CALIFORNIA INSTITUTE OF TECHNOLOGY
EARTHQUAKE ENGINEERING RESEARCH LABORATORY

ANALYSES
OF
STRONG MOTION EARTHQUAKE ACCELEROGRAMS

Volume IV - Fourier Amplitude Spectra
Part F - Accelerograms IIIF086 through IIIF105

EERL 73-104

A Report on Research Conducted Under a Grant
from the National Science Foundation

Pasadena, California
October, 1973
ABSTRACT

This is the sixth report of a series presenting Fourier amplitude spectra for earthquake ground motions and for structural response accelerations. Volume IV, Part A, Report No. EERL 72-100 included an introduction summarizing Fourier spectrum techniques in earthquake engineering as a background to the use of the data. For each earthquake accelerogram, two spectrum plots are given - a Fourier amplitude spectrum versus frequency on a linear scale, and a log-spectrum, log-frequency plot. In the series, Fourier amplitude spectra will be given for all corrected accelerograms, including building response measurements. The corrected records analyzed in this report, Volume IV, Part F, appeared in Volume II, Part F, Report No. EERL 73-51. Their uncorrected versions were published in Volume I, Part F, Report No. EERL 71-23.
# TABLE OF CONTENTS

<table>
<thead>
<tr>
<th>Section</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>Preface</td>
<td>1</td>
</tr>
<tr>
<td>Index of Earthquake Records, Earthquake Data and References for Volume IV, Part F</td>
<td>5</td>
</tr>
<tr>
<td>Plots of Fourier Amplitude Spectra for Accelerograms IIIF086 through IIIF105</td>
<td>10</td>
</tr>
<tr>
<td>List of EERL Reports Available from NTIS</td>
<td>130</td>
</tr>
</tbody>
</table>
PREFACE

This report, Volume IV, Part F, Report No. EERL 73-104 is the sixth report of the Volume IV series presenting Fourier spectrum curves calculated from corrected strong-motion accelerograms including measurements in structures as well as at ground sites. An extensive introduction was prepared for Volume IV, Part A, Report No. EERL 72-100, where details of the methods used can be found together with examples of applications to various problems of earthquake engineering and strong-motion seismology. That introduction should also serve as a basic summary of background information for users of the data.

The series of reports in Volume I present "uncorrected" digitized and plotted strong-motion earthquake accelerograph data, while the series in Volume II present corrected digitized data prepared so that the maximum information over the widest practicable frequency range would be available. The corrections include high frequency smoothing, an instrument correction to account for the high frequency response characteristics of the accelerograph transducer, and long period filtering to ensure a uniform type of base-line adjustment.

A detailed description of the component direction nomenclature for the records was given in Volume II, Part B, Report No. EERL 72-50. Consistent with this, the component direction, where it appears in this report, refers to the direction of the transducer pendulum motion for the trace to be deflected "up" on the record when viewed in the normal way with time increasing from left to right. The direction of true ground acceleration is opposite to this pendulum motion direction. The spectral calculations in this Volume IV, however, are concerned with the amplitude spectrum only and the particular component sense is thus immaterial.

For each component in the following pages the Fourier amplitude spectrum is presented in two forms - a linear plot and a log-log plot. Details concerning identification are given at the top of each plot. The second line gives the name, date, and time of occurrence of the earthquake; the third line is comprised of two labels, the observation station and the component processed. The Roman numeral "IV" in the first identification label indicates that the results pertain to the fourth stage of data processing, i.e., Volume IV of Fourier spectra of accelerometer records already corrected for baseline adjustment and instrument response. The letter "F" following the Roman numerals implies that the processed record belongs to Part F of Volume II. The three digit number completing the first label is the Caltech Reference Number for the given earthquake record in Volume I, right-adjusted in a three-digit numerical field. The second label is a string of three numbers separated by periods; the first number gives the year in which the earthquake occurred; the second is the serial number of the record
as it was received at the Caltech Earthquake Engineering Research Laboratory during that year; and the last number indicates whether it was a main event or an aftershock (sequentially numbered, the main event starting from zero). On the linear spectrum plot, the data lying above the 95 percent confidence level may be considered relevant to that degree. The spectra have been plotted up to a frequency of 25 cyc/sec on linear and logarithmic scales, corresponding to the capabilities of the instrumentation and data processing methods used.

A reproduction of the corrected digitized version of the acceleration – time record corresponding to each spectrum plot appears in Volume II, Part F, Report No. EERL 73-51.

This report presents many spectra of accelerograms recorded simultaneously at different locations in the same building, for example, IVF089, IVF090, and IVF091, at 808 S. Olive, at street level, 4th and 8th levels. At present it is planned to calculate frequency transfer functions involving smoothing and calculating the ratio of two such spectra in supplementary reports.

The cooperative efforts of many people are essential in the preparation of a series of reports of this kind and we have been fortunate in the quality of staff that has carried out the various details with special care and attention. We should like to express our appreciation to Mr. James E. Justiss for his assistance with many details of computer programming, to Miss Barbara Turner and Miss Sharon Vedrode for the care taken over typing and editing, to the staff of the Willis H. Booth Computing Center for their continued help with all aspects of the computing process, and to the staff of the Caltech Graphic Arts Facilities for
very efficient work on publication details. The whole project has been made possible by the continued support of the National Science Foundation, supplemented in an important way by contributions from the Earthquake Research Affiliates program of the California Institute of Technology.

M. D. Trifunac
A. G. Brady
D. E. Hudson
Earthquake Engineering Research Laboratory
California Institute of Technology
INDEX OF EARTHQUAKE RECORDS IN
VOLUME IV, PART F

Records                                                                 Page

San Fernando Earthquake, February 9, 1971 - 0600 PST
IVF086; CMD Bldg., Vernon, Calif.; N83W, S07W, Up                  10
IVF087; Orange County Engr. Bldg., Santa Ana, Calif.; S04E, S86W, Up 16
IVF088; 633 E. Broadway, Glendale, Calif.; S70E, S20W, Down        22
IVF089; 808 S. Olive, Los Angeles, Calif.; Street level; S53E, S37W, Down 28
IVF090; 808 S. Olive, Los Angeles, Calif.; 4th level; N37E, S53E, Down 34
IVF091; 808 S. Olive, Los Angeles, Calif.; 8th level; S53E, S37W, Down 40
IVF092; 2011 Zonal, Los Angeles, Calif.; Basement, S62E, S28W, Down 46
IVF093; 2011 Zonal, Los Angeles, Calif.; 5th floor; S62E, S28W, Down 52
IVF094; 2011 Zonal, Los Angeles, Calif.; 9th floor; S62E, S28W, Down 58
IVF095; 120 N. Robertson, Los Angeles, Calif.; Sub-basement; S88E, S02W, Down 64
IVF096; 120 N. Robertson, Los Angeles, Calif.; 4th floor; S88E, S02W, Down 70
IVF097; 120 N. Robertson, Los Angeles, Calif.; 9th floor; S88E, S02W, Down 76
IVF098; 646 S. Olive, Los Angeles, Calif.; Basement; S53E, S37W, Down 82
IVF099; 646 S. Olive, Los Angeles, Calif.; 4th floor; S53E, S37W, Down 88
IVF100; 646 S. Olive, Los Angeles, Calif.; Roof; S53E, S37W, Down    94
IVF101; So. Calif. Edison Co., Colton, Calif.; S, E, Up            100
IVF102; Fort Tejon, Calif.; N, E, Down                             106
IVF103; Pearblossom Pumping Plant, Pearblossom, Calif.; N, W, Down 112
IVF104; Oso Pumping Plant, Gorman, Calif.; N, W, Down              118
IVF105; UCLA Reactor Lab., Los Angeles, Calif.; S, E, Up          124
EARTHQUAKE DATA

The San Fernando, California, Earthquake of February 9, 1971, 0600 PST; epicenter, 34°24.0'N, 118°23.7'W; maximum intensity, XI; magnitude, \( M_L \), 6.6; depth, 13.0 km.
REFERENCES (See additional list, page 130)


PAGE 9 IS BLANK
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF086  71.100.0  VERNON, CMD BLDG., CAL.  COMP N83W

FOURIER AMPLITUDE SPECTRUM - CM/SEC

95 PERCENT CONFIDENCE LEVEL

FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF086  71.100.0  VERNON, CMD BLDG., CAL.  COMP N83W

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC

LOG OF FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF086  71.100.0  VERNON, CMD BLDG., CAL.  COMP UP

FOURIER AMPLITUDE SPECTRUM - CM/SEC

FREQUENCY - CPS

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUD SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF087, 71.101.0  ENGINEERING BUILDING, SANTA ANA, ORANGE COUNTY, CAL.  COMP SO4E

FOURIER AMPLITUDE SPECTRUM - CM/SEC

FREQUENCY - CPS

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION

SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST

IVF087 71.101.0 ENGINEERING BUILDING, SANTA ANA, ORANGE COUNTY, CAL. COMP S66W

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVFO87  71.101.0  ENGINEERING BUILDING, SANTA ANA, ORANGE COUNTY, CAL.  COMP UP

FOURIER AMPLITUDE SPECTRUM - CM/SEC

FREQUENCY - CPS

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SUN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
633 EAST BROADWAY, MUNICIPAL SERVICE BLDG., GLENDALE, CAL.

FOURIER AMPLITUDE SPECTRUM - CM/SEC

FREQUENCY - CPS

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST

IVF086  71.102.0  633 EAST BROADWAY, MUNICIPAL SERVICE BLDG., GLENDALE, CAL.  COMP S20W

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE    FEB 9, 1971 - 0600 PST
IVFO08  71.102.0   633 EAST BROADWAY, MUNICIPAL SERVICE BLDG., GLENDALE, CAL.  COMP DOWN

FOURIER AMPLITUDE SPECTRUM - CM/SEC

0  5  10  15  20  25  FREQUENCY - CPS

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF088 71.102.0  633 EAST BROADWAY, MUNICIPAL SERVICE BLDG., GLENDALE, CAL.  COMP DOWN
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE    FEB 9, 1971 - 0600 PST
IVF089 71.247.0  808 SOUTH OLIVE STREET, STREET LEVEL, LOS ANGELES, CAL.  COMP S37W

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF089  71.247.0  808 SOUTH OLIVE STREET, STREET LEVEL, LOS ANGELES, CAL.  COMP S37W

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC

LOG OF FREQUENCY - CPS

-2
-1
0
1
2
-2
-1
0
1
2
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF089  71.247.0  808 SOUTH OLIVE STREET, STREET LEVEL, LOS ANGELES, CAL.  COMP DOWN

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC

LOG OF FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST

IVFO90 71.103.0 808 SOUTH OLIVE STREET, 4TH LEVEL, LOS ANGELES, CAL. COMP N37E
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE   FEB 9, 1971 - 0600 PST
IVFO90  71.103.0  800 SOUTH OLIVE STREET, 4TH LEVEL, LOS ANGELES, CAL.  COMP 553E

FREQUENCY - CPS

FOURIER AMPLITUDE SPECTRUM - CM/SEC

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE     FEB 9, 1971 - 0600 PST
IVFO90  71.103.0  808 SOUTH OLIVE STREET, 4TH LEVEL, LOS ANGELES, CAL.    COMP S53E

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC

LOG OF FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE    FEB 9, 1971 - 0600 PST
IVFO90  71.103.0  808 SOUTH OLIVE STREET, 4TH LEVEL, LOS ANGELES, CAL.    COMP DOWN

FOURIER AMPLITUDE SPECTRUM - CM/SEC

FREQUENCY - CPS

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE    FEB 9, 1971 - 0600 PST
IVF090  71.103.0  808 SOUTH OLIVE STREET, 4TH LEVEL, LOS ANGELES, CAL.  COMP DOWN

LOG OF FREQUENCY - CPS

LOG OF FOURIER AMPLITUDE SPECTRUM - CN/SEC
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVFO92 71.105.0 2011 ZONAL AVENUE, BASEMENT, LOS ANGELES, CAL. COMP S28W

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC

LOG OF FREQUENCY - CPS

-2.0
-1.0
0.0
1.0
2.0
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
IVF092 71.105.0 2011 ZONAL AVENUE, BASEMENT, LOS ANGELES, CAL. COMP DOWN

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
1VF092 71,105.0 2011 ZONAL AVENUE, BASEMENT, LOS ANGELES, CAL.  COMP DOWN

LOG OF FOURIER AMPLITUDE SPECTRUM - CH/SEC

LOG OF FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVFO93 71.106.0 2011 ZONAL AVENUE, 5TH FLOOR, LOS ANGELES, CAL. COMP DOWN

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
IVF093 71.106.0 2011 ZONAL AVENUE, 5TH FLOOR, LOS ANGELES, CAL. COMP DOWN

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC

LOG OF FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
300 200 100 0
FREQUENCY - CPS
IVF94 71.107.0 2011 ZONAL AVENUE, 9TH FLOOR, LOS ANGELES, CAL...
COMP S62E
FREQUENCY - CPS
95 PERCENT CONFIDENCE LEVEL
FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM - CM/SEC
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
IVF094 71.107.0 2011 ZONAL AVENUE, 9TH FLOOR, LOS ANGELES, CAL. COMP DOWN

95 PERCENT CONFIDENCE LEVEL

FREQUENCY - CPS

FREQUENCY - CM/SEC
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
IVF094 71.107.0 2011 ZONAL AVENUE, 9TH FLOOR, LOS ANGELES, CAL. COMP DOWN

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC

LOG OF FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB. 9, 1971 - 0600 PST
120 North Robertson Blvd., Sub-Basement, Los Angeles, Calif., Comp S88B

LOG OF FREQUENCY - CPS

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF09S 71.111.0  120 NORTH ROBERTSON BLVD., SUB-BASEMENT, LOS ANGELES, CAL.  COMP DOWN

FOURIER AMPLITUDE SPECTRUM - CM/SEC

FREQUENCY - CPS

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE, FEB 9, 1971 - 0600 PST
120 NORTH ROBERTSON BLVD., SUB-BASEMENT, LOS ANGELES, CAL.

LOG OF FREQUENCY - CPS

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVFO97  71.113.0  120 NORTH ROBERTSON BLVD., 9TH FLOOR, LOS ANGELES, CAL.  COMP 502W

FOURIER AMPLITUDE SPECTRUM - CM/SEC

FREQUENCY - CPS

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
IVF097 71.113.0 120 NORTH ROBERTSON BLVD., 9TH FLOOR, LOS ANGELES, CAL. COMP S02W

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC

LOG OF FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVFO98  71.114.0  646 SOUTH OLIVE AVENUE, BASEMENT, LOS ANGELES, CAL.  COMP S37W
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF099  71.115.0  646 SOUTH OLIVE AVENUE, 4TH LEVEL, LOS ANGELES, CAL.  COMP S53E

FREQUENCY - CPS

45 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971  0600 PST
IVF099  71.115.0  646 SOUTH OLIVE AVENUE, 4TH LEVEL, LOS ANGELES, CAL.  COMP DOWN

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF099 71.115.0  646 SOUTH OLIVE AVENUE, 4TH LEVEL, LOS ANGELES, CAL.  COMP DOWN

LOG OF FREQUENCY - CPS

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF100  71.116.0  646 SOUTH OLIVE AVENUE, ROOF, LOS ANGELES, CAL.  COMP S53E

FOURIER AMPLITUDE SPECTRUM - CM/SEC

FREQUENCY - CPS

--- 95 PERCENT CONFIDENCE LEVEL ---
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF100 71.116.0 646 SOUTH OLIVE AVENUE, ROOF, LOS ANGELES, CAL,  COMP S53E

-95-
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
IVF100 71.116.0 646 SOUTH OLIVE AVENUE, ROOF, LOS ANGELES, CAL. COMP S37W

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC

LOG OF FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF100  71.116.0  646 SOUTH OLIVE AVENUE, ROOF, LOS ANGELES, CAL.  COMP DOWN

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE    FEB 9, 1971 - 0600 PST
IVF101  71.142.0  EDISON COMPANY, COLTON, CAL.  COMP 800W

FREQUENCY - CPS
0  5  10  15  20  25

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
IVF101 71.142.0 EDISON COMPANY, COLTON, CAL. COMP NG0E

FOURIER AMPLITUDE SPECTRUM - CM/SEC

FREQUENCY - CPS

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF101  71.142.0  EDISON COMPANY, COLTON, CAL.  COMP UP

FREQUENCY - CPS

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF102  71.143.0 FT. TEJON. TEJON. CAL.  COMP NODE

FOURIER AMPLITUDE SPECTRUM - CM/SEC

95 PERCENT CONFIDENCE LEVEL

FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE    FEB 9, 1971 - 0600 PST
IVF102  71.143.0  FT, TEJON, TEJON, CAL.  COMP N90E

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC

LOG OF FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF102 71,143.0 FT, TEJON, TEJON, CAL, COMP DOWN
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF103  71.144.0  PUMPING PLANT, PEARBLOSSOM, CAL.  COMP NG0W

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
LVF103 71,144.0 PUMPING PLANT, PEARLBLOSSOM, CAL. COMP DOWN

95 PERCENT CONFIDENCE LEVEL

FREQUENCY - CPS

FOURIER AMPLITUDE SPECTRUM - CM/SEC
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
IVFI04 71.146.0 OSO PUMPING PLANT, GORMAN, CAL., COMP NOOE

FOURIER AMPLITUDE SPECTRUM - CM/SEC

FREQUENCY - CPS

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF104  71.146.0  OSO PUMPING PLANT, GORMAN, CAL.  COMP NODE

LOG OF FOURIER AMPLITUDE SPECTRUM - CM/SEC

LOG OF FREQUENCY - CPS
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE FEB 9, 1971 - 0600 PST
IVF104 71.146.0 OSO PUMPING PLANT, GORMAN, CAL. COMP DOWN

FREQUENCY - CPS

FOURIER AMPLITUDE SPECTRUM - CM/SEC

95 PERCENT CONFIDENCE LEVEL
FOURIER AMPLITUDE SPECTRUM OF ACCELERATION
SAN FERNANDO EARTHQUAKE  FEB 9, 1971 - 0600 PST
IVF104  71.146.0  OSO PUMPING PLANT, GORMAN, CAL.  COMP DOWN
California Institute of Technology
Earthquake Engineering Research Laboratory

The following reports of the Earthquake Engineering Research Laboratory from 1970 on can be obtained from the National Technical Information Service, Springfield, Virginia 22151:

<table>
<thead>
<tr>
<th>EERL</th>
<th>Title</th>
<th>PB</th>
</tr>
</thead>
<tbody>
<tr>
<td>70-20</td>
<td>Strong-Motion Earthquake Accelograms - Digitized and Plotted Data</td>
<td>PB-187847</td>
</tr>
<tr>
<td>70-21</td>
<td>&quot;</td>
<td>PB-196823</td>
</tr>
<tr>
<td>71-20</td>
<td>&quot;</td>
<td>PB-204364</td>
</tr>
<tr>
<td>71-21</td>
<td>&quot;</td>
<td>PB-208529</td>
</tr>
<tr>
<td>71-22</td>
<td>&quot;</td>
<td>PB-209749</td>
</tr>
<tr>
<td>71-23</td>
<td>&quot;</td>
<td>PB-210619</td>
</tr>
<tr>
<td>72-20</td>
<td>&quot;</td>
<td>PB-211357</td>
</tr>
<tr>
<td>72-21</td>
<td>&quot;</td>
<td>PB-211781</td>
</tr>
<tr>
<td>72-22</td>
<td>&quot;</td>
<td>PB-213422</td>
</tr>
<tr>
<td>72-23</td>
<td>&quot;</td>
<td>PB-213423</td>
</tr>
<tr>
<td>72-24</td>
<td>&quot;</td>
<td>PB-213424</td>
</tr>
<tr>
<td>72-25</td>
<td>&quot;</td>
<td>PB-215639</td>
</tr>
<tr>
<td>72-26</td>
<td>&quot;</td>
<td>PB-220554</td>
</tr>
<tr>
<td>72-27</td>
<td>&quot;</td>
<td>PB-223023</td>
</tr>
<tr>
<td>73-20</td>
<td>&quot;</td>
<td>PB-222417</td>
</tr>
<tr>
<td>71-50</td>
<td>Strong-Motion Earthquake Accelograms: Corrected Accelerograms and</td>
<td>PB-208283</td>
</tr>
<tr>
<td></td>
<td>Integrated Ground Velocity and Displacement Curves</td>
<td></td>
</tr>
<tr>
<td>72-50</td>
<td>&quot;</td>
<td>PB-220161</td>
</tr>
<tr>
<td>72-51</td>
<td>&quot;</td>
<td>PB-220162</td>
</tr>
<tr>
<td>72-52</td>
<td>&quot;</td>
<td>PB-220836</td>
</tr>
<tr>
<td>73-50</td>
<td>&quot;</td>
<td>PB-223024</td>
</tr>
<tr>
<td>72-80</td>
<td>Analyses of Strong Motion Earthquake Accelerograms - Response Spectra</td>
<td>PB-212602</td>
</tr>
<tr>
<td>73-80</td>
<td>&quot;</td>
<td>PB-221256</td>
</tr>
<tr>
<td>73-81</td>
<td>&quot;</td>
<td>PB-223025</td>
</tr>
<tr>
<td>72-100</td>
<td>Analyses of Strong Motion Earthquake Accelerograms: Fourier Amplitude</td>
<td>PB-212603</td>
</tr>
<tr>
<td></td>
<td>Spectra</td>
<td></td>
</tr>
<tr>
<td>73-100</td>
<td>&quot;</td>
<td>PB-220837</td>
</tr>
<tr>
<td>Joint Report</td>
<td>Title</td>
<td>Publication Code</td>
</tr>
<tr>
<td>-------------</td>
<td>-------</td>
<td>------------------</td>
</tr>
<tr>
<td>EERL 71-01</td>
<td>P. C. Jennings et al, Forced Vibration of a 22-Story Steel Frame Building</td>
<td>PB-205 161</td>
</tr>
<tr>
<td>EERL 71-02</td>
<td>P. C. Jennings, ed., Engineering Features of the San Fernando Earthquake</td>
<td>PB-202 550</td>
</tr>
<tr>
<td>EERL 71-03</td>
<td>Randolph A. Adu, Response and Failure of Structures under Stationary Random Excitation</td>
<td>PB-205 304</td>
</tr>
<tr>
<td>EERL 71-04</td>
<td>Jacobo Bielak, Earthquake Response of Building-Foundation Systems</td>
<td>PB-205 305</td>
</tr>
<tr>
<td>EERL 71-05</td>
<td>M. D. Trifunac, F. E. Udwadia, A. G. Brady, High Frequency Errors and Instrument Corrections of Strong-Motion Accelerograms</td>
<td>PB-205 369</td>
</tr>
<tr>
<td>EERL 71-06</td>
<td>Knut Sverre Skattum, Dynamic Analysis of Coupled Shear Walls and Sandwich Beams</td>
<td>PB-205 267</td>
</tr>
<tr>
<td>EERL 71-07</td>
<td>John Brent Hoerner, Modal Coupling and Earthquake Response of Tall Buildings</td>
<td>PB-207 635</td>
</tr>
<tr>
<td>EERL 72-01</td>
<td>P. C. Jennings and J. Bielak, Dynamics of Building-Soil Interaction</td>
<td>PB-209 666</td>
</tr>
<tr>
<td>EERL 72-02</td>
<td>F. E. Udwadia, Investigation of Earthquake and Microtremor Ground Motions</td>
<td>PB-212 853</td>
</tr>
<tr>
<td>DRC 72-01</td>
<td>Albert W. Whitney, On Insurance Settlements Incident to the 1906 San Francisco Fire</td>
<td>PB-213 256</td>
</tr>
<tr>
<td>EERL 72-04</td>
<td>J. H. Wood, Analysis of the Earthquake Response of a Nine-Story Steel Frame Building during the San Fernando Earthquake</td>
<td>PB-215 823</td>
</tr>
<tr>
<td>EERL 73-02</td>
<td>Research Papers Submitted to Fifth World Conference on Earthquake Engineering, Rome, Italy, 25-29 June 1973</td>
<td>PB-220 431</td>
</tr>
<tr>
<td>DRC 73-02</td>
<td>Earthquakes and Insurance, Papers presented at the Earthquake Research Affiliates Conference, 2-3 April 1973, at the California Institute of Technology</td>
<td>PB-223 033</td>
</tr>
</tbody>
</table>