PROCESSED CSMIP STRONG-MOTION RECORDS FROM THE NORTHRIDGE, CALIFORNIA EARTHQUAKE OF JANUARY 17 1994: RELEASE NO. 9

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Report No. OSMS 94-16

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INTRODUCTION

The processed records obtained from 20 CSMIP ground-response stations during the Northridge earthquake of January 17, 1994 are included in this ninth release. The epicentral distance of these 20 stations ranges from 31 to 154 km.

Strong-motion records were recovered from 193 CSMIP stations following the Northridge earthquake. The accelerograms, information on the earthquake and recording stations are presented in the CSMIP data report on this earthquake (Shakal and others, 1994). The results of digitizing and processing for an additional 29 ground-response records are included in the reports (Darragh and others, 1994a-f). Details on accelerogram digitizing and processing will be presented in a forthcoming final CSMIP processed data report.

PLOTS OF PROCESSED DATA

For each ground-response station the plots are numbered in the upper right corner of each page. For each station, the page number, station name, station number and epicentral distance are given below as:

Page No.	Station Name	Station No.	Distance (km)
5	Anaverde Valley - City Ranch	24576	52
9	Elizabeth Lake	24575	52
13	Hemet - Ryan Airfield	13660	150
17	Lake Hughes #12A	24607	40
21	Littlerock - Brainard Canyon	23595	60
25	Los Angeles - City Terrace	24592	38
29	Los Angeles - Pico & Sentous	24612	31
33	Los Angeles - Temple & Hope	24611	32
37	Los Angeles - Univ. Hospital Grounds	24605	36
41	Mt. Baldy - Elementary School	23572	81
45	Neenach - Sacatara Creek	24586	71
49	Newport Beach - Newport & Coast Hwy	13610	86
53	Phelan - Wilson Ranch Road	23597	98
57	Rancho Cucamonga - Deer Canyon	23598	89
61	San Bernardino - CSUSB Grounds	23672	113
65	San Bernardino - E & Hospitality	23542	116
69	San Jacinto - CDF Fire Station	12673	154
73	Sandberg - Bald Mountain	24644	62
77	Seal Beach - Office Bldg. Parking Lot	14578	66
81	Wrightwood - Swarthout Valley	23574	83

The order of the plots for each station is as follows:

1. Phase 2 (Vol. 2) data: Instrument and baseline-corrected acceleration, velocity and displacement. The data for first 40 seconds are plotted with equal scaling for all channels. The Usable Data Bandwidth used in the

processing is indicated on the plots. Three channels of acceleration, velocity and displacement are plotted on one page.

2. Phase 1 (Vol. 1) data: Uncorrected accelerations. Acceleration for the full processed length is plotted with each channel individually scaled; three channels are plotted on one page. In general, the full processed length is 60 seconds. However, at Newport Beach - Newport & Coast Hwy and Seal Beach - Office Bldg. Parking Lot the full processed length is 80 seconds.

3. Phase 3 (Vol. 3) data: Response spectra. The absolute acceleration spectra (SA) for 0%, 2%, 5%, 10% and 20% dampings are plotted against period with linear-linear scaling from 0 to 4 seconds. The spectra are plotted for periods within the Usable Data Bandwidth. Three channels are plotted on one page.

4. Phase 3 (Vol. 3) data: Response spectra. The pseudo-velocity spectra (PSV), the pseudo-acceleration spectra (PSA), and the displacement spectra (SD) are presented on a tripartite logarithmic plot for each channel for 0%, 2%, 5%, 10%, and 20% dampings. The spectra are plotted for periods within the Usable Data Bandwidth. Three channels are plotted on one page.

REFERENCES

Darragh, R., T. Cao, C. Cramer, M. Huang and A. Shakal (1994a). Processed CSMIP Strong-Motion Records from the Northridge, California Earthquake of January 17, 1994: Release No. 1, Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-06B, February 4, 1994, 48 p.

Darragh, R., T. Cao, M. Huang and A. Shakal (1994b). Processed CSMIP Strong-Motion Records from the Northridge, California Earthquake of January 17, 1994: Release No. 2, Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-08, February 24, 1994, 48 p.

Darragh, R., T. Cao, C. Cramer, V. Graizer, M. Huang and A. Shakal (1994c). Processed CSMIP Strong-Motion Records from the Northridge, California Earthquake of January 17, 1994: Release No. 3, Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-09, March 15, 1994, 78 p.

Darragh, R., T. Cao, C. Cramer, V. Graizer, M. Huang and A. Shakal (1994d). Processed CSMIP Strong-Motion Records from the Northridge, California Earthquake of January 17, 1994: Release No. 4, Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-10, April 25, 1994, 110 p.

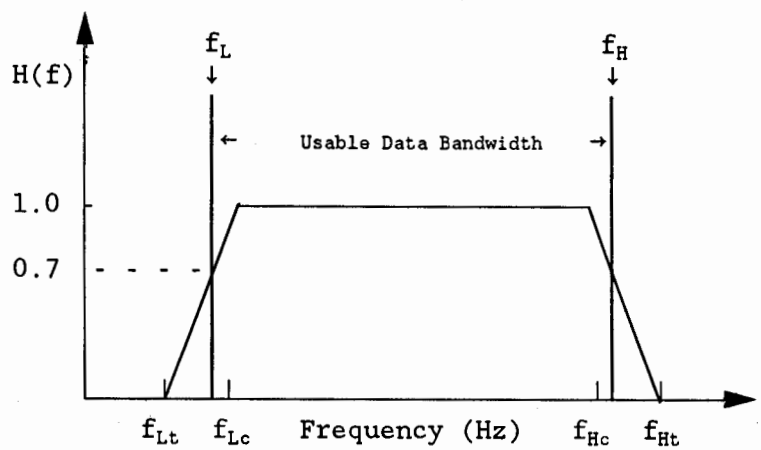
Darragh, R., T. Cao, M. Huang and A. Shakal (1994e). Processed Data for Pacoima - Upper Left Abutment from the Northridge, California Earthquake of January 17, 1994. Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-12A, June 8, 1994, 10 p.

Darragh, R., T. Cao, M. Huang and A. Shakal (1994f). Preliminary Processed Data for Tarzana - Cedar Hill Nursery A from the Northridge, California Earthquake of January 17, 1994. Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-12B, September 9, 1994, 10 p.

Shakal, A., M. Huang, R. Darragh, T. Cao, R. Sherburne, P. Malhotra, C. Cramer, R. Sydnor, V. Graizer, G. Maldonado, C. Petersen and J. Wampole (1994). CSMIP Strong-Motion Records from the Northridge, California Earthquake of 17 January 1994, Calif. Dept. of Conservation, Div. Mines and Geology, Office of Strong Motion Studies, Report No. OSMS 94-07, February 18, 1994, 308 p.

DEFINITION OF USABLE DATA BANDWIDTH

The filter bands for each record are indicated on the plots for the Phase 2 and Phase 3 data. In standard processing, the digitized data are processed and filtered using Ormsby filters. The data are first low-pass filtered using a high-frequency filter with a corner frequency of 46 Hz and a roll-off termination frequency of 50 Hz. Then the data are high-pass filtered using a low-frequency filter with a corner frequency of 0.07 Hz and a roll-off termination of 0.05 Hz. Therefore, the Phase 2 data is the result of the digitized data being filtered by the bandpass filter H(f) with ramps as shown in the figure:



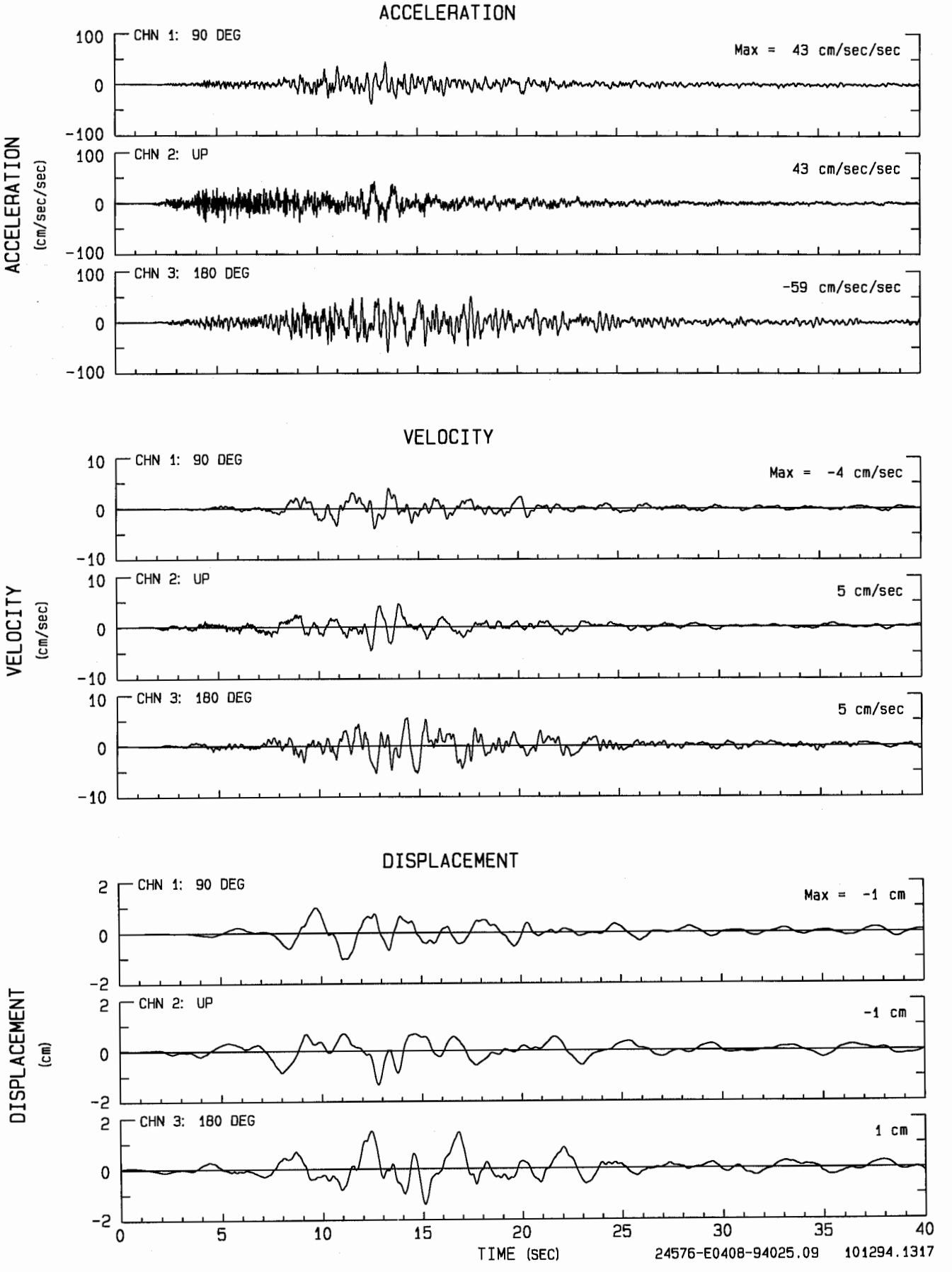
The Usable Data Bandwidth is defined as the band between frequencies f_H and f_L, where f_H and f_L are the -3 dB points on the high-frequency and low-frequency ramps, respectively. The value of H(f) is approximately equal to 0.7 for -3 dB (see Notes). The user should only use these data for analyses within this bandwidth.

Notes:

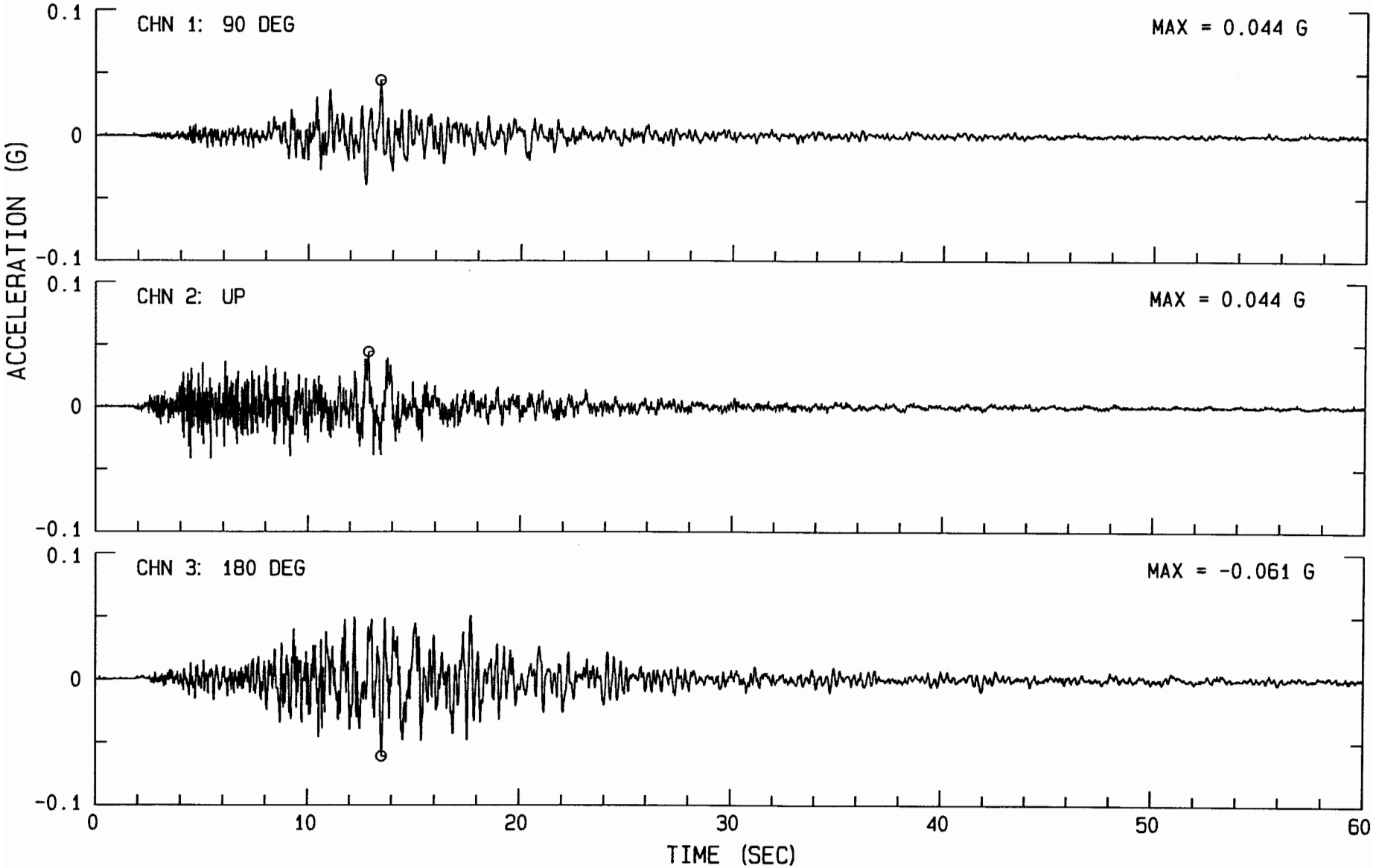
1) The values of f_H and f_L can be calculated from the corner frequencies (f_{Hc}, f_{Lc}) and the roll-off termination frequencies (f_{Ht}, f_{Lt}) used in the processing by using the formulas $f_H = f_{Hc} + 0.3 * (f_{Ht} - f_{Hc})$ and $f_L = f_{Lc} - 0.3 * (f_{Lc} - f_{Lt})$. For example, the Usable Data Bandwidth for data bandpass-filtered with ramps at 0.30 to 0.60 Hz and 23.0 to 25.0 Hz is 0.51 Hz to 23.6 Hz (0.042 to 2.0 seconds period).

2) It is common in signal processing to plot 20 $\log_{10}[H(f)]$ versus frequency, and express the ordinate value in decibels (abbreviated dB). Accordingly, 0 dB corresponds to a value of H(f) equal to 1; 20 dB is equivalent to H(f) = 10, and -20 dB corresponds to H(f) = 0.1. Thus, at the -3 dB frequency point, the amplitude of the transfer function, H(f) is reduced to 0.7, while the power transmitted by the filter, $H^2(f)$, is reduced to 0.5.

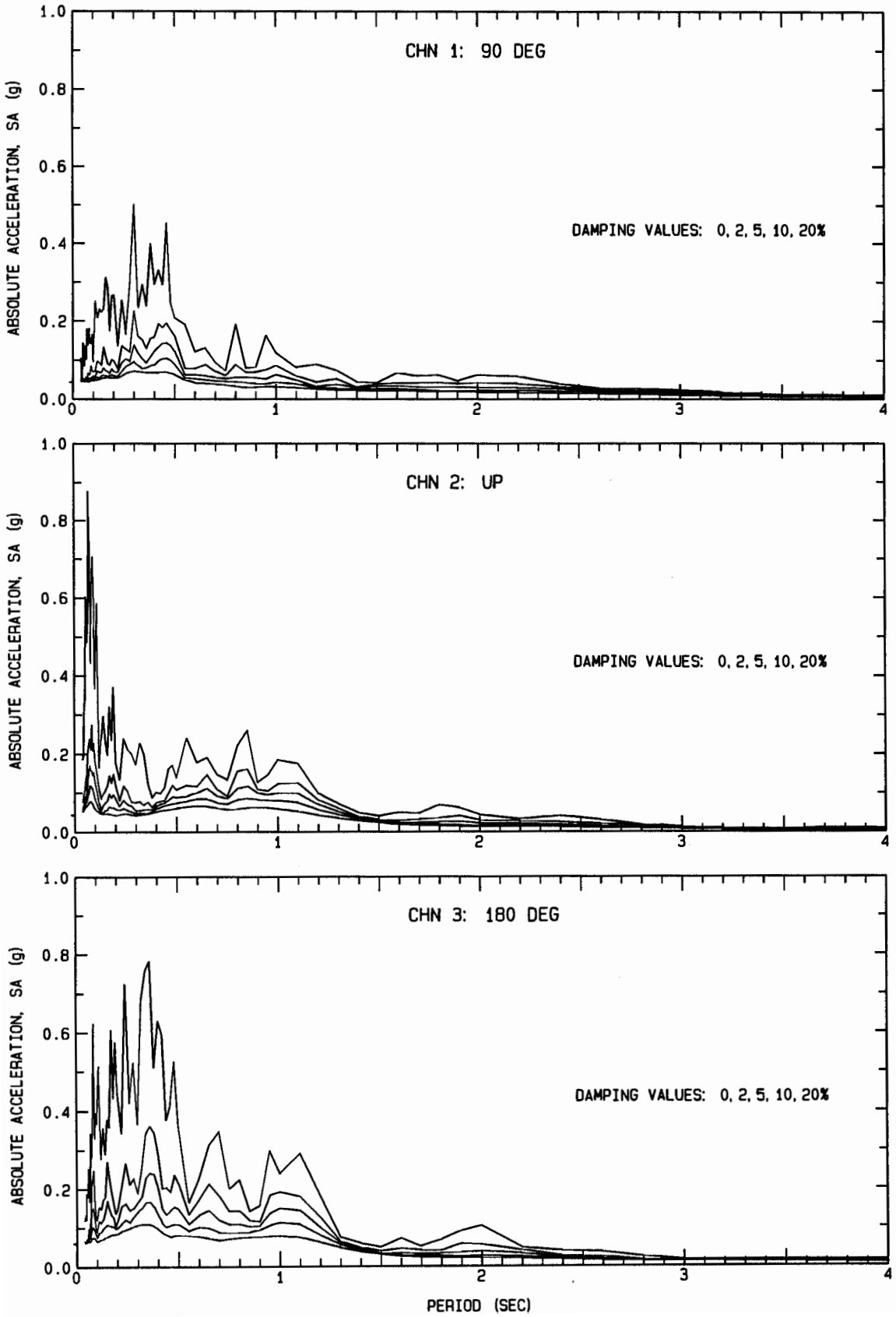
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
ANAVERDE VALLEY - CITY RANCH CSMIP Sta Num 24576
Usable Data Bandwidth: .17 to 47.2 Hz (.02 to 6.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
ANAVERDE VALLEY - CITY RANCH
UNCORRECTED ACCELEROGRAM 24576-E0408-94025.09 101294.1308-QN94A576



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
ANAVERDE VALLEY - CITY RANCH
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 46.0-50.0 HZ.
24576-E040B-94025.09 112194.1110-QN94A576



ANAVERDE VALLEY - CITY RANCH: CSMIP S/N 576

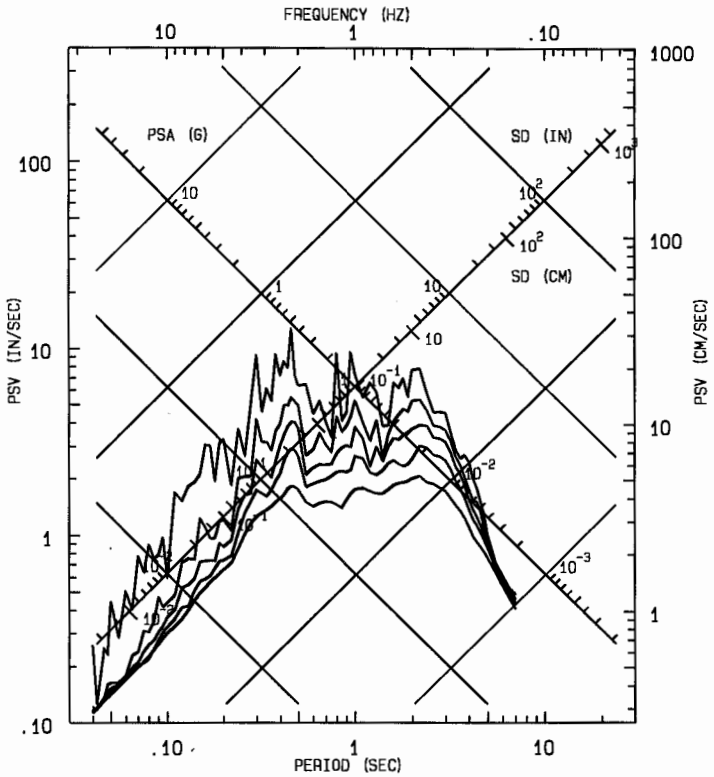
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.17 TO 47.2 HZ
(0.02 TO 5.88 SEC)

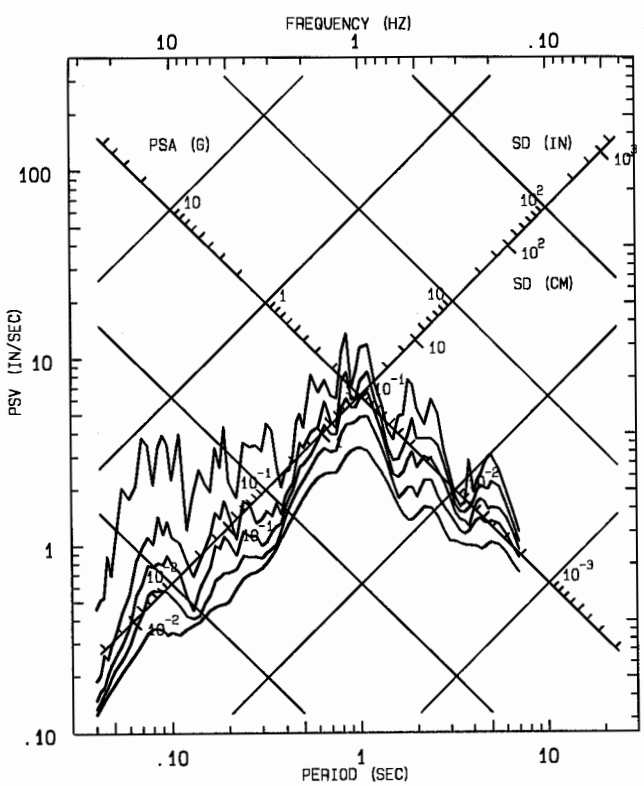
RECORD ID: 24576-E0408-94025.09

RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

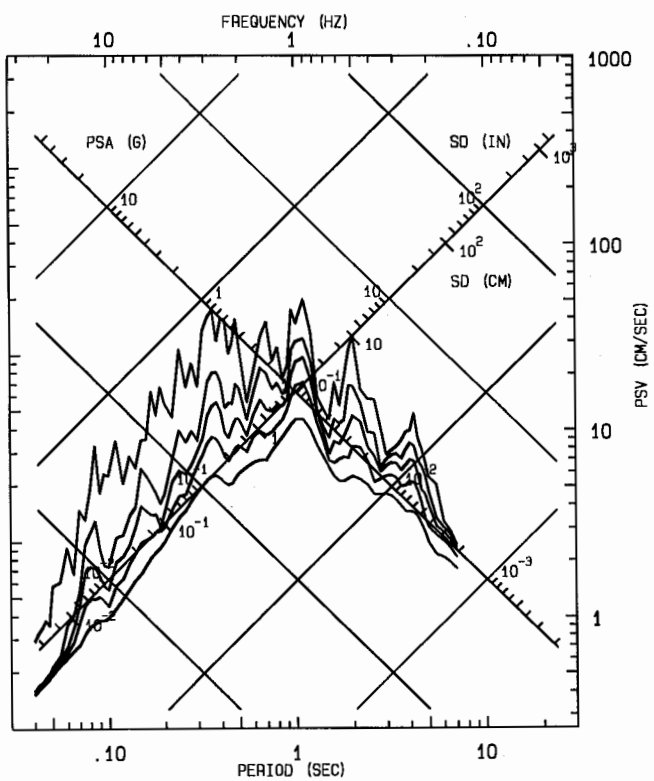
CHN 1: 90 DEG



CHN 2: UP



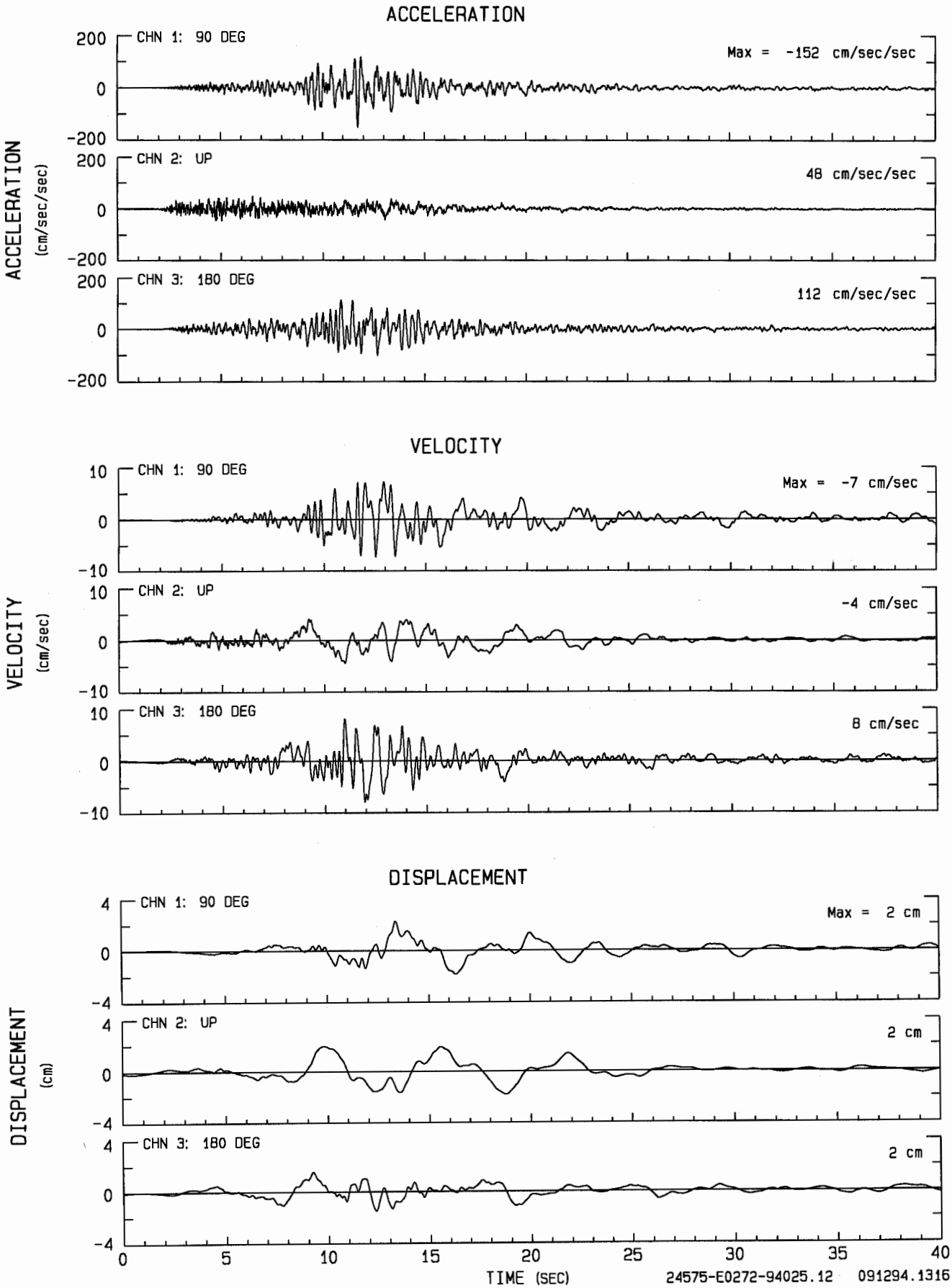
CHN 3: 180 DEG



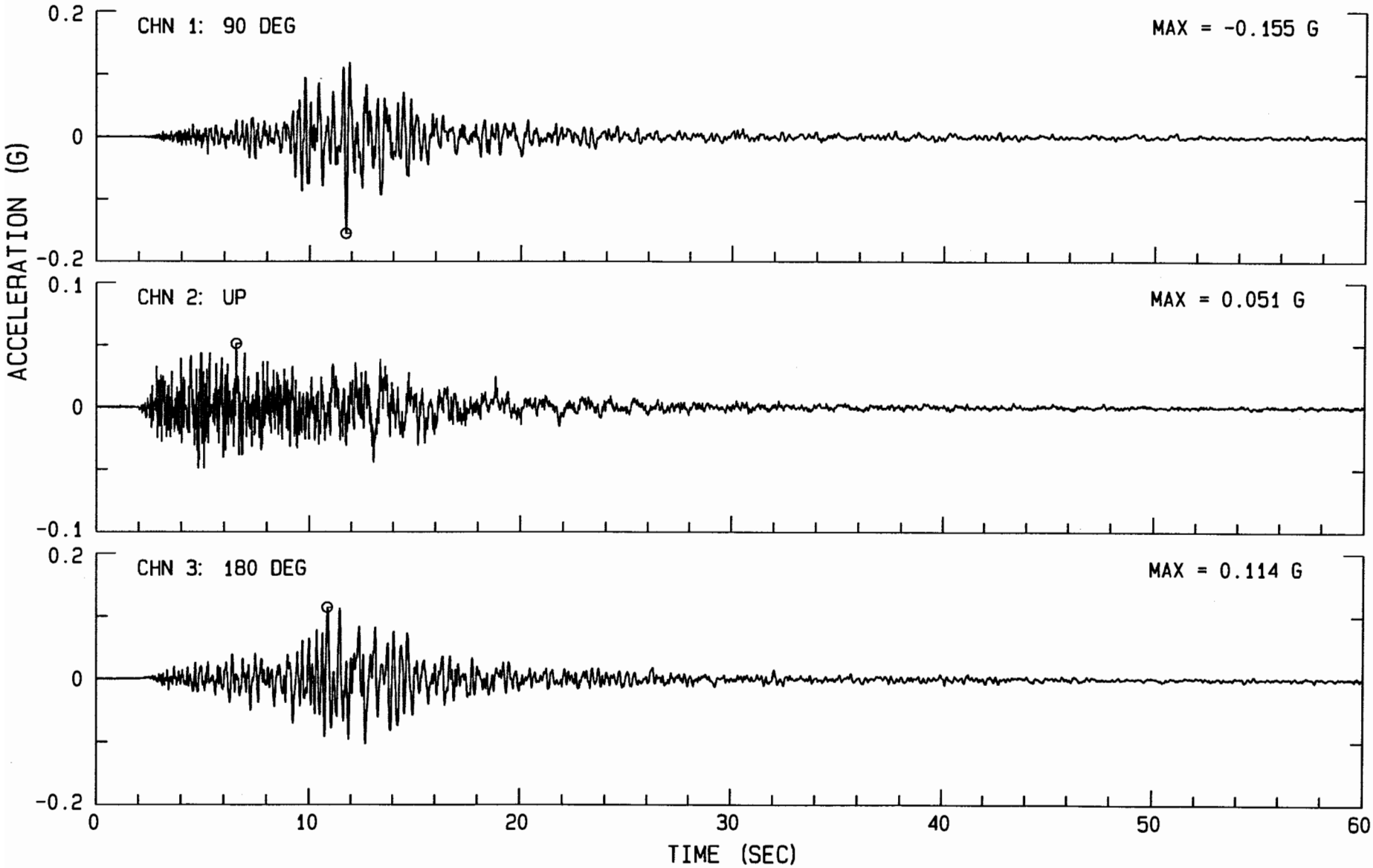
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

ELIZABETH LAKE CSMIP Sta Num 24575

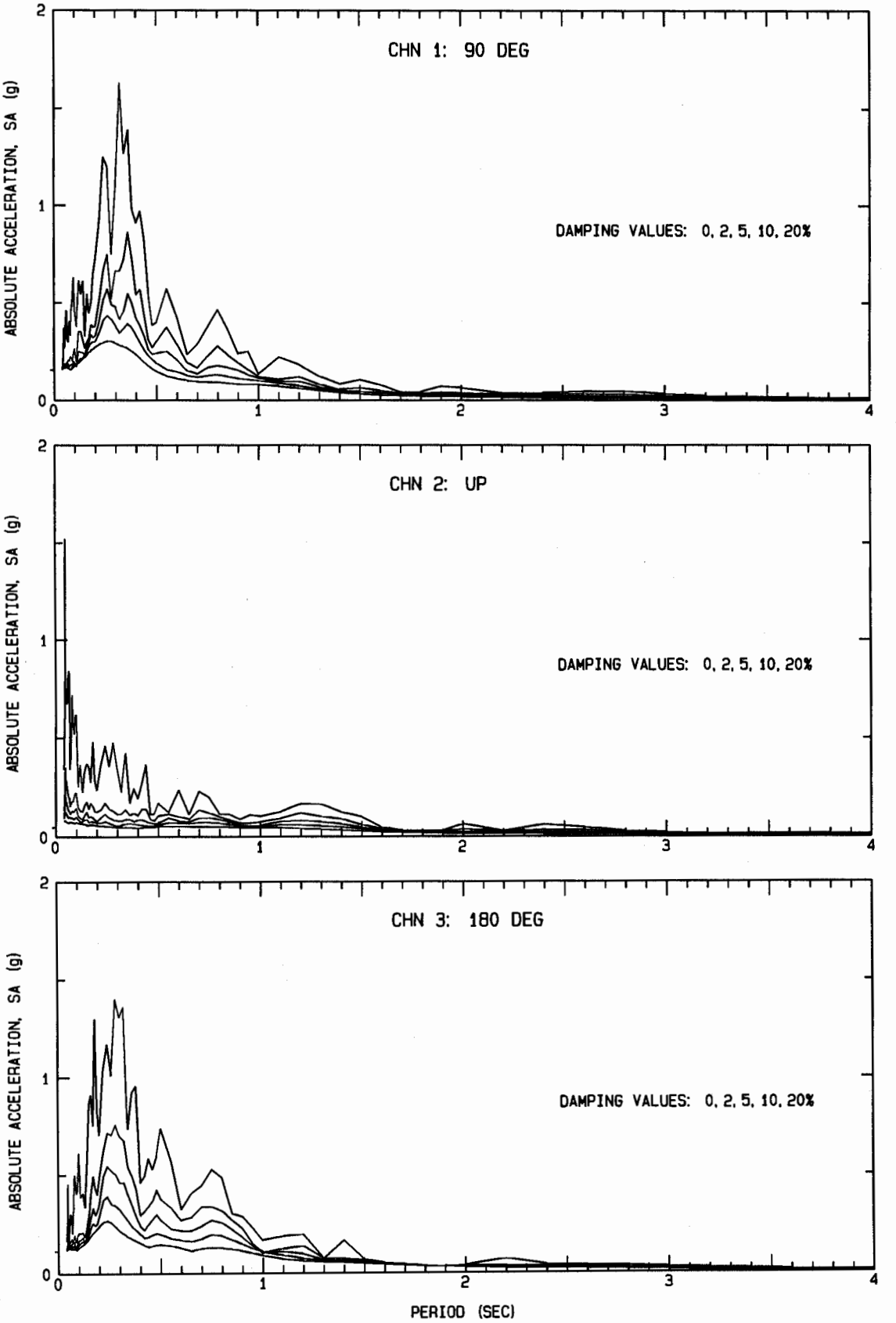
Usable Data Bandwidth: .14 to 47.2 Hz (.02 to 7.5 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
ELIZABETH LAKE
UNCORRECTED ACCELEROGRAM 24575-E0272-94025.12 091294.1309-QN94A575



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
ELIZABETH LAKE
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 46.0-50.0 HZ.
24575-E0272-94025.12 112194.1116-QN94A575



ELIZABETH LAKE: CSMIP S/N 575

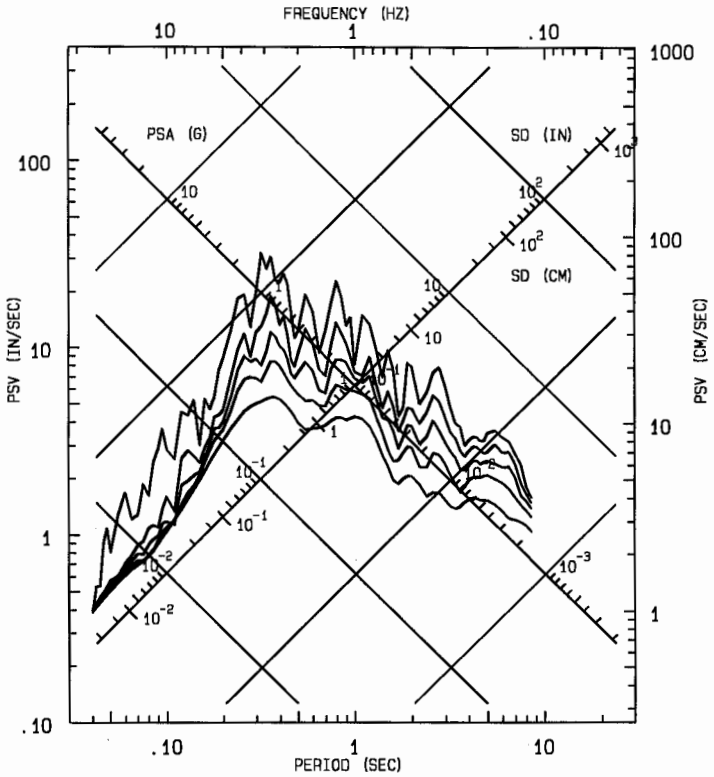
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.14 TO 47.2 HZ
(0.02 TO 7.35 SEC)

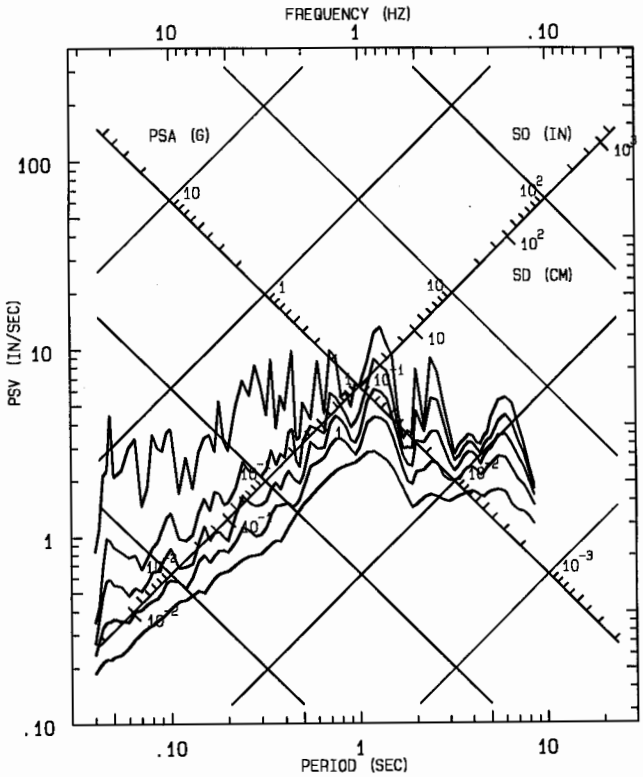
RECORD ID: 24575-E0272-94025.12

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

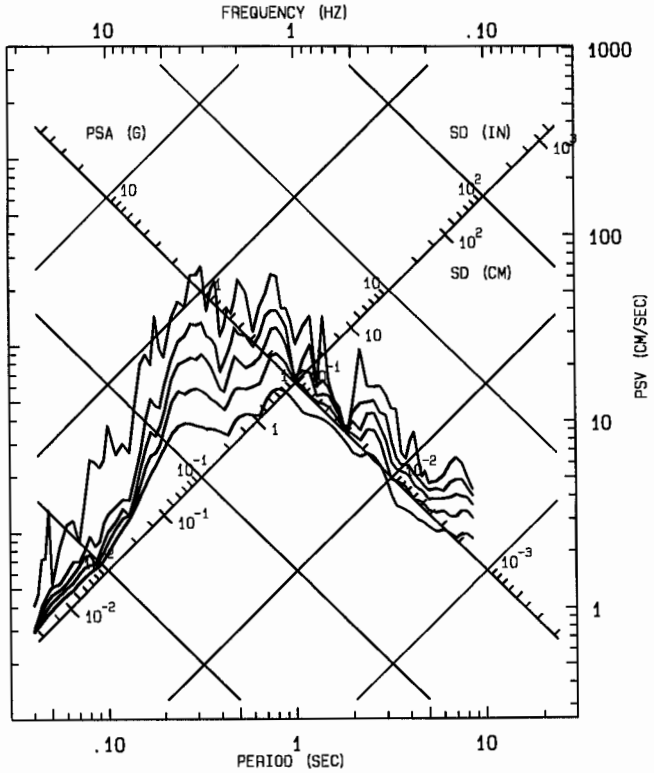
CHN 1: 90 DEG



CHN 2: UP



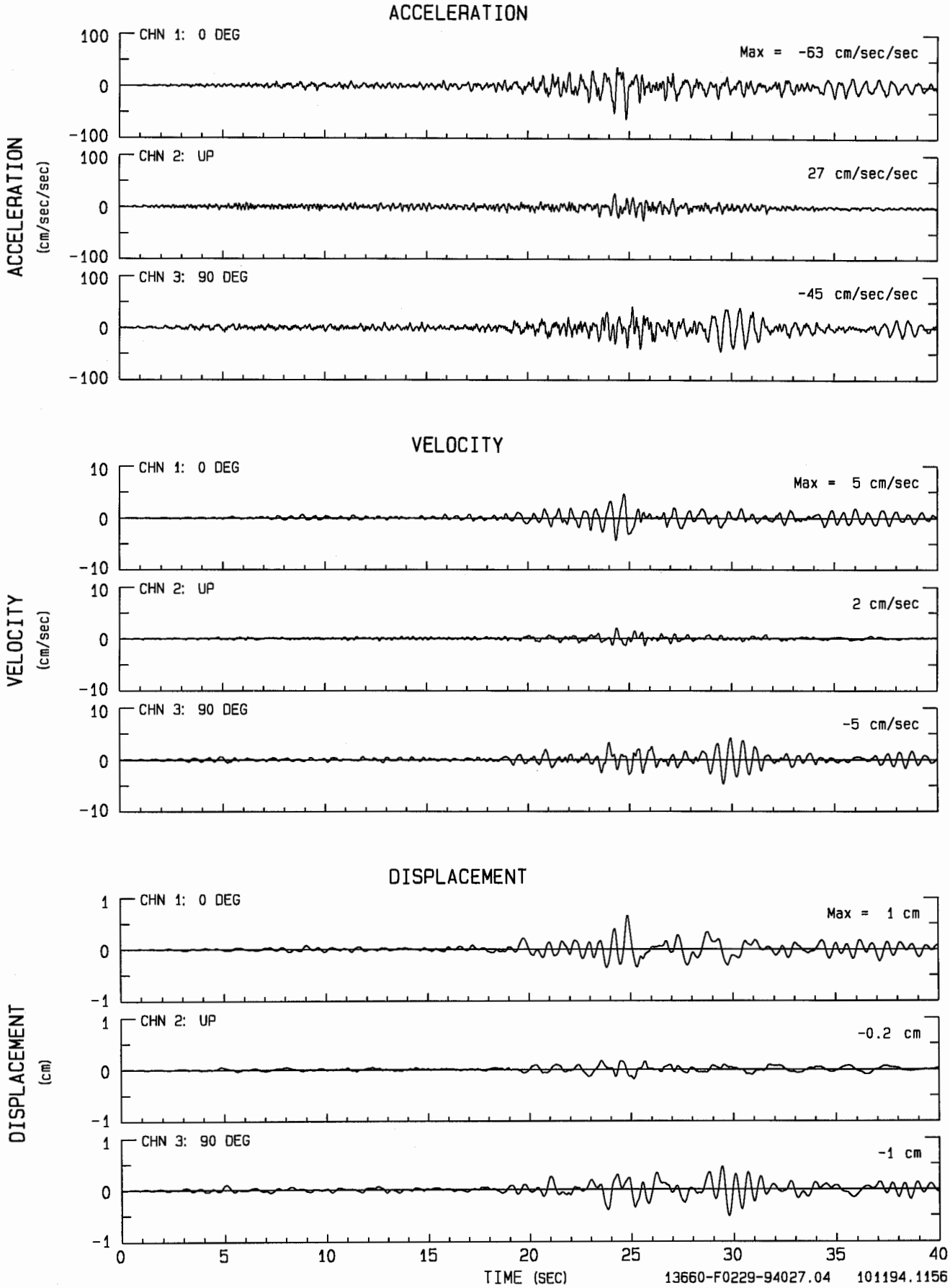
CHN 3: 180 DEG



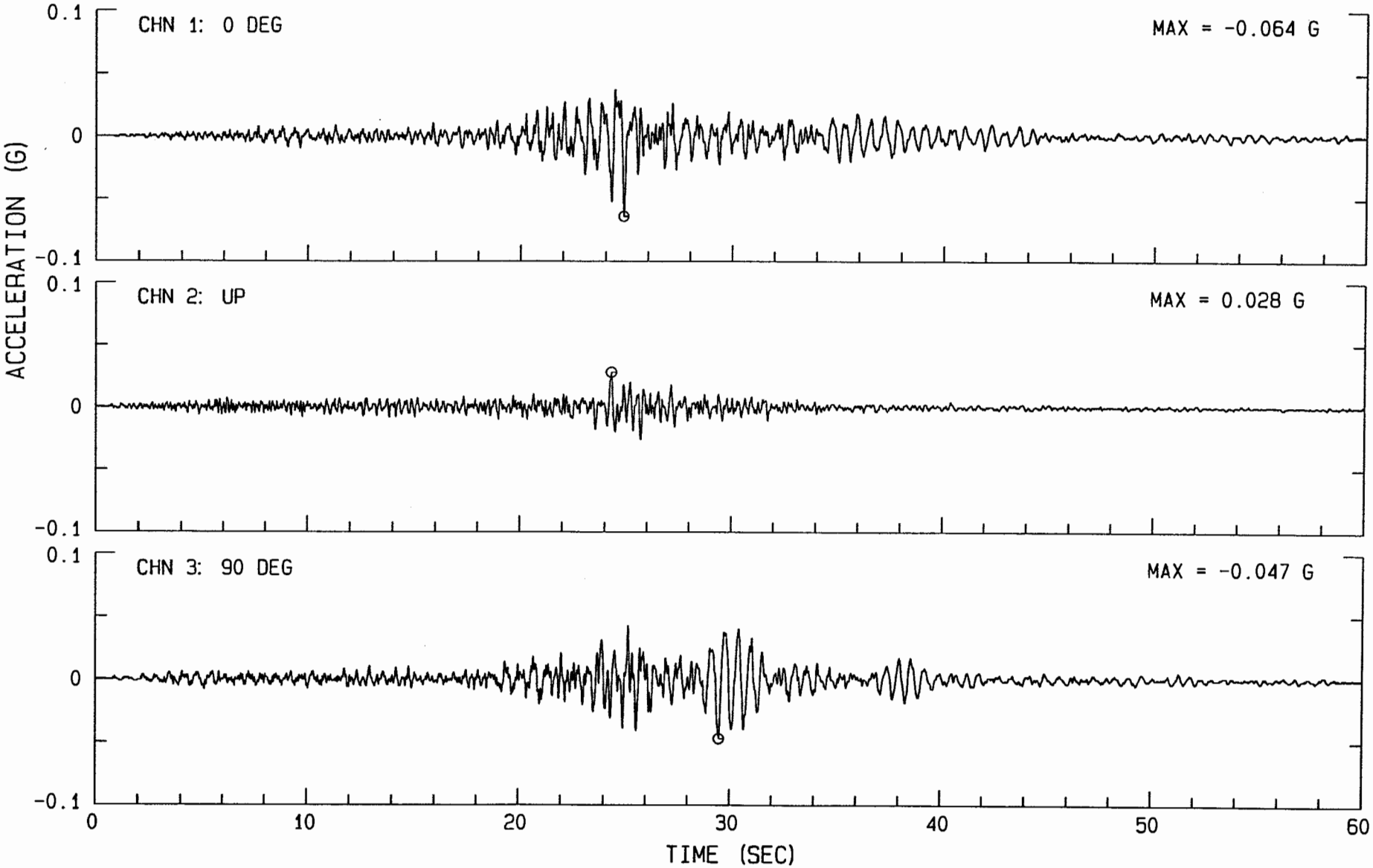
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

HEMET - RYAN AIRFIELD CSMIP Sta Num 13660

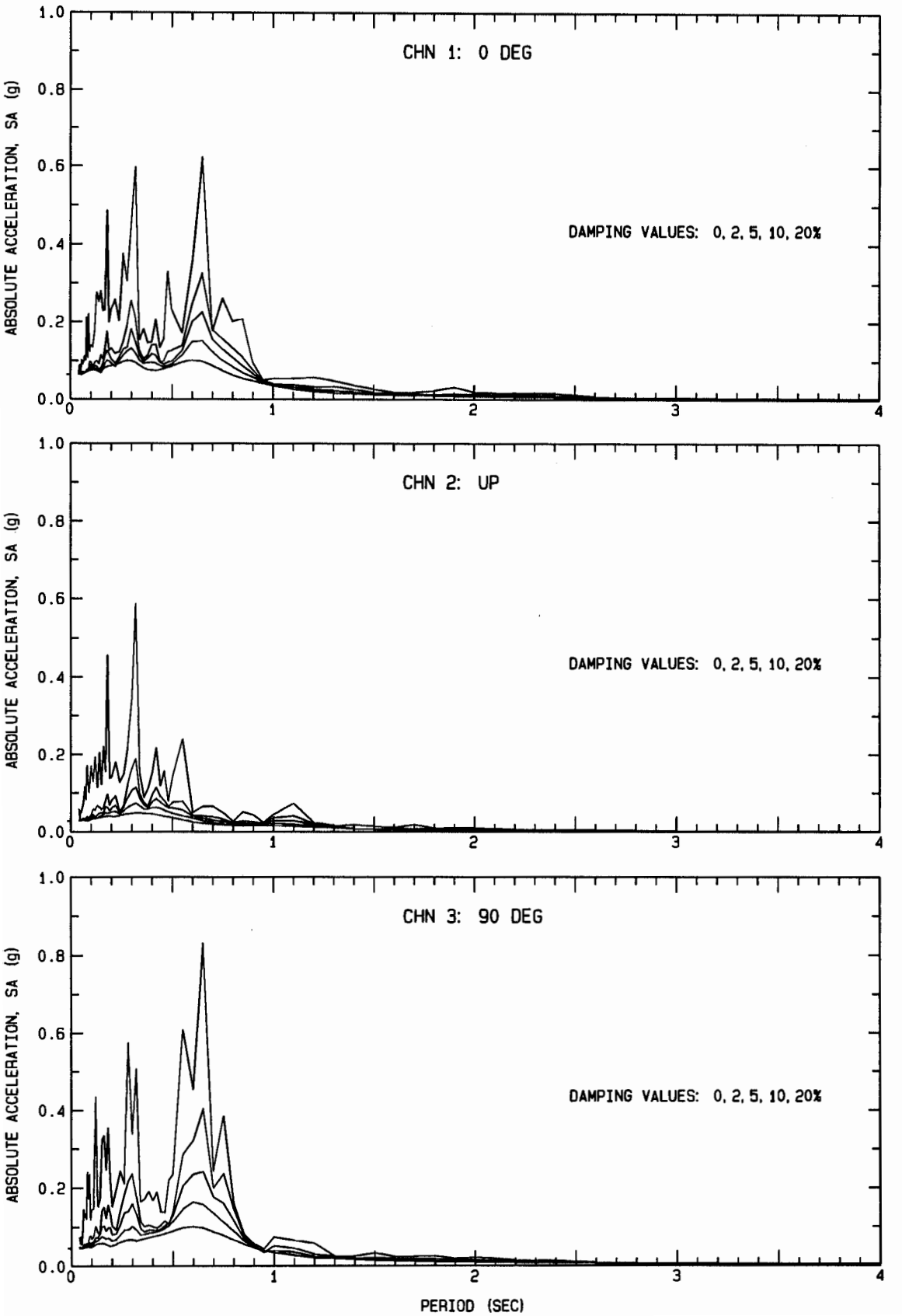
Usable Data Bandwidth: .25 to 47.2 Hz (.02 to 4.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
HEMET - RYAN AIRFIELD
UNCORRECTED ACCELEROGRAM 13660-F0229-94027.04 101194.1145-QN94A660



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
HEMET - RYAN AIRFIELD
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 46.0-50.0 HZ.
13660-F0229-94027.04 112194.1120-QN94A660



HEMET - RYAN AIRFIELD: CSMIP S/N 660

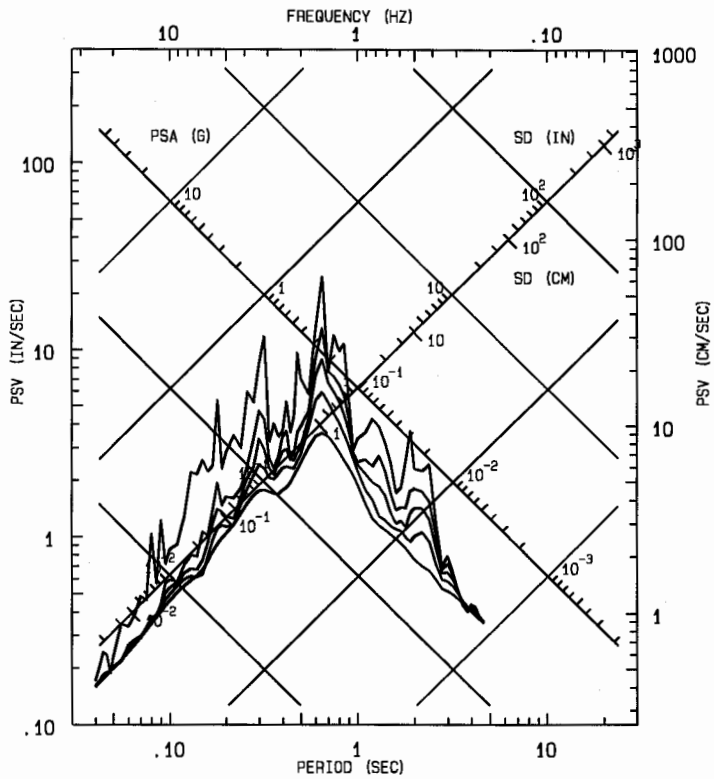
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.25 TO 47.2 HZ
(0.02 TO 3.92 SEC)

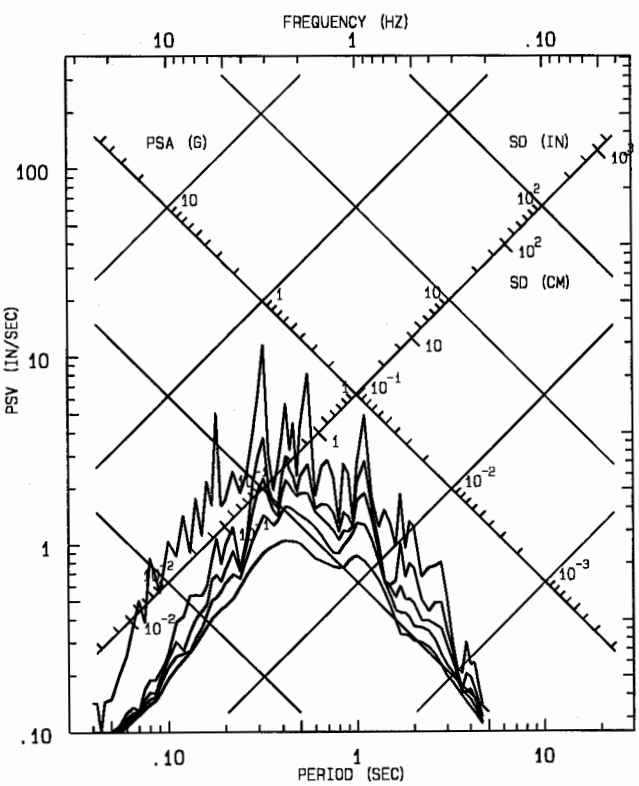
RECORD ID: 13660-F0229-94027.04

RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

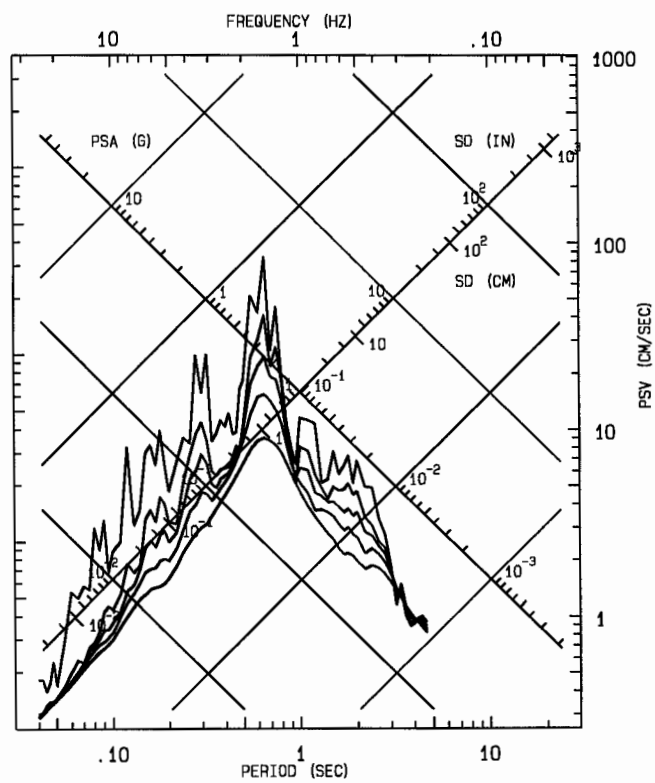
CHN 1: 0 DEG



CHN 2: UP



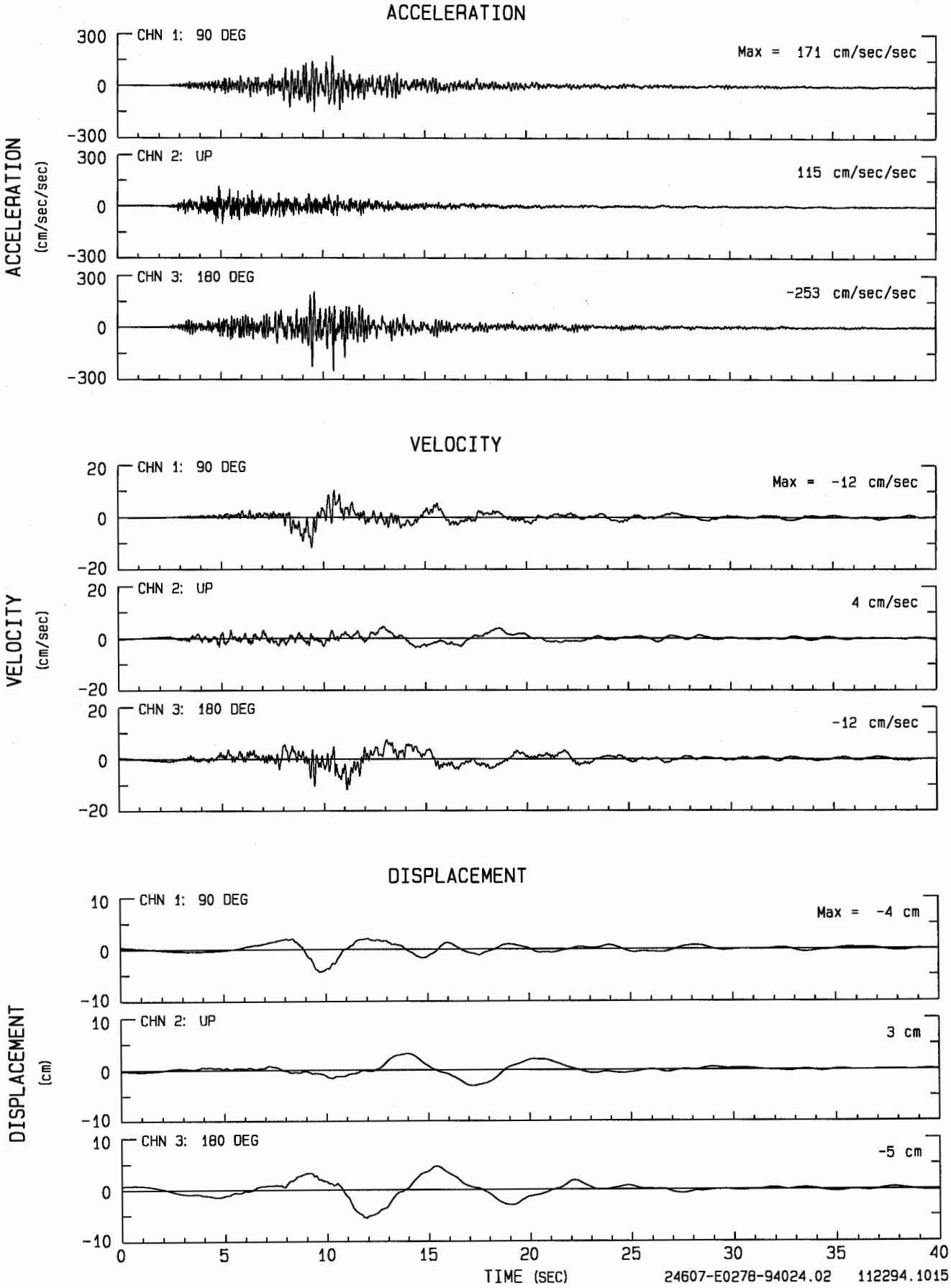
CHN 3: 90 DEG

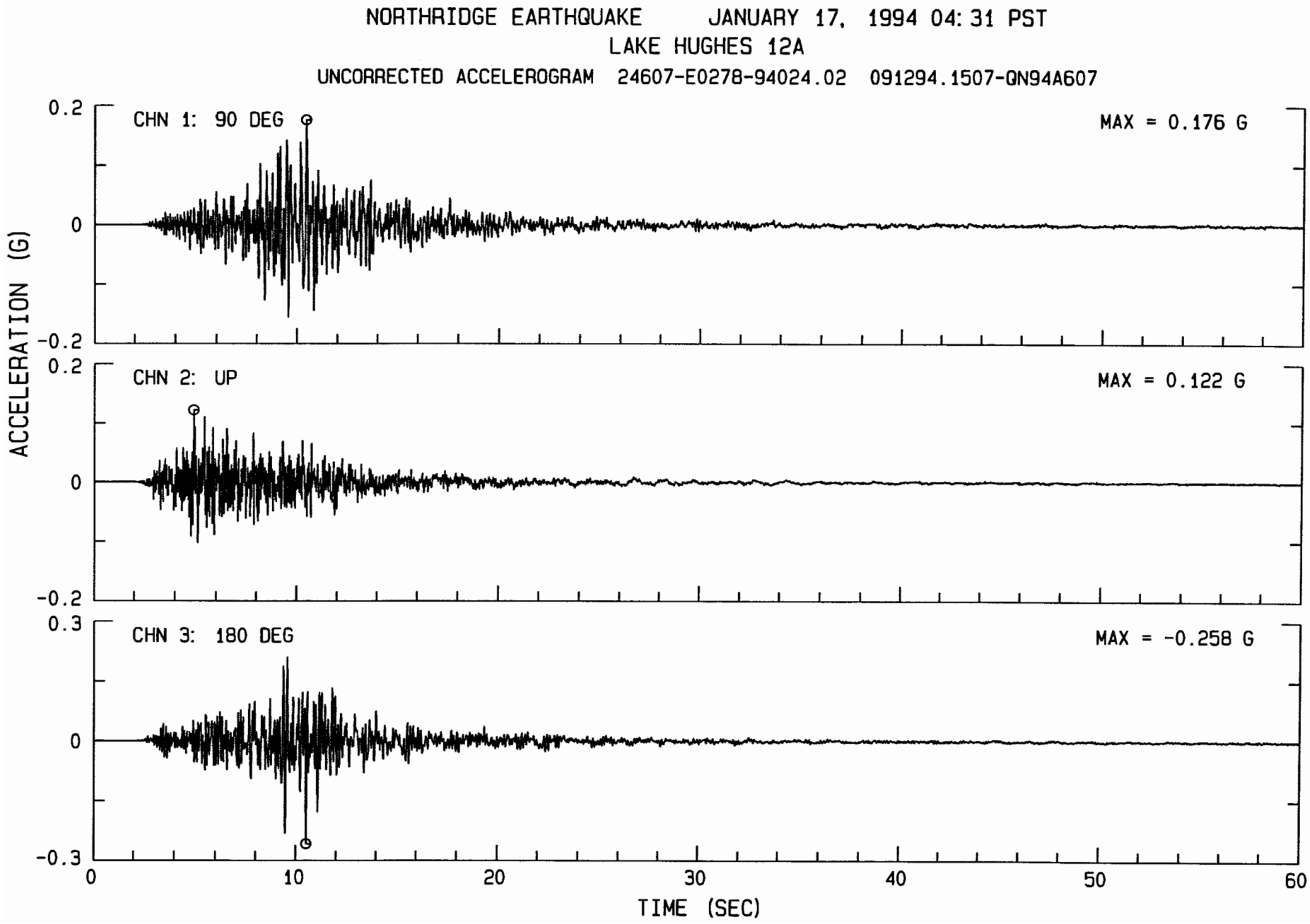


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

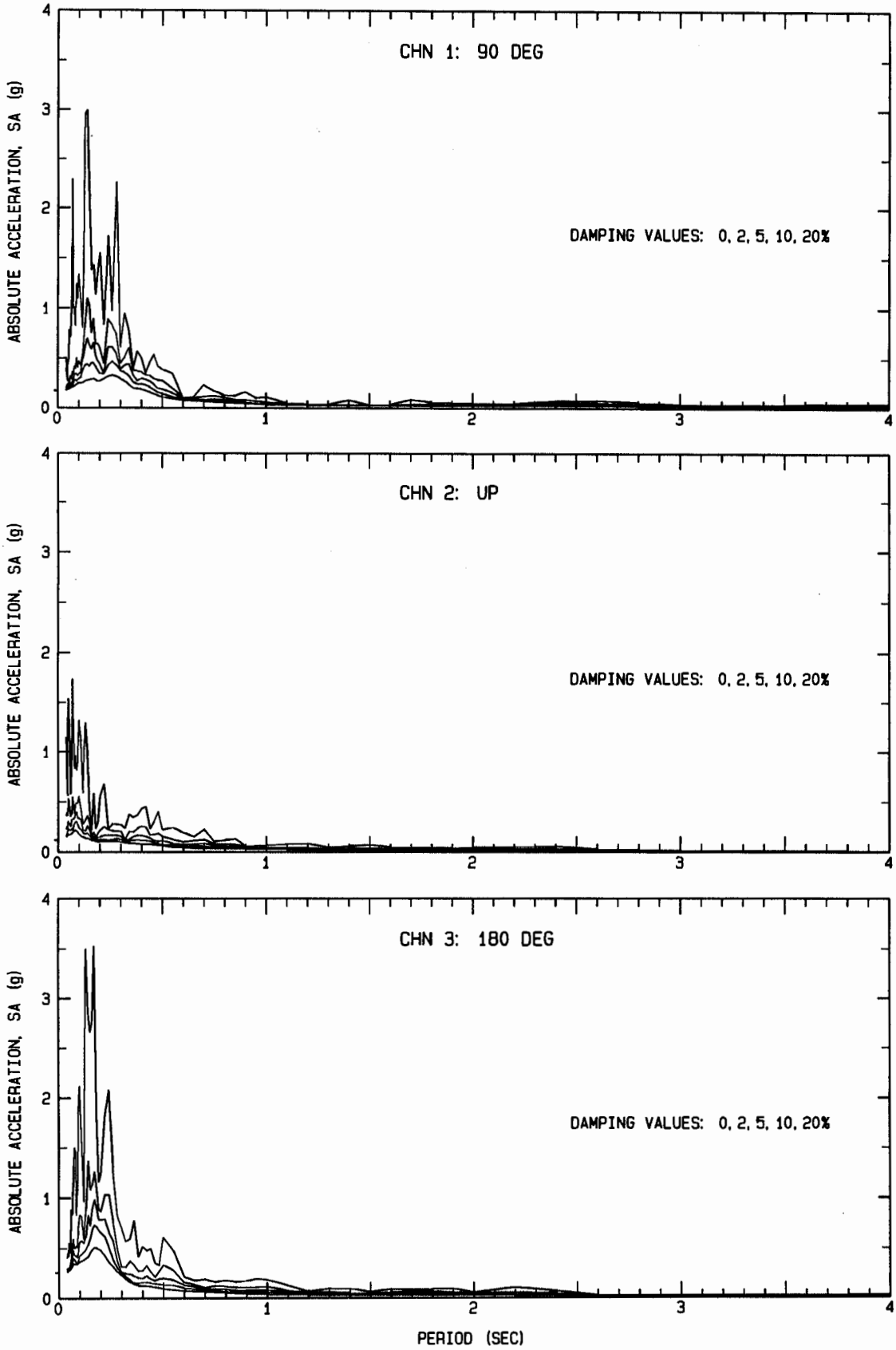
LAKE HUGHES 12A CSMIP Sta Num 24607

Usable Data Bandwidth: .10 to 47.2 Hz (.02 to 10.0 Sec)




NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LAKE HUGHES 12A
UNCORRECTED ACCELEROGRAM 24607-E0278-94024.02 091294.1507-QN94A607
CHN 1: 90 DEG
MAX = 0.176 G
CHN 2: UP
MAX = 0.122 G
CHN 3: 180 DEG
MAX = -0.258 G
ACCELERATION (G)
0.2
0
-0.2
0.3
-0.3
0
10
20
30
40
50
60
TIME (SEC)

NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LAKE HUGHES 12A
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .06-.12 TO 46.0-50.0 HZ.
24607-E0278-94024.02 112294.1018-QN94A607



LAKE HUGHES 12A: CSMIP S/N 607

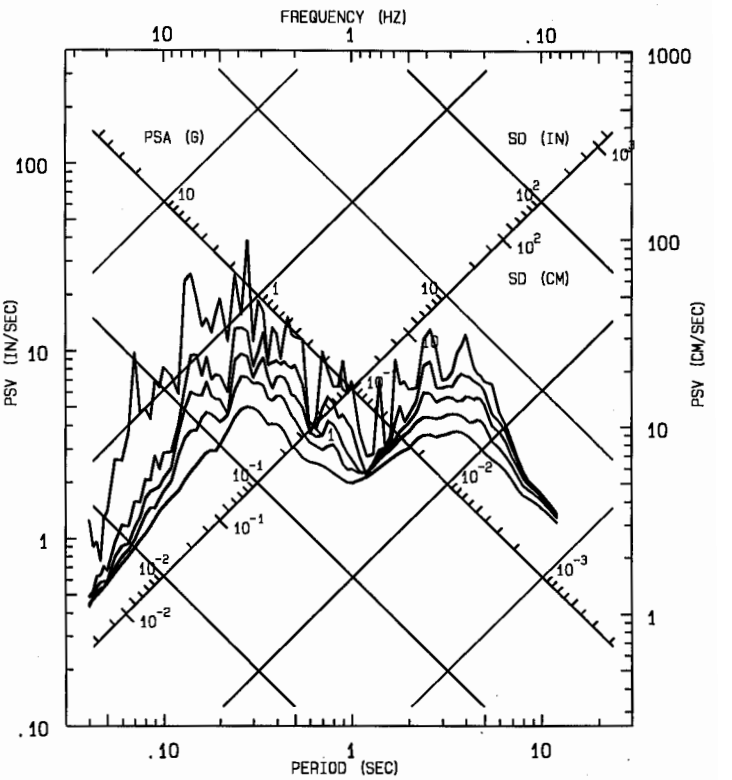
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.10 TO 47.2 HZ
(0.02 TO 9.80 SEC)

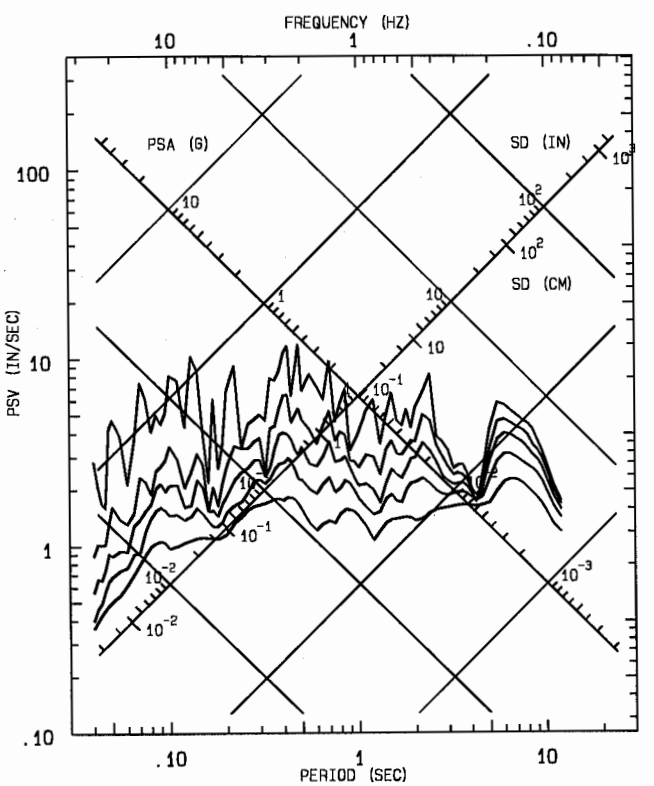
RECORD ID: 24607-E0278-94024.02

RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

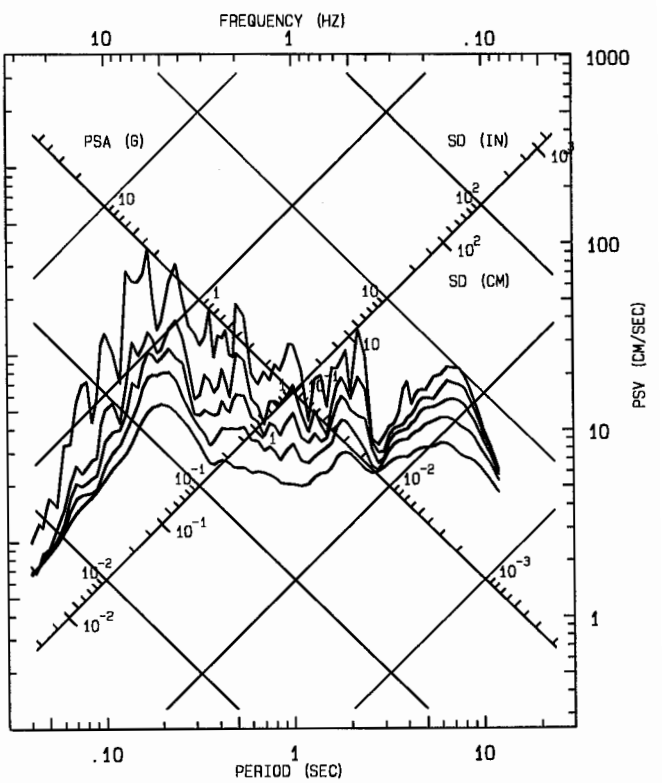
CHN 1: 90 DEG



CHN 2: UP



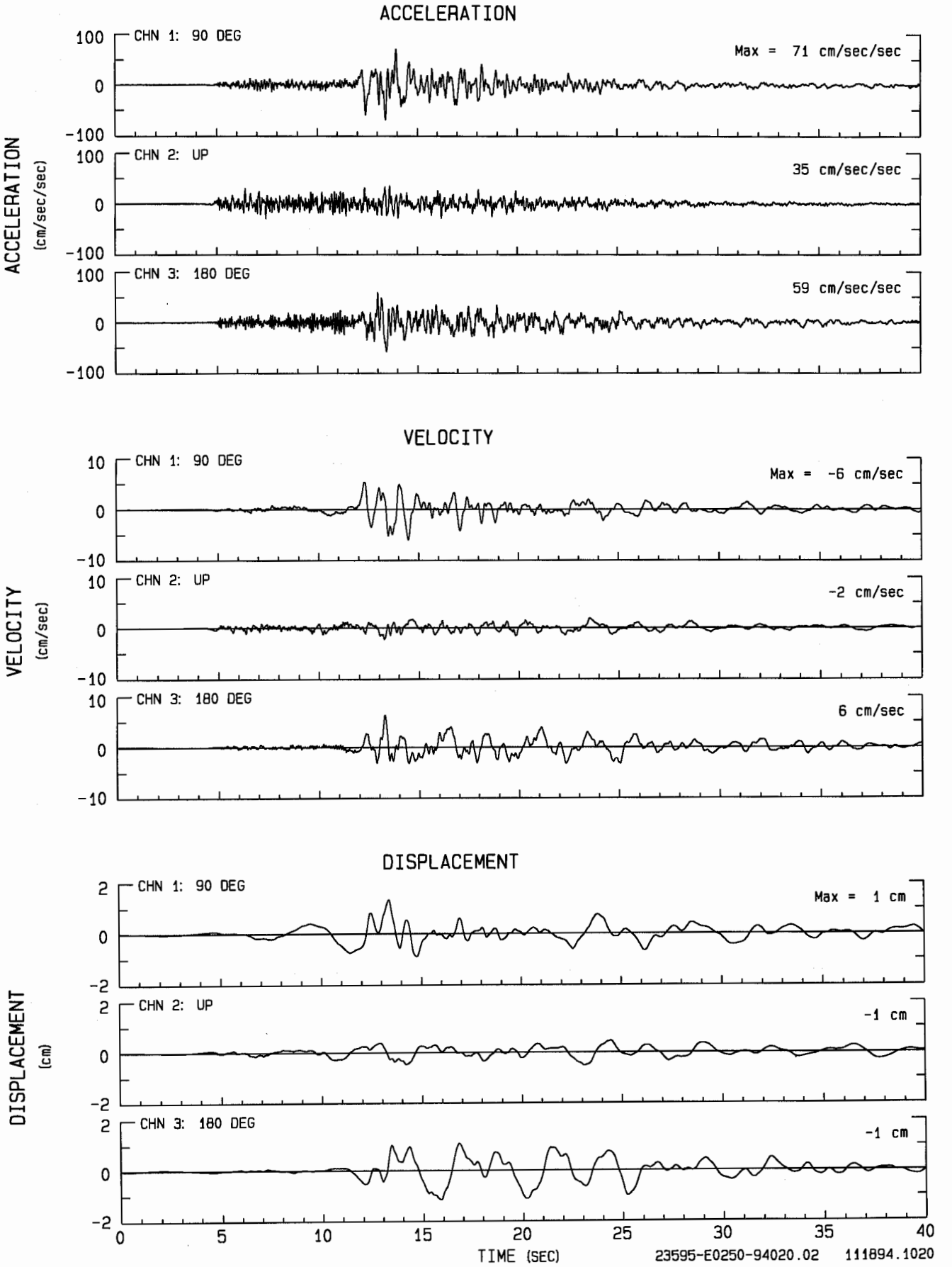
CHN 3: 180 DEG



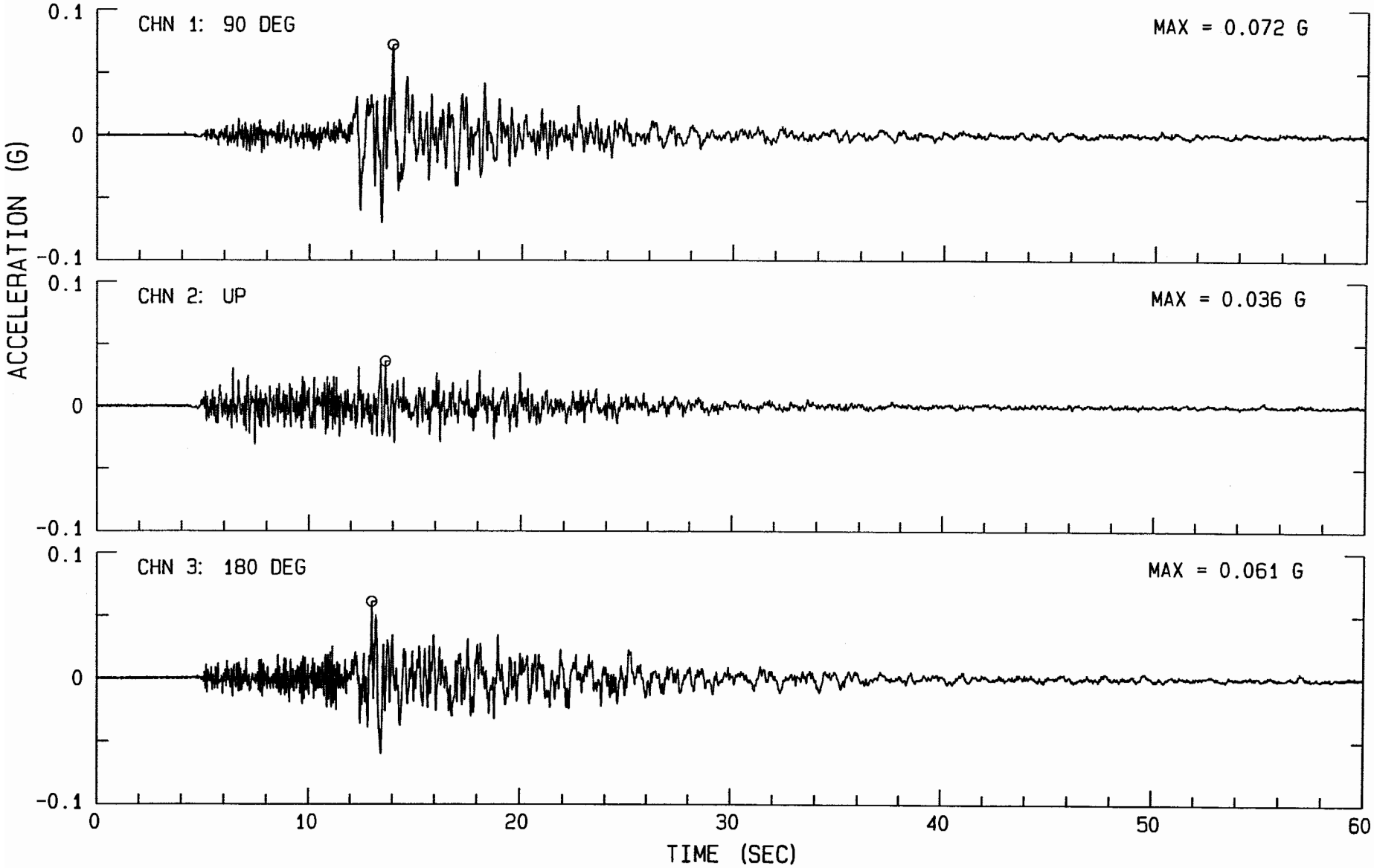
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

LITTLEROCK - BRAINARD CANYON CSMIP Sta Num 23595

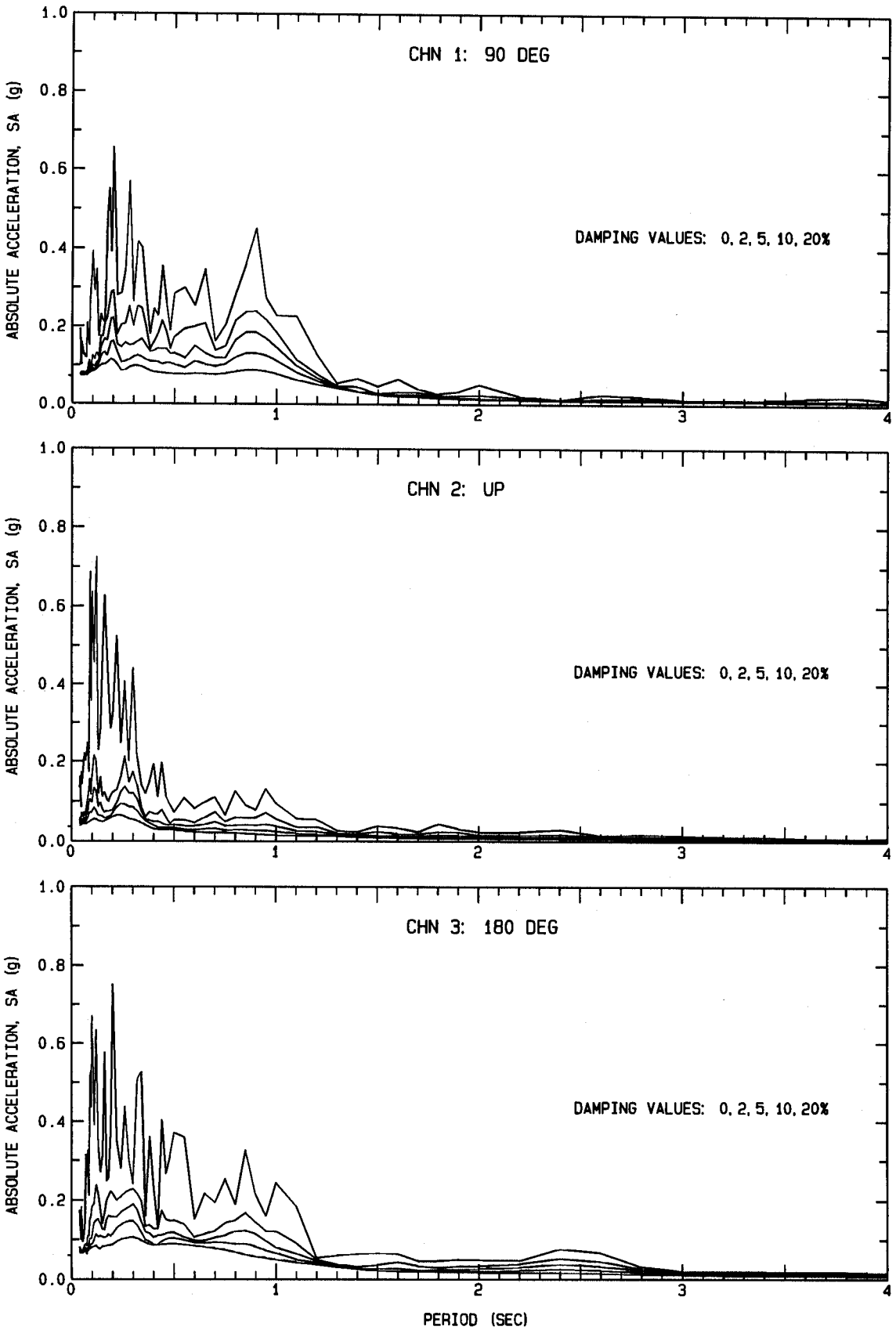
Usable Data Bandwidth: .17 to 47.2 Hz (.02 to 6.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LITTLEROCK - BRAINARD CANYON
UNCORRECTED ACCELEROGRAM 23595-E0250-94020.02 101394.0938-QN94A595



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LITTLEROCK - BRAINARD CANYON
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 46.0-50.0 HZ.
23595-E0250-94020.02 112194.1127-QN94A595



LITTLEROCK - BRAINARD CANYON: CSMIP S/N 595

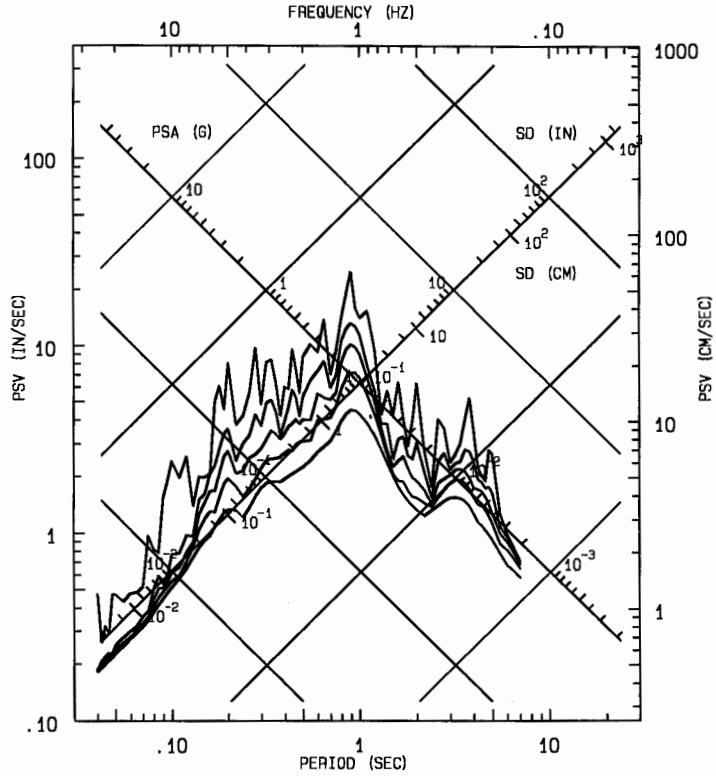
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.17 TO 47.2 HZ
(0.02 TO 5.88 SEC)

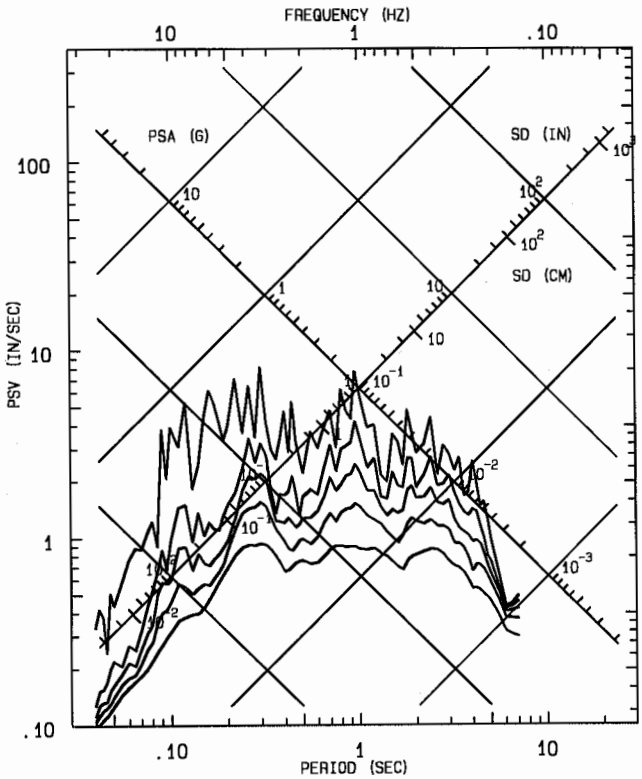
RECORD ID: 23595-E0250-94020.02

RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

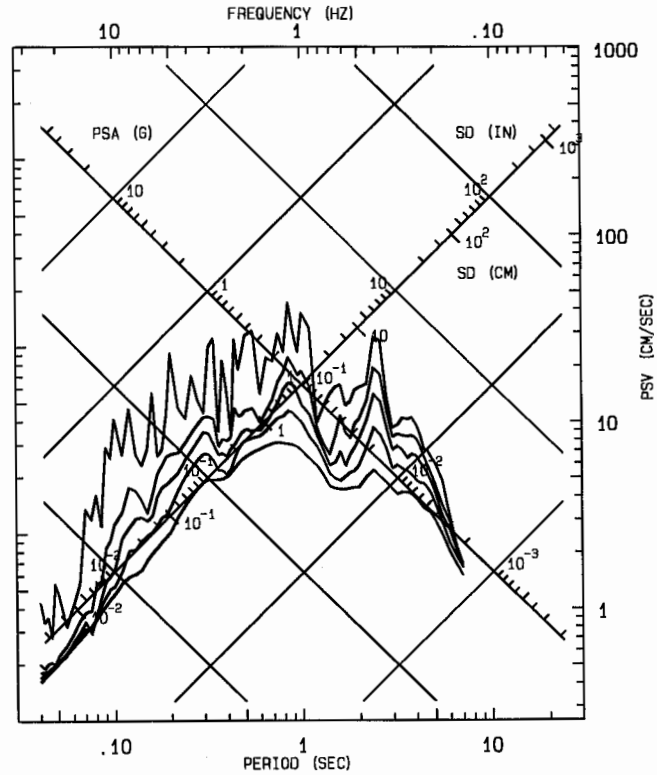
CHN 1: 90 DEG



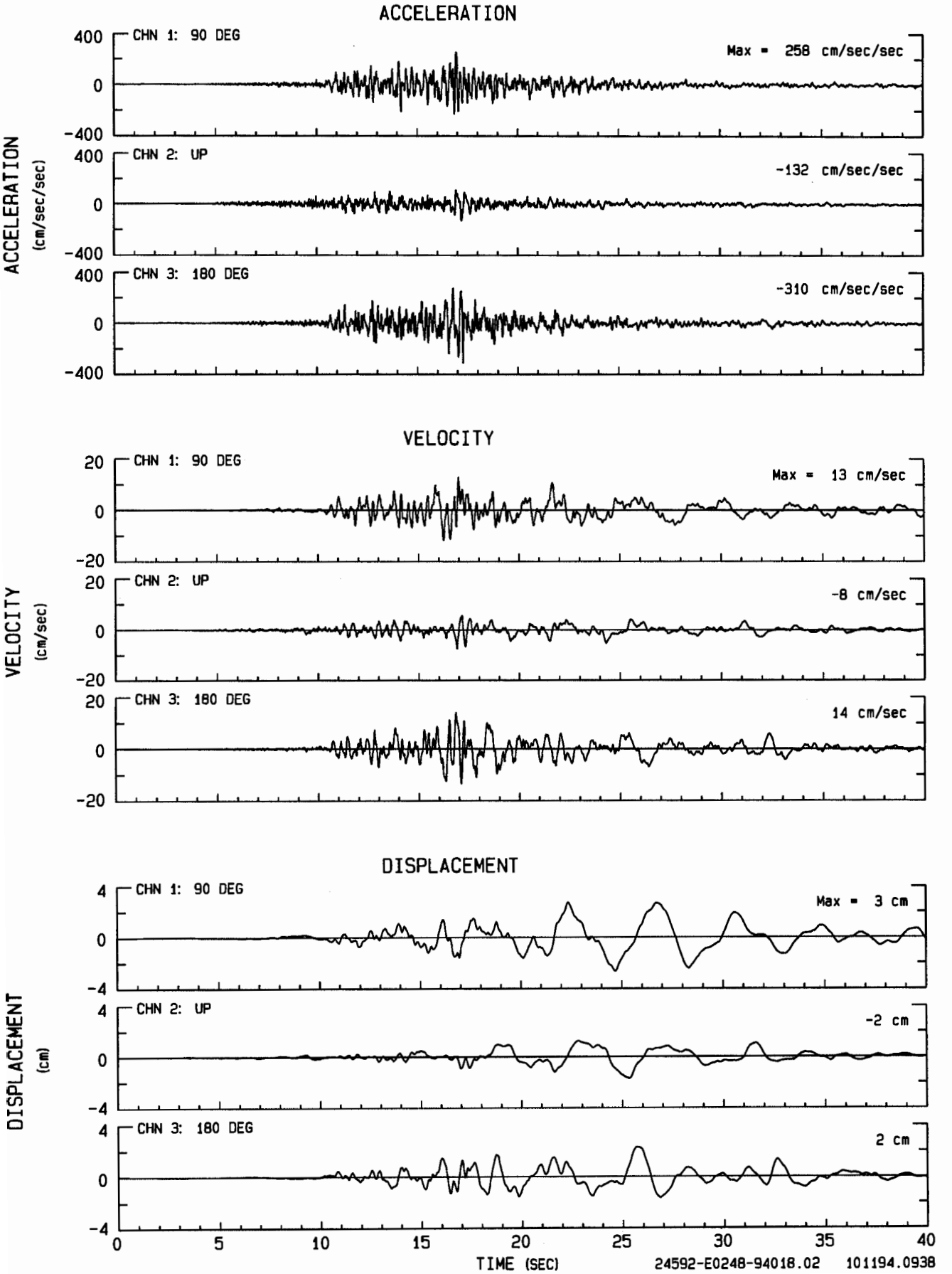
CHN 2: UP



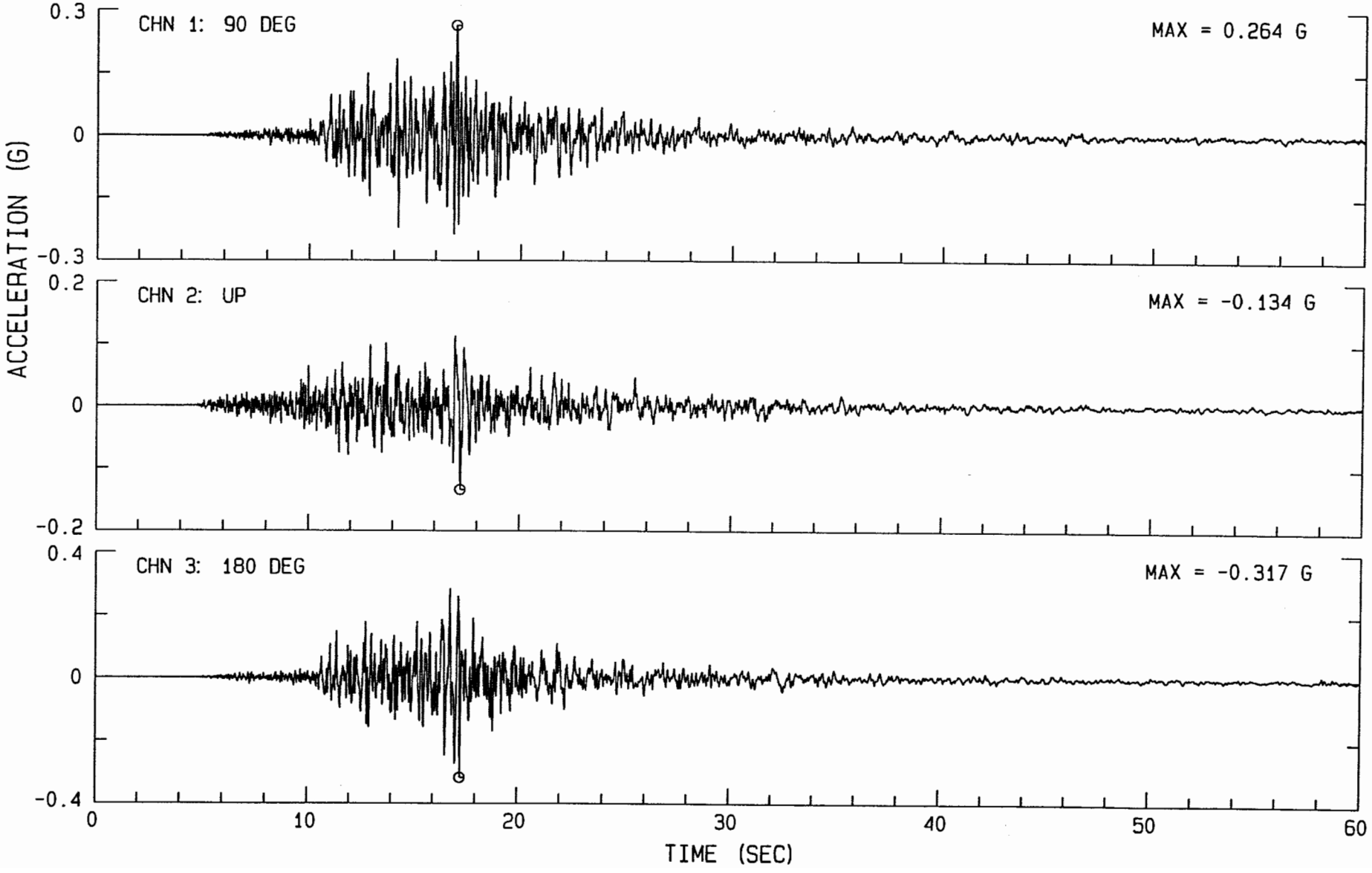
CHN 3: 180 DEG



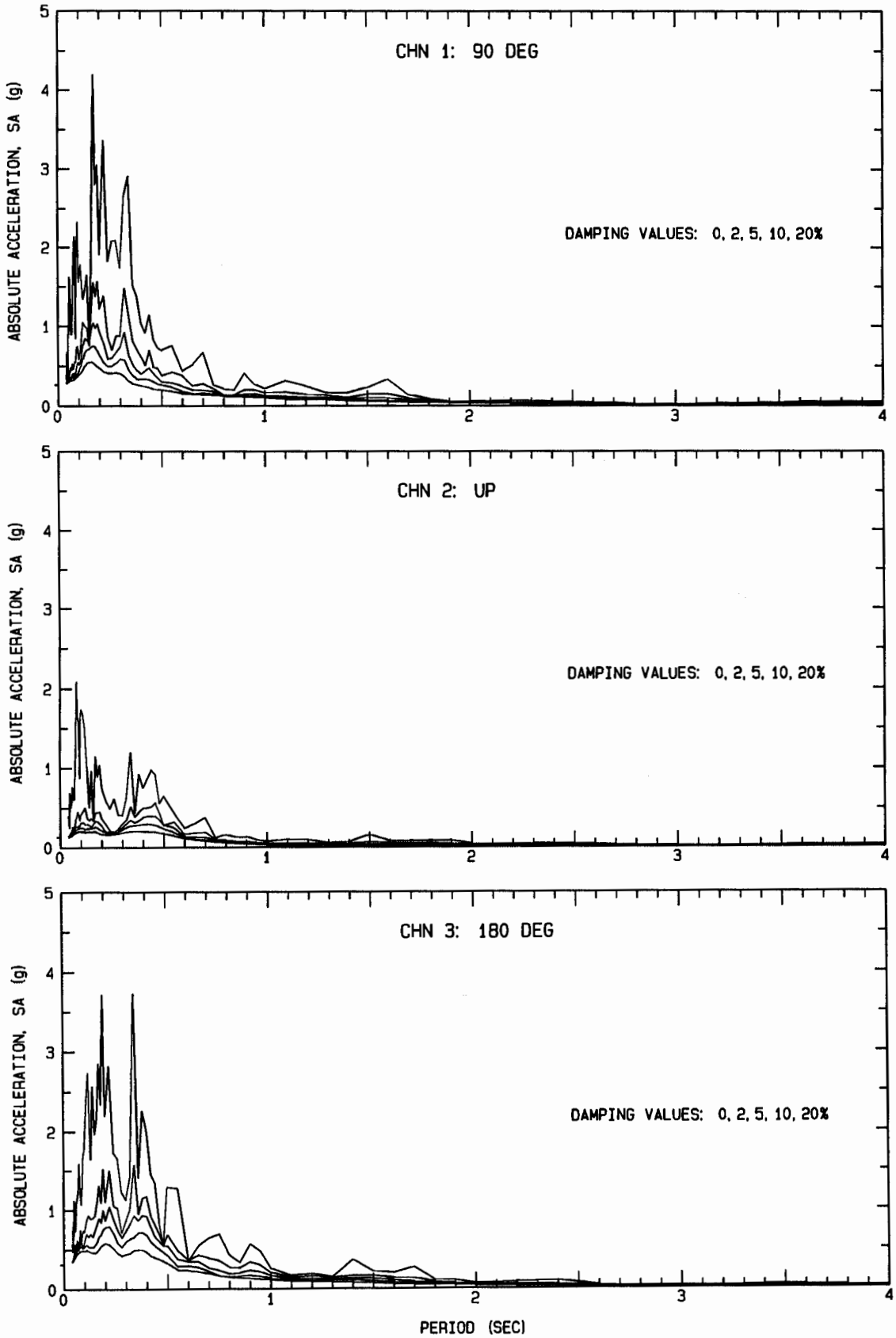
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - CITY TERRACE CSMIP Sta Num 24592
Usable Data Bandwidth: .17 to 47.2 Hz (.02 to 6.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - CITY TERRACE
UNCORRECTED ACCELEROGRAM 24592-E0248-94018.02 101194.0929-QN94A592



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - CITY TERRACE
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 46.0-50.0 HZ.
24592-E024B-94018.02 112194.1131-QN94A592



LOS ANGELES - CITY TERRACE: CSMIP S/N 592

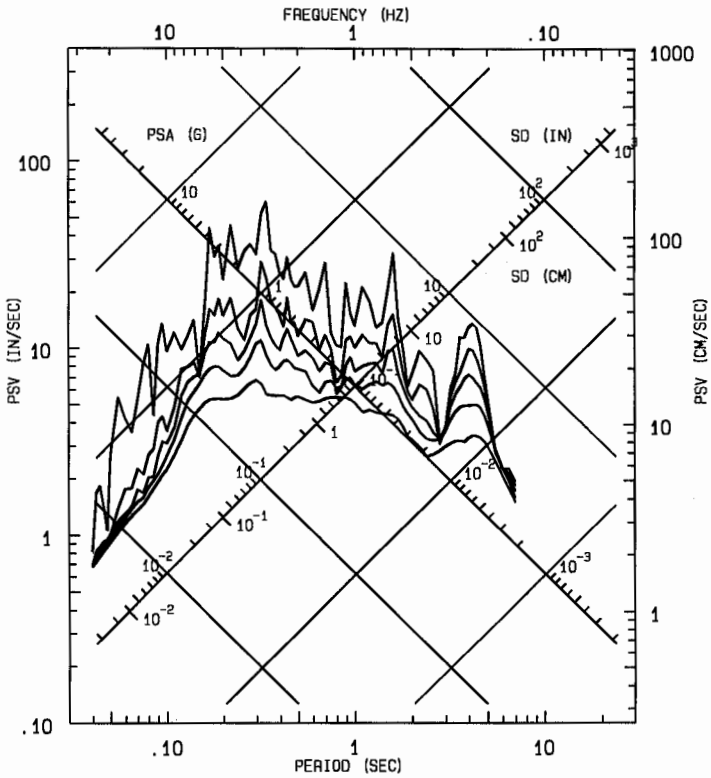
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.17 TO 47.2 HZ
(0.02 TO 5.88 SEC)

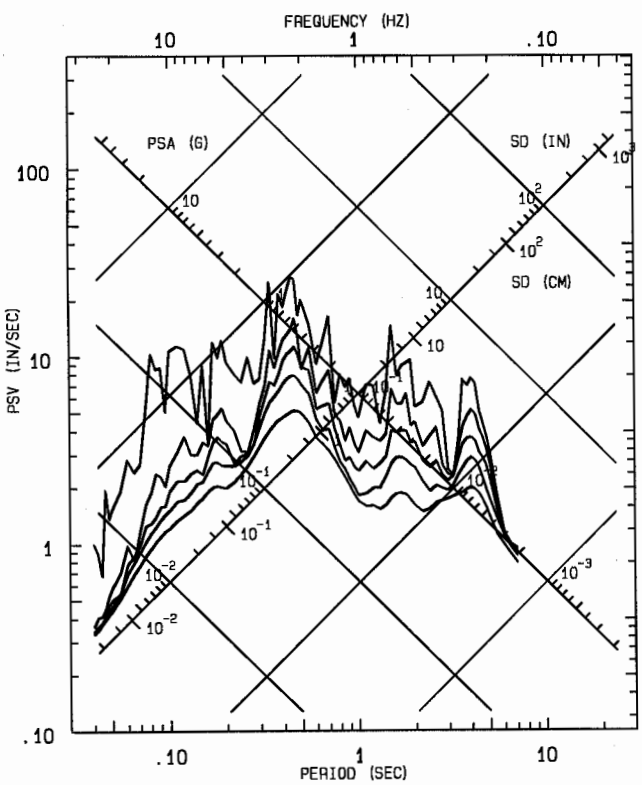
RECORD ID: 24592-E0248-94018.02

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

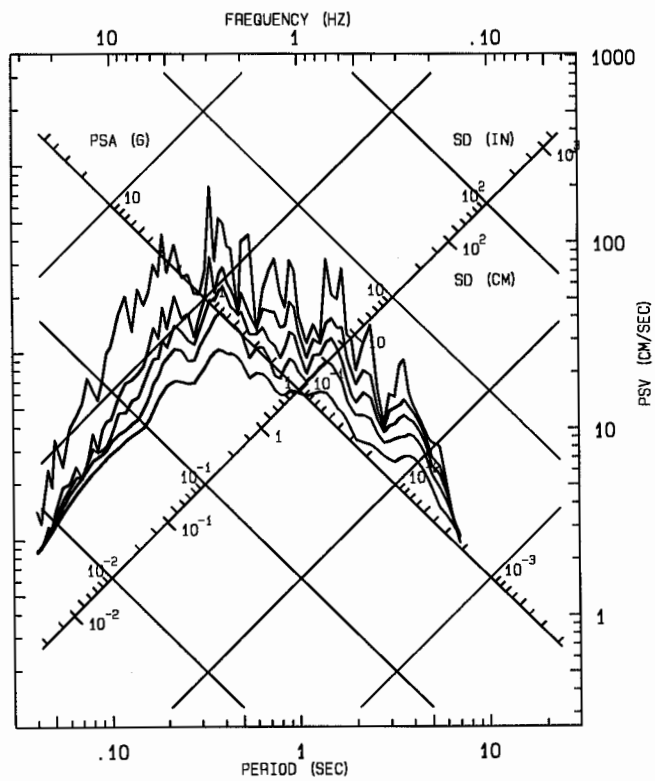
CHN 1: 90 DEG



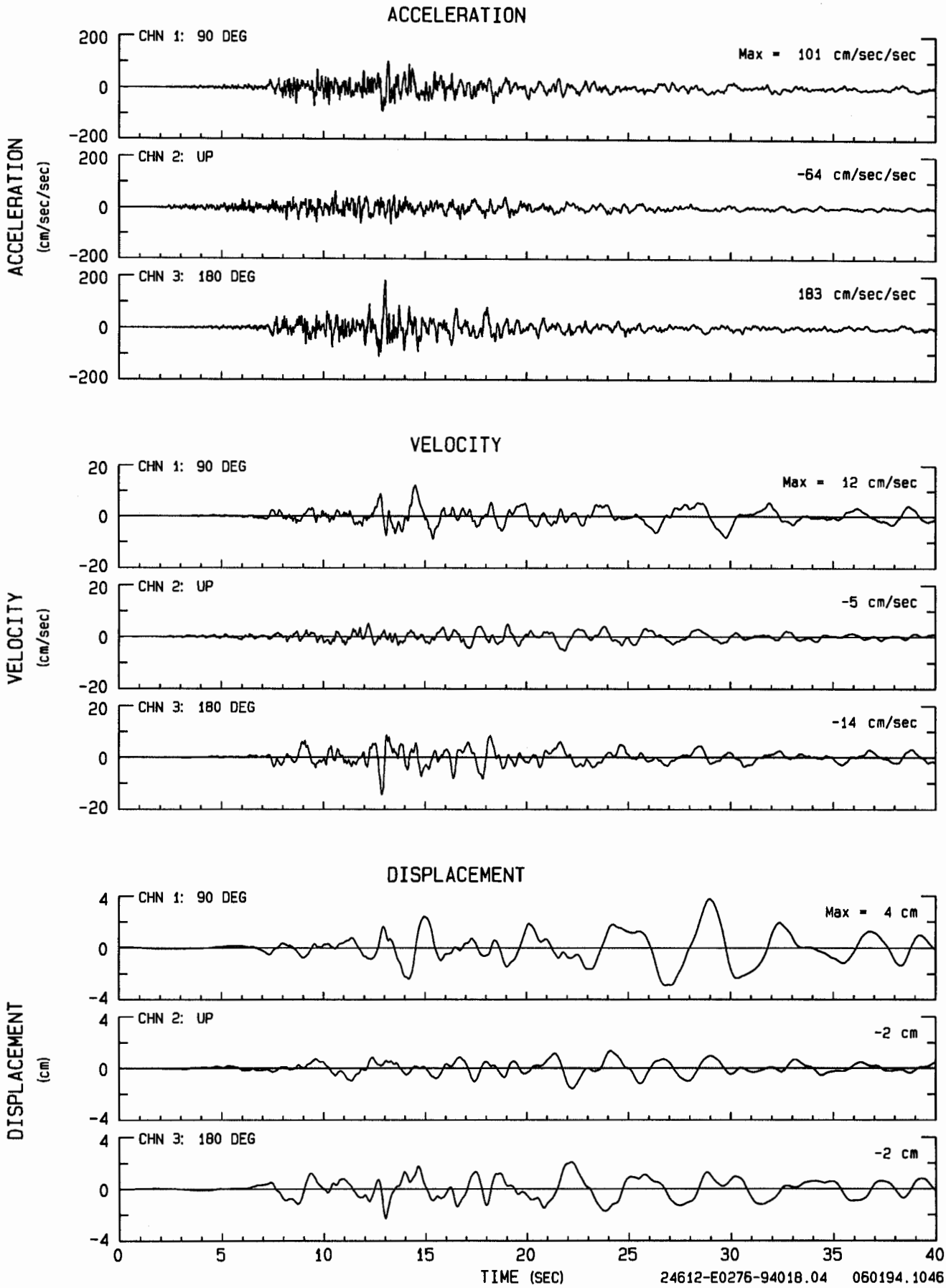
CHN 2: UP



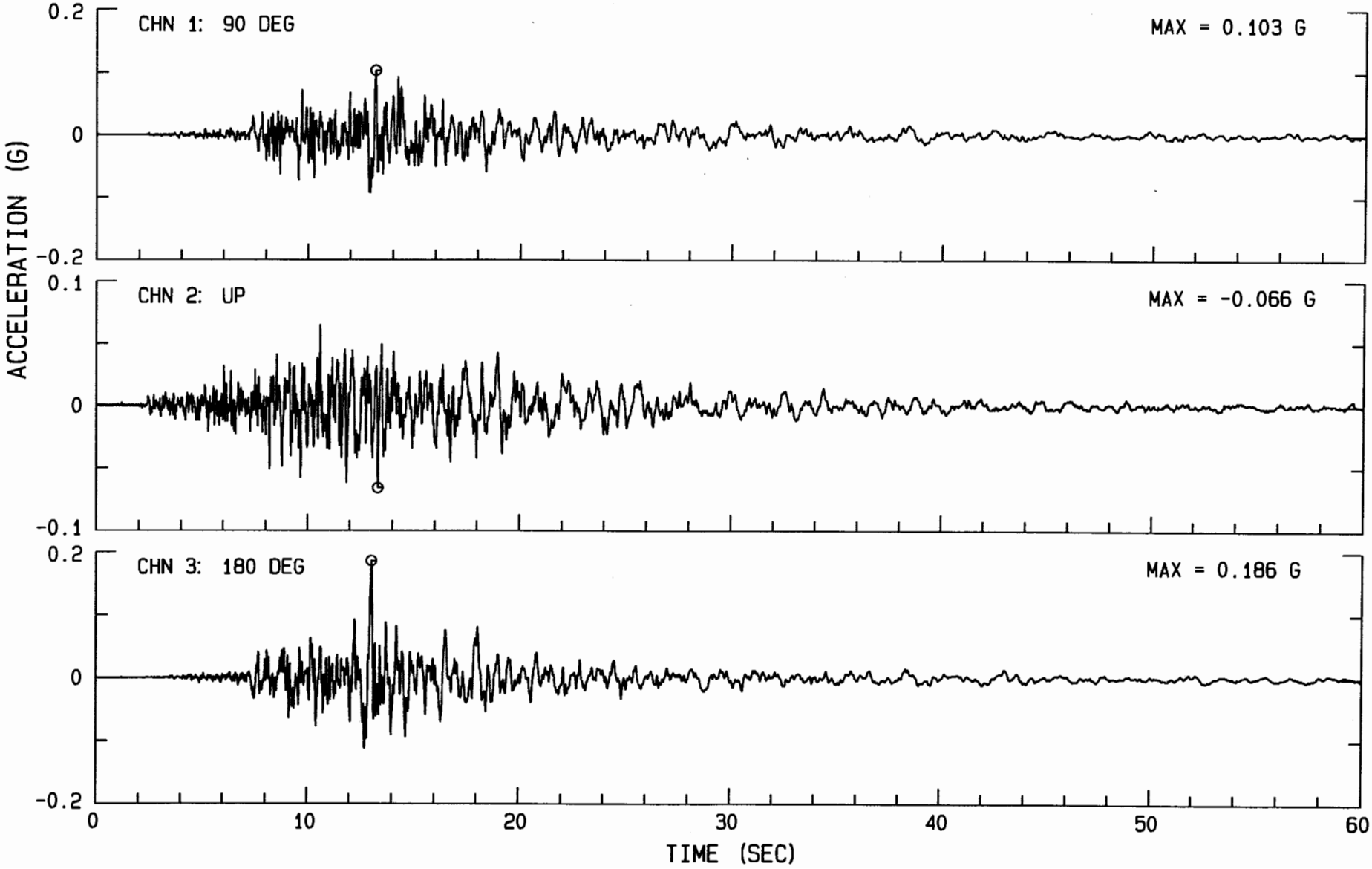
CHN 3: 180 DEG



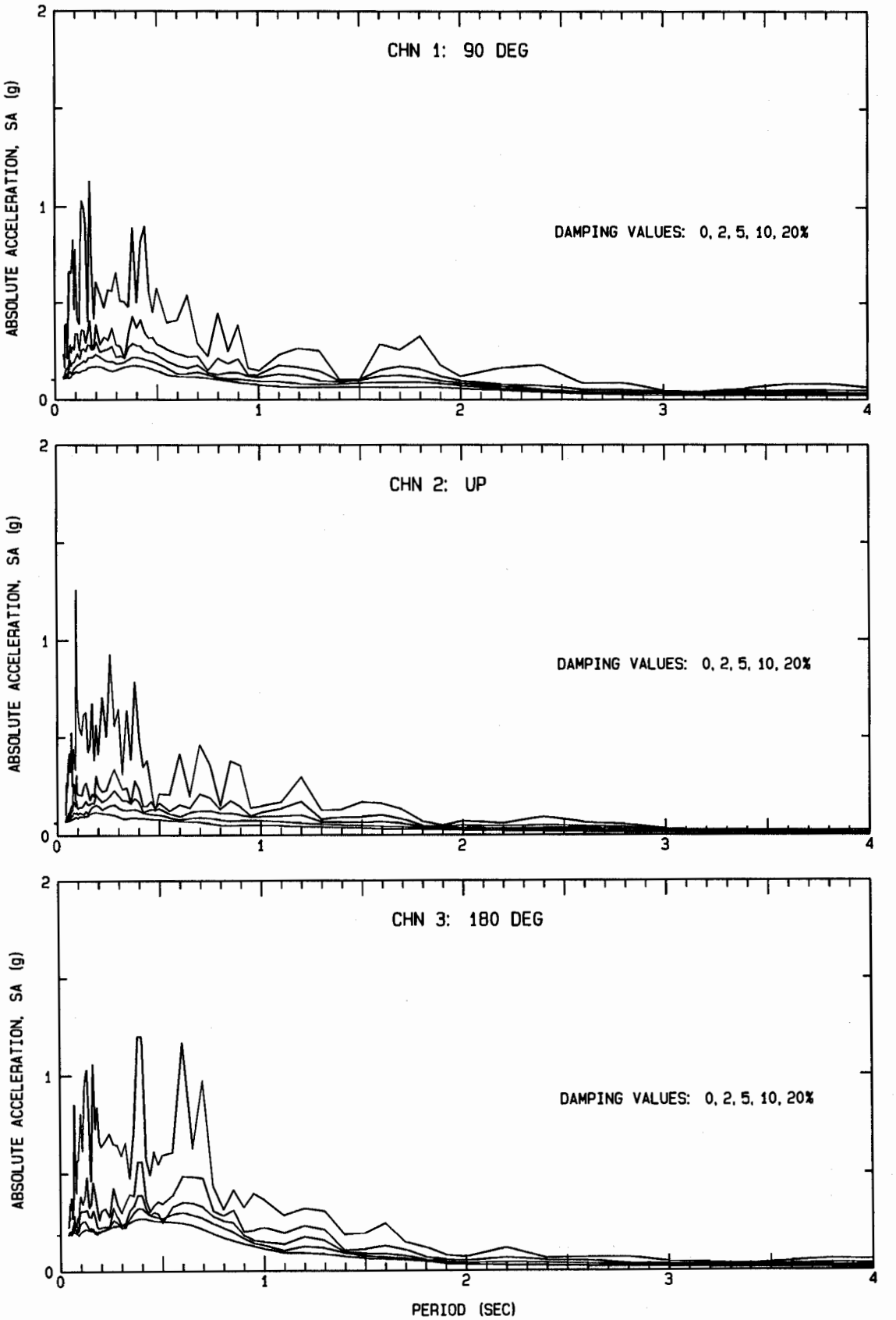
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - PICO & SENTOUS CSMIP Sta Num 24612
Usable Data Bandwidth: .17 to 47.2 Hz (.02 to 6.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - PICO & SENTOUS
UNCORRECTED ACCELEROGRAM 24612-E0276-94018.04 060194.1027-QN94A612



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - PICO & SENTOUS
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 46.0-50.0 HZ.
24612-E0276-94018.04 112194.1134-GN94A612



LOS ANGELES - PICO & SENTOUS: CSMIP S/N 612

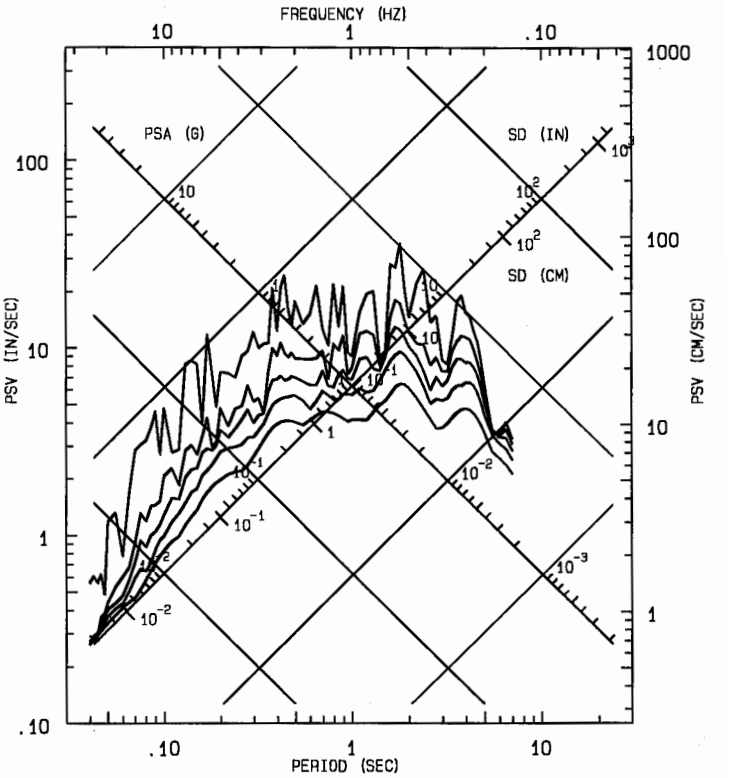
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.17 TO 47.2 HZ
(0.02 TO 5.88 SEC)

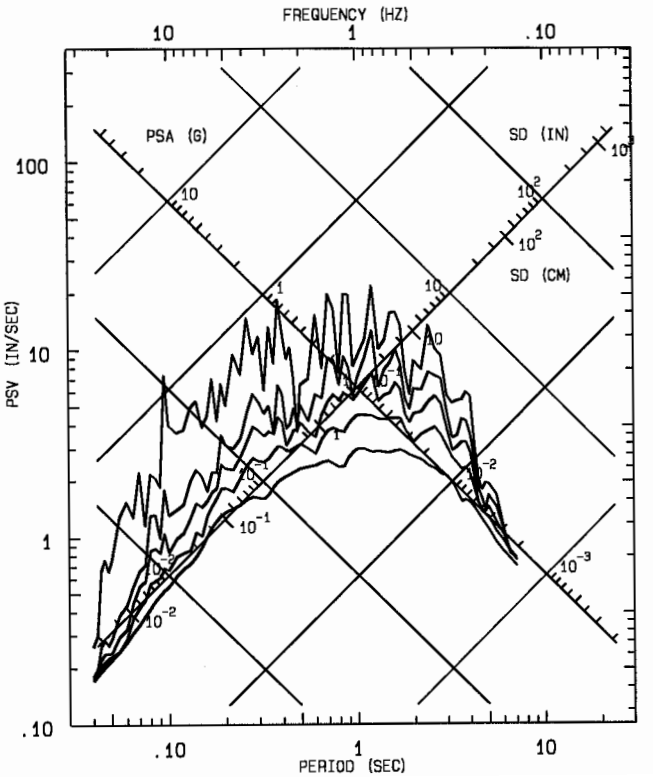
RECORD ID: 24612-E0276-94018.04

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

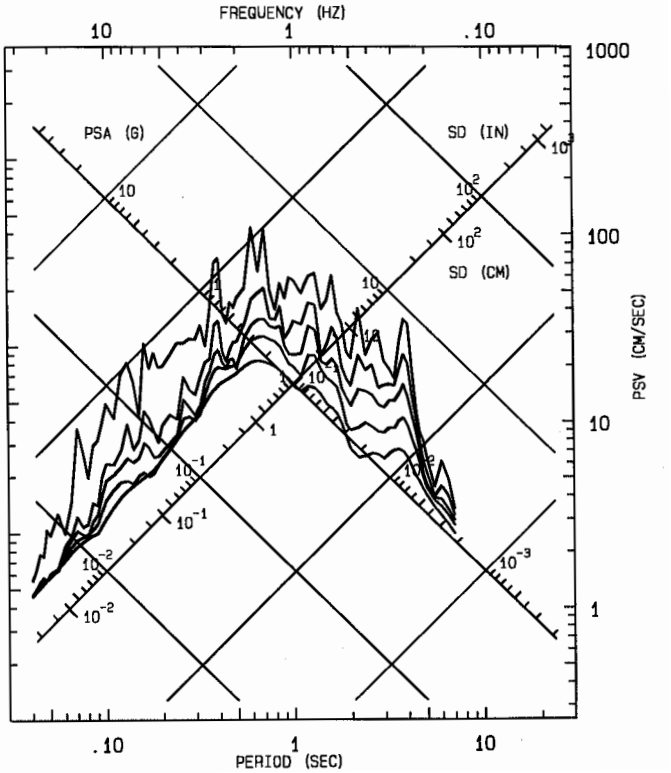
CHN 1: 90 DEG



CHN 2: UP



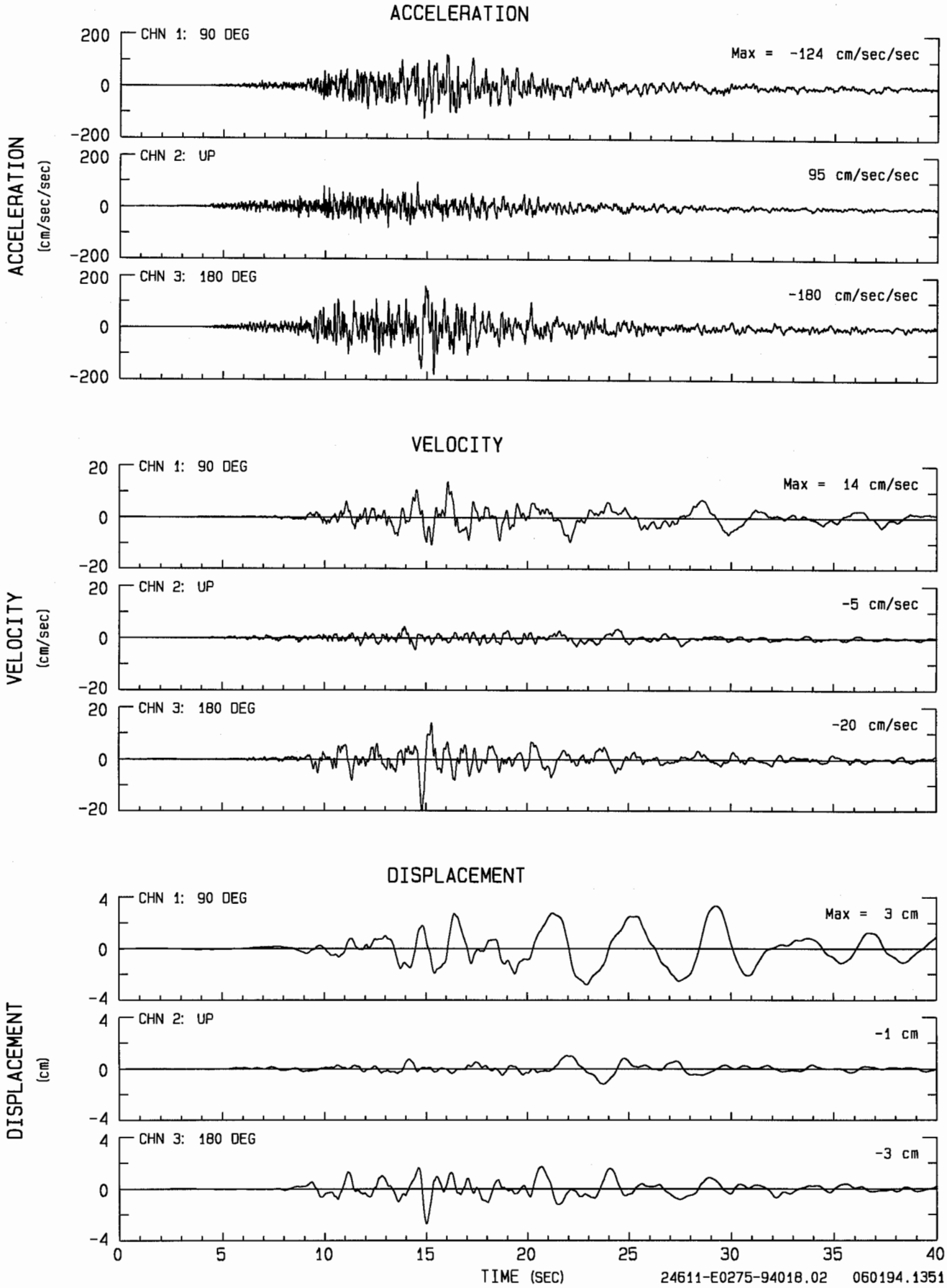
CHN 3: 180 DEG



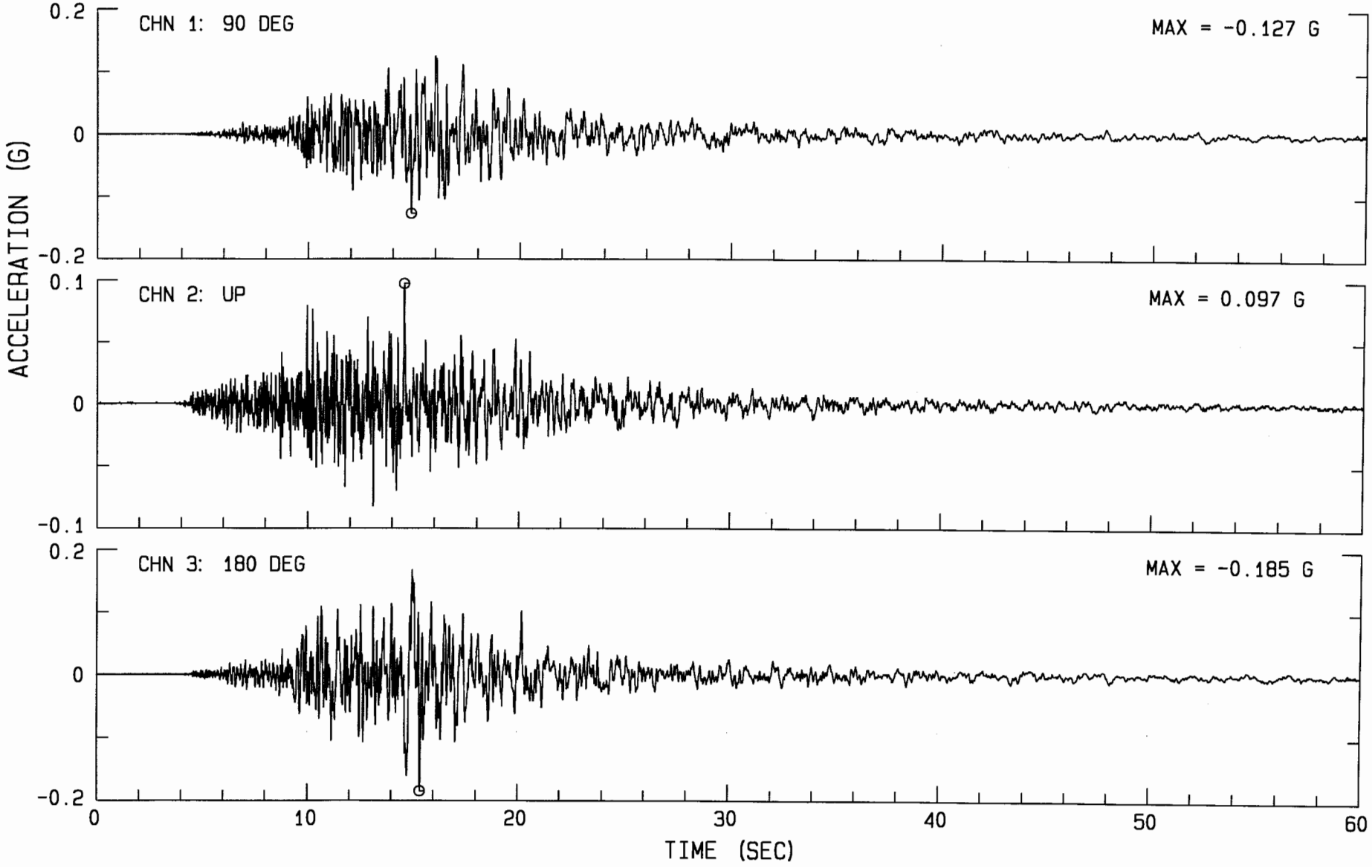
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

LOS ANGELES - TEMPLE & HOPE CSMIP Sta Num 24611

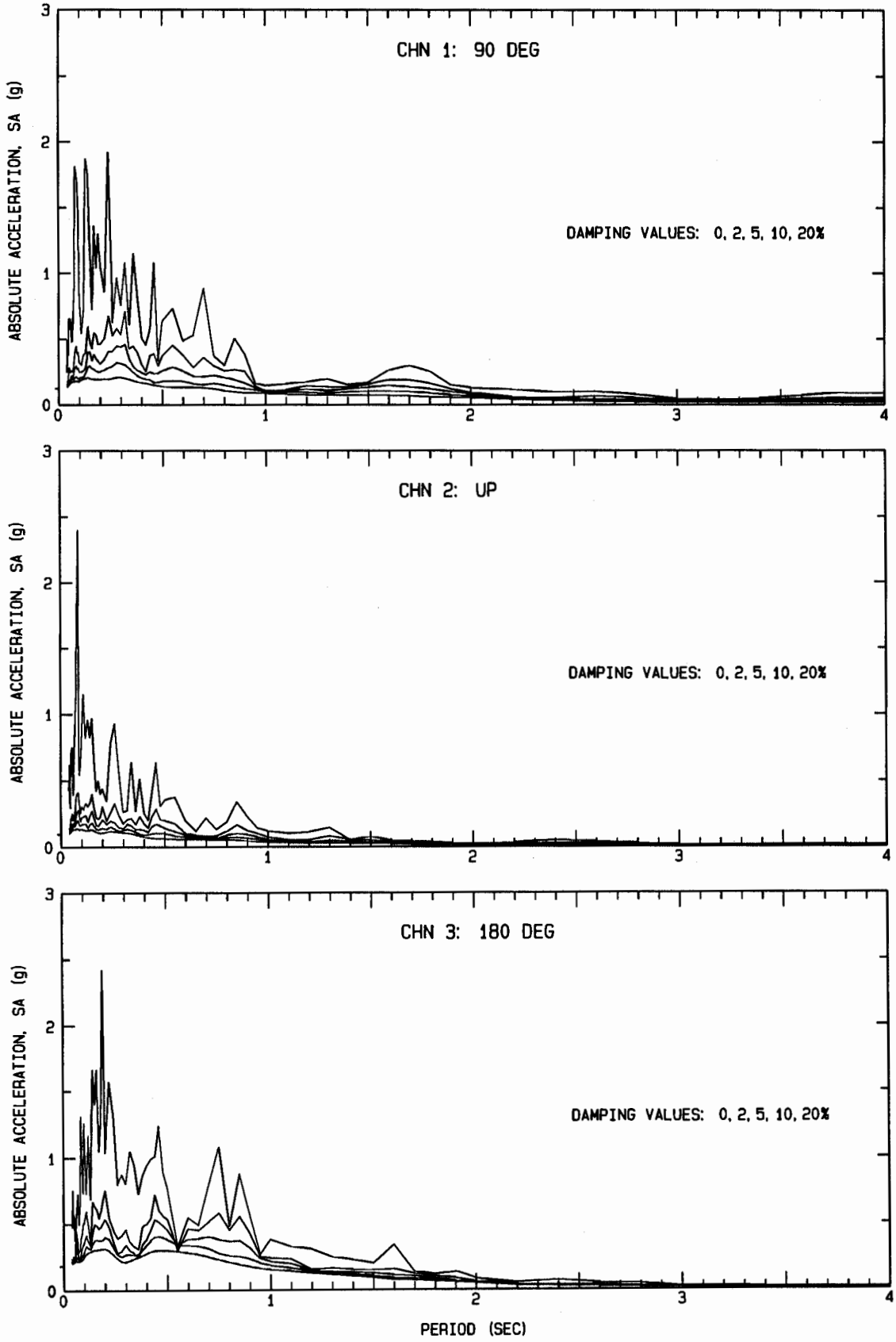
Usable Data Bandwidth: .17 to 47.2 Hz (.02 to 6.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - TEMPLE & HOPE
UNCORRECTED ACCELEROGRAM 24611-E0275-94018.02 060194.1341-QN94A611



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - TEMPLE & HOPE
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 46.0-50.0 HZ.
24611-E0275-94018.02 112194.1139-QN94A611



LOS ANGELES - TEMPLE & HOPE: CSMIP S/N 611

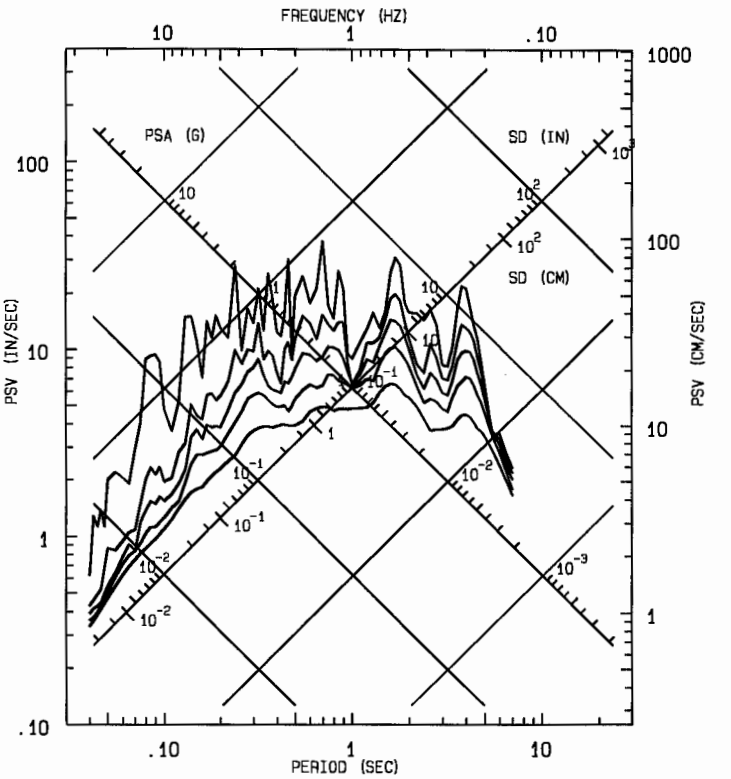
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.17 TO 47.2 HZ
(0.02 TO 5.88 SEC)

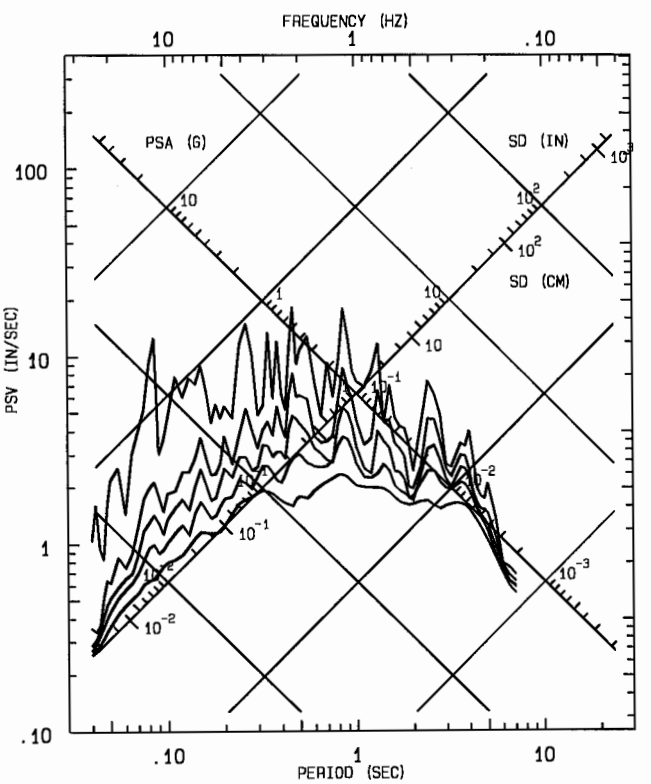
RECORD ID: 24611-E0275-94018.02

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

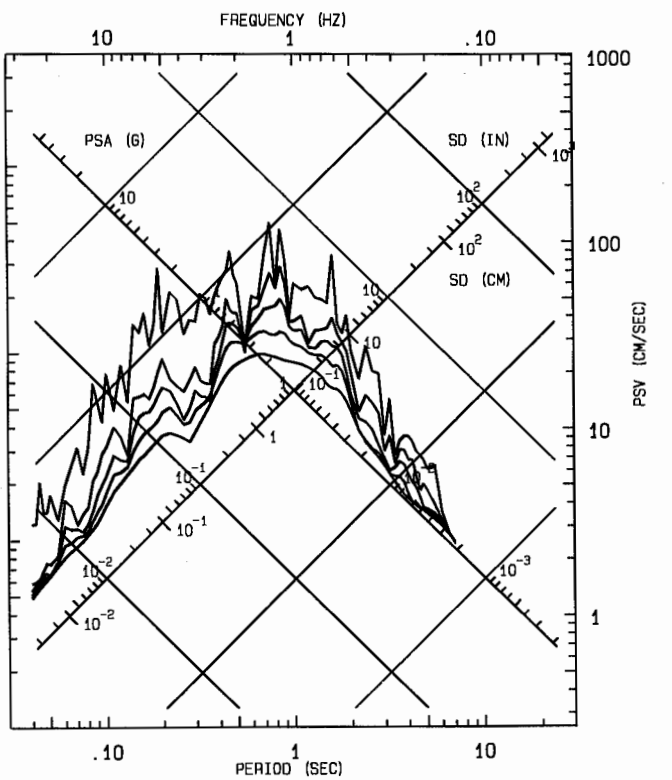
CHN 1: 90 DEG



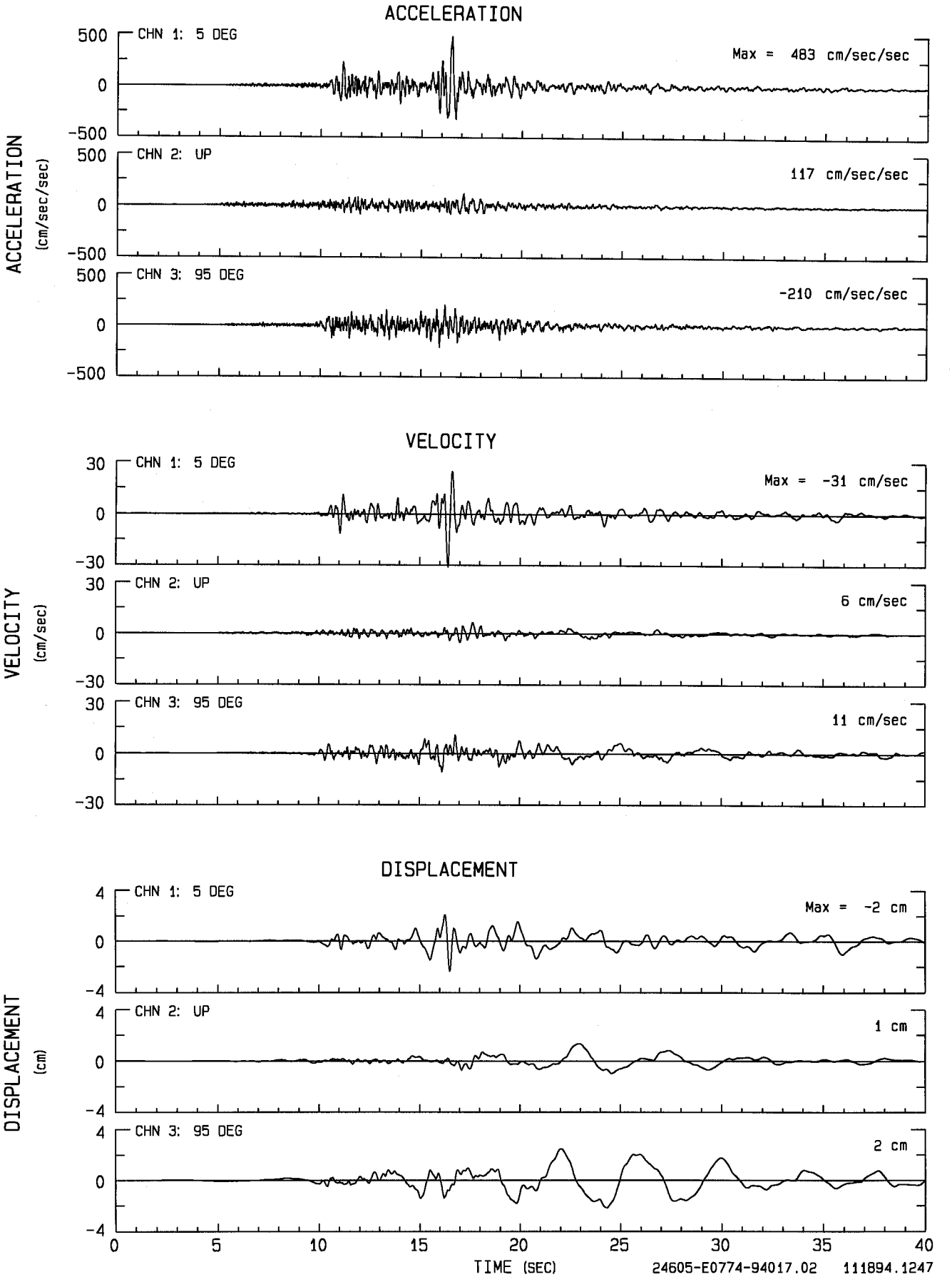
CHN 2: UP

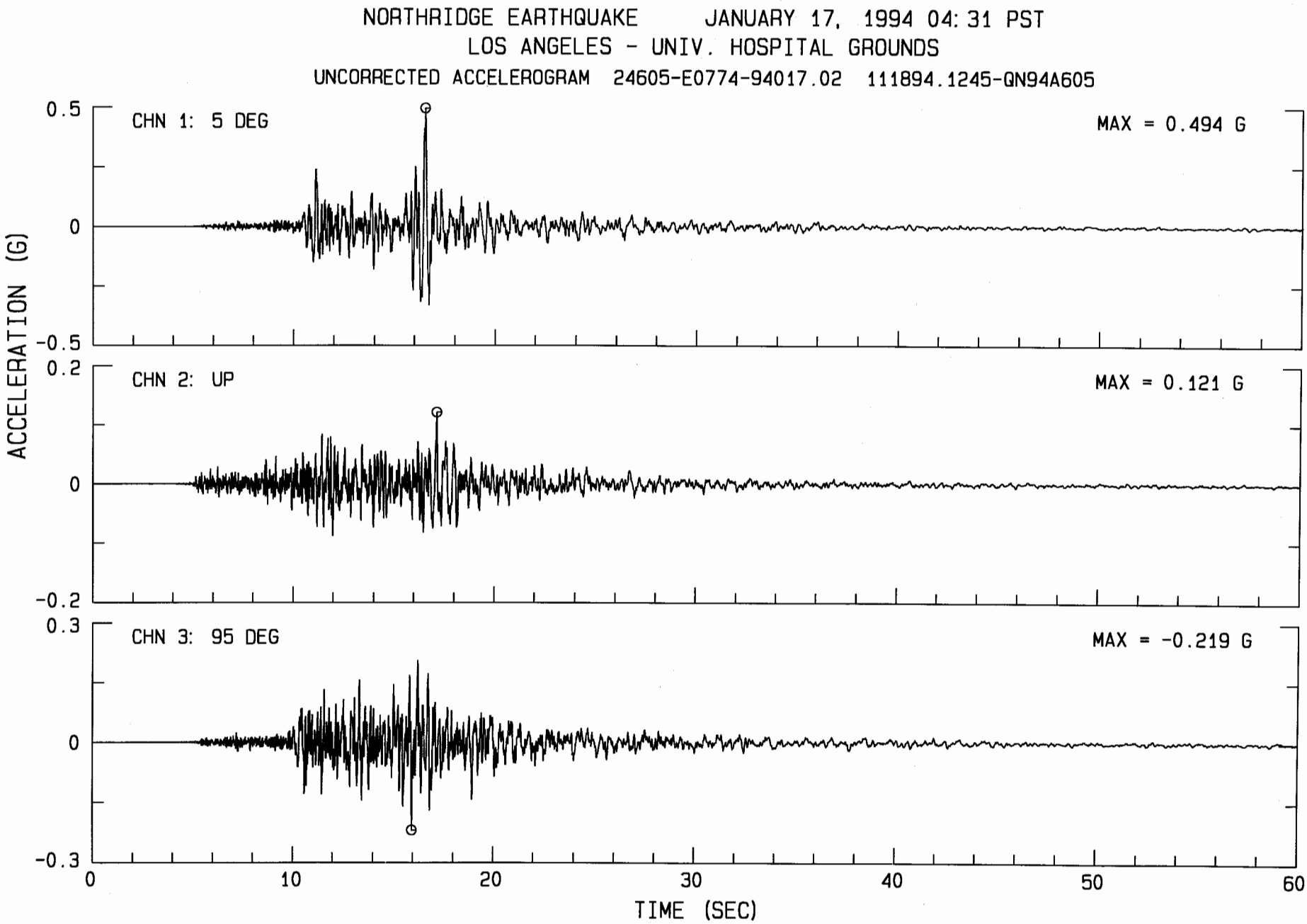


CHN 3: 180 DEG

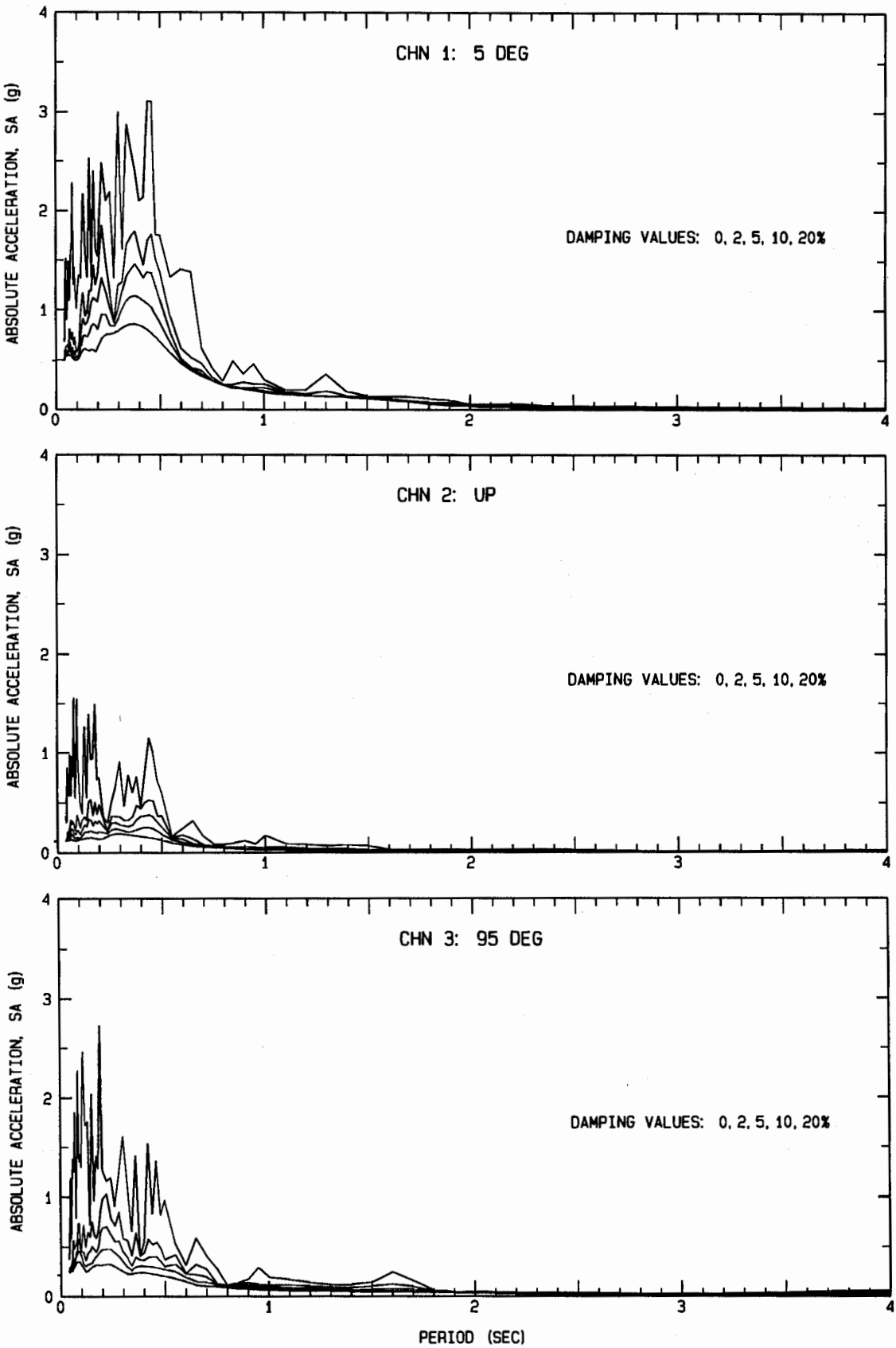


NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - UNIV. HOSPITAL GROUNDS CSMIP Sta Num 24605
Usable Data Bandwidth: .17 to 47.2 Hz (.02 to 6.0 Sec)




NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - UNIV. HOSPITAL GROUNDS
UNCORRECTED ACCELEROGRAM 24605-E0774-94017.02 111894.1245-QN94A605
CHN 1: 5 DEG
MAX = 0.494 G
CHN 2: UP
MAX = 0.121 G
CHN 3: 95 DEG
MAX = -0.219 G
ACCELERATION (G)
0.5
0
-0.5
0.2
0
-0.2
0.3
0
-0.3
0
10
20
30
40
50
60
TIME (SEC)

NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
LOS ANGELES - UNIV. HOSPITAL GROUNDS
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 46.0-50.0 HZ.
24605-E0774-94017.02 112194.1247-QN94A605



LOS ANGELES - UNIV. HOSPITAL GROUNDS: CSMIP S/N 605

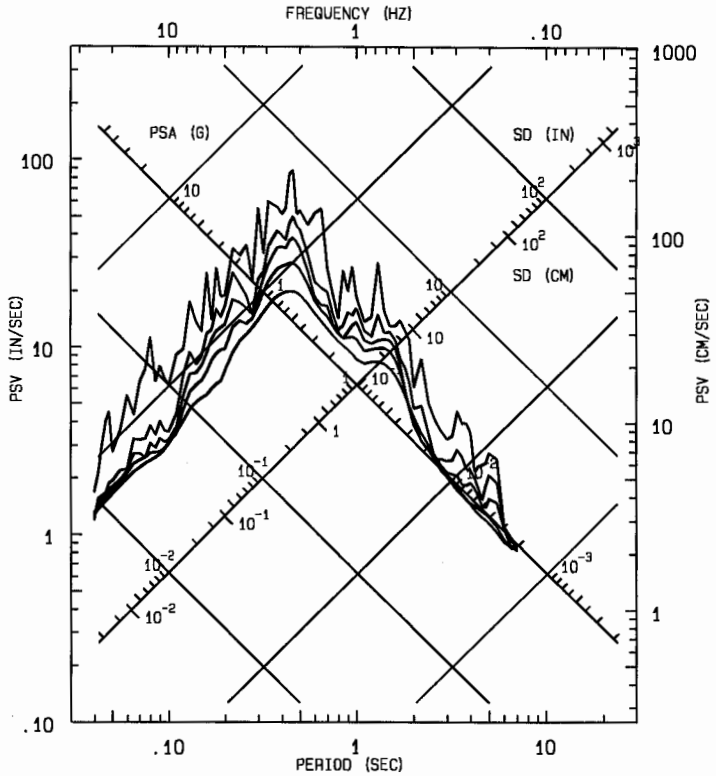
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.17 TO 47.2 HZ
(0.02 TO 5.88 SEC)

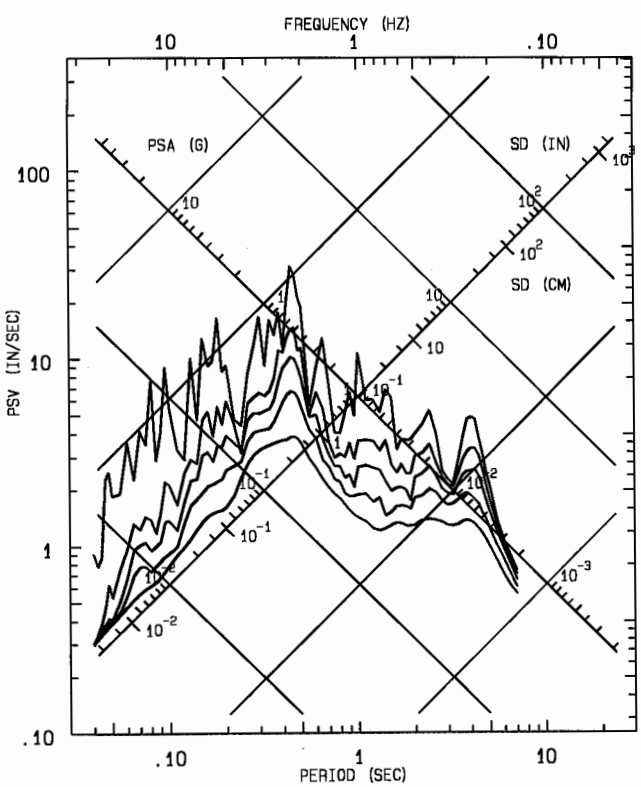
RECORD ID: 24605-E0774-94017.02

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

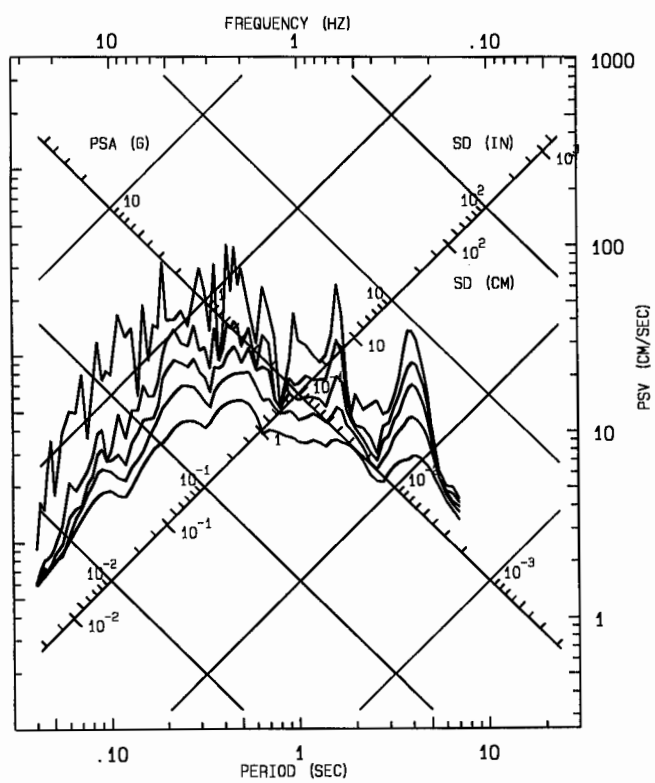
CHN 1: 5 DEG



CHN 2: UP



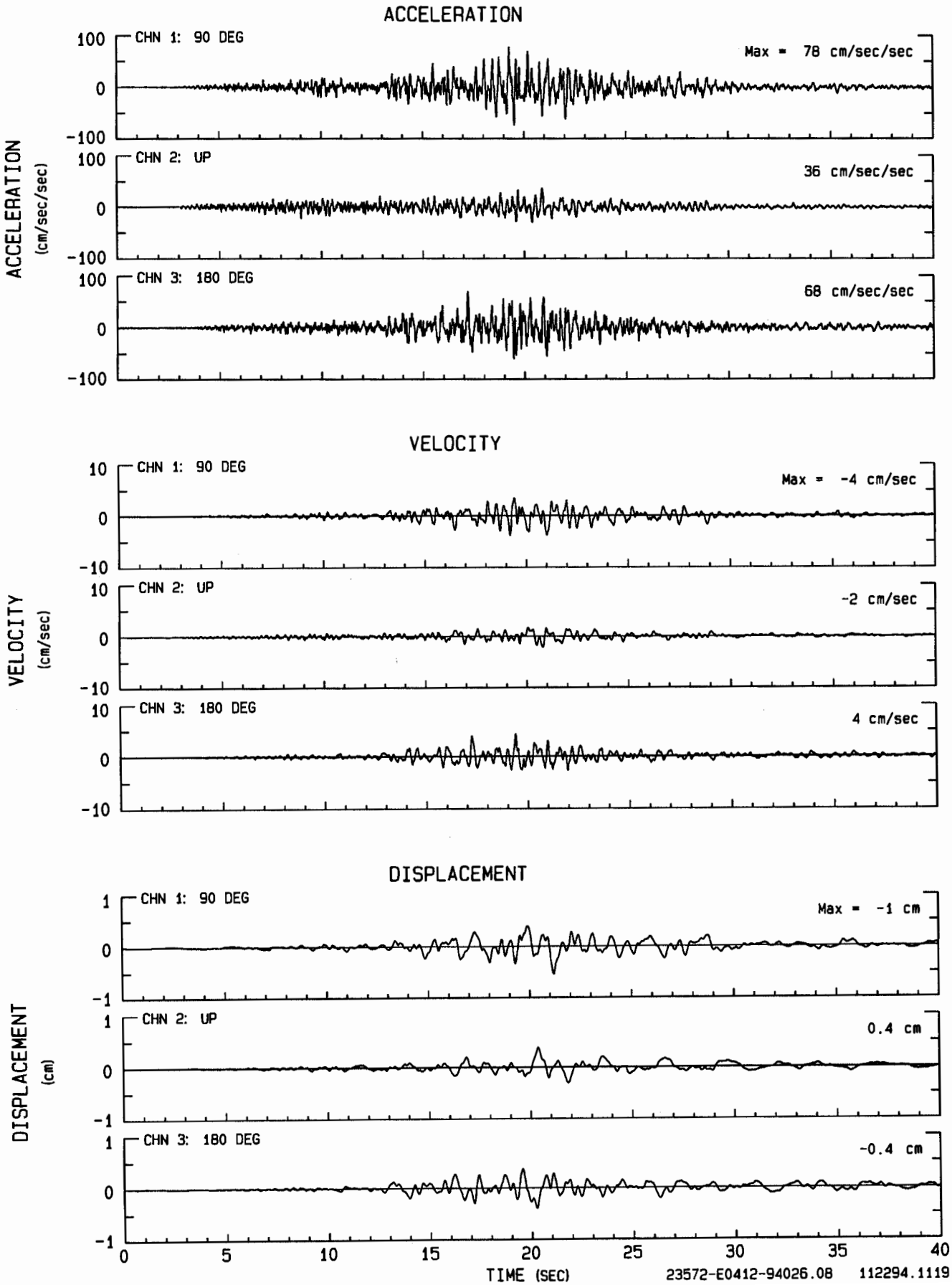
CHN 3: 95 DEG



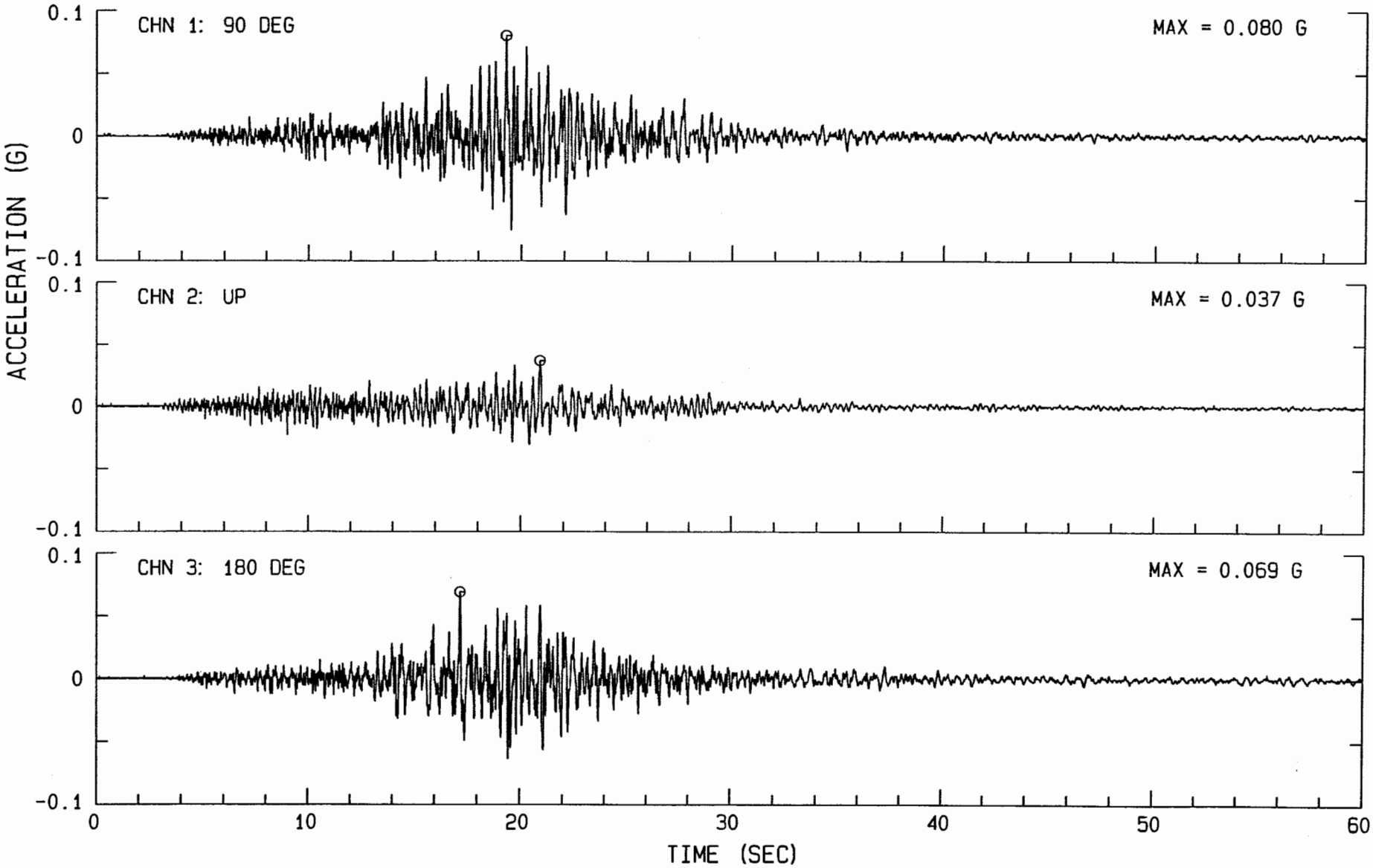
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

MT. BALDY - ELEMENTARY SCHOOL CSMIP Sta Num 23572

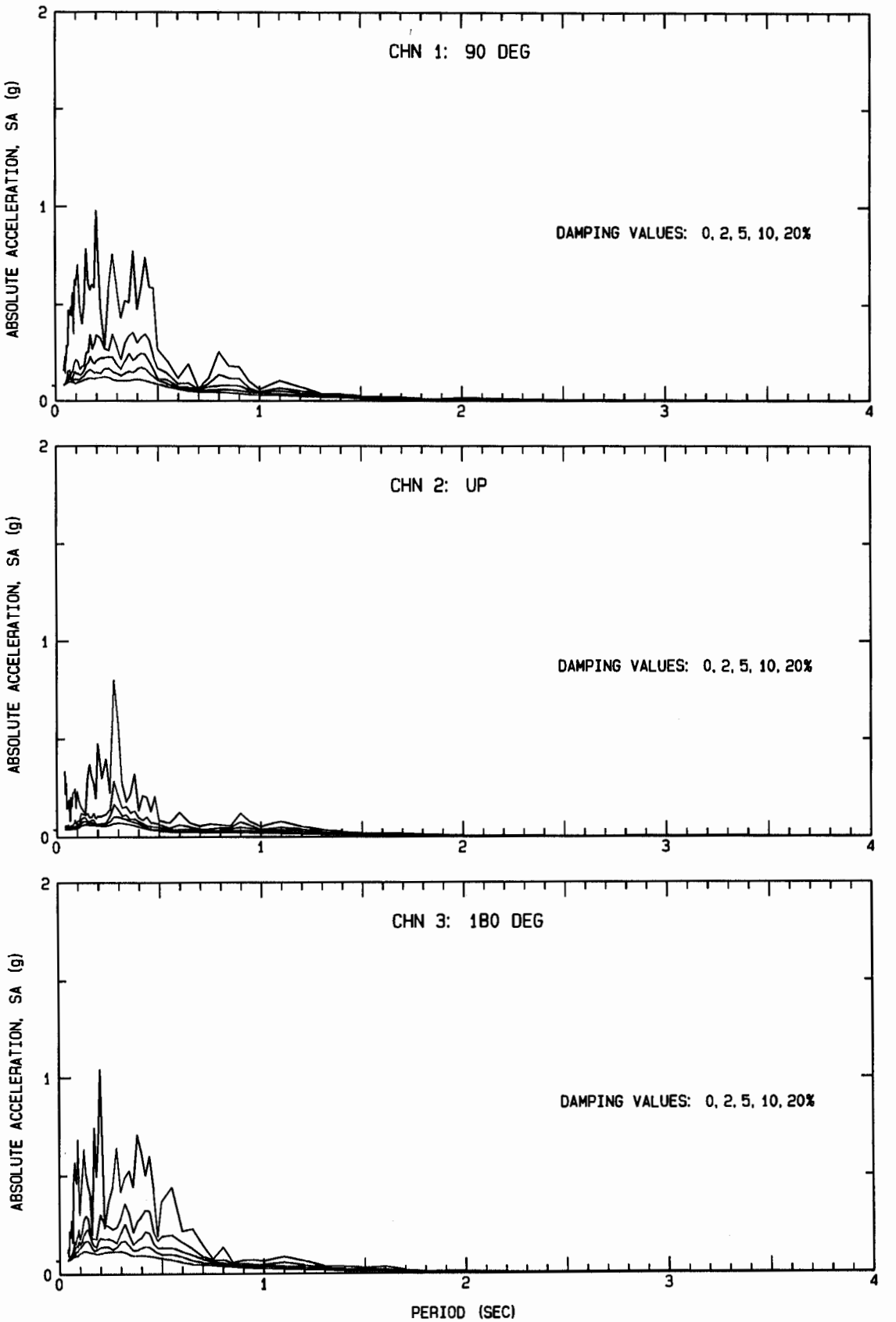
Usable Data Bandwidth: .25 to 47.2 Hz (.02 to 4.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
MT. BALDY - ELEMENTARY SCHOOL
UNCORRECTED ACCELEROGRAM 23572-E0412-94026.08 101294.1006-QN94A572



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
MT. BALDY - ELEMENTARY SCHOOL
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 46.0-50.0 HZ.
23572-E0412-94026.08 112294.1124-QN94A572



MT. BALDY - ELEMENTARY SCHOOL: CSMIP S/N 572

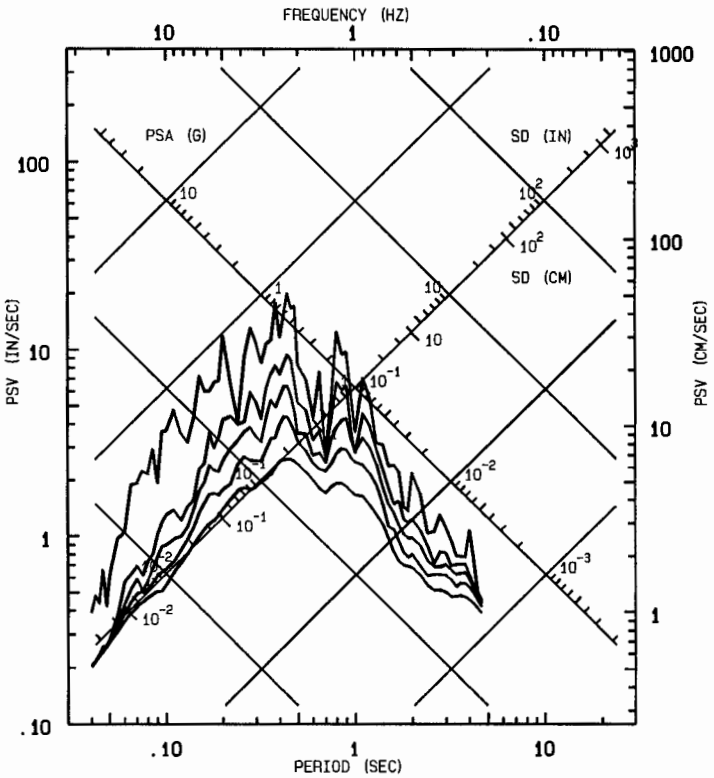
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.25 TO 47.2 HZ
(0.02 TO 3.92 SEC)

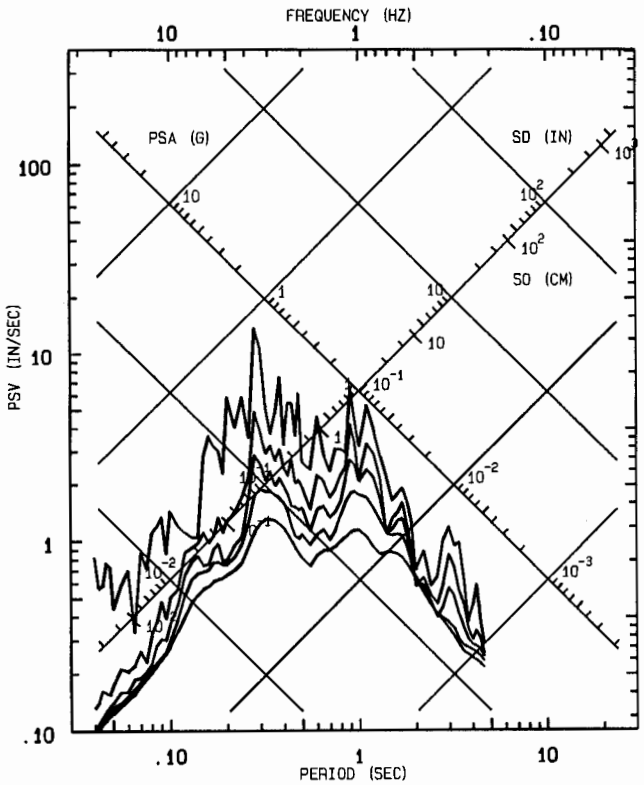
RECORD ID: 23572-E0412-94026.08

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

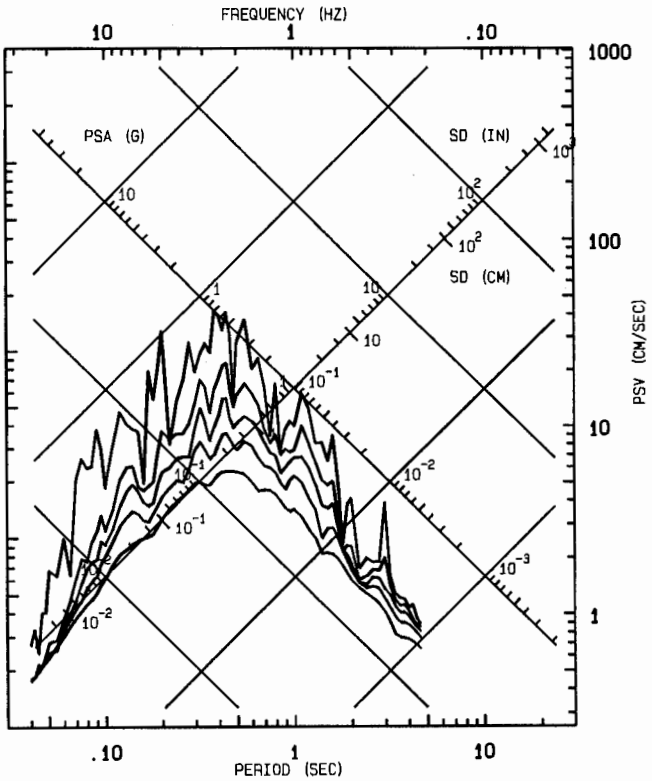
CHN 1: 90 DEG



CHN 2: UP



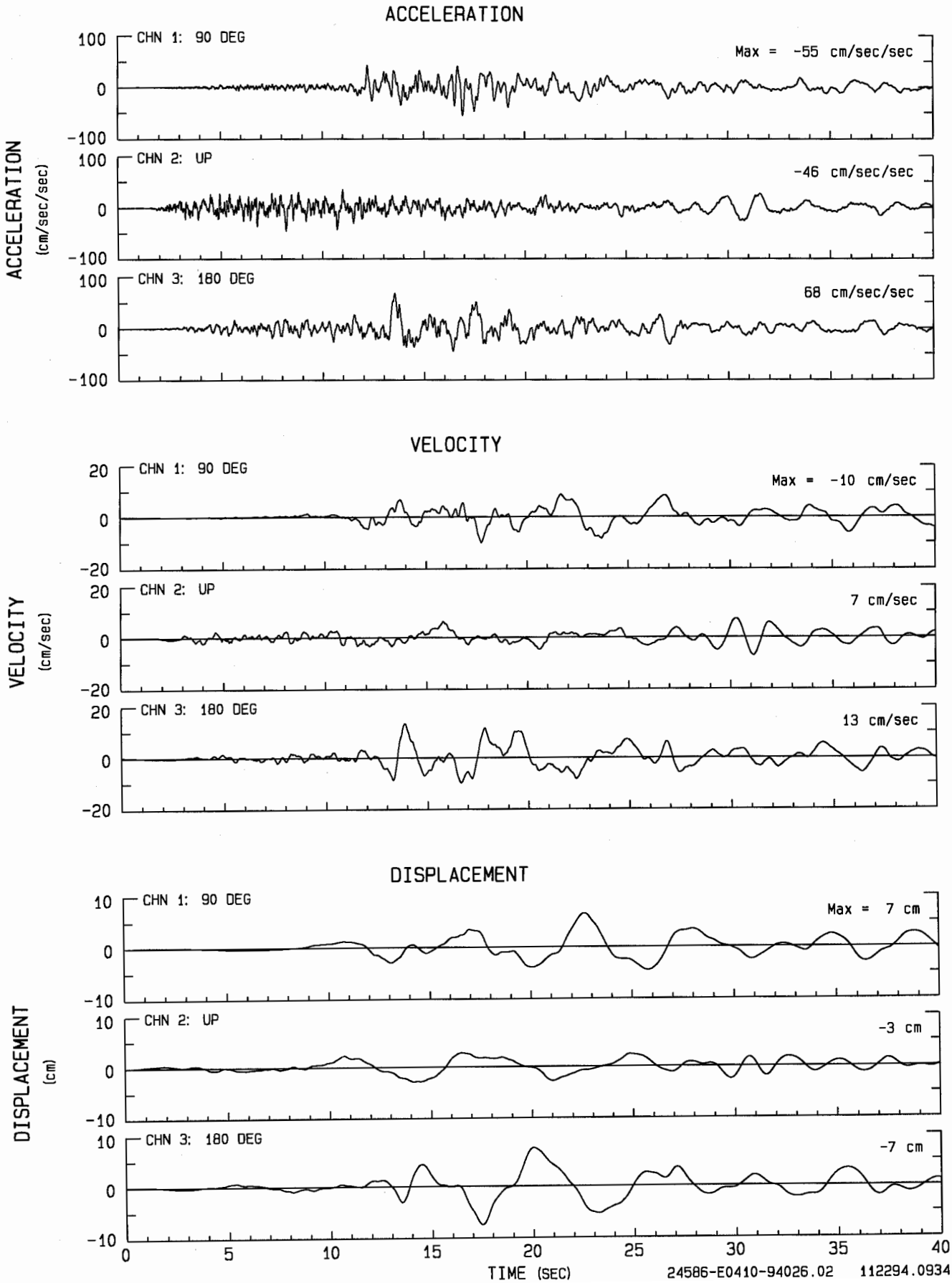
CHN 3: 180 DEG



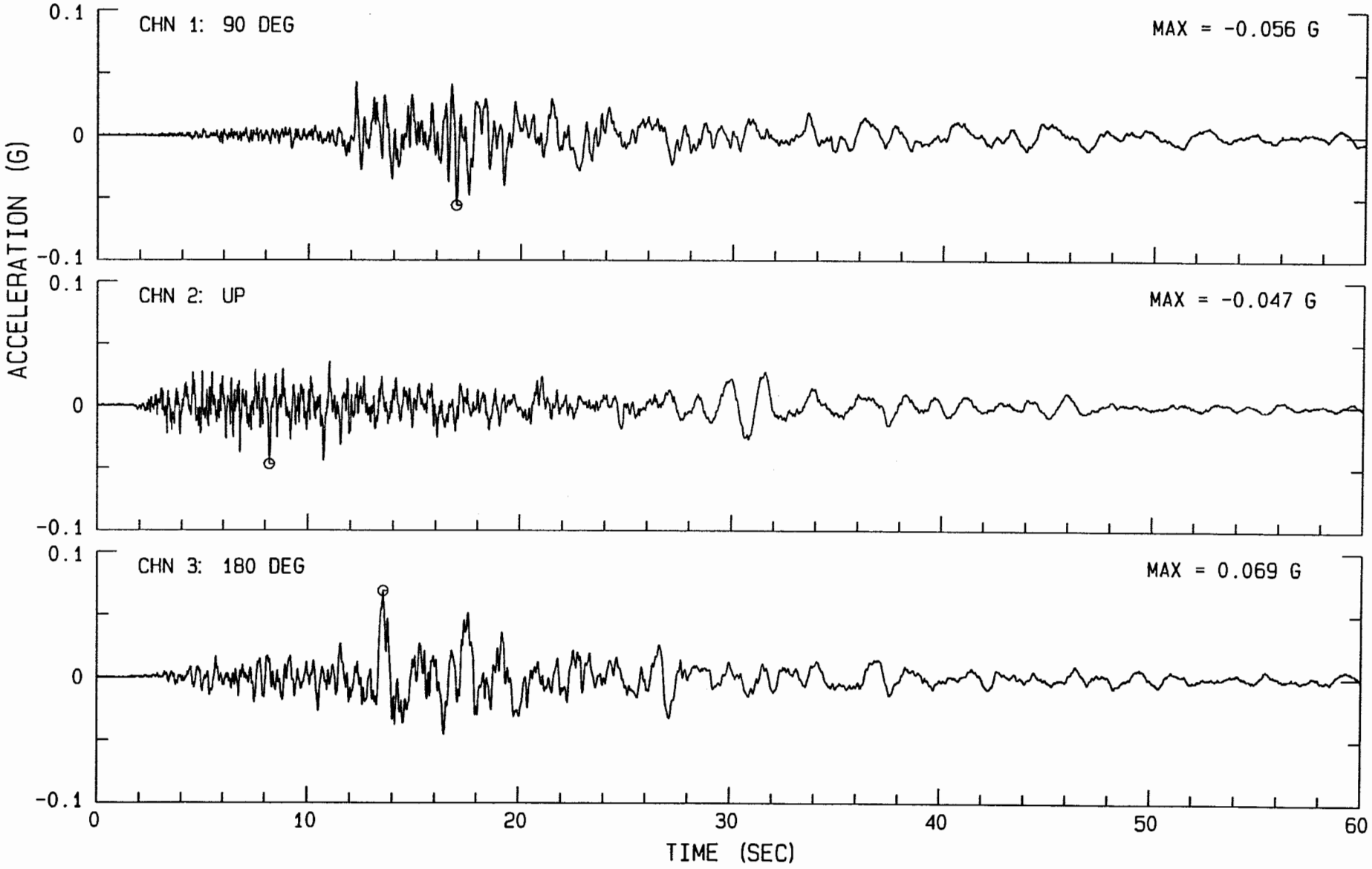
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

NEENACH - SACATARA CREEK CSMIP Sta Num 24586

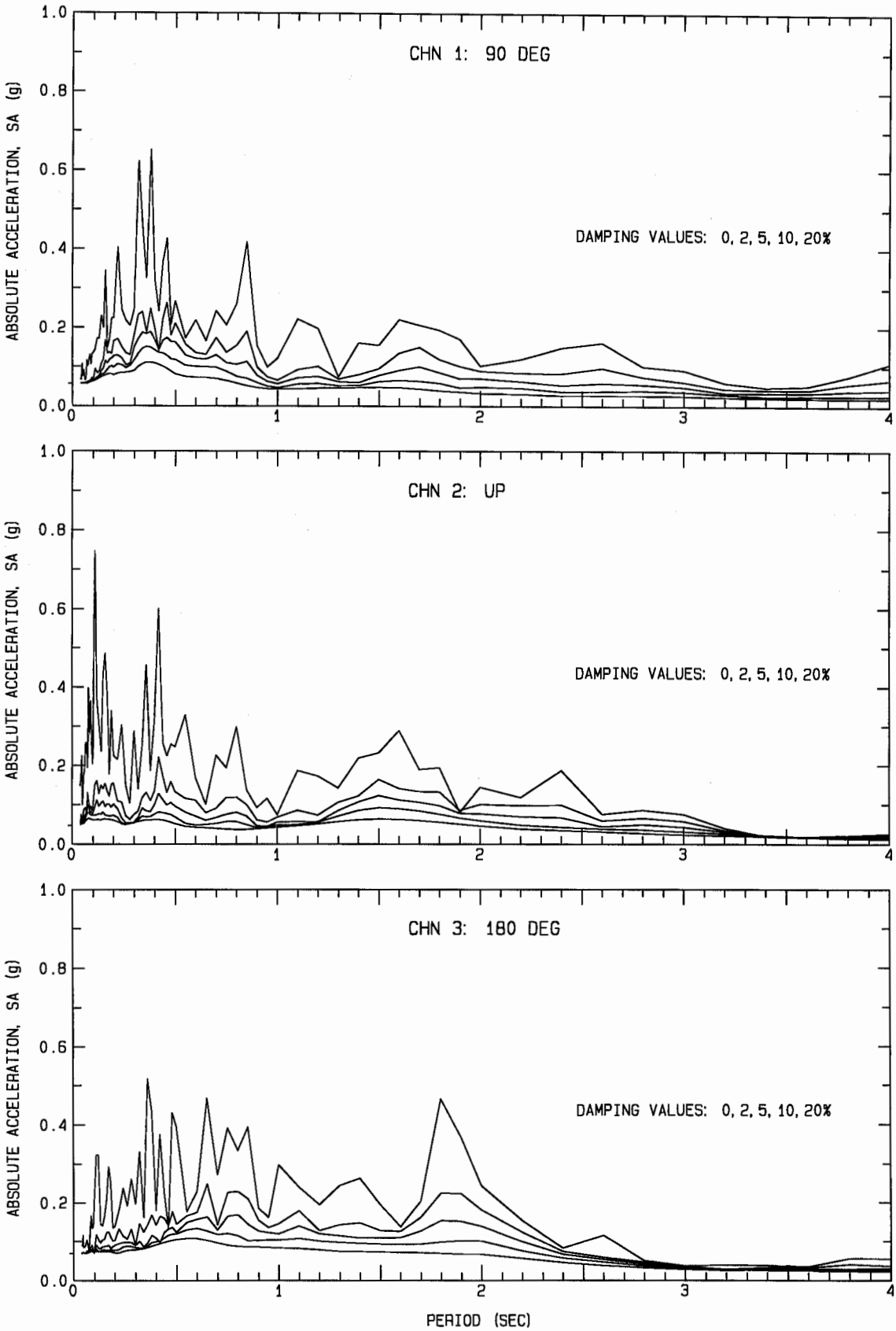
Usable Data Bandwidth: .10 to 47.2 Hz (.02 to 10.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
NEENACH - SACATARA CREEK
UNCORRECTED ACCELEROGRAM 24586-E0410-94026.02 101294.0903-QN94A586



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
NEENACH - SACATARA CREEK
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .06-.12 TO 46.0-50.0 HZ.
24586-E0410-94026.02 112294.0936-QN94A586



NEENACH - SACATARA CREEK: CSMIP S/N 586

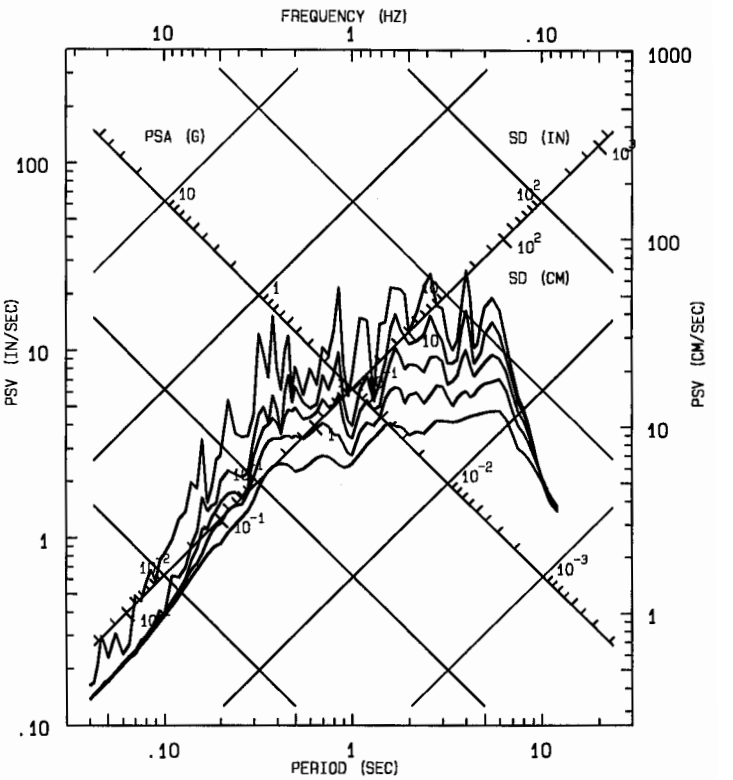
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.10 TO 47.2 HZ
(0.02 TO 9.80 SEC)

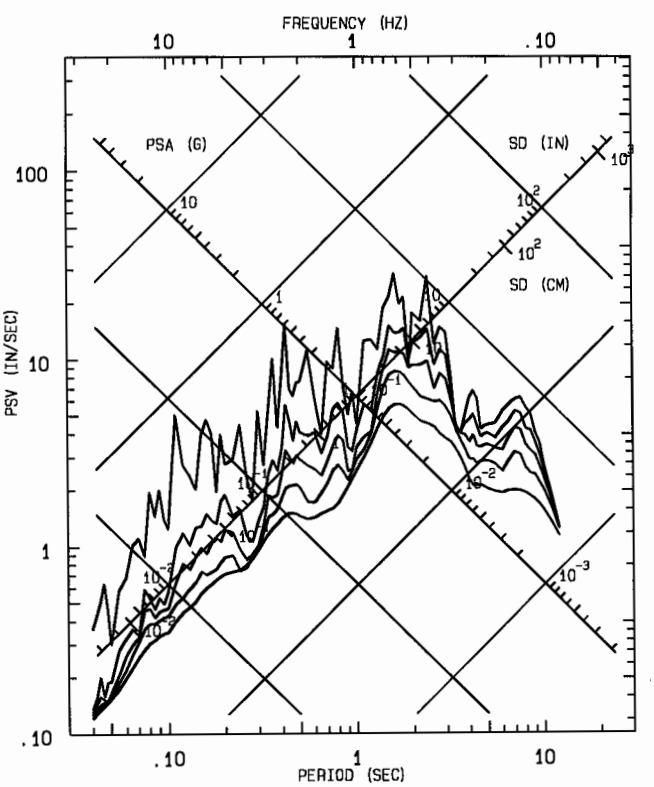
RECORD ID: 24586-E0410-94026.02

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

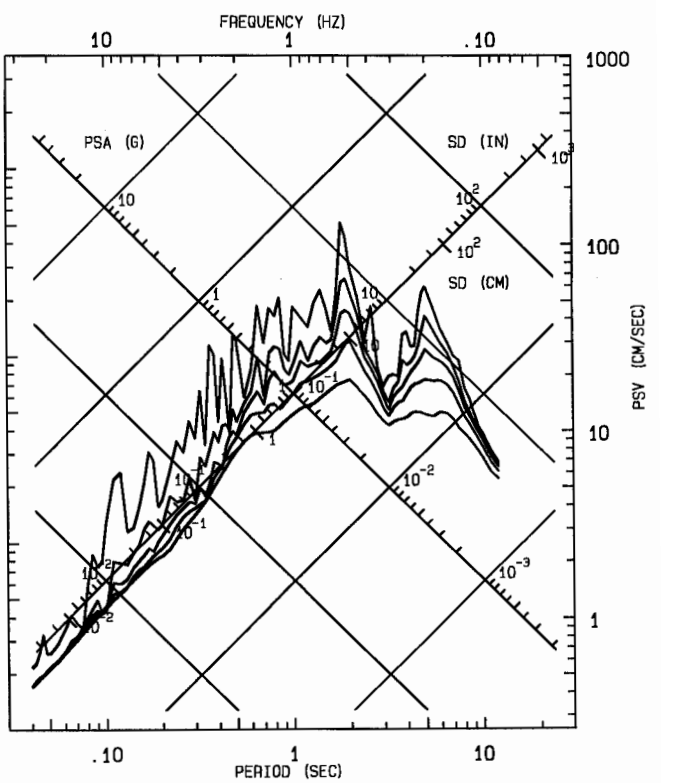
CHN 1: 90 DEG



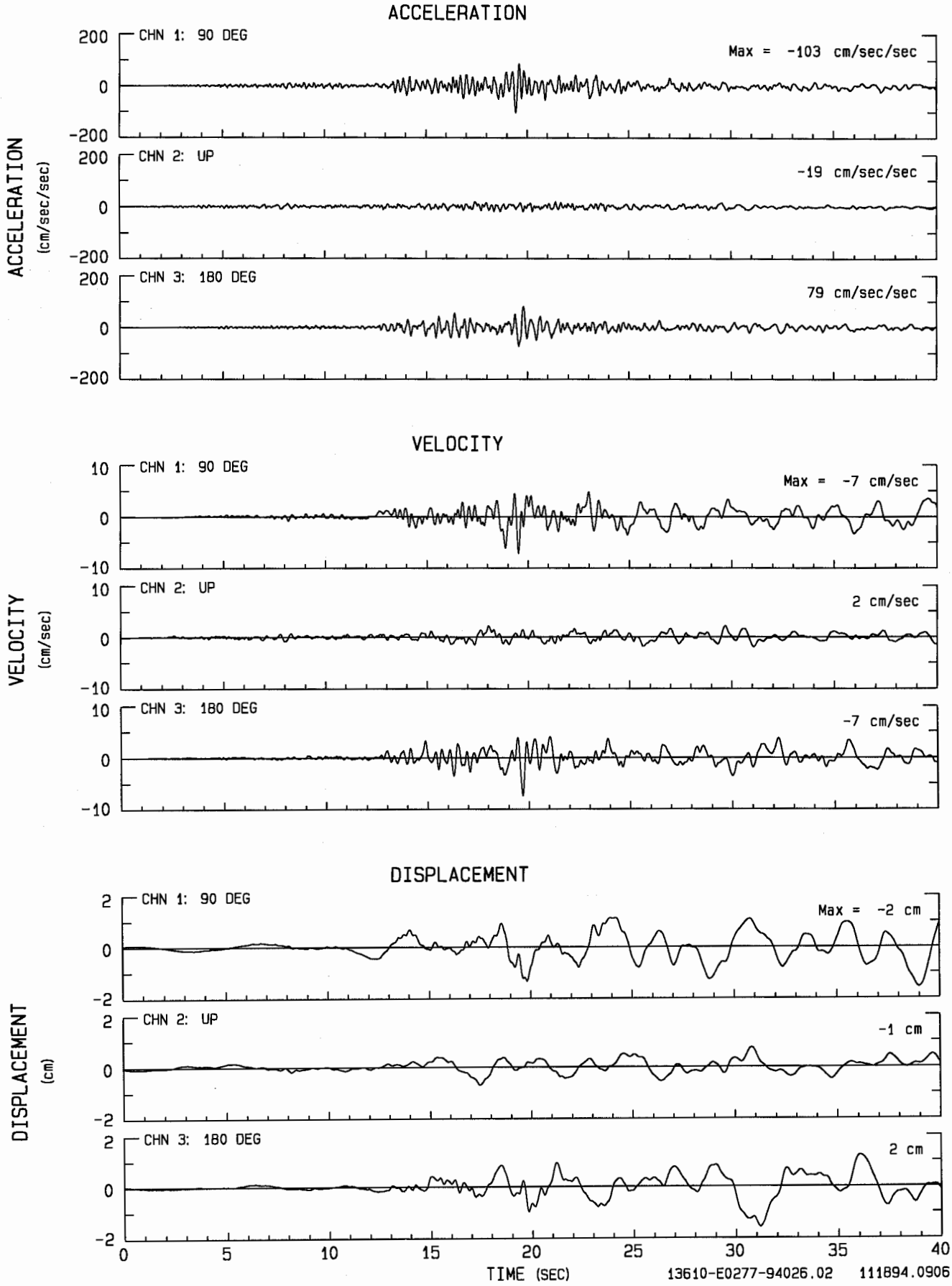
CHN 2: UP



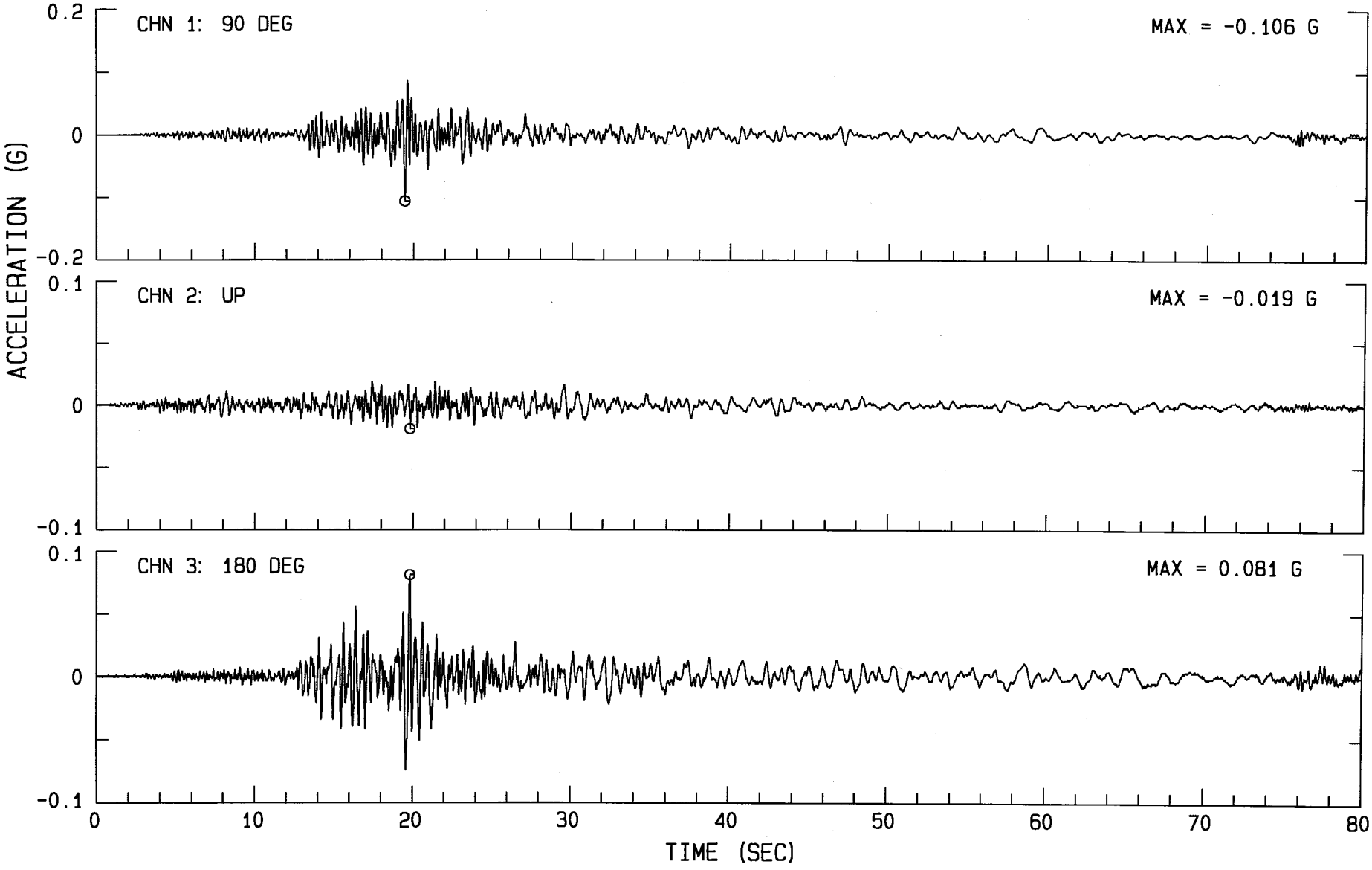
CHN 3: 180 DEG



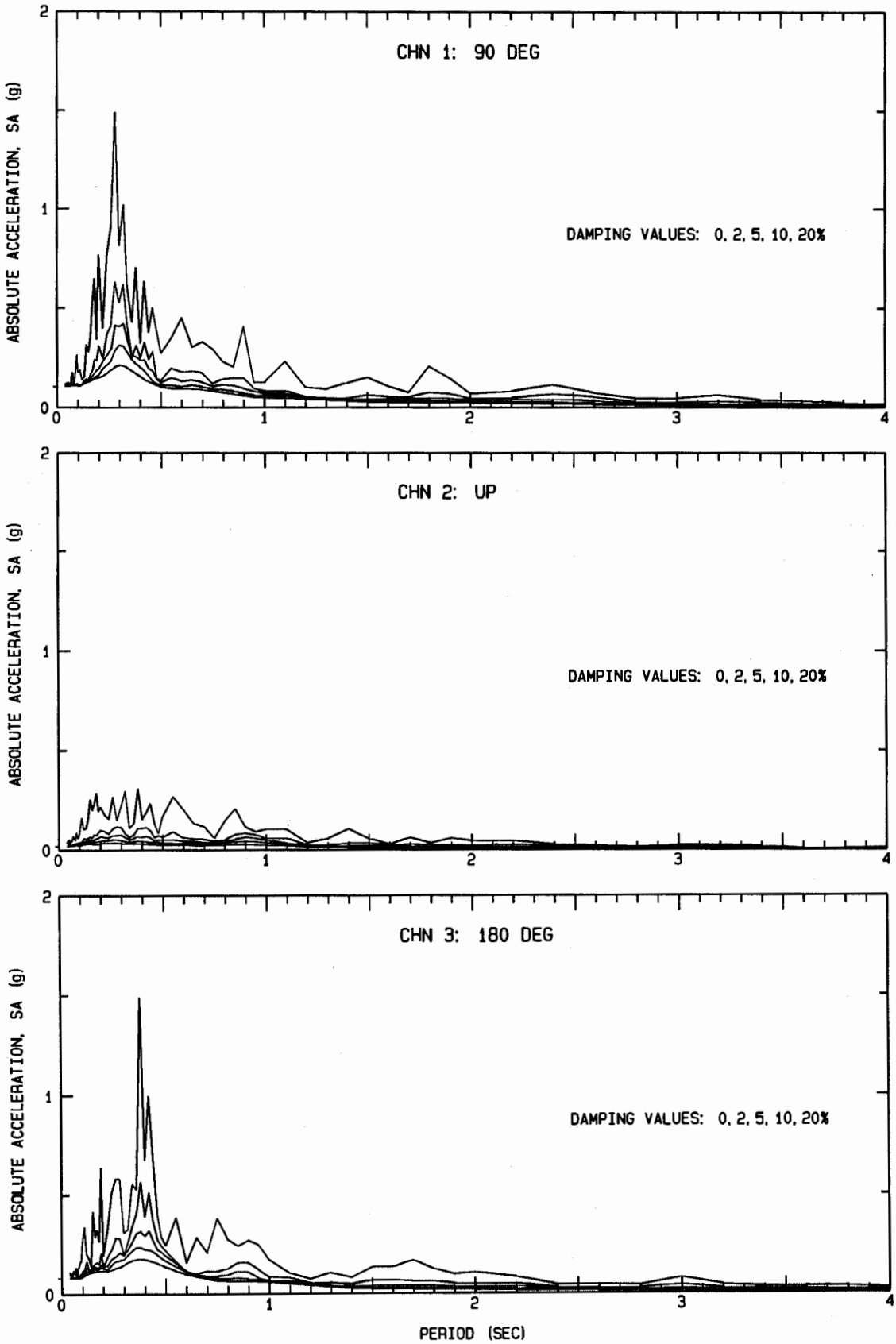
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
NEWPORT BEACH - NEWPORT BLVD & COAST HWY CSMIP Sta Num 13610
Usable Data Bandwidth: .10 to 47.2 Hz (.02 to 10.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
NEWPORT BEACH - NEWPORT BLVD & COAST HWY
UNCORRECTED ACCELEROGRAM 13610-E0277-94026.02 111894.0904-QN94A610



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
NEWPORT BEACH - NEWPORT BLVD & COAST HWY
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .06-.12 TO 46.0-50.0 HZ.
13610-E0277-94026.02 111894.0909-QN94A610



NEWPORT BEACH - NEWPORT BLVD & COAST HWY: CSMIP S/N 610

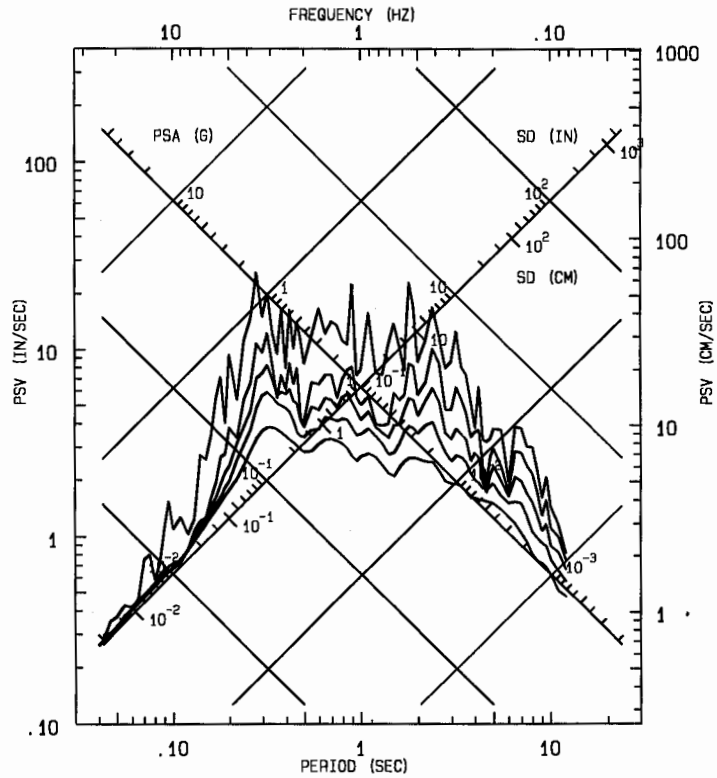
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.10 TO 47.2 HZ
(0.02 TO 9.80 SEC)

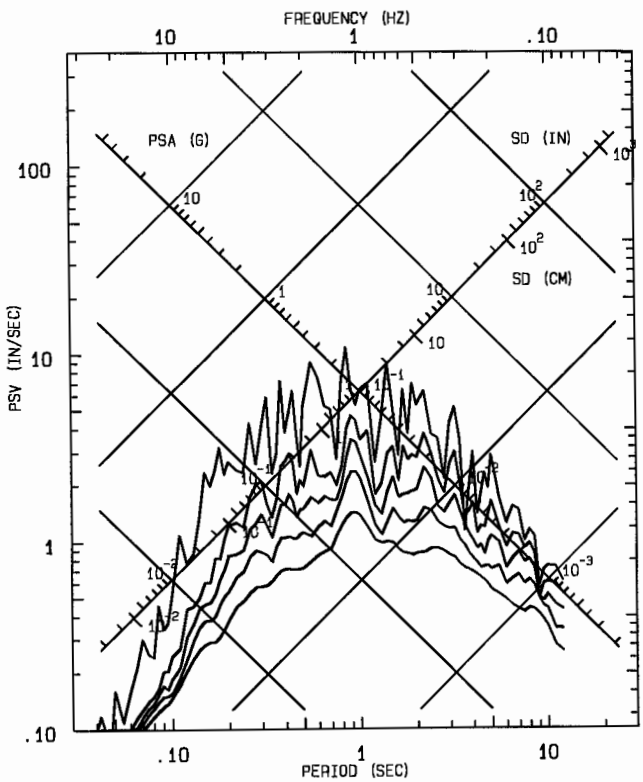
RECORD ID: 13610-E0277-94026.02

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

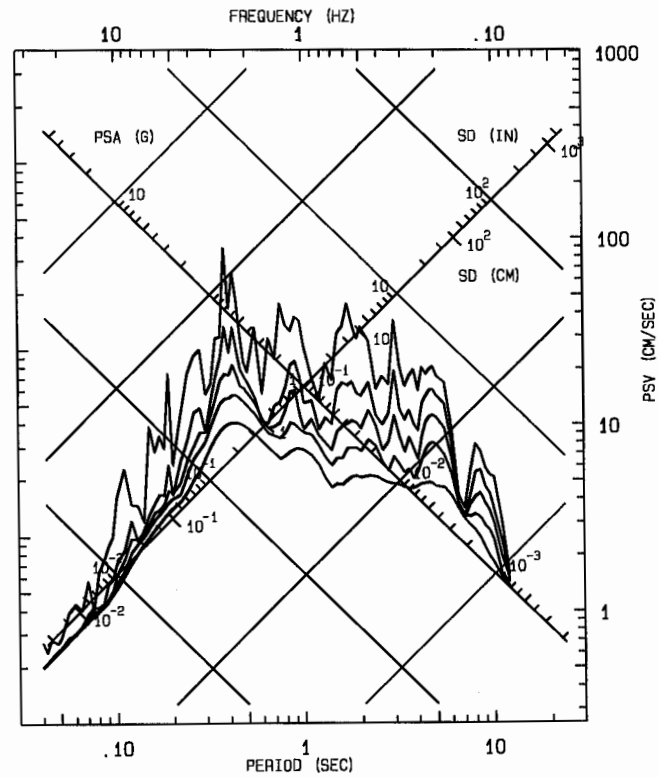
CHN 1: 90 DEG



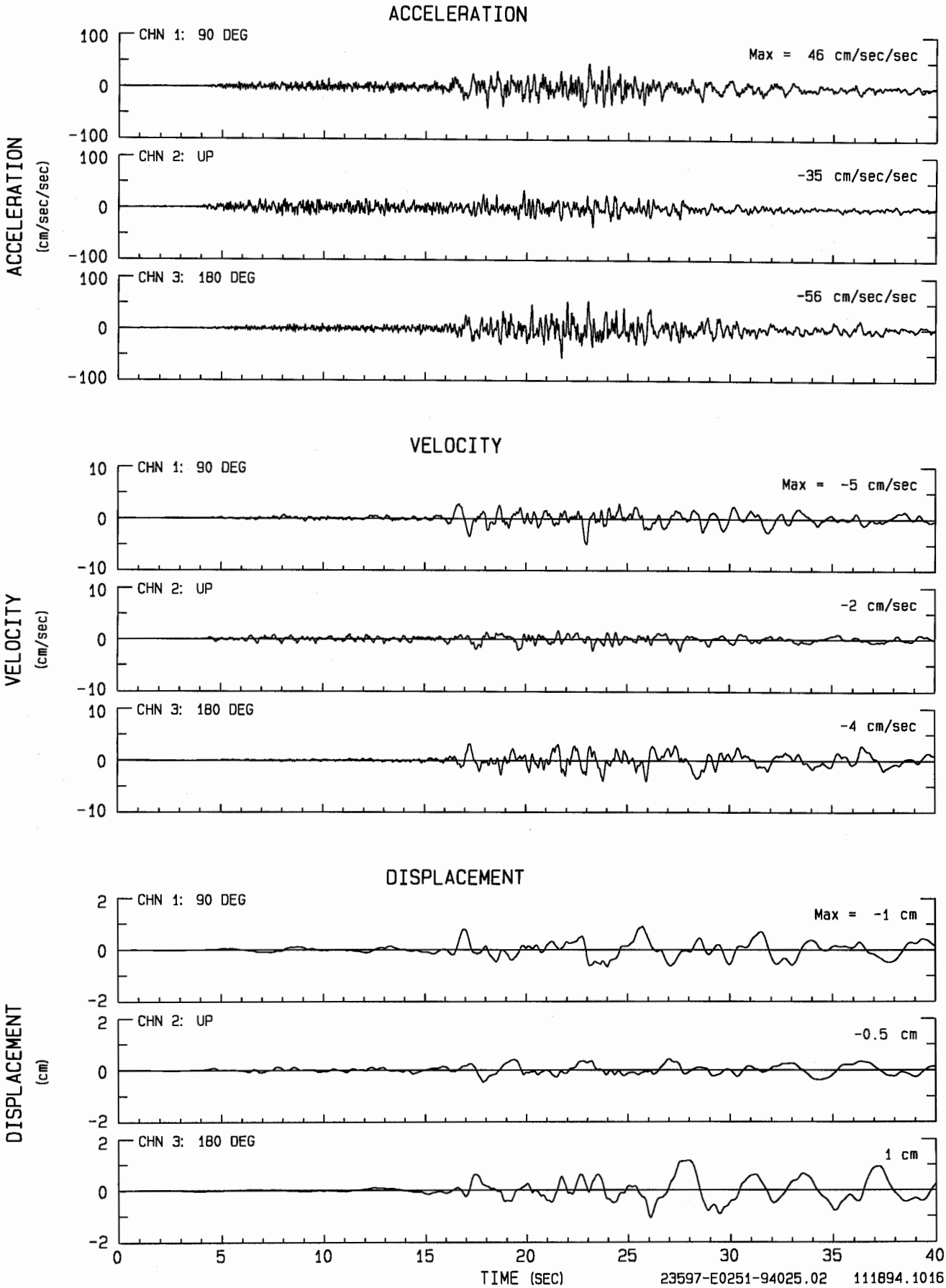
CHN 2: UP



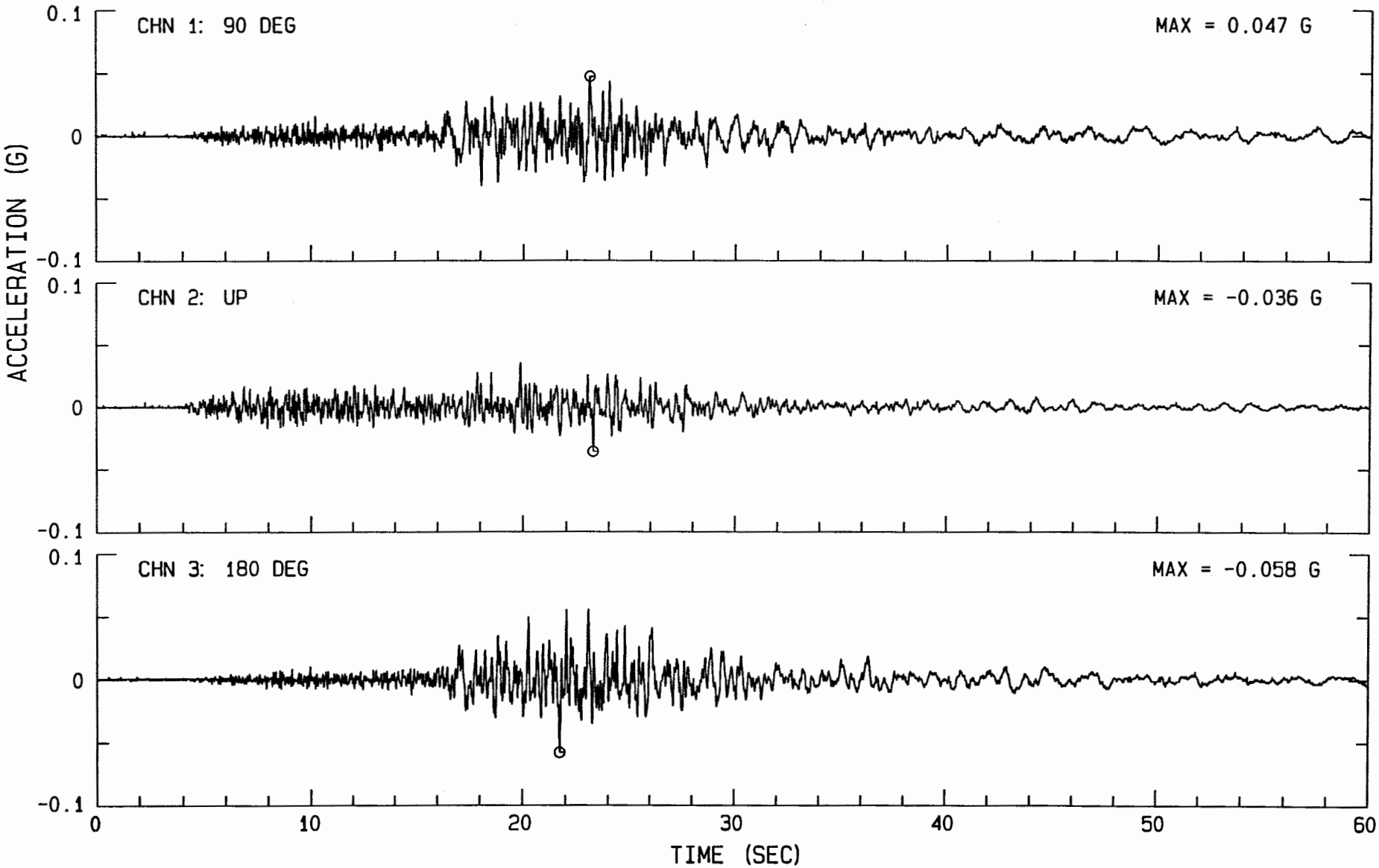
CHN 3: 180 DEG



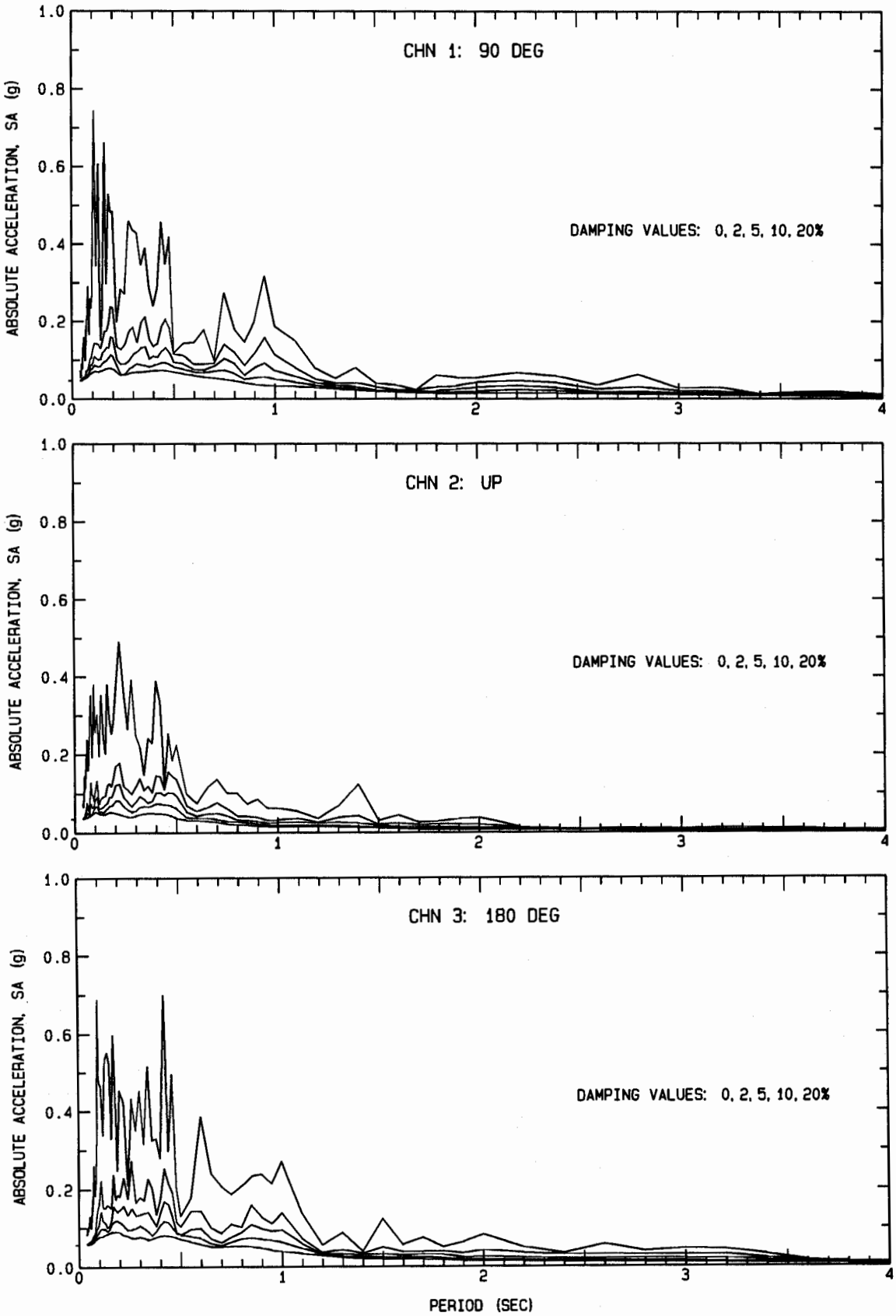
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
PHELAN - WILSON RANCH ROAD CSMIP Sta Num 23597
Usable Data Bandwidth: .17 to 47.2 Hz (.02 to 6.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
PHELAN - WILSON RANCH ROAD
UNCORRECTED ACCELEROGRAM 23597-E0251-94025.02 101294.1504-QN94A597



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
PHELAN - WILSON RANCH ROAD
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 46.0-50.0 HZ.
23597-E0251-94025.02 112194.1151-QN94A597



PHELAN - WILSON RANCH ROAD: CSMIP S/N 597

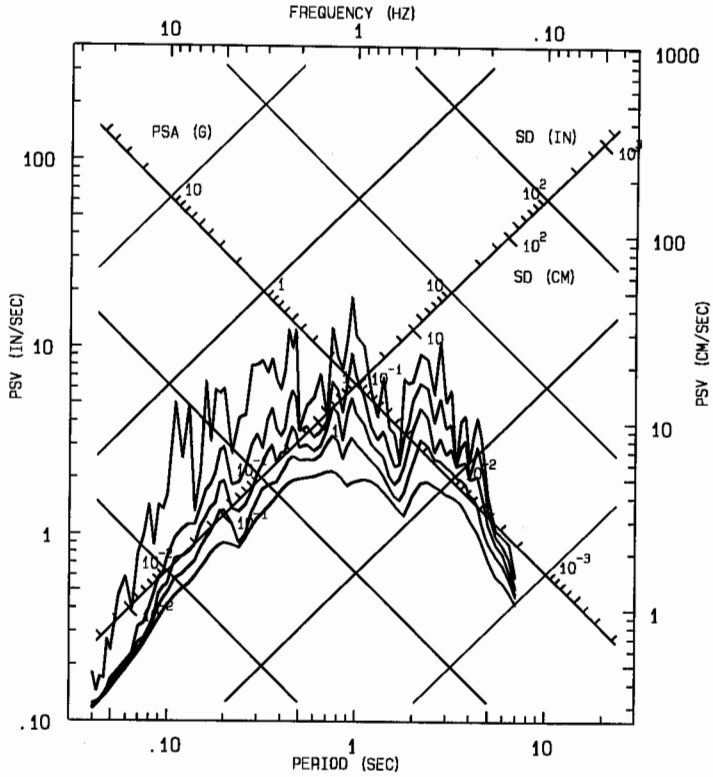
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.17 TO 47.2 HZ
(0.02 TO 5.88 SEC)

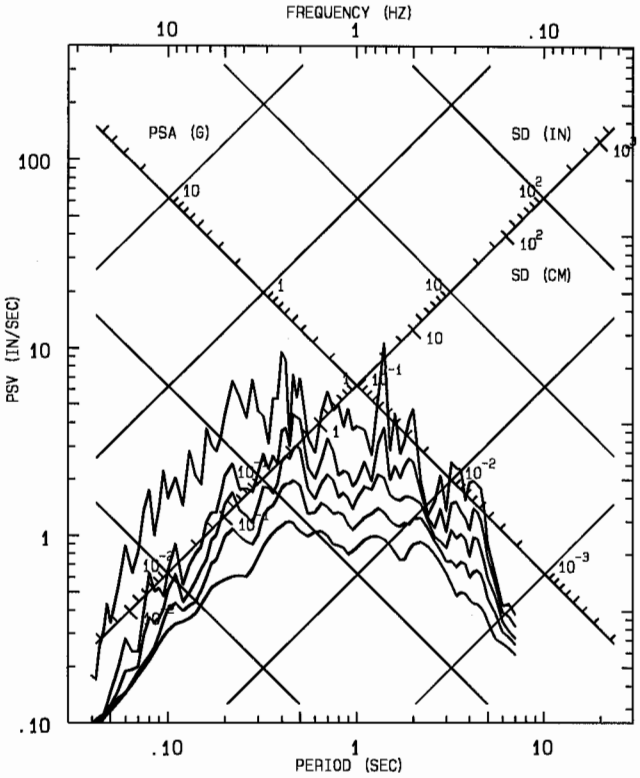
RECORD ID: 23597-E0251-94025.02

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

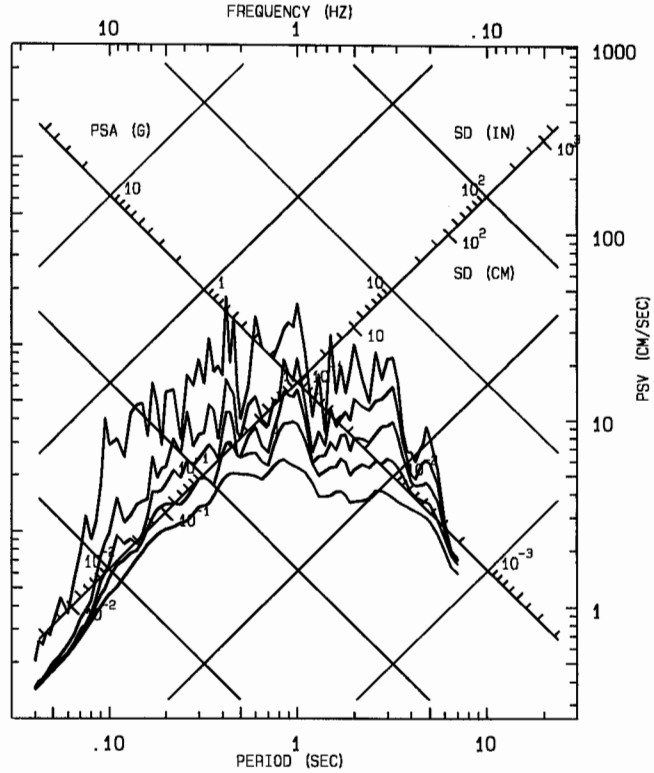
CHN 1: 90 DEG



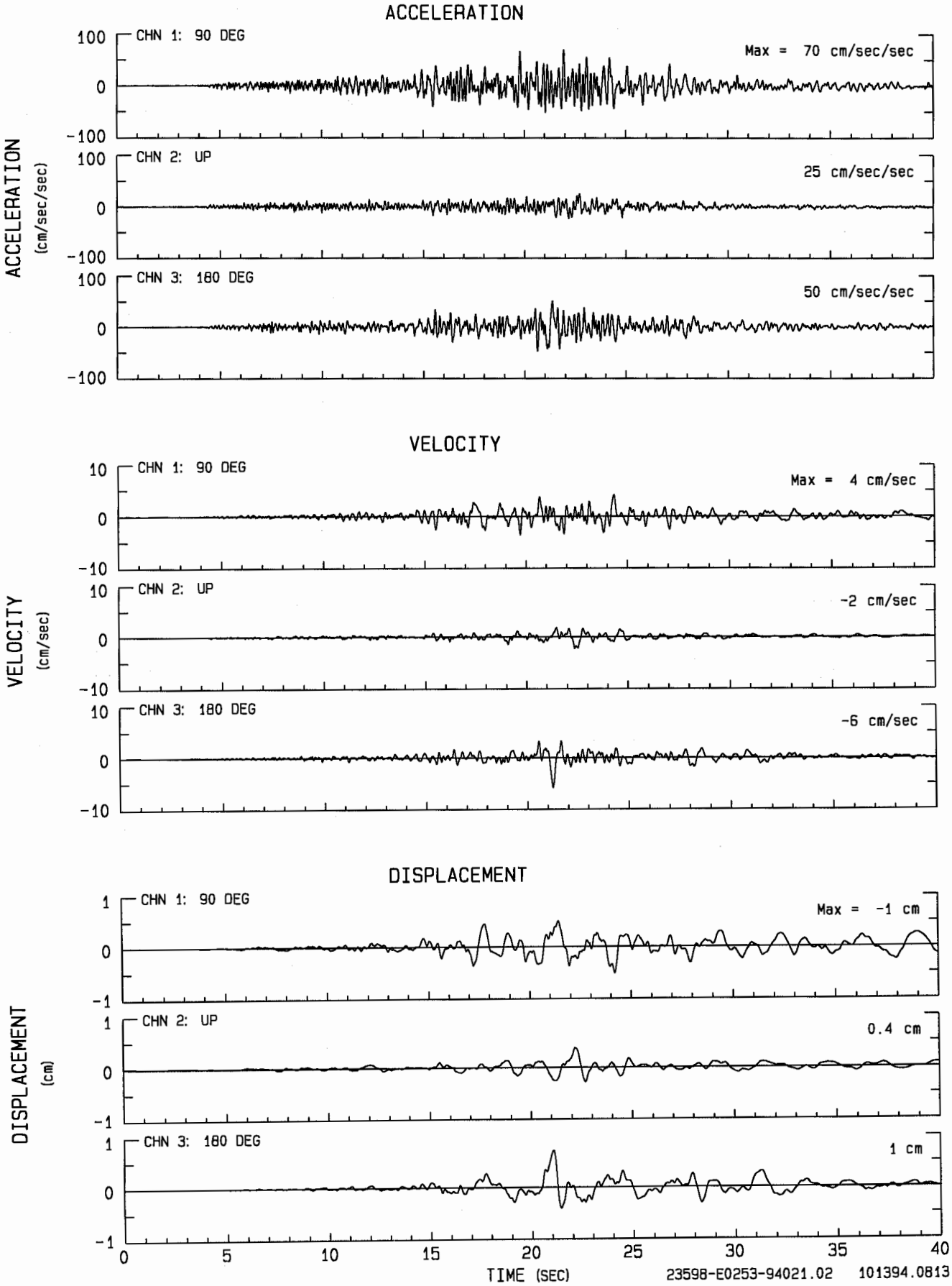
CHN 2: UP



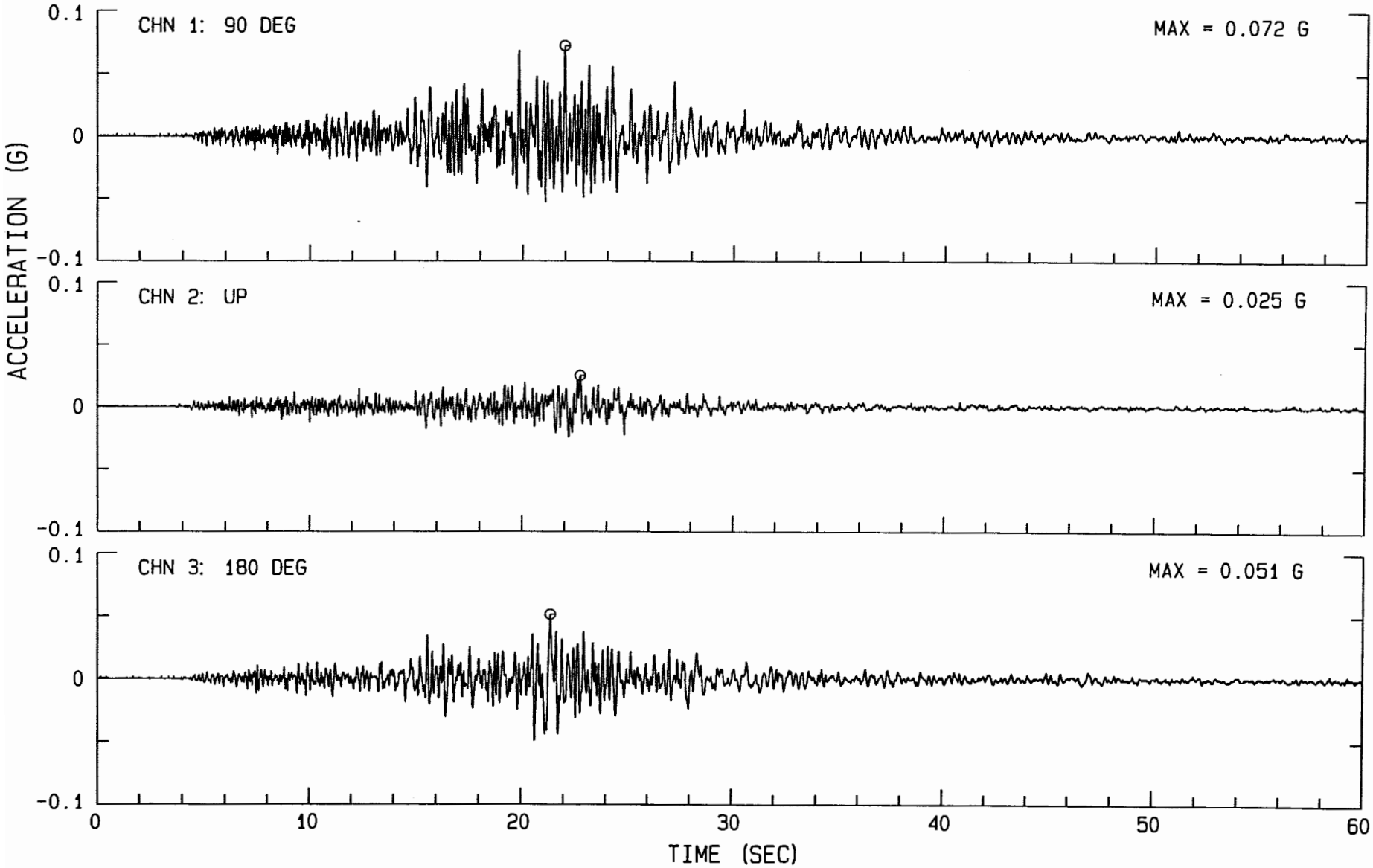
CHN 3: 180 DEG



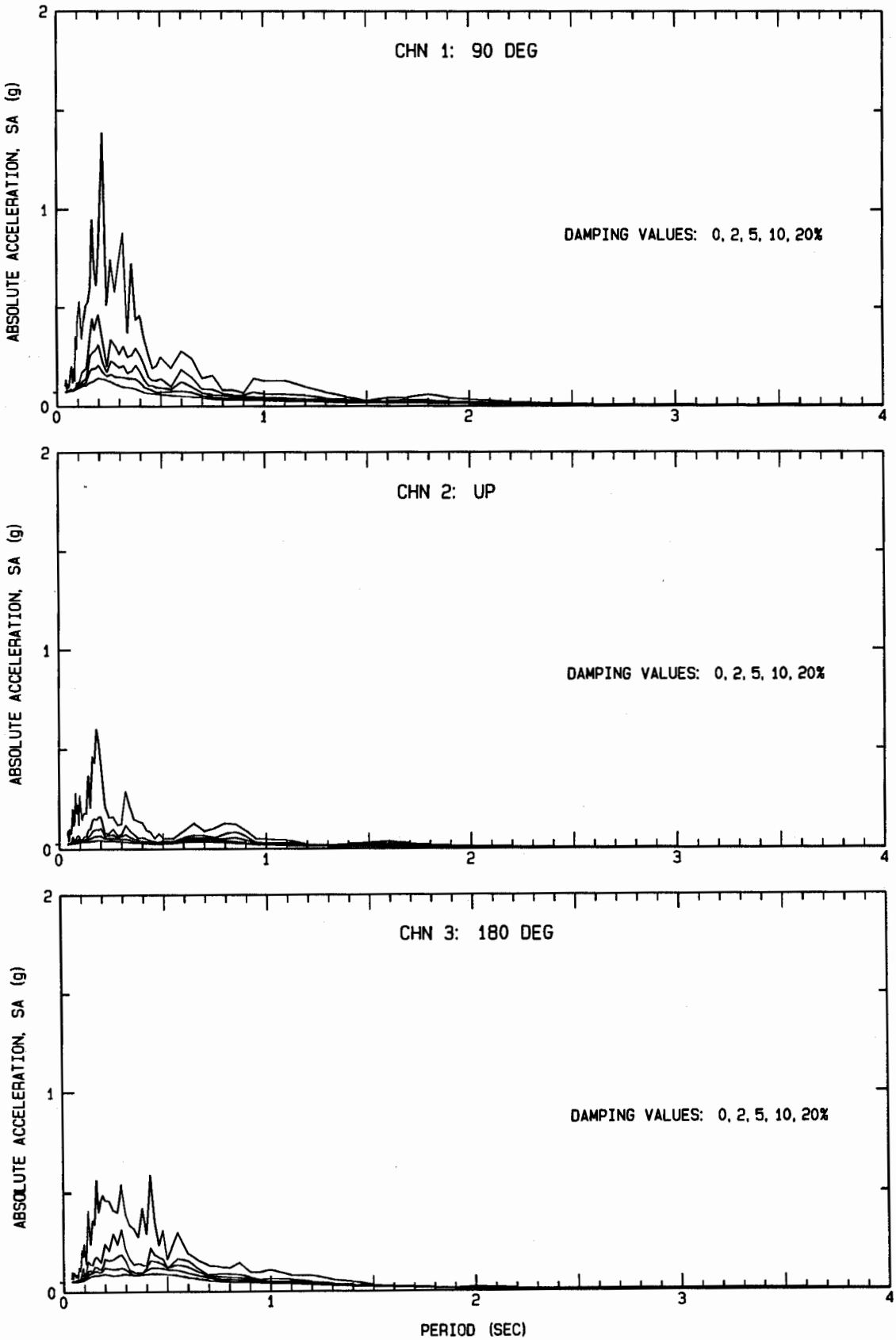
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
RANCHO CUCAMONGA - DEER CANYON CSMIP Sta Num 23598
Usable Data Bandwidth: .25 to 47.2 Hz (.02 to 4.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
RANCHO CUCAMONGA - DEER CANYON
UNCORRECTED ACCELEROGRAM 23598-E0253-94021.02 101394.0802-QN94A598



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
RANCHO CUCAMONGA - DEER CANYON
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 46.0-50.0 HZ.
23598-E0253-94021.02 112194.1155-QN94A598



RANCHO CUCAMONGA - DEER CANYON: CSMIP S/N 598

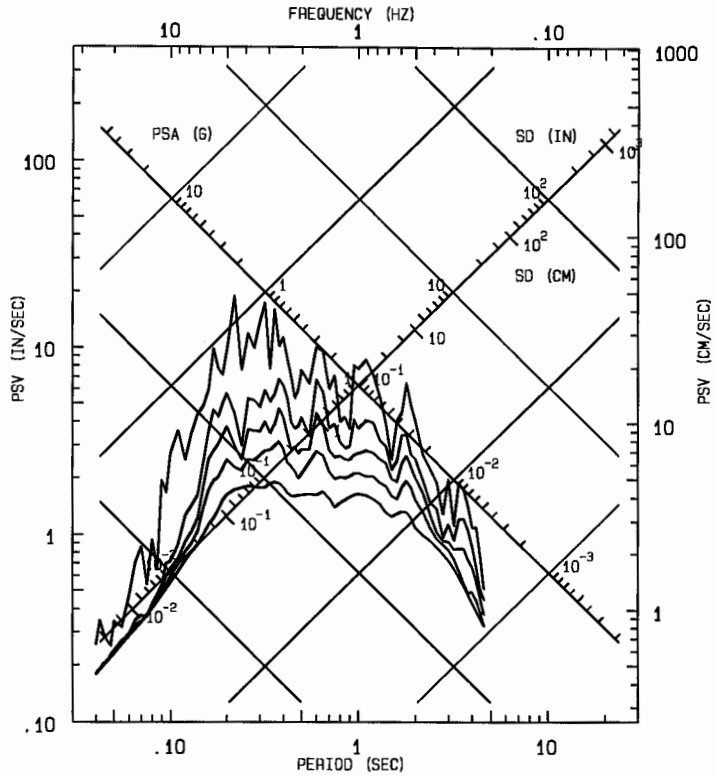
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.25 TO 47.2 HZ
(0.02 TO 3.92 SEC)

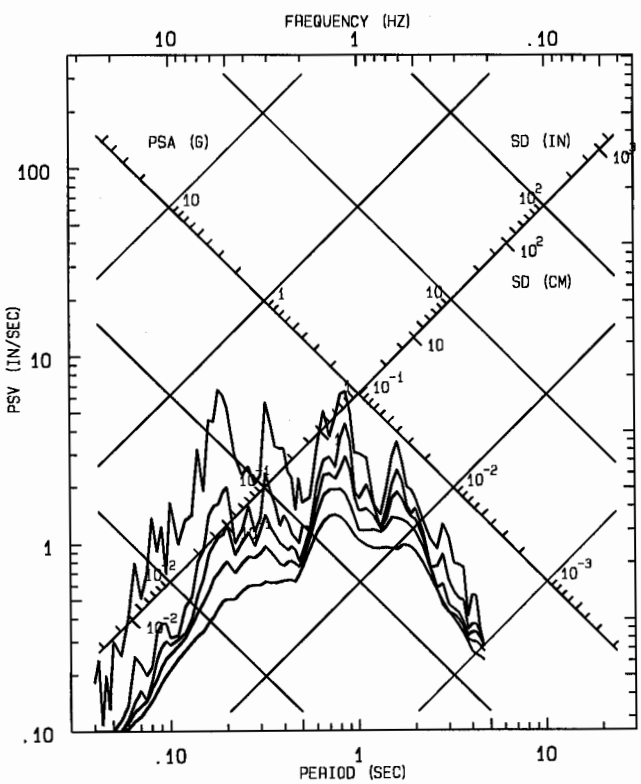
RECORD ID: 23598-E0253-94021.02

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

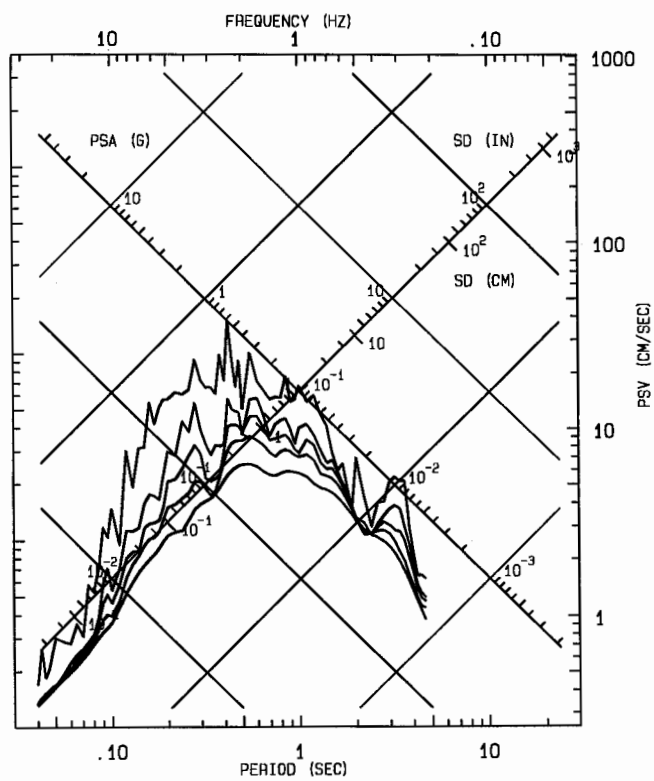
CHN 1: 90 DEG



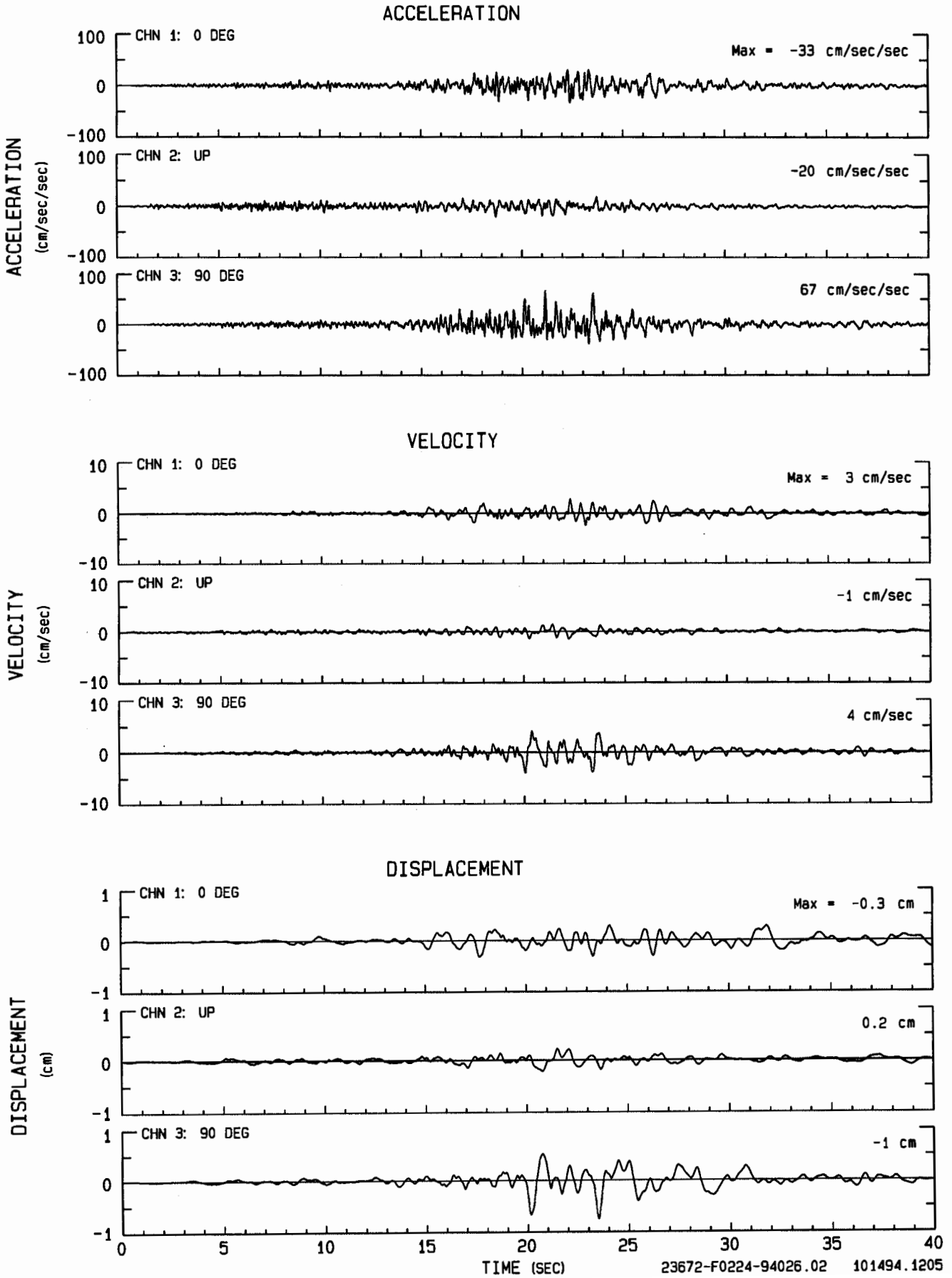
CHN 2: UP



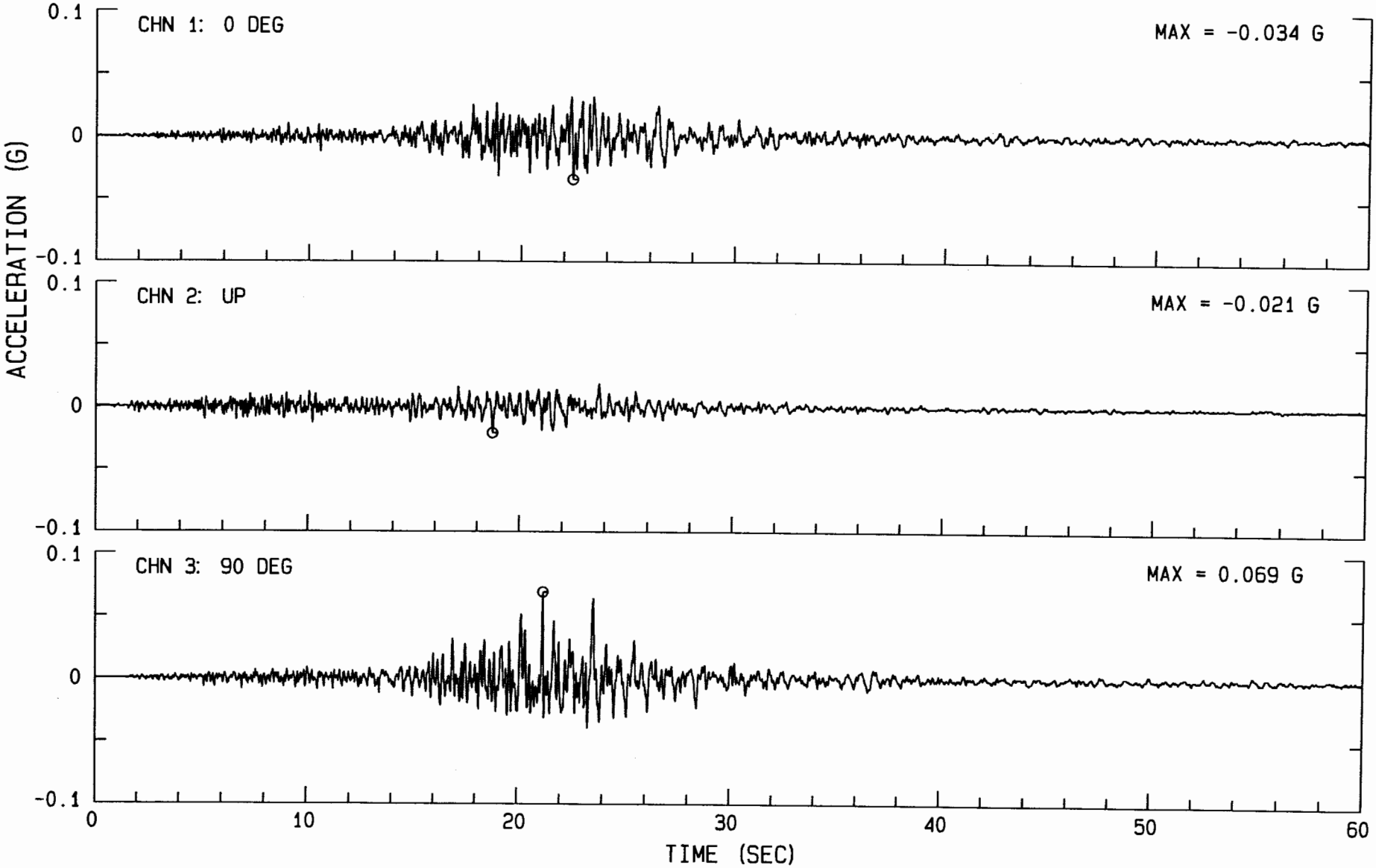
CHN 3: 180 DEG



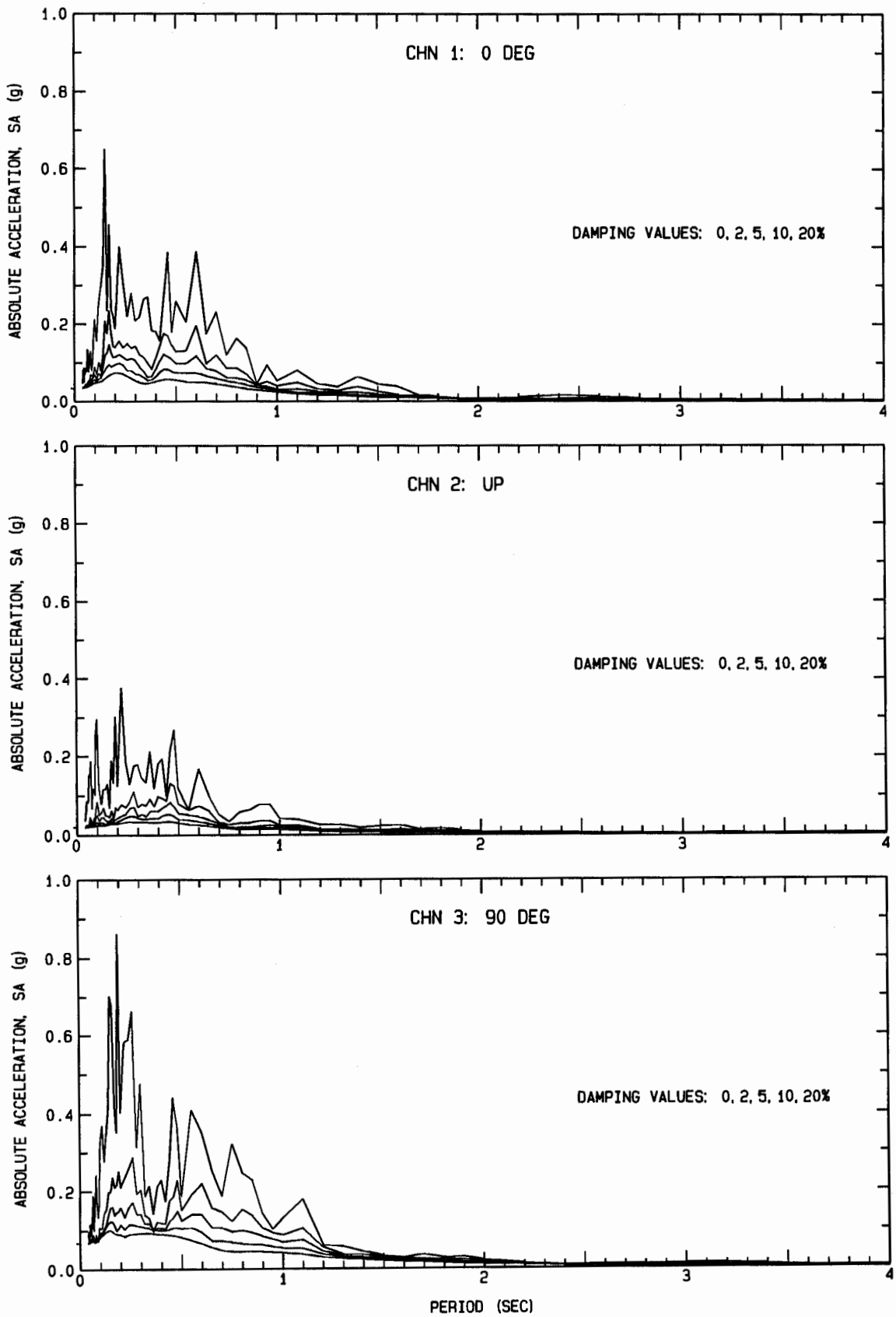
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SAN BERNARDINO - CSUSB GROUNDS CSMIP Sta Num 23672
Usable Data Bandwidth: .25 to 47.2 Hz (.02 to 4.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SAN BERNARDINO - CSUSB GROUNDS
UNCORRECTED ACCELEROGRAM 23672-F0224-94026.02 101494.1154-QN94A672



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SAN BERNARDINO - CSUSB GROUNDS
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 46.0-50.0 HZ.
23672-F0224-94026.02 112294.1050-GN94A672



SAN BERNARDINO - CSUSB GROUNDS: CSMIP S/N 672

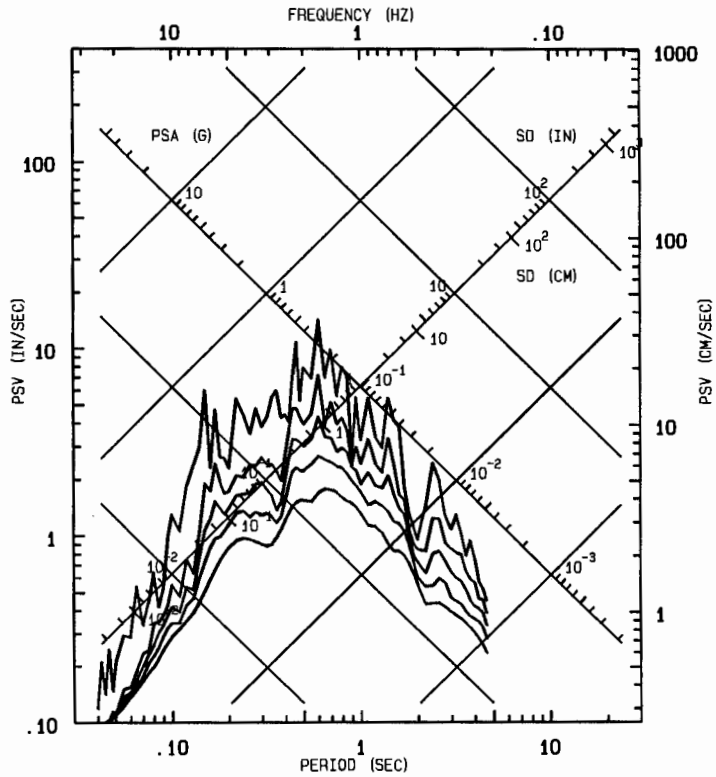
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.25 TO 47.2 HZ
(0.02 TO 3.92 SEC)

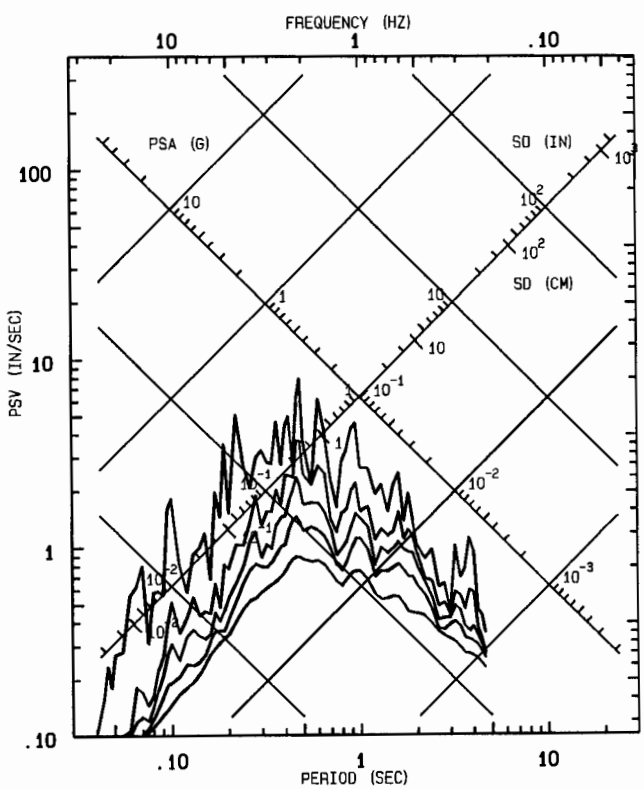
RECORD ID: 23672-F0224-94026.02

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

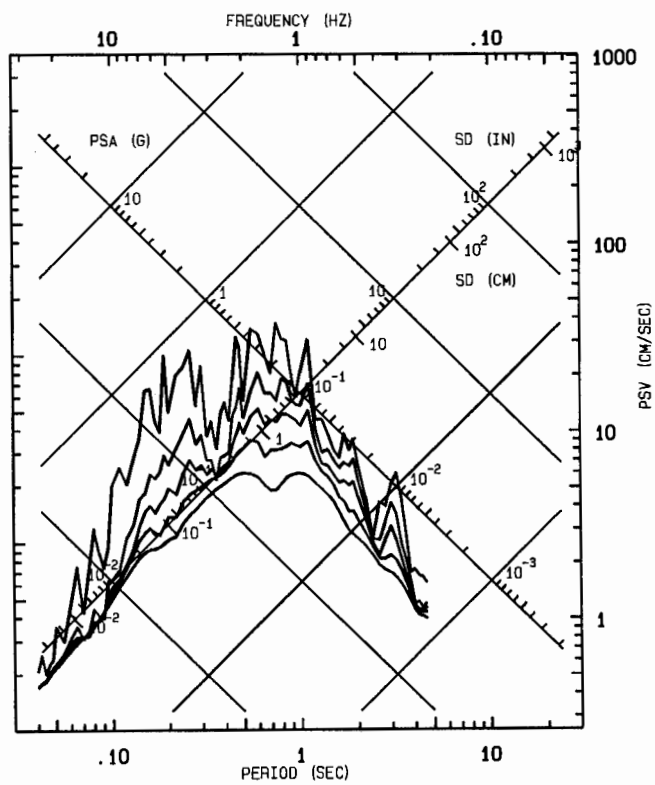
CHN 1: 0 DEG



CHN 2: UP



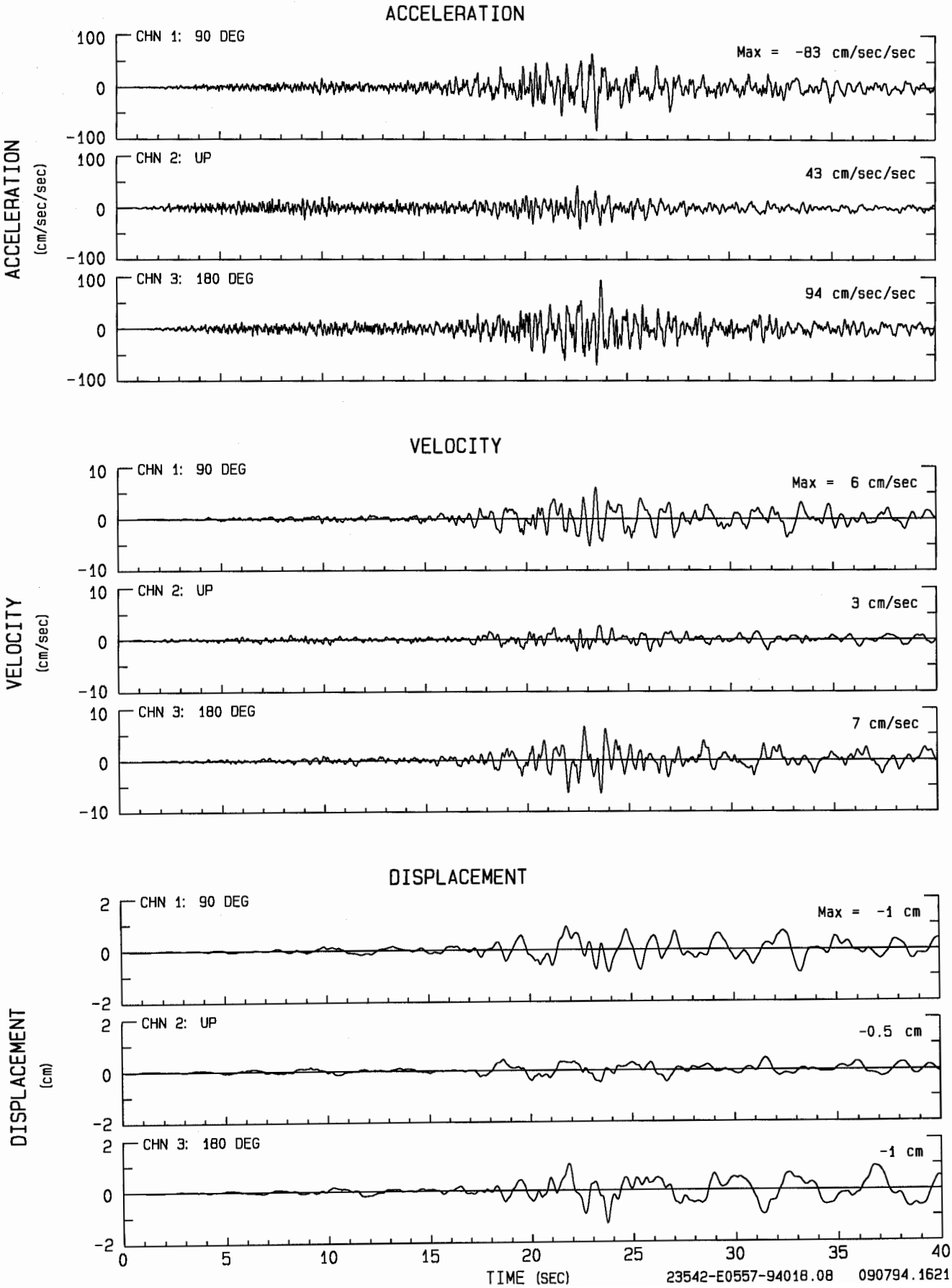
CHN 3: 90 DEG



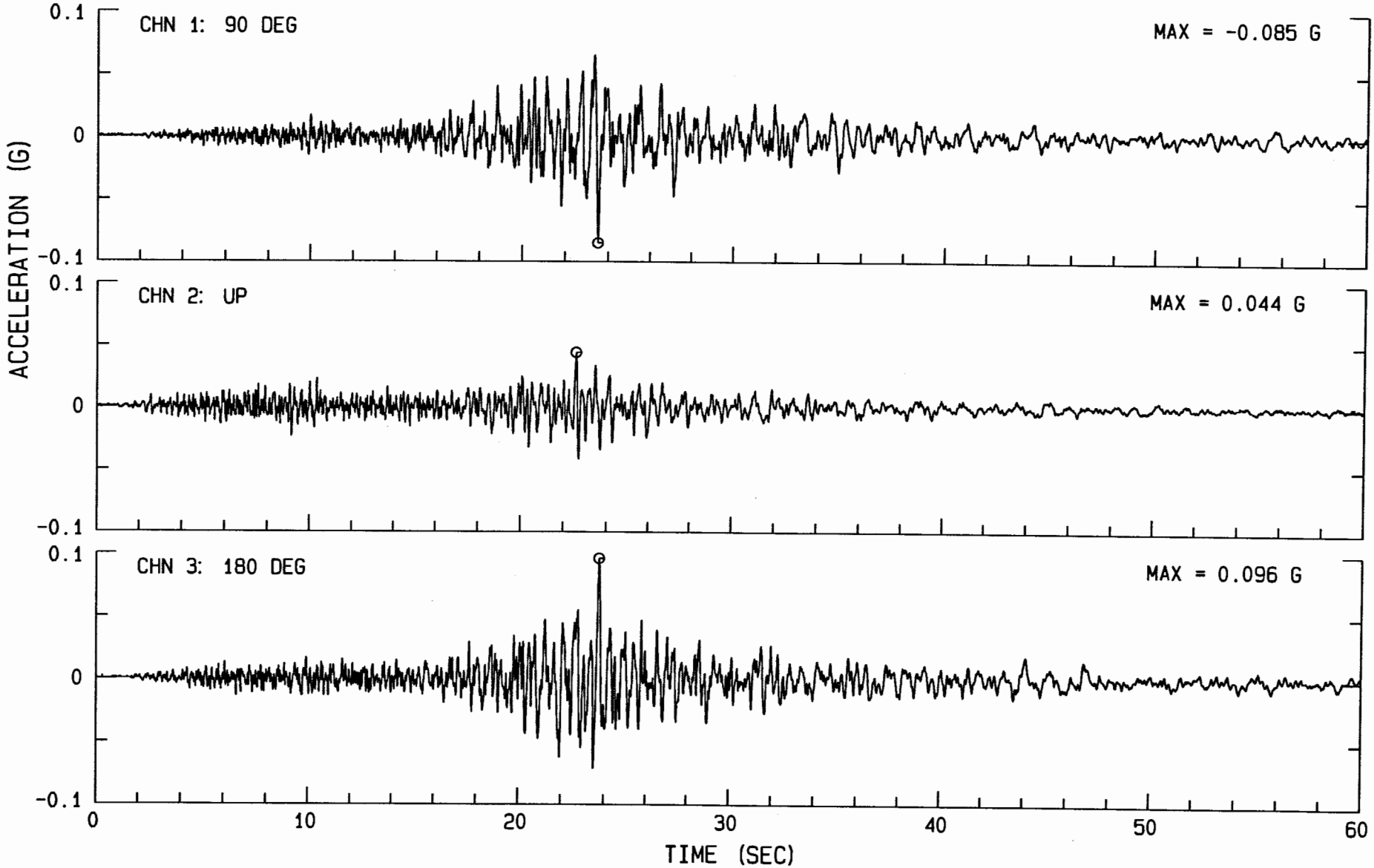
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

SAN BERNARDINO - E & HOSPITALITY CSMIP Sta Num 23542

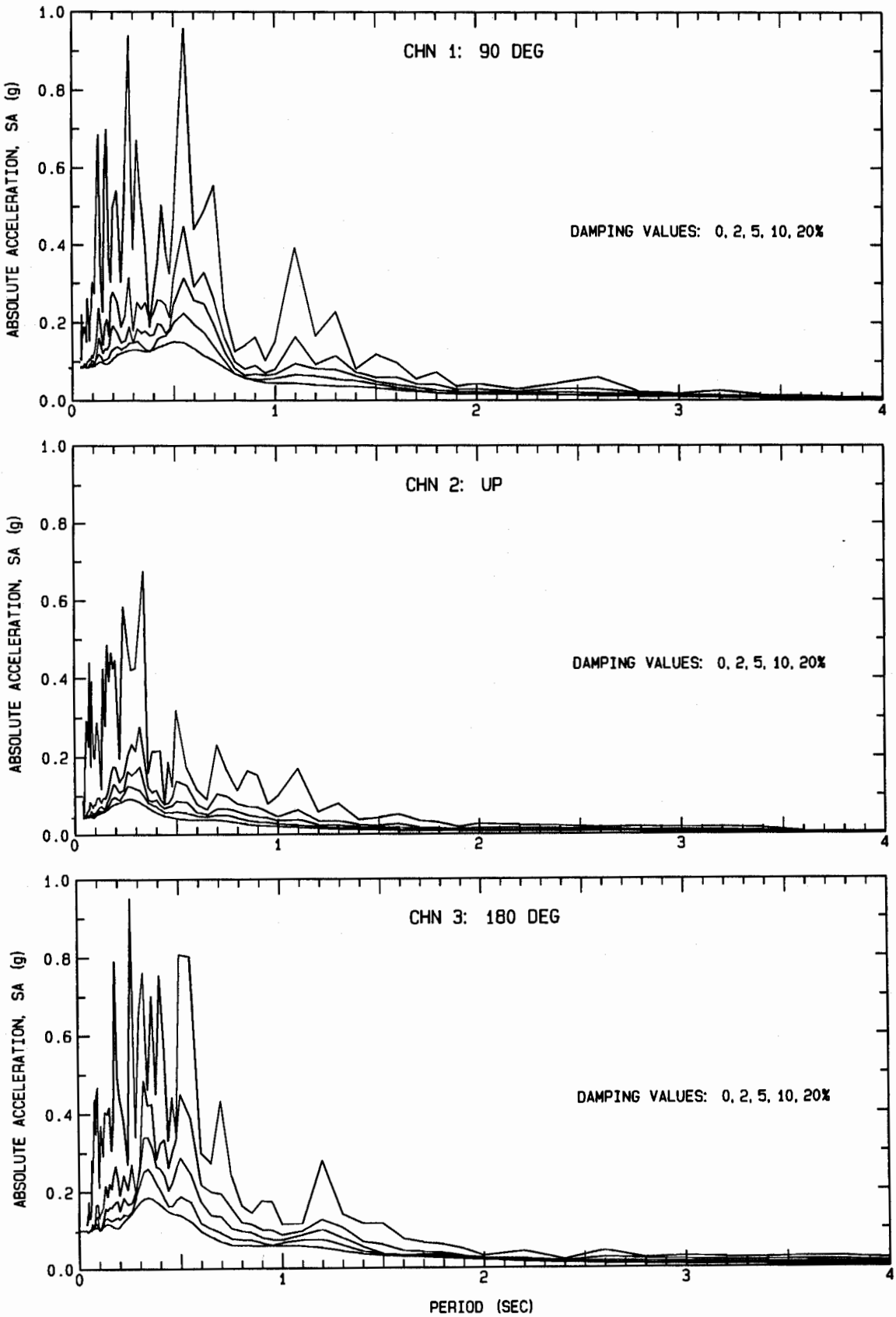
Usable Data Bandwidth: .17 to 47.2 Hz (.02 to 6.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SAN BERNARDINO - E & HOSPITALITY
UNCORRECTED ACCELEROGRAM 23542-E0557-94018.08 090794.1611-QN94A542



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SAN BERNARDINO - E & HOSPITALITY
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .10-.20 TO 46.0-50.0 HZ.
23542-E0557-94018.08 112194.1222-QN94A542



SAN BERNARDINO - E & HOSPITALITY: CSMIP S/N 542

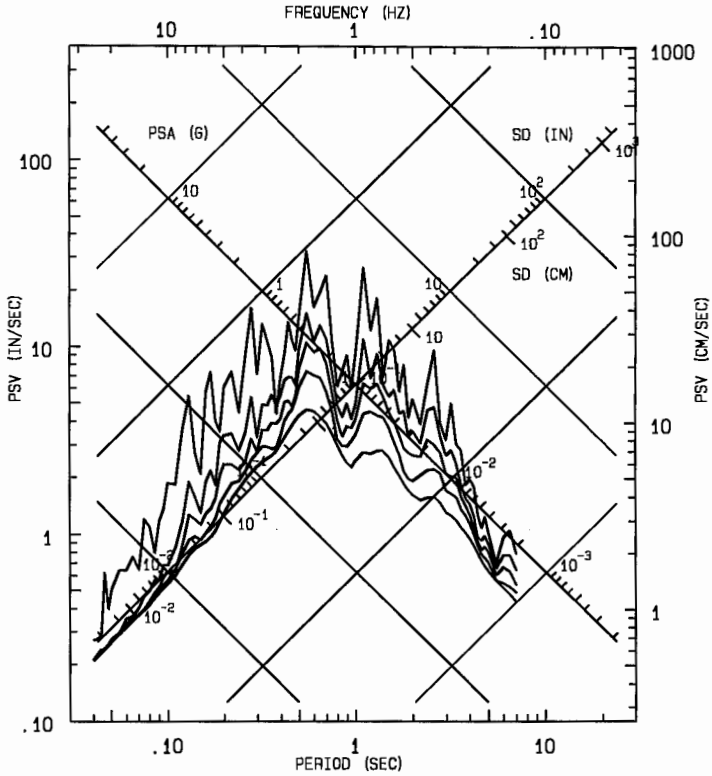
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.17 TO 47.2 HZ
(0.02 TO 5.88 SEC)

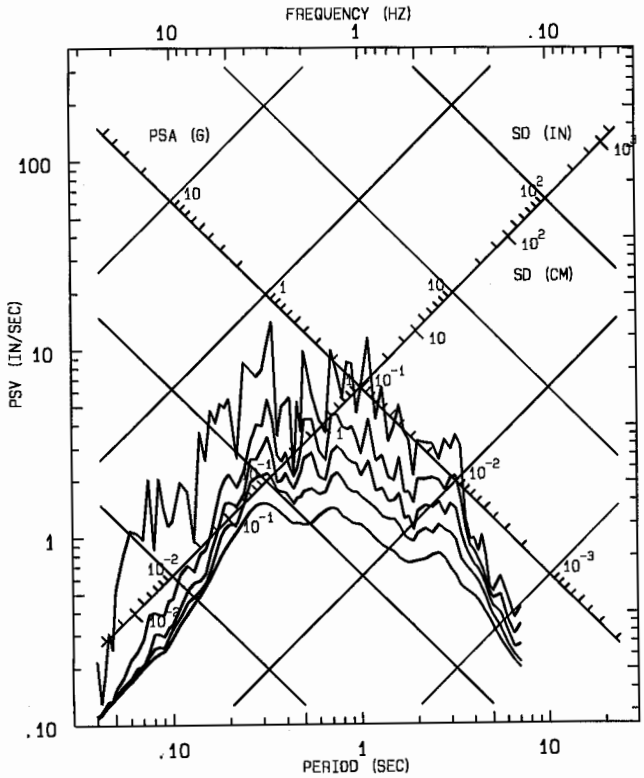
RECORD ID: 23542-E0557-94018.08

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

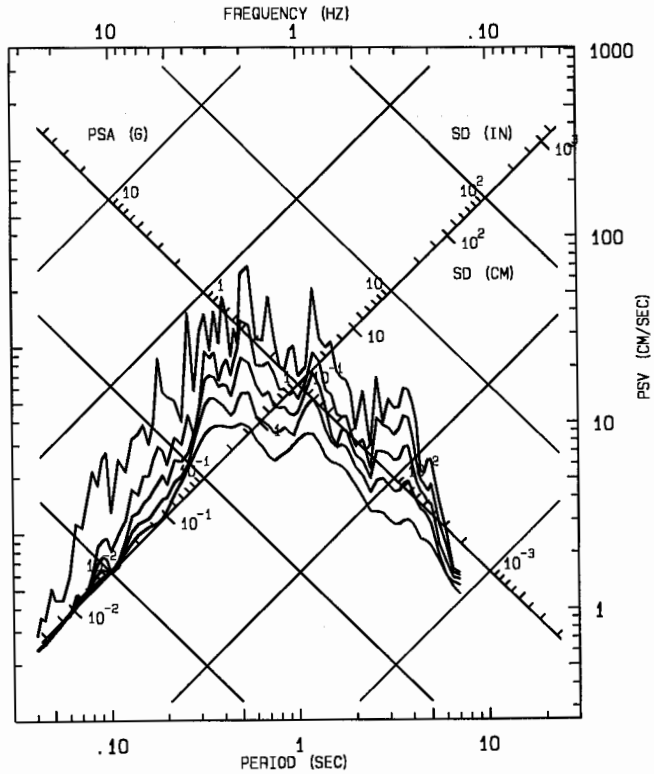
CHN 1: 90 DEG



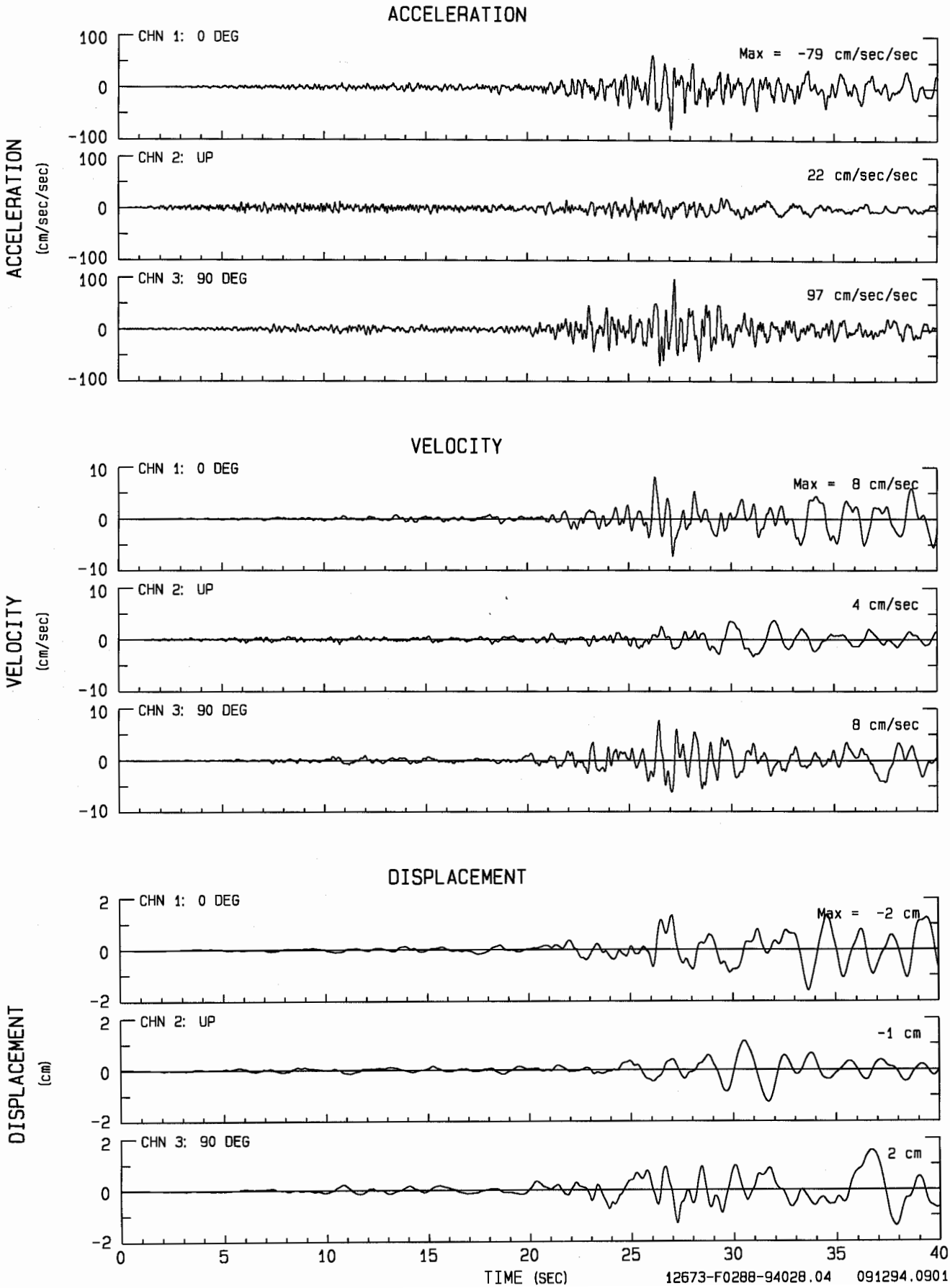
CHN 2: UP



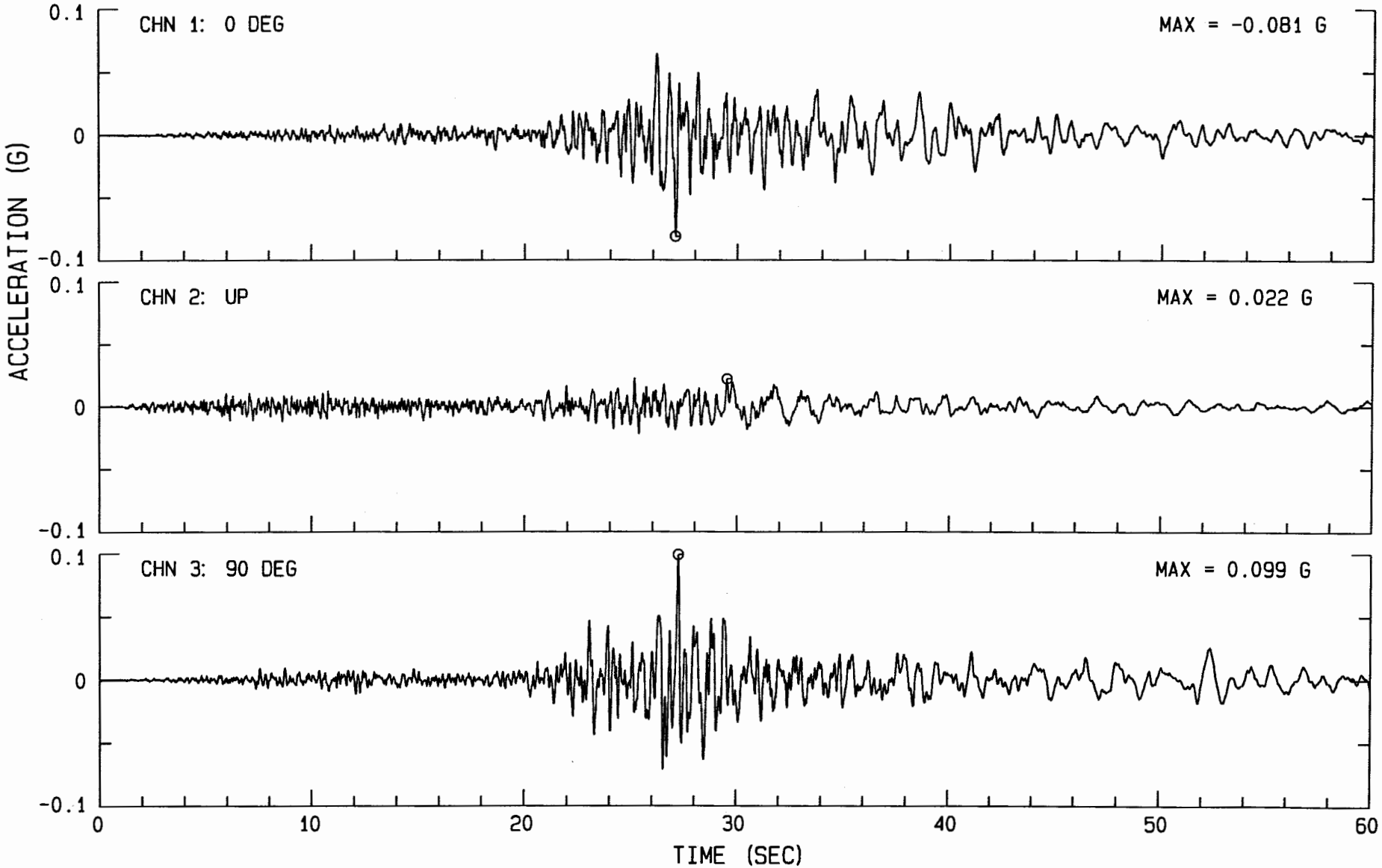
CHN 3: 180 DEG



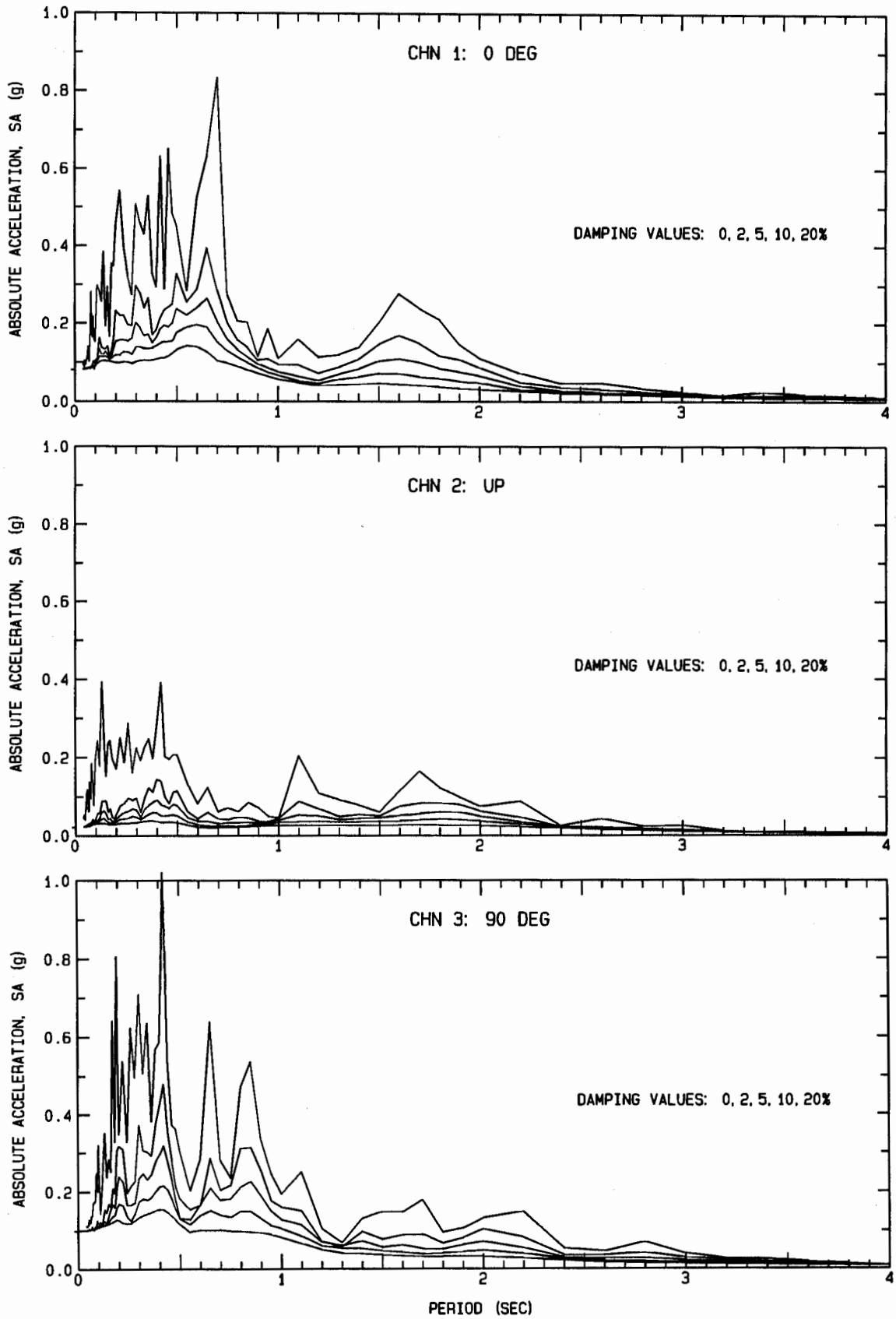
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SAN JACINTO - CDF FIRE STATION CSMIP Sta Num 12673
Usable Data Bandwidth: .14 to 47.2 Hz (.02 to 7.5 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SAN JACINTO - CDF FIRE STATION
UNCORRECTED ACCELEROGRAM 12673-F0288-94028.04 091294.0853-QN94A673



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SAN JACINTO - CDF FIRE STATION
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 46.0-50.0 HZ.
12673-F0288-94028.04 112194.1226-QN94A673



SAN JACINTO - CDF FIRE STATION: CSMIP S/N 673

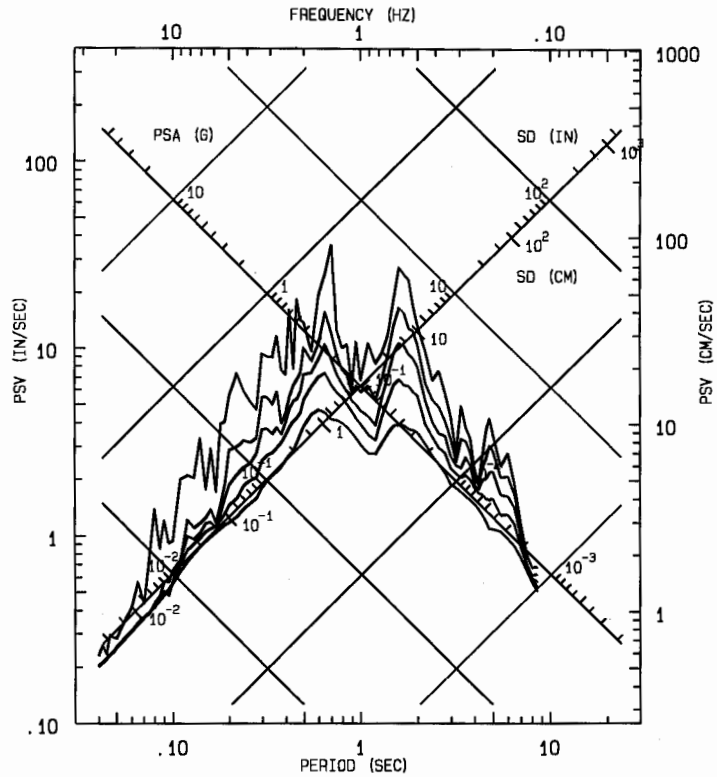
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.14 TO 47.2 HZ
(0.02 TO 7.35 SEC)

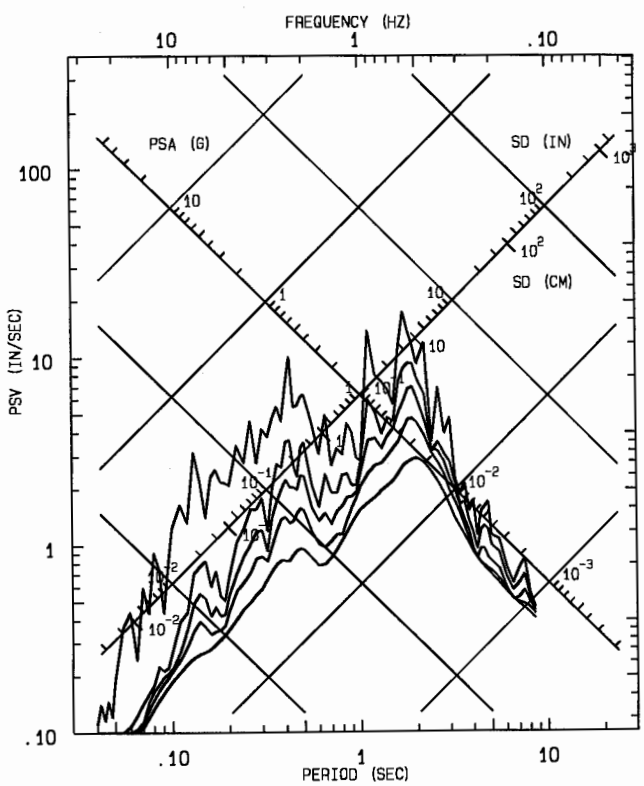
RECORD ID: 12673-F0288-94028.04

RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

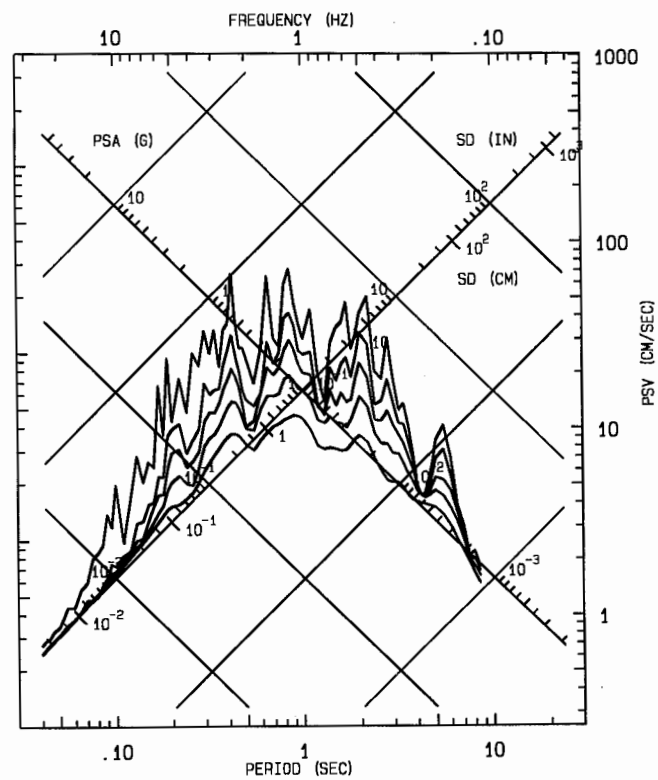
CHN 1: 0 DEG



CHN 2: UP



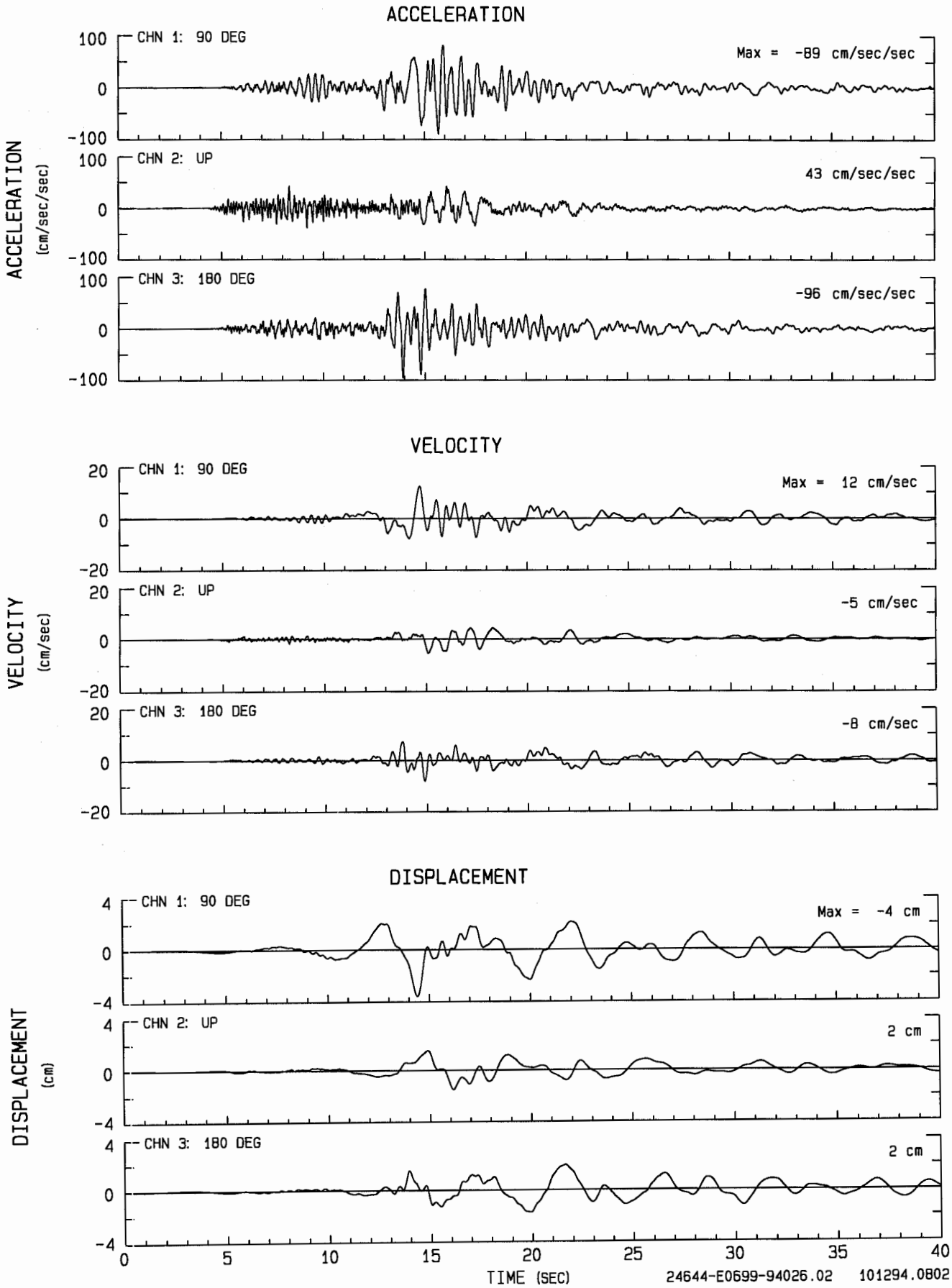
CHN 3: 90 DEG



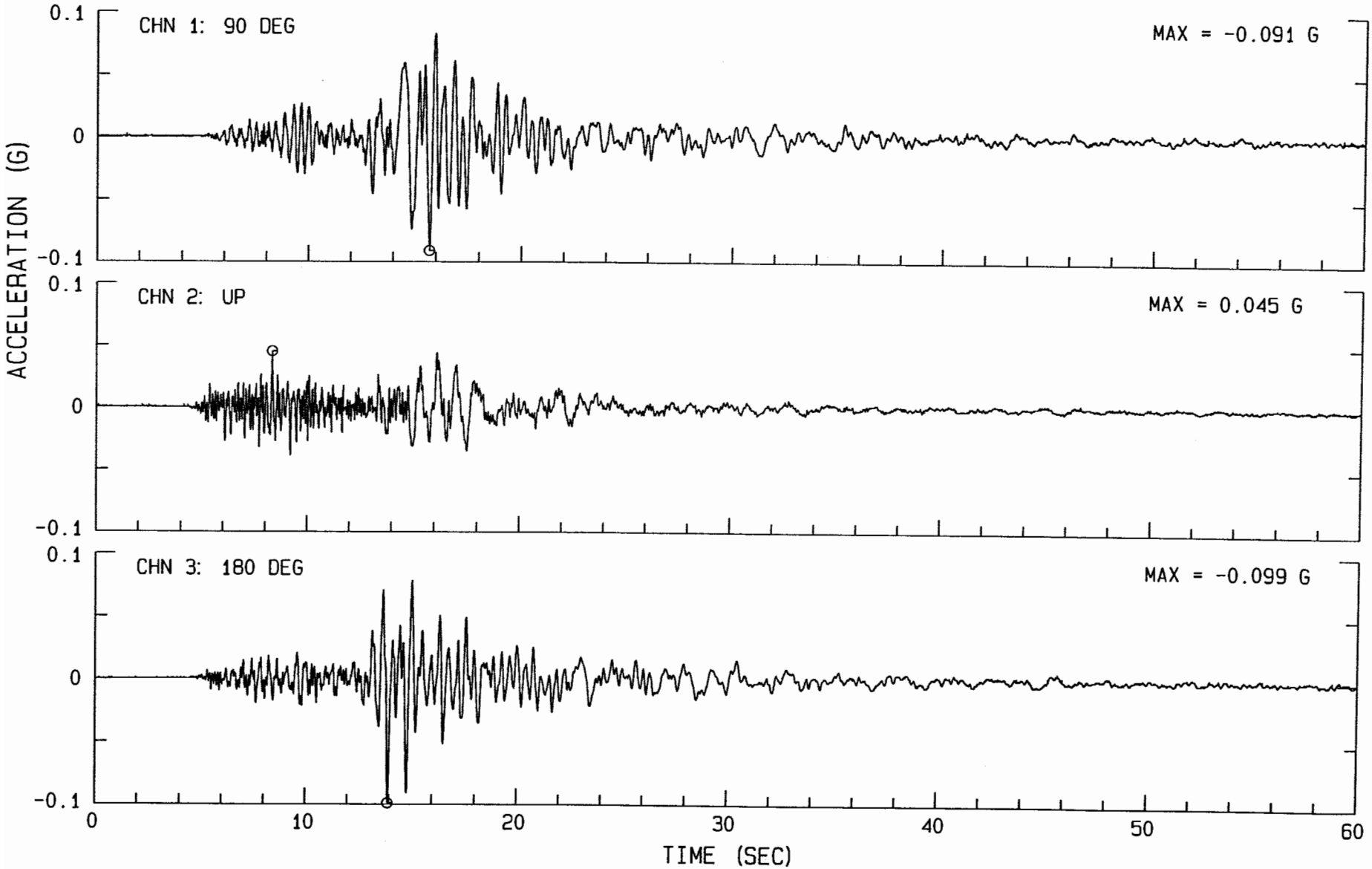
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

SANDBERG - BALD MOUNTAIN CSMIP Sta Num 24644

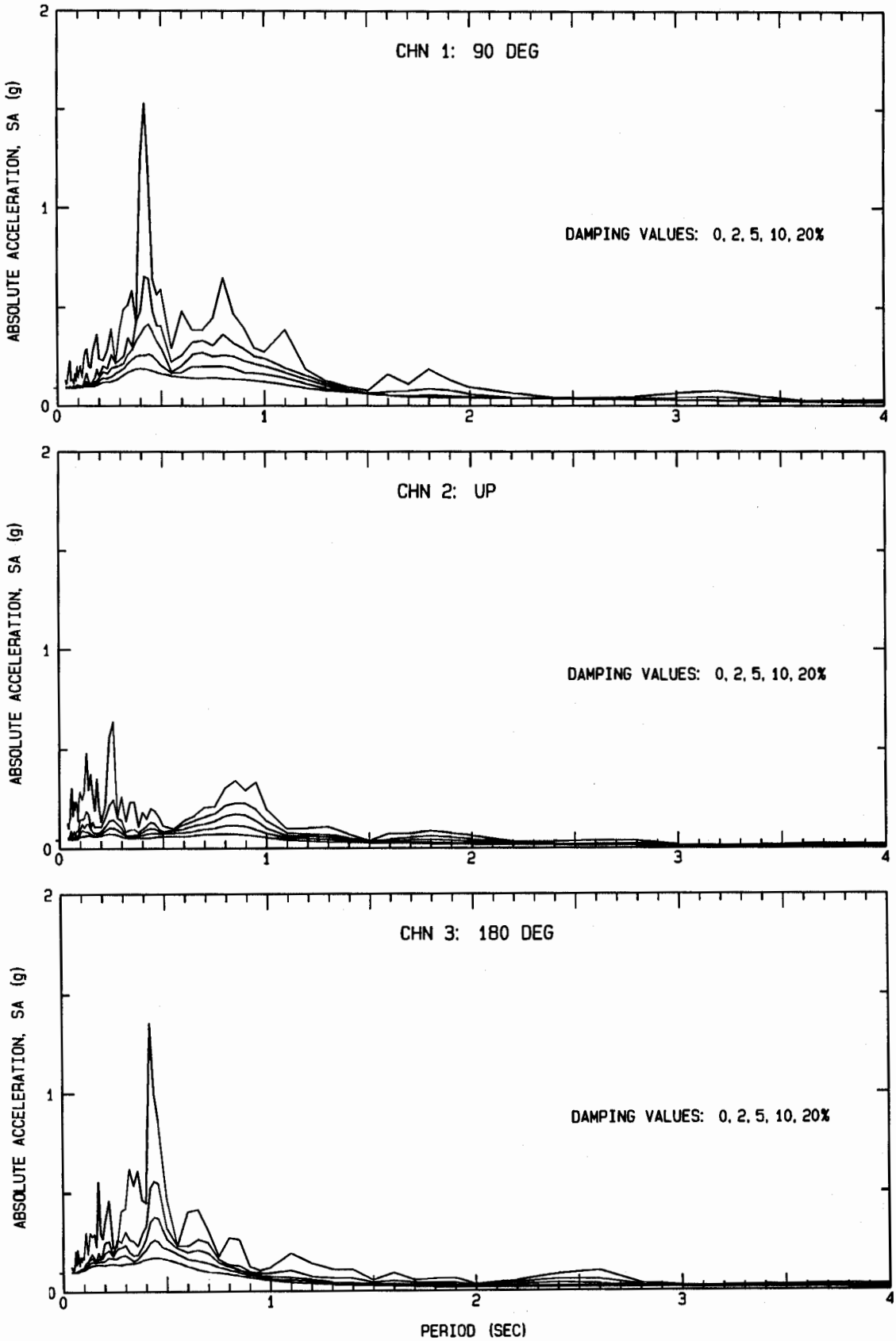
Usable Data Bandwidth: .17 to 47.2 Hz (.02 to 6.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SANDBERG - BALD MOUNTAIN
UNCORRECTED ACCELEROGRAM 24644-E0699-94026.02 101194.1631-GN94A644



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SANDBERG - BALD MOUNTAIN
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .06-.12 TO 46.0-50.0 HZ.
24644-E0699-94026.02 112194.1230-QN94A644



SANDBERG - BALD MOUNTAIN: CSMIP S/N 644

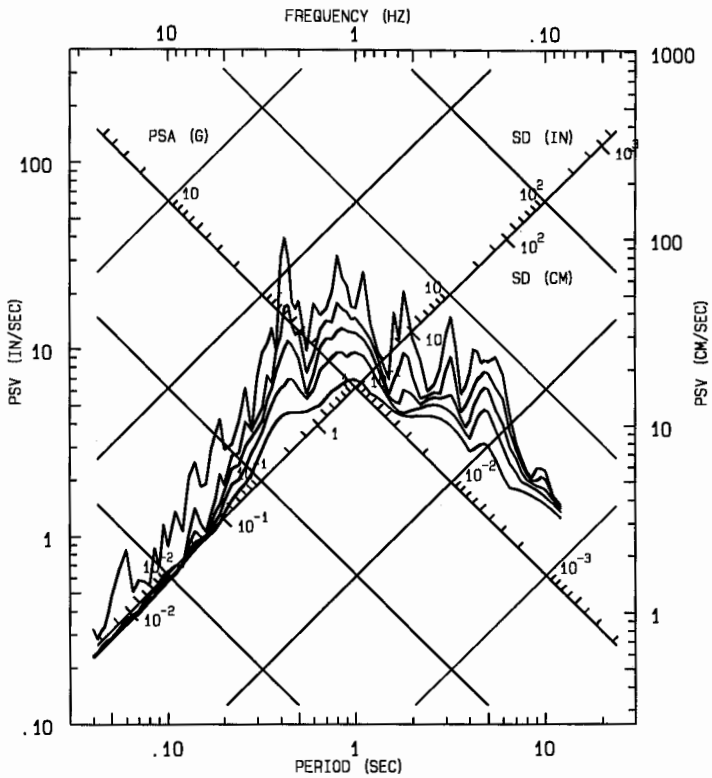
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.10 TO 47.2 HZ
(0.02 TO 9.80 SEC)

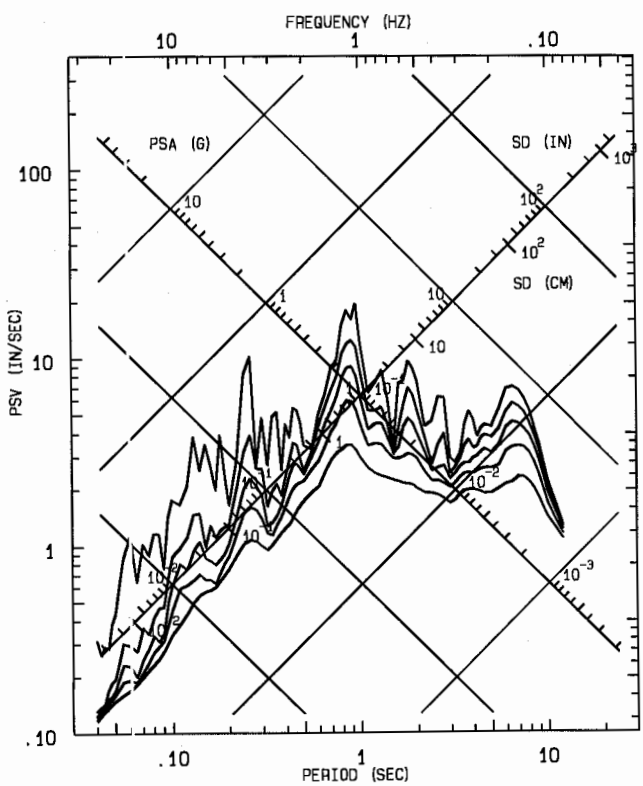
RECORD ID: 24644-E0699-94026.02

RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

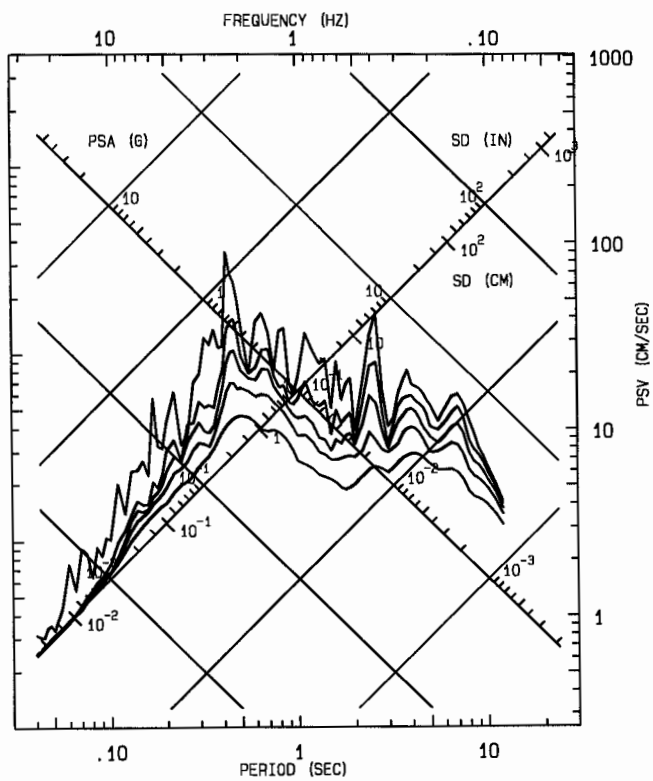
CHN 1: 90 DEG



CHN 2: UP



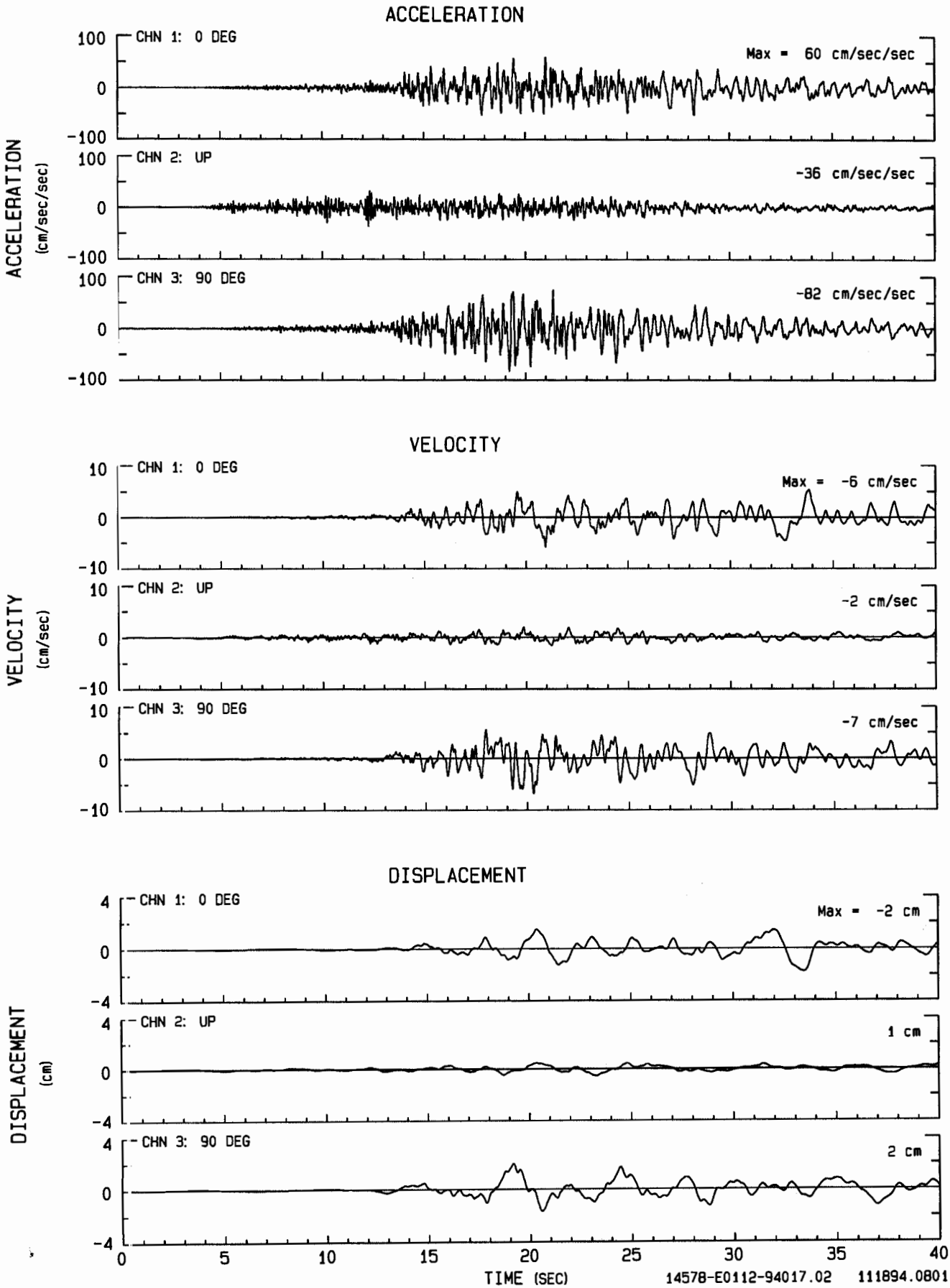
CHN 3: 180 DEG



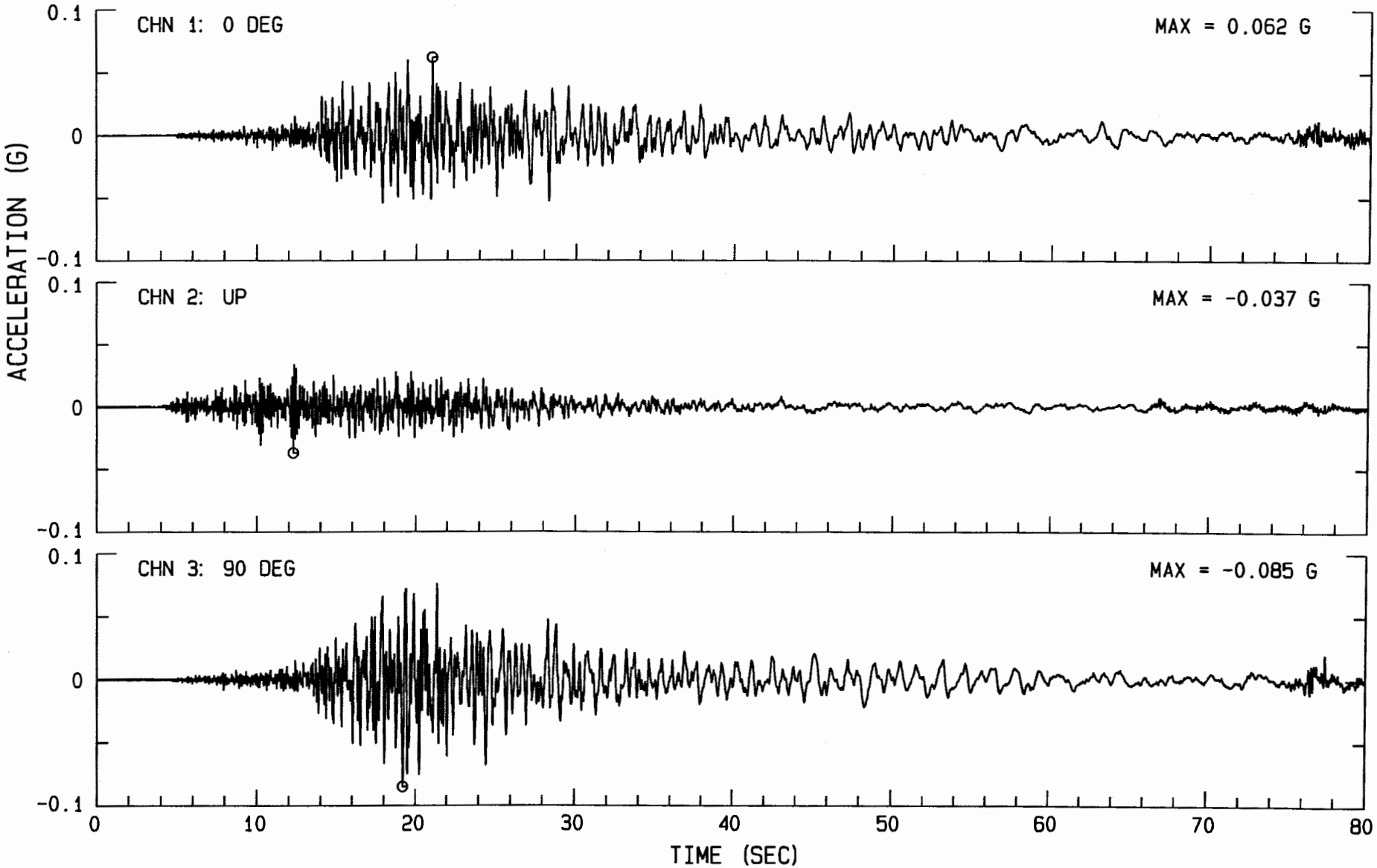
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST

SEAL BEACH - OFFICE BLDG. PARKING LOT CSMIP Sta Num 14578

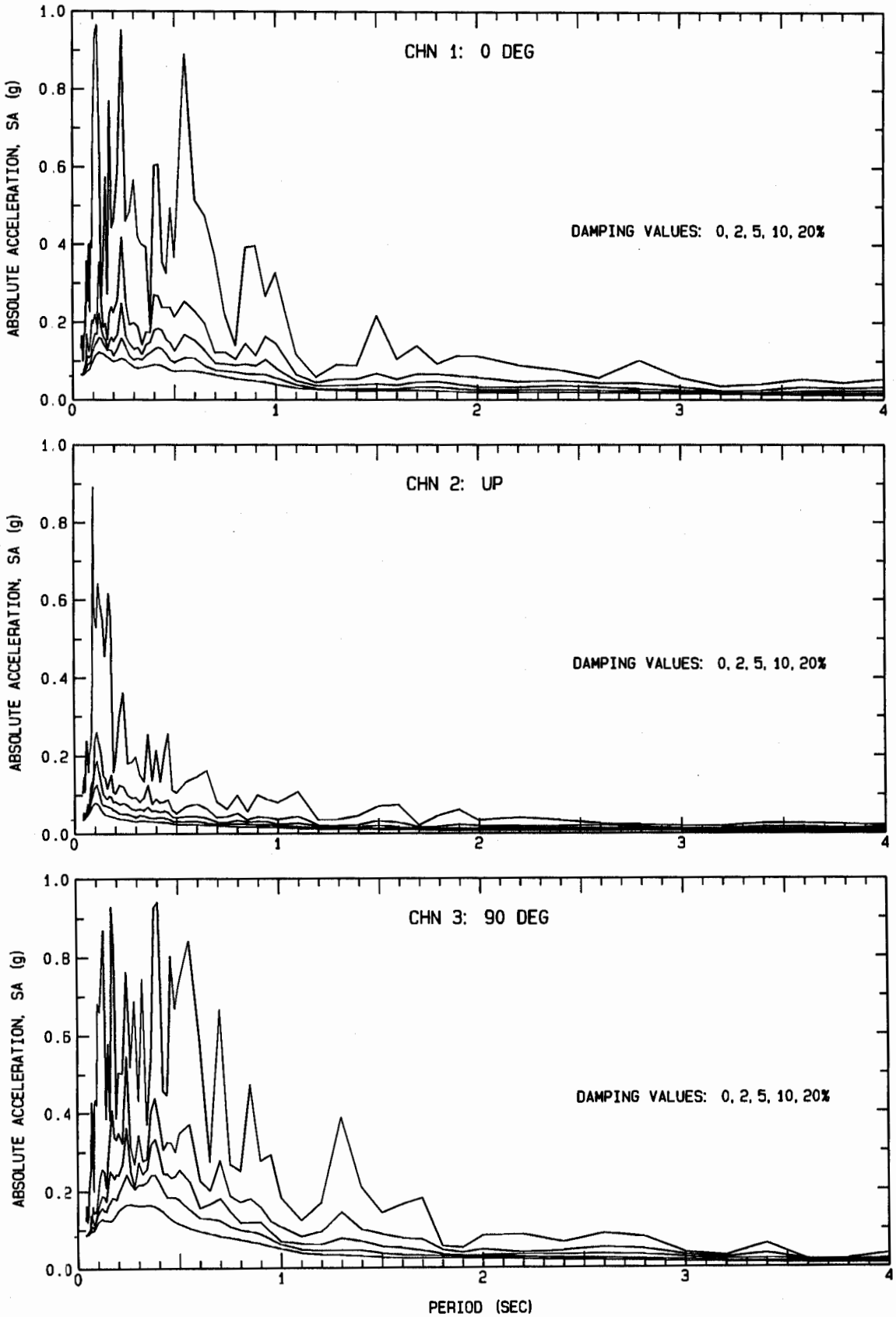
Usable Data Bandwidth: .14 to 47.2 Hz (.02 to 7.5 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SEAL BEACH - OFFICE BLDG. PARKING LOT
UNCORRECTED ACCELEROGRAM 14578-E0112-94017.02 111894.0751-GN94A578



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
SEAL BEACH - OFFICE BLDG. PARKING LOT
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .08-.16 TO 46.0-50.0 HZ.
14578-E0112-94017.02 112194.1234-QN94A578



SEAL BEACH - OFFICE BLDG. PARKING LOT: CSMIP S/N 578

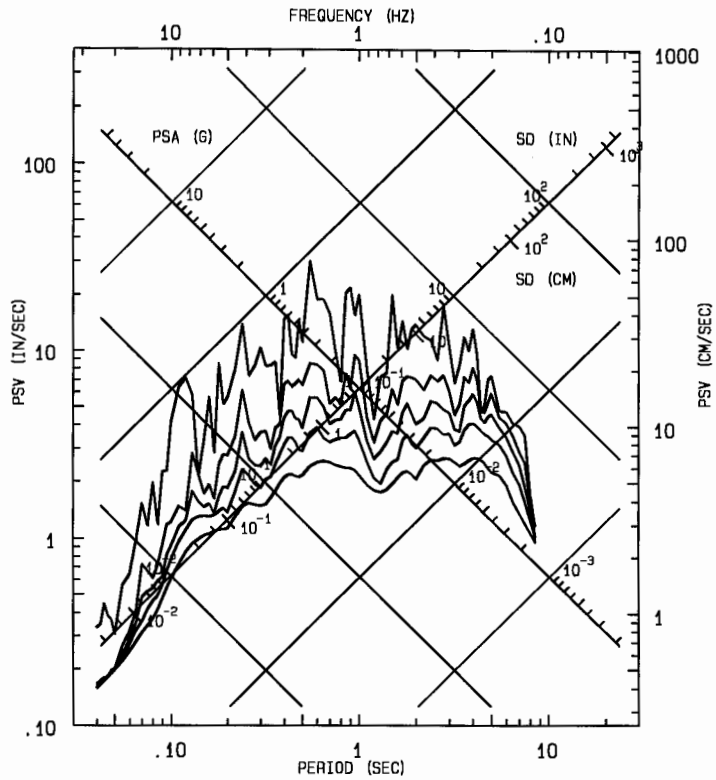
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.14 TO 47.2 HZ
(0.02 TO 7.35 SEC)

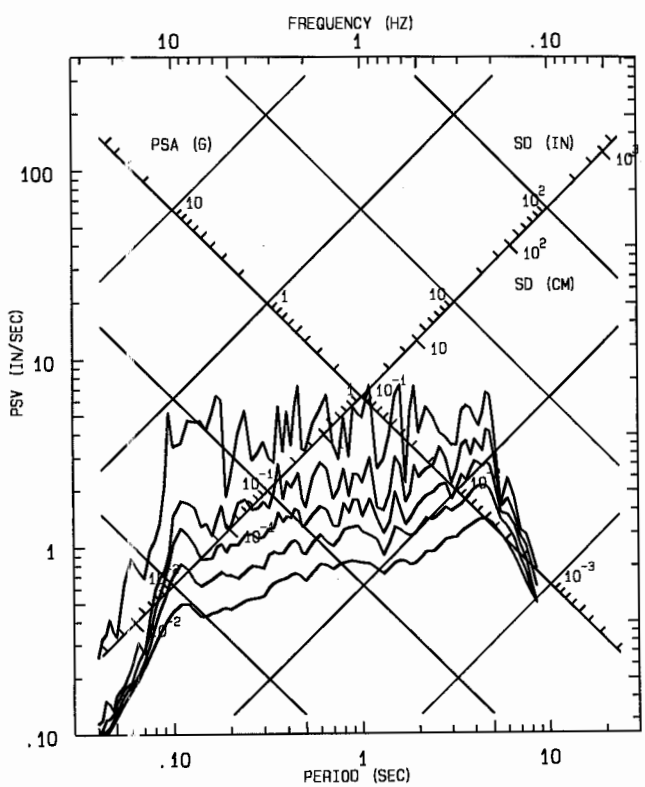
RECORD ID: 14578-E0112-94017.02

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

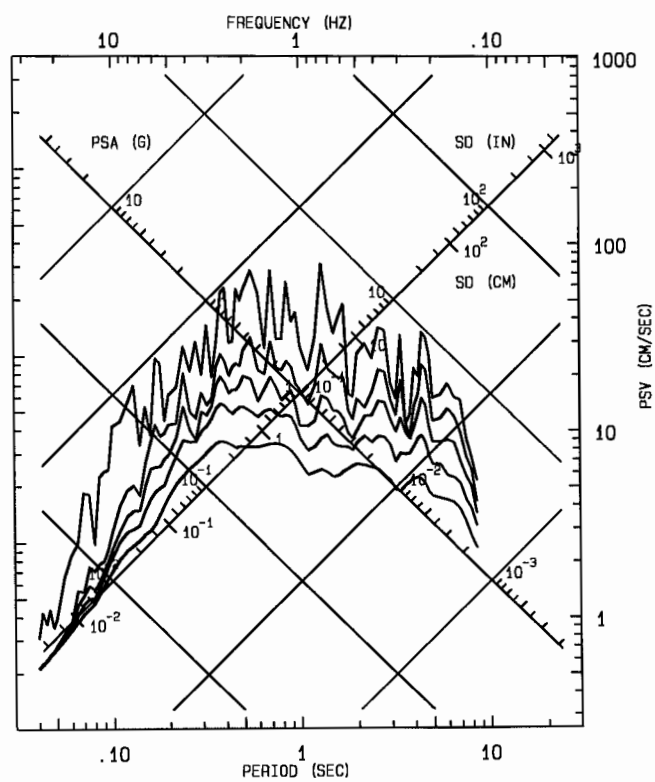
CHN 1: 0 DEG



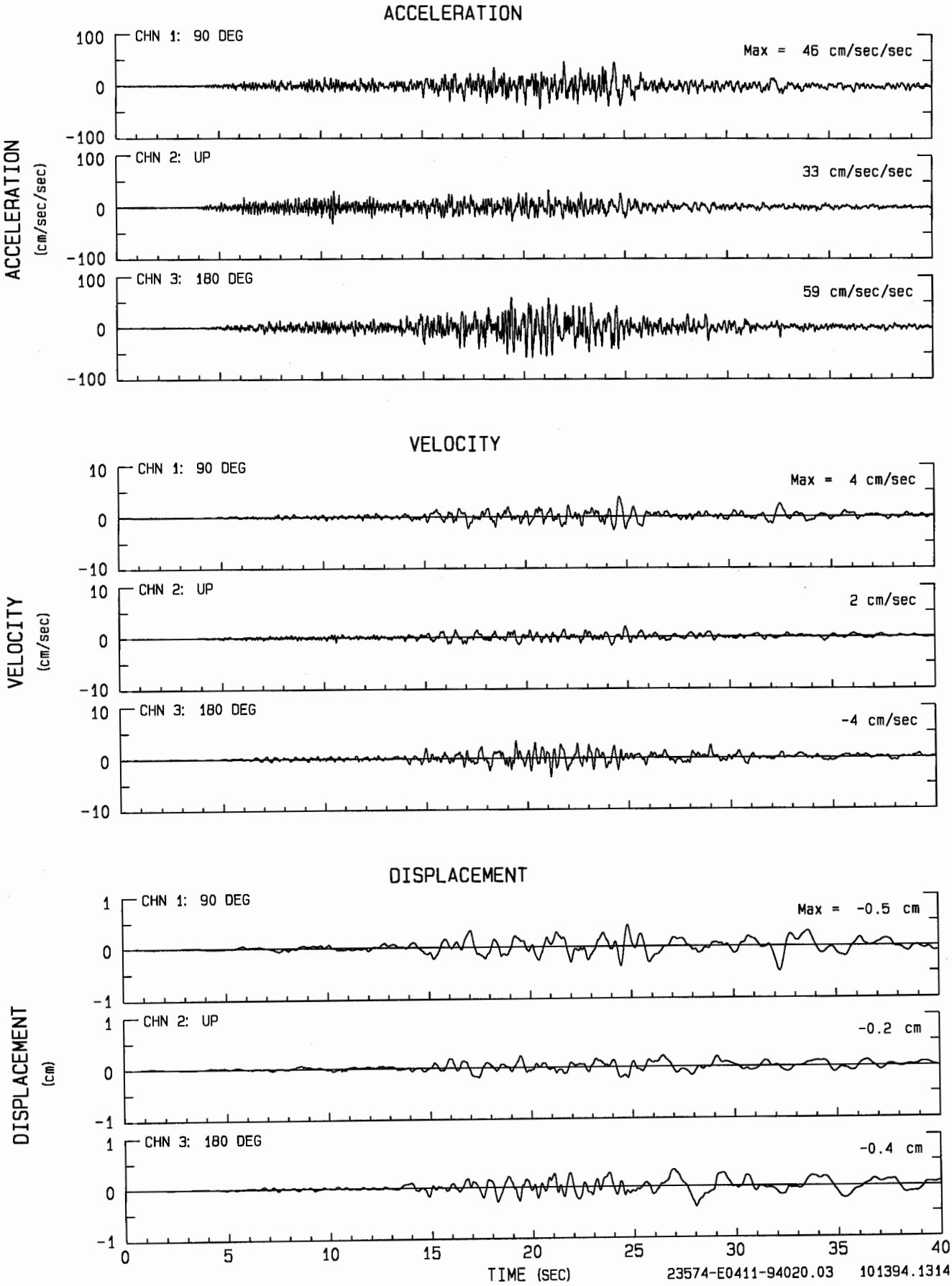
CHN 2: UP



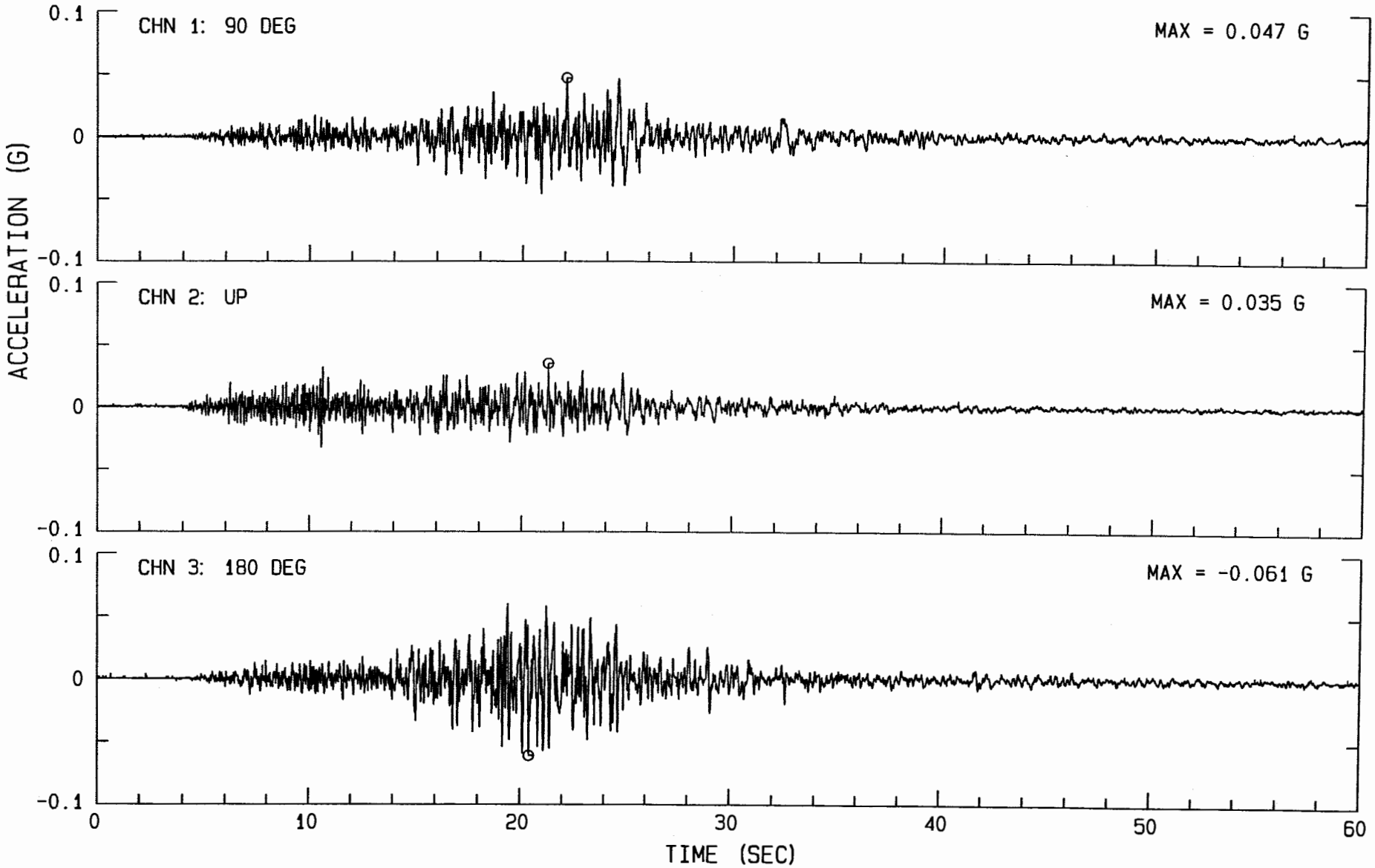
CHN 3: 90 DEG



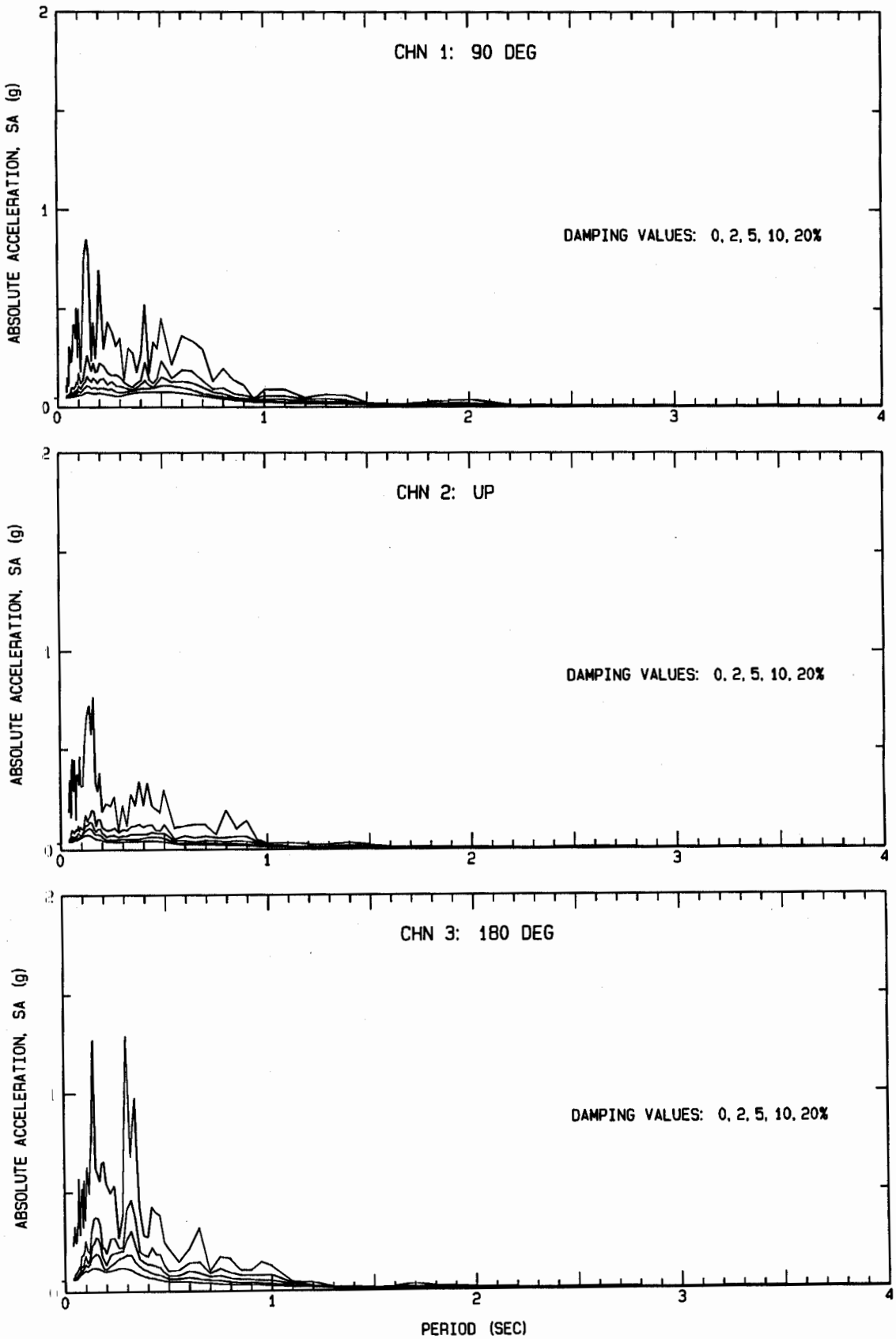
NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
WRIGHTWOOD - SWARTHOUT VALLEY CSMIP Sta Num 23574
Usable Data Bandwidth: .25 to 47.2 Hz (.02 to 4.0 Sec)



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
WRIGHTWOOD - SWARTHOUT VALLEY
UNCORRECTED ACCELEROGRAM 23574-E0411-D4020.03 101394.1303-GN94A574



NORTHRIDGE EARTHQUAKE JANUARY 17, 1994 04:31 PST
WRIGHTWOOD - SWARTHOUT VALLEY
ACCELEROGRAM BANDPASS-FILTERED WITH RAMPS AT .15-.30 TO 46.0-50.0 HZ.
23574-E0411-94020.03 112194.1240-QN94A574



WRIGHTWOOD - SWARTHOUT VALLEY: CSMIP S/N 574

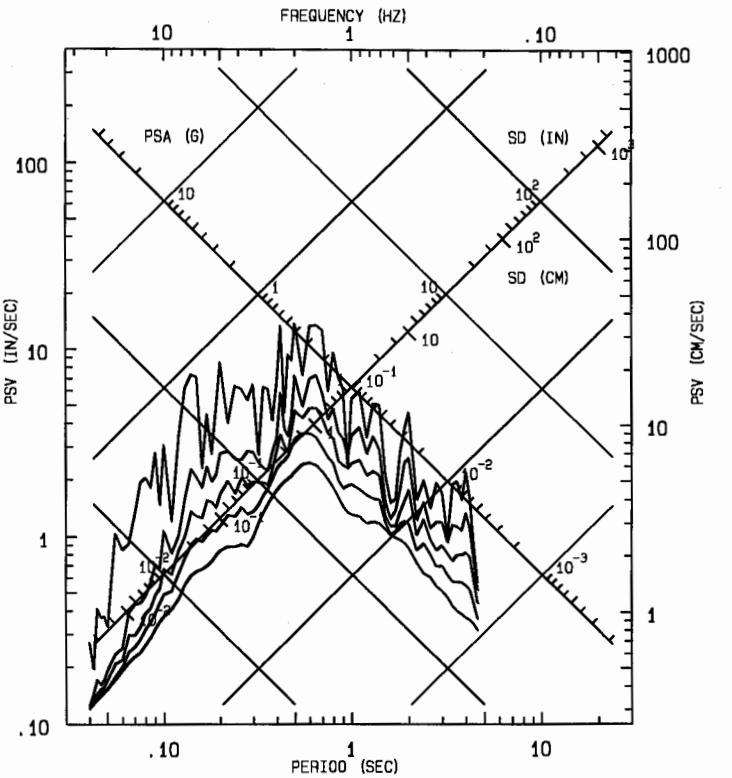
NORTHRIDGE EARTHQUAKE
JANUARY 17, 1994 04:31 PST

PHASE 3 DATA: RESPONSE SPECTRA
USABLE DATA BANDWIDTH: 0.25 TO 47.2 HZ
(0.02 TO 3.92 SEC)

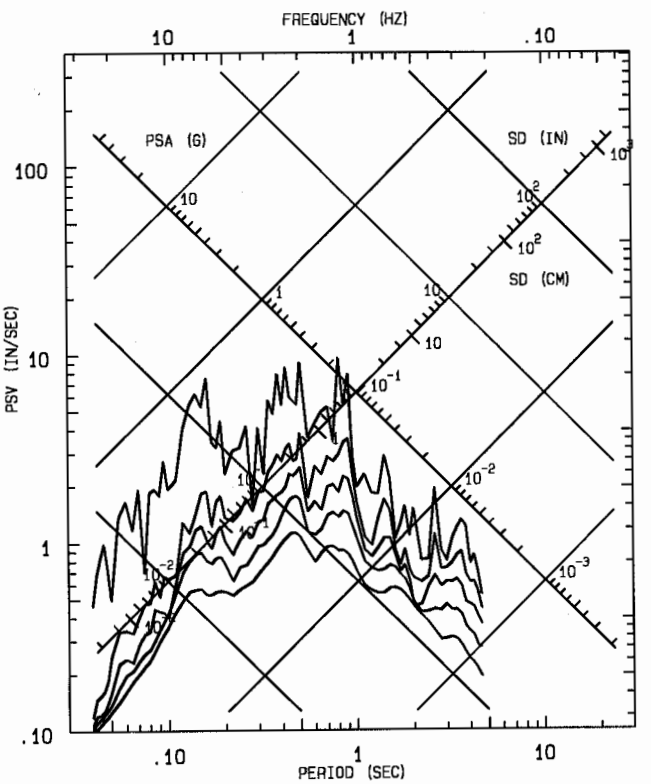
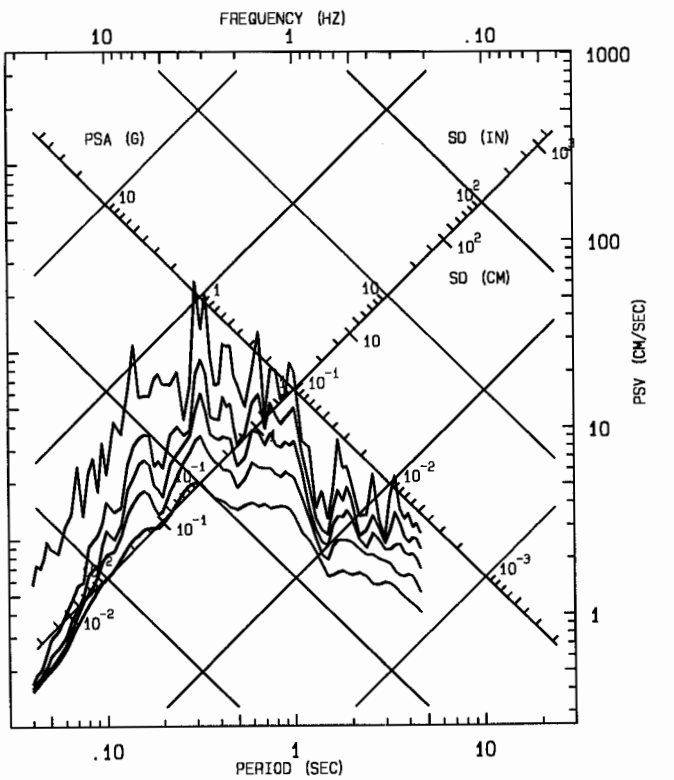
RECORD ID: 23574-E0411-94020.03

—— RESPONSE SPECTRA: PSV, PSA & SD
DAMPING VALUES: 0, 2, 5, 10, 20%

CHN 1: 90 DEG



CHN 2: UP



CHN 3: 180 DEG