Plots to Accompany Data Set: Landers (Release No. 1)

Preliminary Processed Strong-Motion Data for the Landers Earthquake of 28 June 1992

California Strong Motion Instrumentation Program (CSMIP)

OSMS 92-11

The attached plots are for the records from 6 selected ground-response stations for the 28 June 1992 Landers earthquake. For each station there is a set of plots which is identified by an index number at the upper corner of each page as follows:

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A preliminary release of these processed data is being made because of their unprecedented long-period content, probably due to the large magnitude of the earthquake. The bandwidth of the data extends beyond the traditional broadest bandwidth used by CSMIP, which dates back to the Caltech Bluebook processing. This bandwidth is 0.05-0.07 to 23-25 Hz, or 0.04 to 15 seconds period. The data appear to have reliable signal beyond 15 seconds period, but we need to extend the noise analysis of the CSMIP digitization system to increase knowledge about the noise in this period range. In the meantime, this preliminary release of the processed data within the traditional 0.04 to 15 sec bandwidth is being made so that users will not be delayed from analyzing the data. We expect the final release to differ inconsequentially in acceleration and response spectra; differences will be small in velocity, but could be important in long-period displacement.

For each of the stations listed above plots of the processed data are presented here. The order of the plots for each station is as follows:

1. Phase 1 (Vol. 1) data: uncorrected accelerations. Acceleration for the first 22 seconds is plotted with a common scaling factor of 0.3 g for all channels; three channels are plotted on one page. This plot is followed by a second plot with the full processed length (generally, 80 seconds), again with common scaling factor of 0.3 g for all channels.
2. Phase 2 (Vol. 2) data: instrument and baseline-corrected acceleration, velocity and displacement. The data for the full processed length of 80 seconds are plotted with equal scaling for all 6 stations. The filter frequencies used in the processing are indicated on the plots (see Usable Data Bandwidth).

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

4. 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.
DEFINITION OF USABLE DATA BANDWIDTH

The filter bands for each record are indicated on the plots for the Phase 2 and Phase 3 data. The digitized data are processed and filtered using Ormsby filters. The data are first low-pass filtered by a high-frequency filter with a corner frequency of 23 Hz and a roll-off termination frequency of 25 Hz. Then the data are high-pass filtered by 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 \( (f_{HC}, f_{LC}) \) used in the processing by using the formulas \( f_H = f_{HC} + 0.3 \times (f_{HC} - f_{LC}) \) and \( f_L = f_{LC} - 0.3 \times (f_{LC} - f_{LT}) \). For this **preliminary** processing, the usable data bandwidth for data bandpass-filtered with ramps at 0.05 to 0.07 Hz and 23.0 to 25.0 Hz is 0.064 Hz to 23.6 Hz (0.04 to 15 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.
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION
UNCORRECTED ACCELEROMETER 22074-S1695-92189.02 101472.1103-QL92A074

CHN 1: 360 DEG
MAX = -0.154 G

CHN 2: UP
MAX = -0.149 G

CHN 3: 270 DEG
MAX = -0.248 G
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION
UNCORRECTED ACCELEROMETER 22074-S1695-92189.02 101472.1103-QL92A074

CHN 1: 360 DEG
MAX = -0.154 G

CHN 2: UP
MAX = -0.149 G

CHN 3: 270 DEG
MAX = -0.248 G

ACCELERATION (G)
TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION  CHN 3: 270 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 Hz.  22074-S1695-92189.02  101472.1221-QL92A074

ACCELERATION (CM/SEC/SEC)

VELOCITY (CM/SEC)

DISPLACEMENT (CM)

TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION
CHN 1: 360 DEG
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22074-S1695-92189.02  101192.0048-QL92A074

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

FREQUENCY (HZ)

PSA (G)

SD (IN)

SD (CM)

PSV, FS (IN/SEC)

PSV, FS (CM/SEC)

PERIOD (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING)       JUNE 28, 1992 04:58 PDT
YERMO — FIRE STATION
CHN 2: UP
ACCELEROMETER BANDPASS-FILTERED WITH RAMP ANGLE .05-.07 TO 23.0-25.0 HZ.
22074-S1695-92189.02       101192.0048-QL92A074

RESPONSE SPECTRA: PSV, PSA & SD ——— FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
YERMO - FIRE STATION
CHN 3: 270 DEG
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22074-S1695--92189.02  101192.0048-QL92A074

RESPONSE SPECTRA: PSV, PSA & SD
FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
BARSTOW - VINEYARD & H ST.
UNCORRECTED ACCELEROMETER 23559-S0756-92189.02  101292.1844-QL92A559

CHN 1: 90 DEG  MAX = -0.138 G

CHN 2: UP  MAX = 0.072 G

CHN 3: 0 DEG  MAX = 0.138 G

ACCELERATION (G)

TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW - VINEYARD & H ST. CHN 2: UP
INSTRUMENT-CORRECTED AND BANDBPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 23559-S0756-92189.02 101492.1132-QL92A559

ACCELERATION (CM/SEC/SEC)
MAX = 64.4

VELOCITY (CM/SEC)
MAX = 7.45

DISPLACEMENT (CM)
MAX = 3.38

TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW - VINEYARD & H ST. CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 23559-S0756-92189.02 101492.1132-QL92A559

MAX = 129.0

MAX = -21.9

MAX = -19.0
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
BARSTOW -- VINEYARD & H ST.
CHN 1: 90 DEG
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
23559-S0756--92189.02  101492.1149--QL92A559

RESPONSE SPECTRA: PSV, PSA & SD
FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT BARSTOW – VINEYARD & H ST.
CHN 2: UP
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT 0.05–0.07 TO 23.0–25.0 HZ.
23559-S0756-92189.02 101492.1149-QL92A559

RESPONSE SPECTRA: PSV, PSA & SD  --- FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
BARSTOW — VINEYARD & H ST.
CHN 3: 0 DEG
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT 0.05-.07 TO 23.0–25.0 Hz.
23559–S0756–92189.02 101492.1149–QL92A559

RESPONSE SPECTRA: PSV, PSA & SD
FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%
LANDERS EARTHQUAKE (PRELIM. PROCESSING) - JUNE 28, 1992 04:58 PDT
BARSTOW - VINEYARD & H ST.
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT 0.05-0.07 TO 23.0-25.0 Hz.
23559-50756-92189.02 101492.1149-QL92A559

CHN 1: 90 DEG

DAMPING VALUES: 0, 2, 5, 10, 20%

CHN 2: UP

DAMPING VALUES: 0, 2, 5, 10, 20%

CHN 3: 0 DEG

DAMPING VALUES: 0, 2, 5, 10, 20%
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION
UNCORRECTED ACCELEROMETERS 22170-S1612-92180.04 101292.1758-QL92A170

CHN 1: 90 DEG  MAX = 0.287 G

CHN 2: UP  MAX = 0.181 G

CHN 3: 0 DEG  MAX = 0.275 G

ACCELERATION (G)

TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION
UNCORRECTED ACCELEROMETER 22170-S1612-92180.04 101292.1758-QL92A170

CHN 1: 90° DEG
MAX = 0.287 G

CHN 2: UP
MAX = 0.181 G

CHN 3: 0 DEG
MAX = 0.275 G

ACCELERATION (G)
TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 22170-S1612-92180.04 101492.1025-QL92A170

MAX = 278.4

MAX = -42.7

MAX = -15.7

ACCELERATION (CM/SEC/SEC)

VELOCITY (CM/SEC)

DISPLACEMENT (CM)

TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
JOSHUA TREE – FIRE STATION CHN 2: UP
INSTRUMENT-CORRECTED AND BANPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ.  22170-S1612-92180.04  101492.1025-QL92A170

MAX = -177.7

MAX = -14.8

MAX = 5.70
LANDERS EARTHQUAKE (PRELIM. PROCESSING)        JUNE 28, 1992 04:58 PDT
JOSHUA TREE - FIRE STATION       CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ.  22170-S1612-92180.04  101492.1025-QL92A170

ACCELERATION
(CM/SEC/SEC)

VELCITY
(CM/SEC)

DISPLACEMENT
(CM)

MAX = 268.3
MAX = 27.1
MAX = 7.90

TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE – FIRE STATION
CHN 1: 90 DEG
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT .05–.07 TO 23.0–25.0 HZ.
22170-S1612-92180.04 101492.1042-QL92A170

RESPONSE SPECTRA: PSV, PSA & SD — FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%
LANDERS EARTHQUAKE (PRELIM. PROCESSING)       JUNE 28, 1992 04:58 PDT  
JOSHUA TREE - FIRE STATION          
CHN:2: UP                            
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 Hz. 
22170-S1612-92180.04     101492.1042-QL92A170

RESPONSE SPECTRA: PSV, PSA & SD         FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE – FIRE STATION
CHN 3: 0 DEG
ACCELEROMETER BANDPASS-FILTERED WITH RAMP AT 0.05–0.07 TO 23.0–25.0 Hz.
22170-S1612-92180.04 101492.1042-QL92A170

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

FREQUENCY (HZ)

PSA (G)

SD (IN)

SD (CM)

PSV, FS (IN/SEC)

PSV, FS (CM/SEC)

PERIOD (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
JOSHUA TREE – FIRE STATION
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
22170-S1212-92100.04 101492.1042-QL92A170

CHN 1: 90 DEG

DAMPING VALUES: 0, 2, 5, 10, 20%

CHN 2: UP

DAMPING VALUES: 0, 2, 5, 10, 20%

CHN 3: 0 DEG

DAMPING VALUES: 0, 2, 5, 10, 20%

PERIOD (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
UNCORRECTED ACCELEROMETER 12149-S1832-92180.02  101292.1759-QL92A149

CHN 1: 90 DEG
MAX = -0.157 G

CHN 2: UP
MAX = -0.181 G

CHN 3: 0 DEG
MAX = 0.177 G

ACCELERATION (G)
TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
UNCORRECTED ACCELEROMETER 12149-S1832-92180.02  101292.1759-QL92A149

CHN 1: 90 DEG
MAX = -0.157 G

CHN 2: UP
MAX = -0.181 G

CHN 3: 0 DEG
MAX = 0.177 G

TIME (SEC)

ACCELERATION (G)
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
DESSERT HOT SPRINGS  CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ.  12149-S1832-92180.02  101492.1028-QL92A149

MAX = -151.0

MAX = -20.8

MAX = 6.95
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS  CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ.  12149-S1832-92180.02  101492.1028-QL92A149

ACCELERATION (CM/SEC/SEC)
MAX = -163.7

VELOCITY (CM/SEC)
MAX = -9.82

DISPLACEMENT (CM)
MAX = -3.39
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
CHN 1: 90 DEG
ACCELEROMGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12149-S1832-92180.02 101492.1045-QL92A149

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

FREQUENCY (HZ)

PSA (G)
SD (IN)
SD (CM)

PSV, FS (IN/SEC)

SD (CM/SEC)

PERIOD (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
CHN 2: UP
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12149-S1832-92180.02 101492.1045-QL92A149

RESPONSE SPECTRA: PSV, PSA & SD —— FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
CHN 3: 0 DEG
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT 0.05-0.07 TO 23.0-25.0 HZ.
12149-91832-92180.02 101492.1045-QL92A149

RESPONSE SPECTRA: PSV, PSA & SD  --- FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%

FREQUENCY (HZ)

PSA (G)

SD (IN)

SD (CM)

PSV, FS (IN/SEC)

PSV, FS (CM/SEC)

PERIOD (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
DESERT HOT SPRINGS
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT 0.05-0.07 TO 23.0-25.0 Hz.
12149-S1832-92180.02  101492.1045-QL92A149

CHN 1: 90 DEG

DAMPING VALUES: 0, 2, 5, 10, 20%

CHN 2: UP

DAMPING VALUES: 0, 2, 5, 10, 20%

CHN 3: 0 DEG

DAMPING VALUES: 0, 2, 5, 10, 20%

PERIOD (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT
UNCORRECTED ACCELEROMETER 12025-S1833-92180.04  101292.1655-QL92A025

CHN 1: 90 DEG
MAX = -0.093 G

CHN 2: UP
MAX = -0.099 G

CHN 3: 0 DEG
MAX = -0.081 G

ACCELERATION (G)

TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
Palm Springs - Airport  CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BAND-PASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 0.05-0.07 TO 23.0-25.0 HZ.  12025-S1833-92180.04  101492.0907-QL92A025

ACCELERATION (CM/SEC/SEC)
MAX = -87.2

VELOCITY (CM/SEC)
MAX = 13.9

DISPLACEMENT (CM)
MAX = 4.99

TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: 0.05-0.07 TO 23.0-25.0 Hz.
12025-S1833-921B0.04 101492.0907-0L92A025

ACCELERATION (CM/SEC/SEC) MAX = -106.2

 VELOCITY (CM/SEC) MAX = -6.77

 DISPLACEMENT (CM) MAX = -2.58

TIME (SEC) 0 10 20 30 40 50 60 70 80
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT CHN 3: 0 DEG
INSTRUMENT-Corrected AND BANDPASS-Filtered ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 12025-S1833-92180.04 101492.0907-QL92A025

ACCELERATION (CM/SEC/SEC)
MAX = -74.2

VELOCITY (CM/SEC)
MAX = -10.8

DISPLACEMENT (CM)
MAX = 6.79
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT
CHN 1: 90 DEG
ACCELEROMGRAM BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12025-S1833-92180.04  101492.0937-QL92A025

RESPONSE SPECTRA: PSV, PSA & SD  --  FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%

FREQUENCY (HZ)

PSA (G)

SD (IN)

SD (CM)

PSV, FS (IN/SEC)

PSV, FS (CM/SEC)

PERIOD (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT
CHN 2: UP
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT 0.05-0.07 TO 23.0-25.0 Hz.
12025-S1833-92180.04 101492.0937-QL92A025

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

FREQUENCY (HZ)

PSA (G)

SD (IN)

SD (CM)

PSV, FS (IN/SEC)

PSV, FS (CM/SEC)

PERIOD (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT
CHN 3: 0 DEG
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12025-S1833-92180.04 101492.0937-QL92A025

RESPONSE SPECTRA: PSV, PSA & SD
FOURIER AMPLITUDE SPECTRUM: FS
DAMPING VALUES: 0, 2, 5, 10, 20%
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
PALM SPRINGS - AIRPORT
ACCELEROGRAm BANDPASS-FILTERED WITH RAMPS AT .05-.07 TO 23.0-25.0 HZ.
12025-S1833-92180.04 101492.0937-QL92A025

CHN 1: 90 DEG

DAMPING VALUES: 0.2, 5, 10, 20%

CHN 2: UP

DAMPING VALUES: 0.2, 5, 10, 20%

CHN 3: 0 DEG

DAMPING VALUES: 0.2, 5, 10, 20%
LANDERS EARTHQUAKE (PRELIM. PROCESSING)  JUNE 28, 1992 04:58 PDT
INGLEWOOD - UNION OIL YARD
UNCORRECTED ACCELEROMETER 14196-S1874-92191.02  101292.1843-QL92A196

CHN 1: 90 DEG  MAX = -0.034 G

CHN 2: UP  MAX = 0.018 G

CHN 3: 0 DEG  MAX = -0.044 G

ACCELERATION (G)

TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD - UNION OIL YARD CHN 1: 90 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ. 14196-S1874-92191.02 101492.1126-QL92A196

Max = -34.3

Max = 10.5

Max = -10.2

TIME (SEC)

ACCELERATION (CM/SEC/SEC)

VELOCITY (CM/SEC)

DISPLACEMENT (CM)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD - UNION OIL YARD CHN 2: UP
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ.

ACCELERATION (CM/SEC/SEC)
MAX = 14.8

VELOCITY (CM/SEC)
MAX = -4.75

DISPLACEMENT (CM)
MAX = 5.21
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD - UNION OIL YARD CHN 3: 0 DEG
INSTRUMENT-CORRECTED AND BANDPASS-FILTERED ACCELERATION, VELOCITY AND DISPLACEMENT
FILTER BAND: .05-.07 TO 23.0-25.0 HZ.  14196-S1874-92191.02  101492.1126-QL92A196

ACCELERATION (CM/SEC/SEC)

MAX = -41.8

VELOCITY (CM/SEC)

MAX = 15.3

DISPLACEMENT (CM)

MAX = 18.4

TIME (SEC)
LANDERS EARTHQUAKE (PRELIM. PROCESSING) JUNE 28, 1992 04:58 PDT
INGLEWOOD – UNION OIL YARD
CHN 1: 90 DEG
ACCELEROMETER BANDPASS-FILTERED WITH RAMPS AT 0.05-0.07 TO 23.0-25.0 HZ.
14196-S1874-92191.02 101492.1142-QL92A196

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