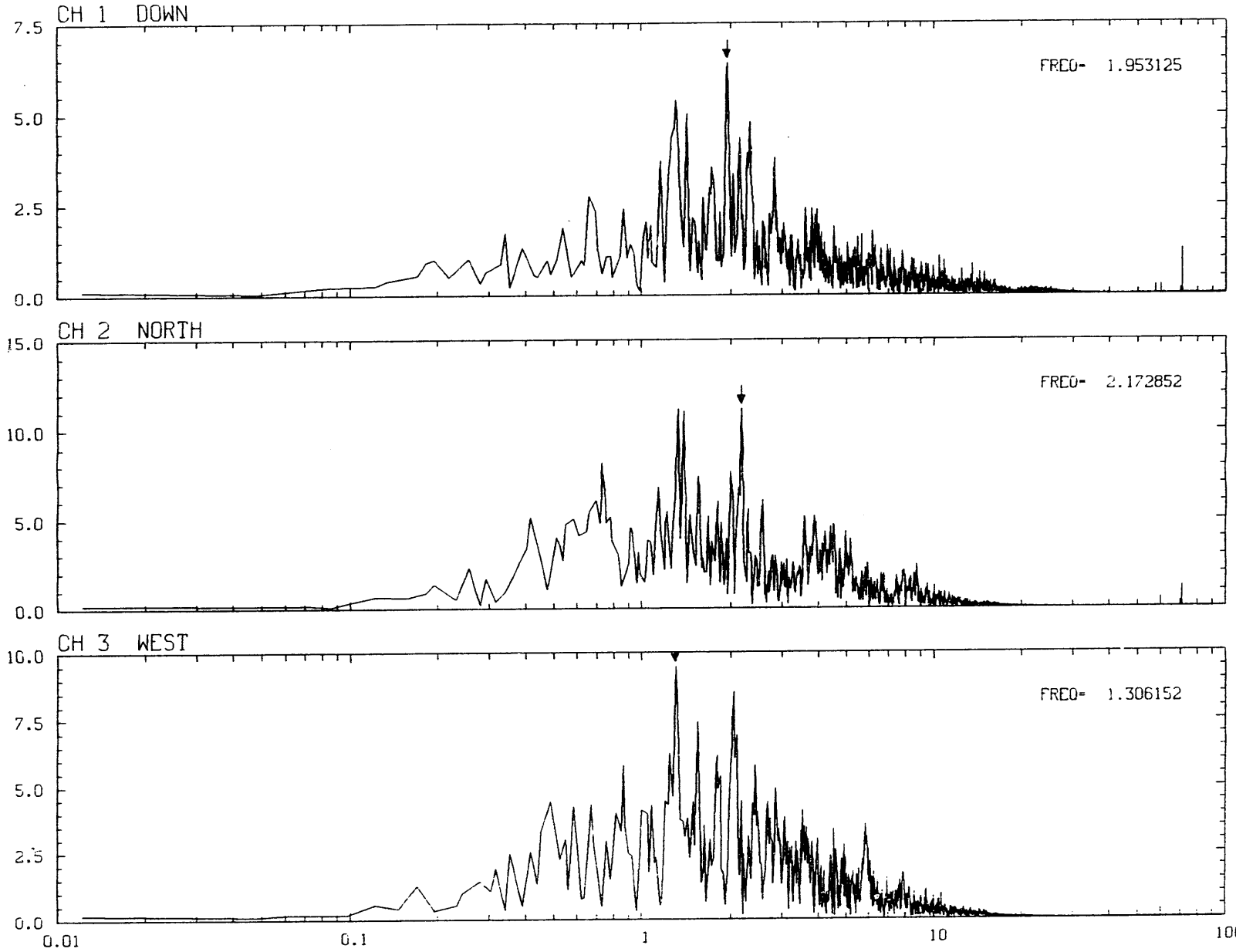


STATION NO. 19

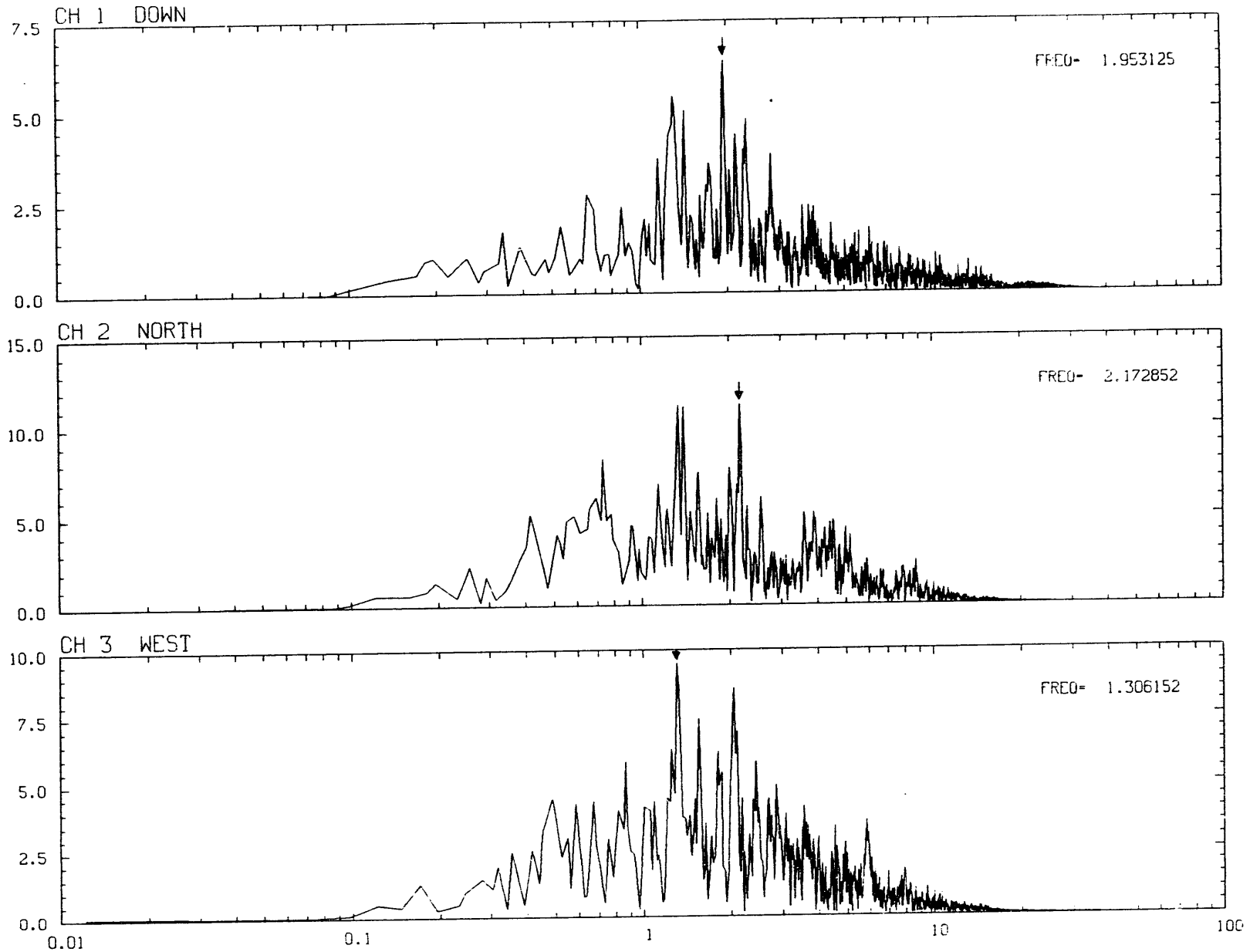
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 19
UNCORRECTED ACCELERATION TIME HISTORIES



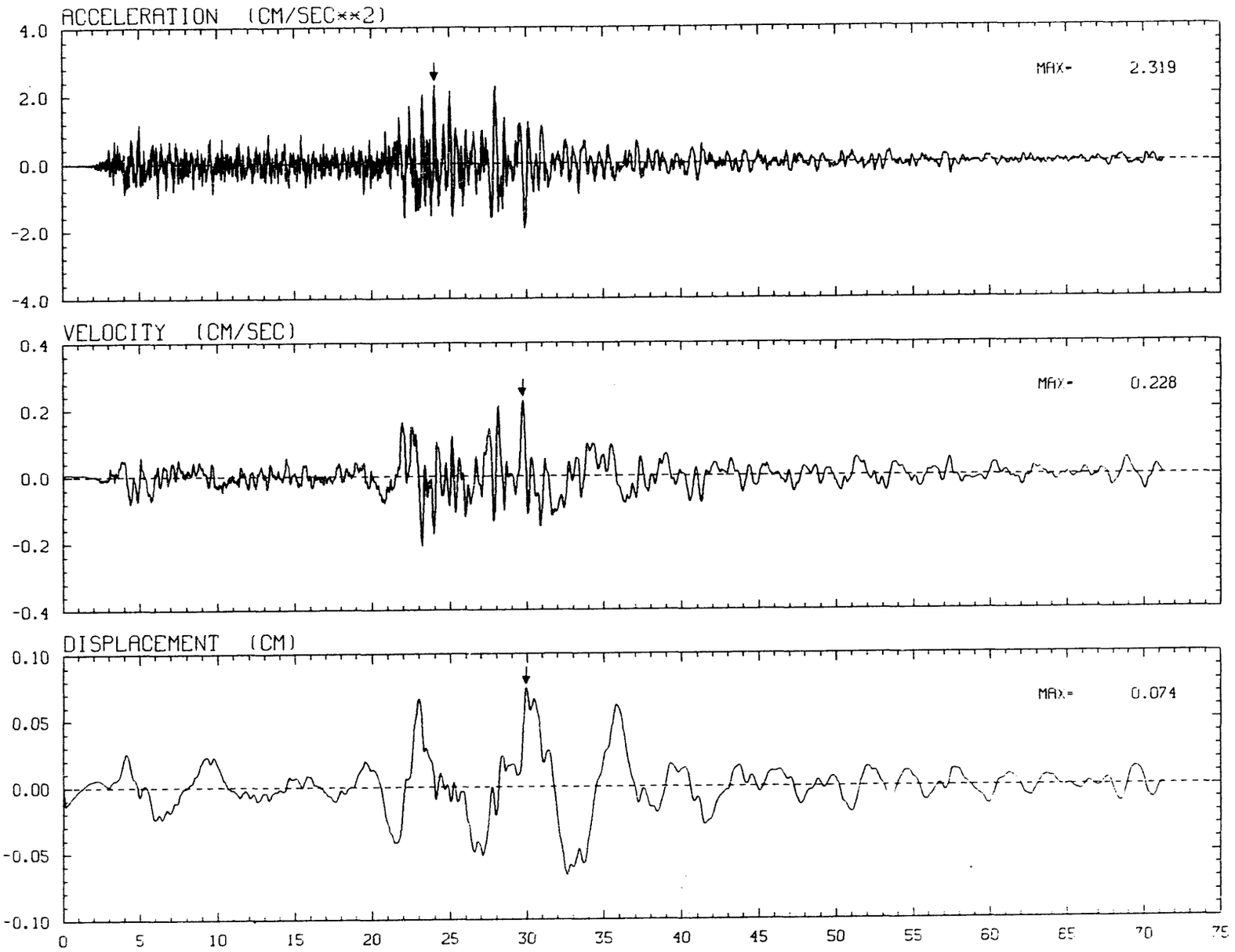
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 19
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



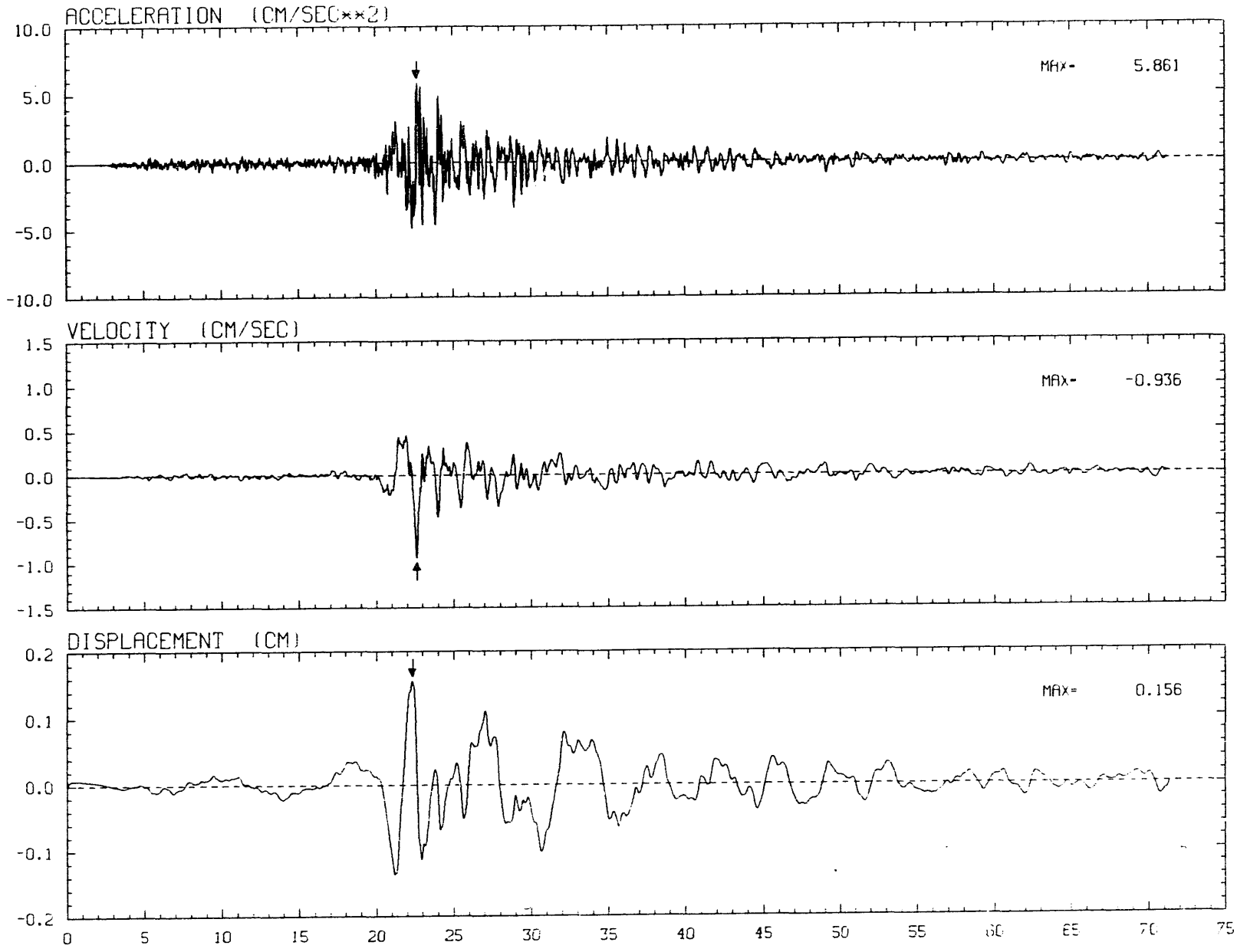
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 19
CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION



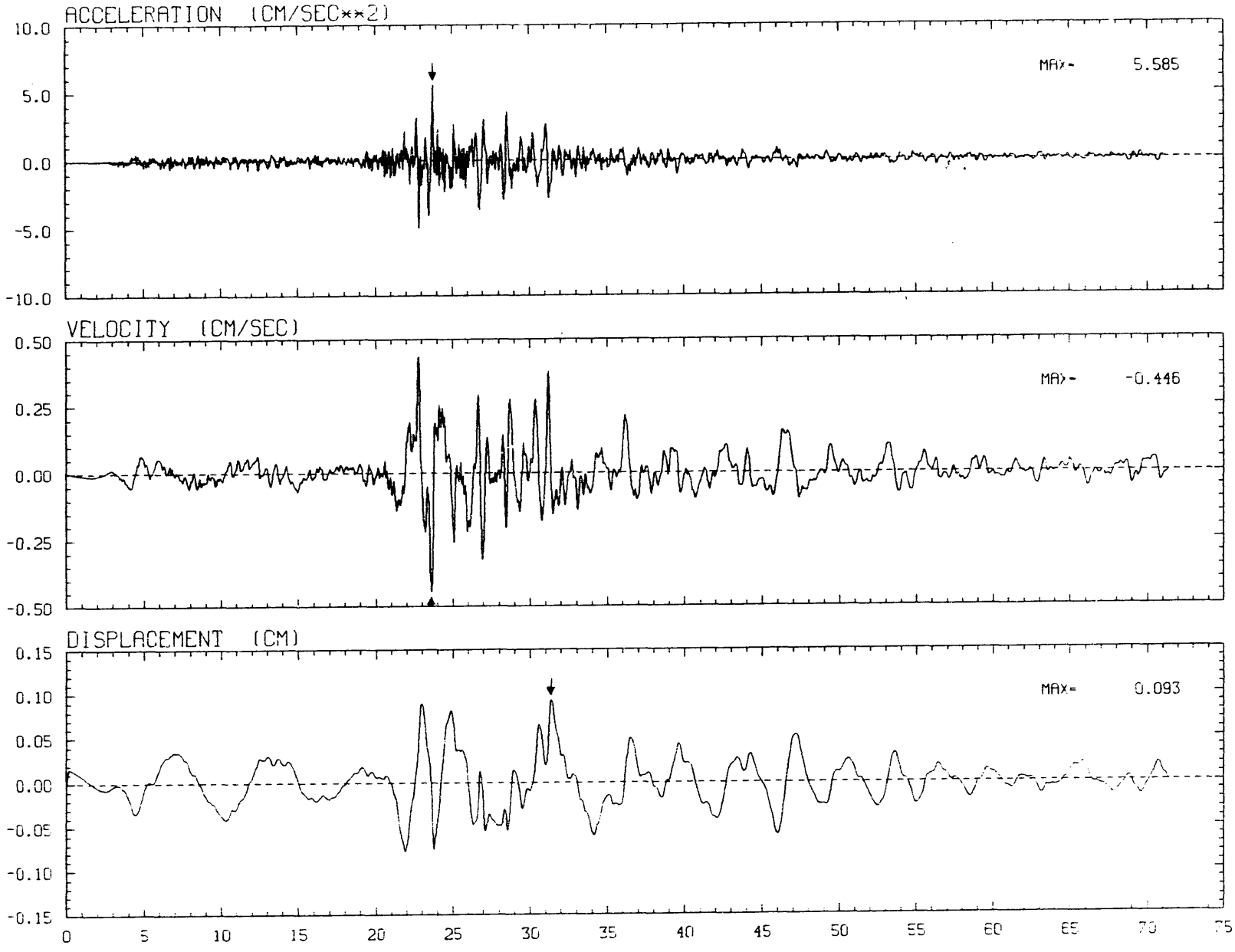
LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 19 CH 1 DOWN
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 19 CH 2 NORTH
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

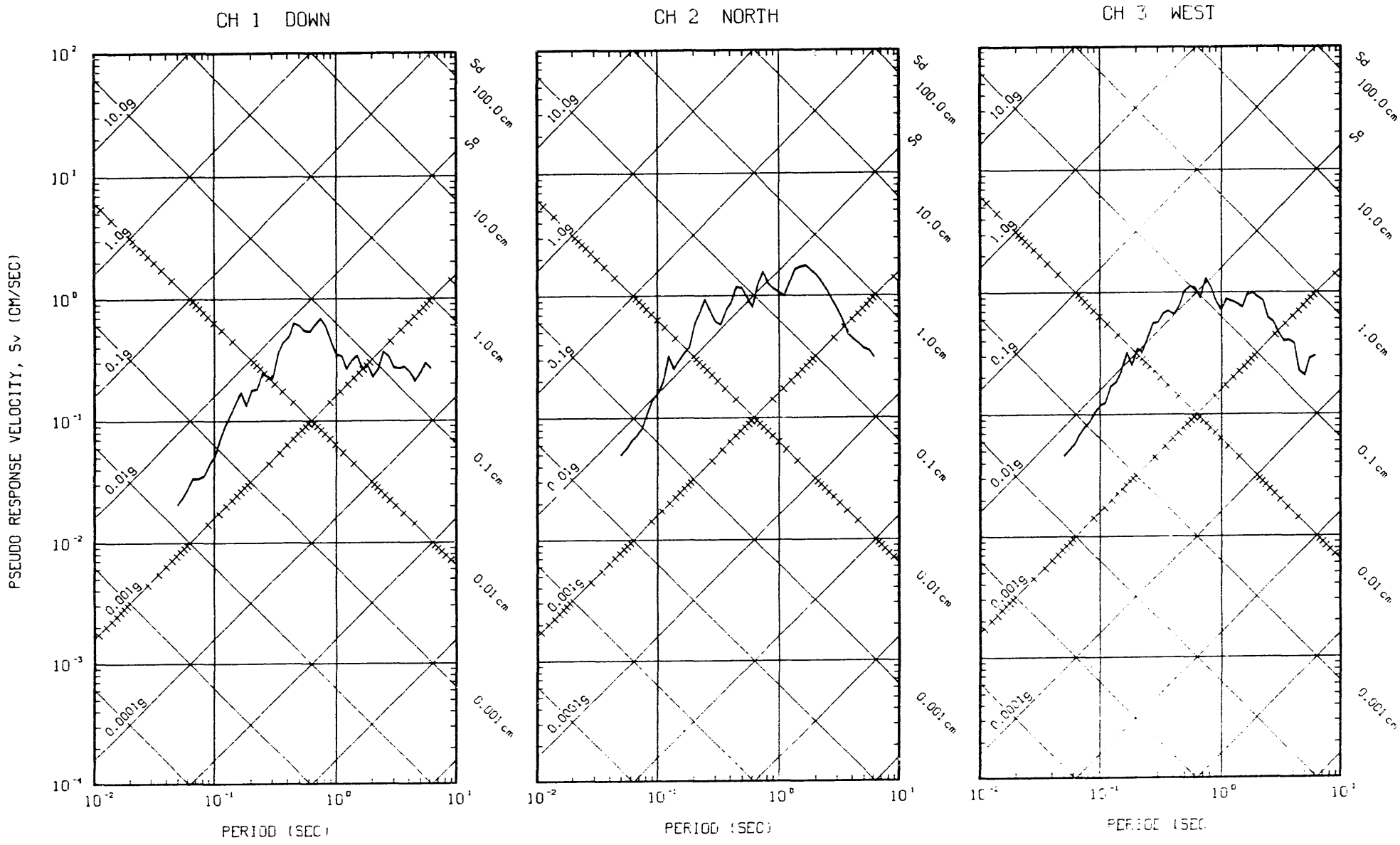


LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 19 CH 3 WEST
CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 19

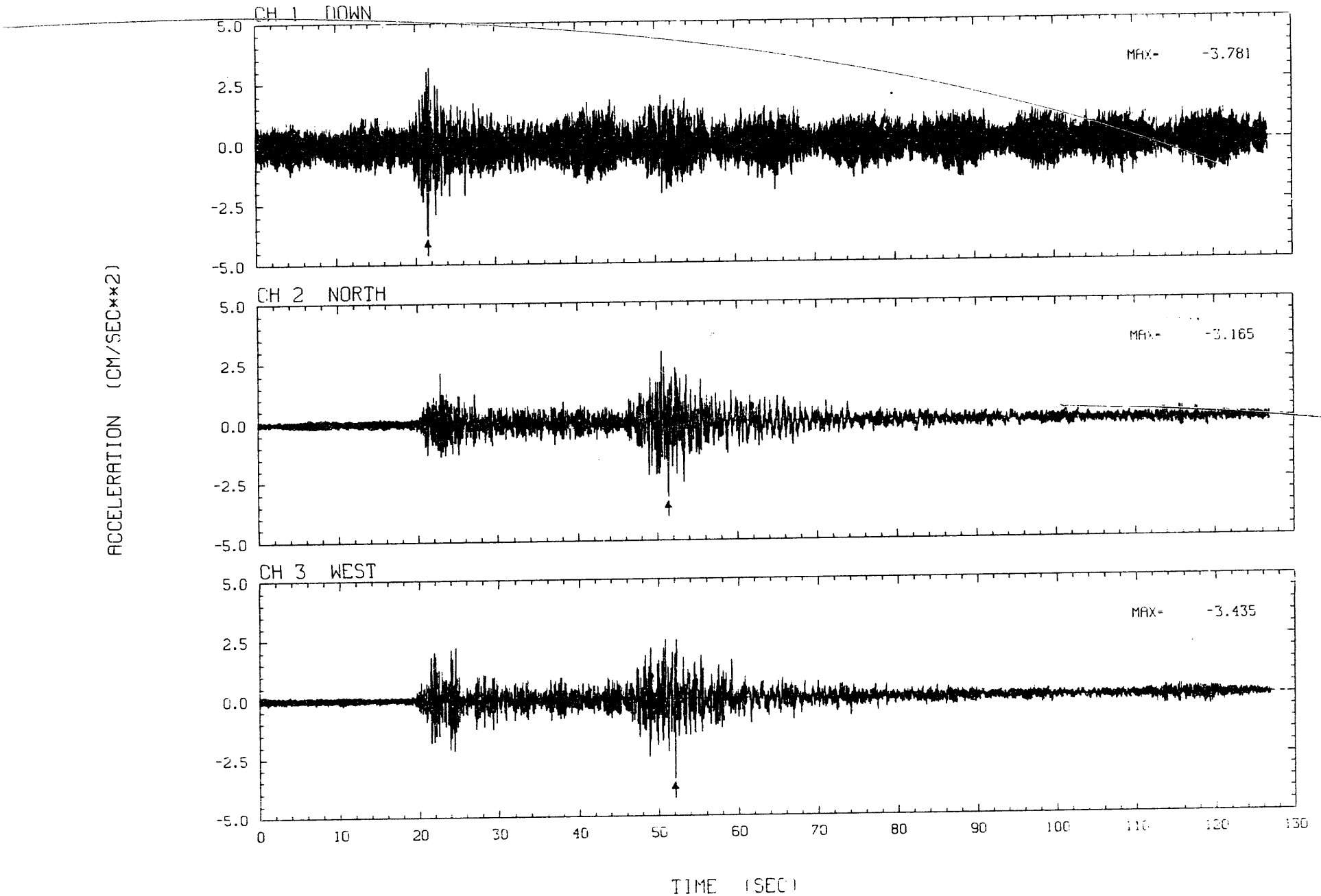
5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA



STATION NO. 20

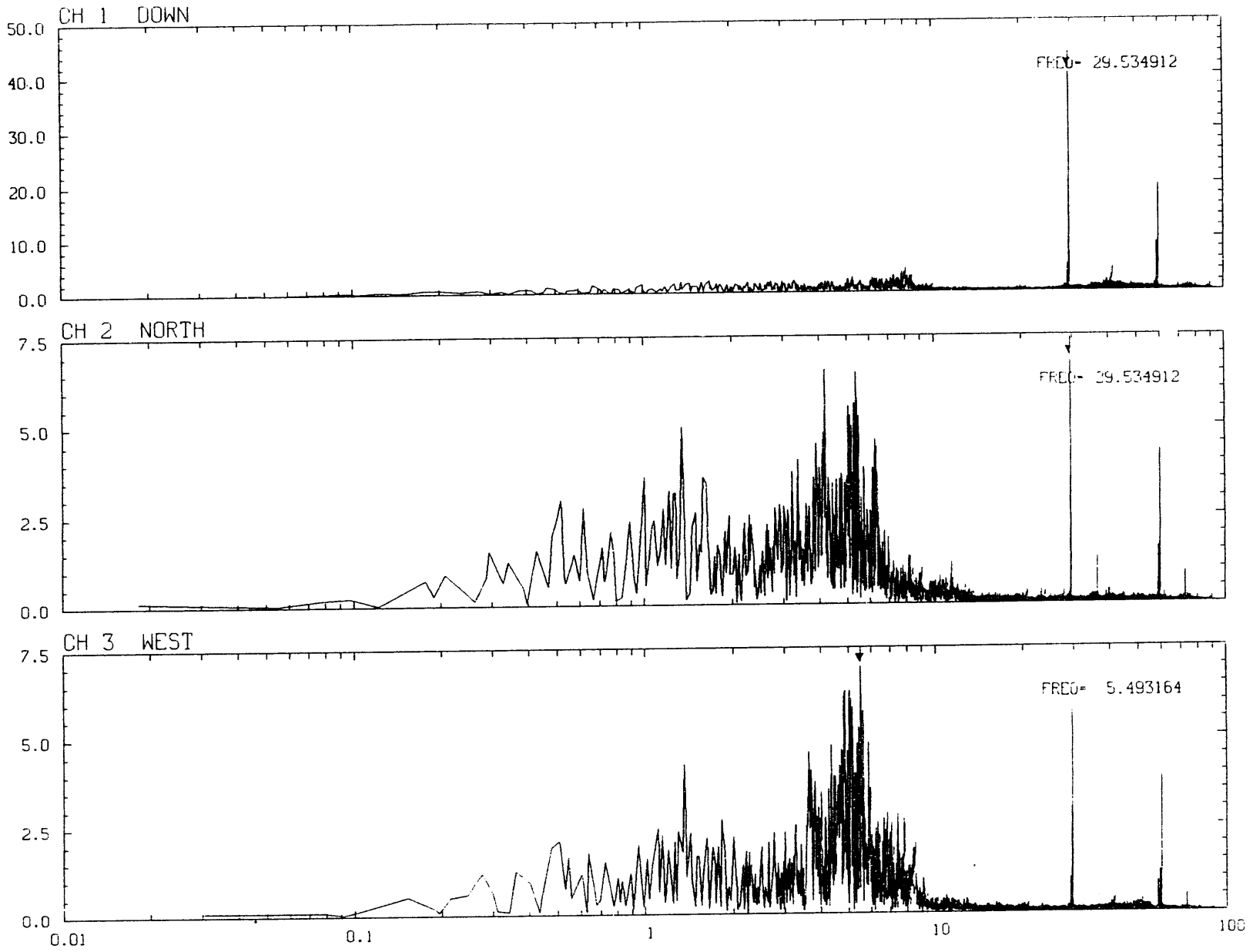
LHRGP3.ACC;1 802 24-OCT-1992 12:14

LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 20
UNCORRECTED ACCELERATION TIME HISTORIES



LHRGP3.AMP;1 518 24-OCT-1992 12:56

LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92
STATION NO. 20
UNCORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION

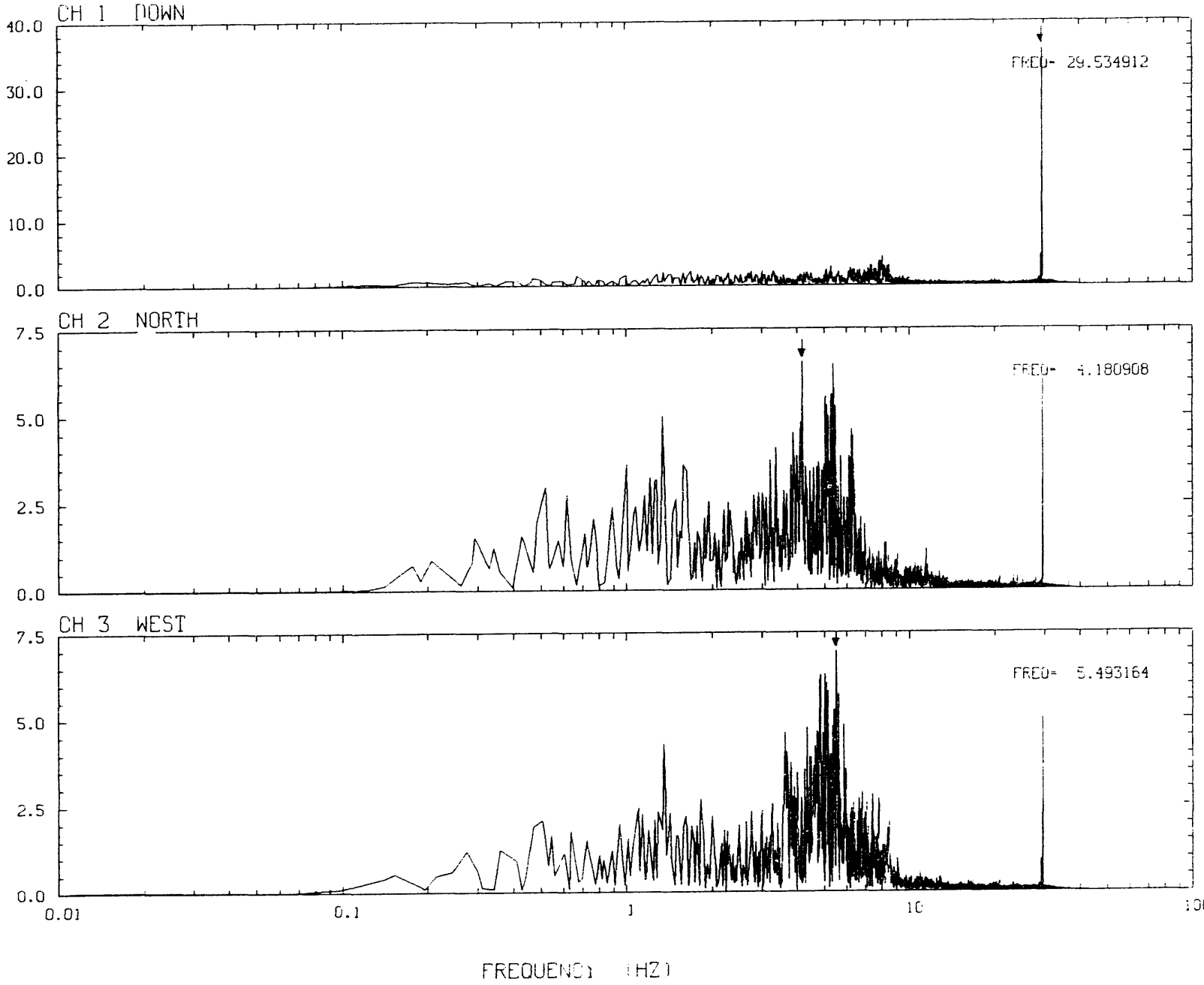


LHR6P3.AM3;1 518 24-OCT-1992 10:23

LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

STATION NO. 20

CORRECTED FOURIER AMPLITUDE SPECTRA OF ACCELERATION

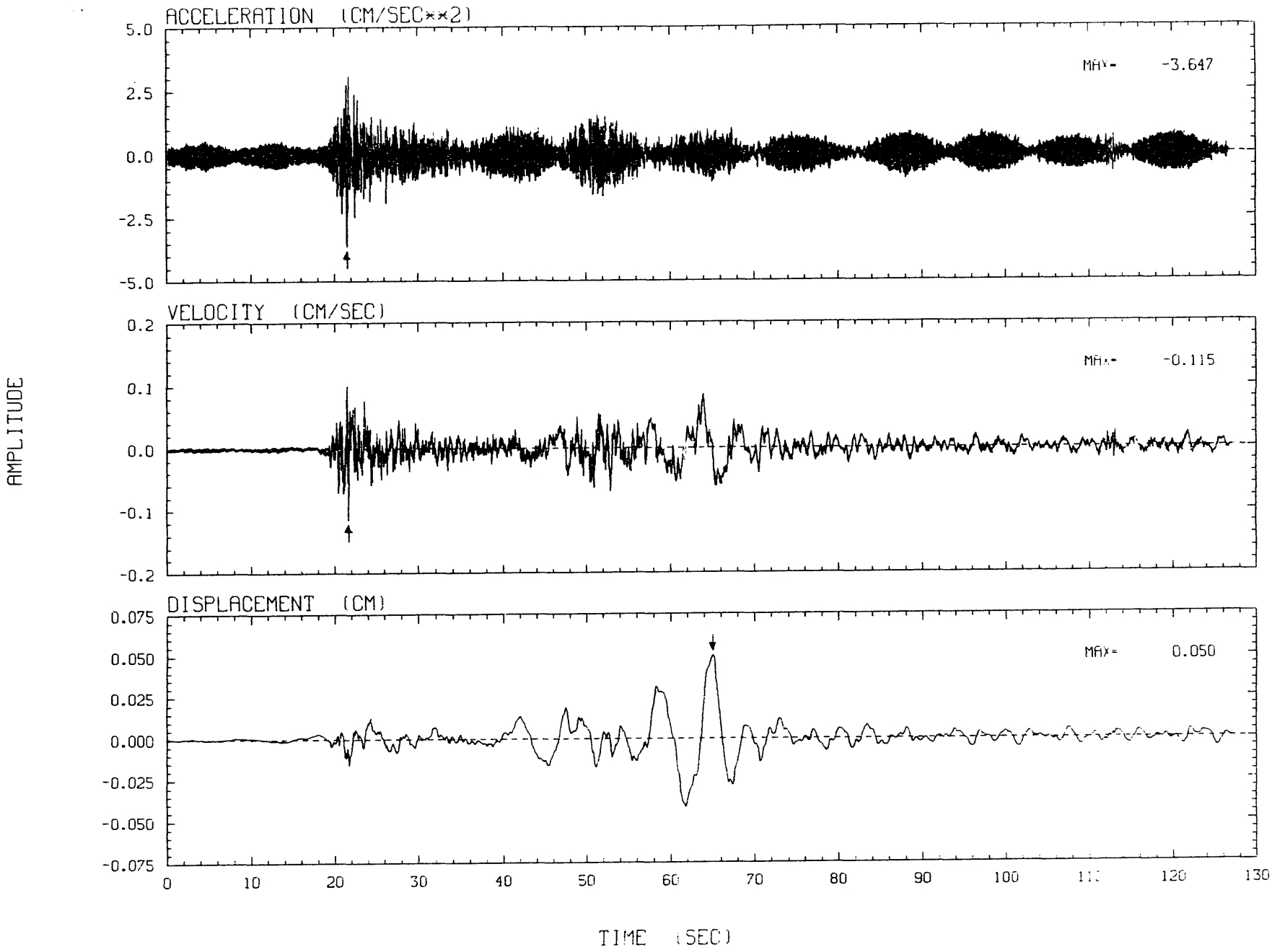


LHRGP3.CH1:1 802 24-OCT-1992 12:41

LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

STATION NO. 20 CH 1 DOWN

CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

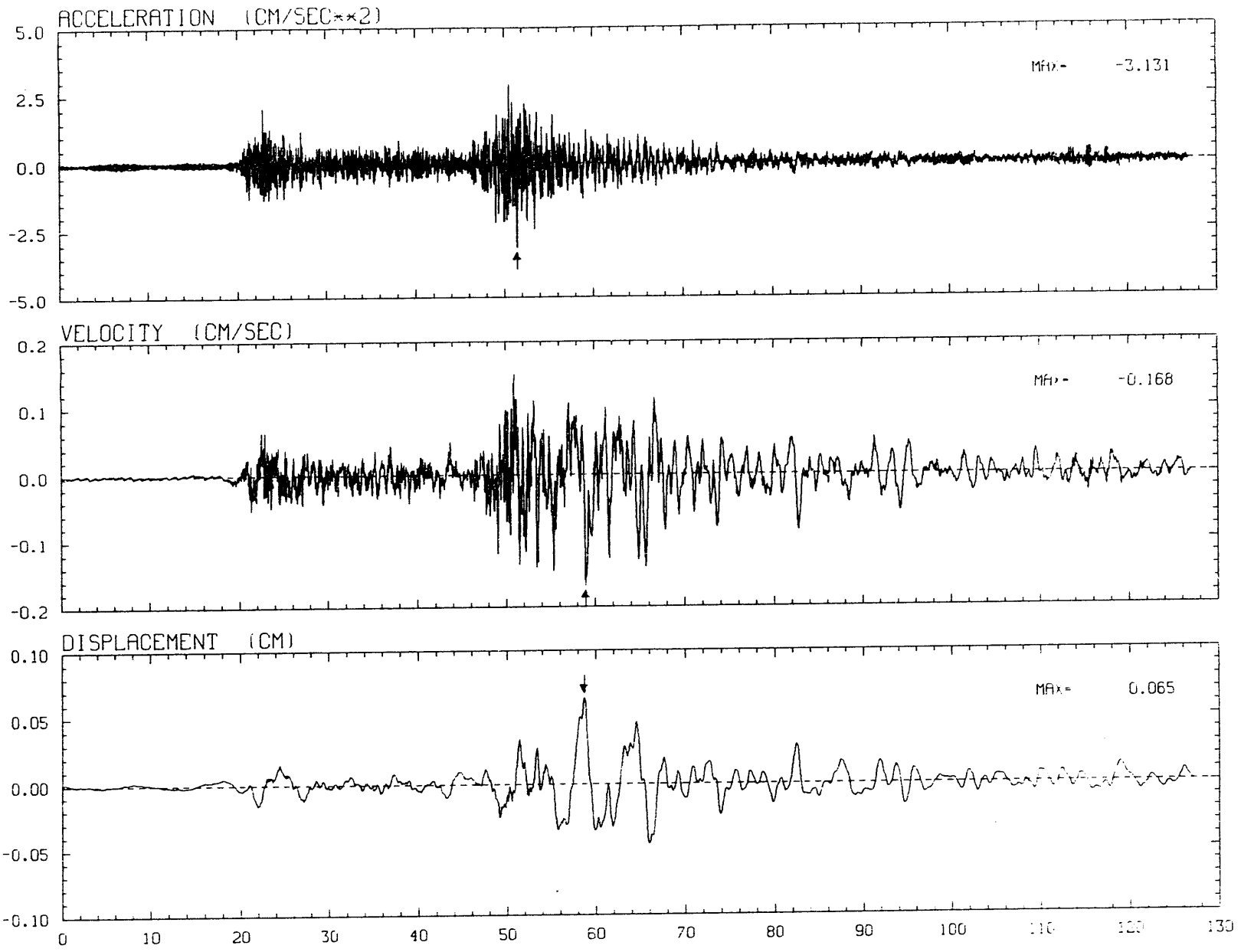


LHRGP3.CH2:1 802 24-OCT-1992 12:42

LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

STATION NO. 20 CH 2 NORTH

CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT

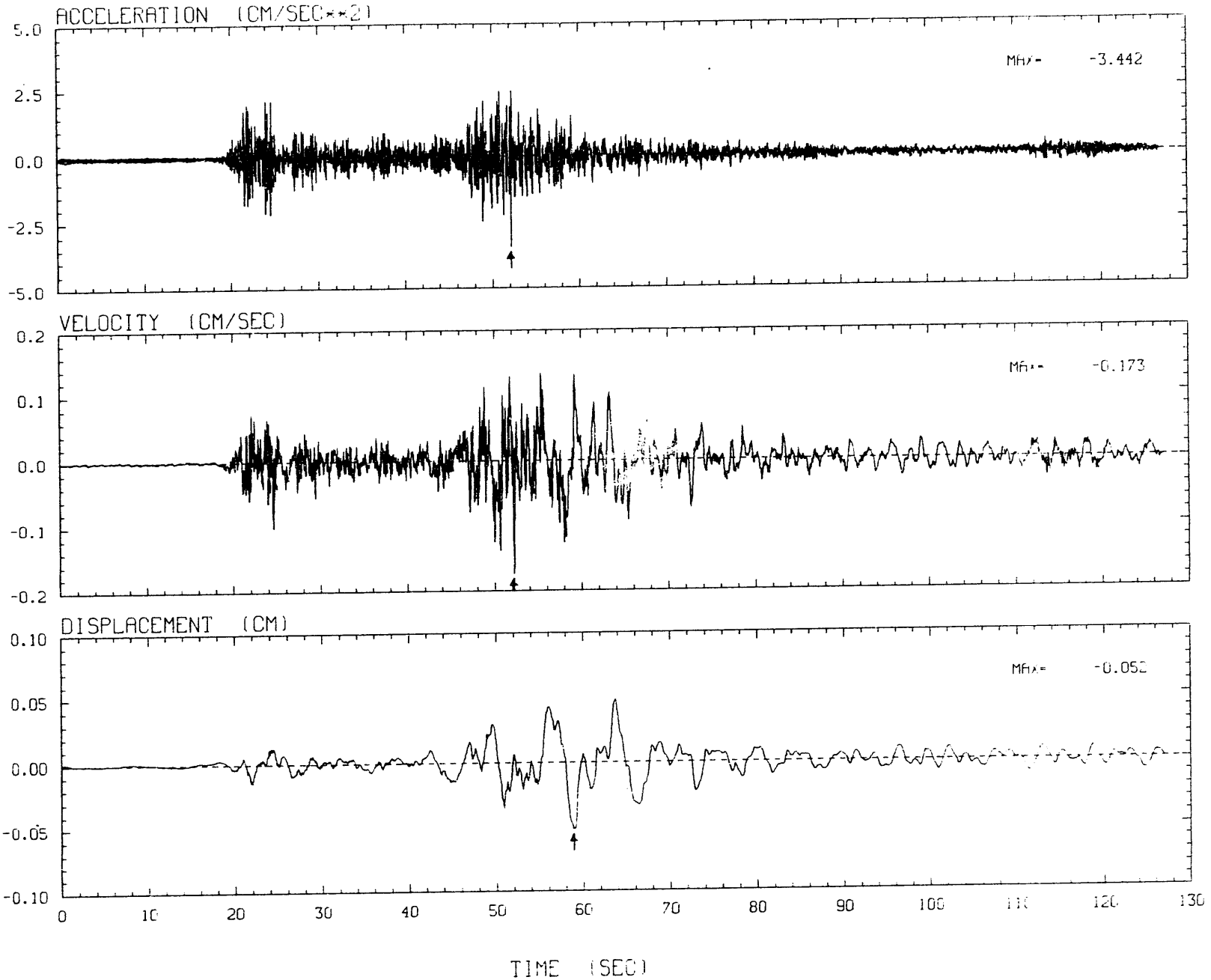


LHRGP3.CH3;1 802 24-OCT-1992 12:42

LITTLE SKULL MOUNTAIN EARTHQUAKE 6/29/92

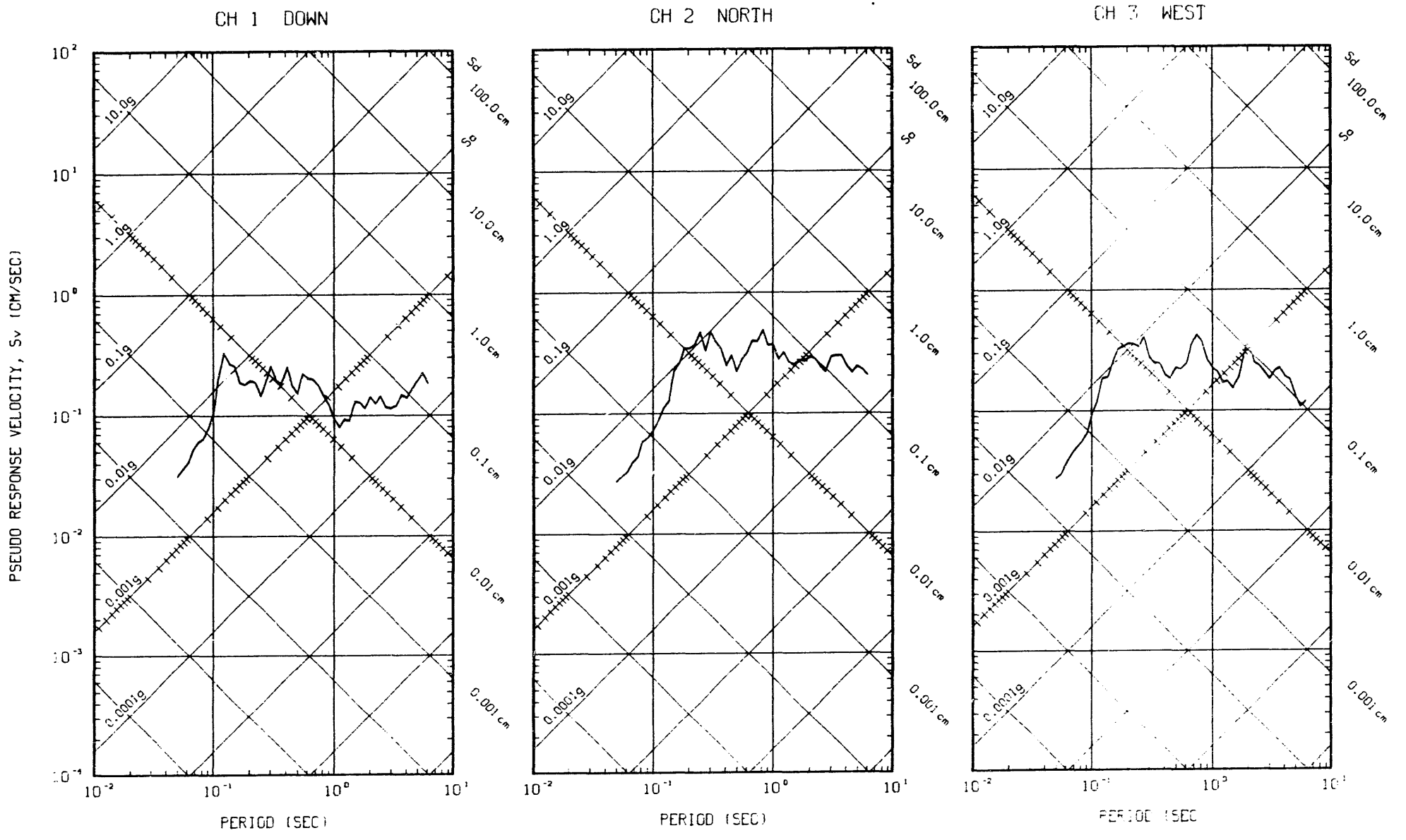
STATION NO. 20 CH 3 WEST

CORRECTED ACCELERATION, VELOCITY & DISPLACEMENT



LITTLE SKULL MOUNTAIN EA[illegible] MAIN 6/29/92
STATION NO. 20

5 PCT DAMPED PESUDO VELOCITY RESPONSE SPECTRA



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