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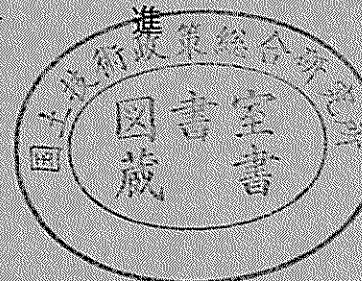
STORONG - MOTION EARTHQUAKE RECORDS ON THE 1994
HOKKAIDO-TOHO - OKI EARTHQUAKE IN PORT AREAS

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1994年北海道東方沖地震の港湾地域における強震記録

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STRONG - MOTION EARTHQUAKE RECORDS ON
THE 1994 HOKKAIDO - TOHO - OKI EARTHQUAKE IN PORT AREAS

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1994年北海道東方沖地震の港湾地域における強震記録

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要 旨

1994年10月4日22時22分56秒、北海道の東方を震源とする気象庁マグニチュード8.1の地震が発生した。気象庁によって、この地震は「平成6年(1994年)北海道東方沖地震」と命名された。本地震の震源位置は、北緯43度22.3分、東経147度42.5分、深さ23kmであった。本地震によって、北海道の釧路で震度VIの烈震、根室、広尾、浦河で震度Vの強震が記録されたのをはじめ、北海道および東北の各地に激しい地震動がもたらされ多くの被害が発生した。これらの被害により、港湾施設の被害額は全体で約135億円に達した。

1962年より観測が開始され、1963年から記録が得られている港湾地域強震観測網においては、本地震によって19港30地点で強震計が作動し、13港20地点でデジタルデータとしての加速度記録を得ることができた。デジタル記録が得られた港湾は、浦河港、苫小牧港、相馬港、大船渡港(構造物)、十勝港、函館港(地表2箇所・地中基盤・構造物)、釜石港(地表・地中基盤)、釧路港(地表・地中基盤)、小樽港、室蘭港、青森港、花咲港、京浜港(地表・地中基盤・構造物)であった。小名浜港、酒田港、大船渡港(地表)、秋田港、品川(地表・地中基盤)、塩釜港(地中基盤)の記録については加速度値が小さいため、八戸港、大船渡港(構造物)、塩釜港(地表)の記録については記録が不鮮明であったため、それぞれ記録をデジタル化することができず加速度の最大値のみの読み取りに留まった。

本資料で報告する記録は、北海道東方沖地震本震の際に港湾地域強震観測網で観測された17個の地表・地中の強震記録、ならびに10月4日22時42分51秒に発生した余震の記録(1港2地点)、10月6日05時39分51秒に発生した余震の記録(2港3地点)、及び10月9日16時55分39秒に発生した余震の記録(2港3地点)である。報告する内容は、それぞれの記録について、1)未補正加速度記録、2)計器特性による補正加速度記録、3)SMAC-B2型強震計の計器特性と等価なものに換算した補正加速度記録(SMAC等価加速度)、4)積分により求めた速度・変位、5)応答スペクトル、6)フーリエスペクトル、7)加速度・速度・変位の軌跡、を示している。釧路港においては、地中基盤と地表の2層同時観測を行っているため、更に加速度の増幅率を示している。また本震の全記録を対象として、加速度・速度・変位の距離減衰関係を併せて示している。

キーワード：地震、港湾、強震観測、デジタル化加速度記録、応答スペクトル

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STRONG-MOTION EARTHQUAKE RECORDS ON THE 1994 HOKKAIDO-TOHO-OKI EARTHQUAKE IN PORT AREAS

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Synopsis

The 1994 Hokkaido-Toho-Oki Earthquake of JMA (Japan Meteorological Agency) Magnitude 8.1 occurred in east off Hokkaido island in Japan at 22:22:56, October 4, 1994. This earthquake triggered 30 accelerographs installed at 19 ports in the strong-motion earthquake observation network of the Port and Harbour Research Institute. 20 accelerograms out of 30 were obtained as digital acceleration data of three components observed in port areas in Japan.

This report presents the strong-motion earthquake observation results of this earthquake and the results of preliminary analyses of the 17 digitized acceleration records obtained on and in ground by the main shock. The records of the after shock at 22:42:51, October 4, 1994, at 05:39:51, October 6, 1994 and at 16:55:39, October 9, 1994 are also presented. Original acceleration without instrument correction, corrected acceleration with instrument correction, SMAC-B2 equivalent acceleration, integrated velocity and displacement, response spectra, Fourier spectra and loci of accelerations, velocities and displacements are presented as results of preliminary analyses. Amplification of accelerations of the main shock at Kushiro port are also presented because surface ground motion and base motion were observed simultaneously there. Attenuation relations of acceleration, velocity and displacement of the main shock are also presented in this report.

Key Words : Earthquake, Port, Strong-Motion Earthquake Observation,
Digitized Acceleration Record, Response Spectra

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1. Introduction

At 22:22:56, October 4, 1994, an earthquake of JMA Magnitude 8.1 hit northern of Japan. The epicenter of the earthquake was located in east off Hokkaido island in Japan. The earthquake was named as '1994 HOKKAIDO-TOHO-OKI EARTHQUAKE' by the Japan Meteorological Agency (JMA). This earthquake caused strong ground motion in northern part of Japan. Many structures were damaged by the earthquake.

This earthquake triggered 30 accelerographs installed at 19 ports in the strong-motion earthquake observation network of the Port and Harbour Research Institute (PHRI). 20 accelerograms at 13 ports out of 30 accelerograms at 19 ports were obtained as digital acceleration data of three components. Ports where digitized accelerograms were obtained were Urakawa port, Tomakomai port, Soma port, Ofunato port (on structure), Tokachi port, Hakodate port (two ground surface, in ground and on structure), Kamaishi port (on ground surface and in ground), Kushiro port (on ground surface and in ground), Otaru port, Muroran port, Aomori port, Hanasaki port, Keihin port (on ground surface, in ground and on structure). The seven of triggered accelerograms, which were Onahama port, Sakata port, Ofunato port (on surface ground), Akita port, Shinagawa port (on surface ground and in ground), Shiogama port (in ground), were not able to be digitized because of the small acceleration amplitude of analog traces of records. The three of triggered accelerograms, which were Hachinohe port, Ofunato port (on structure), Shiogama port (on ground surface), were not able to be digitized because of unclear analog traces of records.

The strong-motion earthquake observation in port areas in Japan was started by PHRI in 1962 and the strong-motion records observed in the network of PHRI have been published as annual reports on strong-motion earthquake records in Japanese port since 1963^{1)~2) 81}. When great earthquakes occurred, such as 1968 Tokachi-Okai Earthquake, the 1978 Miyagi-Ken-Okai Earthquake, etc., special volumes on records obtained by these great earthquakes have been compiled besides annual reports because there exist many accelerograms with large maximum acceleration observed at the same time and it is convenient to use records for investigating damage of structures by compilation^{2)~3) 71}.

This report presents the strong-motion earthquake observation results of this earthquake and the following results of preliminary analyses of 17 digitized acceleration records obtained on and in ground by the main shock. The records of after shock at 22:42:51, October 4, 1994, at 05:39:51, October 6, 1994 and at 16:55:39, October 9, 1994 are also presented. Original acceleration without instrument correction, corrected acceleration with instrument correction, SMAC-B2 equivalent acceleration, integrated velocity and displacement, response spectra, Fourier spectra and loci of accelerations, velocities and displacements are presented as results of preliminary analyses.

- Original Acceleration
- Corrected Acceleration
- SMAC-B2 Equivalent Acceleration
- Integrated Velocity and Displacement
- Response Spectra and Fourier Spectra of Corrected Acceleration
- Loci of Corrected Accelerations, Integrated Velocities and Displacements

Amplification of accelerations at Kushiro port are also presented as square root of the ratio of power spectrum of surface ground motion to that of base motion because surface ground motion and base motion by the main shock were observed simultaneously at Kushiro port. Attenuation relations of acceleration, velocity and displacement of the main shock are also presented in this report.

Following organizations cooperated with PHRI in the strong-motion earthquake observation in port areas in Japan.

- The Bureau for Ports and Harbours of the Ministry of Transport
- The Regional Bureaus for Port Construction of the Ministry of Transport
- The Port and Harbour Division, The Hokkaido Development Bureau of the Hokkaido Development Agency
- The Okinawa General Office of the Okinawa Development Agency
- The Harbour Bureau of the Tokyo Metropolitan Government
- The Harbour Bureau of the Osaka Municipal Government
- The Harbour Section of the Shizuoka Prefectural Government
- The Harbour Section of the Miyazaki Prefectural Government

2. Earthquakes and Triggered Stations

The 1994 Hokkaido-Toho-Oki Earthquake at 22:22:56, October 4, 1994 triggered 30 accelerographs installed at 19 ports in the network of PHRI. The after shock at 22:42:51, October 4 triggered 2 accelerographs at 1 ports, the after shock at 05:39:51, October 4 triggered 5 accelerographs at 4 ports and the after shock at 16:55:39, October 9 triggered 7 accelerographs at 6 ports. Details of these four earthquakes are listed in Table 1^{4,3)}. Locations of epicenter of the main shock and the after shocks, which are slightly different from those by the Jishin-Kazan-Gaikyo published by JMA as a prompt report, are shown in Figure 1^{4,3), 4,4)}.

The triggered stations in the network of PHRI, the maximum of original accelerations without instrument correction and JMA seismic intensity scale of the main shock are shown in Figure 2. Dots in Figure 2 indicate ports where triggered accelerographs were installed and Roman numerals attached to ports represent JMA seismic intensity scale in its area.

All the triggered stations by the main shock are listed in Table 2 with name of locations, name of stations, type of accelerographs and installation conditions. The name of stations are composed of name of ports, type of accelerographs and installation conditions. As for the type of accelerographs, two kinds of accelerographs have been used in the strong-motion earthquake observation network of PHRI. One is the SMAC-B2 accelerograph of mechanical type and the other is the ERS accelerograph of electrical type equipped with either analog or digital recorder. There are several kinds of the ERS accelerograph and the ERS-G type is the newest type at present. Detailed descriptions of name of stations and accelerographs are reported in preceding annual reports. Site conditions of the stations, which are listed in the right column of Table 2 as the number of the Technical Note of the Port and Harbour Research Institute, are also available in the reports on sit characteristics^{18), 22)}.

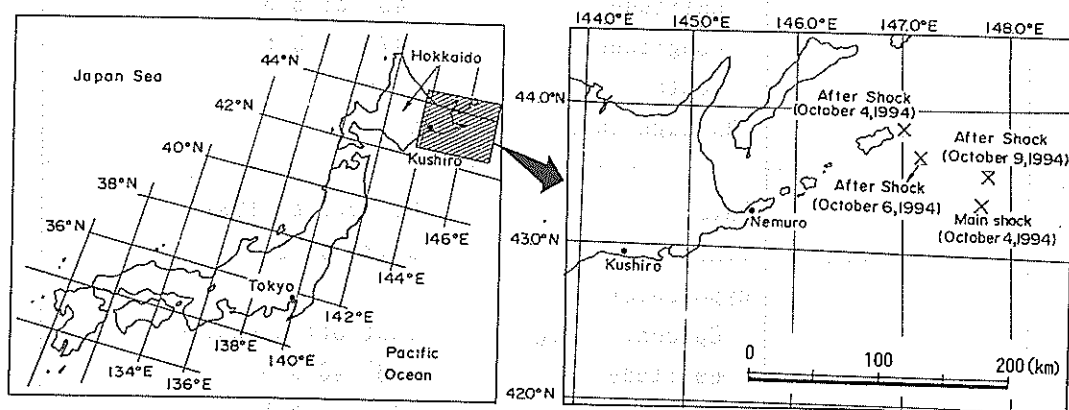
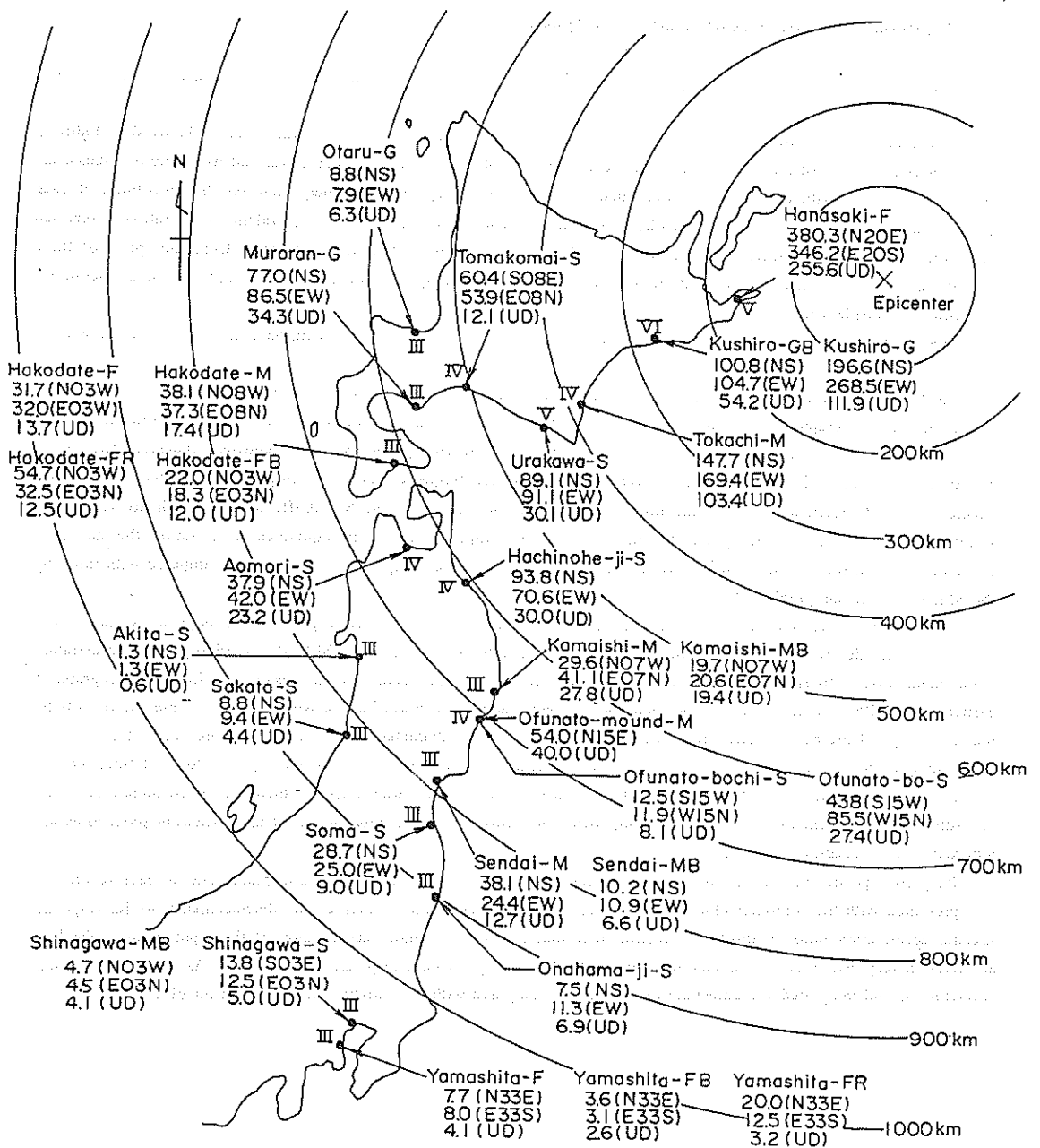


Figure1 Locations of Epicenter of the Main Shock and the After Shocks

Table 1 Details of Earthquakes

Earthquakes	Details	
Main shock 1994 Hokkaido- Toho-Oki Earthquake	Data Time Hypocenter Epicenter Region Latitude Longitude Depth JMA Magnitude	October 4, 1994 22:22:56.3 east off Hokkaido 43° 22.3' N 147° 42.5' E 23km 8.1
After Shock	Data Time Hypocenter Epicenter Region Latitude Longitude Depth JMA Magnitude	October 4, 1994 22:42:51.8 east off Hokkaido 43° 51.8' N 147° 1.3' E 4km 6.3
After Shock	Data Time Hypocenter Epicenter Region Latitude Longitude Depth JMA Magnitude	October 6, 1994 05:39:51.3 east off Hokkaido 43° 40.9' N 147° 10.2' E 30km 6.2
After Shock	Data Time Hypocenter Epicenter Region Latitude Longitude Depth JMA Magnitude	October 9, 1994 16:55:39.0 east off Hokkaido 43° 33.3' N 147° 48.4' E 0km 7.0



Acceleration : Maximum of Original Acceleration (Gal)=(cm/s²)
 Roman Numerals : JMA Seismic Intensity Scale

- Name of Port - S : SMAC-B2 Type
- Name of Port - M : ERS-M Type
- Name of Port - F : ERS-F Type
- Name of Port - G : ERS-G Type
- SMAC-B2 : Mechanical type (analog recorder)
- ERS Type : Mechanical type (analog recorder or digital recorder)
- Suffix B : Accelerograph is installed in ground .

Figure2 Triggered Stations of PHRI, Maximum Original Acceleration and JMA Seismic Intensity Scale of the Main Shock

3. Digitization and Preliminary Analyses

Procedures of digitization and preliminary analyses are identical with those described in the preceding annual reports and are not described here.

The results of preliminary analyses of the main shock and the after shocks are summarized in Table 3 to Table 6. Name of stations, record numbers, type of accelerographs, installation conditions, epicentral and hyposentral distance are shown these tables with the results of preliminary analyses. As results of preliminary analyses, the maximum of each component of original acceleration without instrument correction, SMAC-B2 equivalent acceleration, corrected acceleration, integrated velocity and integrated displacement are presented in these tables. Computer plots of these records are also presented in later part of this report with response spectra, Fourier spectra and loci of accelerations, velocities and displacements.

Original acceleration used in this report denotes the digitized acceleration data with base line correction and without instrument correction.

SMAC-B2 equivalent acceleration denotes the acceleration data corrected by the frequency characteristics of the SMAC-B2 accelerograph of mechanical type. The SMAC-B2 accelerograph has been a main accelerograph in the network of PHRI and many accelerograms have been recorded by this accelerograph. Because frequency characteristics of the SMAC-B2 accelerograph, however, are not very sensitive in high frequency range in comparison with those of the ERS accelerograph of electrical type, the maximum accelerations of records by the SMAC-B2 accelerograph are tend to be smaller than by the ERS accelerograph. By this procedure of computing SMAC-B2 equivalent acceleration, the maximum acceleration of all the records, which were recorded by the ERS accelerographs, can be directly compared with those by the SMAC-B2 accelerograph so far.

Corrected acceleration denotes the acceleration data with instrument correction processed through the variable filter which is briefly described in the preceding annual reports. For the records by the SMAC-B2 accelerograph, acceleration components around 10 Hz in frequency domain are amplified by this procedure. For the records by ERS accelerograph of earlier type (ERS-B, C and D type), acceleration is slightly amplified in accordance with frequency. For the records by the recent type of the ERS accelerograph (ERS-F and G type), phase characteristics of records are only corrected.

Integrations for computing velocities and displacements are conducted by using two types of low cut filter. One is the fixed filter of which cut off frequency is fixed and the other is the variable filter which cut off frequency is varied according to the content of low frequency components of records. Detailed descriptions of these filtering procedures are reported in the preceding annual reports.

Response spectra, Fourier spectra and loci of corrected accelerations, velocities and displacements of each record are also presented with the computer plots of time history data of accelerations, velocities and displacements. As for response spectra, acceleration ratio of absolute acceleration response to the maximum acceleration of the input motion, absolute acceleration response, relative velocity response and relative displacement response are presented. As for loci, corrected accelerations and integrated velocities and displacements computed with the variable filter are used for plots.

Table 2 List of Strong-Motion Earthquake Observation Stations of PHRI
triggered by the Main Shock

Name of port	Name of station	Type of Accelerograph	Installation condition	Ref. No. *
1 Hanasaki	1 Hanasaki-F	ERS-F	ground surface	298
2 Kushiro	2 Kushiro-GB	ERS-G	in ground	
	3 Kushiro-G	ERS-G	ground surface	298
3 Tokachi	4 Tokachi-M	ERS-C	ground surface	
4 Urakawa	5 Urakawa-S	SMAC-B2	ground surface	107
5 Tomakomai	6 Tomakomai-S	SMAC-B2	ground surface	
6 Muroran	7 Muroran-G	ERS-G	ground surface	34, 107
7 Otaru	8 Otaru-G	ERS-G	ground surface	
8 Hakodate	9 Hakodate-M	ERS-C	ground surface	298
	10 Hakodate-FB	ERS-F	in ground	
	11 Hakodate-F	ERS-F	ground surface	107, 156, 298
	12 Hakodate-FR	ERS-F	on structure	
9 Aomori	13 Aomori-G	ERS-G	ground surface	34, 107
10 Hachinohe	14 Hachinohe-ji-S	SMAC-B2	ground surface	
11 Kamaishi	15 Kamaishi-M	ERS-C	ground surface	351
	16 Kamaishi-MB	ERS-D	in ground	
12 Ofunato	17 Ofunato-bochi-S	SMAC-B2	ground surface	107
	18 Ofunato-bo-S	SMAC-B2	on structure	
	19 Ofunato-mound-M	ERS-C	on structure	34, 107
13 Sendai	20 Sendai-M	ERS-C	ground surface	
	21 Sendai-MB	ERS-D	in ground	351
14 Soma	22 Soma-S	SMAC-B2	ground surface	
15 Onahama	23 Onahama-ji-S	SMAC-B2	ground surface	34, 351
16 Tokyo	24 Shinagawa-S	SMAC-B2	ground surface	
	25 Shinagawa-M	ERS-C	in ground	34, 107
17 Yokohama	26 Yamashita-FB	ERS-F	in ground	
	27 Yamashita-F	ERS-F	ground surface	34
	28 Yamashita-FR	ERS-F	on structure	
18 Sakata	29 Sakata-S	SMAC-B2	ground surface	34, 351
19 Akita	30 Akita-S	SMAC-B2	ground surface	

* The numbers correspond to those of the Technical Note of the Port and Harbour Research Institute, in which site characteristics of stations are given.

Table 3 Results of Preliminary Analyses of the Main Shock at 22:22:56, October 4, 1994

Name of Station & Number of Record	Type of Accelerograph	Distance(km)	Type of Data	Maximum of N-S Component	Maximum of E-W Component	Maximum of U-D Component
Hanasaki-F F - 681	ERS-F	Epicentral Dist. = 172 Hypocentral Dist. = 174	Original Acceleration(cm/s ²)	380.3 N20E	346.2 E20S	255.6
			SMAC-B2 Equivalent Acceleration(cm/s ²)	227.1	277.0	142.0
			Corrected Acceleration(cm/s ²)	367.1	350.7	266.7
			Integrated Velocity - fixed(cm/s)	27.60	22.46	14.24
			Integrated Velocity - variable(cm/s)	27.87	29.51	16.24
Integrated Displacement - fixed(cm)	8.29	6.30	5.26			
Integrated Displacement - variable(cm)	31.96	41.38	17.84			
Kushiro-G F - 671	ERS-G	Epicentral Dist. = 275 Hypocentral Dist. = 276	Original Acceleration(cm/s ²)	196.6	268.5	111.9
			SMAC-B2 Equivalent Acceleration(cm/s ²)	162.9	211.5	68.0
			Corrected Acceleration(cm/s ²)	196.9	267.7	116.5
			Integrated Velocity - fixed(cm/s)	19.90	20.96	6.62
			Integrated Velocity - variable(cm/s)	20.54	20.63	6.35
Integrated Displacement - fixed(cm)	4.44	4.05	2.91			
Integrated Displacement - variable(cm)	21.93	10.54	7.28			
Kushiro-GB F - 670	ERS-G	Epicentral Dist. = 275 Hypocentral Dist. = 276	Original Acceleration(cm/s ²)	100.8	104.7	54.2
			SMAC-B2 Equivalent Acceleration(cm/s ²)	72.0	75.5	34.1
			Corrected Acceleration(cm/s ²)	100.7	106.6	52.2
			Integrated Velocity - fixed(cm/s)	8.21	8.22	4.40
			Integrated Velocity - variable(cm/s)	7.16	9.50	6.36
Integrated Displacement - fixed(cm)	2.54	2.75	2.60			
Integrated Displacement - variable(cm)	12.94	11.43	9.04			
Tokachi-M M - 1519	ERS-C	Epicentral Dist. = 378 Hypocentral Dist. = 379	Original Acceleration(cm/s ²)	147.7	169.4	103.4
			SMAC-B2 Equivalent Acceleration(cm/s ²)	96.4	128.4	49.8
			Corrected Acceleration(cm/s ²)	149.6	167.2	108.0
			Integrated Velocity - fixed(cm/s)	6.78	11.83	3.50
			Integrated Velocity - variable(cm/s)	6.77	10.51	3.25
Integrated Displacement - fixed(cm)	2.29	2.12	2.00			
Integrated Displacement - variable(cm)	1.45	1.60	0.80			

(to be continued)

(Table 3 Continued)

Name of Station & Number of Record	Type of Accelerograph	Distance(km)	Type of Data	Maximum of N-S Component	Maximum of E-W Component	Maximum of U-D Component
Urakata-S S - 2580	SMAC-B2	Epicentral Dist. = 425 Hypocentral Dist. = 426	Original Acceleration(cm/s ²)	89.1	91.1	30.1
			SMAC-B2 Equivalent Acceleration(cm/s ²)	138.3	148.1	47.4
			Corrected Acceleration(cm/s ²)	8.63	10.66	4.81
			Integrated Velocity - fixed(cm/s)	13.30	13.90	7.85
			Integrated Velocity - variable(cm/s)	4.75	4.13	3.91
Integrated Displacement - fixed(cm)	9.68	8.60	7.50			
Integrated Displacement - variable(cm)						
Kamaishi-MB M - 1524	ERS-D	Epicentral Dist. = 666 Hypocentral Dist. = 666	Original Acceleration(cm/s ²)	19.7 N07W	20.6 E07N	19.4
			SMAC-B2 Equivalent Acceleration(cm/s ²)	14.9	12.8	11.8
			Corrected Acceleration(cm/s ²)	19.5	21.0	19.0
			Integrated Velocity - fixed(cm/s)	1.38	1.05	1.28
			Integrated Velocity - variable(cm/s)	1.37	0.98	1.27
Integrated Displacement - fixed(cm)	0.73	0.37	0.49			
Integrated Displacement - variable(cm)	0.36	0.24	0.30			
Kamaishi-M M - 1523	ERS-C	Epicentral Dist. = 666 Hypocentral Dist. = 666	Original Acceleration(cm/s ²)	29.6 N07W	41.1 E07N	27.8
			SMAC-B2 Equivalent Acceleration(cm/s ²)	16.5	19.7	12.8
			Corrected Acceleration(cm/s ²)	30.8	44.1	28.6
			Integrated Velocity - fixed(cm/s)	1.54	1.40	1.40
			Integrated Velocity - variable(cm/s)	1.36	1.43	1.48
Integrated Displacement - fixed(cm)	0.52	0.51	0.70			
Integrated Displacement - variable(cm)	0.31	0.39	0.35			
Tomakomai-S S - 2581	SMAC-B2	Epicentral Dist. = 503 Hypocentral Dist. = 504	Original Acceleration(cm/s ²)	60.4 S08E	53.9 E08N	12.1
			SMAC-B2 Equivalent Acceleration(cm/s ²)	80.7	80.3	21.8
			Corrected Acceleration(cm/s ²)	6.42	9.31	3.49
			Integrated Velocity - fixed(cm/s)	8.82	9.27	3.01
			Integrated Velocity - variable(cm/s)	5.59	6.34	2.32
Integrated Displacement - fixed(cm)	6.59	6.80	1.47			
Integrated Displacement - variable(cm)						

(Table 3 Continued)

Name of Station & Number of Record	Type of Accelerograph	Distance(km)	Type of Data	Maximum of N-S Component	Maximum of E-W Component	Maximum of U-D Component
Otaru-G F - 676	ERS-G	Epicentral Dist. = 541 Hypocentral Dist. = 542	Original Acceleration(cm/s ²)	8.8	7.9	6.3
			SMAC-B2 Equivalent Acceleration(cm/s ²)	7.5	6.8	5.8
			Corrected Acceleration(cm/s ²)	8.6	8.0	6.4
			Integrated Velocity - fixed(cm/s)	1.72	1.74	1.06
			Integrated Velocity - variable(cm/s)	1.87	1.49	1.82
Integrated Displacement - fixed(cm)	0.94	0.71	0.70			
Integrated Displacement - variable(cm)	2.60	1.61	1.75			
Soma-S S - 2584	SMAC-B2	Epicentral Dist. = 839 Hypocentral Dist. = 839	Original Acceleration(cm/s ²)	28.7	25.0	9.0
			SMAC-B2 Equivalent Acceleration(cm/s ²)	54.4	46.4	14.7
			Corrected Acceleration(cm/s ²)	2.28	2.16	0.78
			Integrated Velocity - fixed(cm/s)	1.92	1.76	0.57
			Integrated Velocity - variable(cm/s)	0.50	0.68	0.47
Integrated Displacement - fixed(cm)	0.23	0.26	0.05			
Integrated Displacement - variable(cm)						
Murooran-G F - 679	ERS-G	Epicentral Dist. = 563 Hypocentral Dist. = 564	Original Acceleration(cm/s ²)	77.0	86.5	34.3
			SMAC-B2 Equivalent Acceleration(cm/s ²)	61.1	67.2	27.0
			Corrected Acceleration(cm/s ²)	77.2	86.2	34.0
			Integrated Velocity - fixed(cm/s)	4.17	7.07	1.94
			Integrated Velocity - variable(cm/s)	4.42	6.97	2.22
Integrated Displacement - fixed(cm)	0.97	1.37	0.59			
Integrated Displacement - variable(cm)	6.86	4.02	1.18			
Aomori-G F - 680	ERS-G	Epicentral Dist. = 641 Hypocentral Dist. = 641	Original Acceleration(cm/s ²)	37.9	42.0	23.2
			SMAC-B2 Equivalent Acceleration(cm/s ²)	33.5	37.8	15.6
			Corrected Acceleration(cm/s ²)	37.7	42.0	23.1
			Integrated Velocity - fixed(cm/s)	8.12	6.01	2.96
			Integrated Velocity - variable(cm/s)	9.92	5.52	2.69
Integrated Displacement - fixed(cm)	3.63	2.42	0.75			
Integrated Displacement - variable(cm)	13.70	3.44	1.34			

(to be continued)

(Table 3 Continued)

Name of Station & Number of Record	Type of Accelerograph	Distance(km)	Type of Data	Maximum of N-S Component	Maximum of E-W Component	Maximum of U-D Component
Hakodate-F F - 668	ERS-F	Epical Dist. = 599	Original Acceleration(cm/s ²)	31.7 N03W	32.0 E03N	13.7
			SMAC-B2 Equivalent Acceleration(cm/s ²)	28.1	28.7	10.7
			Corrected Acceleration(cm/s ²)	31.8	32.0	14.0
			Integrated Velocity - fixed(cm/s)	6.68	4.63	2.12
			Integrated Velocity - variable(cm/s)	7.99	5.74	2.16
Hypocentral Dist. = 600	Integrated Displacement - fixed(cm)	3.44	2.36	0.81		
	Integrated Displacement - variable(cm)	12.22	5.10	1.10		
Hakodate-FB F - 667	ERS-F	Epical Dist. = 599	Original Acceleration(cm/s ²)	22.0 N03W	18.3 E03N	12.0
			SMAC-B2 Equivalent Acceleration(cm/s ²)	19.2	16.8	10.3
			Corrected Acceleration(cm/s ²)	21.9	18.4	11.8
			Integrated Velocity - fixed(cm/s)	3.78	3.29	1.80
			Integrated Velocity - variable(cm/s)	3.83	4.55	2.12
Hypocentral Dist. = 600	Integrated Displacement - fixed(cm)	1.67	1.77	0.81		
	Integrated Displacement - variable(cm)	9.04	8.19	4.28		
Hakodate-M M - 1520	ERS-C	Epical Dist. = 599	Original Acceleration(cm/s ²)	38.1 N08W	37.3 E08N	17.4
			SMAC-B2 Equivalent Acceleration(cm/s ²)	33.0	32.6	14.6
			Corrected Acceleration(cm/s ²)	38.4	38.1	16.7
			Integrated Velocity - fixed(cm/s)	6.63	5.08	2.83
			Integrated Velocity - variable(cm/s)	6.51	3.78	2.26
Hypocentral Dist. = 600	Integrated Displacement - fixed(cm)	3.60	1.99	0.79		
	Integrated Displacement - variable(cm)	2.30	1.72	0.58		
Yamashita-F F - 754	ERS-F	Epical Dist. = 1118	Original Acceleration(cm/s ²)	7.7 N33E	8.0 E33S	4.1
			SMAC-B2 Equivalent Acceleration(cm/s ²)	6.5	7.0	3.5
			Corrected Acceleration(cm/s ²)	7.7	8.1	3.9
			Integrated Velocity - fixed(cm/s)	0.84	0.84	0.40
			Integrated Velocity - variable(cm/s)	0.84	0.81	0.39
Hypocentral Dist. = 1118	Integrated Displacement - fixed(cm)	0.22	0.29	0.14		
	Integrated Displacement - variable(cm)	0.17	0.24	0.07		

(to be continued)

(Table 3 Continued)

Name of Station & Number of Record	Type of Accelerograph	Distance (km)	Type of Data	Maximum of N-S Component	Maximum of E-W Component	Maximum of U-D Component
Yamashita-FB	ERS-F	Epicentral Dist. = 1118	Original Acceleration(cm/s ²)	3.6 N33E	3.1 E33S	2.6
F - 753			SMAC-B2 Equivalent Acceleration(cm/s ²)	3.3	2.6	2.1
			Corrected Acceleration(cm/s ²)	3.6	3.1	2.4
			Integrated Velocity - fixed(cm/s)	0.56	0.69	0.36
			Integrated Velocity - variable(cm/s)	0.59	0.66	0.29
	Integrated Displacement - fixed(cm)	0.21	0.28	0.15		
	Integrated Displacement - variable(cm)	0.15	0.22	0.06		
Ofunato-mound-M	ERS-C	Epicentral Dist. = 696	Original Acceleration(cm/s ²)	54.0 N15E	—	40.0
M - 1525			SMAC-B2 Equivalent Acceleration(cm/s ²)	—	—	—
(Not digitized)			Corrected Acceleration(cm/s ²)	—	—	—
			Integrated Velocity - fixed(cm/s)	—	—	—
			Integrated Velocity - variable(cm/s)	—	—	—
	Integrated Displacement - fixed(cm)	—	—	—		
	Integrated Displacement - variable(cm)	—	—	—		
Ofunato-bo-S	SMAC-B2 (on structure)	Epicentral Dist. = 696	Original Acceleration(cm/s ²)	43.8 S15W	85.8 W15N	27.4
S - 2587			SMAC-B2 Equivalent Acceleration(cm/s ²)	59.1	149.8	31.8
			Corrected Acceleration(cm/s ²)	4.12	12.18	2.11
			Integrated Velocity - fixed(cm/s)	4.46	11.66	1.92
			Integrated Velocity - variable(cm/s)	1.01	1.68	0.50
	Integrated Displacement - fixed(cm)	0.49	1.03	0.16		
	Integrated Displacement - variable(cm)	—	—	—		
Ofunato-bochi-S	SMAC-B2	Epicentral Dist. = 696	Original Acceleration(cm/s ²)	12.5 S15W	11.9 W15N	8.1
S - 2588			SMAC-B2 Equivalent Acceleration(cm/s ²)	—	—	—
(Not digitized)			Corrected Acceleration(cm/s ²)	—	—	—
			Integrated Velocity - fixed(cm/s)	—	—	—
			Integrated Velocity - variable(cm/s)	—	—	—
	Integrated Displacement - fixed(cm)	—	—	—		
	Integrated Displacement - variable(cm)	—	—	—		

(to be continued)

(Table 3 Continued)

Name of Station & Number of Record	Type of Accelerograph	Distance(km)	Type of Data	Maximum of N-S Component	Maximum of E-W Component	Maximum of U-D Component
Hachinohe-ji-S S - 2582 (Not digitized)	SMAC-B2	Epical Dist. = 603 Hypocentral Dist. = 603	Original Acceleration(cm/s ²) SMAC-B2 Equivalent Acceleration(cm/s ²) Corrected Acceleration(cm/s ²) Integrated Velocity - fixed(cm/s) Integrated Velocity - variable(cm/s) Integrated Displacement - fixed(cm) Integrated Displacement - variable(cm)	93.8 _____ _____ _____ _____ _____ _____	70.6 _____ _____ _____ _____ _____ _____	30.0 _____ _____ _____ _____ _____ _____
Sendai-MB M - 1522 (Not digitized)	ERS-D	Epical Dist. = 798 Hypocentral Dist. = 799	Original Acceleration(cm/s ²) SMAC-B2 Equivalent Acceleration(cm/s ²) Corrected Acceleration(cm/s ²) Integrated Velocity - fixed(cm/s) Integrated Velocity - variable(cm/s) Integrated Displacement - fixed(cm) Integrated Displacement - variable(cm)	10.2 _____ _____ _____ _____ _____ _____	10.9 _____ _____ _____ _____ _____ _____	6.6 _____ _____ _____ _____ _____ _____
Sendai-M M - 1521 (Not digitized)	ERS-C	Epical Dist. = 798 Hypocentral Dist. = 799	Original Acceleration(cm/s ²) SMAC-B2 Equivalent Acceleration(cm/s ²) Corrected Acceleration(cm/s ²) Integrated Velocity - fixed(cm/s) Integrated Velocity - variable(cm/s) Integrated Displacement - fixed(cm) Integrated Displacement - variable(cm)	38.1 _____ _____ _____ _____ _____ _____	24.4 _____ _____ _____ _____ _____ _____	12.7 _____ _____ _____ _____ _____ _____
Onahama-ji-S S - 2583 (Not digitized)	SMAC-B2	Epical Dist. = 918 Hypocentral Dist. = 919	Original Acceleration(cm/s ²) SMAC-B2 Equivalent Acceleration(cm/s ²) Corrected Acceleration(cm/s ²) Integrated Velocity - fixed(cm/s) Integrated Velocity - variable(cm/s) Integrated Displacement - fixed(cm) Integrated Displacement - variable(cm)	7.5 _____ _____ _____ _____ _____ _____	11.3 _____ _____ _____ _____ _____ _____	6.9 _____ _____ _____ _____ _____ _____

(Table 3 Continued)

Name of Station & Number of Record	Type of Accelerograph	Distance(km)	Type of Data	Maximum of N-S Component	Maximum of E-W Component	Maximum of U-D Component
Hakodate-FR F - 669	ERS-F (on structure)	Epicentral Dist. = 599 Hypocentral Dist. = 600	Original Acceleration(cm/s ²)	54.7 N03W	32.5 E03N	12.5
			SMAC-B2 Equivalent Acceleration(cm/s ²)	37.0	27.9	11.2
			Corrected Acceleration(cm/s ²)	50.7	33.0	12.7
			Integrated Velocity - fixed(cm/s)	7.07	4.82	2.43
			Integrated Velocity - variable(cm/s)	7.16	5.19	2.36
Integrated Displacement - fixed(cm)	3.60	2.39	0.85			
Integrated Displacement - variable(cm)	6.99	3.07	0.78			
Akita-S S - 2588 (Not digitized)	SMAC-B2	Epicentral Dist. = 753 Hypocentral Dist. = 754	Original Acceleration(cm/s ²)	1.3	1.3	0.6
			SMAC-B2 Equivalent Acceleration(cm/s ²)	_____	_____	_____
			Corrected Acceleration(cm/s ²)	_____	_____	_____
			Integrated Velocity - fixed(cm/s)	_____	_____	_____
			Integrated Velocity - variable(cm/s)	_____	_____	_____
Integrated Displacement - fixed(cm)	_____	_____	_____			
Integrated Displacement - variable(cm)	_____	_____	_____			
Sakata-S S - 2585 (Not digitized)	SMAC-B2	Epicentral Dist. = 824 Hypocentral Dist. = 825	Original Acceleration(cm/s ²)	8.8	9.4	4.4
			SMAC-B2 Equivalent Acceleration(cm/s ²)	_____	_____	_____
			Corrected Acceleration(cm/s ²)	_____	_____	_____
			Integrated Velocity - fixed(cm/s)	_____	_____	_____
			Integrated Velocity - variable(cm/s)	_____	_____	_____
Integrated Displacement - fixed(cm)	_____	_____	_____			
Integrated Displacement - variable(cm)	_____	_____	_____			
Shinagawa-MB M - 1526 (Not digitized)	ERS-D	Epicentral Dist. = 1097 Hypocentral Dist. = 1098	Original Acceleration(cm/s ²)	4.7 N03W	4.5 E03N	4.1
			SMAC-B2 Equivalent Acceleration(cm/s ²)	_____	_____	_____
			Corrected Acceleration(cm/s ²)	_____	_____	_____
			Integrated Velocity - fixed(cm/s)	_____	_____	_____
			Integrated Velocity - variable(cm/s)	_____	_____	_____
Integrated Displacement - fixed(cm)	_____	_____	_____			
Integrated Displacement - variable(cm)	_____	_____	_____			

(to be continued)

(Table 3 Continued)

Name of Station & Number of Record	Type of Accelerograph	Distance(km)	Type of Data	Maximum of N-S Component	Maximum of E-W Component	Maximum of U-D Component
Shinagawa-S S - 2589 (Not digitized)	SMAC-B2	Epicentral Dist. =1097 Hypocentral Dist. =1098	Original Acceleration(cm/s ²)	13.8 S03E	12.5 E03N	5.0
			SMAC-B2 Equivalent Acceleration(cm/s ²)			
Yamashita-FR F - 755	ERS-F	Epicentral Dist. =1118 Hypocentral Dist. =1118	Corrected Acceleration(cm/s ²)			
			Integrated Velocity - fixed(cm/s)			
			Integrated Velocity - variable(cm/s)			
			Integrated Displacement - fixed(cm)			
			Integrated Displacement - variable(cm)			
			Integrated Displacement - variable(cm)			
(Remark)						
Original Acceleration	:Digitized acceleration with no instrument correction			20.0 N33E	12.5 E33S	3.2
SMAC-B2 Equivalent Acceleration	:Acceleration corrected by SMAC-B2 equivalent filter			17.4	10.8	2.5
Corrected Acceleration	:Acceleration with instrument correction			19.9	12.4	3.1
Integrated Velocity - fixed	:Velocity integrated by fixed filter			1.32	1.07	0.37
Integrated Velocity - variable	:Velocity integrated by variable filter			1.41	1.00	0.36
Integrated Displacement - fixed	:Displacement integrated by fixed filter			0.23	0.28	0.14
Integrated Displacement - variable	:Displacement integrated by variable filter			0.18	0.23	0.06

Table 4 Results of Preliminary Analyses of the After Shock at 22:42:51, October 4, 1994

Name of Station & Number of Record	Type of Accelerograph	Distance(km)	Type of Data	Maximum of N-S Component	Maximum of E-W Component	Maximum of U-D Component
Kushiro-G F - 673	ERS-G	Epicaltral Dist. -250	Original Acceleration(cm/s ²)	9.8	12.0	4.1
			SMAC-B2 Equivalent Acceleration(cm/s ²)	8.6	8.7	2.4
			Corrected Acceleration(cm/s ²)	9.8	12.1	4.1
			Integrated Velocity - fixed(cm/s)	0.88	0.66	0.20
			Integrated Velocity - variable(cm/s)	0.79	0.61	0.17
Kushiro-GB F - 672	ERS-G	Hypocentral Dist. -250	Integrated Displacement - fixed(cm)	0.17	0.10	0.03
			Integrated Displacement - variable(cm)	0.12	0.08	0.01
			Original Acceleration(cm/s ²)	3.8	4.3	1.6
			SMAC-B2 Equivalent Acceleration(cm/s ²)	2.7	3.2	1.1
			Corrected Acceleration(cm/s ²)	3.8	4.2	1.7
(Remark)		Epicaltral Dist. -250	Integrated Velocity - fixed(cm/s)	0.31	0.25	0.15
			Integrated Velocity - variable(cm/s)	0.29	0.22	0.12
			Integrated Displacement - fixed(cm)	0.07	0.05	0.04
			Integrated Displacement - variable(cm)	0.06	0.03	0.01
			Original Acceleration	11.8	13.8	4.4
SMAC-B2 Equivalent Acceleration	11.8	13.8	4.4			
Corrected Acceleration	11.8	13.8	4.4			
Integrated Velocity - fixed	0.9	0.7	0.2			
Integrated Velocity - variable	0.8	0.6	0.2			
Integrated Displacement - fixed	0.1	0.08	0.03			
Integrated Displacement - variable	0.08	0.05	0.02			
Kushiro-G F - 674	ERS-G	Epicaltral Dist. -250	Original Acceleration	11.8	13.8	4.4
			SMAC-B2 Equivalent Acceleration	11.8	13.8	4.4
			Corrected Acceleration	11.8	13.8	4.4
			Integrated Velocity - fixed	0.9	0.7	0.2
			Integrated Velocity - variable	0.8	0.6	0.2
Kushiro-GB F - 675	ERS-G	Hypocentral Dist. -250	Integrated Displacement - fixed	0.1	0.08	0.03
			Integrated Displacement - variable	0.08	0.05	0.02
			Original Acceleration	11.8	13.8	4.4
			SMAC-B2 Equivalent Acceleration	11.8	13.8	4.4
			Corrected Acceleration	11.8	13.8	4.4
(Remark)		Epicaltral Dist. -250	Integrated Velocity - fixed	0.9	0.7	0.2
			Integrated Velocity - variable	0.8	0.6	0.2
			Integrated Displacement - fixed	0.1	0.08	0.03
			Integrated Displacement - variable	0.08	0.05	0.02
			Original Acceleration	11.8	13.8	4.4
SMAC-B2 Equivalent Acceleration	11.8	13.8	4.4			
Corrected Acceleration	11.8	13.8	4.4			
Integrated Velocity - fixed	0.9	0.7	0.2			
Integrated Velocity - variable	0.8	0.6	0.2			
Integrated Displacement - fixed	0.1	0.08	0.03			
Integrated Displacement - variable	0.08	0.05	0.02			

Table 5 Results of Preliminary Analyses of the After Shock at 05:39:51, October 6, 1994

Name of Station & Number of Record	Type of Accelerograph	Distance(km)	Type of Data	Maximum of N-S Component	Maximum of E-W Component	Maximum of U-D Component
Hanasaki-F F - 773	ERS-F	Epicalentral Dist. =135 Hypocentral Dist. =138	Original Acceleration(cm/s ²)	14.2	12.5	8.7
			SMAC-B2 Equivalent Acceleration(cm/s ²)	8.9	8.2	5.0
			Corrected Acceleration(cm/s ²)	14.6	12.7	8.9
			Integrated Velocity - fixed(cm/s)	0.50	0.61	0.33
			Integrated Velocity - variable(cm/s)	0.47	0.58	0.34
Integrated Displacement - fixed(cm)	0.07	0.06	0.07			
Integrated Displacement - variable(cm)	0.04	0.05	0.02			
Kushiro-G F - 675	ERS-G	Epicalentral Dist. =240 Hypocentral Dist. =242	Original Acceleration(cm/s ²)	13.2	17.4	4.0
			SMAC-B2 Equivalent Acceleration(cm/s ²)	10.3	10.2	2.6
			Corrected Acceleration(cm/s ²)	13.2	17.5	4.0
			Integrated Velocity - fixed(cm/s)	0.76	0.80	0.28
			Integrated Velocity - variable(cm/s)	0.69	0.78	0.23
Integrated Displacement - fixed(cm)	0.14	0.11	0.05			
Integrated Displacement - variable(cm)	0.13	0.08	0.02			
Kushiro-GB F - 674	ERS-G	Epicalentral Dist. =240 Hypocentral Dist. =242	Original Acceleration(cm/s ²)	4.0	4.8	1.9
			SMAC-B2 Equivalent Acceleration(cm/s ²)	2.9	3.5	1.2
			Corrected Acceleration(cm/s ²)	4.0	4.7	1.9
			Integrated Velocity - fixed(cm/s)	0.26	0.24	0.12
			Integrated Velocity - variable(cm/s)	0.27	0.23	0.09
Integrated Displacement - fixed(cm)	0.05	0.05	0.04			
Integrated Displacement - variable(cm)	0.04	0.03	0.01			

(Remark)

:Digitized acceleration with no instrument correction
 :SMAC-B2 Equivalent Acceleration corrected by SMAC-B2 equivalent filter
 :Corrected Acceleration with instrument correction
 :Integrated Velocity - fixed :Velocity integrated by fixed filter (cut-off frequency is constant)
 :Integrated Velocity - variable :Velocity integrated by variable filter (cut-off frequency is varied)
 :Integrated Displacement - fixed :Displacement integrated by fixed filter (cut-off frequency is constant)
 :Integrated Displacement - variable :Displacement integrated by variable filter (cut-off frequency is varied)

Table 6 Results of Preliminary Analyses of the After Shock at 16:55:39, October 9, 1994

Name of Station & Number of Record	Type of Accelerograph	Distance(km)	Type of Data	Maximum of N-S Component	Maximum of E-W Component	Maximum of U-D Component
Hanasaki-F F - 777	ERS-F	Epicentral Dist. =182 Hypocentral Dist. =182	Original Acceleration(cm/s ²)	19.7	23.4	11.0
			SMAC-B2 Equivalent Acceleration(cm/s ²)	15.8	16.0	7.8
			Corrected Acceleration(cm/s ²)	19.7	22.8	10.7
			Integrated Velocity - fixed(cm/s)	1.31	1.72	1.08
			Integrated Velocity - variable(cm/s)	1.44	1.34	1.34
			Integrated Displacement - fixed(cm)	0.65	0.45	0.81
Integrated Displacement - variable(cm)	0.74	0.52	1.04			
Kushiro-G F - 696	ERS-G	Epicentral Dist. =286 Hypocentral Dist. =286	Original Acceleration(cm/s ²)	19.0	19.5	5.5
			SMAC-B2 Equivalent Acceleration(cm/s ²)	16.5	13.1	4.5
			Corrected Acceleration(cm/s ²)	18.8	19.6	5.5
			Integrated Velocity - fixed(cm/s)	1.46	1.17	0.60
			Integrated Velocity - variable(cm/s)	1.45	1.31	0.58
			Integrated Displacement - fixed(cm)	0.42	0.36	0.27
Integrated Displacement - variable(cm)	0.30	0.22	0.18			
Kushiro-GB F - 695	ERS-G	Epicentral Dist. =286 Hypocentral Dist. =286	Original Acceleration(cm/s ²)	7.8	6.9	3.2
			SMAC-B2 Equivalent Acceleration(cm/s ²)	6.2	6.0	2.6
			Corrected Acceleration(cm/s ²)	7.7	6.9	3.2
			Integrated Velocity - fixed(cm/s)	0.58	0.51	0.44
			Integrated Velocity - variable(cm/s)	0.70	0.56	0.48
			Integrated Displacement - fixed(cm)	0.22	0.28	0.27
Integrated Displacement - variable(cm)	0.23	0.38	0.36			

(Remark)

Original Acceleration :Digitized acceleration with no instrument correction
 SMAC-B2 Equivalent Acceleration :Acceleration corrected by SMAC-B2 equivalent filter
 Corrected Acceleration :Acceleration with instrument correction
 Integrated Velocity - fixed :Velocity integrated by fixed filter (cut-off frequency is constant)
 Integrated Velocity - variable :Velocity integrated by variable filter (cut-off frequency is varied)
 Integrated Displacement - fixed :Displacement integrated by fixed filter (cut-off frequency is constant)
 Integrated Displacement - variable :Displacement integrated by variable filter (cut-off frequency is varied)

4. Attenuation Relations of Acceleration, Velocity and Displacement

Attenuation relations of peak ground acceleration of corrected acceleration, peak ground velocity and displacement computed with the variable filter are shown in Figure 3 to Figure 5. Results of horizontal and vertical motions are shown together in these figures. As for horizontal motion, larger of two horizontal components is used. There exist clear attenuation relationship both horizontal and vertical acceleration data. Site characteristics of the stations, such as shear wave velocity profile, are not considered here.

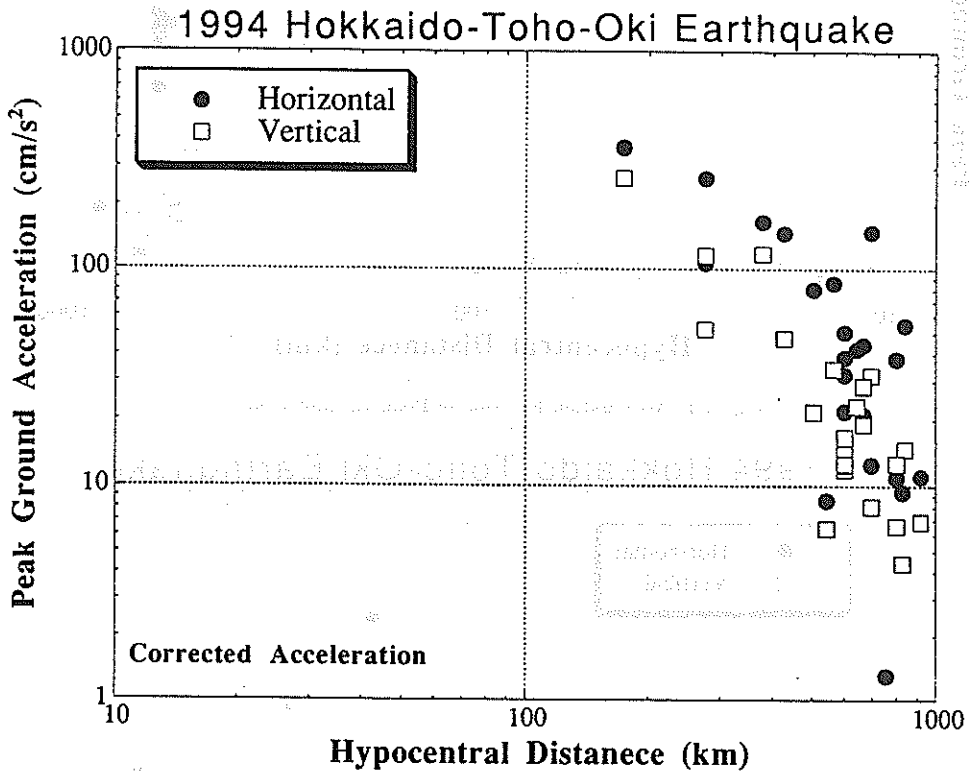
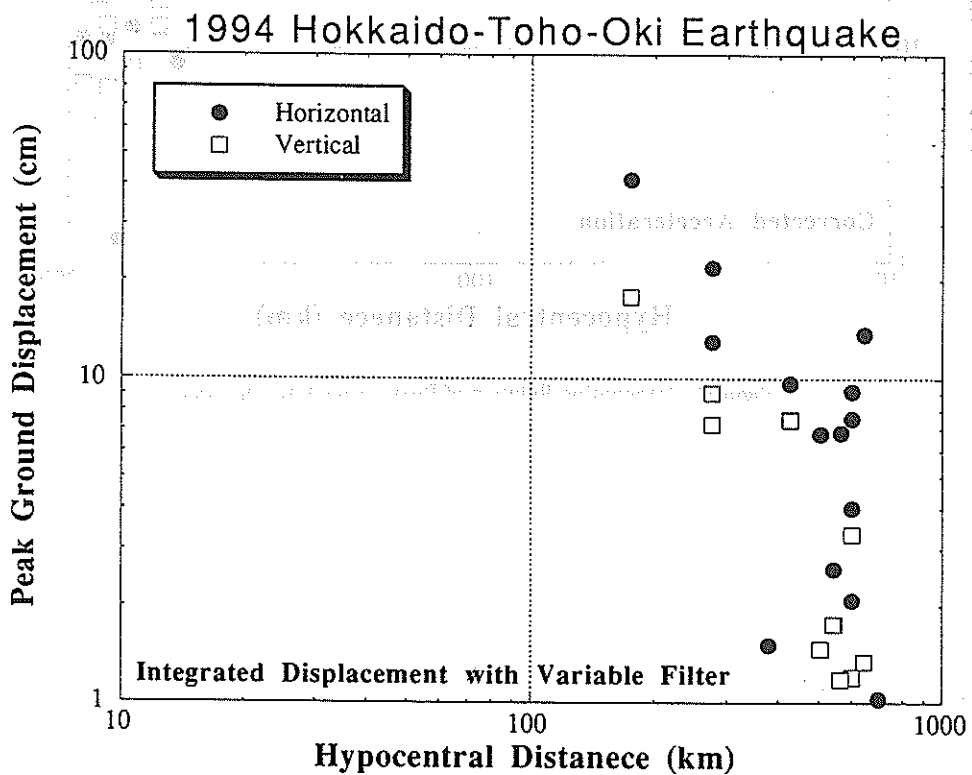
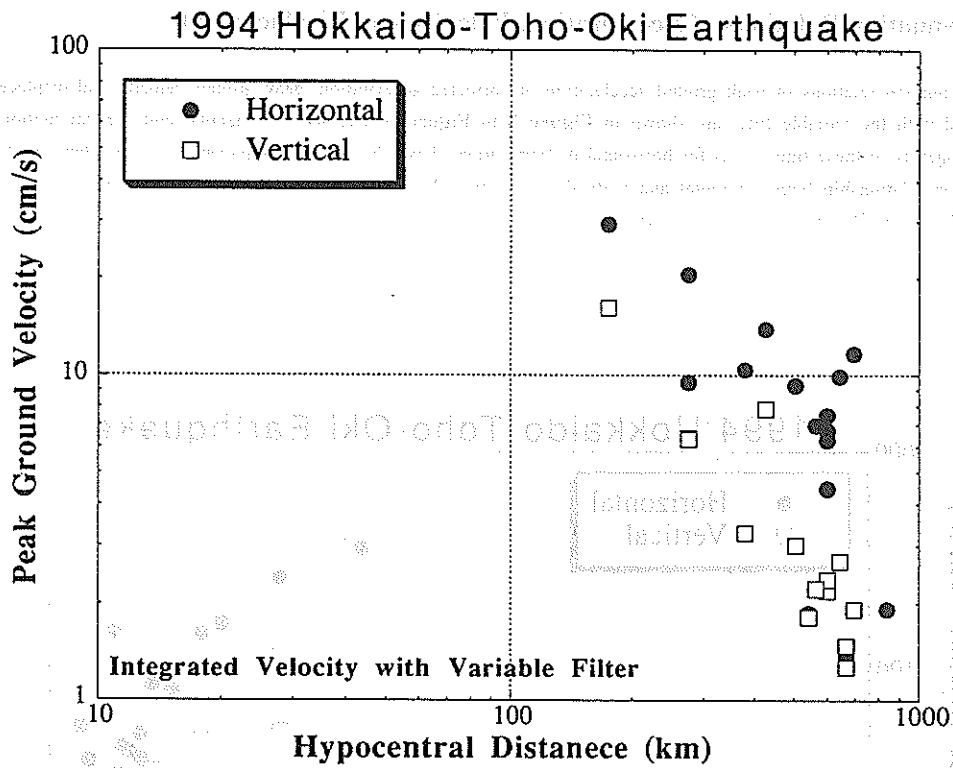


Figure3 Attenuation Relation of Peak Ground Acceleration



5. Amplification of Acceleration at Kushiro Port

1994年10月4日 震害調査報告書

Surface ground motion and base motion of the main shock were observed simultaneously at Kushiro port. In order to examine amplification characteristics of accelerations at Kushiro port, Amplification of accelerations, which are computed by square root of ratio of power spectrum of surface ground motion to that of base motion, are shown in Figure 6.

Acceleration components around 1-2 Hz are amplified in the horizontal motions and 5 Hz for the vertical motion of the main shock.

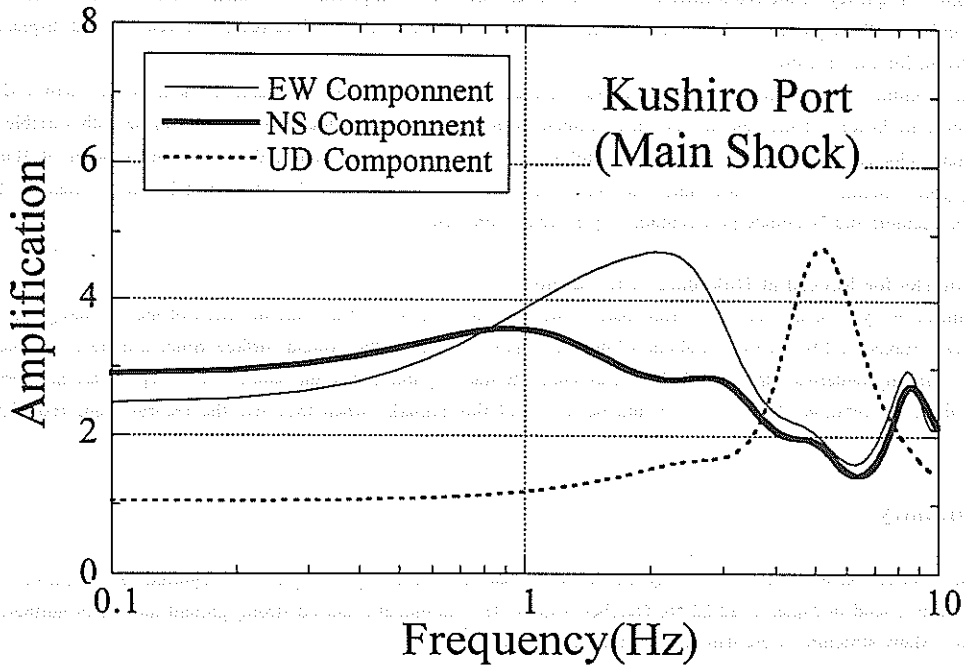


Figure6 Amplification of Acceleration at Kushiro Port (Main Shock on October 4)

6. Remarks for Records

6.1 Remarks for Records Obtained by the Main Shock

The cut-off frequency of a high pass filter for integration of digitized accelerogram should be varied in accordance with frequency characteristics of an accelerogram from a point of view that SN ratio should be higher than some constant level for every frequency component and at the same time the physically real signals should be preserved as much as possible. On the other hand, cut-off frequency of the high pass filter should be constant for any accelerograms from a point of view that the preserved real seismic signals should be filtered out by same filter for purpose of comparison between two or more velocities or displacements even if integrated errors are more or less included in them. In order to satisfy a wide range of applications of the strong-motion records from the various view points, the authors proposed two methods of correction of an accelerogram to obtain integrated velocities and displacements. One is a method with a fixed filter and the other is a method with a variable filter²⁸⁾.

Cut-off frequency of the fixed filter is 0.154 Hz. Therefore wave component lower than 0.154 Hz is removed. On the other hand, cut-off frequency of the variable filter varies with each record. Therefore results of velocity and displacement are different for each record.

For example, cut-off frequency of the record obtained at Hanasaki port by the main shock is about 0.014-0.026 Hz. Therefore time history of the velocity and displacement with fixed filter are quite different from those with variable filter. Maximum velocity and displacement are also different for each other. We can find that ground motion of Hanasaki (F-681) port contains long period components. From such a point of view, records obtained at Kushiro, Urakawa, Otaru, Muroran, Aomori and Hakodate port contain long period components.

6.2 Remarks for Record at Hakodate-FB station

Preliminary analysis of the records at Hakodate-F and FB stations indicated that the direction of the accelerograph at the base rock (Hakodate-FB) is rotated about 47 degrees relative to that at the ground surface. Since a more comprehensive study is currently underway, the records from Hakodate-FB station published in this and previous reports are not corrected for the direction rotation. The readers should be aware of this remarks when they use the records from Hakodate-FB station.

7. Summary

The 1994 Hokkaido-Toho-OkI Earthquake of JMA (Japan Meteorological Agency) Magnitude 8.1 occurred in east off Hokkaido island in Japan at 22:22:56, October 4, 1994. This earthquake caused strong ground motion in northern part of Japan. Many structures were damaged by the earthquake.

The earthquake triggered 30 accelerographs installed at 19 ports in the strong-motion earthquake observation network of the Port and Harbour Research Institute. 20 accelerograms out of 30 were obtained as digital acceleration data of three components observed in port areas in Japan.

This report presents the strong-motion earthquake observation results of this earthquake and the results of preliminary analyses of the 17 digitized acceleration records obtained on surface ground and in ground by the main shock. The records of after shock at 22:42:51, October 4, 1994, at 05:39:51, October 6, 1994 and at 16:55:39, October 9, 1994 are also presented. Original acceleration without instrument correction, corrected acceleration with instrument correction, SMAC-B2 equivalent acceleration, integrated velocity and displacement, response spectra, Fourier spectra and loci of accelerations, velocities and displacements are presented as results of preliminary analyses. Amplification of accelerations of the main shock at Kushiro port are also presented. Attenuation relations of acceleration, velocity and displacement of main shock are also presented in this report.

It was noteworthy that the magnitude of the 1994 Hokkaido-Toho-OkI Earthquake was 8.1, which was the largest magnitude among earthquakes which had been ever obtained in the network of PHRI since 1963, and the record of rock was observed at Hanasaki port.

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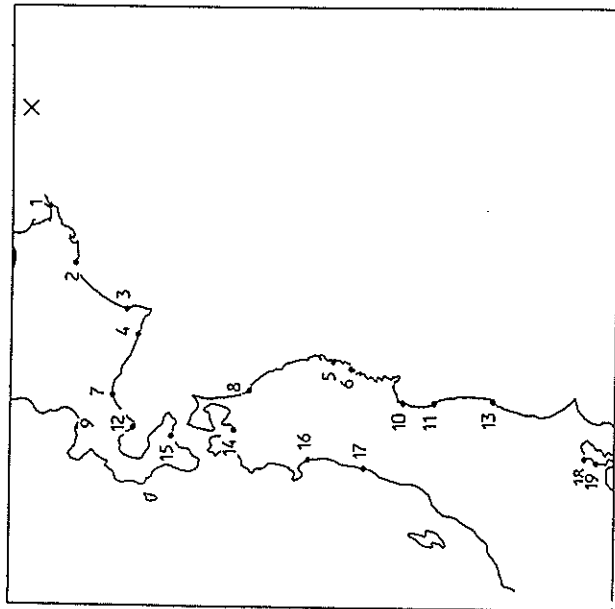
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STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

22:22 OCT. 4, 1994
 E OFF HOKKAIDO
 JMA INTENSITIES
 Ⅶ : KUSHIRO
 Ⅴ : NEMURO, HIROO, URAKAWA
 Ⅳ : ABASHIRI, OBIHIRO,
 HACHINOHE, TOMAKOMAI,
 MUTSU, AOMORI, MORIOKA,
 OFUNATO

Strong Motion Earthquake Observation Results
 October 4, 1994

STATION	CONDITION	RECORD NUMBER	MAX. ACC. (GAL) (NS)	MAX. ACC. (E-W) (UD)	DIST. (KM)
1 HANASAKI-F	ON GROUND	F-681	380	346	256
2 KUSHIRO-G	ON GROUND	F-671	197	269	112
3 KUSHIRO-GB	IN GROUND	F-670	101	105	54
3 TOKACHI-M	ON GROUND	M-1519	142	163	105
4 URAKAWA-S	ON GROUND	S-2580	86	81	28
5 KAMASHI-MB	IN GROUND	M-1524	20	20	19
5 KAMASHI-M	ON GROUND	M-1523	32	44	30
6 OFUNATO-MOUND-M	ON STRUC.	M-1525	53	38	695
6 OFUNATO-BO-S	ON STRUC.	S-2587	43	83	23
6 OFUNATO-BOCHI-S	ON GROUND	S-2586	13	12	8
7 TOMAKOMAI-S	ON GROUND	S-2581	54	51	13
8 HACHINOHE-JI-S	ON GROUND	S-2582	94	71	30
9 OTARU-G	ON GROUND	F-676	9	8	6
10 SENDAI-MB	IN GROUND	M-1522	10	11	7
10 SENDAI-M	ON GROUND	M-1521	38	24	13
11 SONA-S	ON GROUND	S-2584	28	24	7
12 MURORAH-G	ON GROUND	F-679	77	87	34
13 ONAHAMA-JI-S	ON GROUND	S-2583	8	11	7
14 AOMORI-G	ON GROUND	F-680	38	42	23
15 HAKODATE-FR	ON STRUC.	F-669	55	33	13
15 HAKODATE-F	ON GROUND	F-668	32	32	14
15 HAKODATE-FB	IN GROUND	F-667	22	18	12
15 HAKODATE-M	ON GROUND	M-1520	39	37	17
16 AKITA-S	ON GROUND	S-2588	1	1	1
17 SAKATA-S	ON GROUND	S-2585	9	4	823
18 SHINAGAWA-MB	IN GROUND	M-1526	5	5	4
18 SHINAGAWA-S	ON GROUND	S-2589	14	13	5
19 YAMASHITA-FR	ON STRUC.	F-755	20	13	3
19 YAMASHITA-F	ON GROUND	F-754	8	8	4
19 YAMASHITA-FB	IN GROUND	F-753	4	3	3



Results of Preliminary Analyses of the Main Shock at 22:22:56, October 4, 1994

Station	Component	Amplitude (cm)	Duration (sec)
Kobe	North-South	1.8	12
	East-West	1.5	10
	Vertical	0.8	8
Miyako	North-South	1.2	10
	East-West	1.0	8
	Vertical	0.5	6
Miyako	North-South	1.0	10
	East-West	0.8	8
	Vertical	0.4	6

RECORD NUMBER : F-681

STATION : HANASAKI-F

EARTHQUAKE DATA

DATE AND TIME 22:22 OCT. 4,1994
LOCATION OF HYPOCENTER
EPICENTRAL REGION E OFF HOKKAIDO
LATITUDE 43°22.3' N
LONGITUDE 147°42.5' E
DEPTH 23.0KM
JMA MAGNITUDE 8.1

PEAK VALUES OF COMPONENTS

N S E W U D HORIZONTAL*

PARAMETER OF THE VARIABLE FILTER

FC (HZ) 0.023 0.020 0.032

MAXIMUM ACCELERATION (GAL)

SMAC-B2 EQUIVALENT 227.1 277.0 142.0 281.3
ORIGINAL 380.3 346.2 255.6 395.5
CORRECTED 367.2 350.7 266.8 404.3

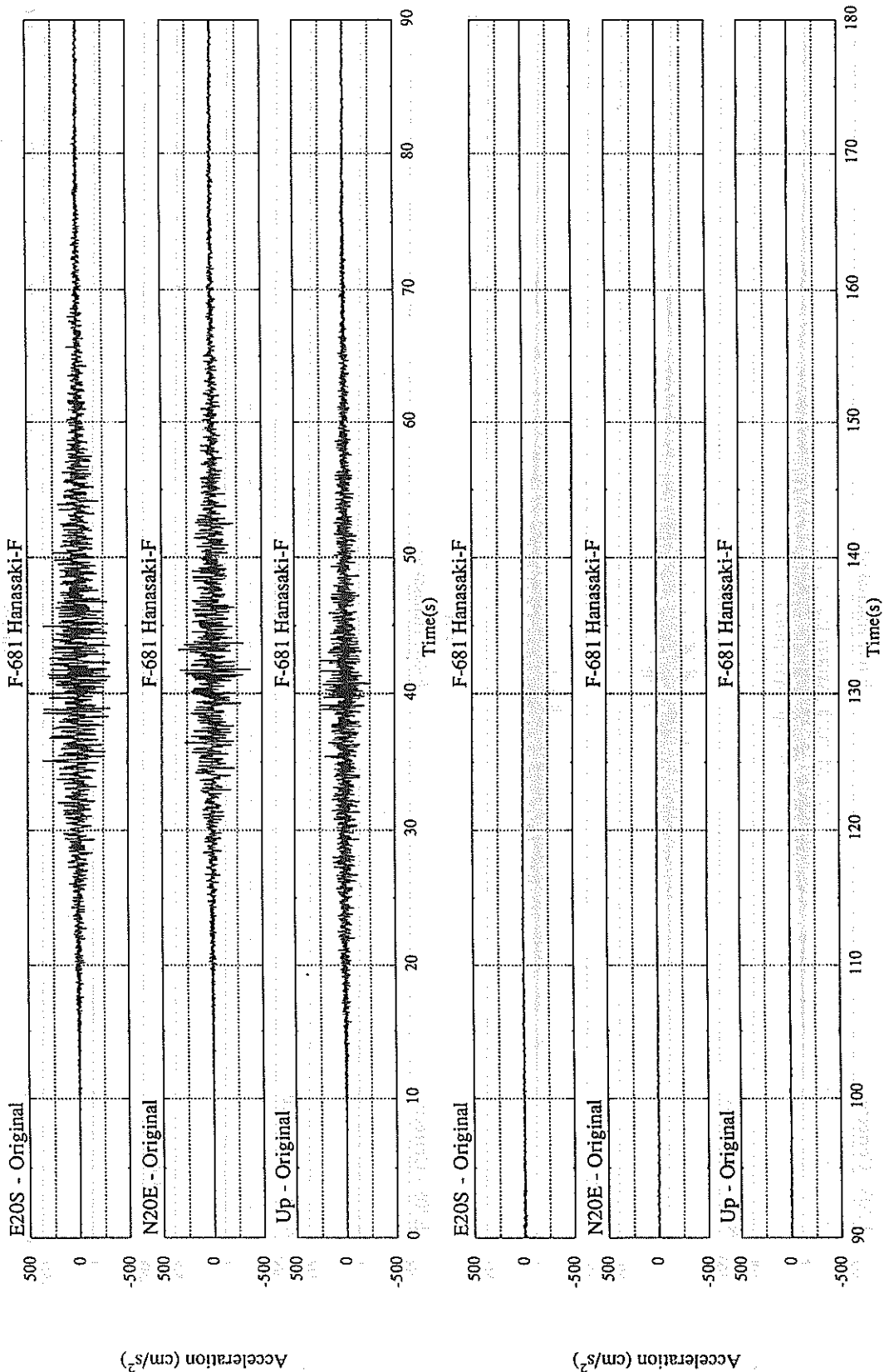
MAXIMUM VELOCITY (CM/SEC)

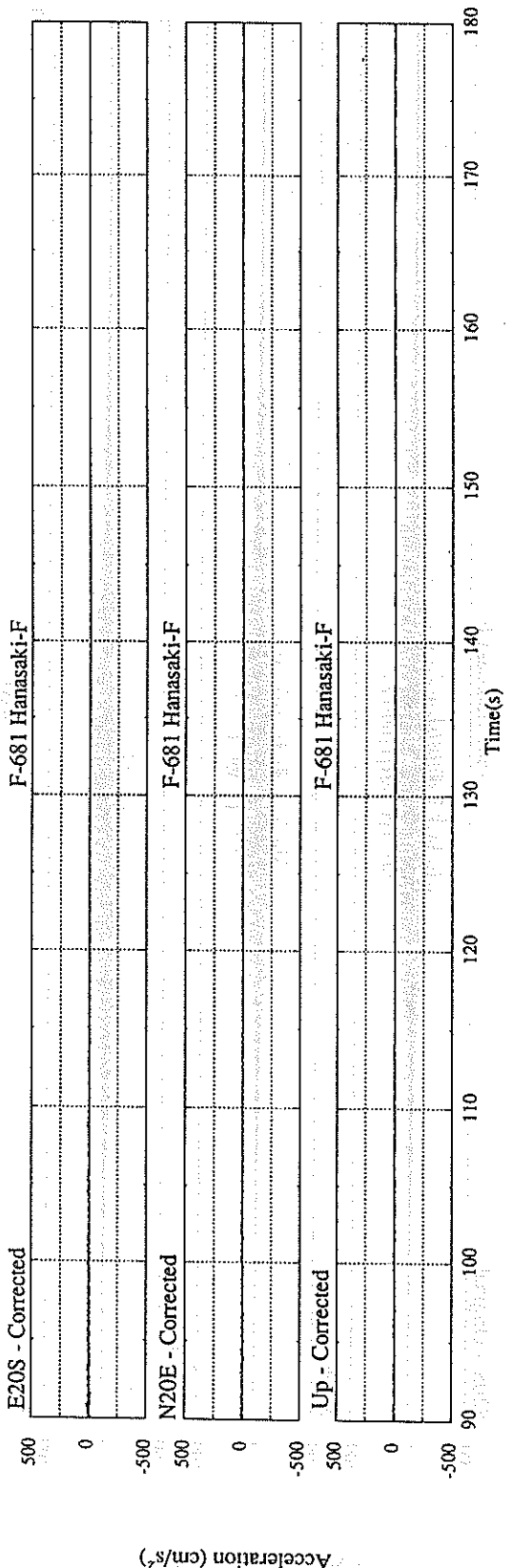
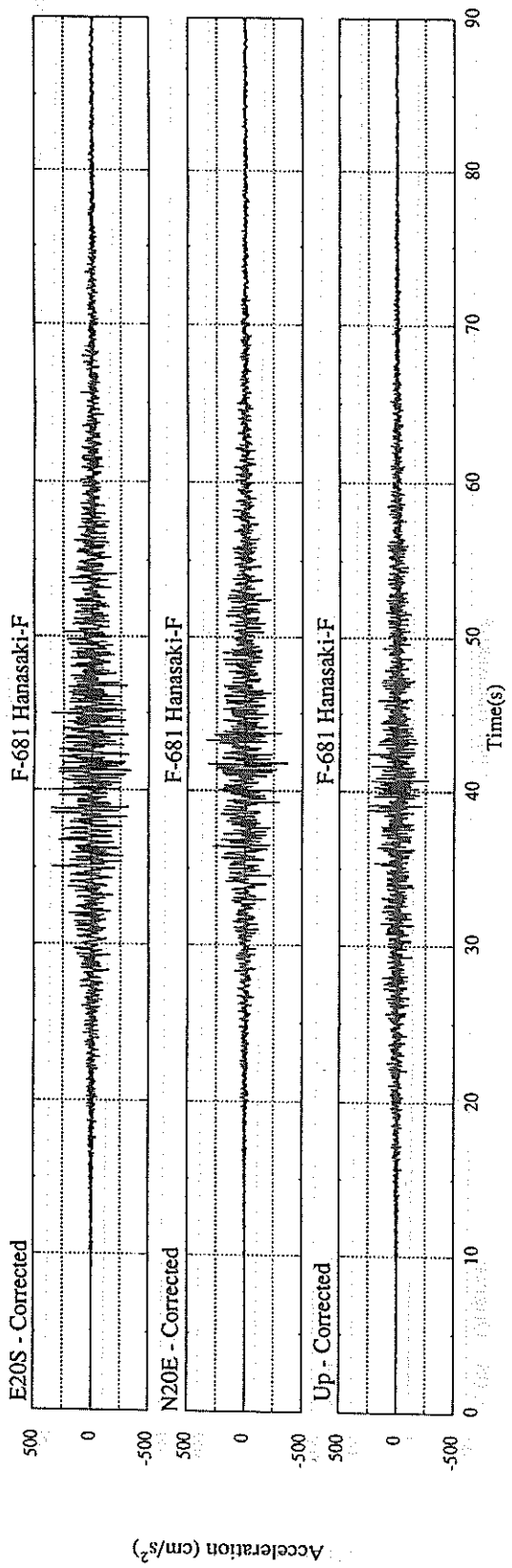
FIXED FILTER 27.60 22.46 14.24 29.14
VARIABLE FILTER 27.85 28.61 15.93 31.96

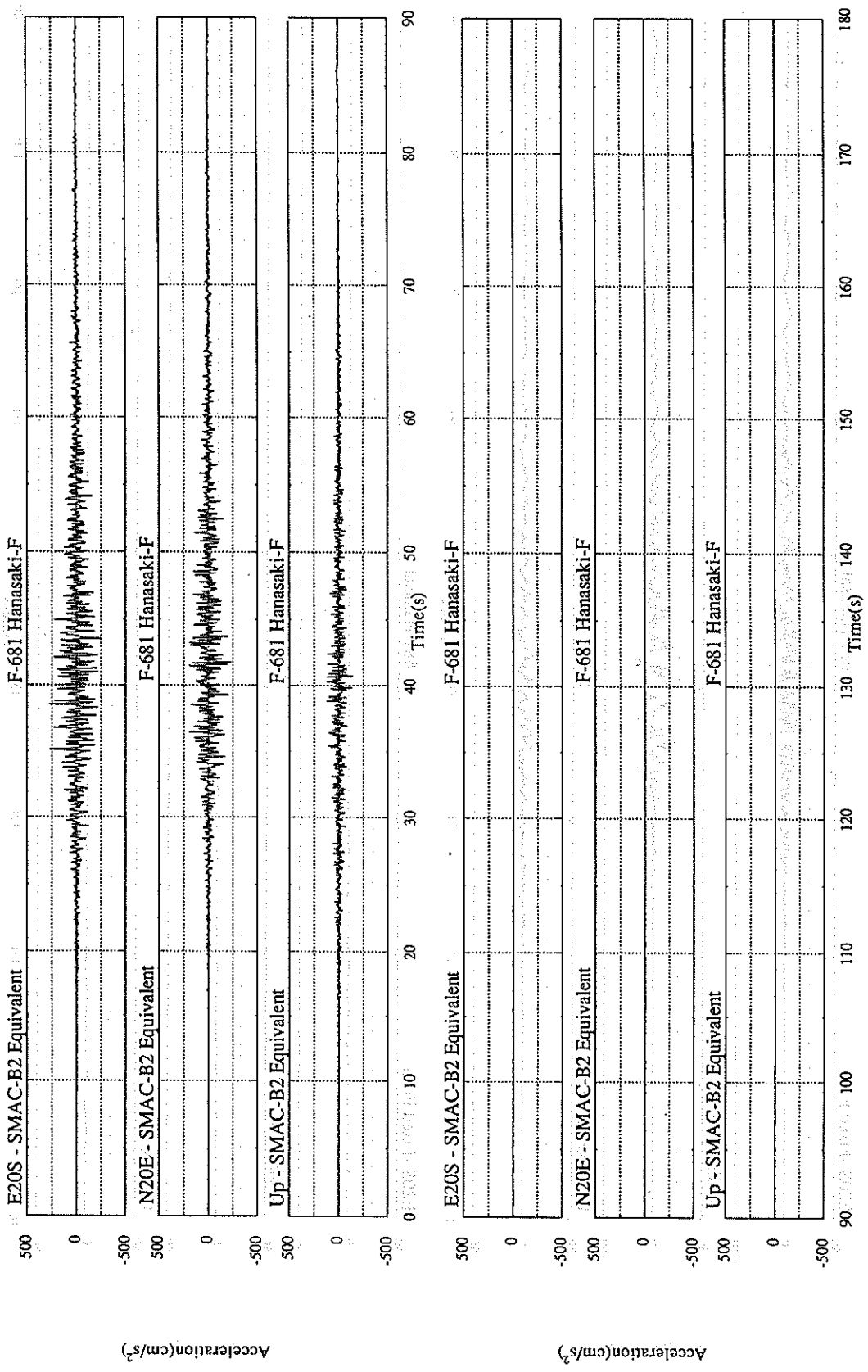
MAXIMUM DISPLACEMENT (CM)

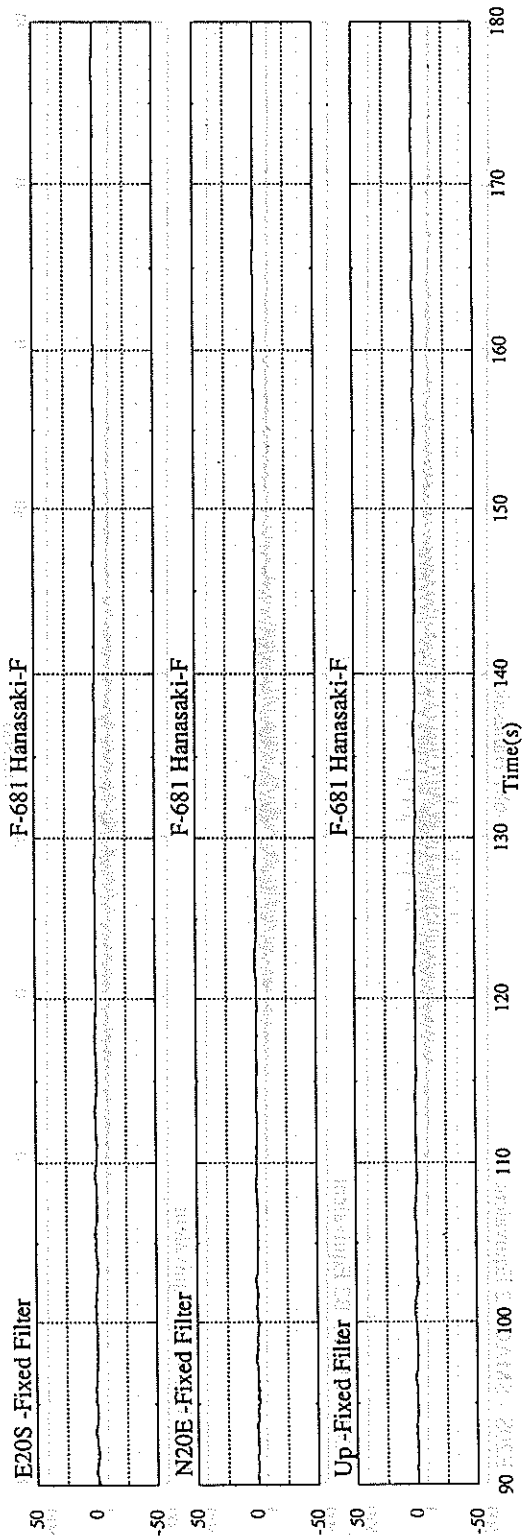
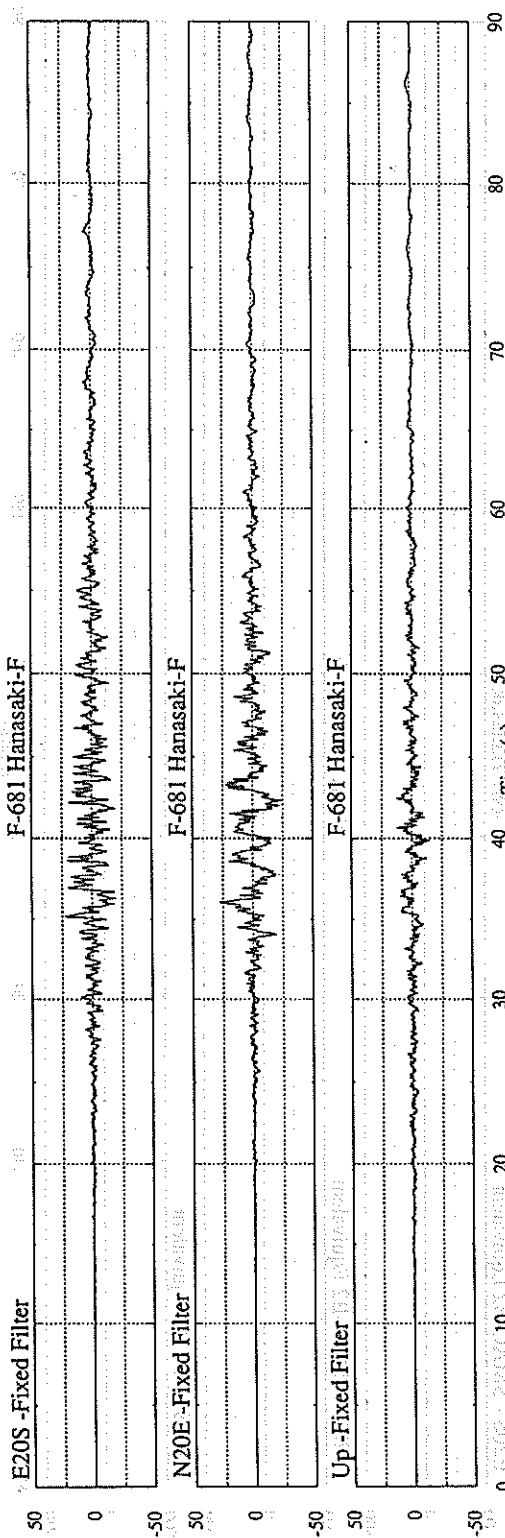
FIXED FILTER 8.29 6.30 5.26 8.48
VARIABLE FILTER 28.75 30.58 15.20 31.74

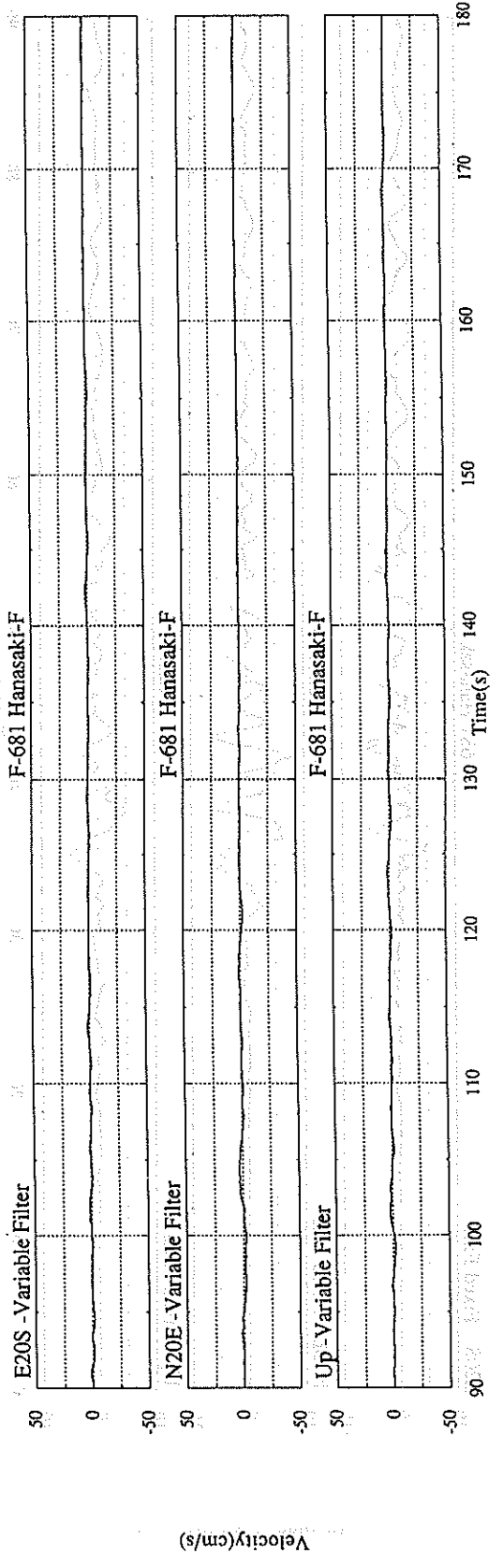
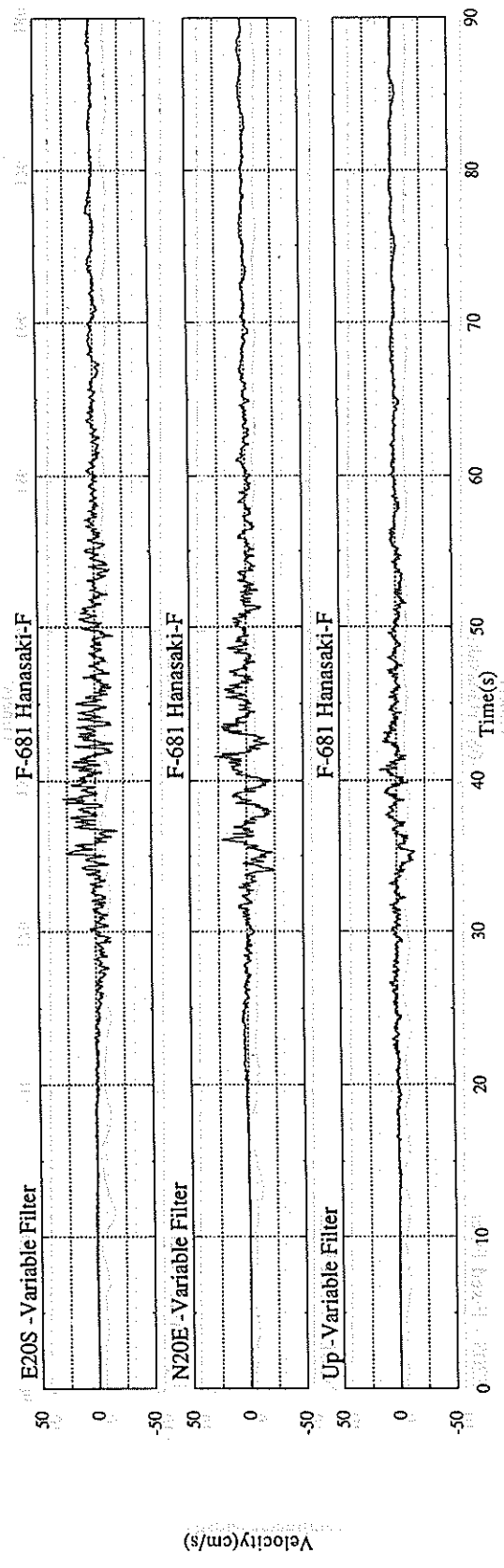
* RESULTANT OF HORIZONTAL COMPONENTS

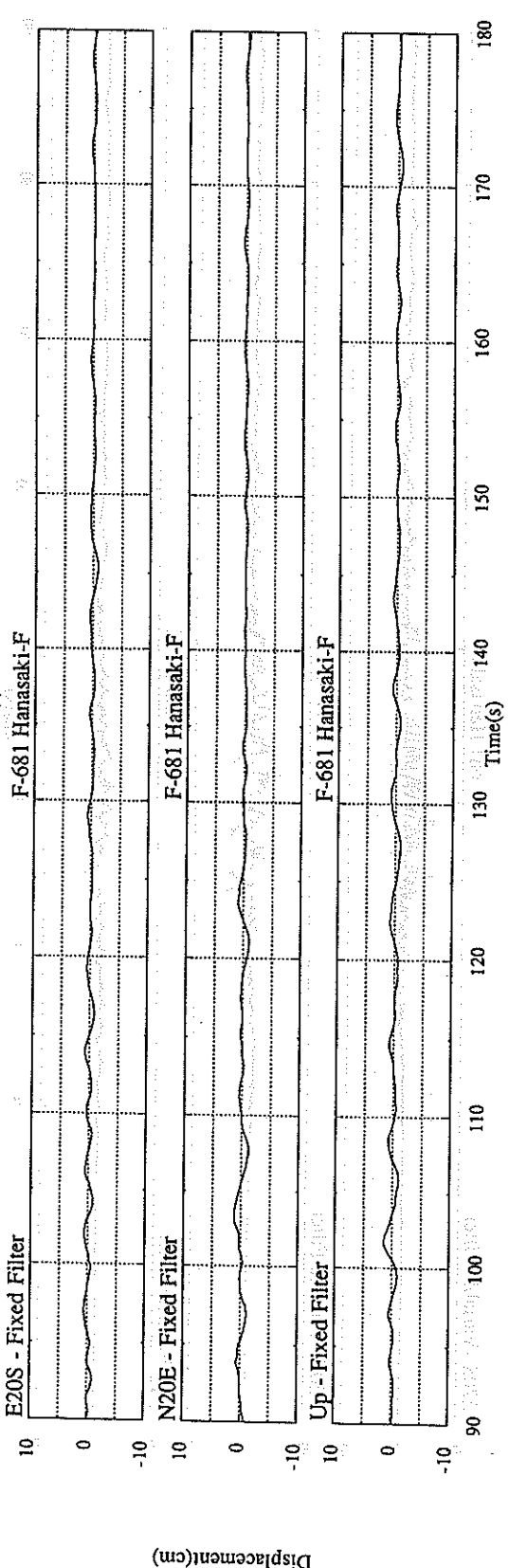
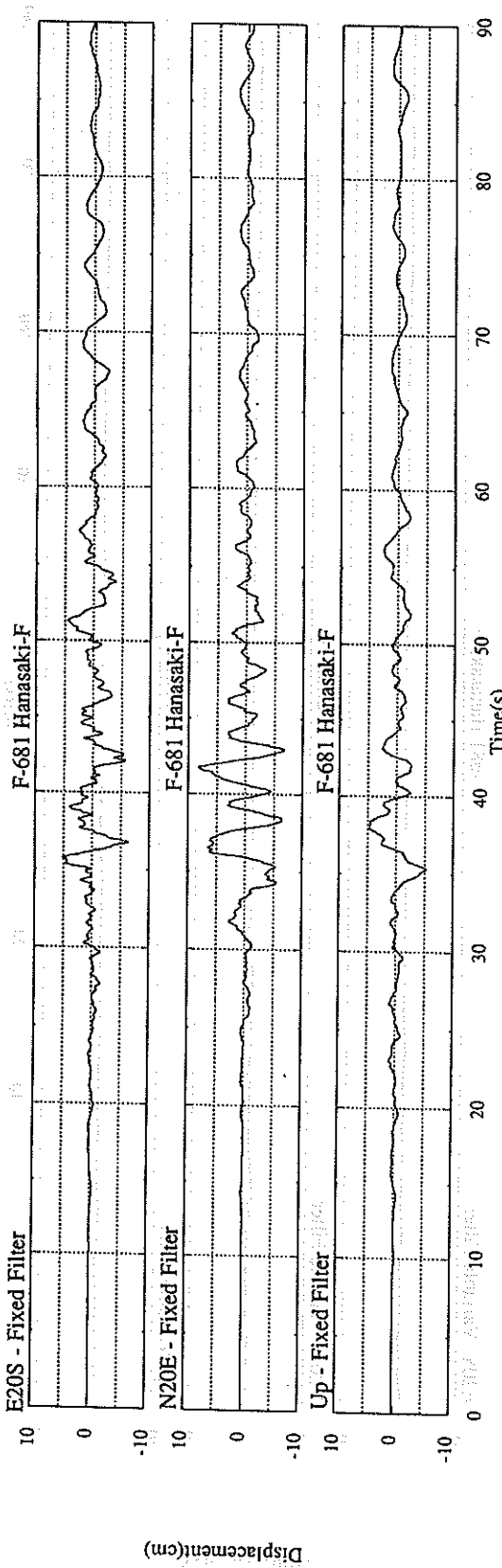


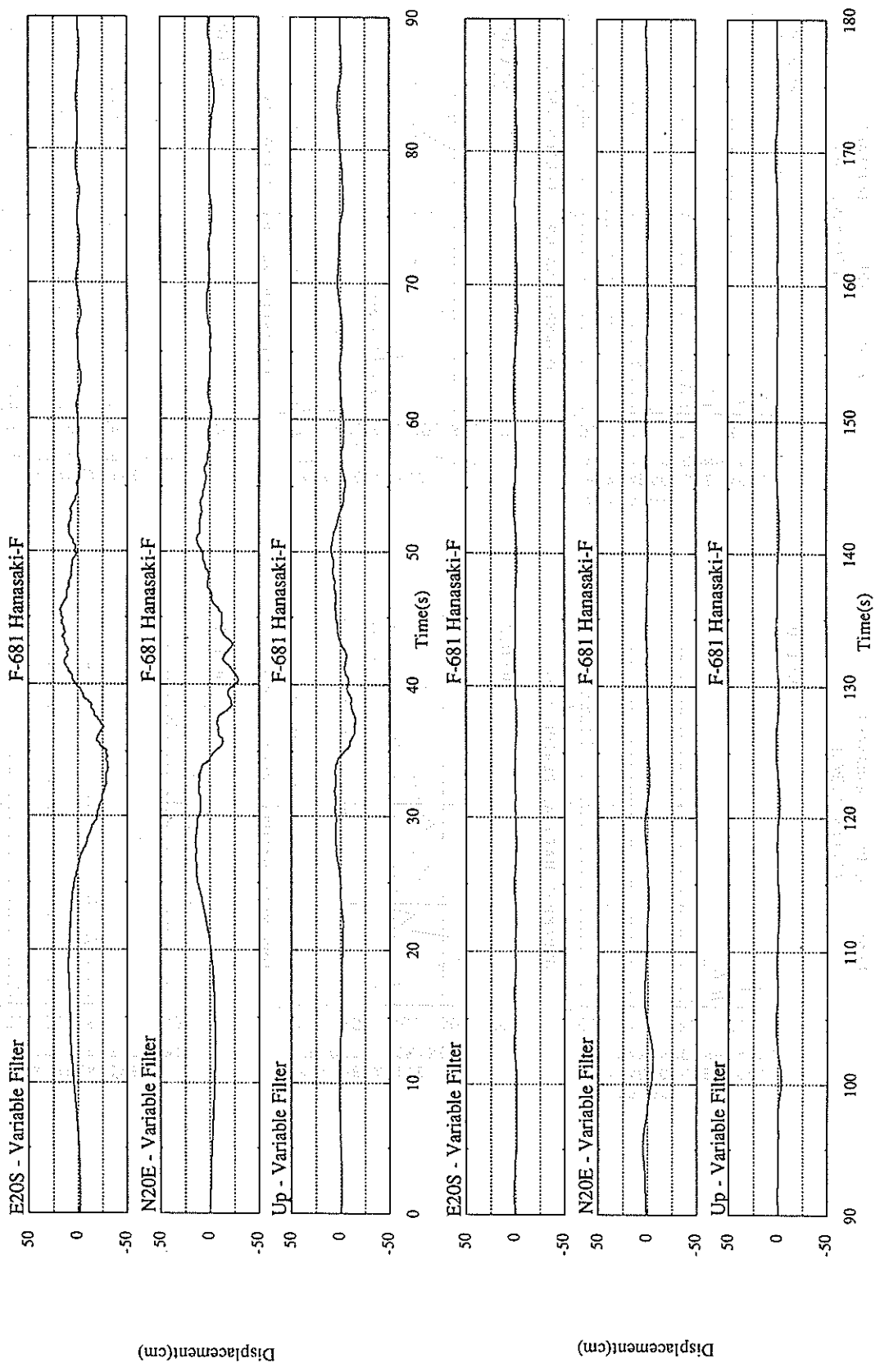




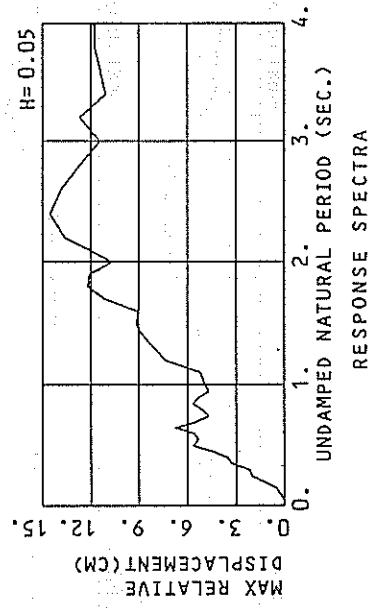
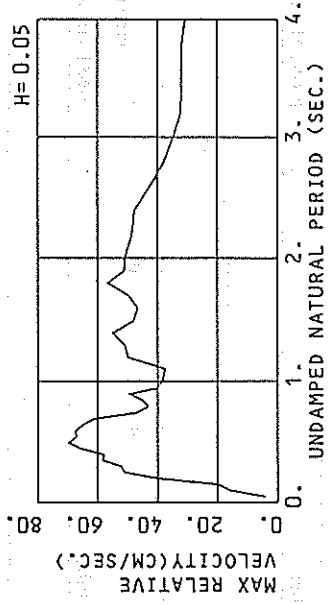
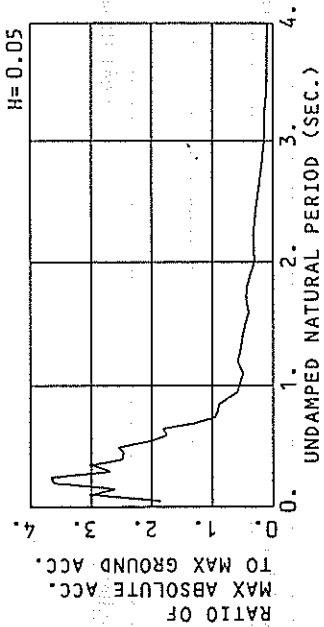




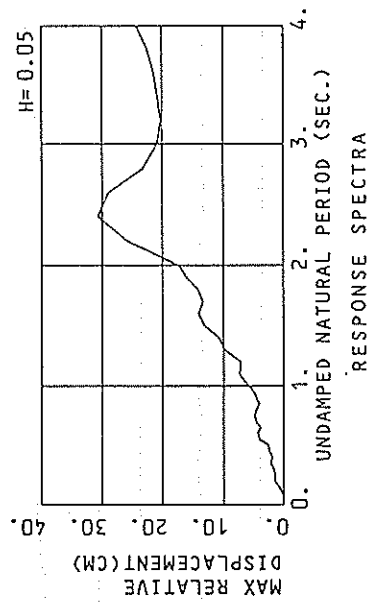
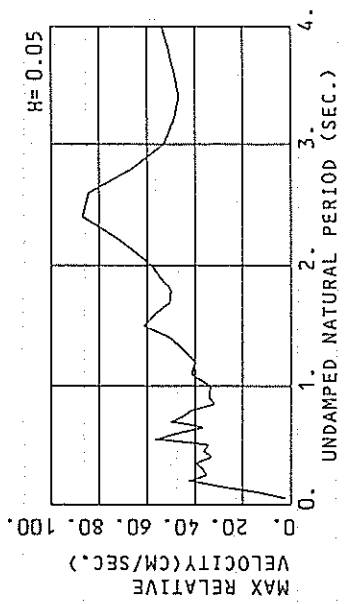
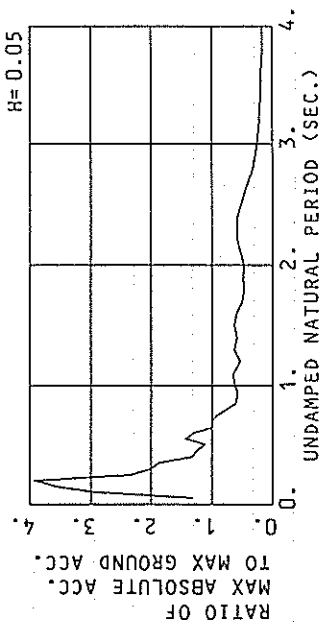




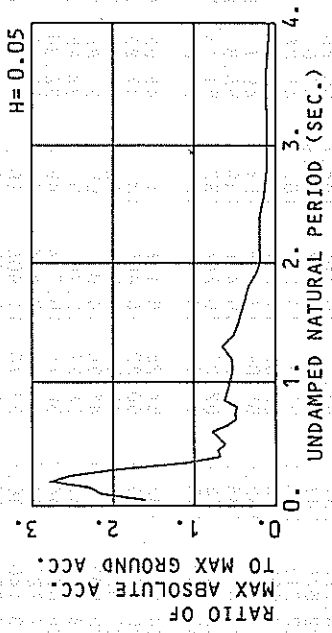
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(1/FC=71.37 SEC.)



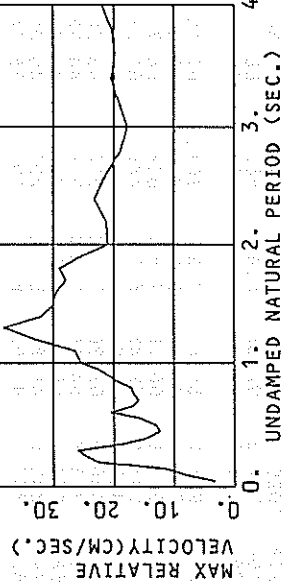
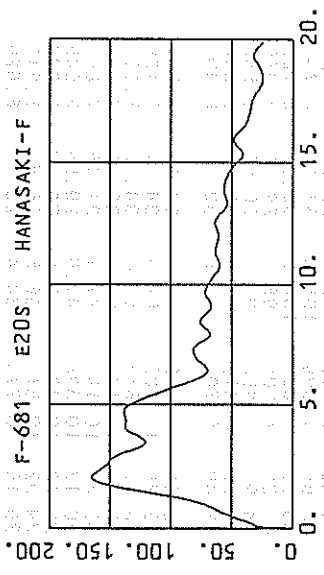
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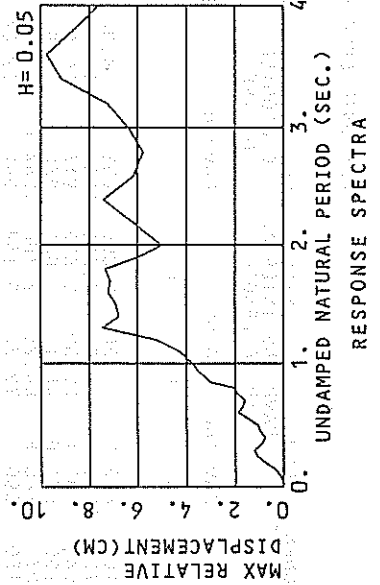
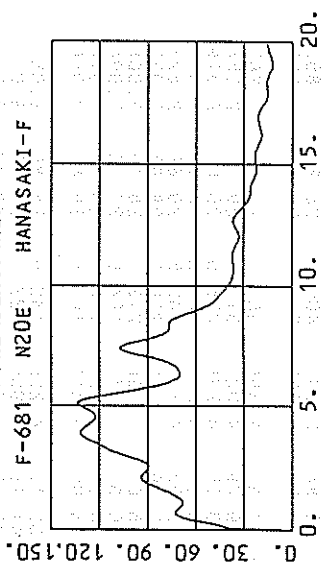
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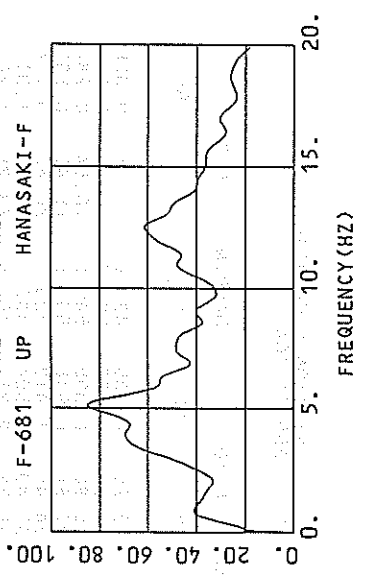
FOURIER SPECTRUM



FOURIER SPECTRUM



FOURIER SPECTRUM



RESPONSE SPECTRUM

RECORD = F-681 COMPONENT = E20S SIGNAL = GR ACC CORRECTION = STATION = HANASAKI-F
 DATE AND TIME = 1994-10-4-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 350.71 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0.				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	2529.3	18.22	0.160	863.2	6.36	0.055	652.0	4.30	0.041	552.5	3.25	0.035	433.0	2.18	0.026					
0.10	2880.7	44.87	0.730	1328.9	19.86	0.338	1062.6	16.09	0.270	792.3	11.36	0.197	521.3	5.94	0.124					
0.15	6221.1	147.84	3.546	1187.4	26.99	0.673	916.2	19.92	0.516	703.9	15.80	0.395	540.0	10.64	0.284					
0.20	4174.4	131.78	4.230	1571.6	48.13	1.601	1266.3	39.62	1.273	955.0	27.84	0.945	593.5	15.40	0.530					
0.25	4470.1	179.95	7.077	1745.8	64.25	2.760	1284.6	51.17	2.143	906.6	34.45	1.413	520.0	20.80	0.754					
0.30	2697.5	131.19	6.150	1390.1	72.62	3.154	942.1	52.04	2.030	670.4	37.40	1.504	485.2	22.47	1.013					
0.35	4231.7	233.49	13.131	1419.5	83.33	4.403	1059.3	58.30	3.266	728.0	38.52	2.210	451.9	23.25	1.263					
0.40	2782.6	176.07	11.278	1099.1	74.06	4.441	873.3	57.84	3.514	595.7	38.15	2.381	416.1	24.71	1.515					
0.45	2956.4	210.22	15.164	1264.2	92.86	6.455	866.5	66.07	4.427	563.5	40.84	2.842	409.7	25.24	1.855					
0.50	2726.4	226.35	17.265	1211.6	93.16	7.562	892.1	69.49	5.627	618.5	45.03	3.833	391.6	26.61	2.090					
0.55	2065.4	187.85	15.826	961.2	85.62	7.367	701.8	67.10	5.339	519.6	47.33	3.866	350.1	28.22	2.267					
0.60	1369.2	134.61	12.486	762.1	69.34	6.934	513.5	67.42	5.562	450.2	49.29	4.022	310.4	29.76	2.258					
0.65	2128.4	220.57	22.778	907.6	90.76	9.688	636.6	64.71	6.764	414.6	43.35	4.298	255.5	30.60	2.319					
0.70	755.8	85.07	9.380	547.9	72.45	6.785	445.3	61.07	5.484	334.0	46.37	4.013	249.6	30.72	2.614					
0.75	866.9	106.50	12.351	433.8	58.01	6.172	331.1	46.94	4.670	300.8	42.65	4.115	242.5	28.89	2.828					
0.80	911.2	121.22	14.772	456.3	62.20	7.383	318.1	43.20	5.118	267.9	39.39	4.160	229.0	28.95	2.957					
0.85	720.3	96.80	13.183	373.4	64.19	6.820	314.1	44.93	5.690	251.1	36.07	4.396	212.1	28.19	3.008					
0.90	808.4	121.23	16.585	374.9	65.71	7.671	260.9	49.49	5.299	207.8	36.34	4.077	194.9	27.53	2.998					
0.95	688.7	103.97	15.745	242.5	48.85	5.532	207.5	40.03	4.702	168.5	34.59	3.731	178.5	26.67	2.974					
1.00	573.3	94.29	14.522	267.0	45.96	6.751	196.2	38.74	4.919	140.8	34.99	3.413	164.5	26.83	2.656					
1.10	479.8	90.55	14.706	233.6	43.55	7.147	171.7	37.49	5.216	146.0	32.13	4.220	142.9	28.86	2.957					
1.20	458.7	83.10	16.732	276.4	59.57	10.060	202.2	49.97	7.294	142.9	41.16	4.965	122.1	31.11	3.011					
1.30	329.1	65.68	14.088	237.6	47.73	10.155	188.8	50.86	8.019	140.0	45.07	5.757	106.7	32.42	3.564					
1.40	456.2	103.05	22.649	247.4	68.93	12.264	175.9	55.01	8.690	129.1	43.26	6.158	109.0	32.27	4.225					
1.50	389.8	98.71	22.215	233.6	62.91	13.274	162.3	48.08	9.167	134.3	35.65	7.399	108.5	31.26	4.795					
1.60	202.0	59.77	13.096	170.8	53.56	11.062	140.9	46.76	9.040	127.1	35.95	7.889	104.5	30.23	5.185					
1.70	229.4	67.34	16.793	182.5	55.09	13.315	154.3	48.73	11.131	118.6	41.22	8.306	98.1	29.56	5.389					
1.80	315.0	94.65	25.852	188.2	66.66	15.416	149.4	56.63	12.182	109.8	44.92	8.865	90.2	30.63	5.545					
1.90	467.0	141.44	42.703	178.4	62.27	16.284	133.5	51.18	12.106	106.1	43.59	9.370	81.6	32.18	6.044					
2.00	316.4	100.70	32.053	140.0	56.66	14.171	106.7	51.01	10.690	100.0	42.40	9.700	74.8	33.37	6.408					
2.20	196.3	69.03	24.069	132.6	54.25	16.186	113.1	48.53	13.620	90.7	43.68	10.566	70.4	34.80	6.741					
2.40	139.0	67.85	20.277	113.2	50.82	16.465	100.7	47.83	14.522	83.3	43.26	11.702	62.3	34.97	7.106					
2.60	161.1	67.74	27.580	87.4	49.56	14.904	82.4	42.39	13.833	73.4	39.73	11.813	56.1	34.12	7.631					
2.80	103.7	51.78	20.603	75.7	42.36	14.981	65.5	37.85	12.718	61.3	36.07	11.171	52.2	32.72	7.694					
3.00	83.2	46.43	18.974	57.1	38.37	12.961	51.3	34.85	11.442	49.9	32.81	10.191	47.1	31.15	7.661					
3.20	108.3	56.89	28.093	64.7	36.74	16.714	49.8	32.36	12.712	43.6	30.12	10.338	41.9	29.55	8.045					
3.40	60.5	41.68	17.723	44.0	33.33	12.864	39.3	32.03	11.076	39.6	28.13	10.433	38.6	28.00	8.320					
3.60	40.0	35.37	13.140	36.5	33.70	11.905	36.5	32.16	11.395	36.4	29.32	10.618	36.5	26.53	8.513					
3.80	37.8	35.68	13.835	34.3	33.62	12.405	33.6	31.94	11.768	33.6	28.15	10.774	34.4	25.17	8.629					
4.00	52.5	37.82	21.318	35.4	32.08	14.241	30.5	30.79	11.745	30.8	28.51	10.770	32.4	23.89	8.679					

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = F-681
 DATE AND TIME = 1994-10-4-22-23
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = N2OE
 SIGNAL = GR. ACC.
 SAMPLING INTERVAL = 0.0100 (SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION = MAX. GROUND ACC. = 367.13 (GAL)
 STATION = HANASAKI-F

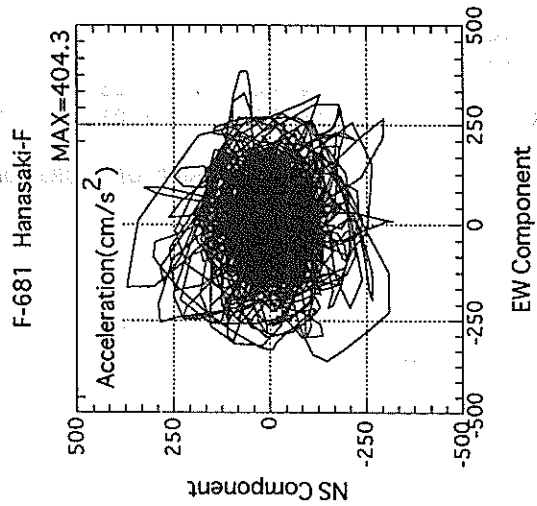
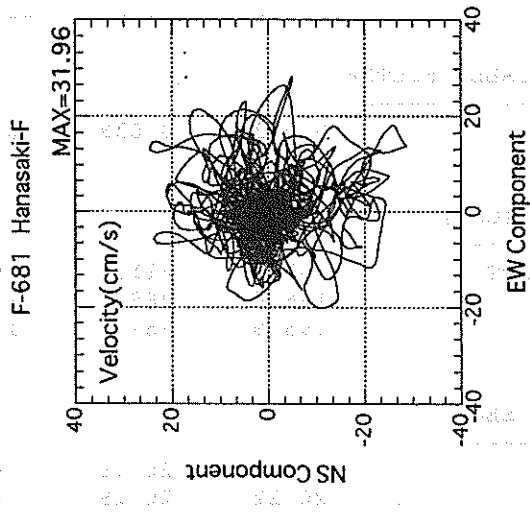
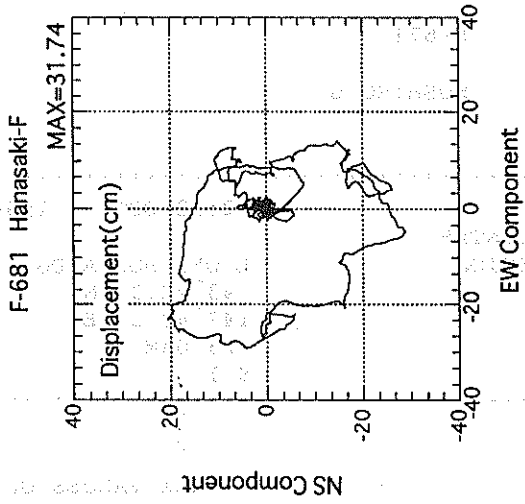
PER	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	2176.5	16.87	0.138	582.7	2.93	0.037	483.2	2.09	0.031	419.8	1.79	0.027	411.0	1.42	0.026
0.10	3360.8	49.62	0.851	1325.6	16.41	0.336	1074.9	12.54	0.273	849.4	9.31	0.214	632.9	6.36	0.50
0.15	3200.2	73.09	1.824	1889.8	37.42	0.955	1310.2	28.47	0.735	955.0	20.62	0.533	673.8	12.26	0.351
0.20	4972.7	157.66	5.038	1701.4	54.59	1.730	1443.7	42.19	1.453	1080.6	32.40	1.086	619.1	17.81	0.570
0.25	2913.4	114.01	4.612	1156.8	48.20	1.833	858.6	35.25	1.350	631.5	27.17	0.983	454.4	19.15	0.650
0.30	3281.7	157.88	7.481	1055.4	53.12	2.404	731.8	36.62	1.665	526.0	27.26	1.166	404.7	18.86	0.798
0.35	1930.5	108.79	5.990	835.5	47.91	2.586	689.0	39.61	2.128	512.5	29.56	1.556	334.3	18.17	0.894
0.40	1320.0	84.23	5.350	653.2	41.28	2.650	484.4	33.08	1.953	406.3	28.54	1.597	318.4	18.82	1.083
0.45	1265.0	91.23	6.489	591.6	47.62	3.034	460.0	36.19	2.340	384.0	28.40	1.913	284.8	21.38	1.192
0.50	1316.4	104.86	8.336	497.9	43.36	3.148	404.2	34.36	2.541	349.2	32.90	2.138	256.1	24.33	1.469
0.55	1805.9	160.36	13.838	696.3	72.81	5.331	525.4	56.54	4.010	381.0	41.67	2.871	254.5	26.21	1.758
0.60	1223.0	118.55	11.152	561.9	54.46	5.113	471.6	47.08	4.274	360.2	37.99	3.212	241.4	25.74	1.974
0.65	960.5	100.22	10.280	443.5	44.42	4.737	358.7	36.43	3.815	269.5	30.97	2.799	223.5	24.14	2.094
0.70	661.6	81.66	8.212	471.4	60.97	5.843	367.6	49.76	4.533	257.4	30.16	3.159	204.8	22.57	2.174
0.75	729.0	80.38	10.330	431.8	50.47	6.146	335.0	44.75	4.736	256.9	35.95	3.592	187.1	21.68	2.221
0.80	705.0	108.75	12.953	367.0	51.54	5.946	283.0	41.15	4.554	234.4	30.61	3.693	167.7	21.79	2.297
0.85	369.1	58.94	6.755	240.9	37.65	4.405	232.3	31.69	4.025	201.7	25.50	3.556	154.8	20.56	2.423
0.90	412.8	58.62	8.471	269.3	40.93	5.511	216.7	33.89	4.408	175.3	25.76	3.452	136.2	20.07	2.492
0.95	334.5	54.20	7.646	247.2	39.49	5.640	213.7	33.75	4.853	171.7	25.87	3.821	146.7	20.54	2.694
1.00	523.2	82.11	13.253	288.5	41.82	7.296	228.3	33.28	5.737	178.9	28.00	4.418	130.4	21.29	2.931
1.10	664.4	116.69	20.363	303.0	50.90	9.270	239.7	41.59	7.285	180.8	32.28	5.321	125.8	22.37	3.204
1.20	414.7	81.79	15.126	252.3	53.46	9.189	195.0	39.91	7.064	142.1	32.91	4.893	112.2	25.05	3.593
1.30	365.2	73.81	15.633	284.4	54.13	12.157	230.2	44.90	9.787	166.4	37.52	6.910	112.2	26.92	4.179
1.40	761.4	170.32	37.804	295.8	66.37	14.656	217.1	50.29	10.700	159.6	39.48	7.657	113.1	27.74	4.903
1.50	487.8	119.48	27.801	312.2	81.90	17.760	229.6	61.34	13.008	170.1	41.60	9.454	115.7	27.86	5.616
1.60	531.0	135.46	34.435	263.7	69.28	17.082	218.4	56.49	14.117	169.6	41.24	10.674	114.7	27.50	6.138
1.70	243.8	65.76	17.850	192.9	54.01	14.099	183.4	50.46	13.368	155.6	40.70	11.216	109.6	28.38	6.680
1.80	197.8	60.31	16.230	184.3	55.03	15.101	173.4	50.07	14.135	150.3	43.04	12.043	100.6	29.73	7.266
1.90	218.9	71.74	20.017	195.1	62.14	17.820	175.3	54.31	15.957	145.3	45.92	13.057	97.5	31.63	7.734
2.00	290.9	102.30	29.472	198.4	67.23	20.065	171.5	57.98	17.290	140.7	47.91	13.915	99.7	32.75	8.460
2.20	361.1	127.87	44.276	267.6	91.79	32.774	211.8	70.89	25.787	155.1	52.17	18.623	99.2	34.99	10.379
2.40	424.0	163.21	61.856	270.7	112.08	39.428	210.6	87.04	30.652	154.6	55.49	21.759	95.7	39.91	11.183
2.60	280.9	120.17	48.094	207.8	98.92	35.541	159.6	84.18	28.909	129.2	63.94	20.869	84.1	41.01	11.340
2.80	210.8	94.92	41.864	141.2	76.13	27.992	118.5	66.71	23.341	90.9	55.17	17.497	69.1	39.09	10.684
3.00	116.4	67.64	26.542	102.6	59.50	23.291	92.9	53.14	20.858	78.7	44.49	17.238	59.1	37.14	10.767
3.20	90.7	56.79	23.524	84.6	53.18	21.911	79.9	48.86	20.770	71.1	44.09	17.270	52.4	35.67	10.906
3.40	83.3	53.35	24.405	77.7	49.06	22.689	71.6	46.67	20.770	62.1	43.03	17.117	46.5	34.61	10.647
3.60	86.9	57.79	28.531	74.9	42.79	24.508	66.3	48.53	21.422	54.0	41.44	16.914	46.5	33.93	11.504
3.80	86.6	63.90	31.685	68.4	56.65	24.951	62.1	51.04	22.451	53.2	42.77	18.737	42.8	33.29	12.221
4.00	88.8	74.12	35.985	67.1	62.08	27.177	60.3	53.77	24.159	51.5	43.60	19.873	40.9	32.35	12.658

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

PER	DAMPING = 0			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	3150.2	24.96	0.199	590.2	4.57	0.037	429.4	3.26	0.027	411.0	2.23	0.026	368.9	1.70	0.022
0.10	2823.8	44.51	0.715	699.4	10.59	0.177	574.2	8.14	0.146	468.5	5.74	0.117	383.9	4.83	0.089
0.15	1601.5	36.72	0.913	714.9	14.62	0.408	608.3	11.55	0.345	506.7	8.60	0.288	401.1	6.19	0.207
0.20	2533.7	81.20	2.587	886.9	29.01	0.903	742.2	22.58	0.741	531.7	15.83	0.527	337.4	9.24	0.310
0.25	3524.9	141.49	5.580	902.9	34.56	1.422	671.2	24.79	1.061	419.4	16.76	0.650	275.4	10.09	0.388
0.30	1643.5	79.20	3.747	751.6	36.86	1.712	527.3	25.89	1.197	346.4	17.32	0.768	225.4	11.15	0.452
0.35	1541.3	86.02	4.782	394.4	24.36	1.221	296.3	18.52	0.912	224.2	14.82	0.677	185.3	10.61	0.492
0.40	1121.0	74.01	4.543	277.2	19.28	1.123	181.8	14.39	0.732	157.2	12.39	0.621	148.6	9.75	0.512
0.45	637.2	46.69	3.269	248.2	17.77	1.269	189.1	12.32	0.963	167.0	10.66	0.834	140.5	8.90	0.620
0.50	445.1	35.16	2.818	194.2	16.31	1.230	183.2	12.98	1.028	156.7	9.66	0.964	133.9	8.46	0.706
0.55	375.9	33.03	2.880	203.9	19.34	1.560	188.3	15.55	1.433	157.0	11.72	1.172	121.7	8.42	0.751
0.60	767.3	71.75	6.997	292.1	27.72	2.661	206.1	20.48	1.868	141.1	14.82	1.263	105.2	9.27	0.774
0.65	350.1	38.00	3.747	196.7	20.86	2.101	156.1	16.81	1.660	117.2	13.16	1.231	88.3	9.55	0.768
0.70	273.5	30.73	3.395	171.8	21.42	2.130	130.2	15.80	1.599	99.1	11.72	1.199	74.5	9.40	0.763
0.75	419.6	50.08	5.978	177.5	21.71	2.526	131.6	16.66	1.865	92.6	12.11	1.280	71.7	9.55	0.897
0.80	290.9	38.35	4.717	165.5	20.91	2.677	125.7	17.16	2.023	92.6	12.64	1.482	76.1	10.03	1.065
0.85	486.9	66.09	8.910	230.2	27.67	4.208	166.0	19.24	3.026	116.7	14.20	2.079	79.1	10.60	1.216
0.90	308.2	44.26	6.324	195.2	26.26	3.997	162.1	20.89	3.293	117.6	15.14	2.300	79.4	11.43	1.314
0.95	322.3	47.61	7.368	217.6	31.62	4.967	155.4	22.38	3.536	113.7	17.89	2.523	77.0	12.50	1.370
1.00	367.3	60.85	9.304	182.3	33.20	4.612	149.1	25.37	3.744	114.0	18.42	2.764	73.4	13.66	1.514
1.10	223.2	41.09	6.840	172.6	32.70	5.278	140.9	26.47	4.288	101.4	20.19	3.050	70.8	15.62	1.909
1.20	232.9	45.96	8.497	175.8	38.05	6.400	143.6	32.92	5.228	111.0	25.05	3.930	73.9	16.69	2.266
1.30	527.3	110.27	22.574	247.2	52.51	10.569	174.6	38.13	7.438	119.4	26.89	4.942	73.7	16.31	2.552
1.40	197.8	44.16	9.821	155.9	36.62	7.729	137.5	31.93	6.769	110.2	24.80	5.272	70.0	16.78	2.956
1.50	324.8	77.55	18.514	143.0	34.70	8.143	121.6	29.87	6.889	97.3	24.02	5.250	68.8	16.29	3.126
1.60	233.3	59.92	15.131	143.1	36.03	9.264	111.8	29.59	7.193	85.2	22.44	5.330	63.9	15.59	3.103
1.70	133.4	40.41	9.765	117.1	32.51	8.557	98.1	27.87	7.129	75.6	22.63	5.268	57.3	16.21	2.941
1.80	193.4	56.12	15.873	114.1	36.75	9.349	90.0	29.00	7.329	65.5	22.63	5.299	50.3	16.40	2.918
1.90	146.1	43.81	13.362	81.2	29.21	7.418	66.6	25.61	6.009	56.4	21.48	5.004	44.7	16.23	3.132
2.00	65.3	26.45	6.620	55.5	23.35	5.598	50.0	21.06	5.009	47.2	19.17	4.632	41.4	15.78	3.269
2.20	111.0	39.71	13.609	66.0	24.30	8.062	51.0	21.28	6.196	42.1	17.12	4.903	34.9	14.60	3.419
2.40	104.3	43.93	15.217	63.8	27.65	9.281	51.3	23.25	7.407	37.0	19.07	5.251	29.5	14.34	3.382
2.60	54.0	32.02	9.247	41.9	25.21	7.170	36.2	21.43	6.158	29.7	17.70	4.900	25.9	14.43	3.387
2.80	37.8	26.22	7.504	32.4	21.59	6.412	28.6	18.95	5.766	25.9	17.10	4.924	22.5	14.42	3.383
3.00	35.4	19.16	8.081	31.8	18.18	7.217	28.7	17.71	6.383	24.5	16.90	5.124	19.3	14.28	3.428
3.20	57.5	29.77	14.915	35.4	20.99	9.148	28.2	19.08	7.253	23.9	17.16	6.002	18.5	13.96	4.086
3.40	60.6	34.13	17.739	36.7	24.67	10.707	31.6	20.46	9.140	25.8	16.85	7.234	14.10	14.692	4.692
3.60	41.7	31.64	13.700	34.7	24.17	11.336	30.1	19.72	8.765	25.0	15.48	7.824	19.4	14.56	5.161
3.80	33.4	28.19	12.210	25.3	23.24	9.198	24.1	20.41	8.655	22.3	17.69	7.723	19.2	15.15	5.505
4.00	19.7	25.49	7.987	18.6	23.70	7.486	19.2	22.02	7.620	19.8	19.44	7.529	18.6	15.68	5.756

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)



RECORD NUMBER : F-671
 STATION : KUSHIRO-G

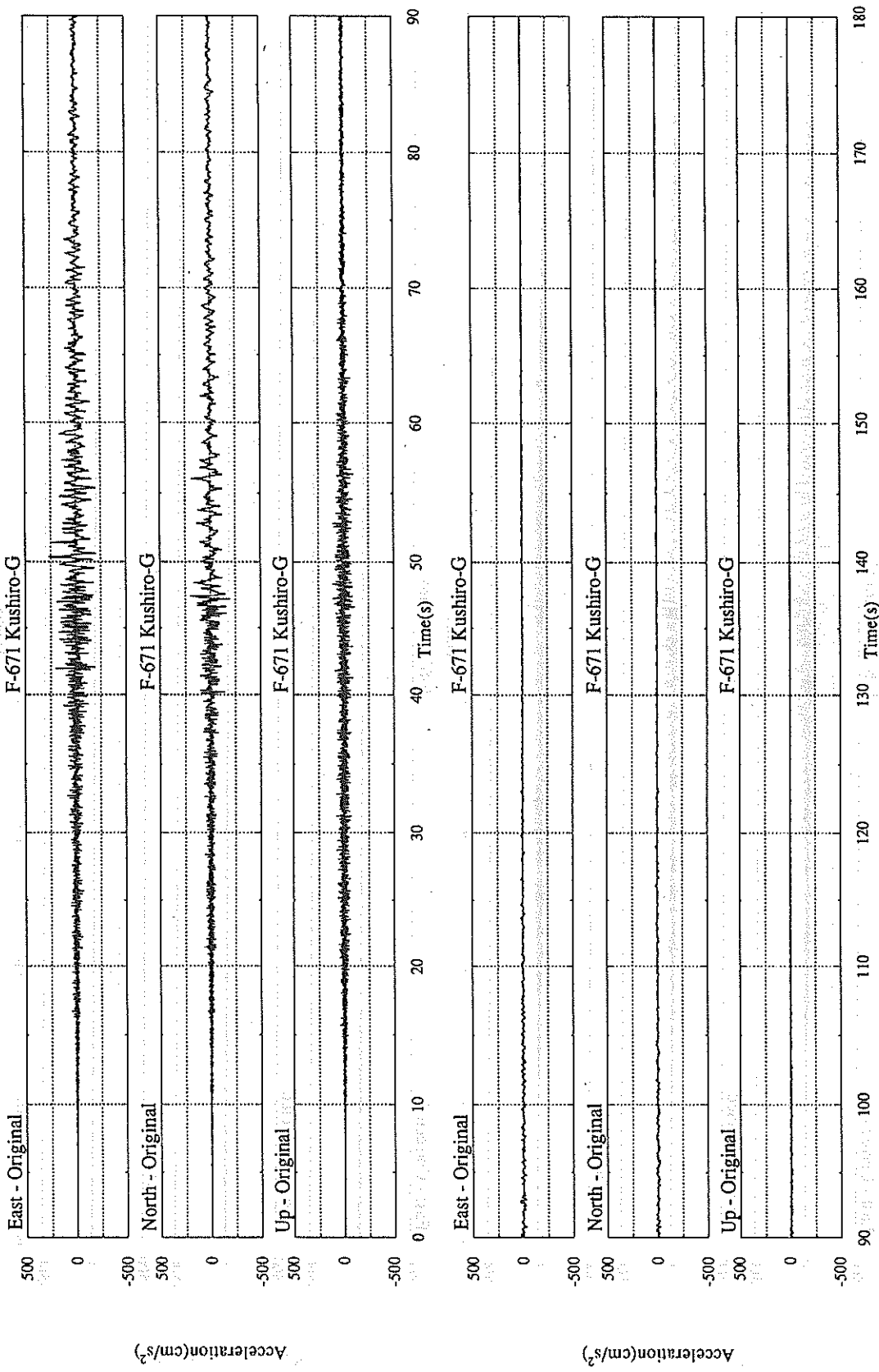
EARTHQUAKE DATA

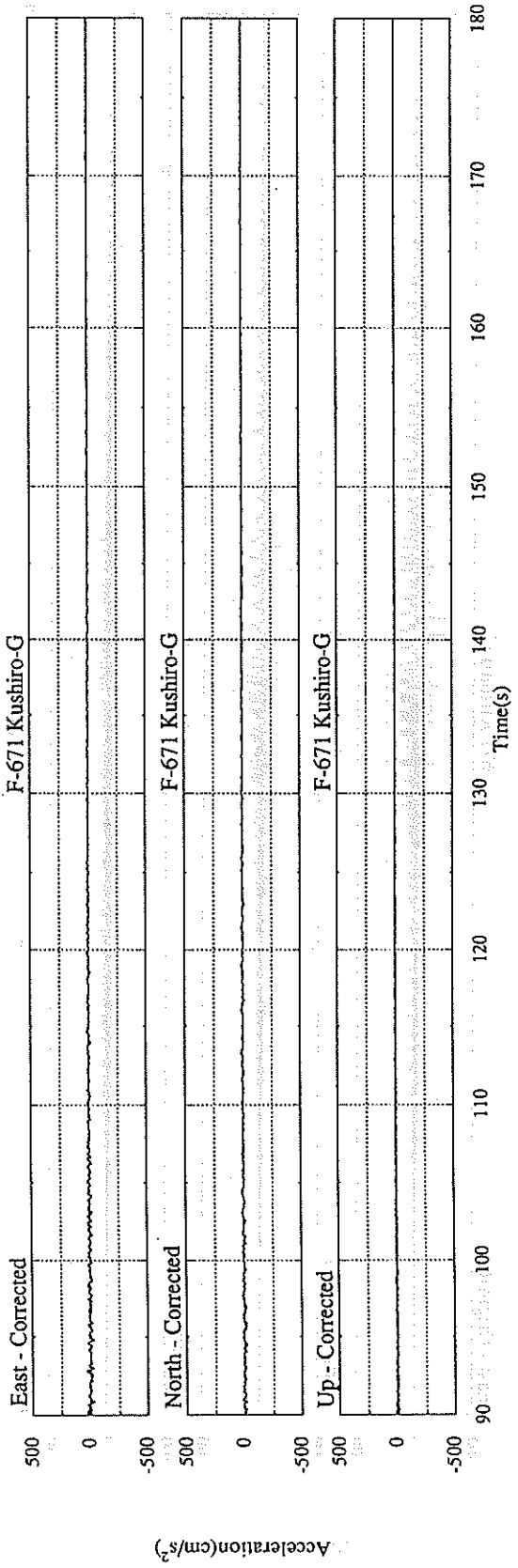
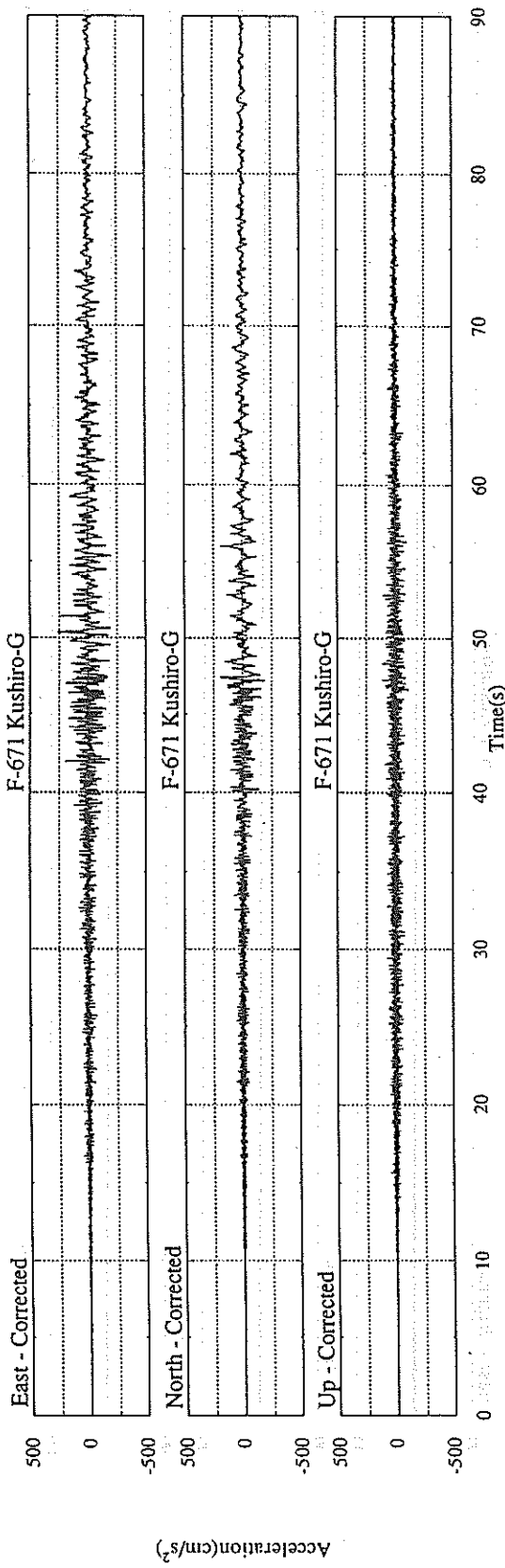
 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

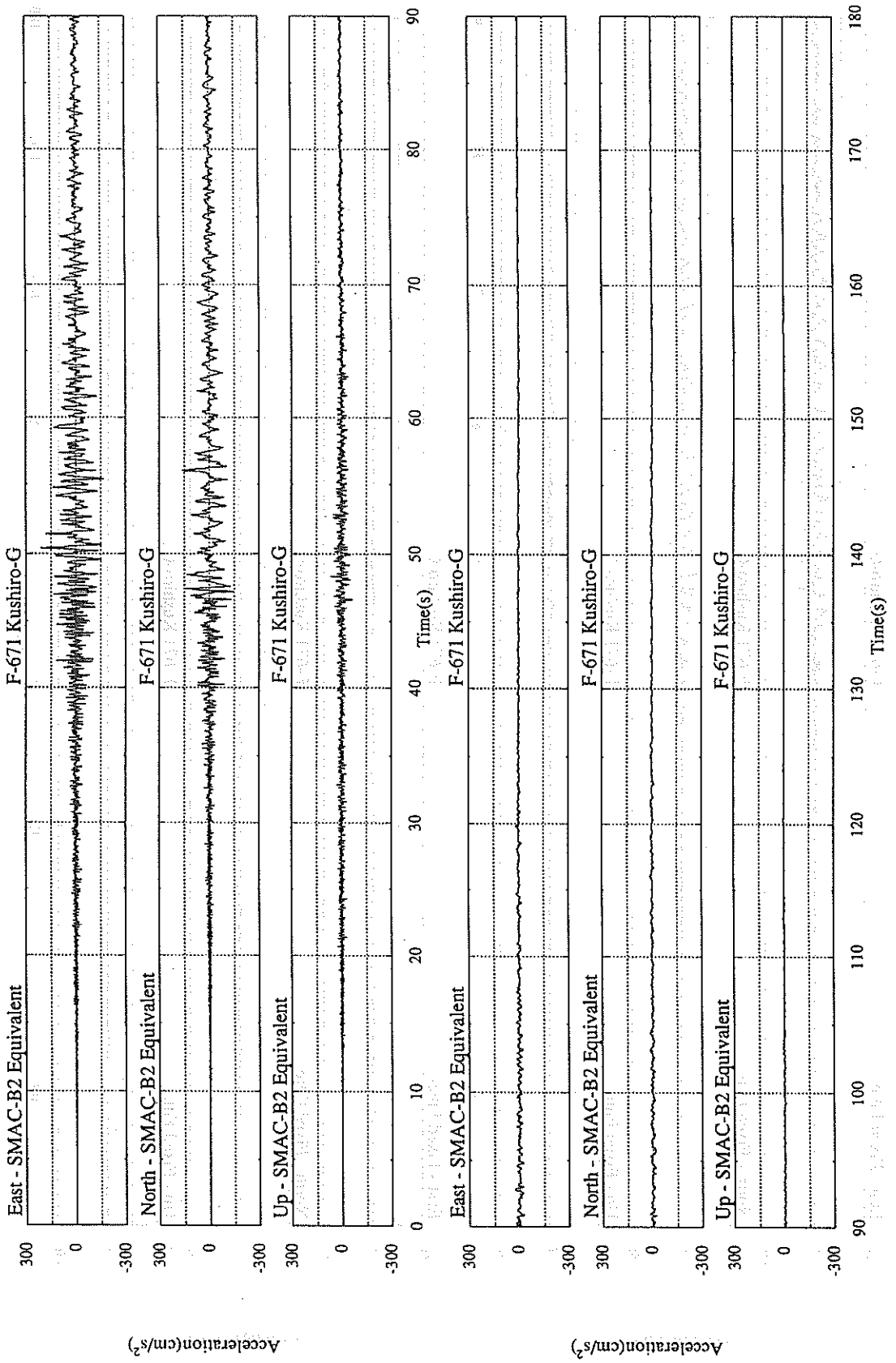
PEAK VALUES OF COMPONENTS

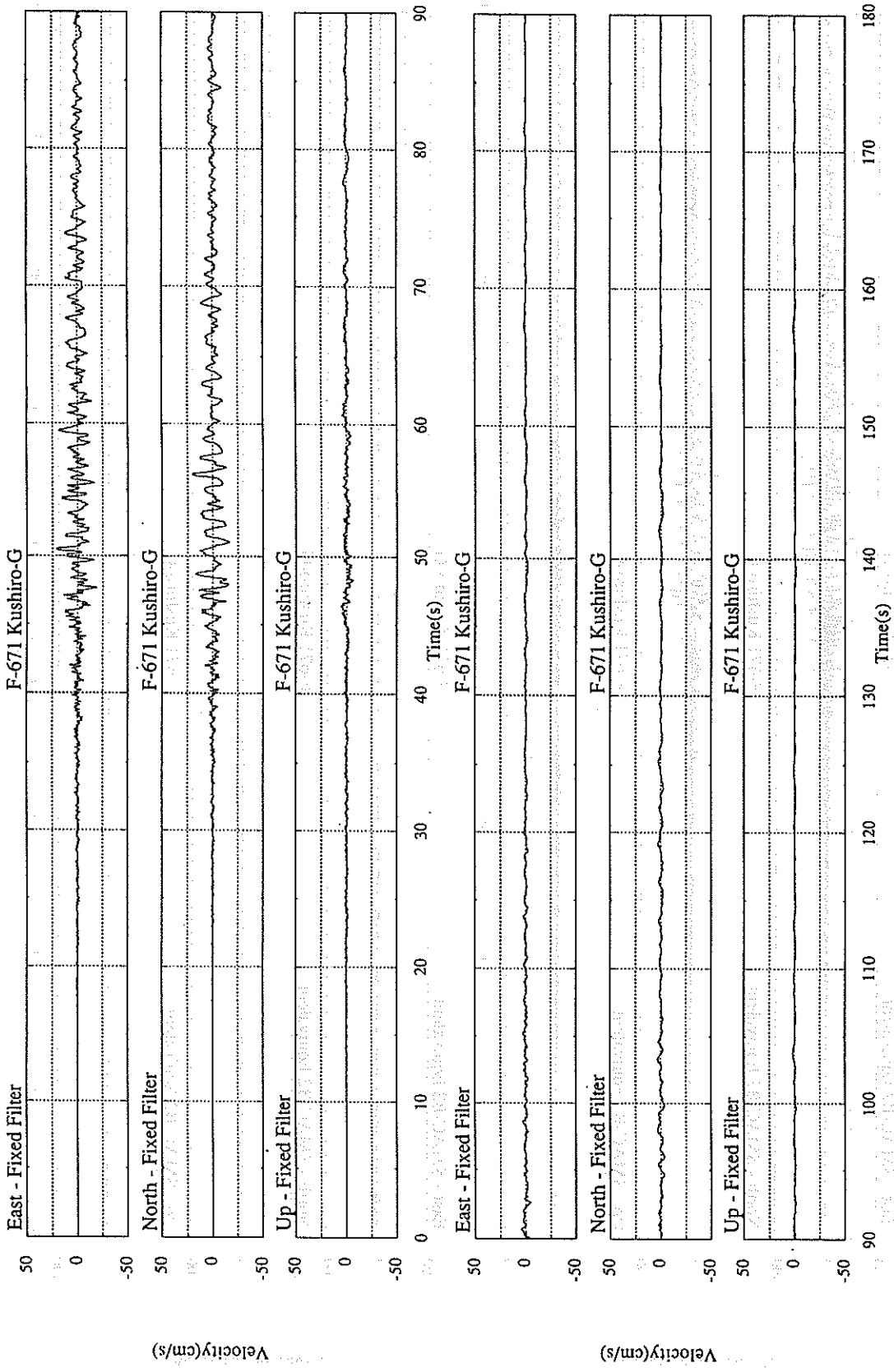
	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.023	0.038	0.035	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	162.9	211.5	68.0	216.6
ORIGINAL	196.6	268.5	111.9	274.1
CORRECTED	196.9	267.7	116.5	272.5
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	19.90	20.96	6.62	22.88
VARIABLE FILTER	20.22	20.19	6.21	22.43
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	4.46	4.05	2.90	4.97
VARIABLE FILTER	14.32	9.01	7.06	14.39

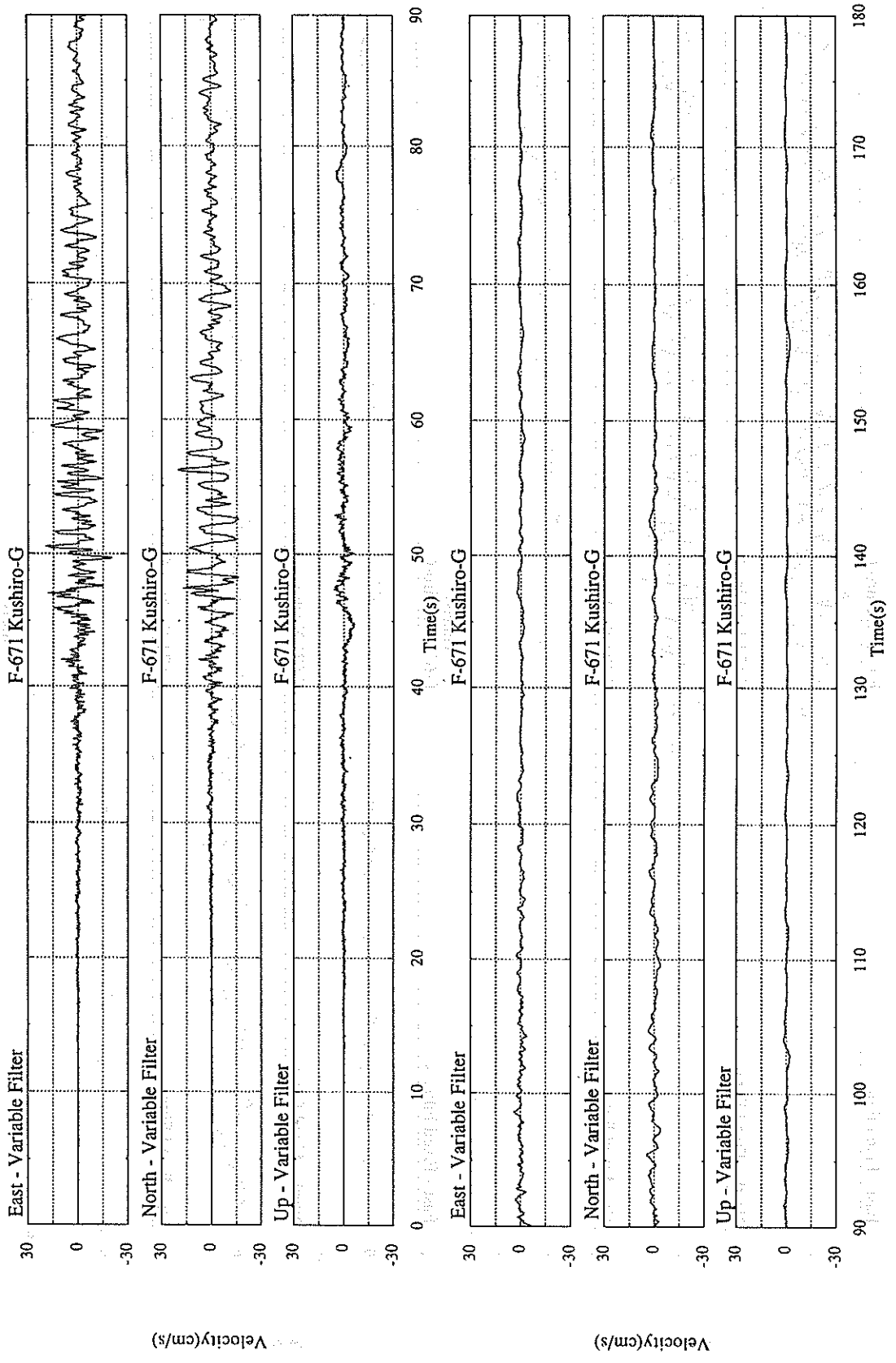
* RESULTANT OF HORIZONTAL COMPONENTS

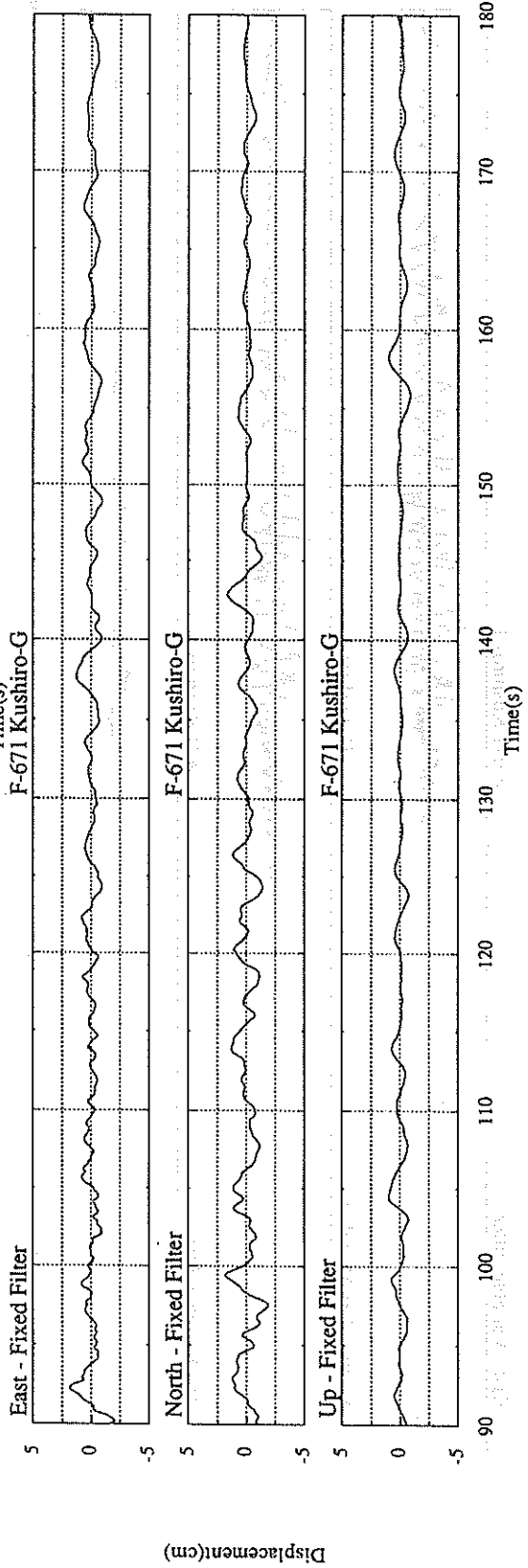
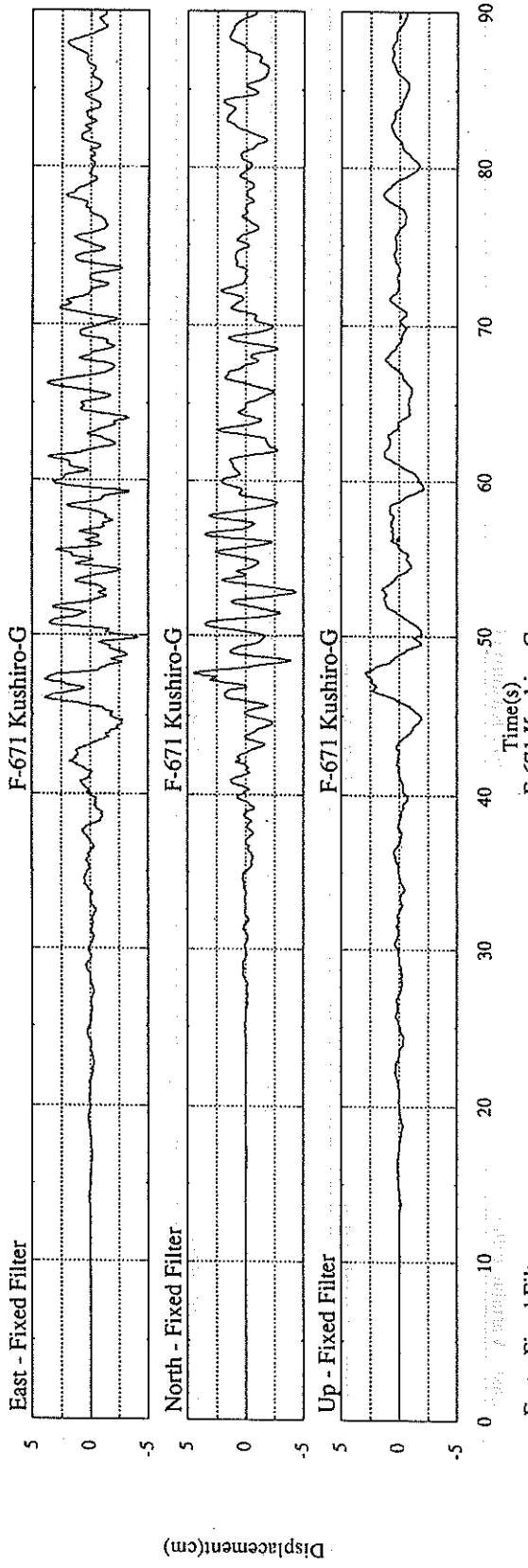


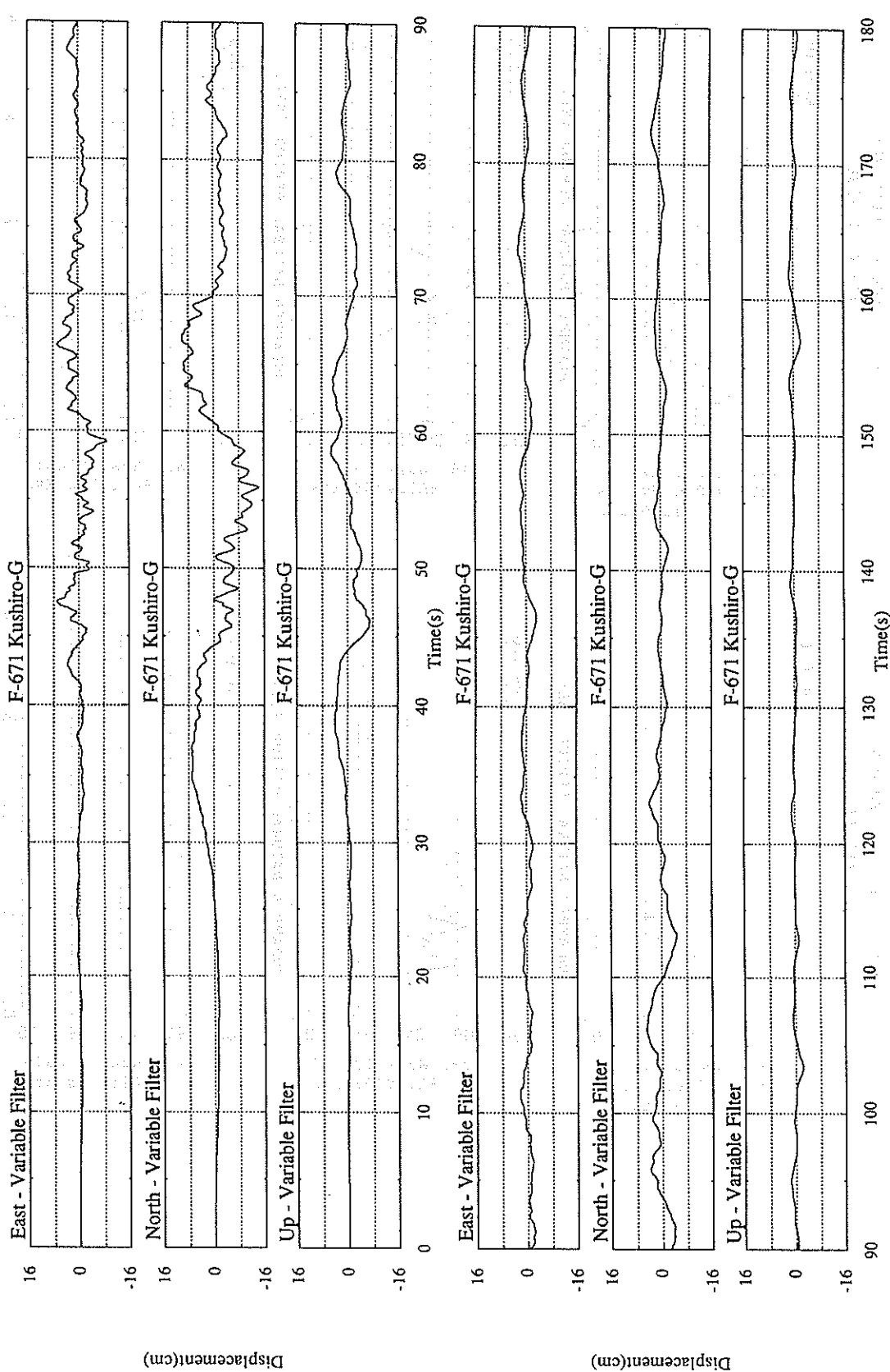




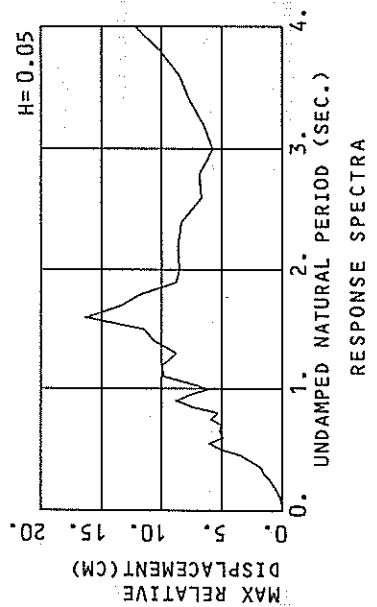
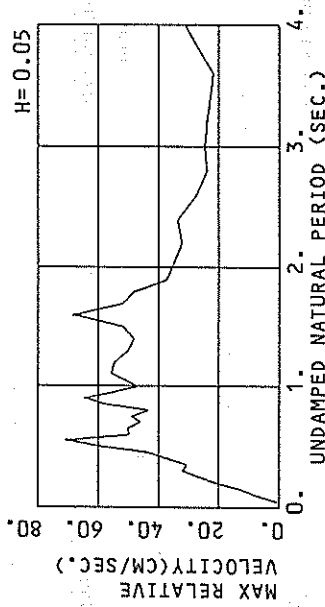
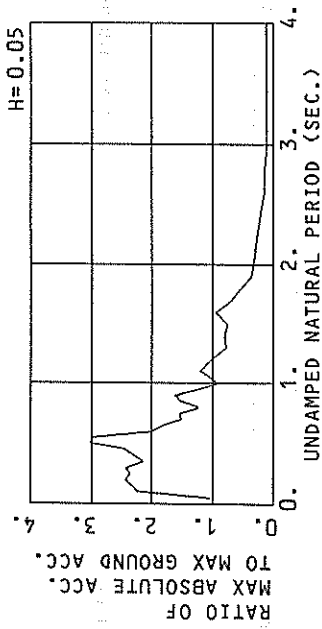




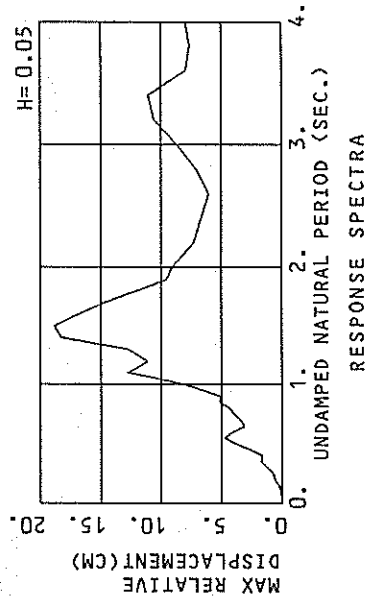
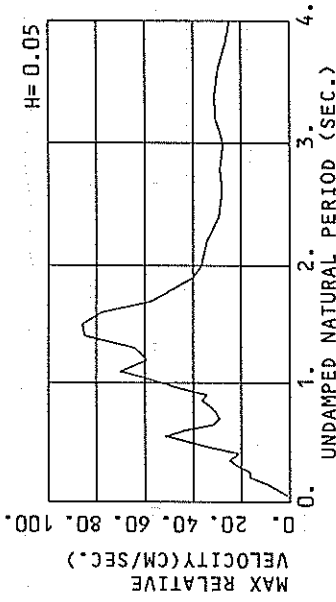
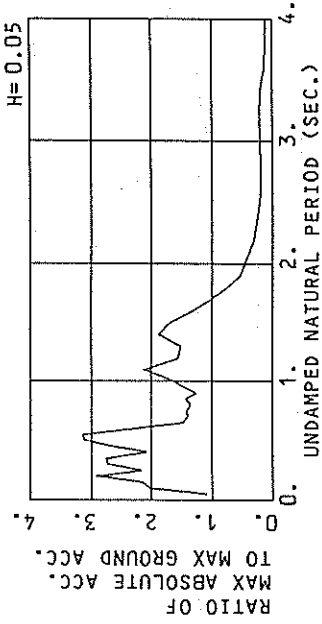




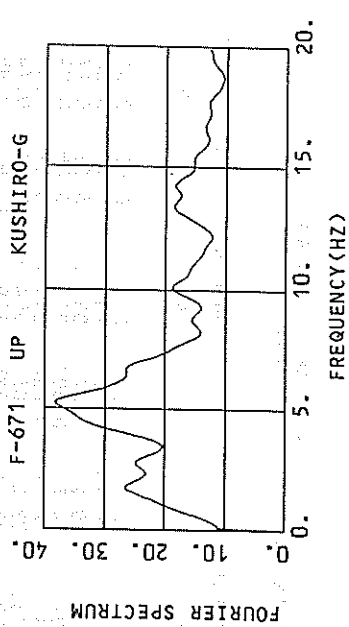
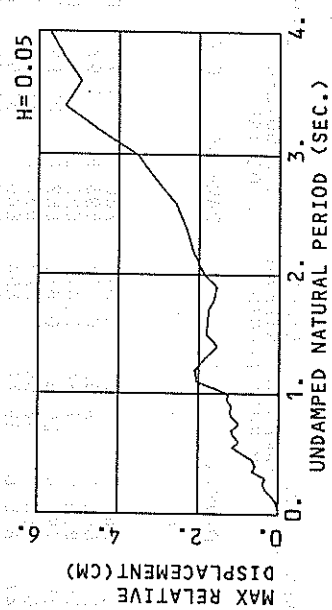
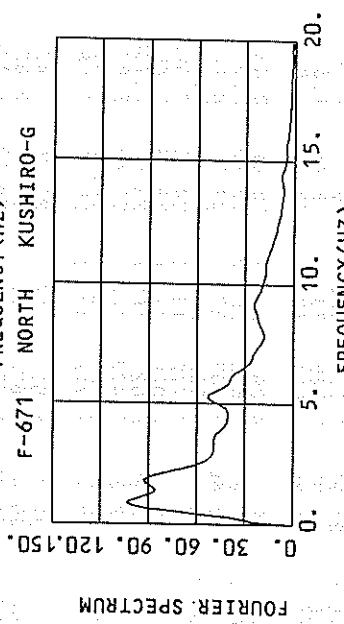
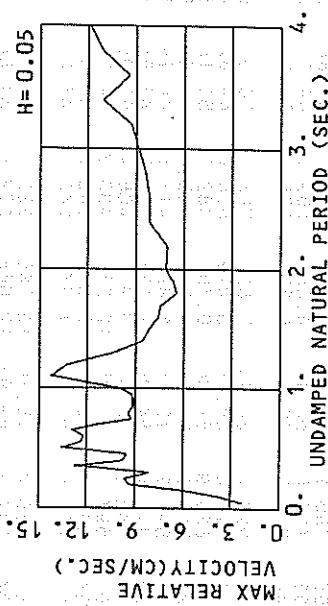
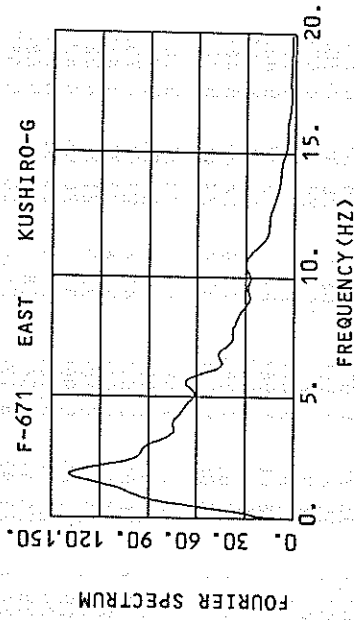
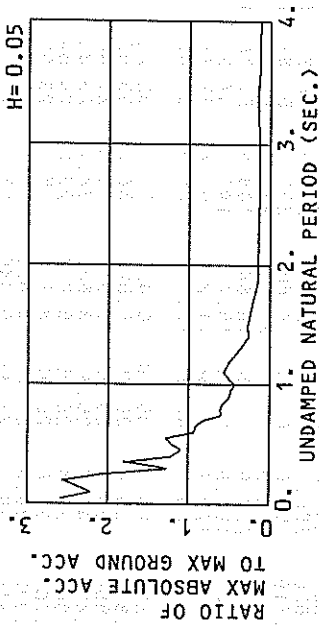
F-671 EAST KUSHIRO-G
(1/FC=38.14SEC.)



F-671 NORTH KUSHIRO-G
(1/FC=71.37SEC.)



F-671 UP KUSHIRO-G
(1/FC=30.94 SEC.)



RESPONSE SPECTRA

RESPONSE SPECTRUM

RECORD = F-671 COMPONENT = EAST SIGNAL = CORRECTION = STATION = KUSHIRO-G
 DATE AND TIME = 1994.10.04.22.23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 267.71 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	AA	RV	RD	AA	AA	RV	RD	AA	AA	RV	RD	AA	AA	RV	RD	
0.05	597.6	3.50	0.038	286.7	0.81	0.018	280.2	0.77	0.018	276.4	0.74	0.017	274.5	0.63	0.017	274.5	0.63	0.017	274.5	
0.10	2331.6	35.62	0.591	690.8	9.62	0.176	598.8	7.98	0.150	445.6	5.75	0.111	331.2	3.19	0.111	331.2	3.19	0.062	331.2	
0.15	3991.1	94.34	2.275	835.0	17.84	0.472	622.2	12.83	0.355	484.7	12.83	0.271	331.6	5.37	0.271	331.6	5.37	0.179	331.6	
0.20	2738.5	85.11	2.775	795.4	26.53	0.810	652.0	20.53	0.657	509.6	14.57	0.507	330.4	9.05	0.507	330.4	9.05	0.283	330.4	
0.25	3225.6	124.73	5.107	960.4	38.58	1.523	633.8	26.59	1.001	435.9	18.18	0.680	344.8	10.62	0.680	344.8	10.62	0.511	344.8	
0.30	1643.5	73.49	3.747	815.6	39.77	1.854	649.7	31.97	1.479	476.0	22.50	1.065	354.3	12.14	1.065	354.3	12.14	0.744	354.3	
0.35	2539.9	138.68	7.881	890.6	46.20	2.765	573.0	30.92	1.768	420.9	22.78	1.285	339.0	11.91	1.285	339.0	11.91	0.953	339.0	
0.40	1620.2	98.73	6.566	795.8	49.10	3.217	613.2	36.86	2.481	476.5	26.91	1.901	326.5	15.35	1.901	326.5	15.35	1.191	326.5	
0.45	1839.1	131.05	9.433	794.0	52.48	4.069	659.2	44.14	3.368	500.9	31.92	2.525	330.1	18.44	2.525	330.1	18.44	1.515	330.1	
0.50	3275.7	261.38	20.744	1035.5	79.47	6.555	808.8	59.91	5.093	567.6	41.86	3.534	325.3	23.30	3.534	325.3	23.30	1.831	325.3	
0.55	3566.6	312.25	27.329	997.4	88.74	7.625	795.1	70.66	6.059	545.5	49.57	4.092	296.7	25.69	4.092	296.7	25.69	2.031	296.7	
0.60	2111.4	201.82	19.254	712.0	68.64	6.479	536.0	49.82	4.864	403.5	41.89	3.605	257.6	25.99	3.605	257.6	25.99	2.093	257.6	
0.65	1291.0	130.07	13.817	635.9	67.00	6.792	482.2	46.09	5.133	326.0	35.86	3.409	220.4	24.81	3.409	220.4	24.81	2.138	220.4	
0.70	1352.4	150.71	16.786	505.6	58.85	6.264	406.1	46.09	5.010	297.4	33.96	3.622	202.2	23.76	3.622	202.2	23.76	2.262	202.2	
0.75	1082.8	131.91	15.571	597.2	72.16	8.498	412.5	48.79	5.855	270.1	33.51	3.772	181.3	24.02	3.772	181.3	24.02	2.300	181.3	
0.80	1081.1	142.18	17.526	440.6	54.06	7.133	327.5	43.55	5.282	253.5	35.90	4.029	173.6	23.99	4.029	173.6	23.99	2.492	173.6	
0.85	1083.9	146.95	19.837	542.2	78.52	9.915	406.4	57.90	7.404	280.2	38.20	5.027	168.5	23.52	5.027	168.5	23.52	2.708	168.5	
0.90	1092.0	157.88	22.404	597.2	87.35	12.231	430.8	64.51	8.758	273.5	42.24	5.473	162.4	24.43	5.473	162.4	24.43	2.872	162.4	
0.95	712.3	112.64	16.284	437.4	70.02	9.982	340.5	55.43	7.730	240.5	39.54	5.323	153.0	23.62	5.323	153.0	23.62	2.938	153.0	
1.00	331.5	63.96	8.397	291.6	51.64	7.379	243.4	47.08	6.117	195.3	37.81	4.794	141.2	25.17	4.794	141.2	25.17	3.085	141.2	
1.10	758.6	127.77	23.251	450.4	75.10	13.786	322.1	55.71	9.824	217.9	39.73	6.530	126.2	25.30	6.530	126.2	25.30	3.423	126.2	
1.20	579.4	116.19	21.134	347.9	69.99	12.668	272.9	54.66	9.877	194.5	39.46	6.892	122.1	25.17	6.892	122.1	25.17	3.820	122.1	
1.30	710.1	145.09	30.397	237.5	55.55	10.150	206.8	50.10	8.792	167.6	38.78	6.938	117.1	25.37	6.938	117.1	25.37	4.170	117.1	
1.40	455.3	104.65	22.606	266.7	61.57	13.216	214.3	48.27	10.561	157.0	35.41	8.230	100.2	26.30	8.230	100.2	26.30	4.368	100.2	
1.50	468.8	111.28	26.719	257.6	67.00	14.660	201.6	51.82	11.435	147.3	38.94	9.424	96.9	26.38	9.424	96.9	26.38	4.878	96.9	
1.60	1005.1	260.07	65.176	419.0	111.71	27.140	252.3	68.23	16.280	148.3	40.97	13.444	91.0	23.48	13.444	91.0	23.48	5.268	91.0	
1.70	487.6	140.52	35.696	257.9	71.08	18.845	184.9	51.76	13.444	126.0	38.60	8.984	83.1	23.48	8.984	83.1	23.48	5.583	83.1	
1.80	323.5	96.01	16.547	191.8	42.56	15.711	143.7	47.94	11.716	107.0	36.17	7.254	74.9	24.83	7.254	74.9	24.83	5.536	74.9	
1.90	178.4	59.07	16.313	122.9	42.56	11.216	97.4	37.15	8.813	81.5	32.65	7.254	67.4	24.83	7.254	67.4	24.83	5.484	67.4	
2.00	118.4	46.30	11.995	100.7	40.36	10.179	85.3	35.45	8.550	65.9	30.00	6.336	67.4	24.85	6.336	67.4	24.85	5.401	67.4	
2.20	151.1	54.52	18.528	85.2	35.10	10.427	71.1	32.22	8.642	59.4	28.40	7.053	55.6	24.65	7.053	55.6	24.65	5.264	55.6	
2.40	74.5	40.36	10.876	65.4	36.75	9.523	58.0	33.52	8.384	49.0	29.42	6.891	47.5	24.30	6.891	47.5	24.30	5.063	47.5	
2.60	96.8	41.32	16.569	55.7	29.52	9.512	39.4	27.48	6.681	34.4	26.50	5.612	41.4	23.60	5.612	41.4	23.60	4.750	41.4	
2.80	57.7	33.00	11.466	43.7	25.67	8.667	34.7	23.80	6.819	28.1	24.19	5.016	36.8	22.72	5.016	36.8	22.72	4.426	36.8	
3.00	45.5	30.18	10.365	30.4	26.25	6.914	26.0	23.54	5.722	25.2	23.23	5.109	33.3	21.82	5.109	33.3	21.82	4.325	33.3	
3.20	53.1	28.60	13.765	31.6	25.93	8.178	25.9	23.98	6.529	25.0	21.89	5.960	30.9	20.94	5.960	30.9	20.94	4.828	30.9	
3.40	52.4	28.95	15.345	28.9	23.75	8.405	27.0	22.82	7.673	25.6	21.28	6.858	29.5	20.08	6.858	29.5	20.08	5.292	29.5	
3.60	45.1	32.77	14.816	29.0	23.38	9.449	26.8	21.76	8.540	25.4	20.41	7.555	28.8	19.31	7.555	28.8	19.31	5.684	28.8	
3.80	53.8	37.87	19.660	32.8	29.72	11.964	28.0	26.67	10.095	24.5	23.43	8.130	28.4	20.17	8.130	28.4	20.17	5.987	28.4	
4.00	55.6	43.54	22.529	38.4	36.17	15.496	30.7	31.17	12.153	27.0	25.26	9.564	28.0	20.96	9.564	28.0	20.96	6.432	28.0	

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = F-871 COMPONENT = NORTH SIGNAL = CORRECTION = STATION = KUSHIRO-G
 DATE AND TIME = 1994.10.04.22.23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 196.95 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250					
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD			
0.05	349.8	1.88	0.022	217.1	0.87	0.014	212.9	0.75	0.013	210.1	0.64	0.013	207.0	0.53	0.013
0.10	2703.0	42.70	0.685	519.9	6.30	0.131	398.7	5.08	0.100	324.4	3.60	0.082	249.8	2.48	0.061
0.15	1248.8	29.18	0.712	490.7	10.42	0.278	421.6	9.25	0.239	334.5	7.03	0.190	249.2	4.29	0.134
0.20	1537.8	47.93	1.558	688.8	19.59	0.699	573.2	16.34	0.581	413.6	11.40	0.410	261.5	7.57	0.242
0.25	1202.0	46.38	1.903	476.4	19.16	0.752	426.0	16.43	0.675	365.7	13.13	0.568	239.1	8.69	0.345
0.30	1089.3	48.63	2.483	649.0	27.14	1.475	538.0	21.84	1.222	414.2	16.63	0.931	275.4	10.02	0.585
0.35	1200.4	66.32	3.725	645.3	30.62	1.996	543.0	24.77	1.681	434.6	19.50	1.329	294.2	12.53	0.837
0.40	1507.4	95.42	6.109	372.5	21.39	1.507	410.0	21.18	1.658	397.5	20.50	1.583	288.9	15.08	1.068
0.45	1678.4	119.54	8.609	576.0	36.93	2.957	523.0	32.29	2.671	431.8	27.31	2.177	277.4	17.64	1.298
0.50	1273.0	100.04	8.061	798.5	56.62	5.046	615.4	42.13	3.882	441.6	32.97	2.746	259.5	19.27	1.498
0.55	1517.5	129.40	11.628	845.7	69.83	6.470	618.7	51.58	4.720	407.7	34.39	3.066	233.8	19.42	1.610
0.60	1043.0	99.20	9.511	574.7	53.83	5.229	448.5	43.26	4.051	322.7	33.55	2.891	199.8	20.71	1.635
0.65	607.5	62.24	6.501	358.4	40.40	3.829	290.1	31.41	3.090	235.4	28.98	2.473	188.3	20.49	1.811
0.70	1094.3	119.80	13.583	374.8	39.82	4.642	276.5	29.04	3.416	225.5	24.80	2.760	179.7	19.41	2.015
0.75	749.3	88.15	10.677	351.4	40.21	4.997	277.7	30.37	3.937	228.4	23.66	3.212	172.4	18.82	2.260
0.80	518.3	65.66	8.402	303.6	36.83	4.918	265.6	32.84	3.824	217.9	26.82	3.482	168.2	19.93	2.536
0.85	907.9	123.04	16.616	395.5	52.57	7.231	282.1	36.27	5.138	204.0	28.15	3.679	168.3	21.11	2.841
0.90	985.0	140.51	20.210	347.7	45.90	7.128	249.9	34.25	5.102	212.4	30.90	4.293	169.2	22.53	3.189
0.95	765.0	117.11	17.489	354.9	53.93	8.103	290.9	45.39	6.611	240.8	36.58	5.423	169.7	24.01	3.572
1.00	1149.0	181.75	29.104	359.4	58.19	9.090	320.5	53.22	8.082	265.4	41.98	6.618	170.1	25.39	3.951
1.10	930.7	162.17	28.525	587.4	98.20	17.980	418.8	70.29	12.775	282.5	46.84	8.481	166.6	27.32	4.531
1.20	482.0	92.49	17.582	345.8	67.41	12.599	306.4	59.29	11.120	235.3	45.96	8.419	152.3	27.16	4.823
1.30	565.4	117.52	24.206	392.2	82.13	16.770	298.1	64.21	12.704	217.7	44.76	9.071	140.9	27.18	5.213
1.40	1074.4	239.01	53.343	526.9	117.71	26.127	369.6	84.82	18.243	229.3	54.73	11.952	134.0	28.46	5.637
1.50	753.5	181.60	42.943	453.5	119.48	26.370	392.4	85.99	18.615	214.1	55.99	11.954	125.3	28.69	5.893
1.60	617.1	160.81	40.016	347.1	109.44	22.471	259.9	77.86	16.754	180.6	52.04	11.393	112.2	30.05	5.916
1.70	335.6	96.21	24.569	249.0	71.73	18.204	201.9	57.34	14.702	150.1	43.25	10.707	98.8	30.05	5.924
1.80	277.4	83.35	22.768	169.4	55.12	13.885	149.0	48.98	12.141	120.0	38.74	9.621	89.2	30.18	5.834
1.90	217.4	71.44	19.884	129.9	44.63	11.866	105.1	40.14	9.520	92.8	35.81	8.212	80.0	27.98	5.678
2.00	227.0	72.42	23.004	118.2	42.78	11.953	90.8	36.54	9.127	74.5	34.52	7.296	71.5	27.85	5.481
2.20	107.9	40.80	13.227	71.0	36.09	8.686	59.9	34.43	7.299	54.1	32.25	6.429	57.1	27.34	5.039
2.40	80.1	31.34	11.684	52.7	29.29	7.619	46.2	29.44	6.668	44.0	29.33	6.079	45.9	26.53	5.015
2.60	51.7	27.74	8.845	38.3	28.06	6.558	35.8	28.04	6.029	37.8	27.82	6.088	38.8	25.65	5.261
2.80	90.3	42.14	17.929	42.1	30.11	8.366	35.9	28.77	7.064	35.5	27.11	6.602	36.1	24.77	5.506
3.00	62.7	33.50	14.291	43.0	28.60	9.775	38.4	27.43	8.666	33.5	25.82	7.164	33.7	23.88	5.723
3.20	97.4	58.44	25.255	57.4	39.58	14.665	41.3	30.57	10.609	31.0	24.86	7.660	31.4	22.94	5.887
3.40	78.1	44.33	22.875	52.2	34.15	15.249	38.1	30.87	11.036	28.8	26.80	7.921	29.2	22.54	5.999
3.60	40.9	33.80	13.438	30.7	31.71	10.955	24.7	29.68	7.964	23.4	26.51	6.973	27.2	22.44	6.085
3.80	29.6	29.77	10.820	24.7	28.02	8.973	21.3	26.68	7.631	21.5	24.74	7.081	25.4	22.06	6.162
4.00	36.4	27.30	14.758	23.5	25.93	9.432	20.1	24.88	7.958	20.5	23.20	7.427	23.9	21.51	6.223

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = F-671
 DATE AND TIME = 1994.10.04.22.23
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = UP
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION = MAX.GROUND ACC. = 116.50 (GAL)
 STATION = KUSHIRO-G

PER	DAMPING = 0.				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	2409.1	19.13	0.153	375.5	2.82	0.024	299.8	2.28	0.019	202.7	1.50	0.013	159.9	0.79	0.009					
0.10	876.2	13.94	0.222	399.4	5.82	0.101	258.4	3.74	0.066	183.2	2.44	0.046	157.8	1.55	0.037					
0.15	1213.2	28.55	0.691	371.5	8.73	0.211	278.4	5.93	0.157	207.3	4.14	0.114	160.0	2.61	0.084					
0.20	1044.5	33.55	1.058	390.7	11.91	0.395	298.0	9.34	0.303	216.8	6.99	0.213	140.9	4.12	0.132					
0.25	1008.1	40.37	1.596	345.3	13.89	0.546	242.4	9.64	0.384	158.9	6.93	0.247	105.0	4.19	0.148					
0.30	419.3	20.57	0.956	202.1	10.30	0.461	147.0	8.11	0.334	132.4	6.33	0.294	108.7	4.30	0.218					
0.35	410.3	22.86	1.273	248.9	14.93	0.771	210.7	12.72	0.652	162.5	9.45	0.493	110.5	5.30	0.294					
0.40	253.8	16.52	1.029	141.8	10.06	0.574	141.5	9.75	0.568	130.4	8.55	0.515	96.1	5.88	0.336					
0.45	384.2	27.48	1.971	132.9	9.47	0.681	126.9	9.50	0.646	110.2	8.99	0.551	79.6	6.61	0.351					
0.50	360.2	28.21	2.281	188.2	16.66	1.189	142.1	13.54	0.892	99.4	10.44	0.611	62.9	6.74	0.343					
0.55	490.3	43.01	3.757	224.5	18.04	1.715	149.2	12.33	1.138	95.8	8.40	0.715	60.0	6.14	0.386					
0.60	350.0	33.23	146.1	147.2	14.72	1.332	109.1	12.23	0.991	86.9	9.46	0.767	56.6	6.06	0.475					
0.65	330.4	34.99	3.535	140.0	15.80	1.497	105.8	12.89	1.128	83.6	10.04	0.869	57.6	6.35	0.566					
0.70	319.2	35.65	3.962	116.8	13.45	1.447	95.6	11.34	1.180	78.7	9.57	0.949	55.5	6.31	0.637					
0.75	106.0	12.65	71.3	71.3	10.32	1.014	69.6	9.25	0.984	68.0	8.57	0.935	55.8	6.17	0.688					
0.80	183.5	24.12	2.974	94.2	11.93	1.524	71.1	9.45	1.144	64.2	8.14	1.002	53.3	5.95	0.725					
0.85	169.7	22.83	3.106	74.1	10.44	1.353	67.4	9.14	1.222	59.7	7.51	1.053	50.5	6.08	0.752					
0.90	176.8	25.43	3.628	79.2	11.52	1.622	57.7	9.14	1.273	53.8	7.69	1.064	47.4	6.16	0.769					
0.95	130.1	20.34	2.973	79.4	12.45	1.812	57.0	9.21	1.295	49.2	7.84	1.080	44.1	6.22	0.716					
1.00	149.2	23.53	3.779	71.6	13.13	1.812	50.8	9.95	1.279	47.6	8.13	1.157	40.6	6.26	0.771					
1.10	164.2	29.16	5.032	92.7	18.03	2.839	67.2	14.25	2.048	44.3	10.64	1.315	32.8	6.73	0.707					
1.20	193.2	25.83	4.857	69.8	15.04	2.540	57.9	13.26	2.089	42.4	10.48	1.482	25.3	6.77	0.781					
1.30	141.9	29.03	6.076	59.4	12.26	2.540	43.4	10.41	1.847	31.0	8.40	1.279	22.7	6.52	0.761					
1.40	85.1	19.02	4.827	38.5	9.78	1.908	31.4	8.55	1.537	27.6	6.90	1.320	21.9	6.45	0.876					
1.50	53.3	13.01	3.040	36.7	8.45	2.084	32.3	8.15	1.815	27.0	6.68	1.471	21.6	6.42	0.966					
1.60	63.6	16.33	4.124	31.4	8.69	2.028	28.0	7.62	1.781	24.2	7.01	1.473	20.6	6.42	1.015					
1.70	73.7	21.57	5.394	32.8	10.04	2.401	24.3	7.41	1.766	20.0	6.94	1.345	19.1	6.42	1.032					
1.80	34.4	10.15	2.823	25.1	7.44	2.057	19.9	6.46	1.626	16.8	6.59	1.292	17.6	6.41	1.030					
1.90	50.3	9.46	2.359	18.4	7.61	1.677	17.3	6.66	1.565	14.8	6.35	1.287	16.1	6.41	1.019					
2.00	25.8	15.64	5.094	24.7	8.57	2.498	18.4	7.13	1.853	13.8	6.39	1.370	14.8	6.43	1.002					
2.20	41.8	15.51	5.127	23.1	8.11	2.836	17.6	7.07	2.142	13.3	6.86	1.600	12.6	6.54	1.128					
2.40	31.7	14.73	4.621	19.1	9.17	2.788	16.0	8.17	2.315	13.4	7.22	1.863	11.2	6.69	1.238					
2.60	28.0	11.91	4.792	17.4	8.71	3.976	15.2	8.18	2.578	13.0	7.53	2.144	11.0	6.80	1.509					
2.80	37.9	16.53	7.533	19.9	9.63	3.943	15.7	8.39	3.085	12.7	7.89	2.429	11.3	6.85	1.815					
3.00	35.0	16.44	7.973	20.6	10.42	4.684	15.7	8.86	3.546	11.9	8.09	2.680	11.7	6.79	2.145					
3.20	39.4	20.39	10.210	22.9	11.51	5.933	17.5	9.30	4.504	12.9	7.92	3.251	11.9	6.59	2.475					
3.40	36.7	18.82	10.755	24.1	14.04	7.039	18.3	11.07	5.334	13.5	7.97	3.820	12.1	6.27	2.824					
3.60	25.0	14.97	8.324	17.0	10.48	5.581	15.2	9.43	4.939	13.6	7.96	4.260	12.1	6.47	3.142					
3.80	22.4	14.24	8.054	15.9	12.47	5.784	15.0	11.09	5.365	13.5	9.10	4.687	11.9	6.27	3.410					
4.00	30.3	20.75	12.262	16.1	13.35	6.511	14.3	11.84	5.717	13.1	9.87	4.949	11.5	7.73	3.622					

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RECORD NUMBER : F-670
 STATION : KUSHIRO-GB

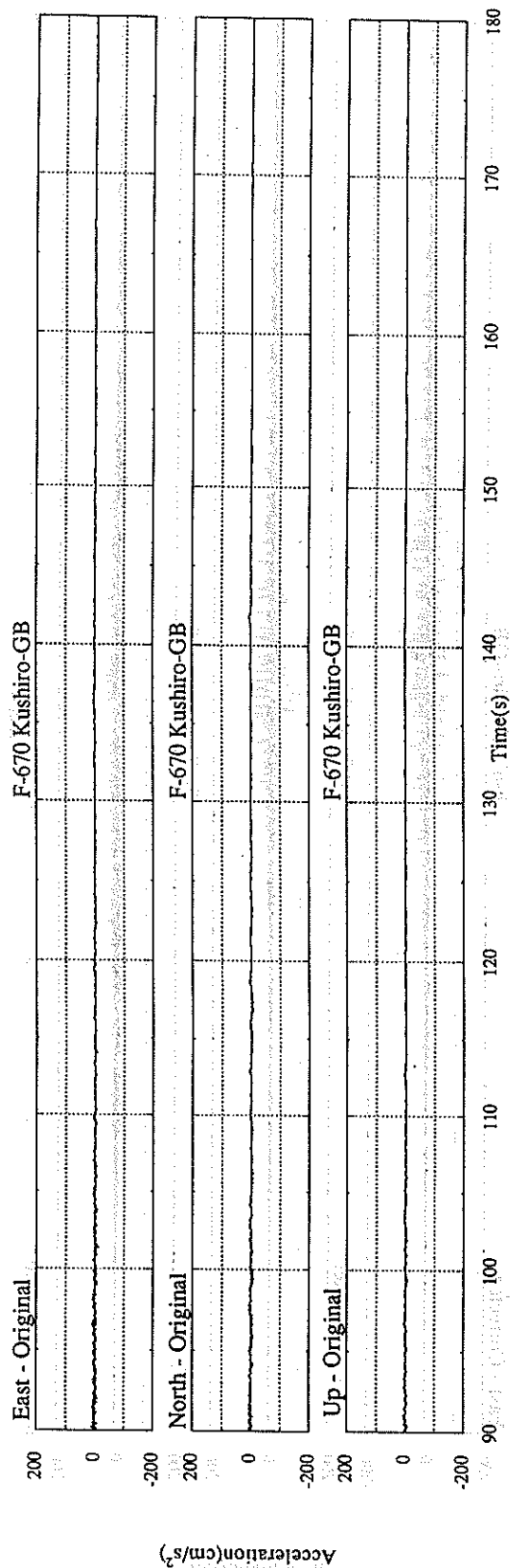
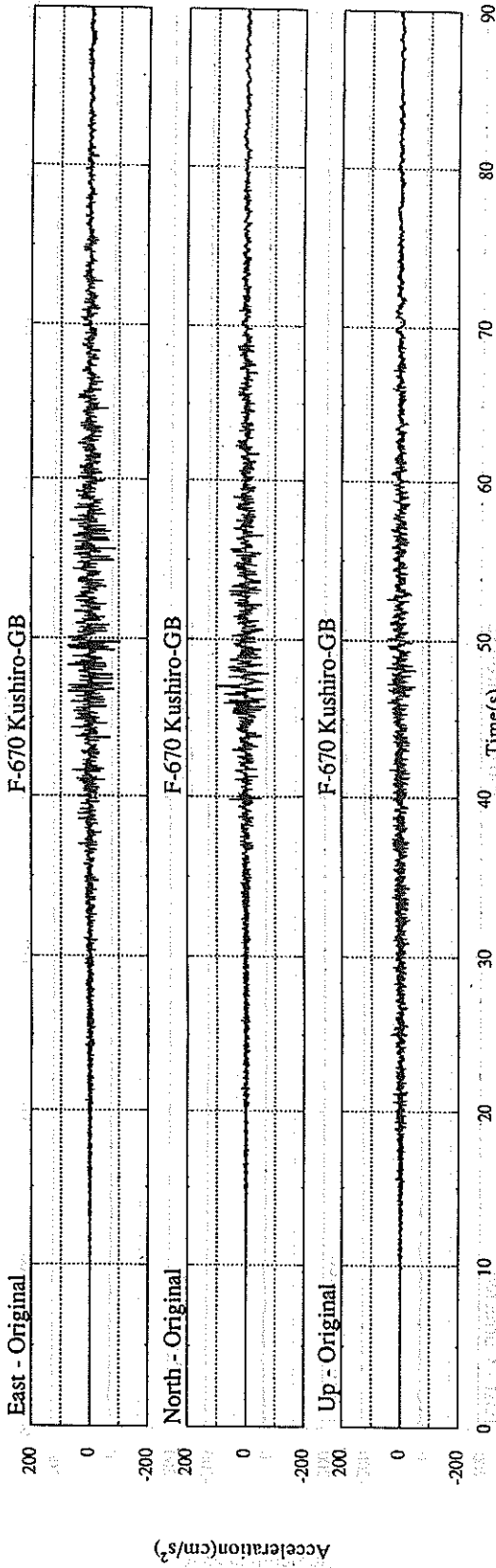
EARTHQUAKE DATA

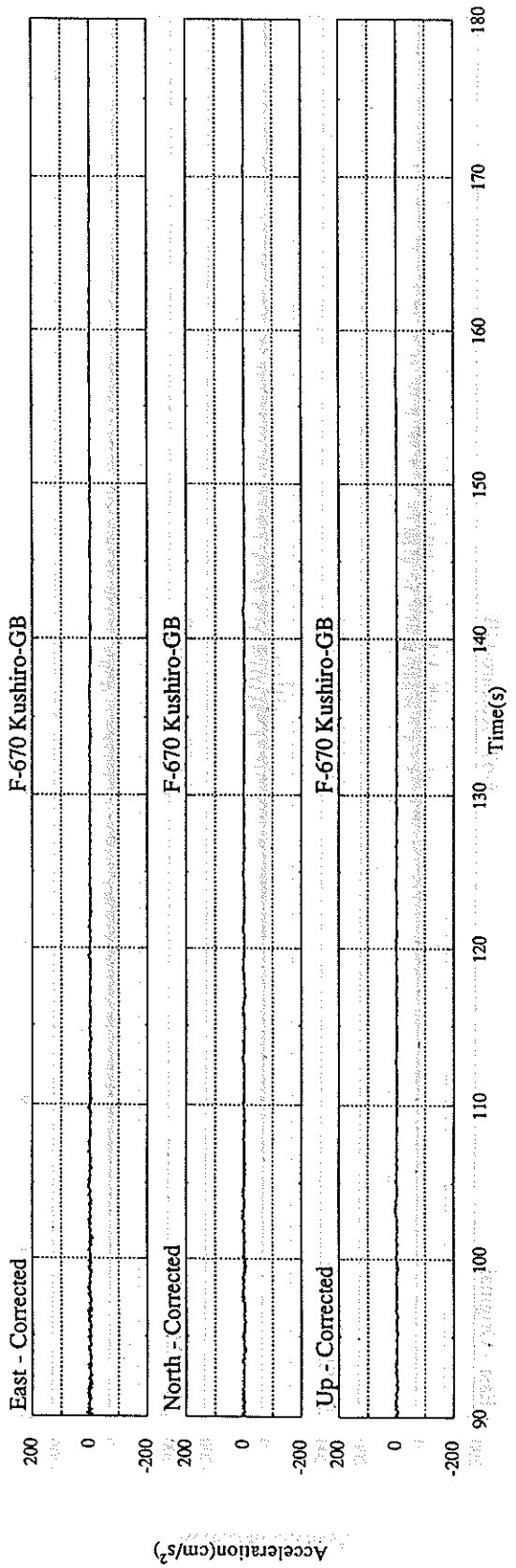
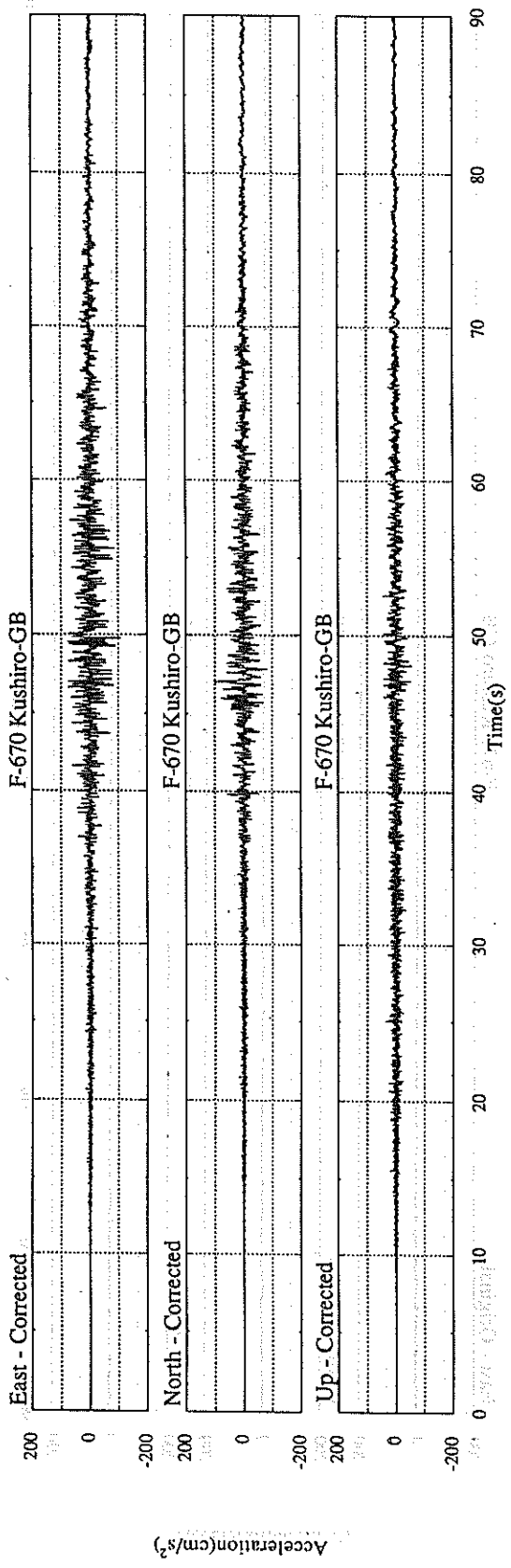
 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

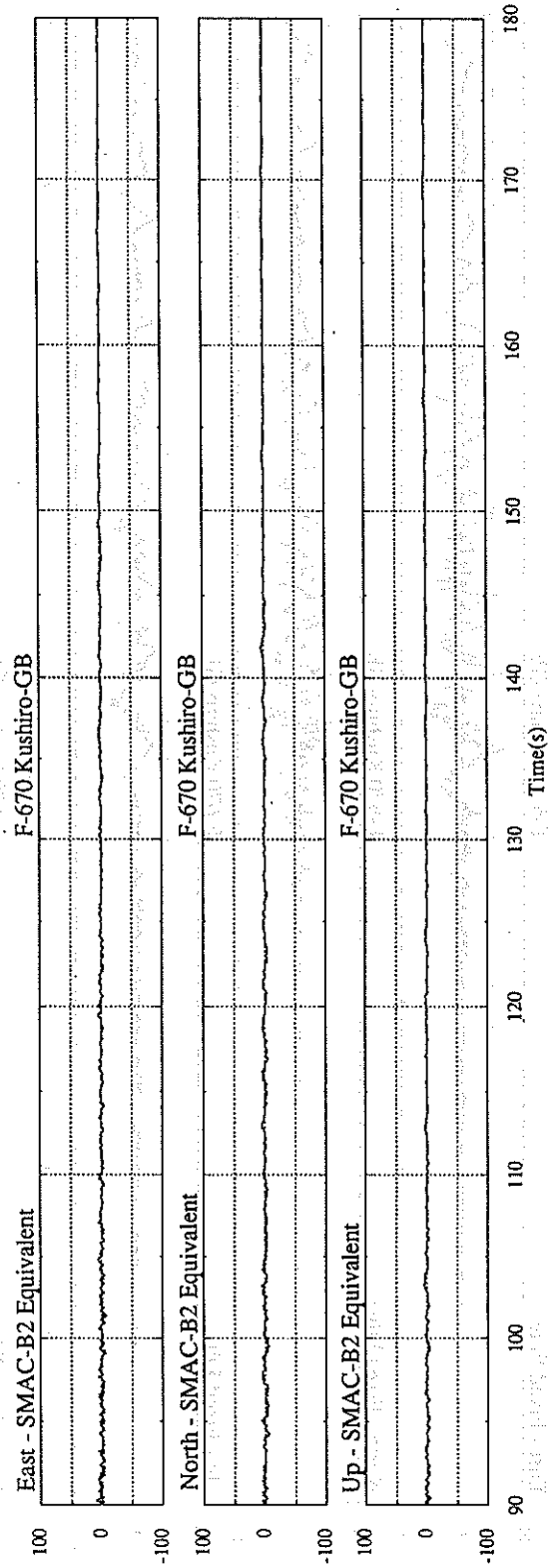
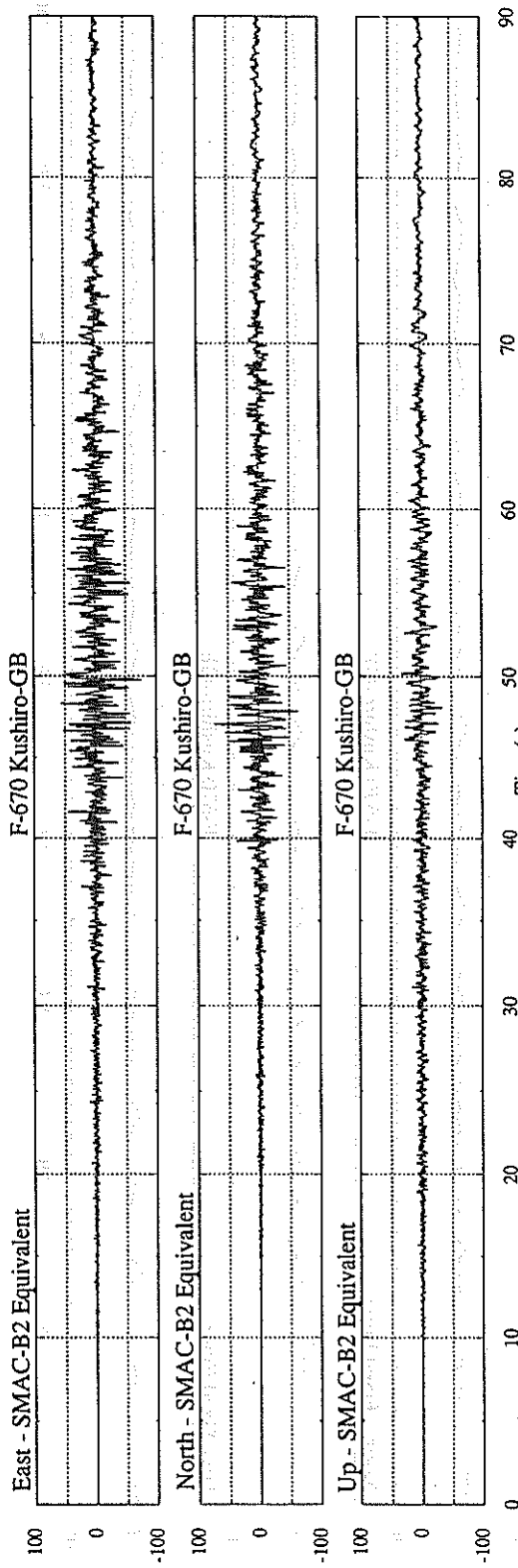
PEAK VALUES OF COMPONENTS

	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.020	0.026	0.026	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	72.0	75.5	34.1	81.5
ORIGINAL	100.8	104.7	54.2	115.6
CORRECTED	100.8	106.6	52.2	115.3
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	8.21	8.22	4.42	9.80
VARIABLE FILTER	7.26	9.10	6.46	9.45
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	2.54	2.74	2.59	3.34
VARIABLE FILTER	12.84	9.68	9.28	14.49

* RESULTANT OF HORIZONTAL COMPONENTS

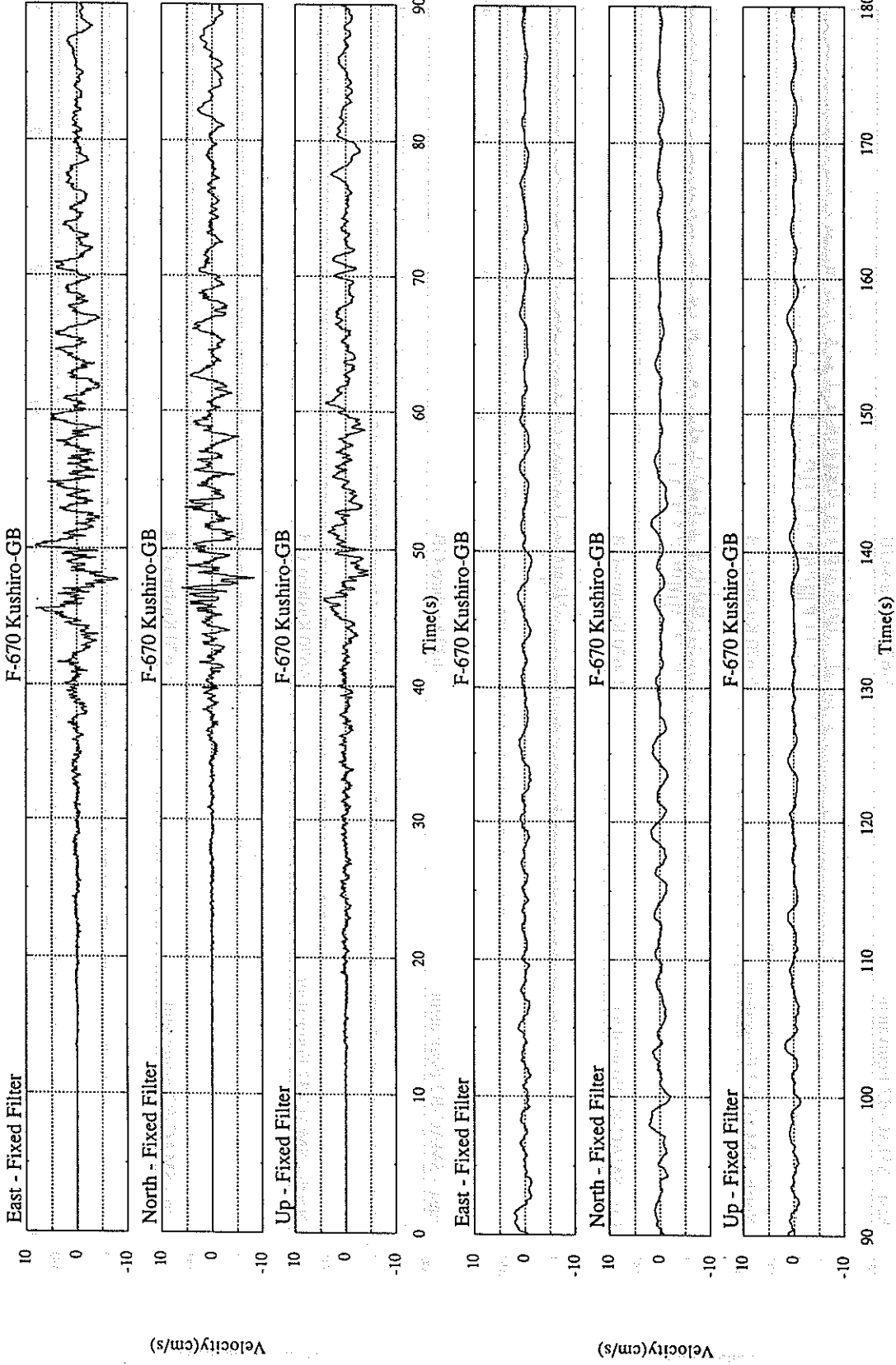


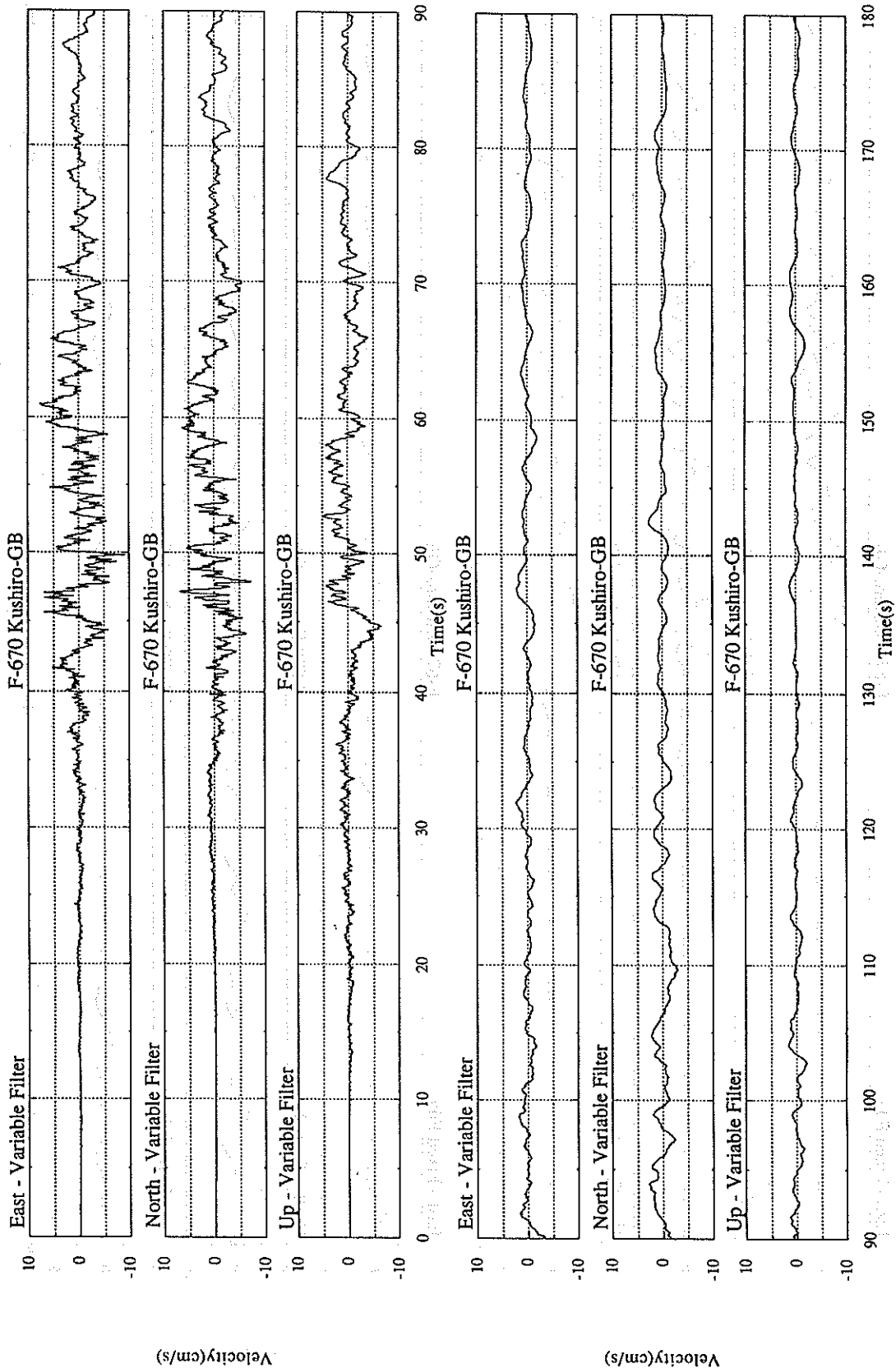


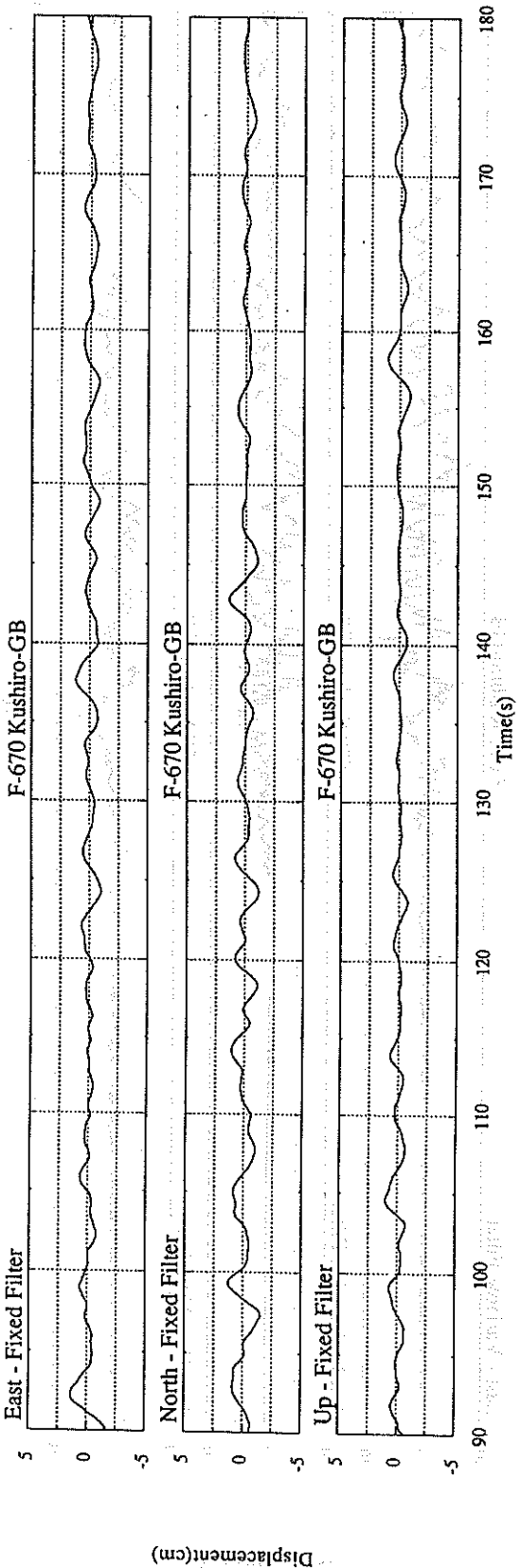
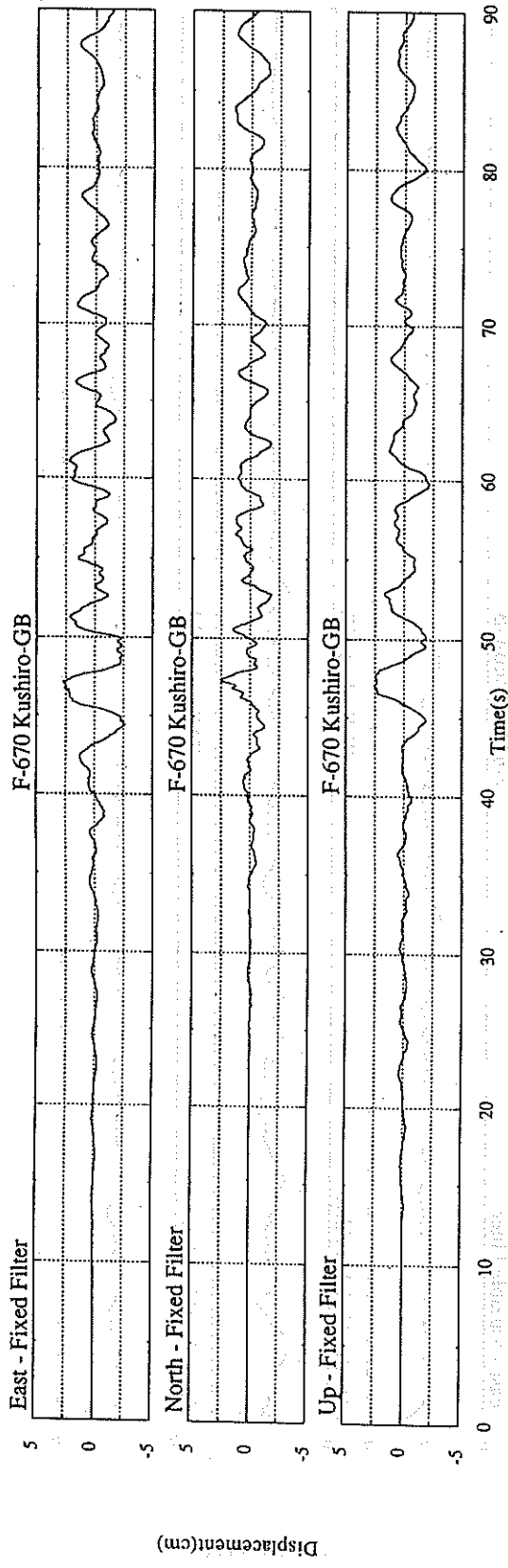


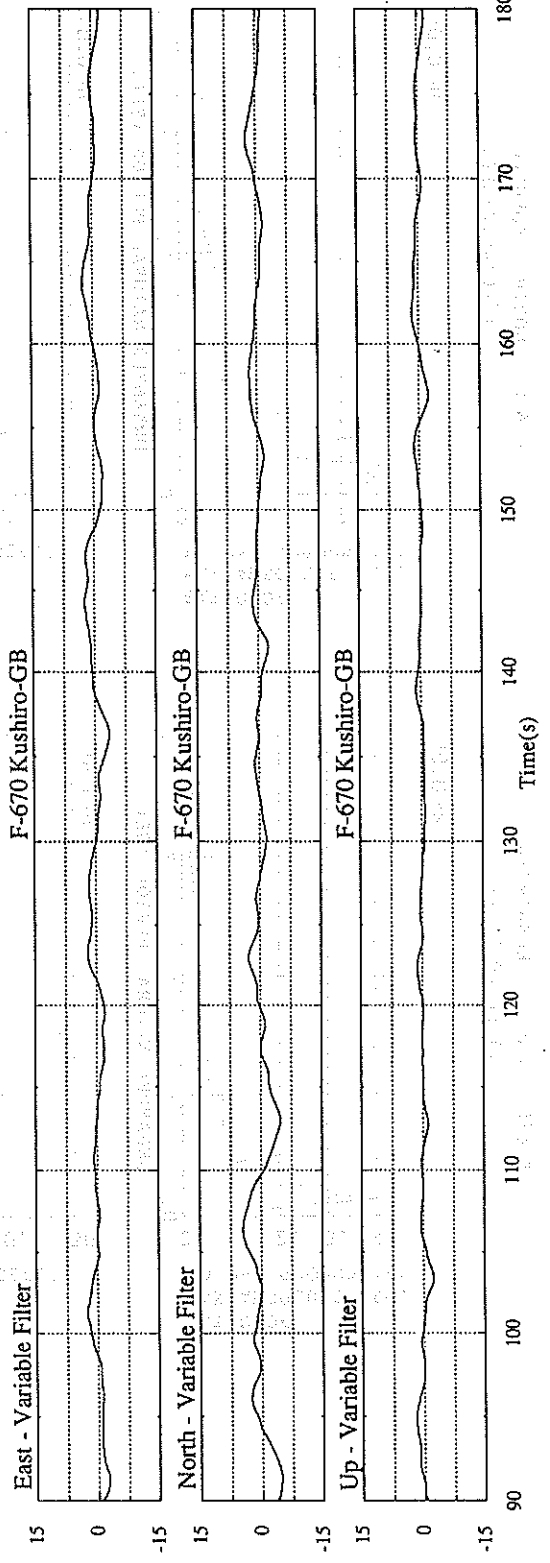
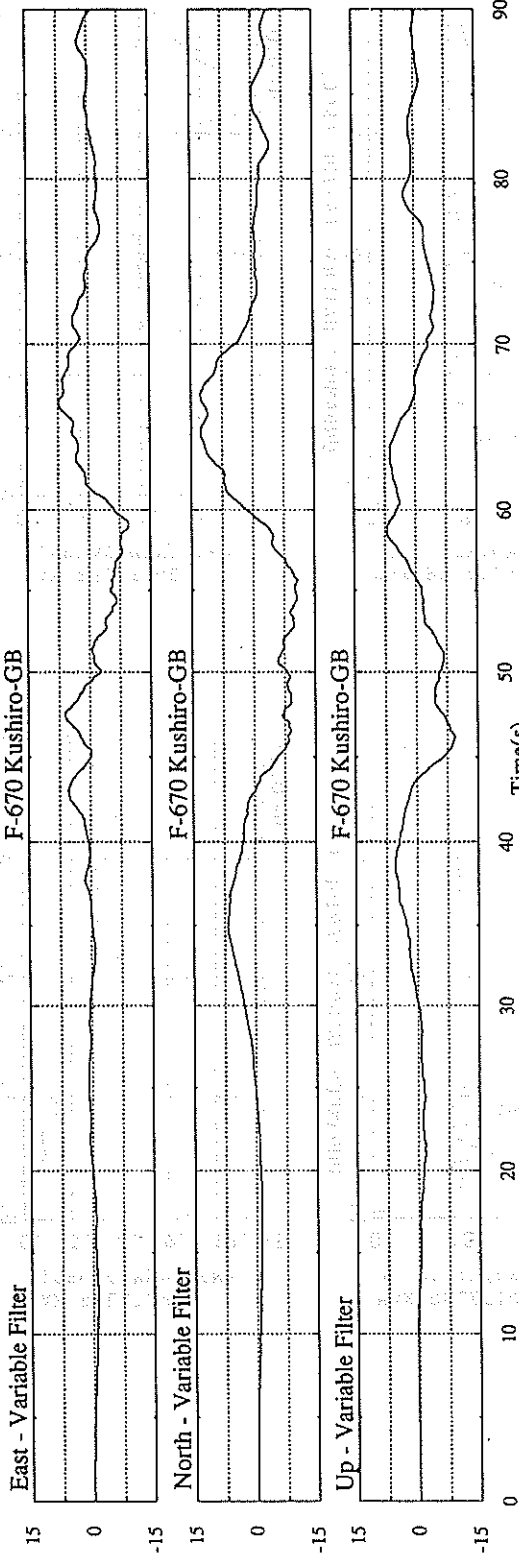
Acceleration(cm/s³)

Acceleration(cm/s³)

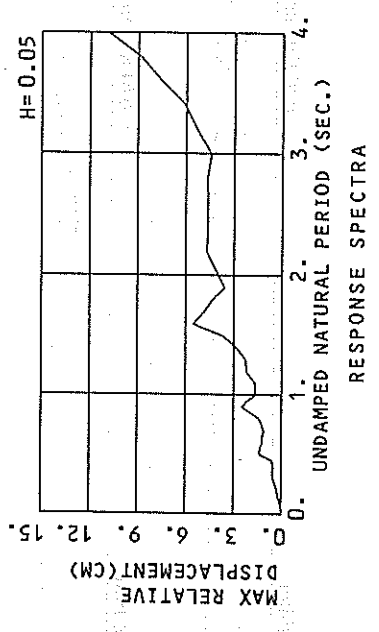
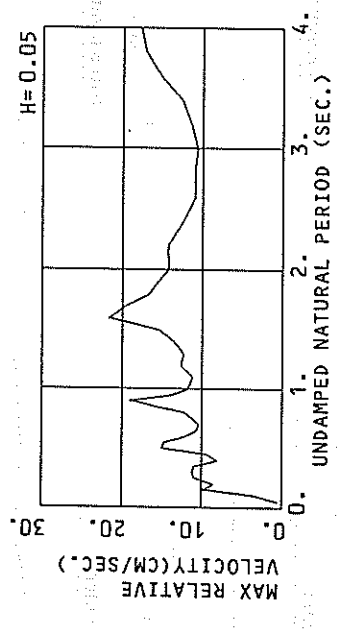
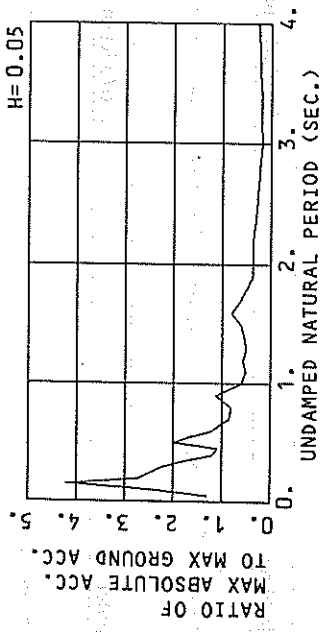






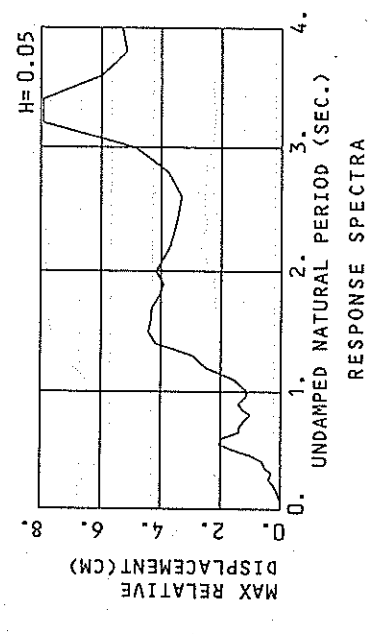
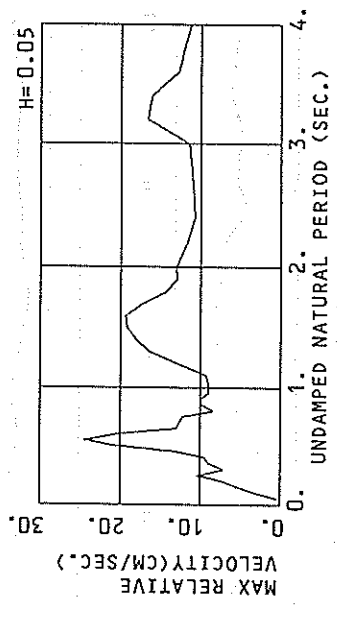
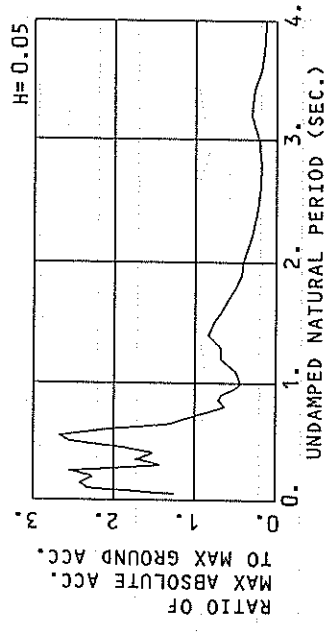


F-670 EAST KUSHIRO-GB
(1/FC=49.71 SEC.)



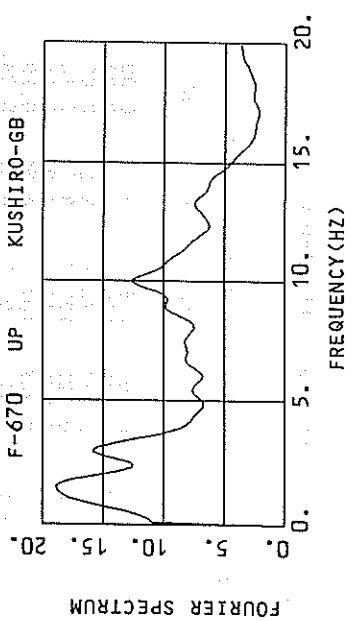
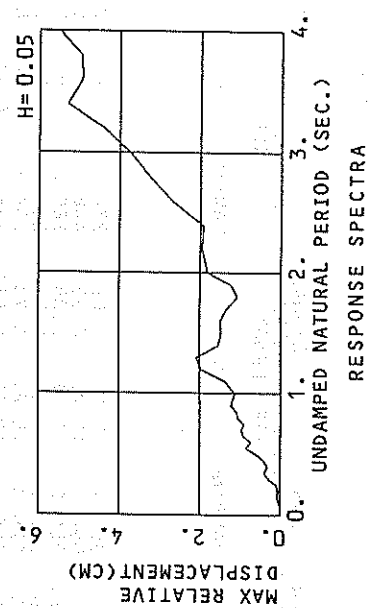
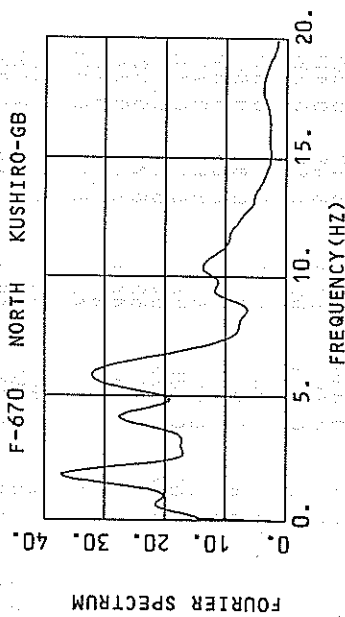
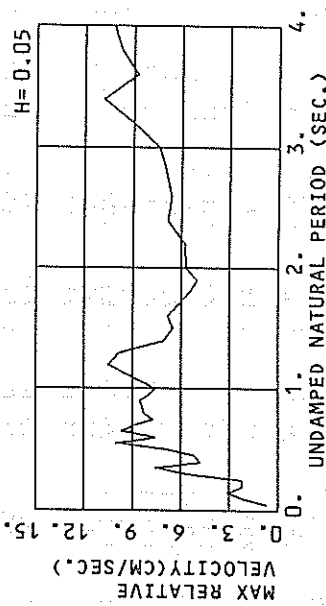
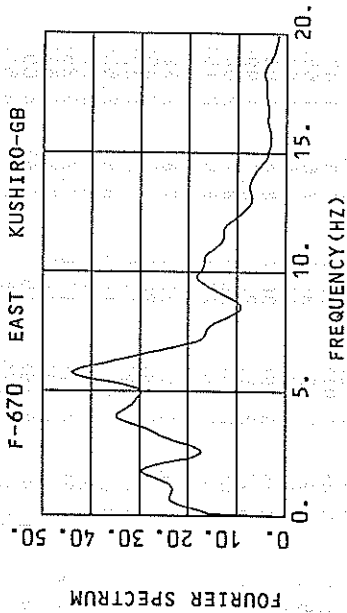
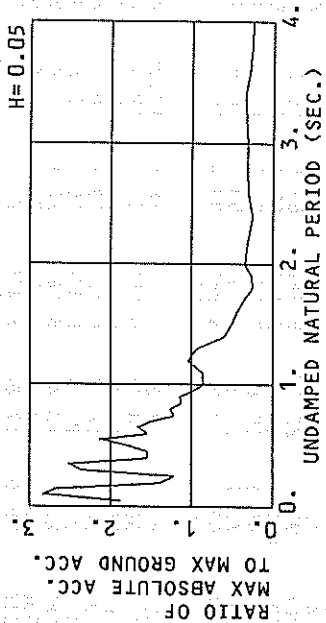
RESPONSE SPECTRA

F-670 NORTH KUSHIRO-GB
(1/FC=49.71 SEC.)



RESPONSE SPECTRA

F-670 UP KUSHIRO-GB
(1/FC=38.14 SEC.)



RESPONSE SPECTRUM

RECORD = F-670
 DATE AND TIME = 1994.10.04.22.23
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = EAST
 SIGNAL =
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION =
 MAX. GROUND ACC. = 106.55 (GAL)
 STATION = KUSHIRO-68

PER	DAMPING = 0.				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	161.8	0.79	0.010	144.2	0.48	0.009	138.6	0.45	0.009	129.0	0.39	0.008	116.3	0.35	0.007					
0.10	1668.1	26.48	0.423	361.1	5.02	0.091	274.2	3.44	0.069	195.8	2.33	0.049	136.5	1.46	0.033					
0.15	1690.3	39.94	0.963	594.1	13.40	0.338	448.6	9.76	0.252	303.3	6.53	0.171	170.8	3.27	0.091					
0.20	864.2	27.22	0.876	356.2	11.58	0.360	289.2	8.55	0.293	221.1	6.05	0.222	139.7	3.74	0.124					
0.25	1247.7	49.29	1.033	362.3	14.92	0.575	261.0	10.95	0.409	168.8	6.79	0.262	118.4	4.30	0.168					
0.30	453.0	21.63	1.033	325.4	15.87	0.740	234.8	11.14	0.532	156.5	7.67	0.348	107.0	4.50	0.249					
0.35	304.8	17.34	0.946	220.7	12.55	0.684	185.1	10.91	0.572	134.7	8.20	0.410	91.9	4.82	0.249					
0.40	390.8	25.02	1.584	153.9	8.93	0.622	127.3	8.04	0.512	109.5	6.90	0.439	82.1	5.12	0.309					
0.45	404.0	28.75	2.072	129.7	11.26	0.663	115.9	9.33	0.594	117.7	7.41	0.597	87.2	4.49	0.309					
0.50	598.0	47.00	3.787	301.1	22.23	1.904	213.2	15.01	1.345	147.1	9.87	0.918	90.4	5.50	0.528					
0.55	699.2	50.89	5.358	203.9	17.51	1.562	177.3	14.70	1.351	138.9	10.64	1.046	87.2	6.37	0.615					
0.60	316.5	35.54	3.433	158.5	14.29	1.443	129.9	12.11	1.179	113.7	9.87	1.016	81.4	6.80	0.667					
0.65	204.7	21.48	2.191	133.4	12.92	1.426	110.8	10.62	1.180	93.0	9.11	0.977	73.3	6.85	0.695					
0.70	300.0	33.35	3.724	126.7	13.86	1.570	91.4	10.35	1.129	74.6	8.28	0.908	63.3	6.61	0.714					
0.75	145.3	16.21	2.071	116.6	13.19	1.659	88.0	11.19	1.247	63.3	9.00	0.885	58.9	6.21	0.740					
0.80	203.7	25.85	3.502	115.9	14.69	1.878	86.6	12.16	1.398	61.7	9.88	0.983	54.1	5.87	0.777					
0.85	220.6	32.19	4.038	142.6	21.65	2.606	103.9	15.81	1.890	68.0	10.75	1.219	50.7	6.22	0.825					
0.90	401.2	57.46	8.233	172.4	26.79	3.532	120.6	18.96	2.463	76.1	12.17	1.531	48.0	6.48	0.876					
0.95	209.4	30.54	4.787	116.6	18.17	2.661	95.2	13.78	2.159	69.9	10.53	1.554	45.6	6.38	0.928					
1.00	161.7	25.37	4.096	66.6	12.63	1.682	64.8	11.72	1.628	57.7	9.70	1.407	43.3	6.23	0.975					
1.10	81.0	14.90	2.482	59.3	16.64	1.815	54.5	11.20	1.659	47.0	9.28	1.402	40.0	6.07	1.067					
1.20	126.9	23.76	4.629	80.7	16.01	2.941	60.4	12.64	2.192	44.1	9.45	1.559	37.3	6.33	1.168					
1.30	125.7	26.12	5.382	53.5	12.90	2.287	52.2	12.29	2.220	42.8	9.90	1.785	35.5	6.85	1.300					
1.40	113.7	25.47	5.646	72.6	16.82	3.598	56.5	13.43	2.788	40.0	9.88	1.915	35.0	7.33	1.475					
1.50	179.0	42.32	10.204	92.9	22.69	5.288	63.9	15.30	3.629	45.2	11.90	2.520	34.7	7.66	1.663					
1.60	334.7	85.40	21.704	141.5	35.95	9.166	85.3	21.66	5.505	48.7	13.10	3.098	33.4	7.83	1.847					
1.70	200.2	54.43	14.657	96.8	26.86	7.071	66.7	19.59	4.855	48.1	14.19	3.398	30.8	8.45	1.967					
1.80	134.0	39.61	10.996	53.2	22.64	6.160	53.1	16.58	4.327	40.0	13.19	3.152	28.4	8.74	1.999					
1.90	79.1	25.85	7.230	53.2	19.37	4.852	39.4	15.53	3.566	30.6	11.66	2.744	26.2	8.71	2.049					
2.00	59.7	18.93	6.049	45.2	16.23	4.672	39.2	14.18	3.931	29.4	11.01	2.858	23.8	8.51	2.151					
2.20	94.8	33.33	11.621	49.2	18.37	6.017	38.5	14.25	4.687	29.4	10.46	3.496	22.0	7.88	2.324					
2.40	40.0	16.56	5.831	36.1	14.15	5.255	31.9	12.41	4.598	25.6	10.16	3.644	20.0	7.27	2.400					
2.60	65.8	27.42	11.267	36.7	15.45	6.283	27.0	10.92	4.589	19.0	8.68	3.120	17.5	7.06	2.426					
2.80	48.0	20.20	9.133	30.9	14.25	6.128	23.6	10.93	4.647	16.2	8.95	3.060	16.9	6.84	2.559					
3.00	38.7	18.39	8.814	23.6	12.14	5.374	19.6	10.62	4.405	18.1	9.39	3.879	17.0	6.97	2.891					
3.20	35.4	16.93	9.185	22.4	13.41	5.782	20.9	11.45	5.036	18.6	10.11	4.508	16.0	7.51	3.258					
3.40	46.3	24.70	13.556	23.0	14.27	6.725	20.8	12.49	6.036	18.6	11.95	5.085	16.7	7.51	3.537					
3.60	38.4	24.14	12.610	25.9	17.64	8.479	23.2	15.18	7.535	19.4	12.56	6.168	16.1	8.13	4.007					
3.80	43.6	28.25	15.953	29.1	20.72	10.637	24.4	17.12	8.858	19.9	13.17	7.079	15.4	8.71	4.514					
4.00	49.1	31.47	19.896	32.5	22.43	13.158	27.0	17.76	10.863	20.3	13.17	7.932	14.8	9.04	4.911					

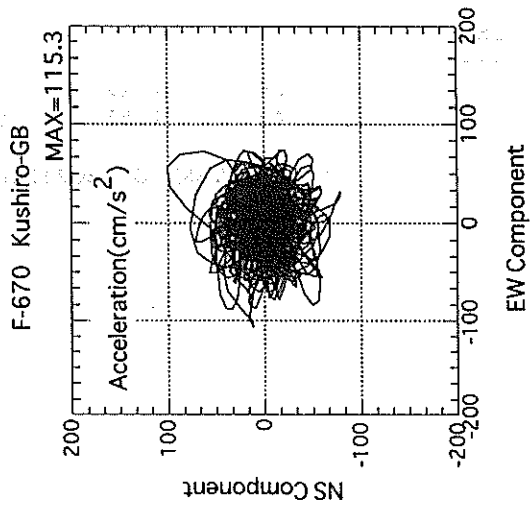
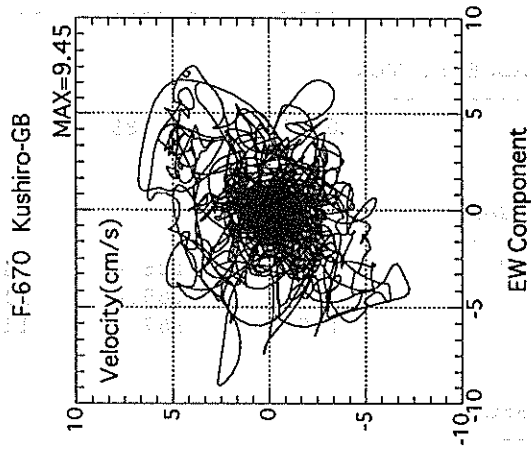
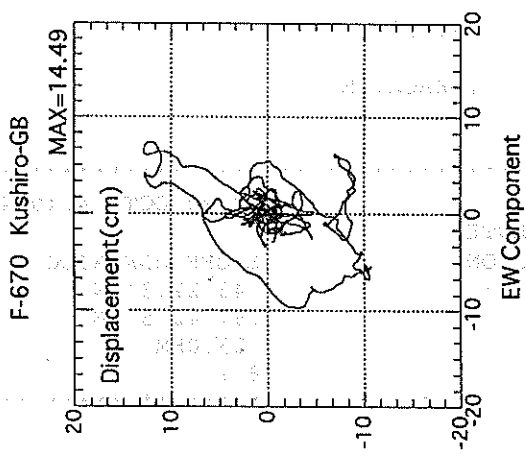
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = F-670
 DATE AND TIME = 1994.10.04.22.23
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = UP
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION = MAX.GROUND ACC. = 52.23 (GAL)
 STATION = KUSHIRO-GB

PER	DAMPING = 0.				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	643.2	5.08	0.041	116.4	0.86	0.007	98.1	0.69	0.006	83.4	0.47	0.005	65.8	0.28	0.004	0.015				
0.10	489.0	15.10	0.241	237.5	3.57	0.060	148.2	2.17	0.037	101.0	1.37	0.025	63.8	0.74	0.015	0.034				
0.15	350.0	11.65	0.279	181.5	4.18	0.103	139.7	3.08	0.079	101.2	2.07	0.057	64.8	1.28	0.034	0.047				
0.20	264.7	5.18	0.164	76.4	2.61	0.087	73.3	2.22	0.074	63.2	1.80	0.083	50.3	1.27	0.047	0.078				
0.25	161.9	10.18	0.419	89.8	2.82	0.126	63.3	2.22	0.100	54.9	1.96	0.086	52.5	1.62	0.078	0.127				
0.30	370.8	17.31	0.845	170.9	7.61	0.388	123.6	5.49	0.280	88.8	3.71	0.200	60.7	2.06	0.127	0.163				
0.35	336.9	18.68	1.046	185.1	10.23	0.574	131.7	7.58	0.406	89.5	5.11	0.272	59.5	2.84	0.163	0.187				
0.40	223.0	14.15	0.904	87.5	5.39	0.355	80.9	4.80	0.326	64.4	3.86	0.257	52.7	2.99	0.187	0.225				
0.45	162.8	11.52	0.835	102.5	6.72	0.526	80.9	5.16	0.412	66.2	4.46	0.331	51.0	3.30	0.225	0.274				
0.50	192.6	16.00	1.219	118.5	9.04	0.749	93.4	6.82	0.589	68.3	5.20	0.422	48.4	4.00	0.274	0.342				
0.55	312.3	27.23	2.393	156.6	13.55	1.196	111.7	10.04	0.852	75.1	7.20	0.565	48.6	4.60	0.342	0.400				
0.60	227.1	21.55	2.071	103.6	9.27	0.943	80.5	7.60	0.731	65.5	7.29	0.588	49.0	4.93	0.400	0.452				
0.65	282.1	28.85	3.019	114.0	12.00	1.210	86.6	9.67	0.923	64.4	7.63	0.677	47.8	4.98	0.452	0.496				
0.70	281.6	31.38	3.495	96.7	10.97	1.200	78.3	8.94	0.965	62.7	7.20	0.762	45.3	4.79	0.496	0.530				
0.75	158.4	18.83	2.257	72.1	8.96	1.027	63.7	7.75	0.903	57.1	6.41	0.793	42.4	4.45	0.530	0.553				
0.80	181.0	23.75	1.883	87.8	11.86	1.238	66.2	8.32	1.064	55.0	6.75	0.864	39.5	4.75	0.553	0.581				
0.85	136.8	18.53	2.503	70.5	9.68	1.288	59.2	8.40	1.074	49.8	7.16	0.880	36.2	4.94	0.581	0.613				
0.90	211.2	29.97	4.333	92.2	12.75	1.891	59.9	8.57	1.223	42.9	7.29	0.846	32.7	5.03	0.613	0.640				
0.95	122.1	18.78	2.790	71.0	11.47	1.621	51.7	8.01	1.177	31.9	7.06	0.856	29.0	5.05	0.640	0.671				
1.00	100.4	16.18	2.544	60.8	10.08	1.539	45.1	7.59	1.136	36.9	7.06	0.922	25.0	5.01	0.671	0.716				
1.10	83.5	16.64	2.558	58.5	11.75	1.789	45.4	9.17	1.378	36.6	6.71	1.100	23.0	4.65	0.716	0.758				
1.20	104.3	19.65	3.803	69.9	13.54	2.547	54.4	10.50	1.976	37.9	7.02	1.363	22.0	4.16	0.758	0.790				
1.30	131.6	27.61	5.634	61.5	12.78	2.631	49.0	9.84	2.083	35.2	6.88	1.475	19.9	4.28	0.790	0.822				
1.40	59.4	12.62	2.951	29.3	7.38	1.451	31.3	7.05	1.547	27.9	6.28	1.347	18.3	4.23	0.822	0.854				
1.50	41.4	9.98	2.357	28.7	7.15	1.634	26.2	6.51	1.483	22.7	5.78	1.260	16.3	4.14	0.854	0.886				
1.60	54.0	15.49	3.504	30.3	8.48	1.964	18.4	6.83	1.491	18.6	5.42	1.169	14.3	3.97	0.886	0.918				
1.70	45.6	12.88	3.335	23.8	7.78	1.333	13.4	6.15	1.333	14.6	5.06	1.049	12.5	3.72	0.918	0.950				
1.80	26.2	7.18	2.148	14.5	6.14	1.191	13.1	5.49	1.071	12.2	4.72	0.982	11.9	3.59	0.950	0.982				
1.90	22.6	6.84	2.065	14.4	5.43	1.317	13.5	4.99	1.225	12.2	4.72	1.096	11.5	3.51	0.982	1.018				
2.00	44.6	13.06	4.516	23.7	6.74	2.398	18.0	5.79	1.825	13.2	4.80	1.320	11.2	3.51	1.018	1.050				
2.20	43.7	15.31	5.356	21.6	7.64	2.649	15.9	5.75	1.947	12.0	4.53	1.451	10.4	3.67	1.050	1.082				
2.40	31.6	14.60	4.615	17.7	9.14	2.573	13.2	6.81	1.922	11.2	4.95	1.588	9.3	3.82	1.082	1.114				
2.60	28.0	12.30	4.795	17.8	7.68	3.038	15.8	6.63	2.682	13.0	5.37	2.153	9.6	3.88	1.114	1.146				
2.80	37.0	16.25	7.346	19.9	8.98	3.939	16.5	6.94	3.250	13.5	5.41	2.580	9.7	3.95	1.146	1.178				
3.00	36.3	16.63	8.267	20.9	9.56	4.761	16.6	7.37	3.754	12.6	6.08	2.800	9.6	4.25	1.178	1.210				
3.20	39.2	20.29	10.164	22.6	11.20	5.862	17.0	8.99	4.391	12.6	7.18	3.185	10.0	4.59	1.210	1.242				
3.40	36.0	18.42	10.541	24.1	13.80	7.036	18.2	10.85	5.301	13.1	7.82	3.163	10.4	4.81	1.242	1.274				
3.60	24.7	14.91	8.104	17.0	10.01	5.583	15.1	8.76	4.953	12.5	7.29	3.934	10.6	5.07	1.274	1.306				
3.80	21.4	12.92	7.822	15.1	10.99	5.504	13.7	8.74	4.959	12.5	7.93	4.359	10.6	5.28	1.306	1.338				
4.00	29.3	20.92	11.856	15.4	11.55	6.225	13.6	10.23	5.503	12.2	8.27	4.674	10.5	5.33	1.338	1.370				

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)



RECORD NUMBER : M-1519
 STATION : TOKACHI-M

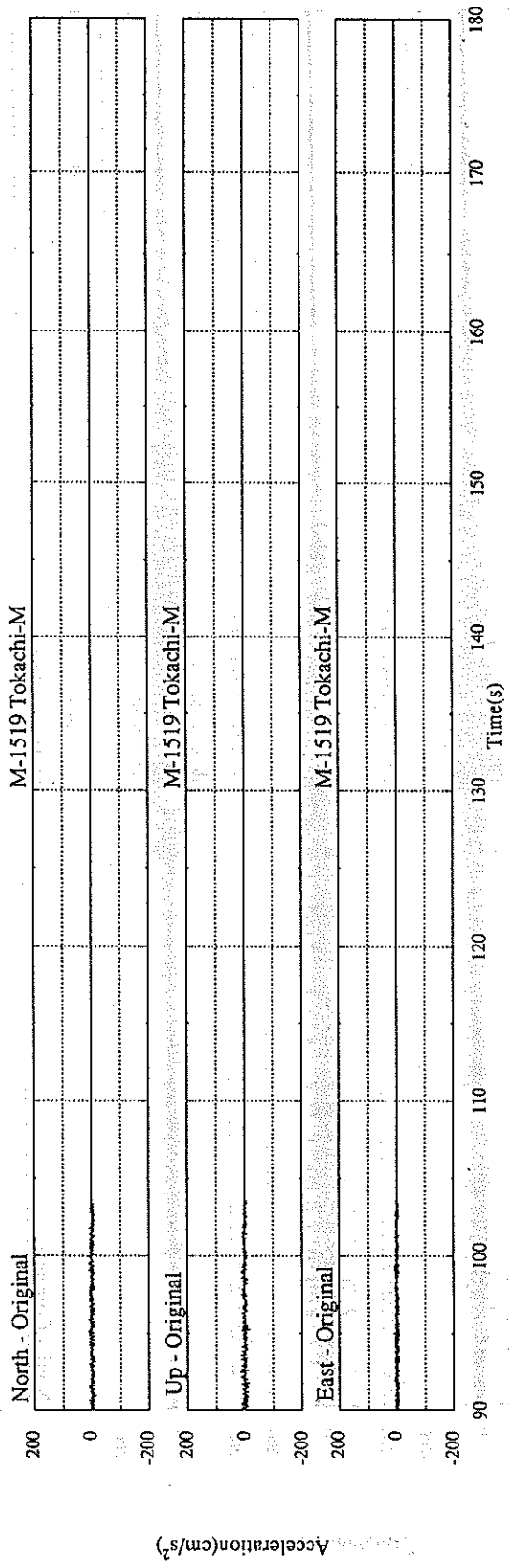
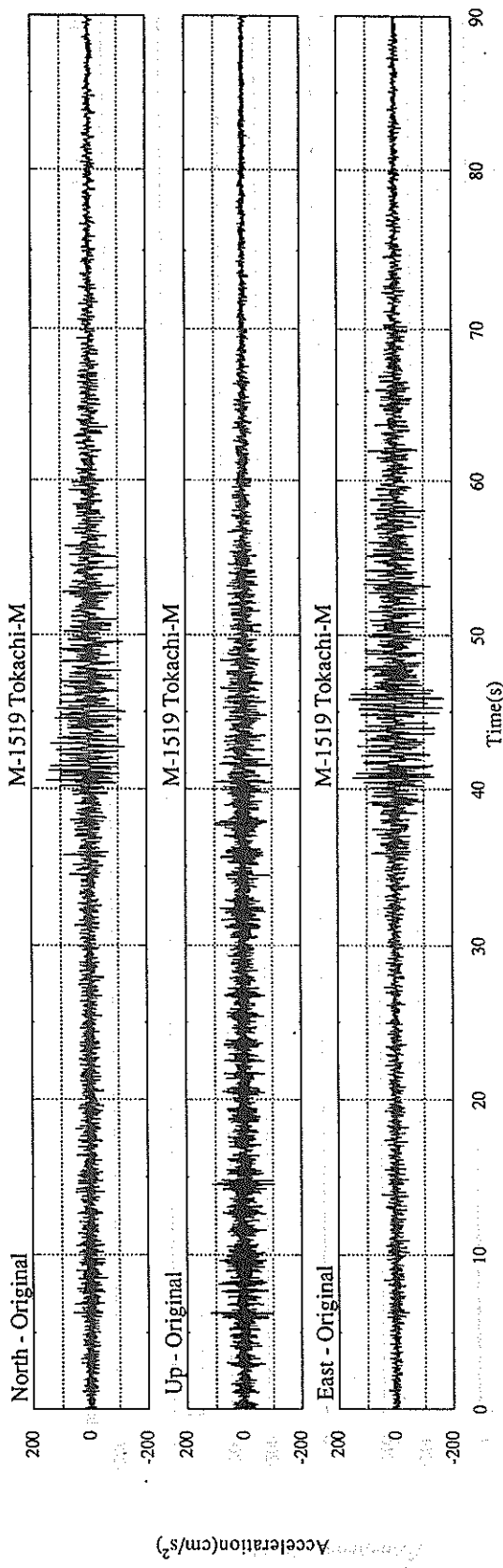
EARTHQUAKE DATA

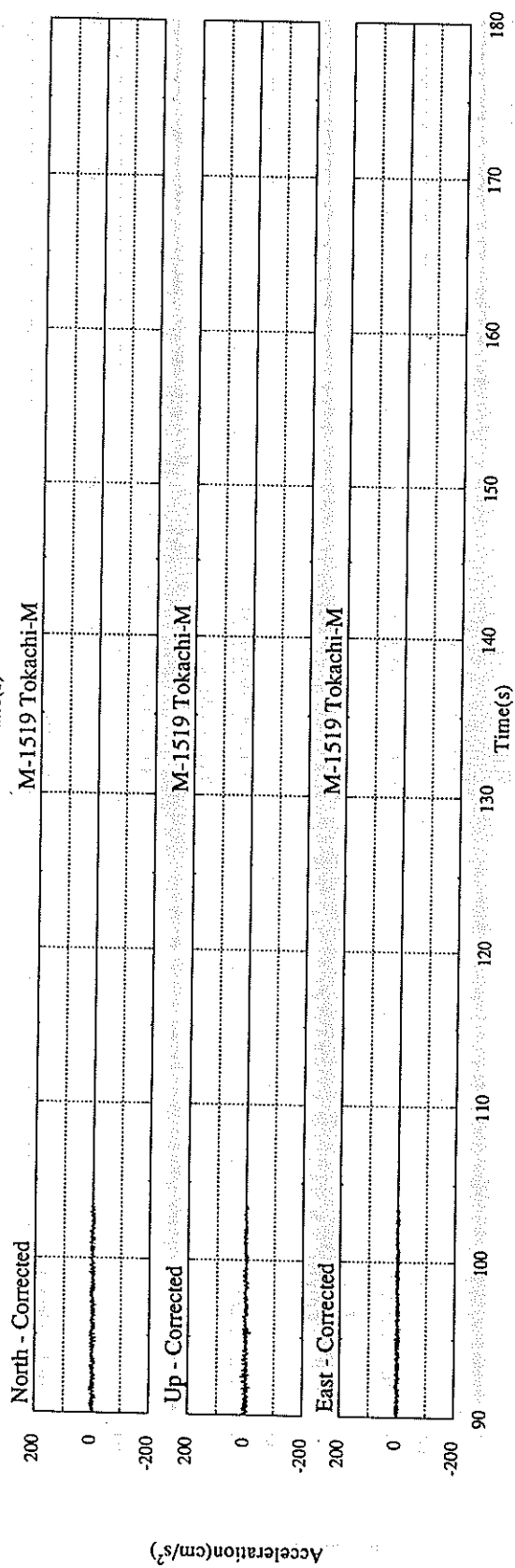
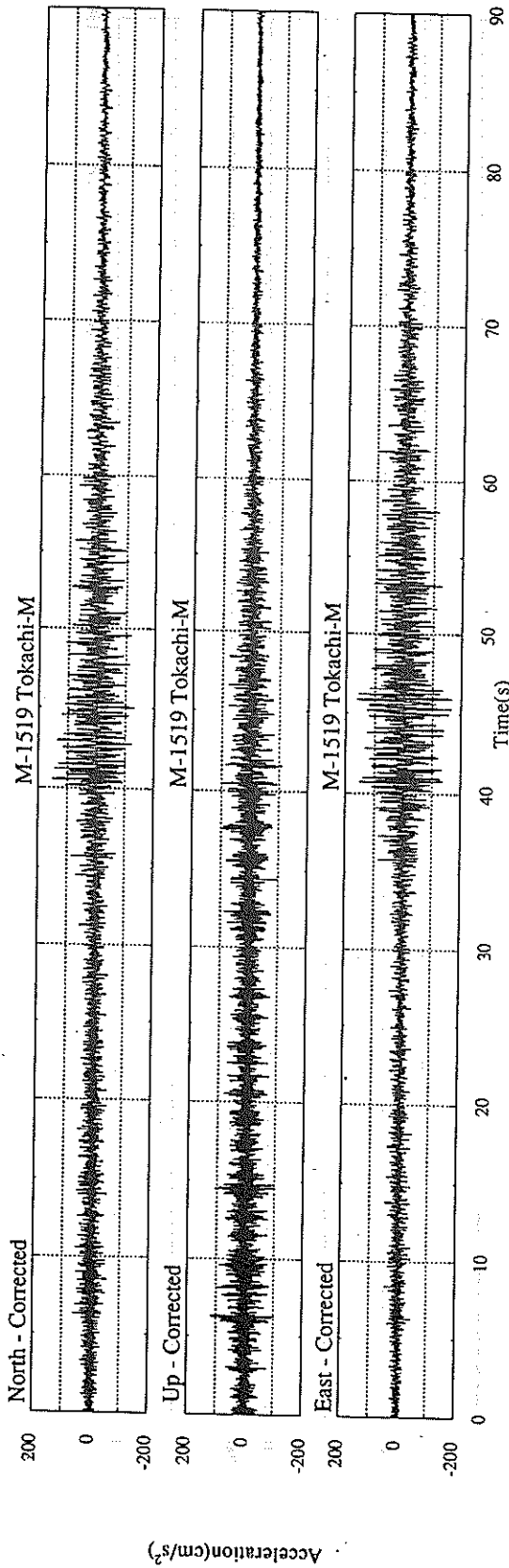
 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

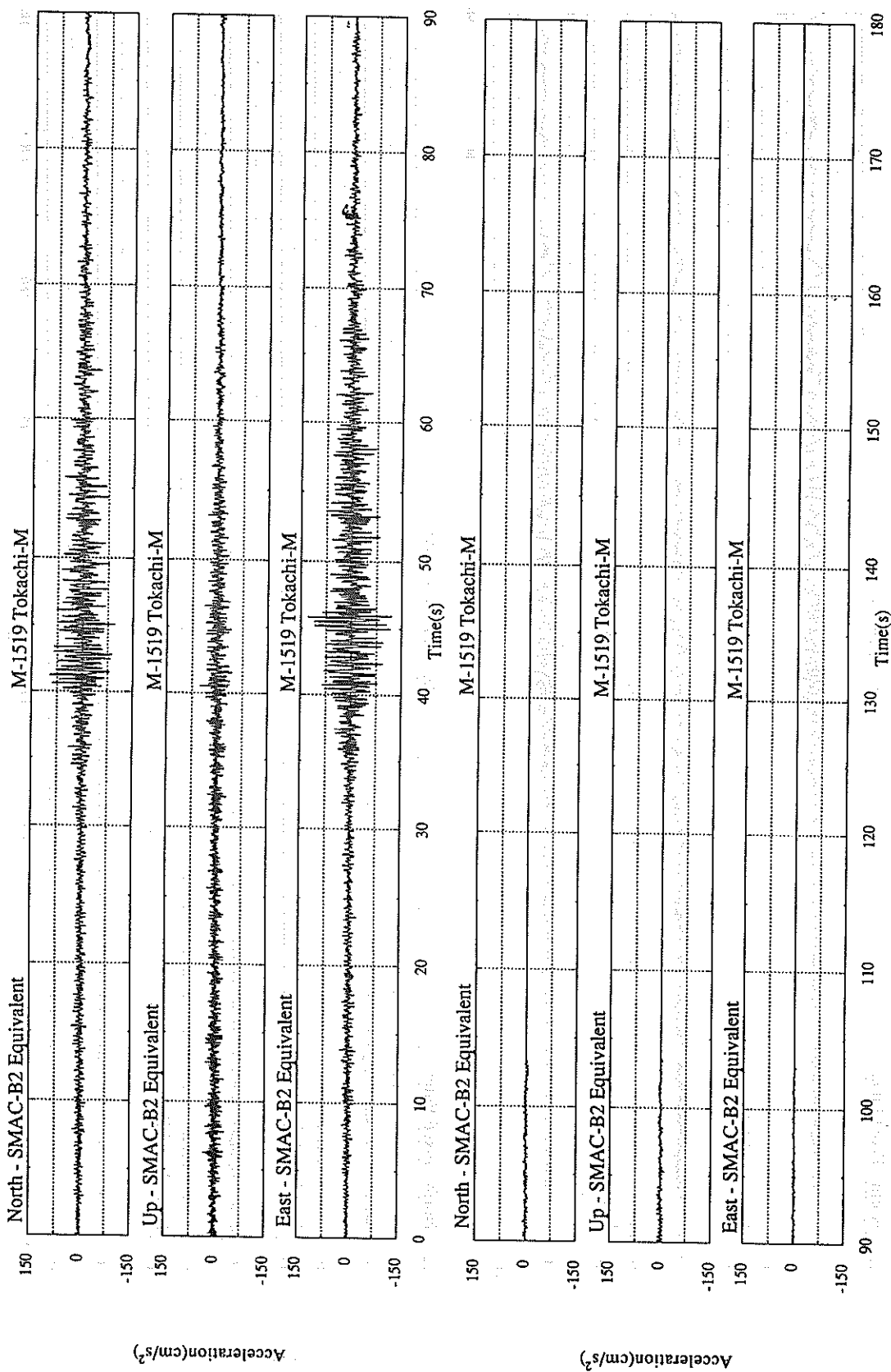
PEAK VALUES OF COMPONENTS

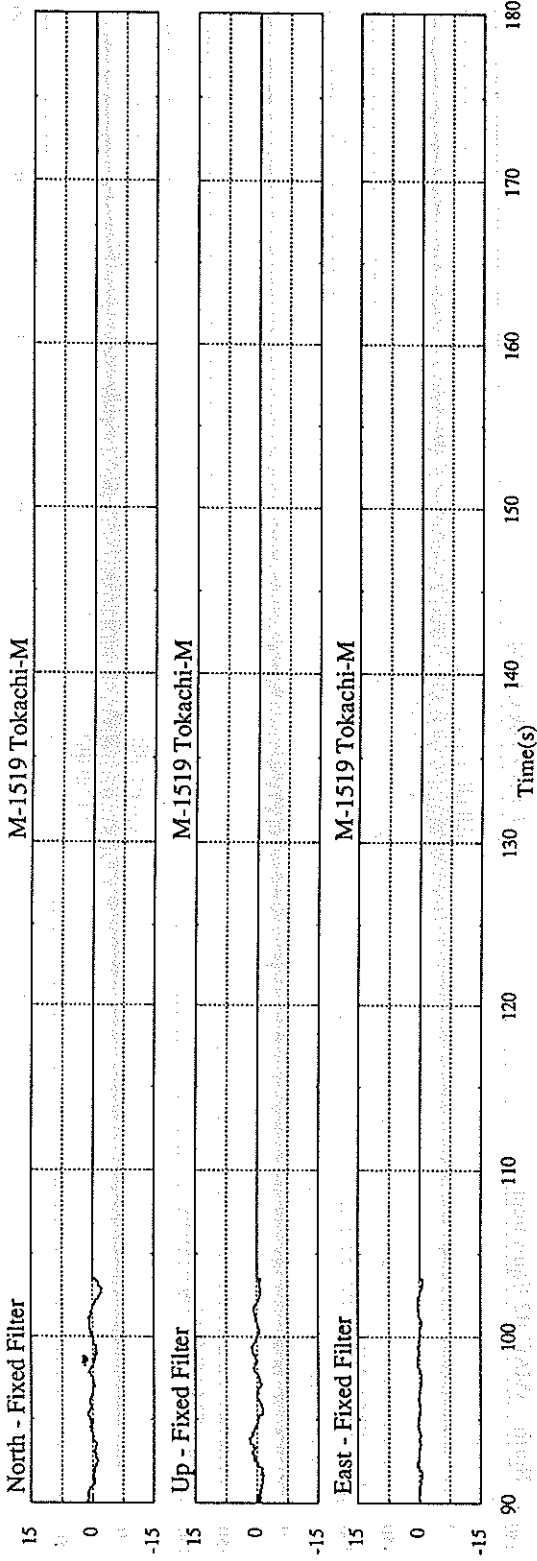
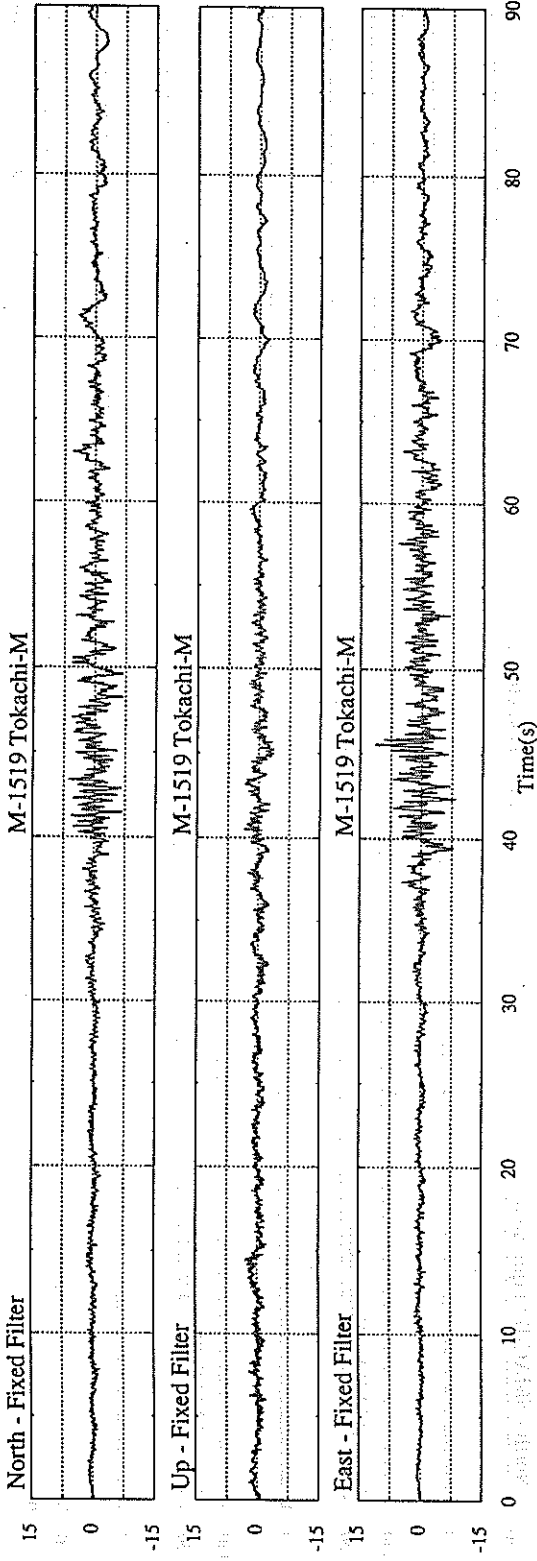
	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.171	0.189	0.189	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	96.5	128.6	49.9	129.7
ORIGINAL	147.7	169.4	119.3	173.7
CORRECTED	149.6	167.3	118.2	175.8
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	6.79	11.32	3.48	11.41
VARIABLE FILTER	6.78	10.43	3.28	10.83
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	2.29	2.12	1.99	2.47
VARIABLE FILTER	1.45	1.51	0.84	1.56

* RESULTANT OF HORIZONTAL COMPONENTS



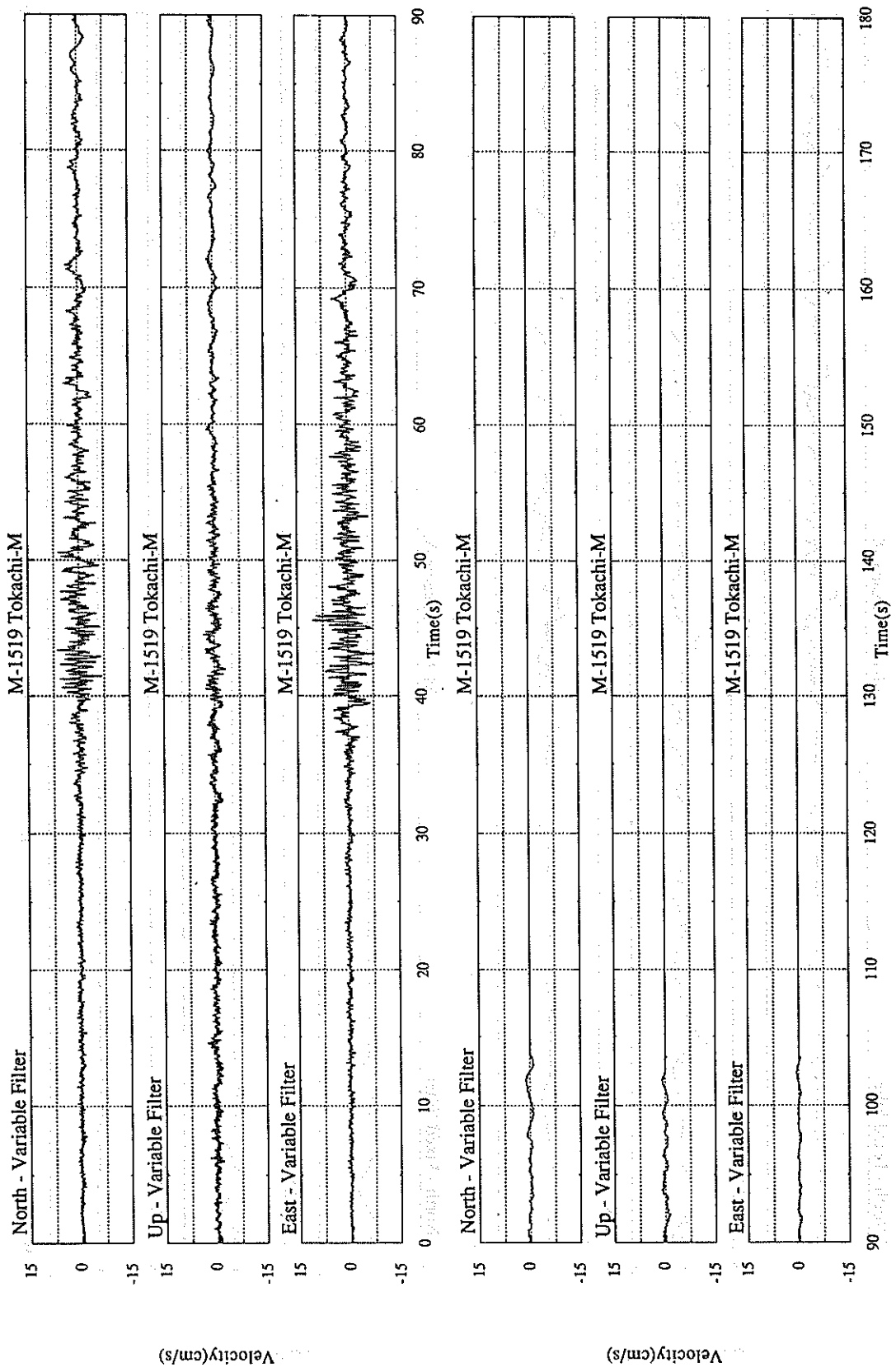


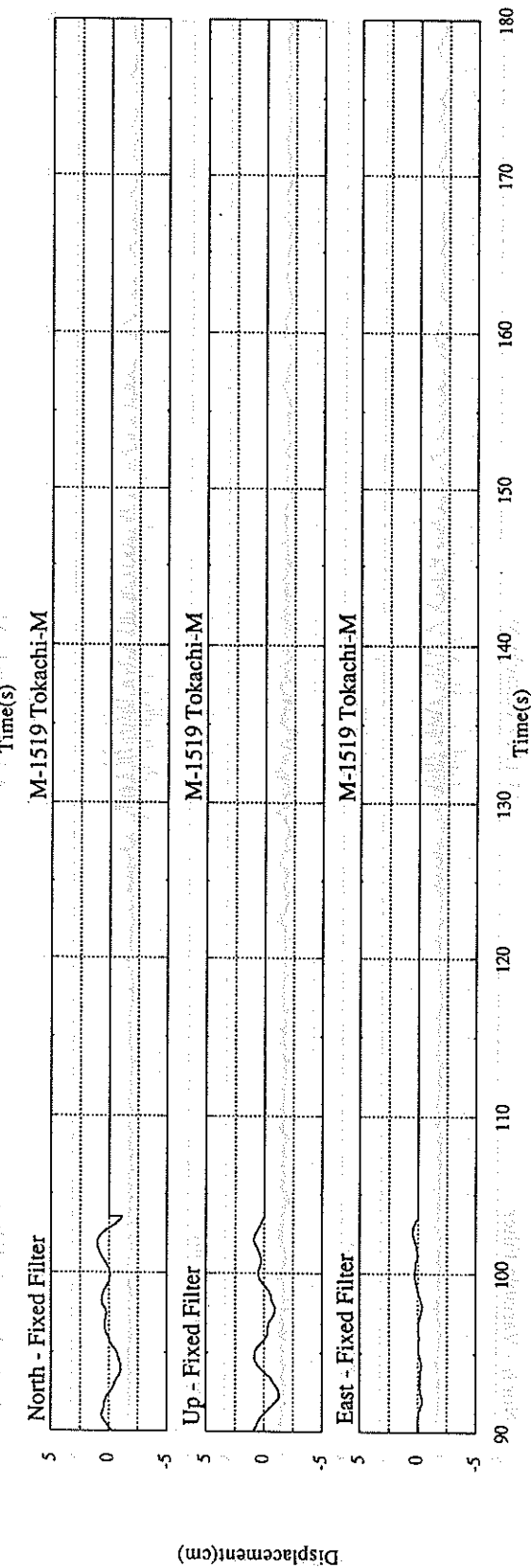
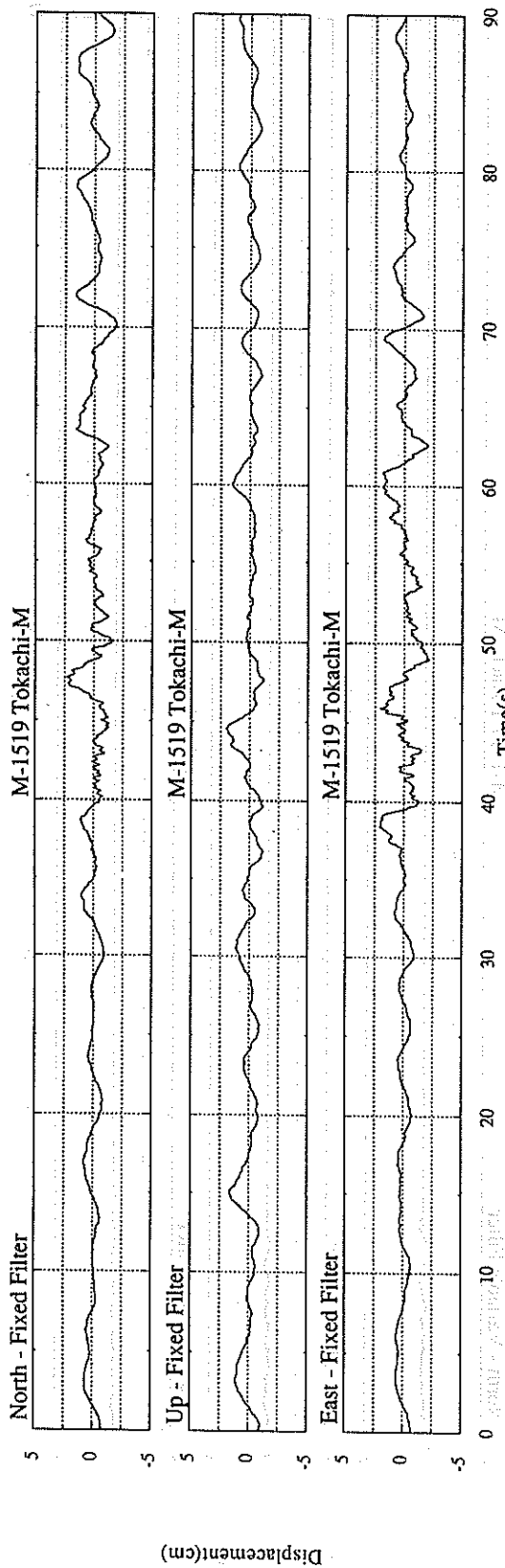




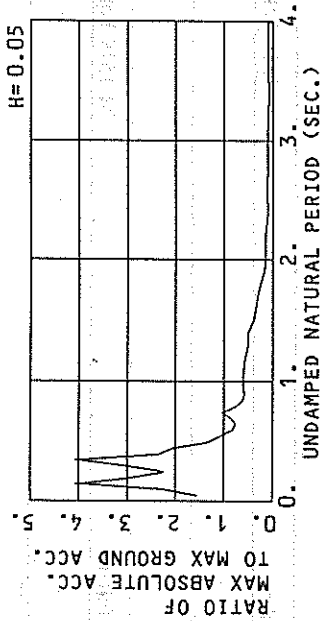
Velocity(cm/s)

Velocity(cm/s)

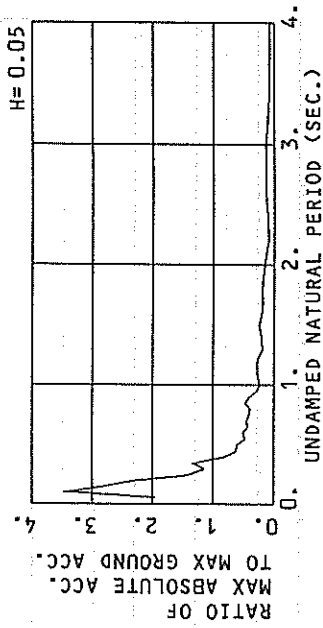




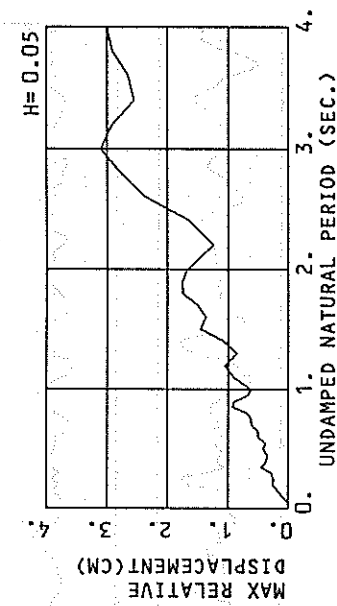
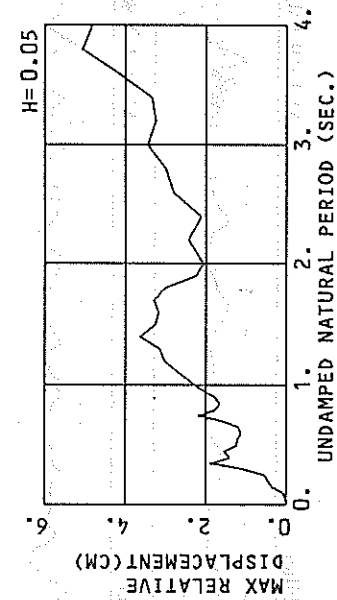
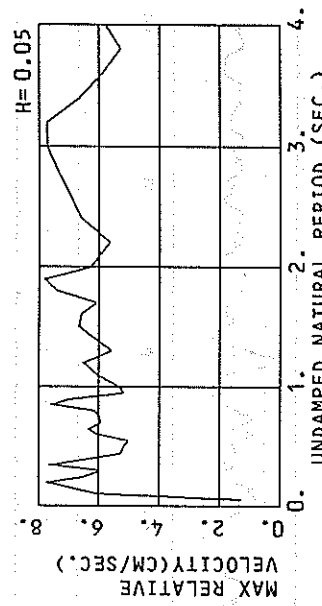
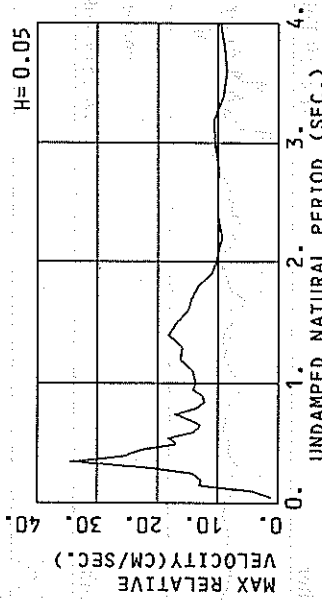
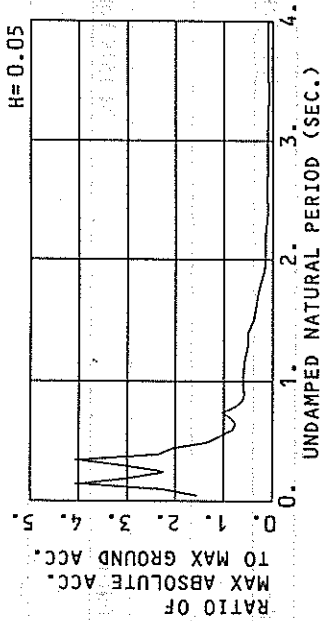
M-1519 NORTH TOKACHI-M
(1/FC=5.85 SEC.)



M-1519 UP TOKACHI-M
(1/FC=5.12 SEC.)



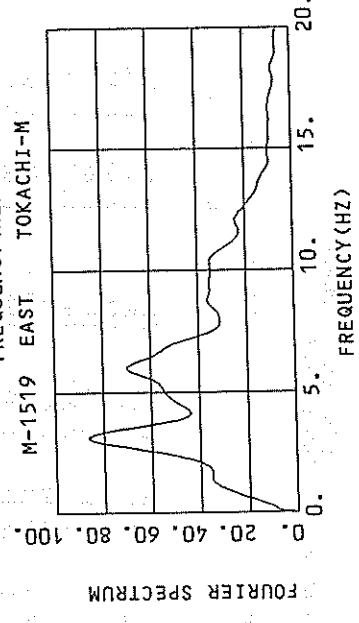
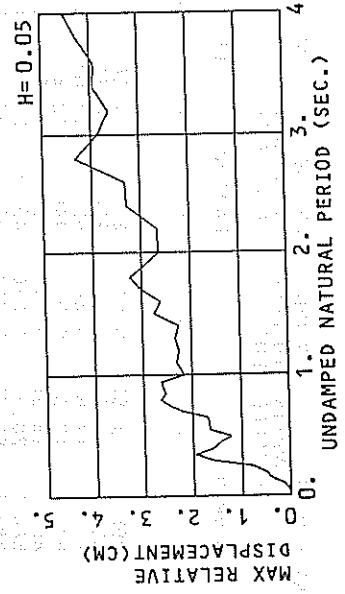
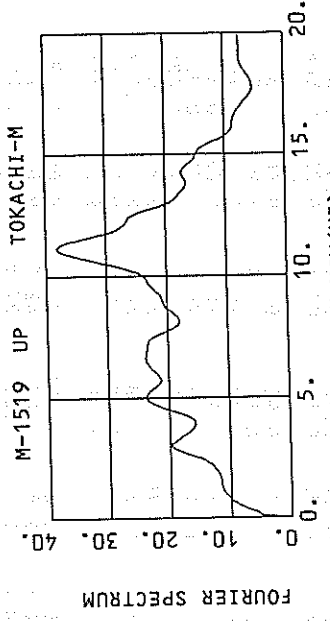
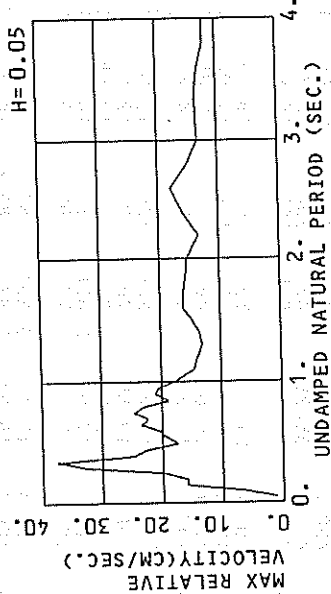
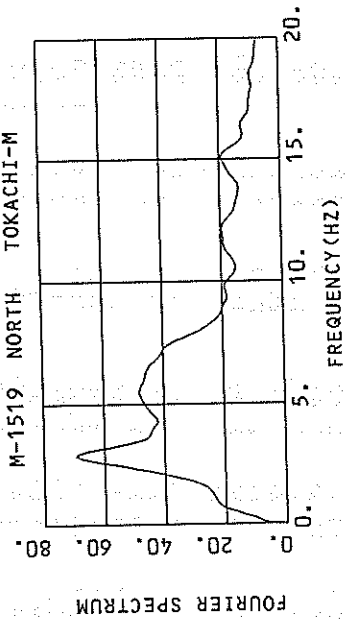
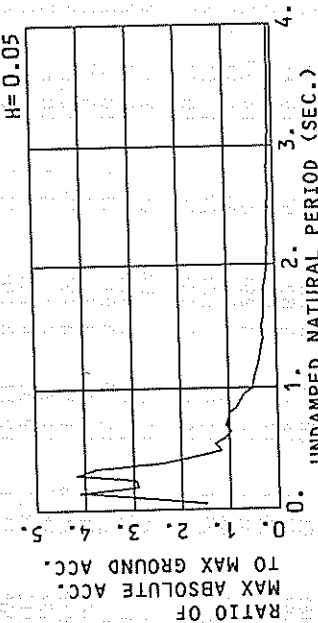
M-1519 NORTH TOKACHI-M
(1/FC=5.85 SEC.)



RESPONSE SPECTRA

RESPONSE SPECTRA

M-1519 EAST TOKACHI-M
(1/FC=5.85 SEC.)



RESPONSE SPECTRUM

RECORD = M-1519 COMPONENT = NORTH SIGNAL = GR. ACC. CORRECTION = STATION = TOKACHI-M
 DATE AND TIME = 1994-10-4-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 149.56 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	
0.05	1238.7	9.52	0.078	265.9	1.62	0.017	233.3	1.20	0.015	227.9	0.83	0.014	200.2	0.62	0.012	
0.10	2165.4	34.42	0.549	437.1	5.88	0.111	334.8	4.23	0.095	244.5	3.25	0.061	189.1	2.12	0.046	
0.15	2767.5	65.57	1.577	817.5	17.50	0.462	607.1	13.05	0.343	386.7	8.85	0.222	229.7	4.55	0.121	
0.20	1505.9	47.93	1.526	571.4	17.34	0.581	446.9	12.83	0.447	347.5	9.73	0.337	193.3	5.46	0.174	
0.25	996.0	38.51	1.577	451.0	18.35	0.712	335.5	14.31	0.528	247.5	9.73	0.383	168.2	6.31	0.242	
0.30	1552.1	73.62	3.538	584.6	28.34	1.330	452.5	21.57	1.029	306.3	14.98	0.684	183.6	7.68	0.383	
0.35	1589.4	90.69	4.932	884.6	50.72	2.734	607.3	34.42	1.859	385.3	20.20	1.111	180.8	9.22	0.502	
0.40	912.0	58.10	3.696	430.5	30.69	1.741	352.0	25.68	1.420	271.2	18.90	1.079	158.0	10.03	0.577	
0.45	1246.2	89.09	6.392	473.1	35.25	2.422	304.0	22.70	1.548	189.7	14.50	0.951	129.3	9.39	0.587	
0.50	441.1	37.42	2.793	256.6	22.11	1.626	197.9	16.91	1.247	144.4	13.66	0.889	107.4	9.23	0.568	
0.55	364.6	30.84	2.794	198.4	21.17	1.520	161.7	18.13	1.231	123.8	14.42	0.923	90.2	9.40	0.572	
0.60	250.9	24.93	2.288	151.0	15.95	1.375	124.2	14.08	1.127	96.6	11.97	0.863	79.9	8.90	0.613	
0.65	256.7	26.62	2.747	137.0	15.64	1.465	112.9	12.85	1.198	99.0	11.07	1.041	79.0	8.27	0.750	
0.70	226.3	26.88	2.809	147.7	17.35	1.832	127.1	14.82	1.571	106.7	11.64	1.301	76.5	8.03	0.869	
0.75	487.1	58.53	6.940	220.4	24.84	3.134	153.7	17.11	2.178	110.1	11.16	1.534	76.5	7.78	0.961	
0.80	121.4	18.28	1.968	111.6	14.49	1.806	109.1	13.51	1.760	93.7	11.36	1.478	73.3	7.28	1.077	
0.85	150.2	20.53	2.749	96.3	13.65	1.768	109.7	12.55	1.649	80.4	10.76	1.425	68.9	7.25	1.077	
0.90	118.5	17.54	2.432	94.5	13.95	1.936	86.9	12.56	1.773	74.7	10.65	1.484	64.4	8.71	1.114	
0.95	242.7	37.17	5.548	106.2	17.02	2.426	89.2	14.21	2.035	71.8	11.31	1.582	59.9	9.08	1.141	
1.00	155.3	23.18	3.935	107.9	15.77	2.728	90.0	13.76	2.267	71.8	11.77	1.787	55.7	9.37	1.155	
1.10	146.4	25.29	4.488	108.9	17.11	3.331	87.7	14.15	2.670	69.5	12.36	2.058	47.7	9.69	1.199	
1.20	162.9	32.28	5.940	106.3	19.37	3.873	83.4	16.33	3.023	58.9	12.61	2.075	42.9	9.67	1.241	
1.30	132.8	28.42	5.684	86.6	19.39	3.698	74.2	15.99	3.142	54.0	12.23	2.257	37.5	9.49	1.265	
1.40	261.6	58.82	12.985	106.0	20.78	5.265	73.7	18.15	3.638	50.4	13.11	2.430	33.5	9.22	1.412	
1.50	67.5	17.85	3.850	63.9	18.48	3.632	57.8	16.86	3.252	44.4	12.98	2.435	31.4	8.93	1.468	
1.60	99.8	25.65	6.472	56.8	17.37	3.675	49.6	15.03	3.178	39.1	11.93	2.385	28.9	8.69	1.461	
1.70	88.1	26.05	6.448	58.8	18.36	4.299	45.3	14.33	3.292	34.0	10.84	2.427	25.9	8.52	1.459	
1.80	90.8	26.92	7.448	44.6	15.62	3.660	36.9	13.26	3.007	29.2	10.54	2.312	22.8	8.39	1.472	
1.90	37.4	12.02	3.418	28.6	11.60	2.608	24.5	11.06	2.245	22.7	9.99	2.004	19.9	8.24	1.456	
2.00	30.5	12.37	3.093	23.1	10.50	2.336	20.5	10.33	2.058	17.5	9.59	1.715	17.7	8.09	1.428	
2.20	68.4	24.06	8.388	25.7	11.02	3.154	20.1	9.42	2.423	16.2	8.47	1.881	14.7	7.57	1.398	
2.40	23.7	11.35	3.459	17.1	10.66	2.492	14.7	10.09	2.113	12.5	9.20	1.766	13.1	7.77	1.419	
2.60	41.5	17.00	7.110	20.5	10.43	3.512	16.5	10.00	2.797	13.1	9.26	2.173	11.5	7.91	1.453	
2.80	22.9	12.18	4.540	16.8	10.76	3.331	15.3	9.88	2.989	12.9	8.90	2.448	11.0	7.87	1.482	
3.00	40.5	20.75	9.236	20.3	11.85	4.730	15.3	10.56	3.451	11.5	9.15	2.559	10.8	7.71	1.534	
3.20	29.0	14.83	7.534	16.7	11.76	4.328	12.8	10.65	3.234	10.9	8.53	2.521	10.3	7.48	1.700	
3.40	25.0	13.67	7.313	14.3	9.35	4.189	11.5	9.12	3.337	10.5	8.53	2.760	10.3	7.24	1.826	
3.60	33.5	18.86	11.005	18.6	10.58	6.103	12.7	8.51	4.167	9.6	8.03	3.073	9.8	7.05	1.978	
3.80	29.3	18.13	10.720	19.9	12.38	7.267	13.9	8.91	5.062	9.4	8.42	3.276	9.2	7.20	2.120	
4.00	30.8	19.65	12.498	15.4	11.43	6.234	12.1	9.59	4.830	9.5	8.82	3.638	8.5	7.55	2.203	

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = M-1519
 DATE AND TIME = 1994-10-4-22-23
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = UP
 SIGNAL = GR. ACC. CORRECTION = TOKACHI-1-M
 SAMPRING INTERVAL = 0.0100(SEC)
 MAX. GROUND ACC. = 108.04 (GAL)

PER	DAMPING = 0.				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	818.7	6.25	0.052	267.6	1.88	0.017	210.5	1.29	0.013	195.4	1.00	0.012	163.0	0.80	0.010	175.9	2.38	0.041		
0.10	2287.9	36.30	0.580	517.2	8.09	0.131	373.8	6.05	0.094	257.3	4.01	0.063	140.4	3.11	0.071	140.4	3.11	0.103		
0.15	1195.9	28.56	0.682	420.7	10.36	0.238	306.6	8.90	0.172	194.3	4.40	0.109	112.5	3.69	0.120	112.5	3.69	0.144		
0.20	831.6	26.35	0.843	373.1	11.45	0.378	250.7	7.72	0.254	176.8	5.36	0.175	85.1	3.16	0.114	85.1	3.16	0.147		
0.25	557.4	13.36	0.530	174.3	7.56	0.275	155.6	6.54	0.245	131.2	4.90	0.203	62.8	3.38	0.147	62.8	3.38	0.159		
0.30	357.4	26.82	1.271	163.8	8.19	0.371	122.6	5.95	0.278	90.0	4.90	0.201	47.5	3.19	0.159	47.5	3.19	0.167		
0.35	530.2	29.54	1.645	198.6	10.75	0.614	145.1	7.63	0.447	94.4	5.02	0.285	40.9	3.11	0.157	40.9	3.11	0.171		
0.40	202.6	13.44	0.821	110.2	7.50	0.447	88.4	6.35	0.357	67.2	5.12	0.268	35.8	2.98	0.171	35.8	2.98	0.190		
0.45	195.5	14.57	1.003	88.0	6.76	0.451	66.7	5.25	0.340	51.0	4.34	0.254	29.2	3.04	0.190	29.2	3.04	0.216		
0.50	149.2	12.42	0.945	90.5	6.73	0.571	66.0	5.18	0.415	44.3	4.07	0.273	25.7	3.48	0.232	25.7	3.48	0.262		
0.55	200.3	17.62	1.535	66.8	6.29	0.510	50.6	5.04	0.385	37.1	3.80	0.276	23.8	3.79	0.299	23.8	3.79	0.324		
0.60	151.2	14.37	1.378	67.0	6.96	0.610	54.7	6.07	0.495	38.0	4.73	0.336	21.3	3.89	0.377	21.3	3.89	0.387		
0.65	90.4	9.39	0.967	54.4	6.55	0.580	46.5	6.34	0.495	38.1	5.07	0.393	19.2	3.54	0.390	19.2	3.54	0.409		
0.70	133.9	14.66	1.662	63.0	7.29	0.781	48.3	5.93	0.604	37.0	4.85	0.452	15.4	3.68	0.514	15.4	3.68	0.544		
0.75	158.9	19.07	2.264	49.9	7.03	0.709	43.6	5.95	0.617	37.0	5.31	0.515	13.0	3.39	0.564	13.0	3.39	0.612		
0.80	77.1	9.99	1.249	46.7	5.99	0.756	42.2	6.15	0.679	36.1	5.59	0.567	11.4	3.49	0.629	11.4	3.49	0.629		
0.85	153.2	20.68	2.803	66.5	8.67	1.216	50.6	8.99	0.900	33.1	5.15	0.657	9.7	3.74	0.621	9.7	3.74	0.662		
0.90	135.4	19.75	2.777	57.6	8.56	1.178	44.0	8.99	0.900	33.1	5.15	0.657	9.0	3.77	0.662	9.0	3.77	0.720		
0.95	53.7	8.95	1.229	31.5	5.56	0.719	30.1	5.18	0.682	26.9	4.56	0.606	8.6	3.73	0.720	8.6	3.73	0.784		
1.00	62.5	10.02	1.583	26.1	5.91	0.659	24.6	5.30	0.619	24.0	4.13	0.593	8.1	3.82	0.897	8.1	3.82	0.897		
1.10	72.7	12.80	2.229	37.3	7.94	1.139	29.6	6.04	0.899	22.6	4.69	0.662	7.9	4.03	1.061	7.9	4.03	1.061		
1.20	111.6	21.15	4.072	40.8	8.97	1.484	29.1	6.51	1.048	20.8	5.15	0.732	7.5	4.41	1.061	7.5	4.41	1.061		
1.30	29.6	6.08	1.266	21.5	5.53	0.898	20.0	5.57	0.845	19.1	5.13	0.779	6.0	4.35	1.061	6.0	4.35	1.061		
1.40	48.1	10.93	2.387	24.5	7.05	1.214	22.1	6.65	1.451	18.1	4.98	1.011	5.2	4.17	1.061	5.2	4.17	1.061		
1.50	64.6	15.33	3.683	33.6	8.46	1.915	25.5	8.68	1.971	16.5	4.99	1.024	4.7	4.11	1.061	4.7	4.11	1.061		
1.60	91.2	23.59	5.917	29.4	8.81	1.903	21.4	6.08	1.489	15.7	5.05	1.092	4.3	4.02	1.153	4.3	4.02	1.153		
1.70	39.7	10.99	2.905	23.1	7.44	1.685	20.6	6.40	1.489	15.3	5.74	1.198	4.0	3.91	1.173	4.0	3.91	1.173		
1.80	48.4	14.27	3.898	27.0	8.70	2.207	21.6	7.40	1.751	15.3	5.90	1.219	3.8	3.77	1.247	3.8	3.77	1.247		
1.90	35.9	12.38	3.285	25.4	9.51	2.315	19.5	7.80	1.762	13.9	5.38	1.249	3.6	3.73	1.247	3.6	3.73	1.247		
2.00	25.2	8.62	2.556	20.0	6.72	2.021	16.7	6.27	1.678	12.9	5.38	1.249	3.5	3.73	1.247	3.5	3.73	1.247		
2.20	23.7	8.68	2.901	13.6	5.87	1.657	10.3	5.64	1.234	9.3	5.07	1.089	3.1	3.77	1.247	3.1	3.77	1.247		
2.40	15.1	7.93	2.200	12.2	7.23	1.770	11.3	6.50	1.639	10.0	5.56	1.408	2.9	3.82	1.247	2.9	3.82	1.247		
2.60	20.3	9.51	3.471	16.2	8.05	2.769	14.1	6.98	2.370	11.2	5.79	2.046	2.7	4.30	1.247	2.7	4.30	1.247		
2.80	33.7	15.51	6.700	17.7	9.22	3.511	14.3	7.36	2.763	11.1	5.98	2.033	2.6	4.41	1.061	2.6	4.41	1.061		
3.00	28.9	14.06	6.588	17.6	9.61	3.992	13.7	7.72	3.097	9.3	5.81	2.034	2.5	4.35	1.061	2.5	4.35	1.061		
3.20	25.8	13.91	6.695	14.0	9.21	3.613	11.5	7.73	2.919	8.2	5.73	2.034	2.4	4.17	1.061	2.4	4.17	1.061		
3.40	18.3	10.45	5.352	10.8	7.26	3.160	8.8	6.67	2.551	7.1	5.30	1.965	2.3	4.11	1.061	2.3	4.11	1.061		
3.60	14.9	8.78	4.876	9.3	6.19	3.048	8.1	5.87	2.644	6.1	5.30	1.965	2.2	4.02	1.153	2.2	4.02	1.153		
3.80	20.0	12.89	7.317	10.6	6.58	3.876	8.0	5.29	2.906	5.8	4.89	2.053	2.1	4.30	1.153	2.1	4.30	1.153		
4.00	17.9	11.74	7.263	10.8	7.29	4.352	7.4	5.78	2.999	5.5	4.52	2.147	2.0	3.91	1.173	2.0	3.91	1.173		

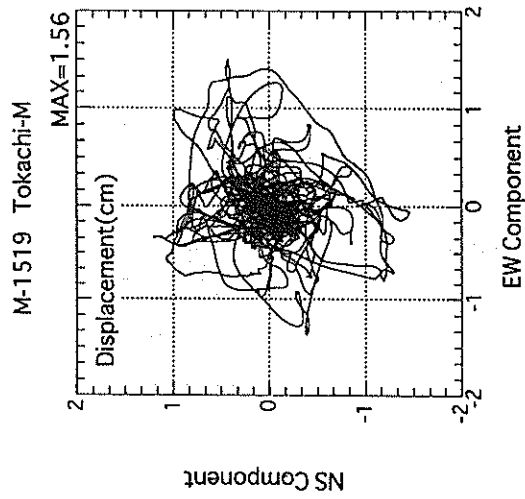
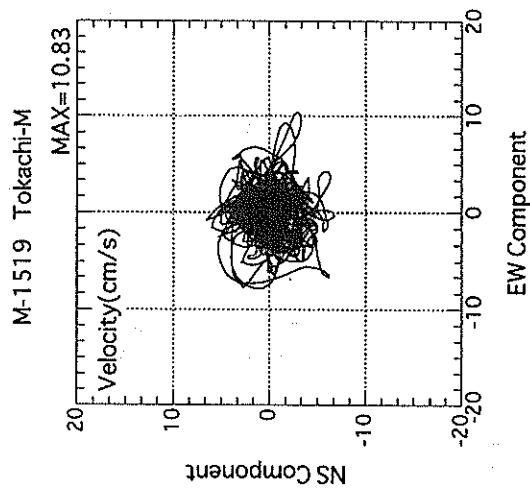
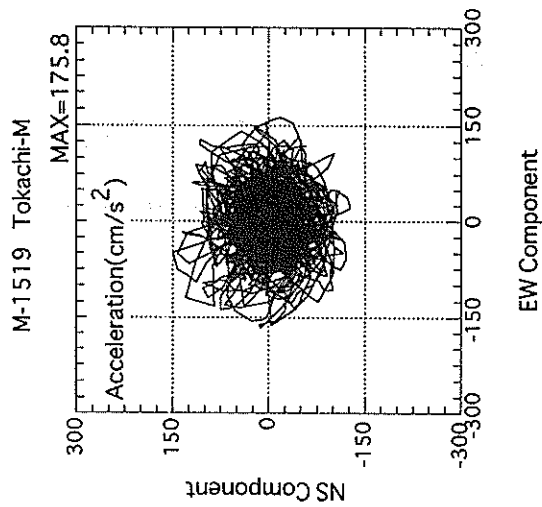
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = M-1519 COMPONENT = EAST SIGNAL = GR. ACC. CORRECTION = STATION = TOKACHI-M
 DATE AND TIME = 1994-10-4-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 167.20 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0.				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	535.8	3.75	0.034	258.0	1.34	0.016	247.1	1.13	0.016	232.5	1.09	0.015	204.6	0.92	0.015	189.1	0.92	0.013		
0.10	2679.8	42.00	0.679	639.0	8.58	0.162	471.8	6.51	0.120	365.3	4.54	0.092	289.1	2.94	0.092	289.1	2.94	0.069		
0.15	1827.5	41.67	1.042	907.9	21.02	0.515	684.3	15.86	0.388	446.9	10.81	0.253	319.9	5.59	0.253	319.9	5.59	0.169		
0.20	1937.8	61.72	1.963	667.7	23.01	0.678	485.0	19.61	0.487	395.4	11.25	0.339	303.9	7.60	0.339	303.9	7.60	0.287		
0.25	2024.7	80.67	3.205	613.3	24.08	0.970	489.5	19.60	0.769	410.1	15.80	0.639	306.4	10.34	0.639	306.4	10.34	0.442		
0.30	4309.4	205.35	9.824	900.3	43.15	2.045	696.0	32.55	1.584	511.0	23.22	1.141	289.4	13.05	1.141	289.4	13.05	0.574		
0.35	1910.2	106.27	5.927	790.4	48.63	2.448	629.6	37.46	1.946	442.9	25.98	1.338	249.5	13.30	1.338	249.5	13.30	0.646		
0.40	859.6	57.82	3.484	509.0	32.86	2.058	394.9	24.78	1.591	285.7	22.25	1.129	193.0	10.88	1.129	193.0	10.88	0.672		
0.45	488.3	39.47	2.504	351.7	28.66	1.801	281.0	22.59	1.433	208.7	16.53	1.050	157.6	12.73	1.050	157.6	12.73	0.683		
0.50	447.3	35.46	2.833	242.8	22.17	1.535	192.5	17.44	1.208	170.7	15.52	1.044	143.9	11.14	1.044	143.9	11.14	0.750		
0.55	658.9	60.68	5.049	267.9	24.05	2.053	215.3	19.21	1.642	161.4	15.16	1.216	129.2	11.03	1.216	129.2	11.03	0.793		
0.60	297.5	27.95	2.712	200.3	22.26	1.825	183.2	20.35	1.656	147.7	17.05	1.291	111.5	11.90	1.291	111.5	11.90	0.844		
0.65	316.5	34.57	3.387	193.6	25.77	2.009	157.5	23.40	1.678	121.0	18.75	1.271	97.1	12.33	1.271	97.1	12.33	0.885		
0.70	403.8	47.68	5.012	250.6	29.74	3.101	177.7	22.30	2.188	122.0	16.81	1.457	85.6	12.03	1.457	85.6	12.03	0.920		
0.75	543.3	65.11	7.741	233.3	31.23	3.320	172.1	24.56	2.442	120.6	17.49	1.685	75.0	11.48	1.685	75.0	11.48	0.941		
0.80	272.9	34.86	4.425	200.4	27.13	3.277	163.8	23.06	2.644	120.3	17.21	1.909	71.5	11.00	1.909	71.5	11.00	0.984		
0.85	221.5	29.43	4.054	152.1	21.45	2.779	140.4	18.97	2.546	109.1	14.89	1.940	68.8	10.65	1.940	68.8	10.65	1.037		
0.90	363.3	51.42	7.454	174.4	29.32	3.573	127.5	21.02	2.590	89.9	15.00	1.765	66.2	10.32	1.765	66.2	10.32	1.081		
0.95	265.2	43.58	6.063	153.0	26.07	3.493	116.0	20.58	2.634	82.4	14.97	1.833	63.8	10.18	1.833	63.8	10.18	1.099		
1.00	220.5	35.74	5.584	105.3	21.90	2.659	85.9	17.99	2.153	67.0	13.47	1.651	60.3	9.86	1.651	60.3	9.86	1.101		
1.10	186.6	34.53	5.720	99.3	18.27	3.038	75.7	14.49	2.300	52.7	12.63	1.553	52.2	9.92	1.553	52.2	9.92	1.098		
1.20	161.2	32.20	5.880	78.7	17.94	2.865	62.1	13.93	2.246	47.7	11.68	1.702	44.9	10.07	1.702	44.9	10.07	1.073		
1.30	102.2	22.15	4.374	70.8	16.17	3.023	54.7	13.14	2.333	41.0	10.54	1.703	39.6	10.00	1.703	39.6	10.00	1.154		
1.40	115.3	27.52	5.735	57.1	16.07	2.826	45.8	13.50	2.245	39.2	10.85	1.857	36.0	9.88	1.857	36.0	9.88	1.215		
1.50	86.4	22.24	4.923	60.3	17.71	3.429	48.9	14.68	2.750	37.9	11.76	2.032	33.6	9.80	2.032	33.6	9.80	1.353		
1.60	89.4	25.80	5.800	54.8	18.43	3.550	40.9	16.13	2.617	33.2	12.14	2.020	32.4	9.93	2.020	32.4	9.93	1.382		
1.70	126.9	34.66	9.291	57.0	19.43	4.170	41.5	16.18	3.018	29.9	12.88	2.000	31.6	10.18	2.000	31.6	10.18	1.393		
1.80	67.6	22.79	5.544	50.7	18.14	4.155	40.2	15.87	3.242	31.3	13.01	2.362	30.6	10.64	2.362	30.6	10.64	1.485		
1.90	76.3	25.33	6.975	39.3	17.66	3.571	32.8	15.57	2.921	27.5	13.22	2.297	29.1	11.13	2.297	29.1	11.13	1.528		
2.00	58.7	18.59	5.948	29.0	16.67	2.917	22.2	15.42	2.646	24.4	13.73	2.205	27.3	11.54	2.205	27.3	11.54	1.525		
2.20	46.1	16.78	5.654	26.1	12.67	3.198	22.0	13.42	2.662	20.9	13.64	2.266	23.5	12.12	2.266	23.5	12.12	1.578		
2.40	52.2	21.35	7.617	26.7	16.74	3.868	23.4	15.97	3.279	20.4	14.77	2.540	19.9	12.46	2.540	19.9	12.46	1.680		
2.60	30.6	22.62	5.237	32.4	19.81	3.986	19.8	17.84	3.303	16.1	15.40	2.426	17.5	12.49	2.426	17.5	12.49	1.861		
2.80	67.8	30.40	13.467	32.0	16.99	6.344	22.0	15.07	4.332	15.2	13.87	2.934	15.0	12.16	2.934	15.0	12.16	2.006		
3.00	24.3	17.56	5.536	20.0	15.15	4.350	17.0	13.36	3.863	13.5	11.47	2.986	13.3	11.63	2.986	13.3	11.63	2.112		
3.20	27.2	17.04	7.065	16.3	14.48	4.188	14.5	13.54	3.623	12.3	12.12	2.802	12.2	11.16	2.802	12.2	11.16	2.183		
3.40	22.5	15.48	6.596	15.5	14.51	4.525	13.8	13.68	3.922	12.1	12.36	3.047	11.2	10.88	3.047	11.2	10.88	2.218		
3.60	15.6	14.43	5.120	13.7	13.74	4.451	12.3	13.12	3.917	10.8	12.09	3.105	10.6	10.82	3.105	10.6	10.82	2.228		
3.80	25.7	15.85	9.416	15.0	12.52	5.454	11.8	12.16	4.260	9.5	11.50	3.362	10.0	10.91	3.362	10.0	10.91	2.378		
4.00	18.1	13.71	7.321	12.0	12.79	4.872	11.3	12.17	4.531	9.9	11.49	3.882	9.7	11.07	3.882	9.7	11.07	2.501		

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)



RECORD NUMBER : S-2580
 STATION : URAKAWA-S

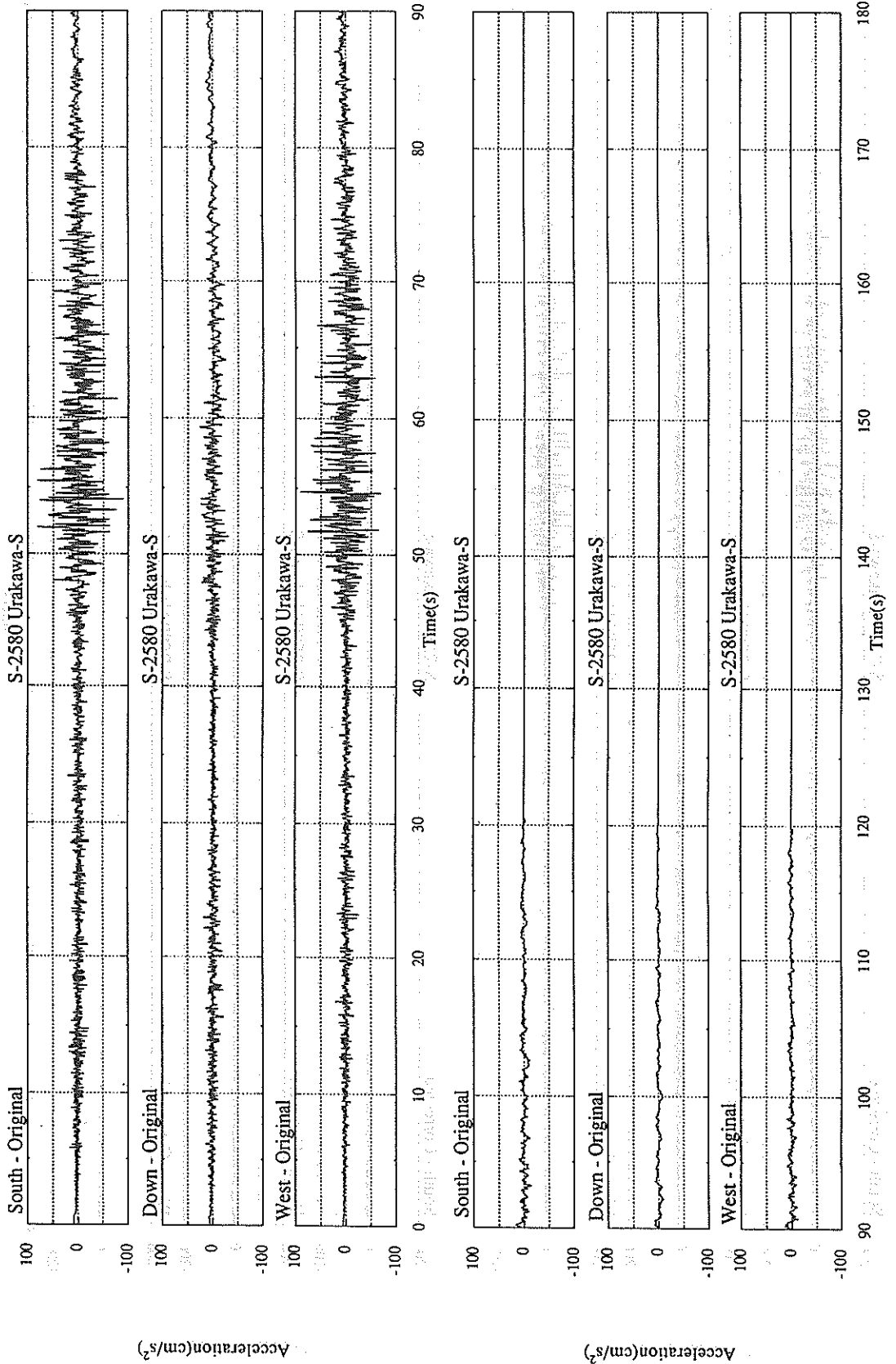
EARTHQUAKE DATA

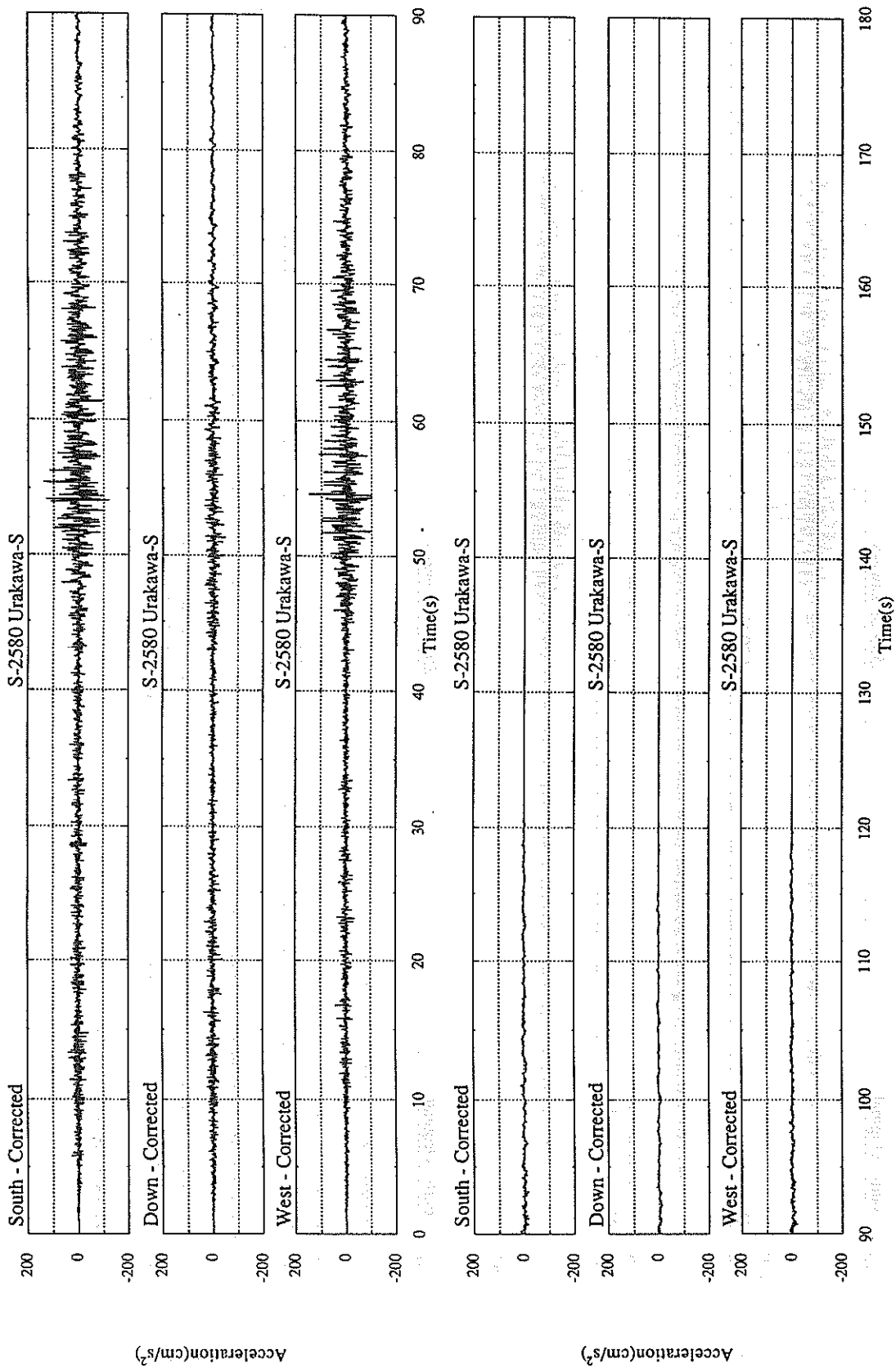
 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43°22.3' N
 LONGITUDE 147°42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

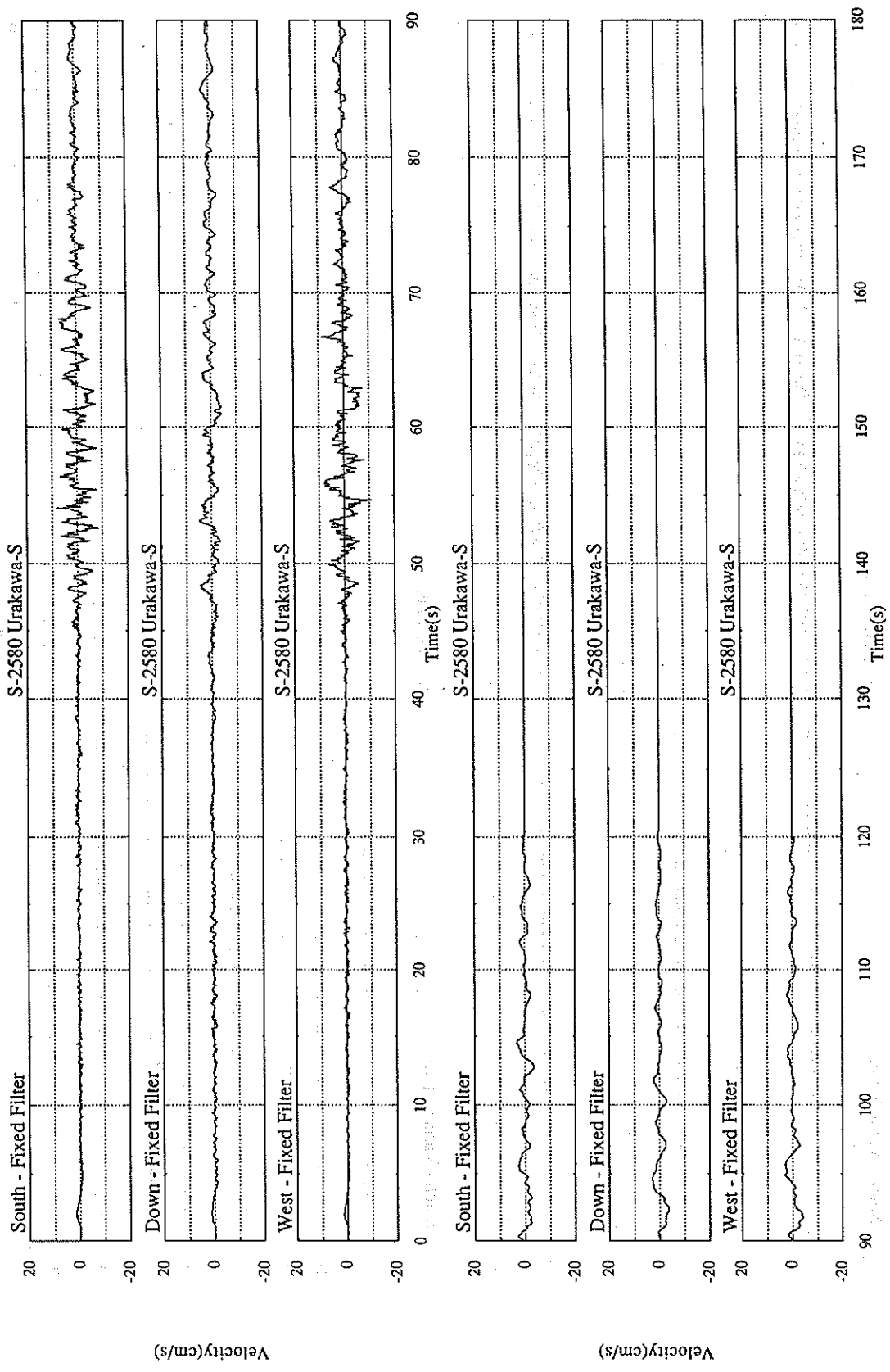
PEAK VALUES OF COMPONENTS

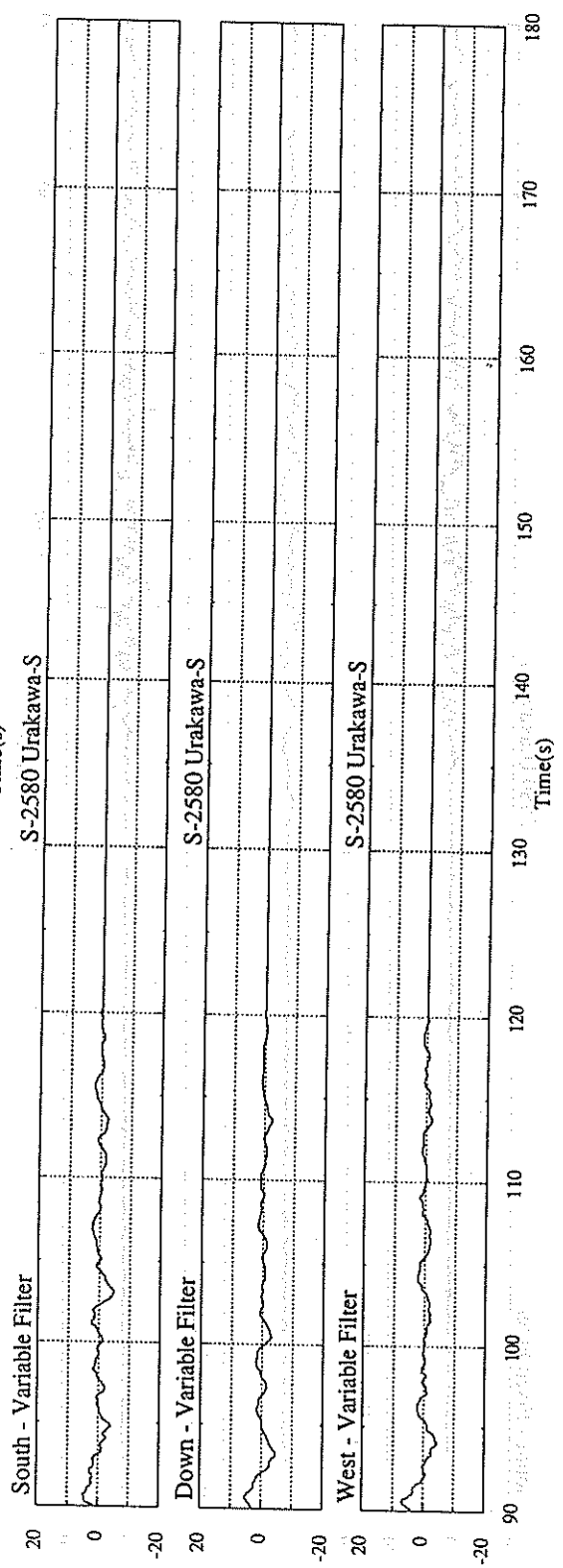
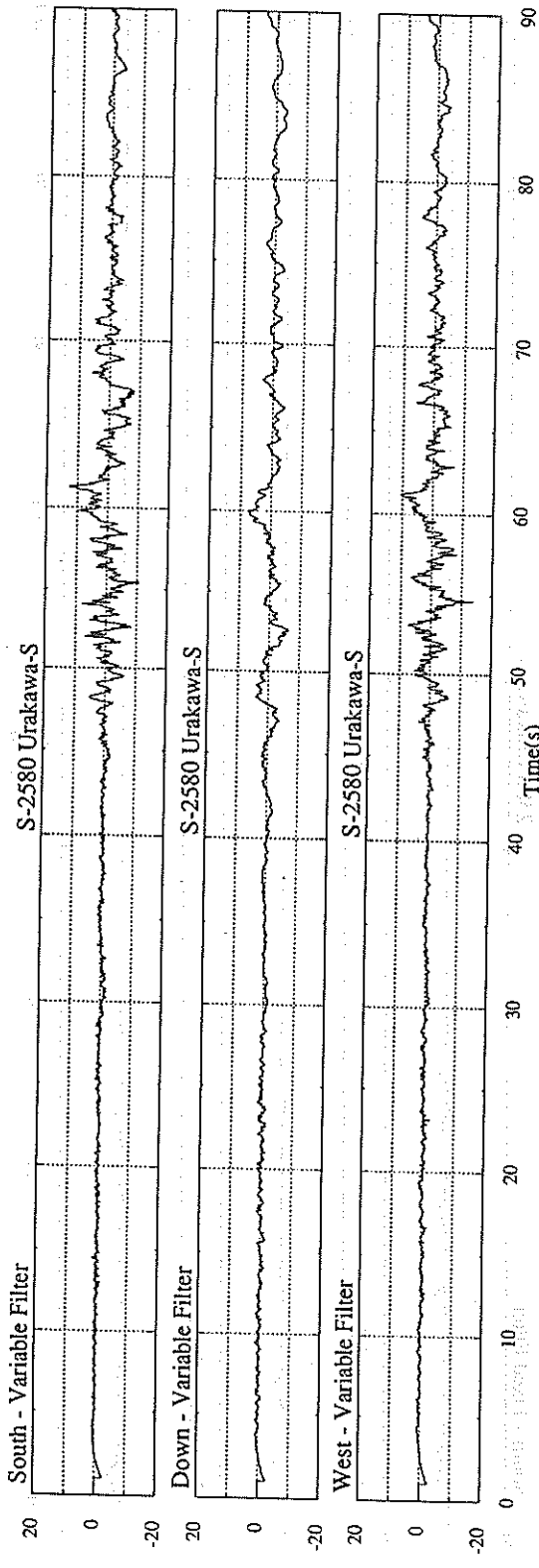
	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.078	0.079	0.078	
MAXIMUM ACCELERATION (GAL)				
ORIGINAL	89.1	91.1	30.1	96.3
CORRECTED	138.2	148.1	47.2	149.2
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	8.63	10.66	4.81	10.93
VARIABLE FILTER	12.67	13.68	7.26	15.50
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	4.75	4.12	3.91	6.27
VARIABLE FILTER	8.17	7.24	6.43	10.07

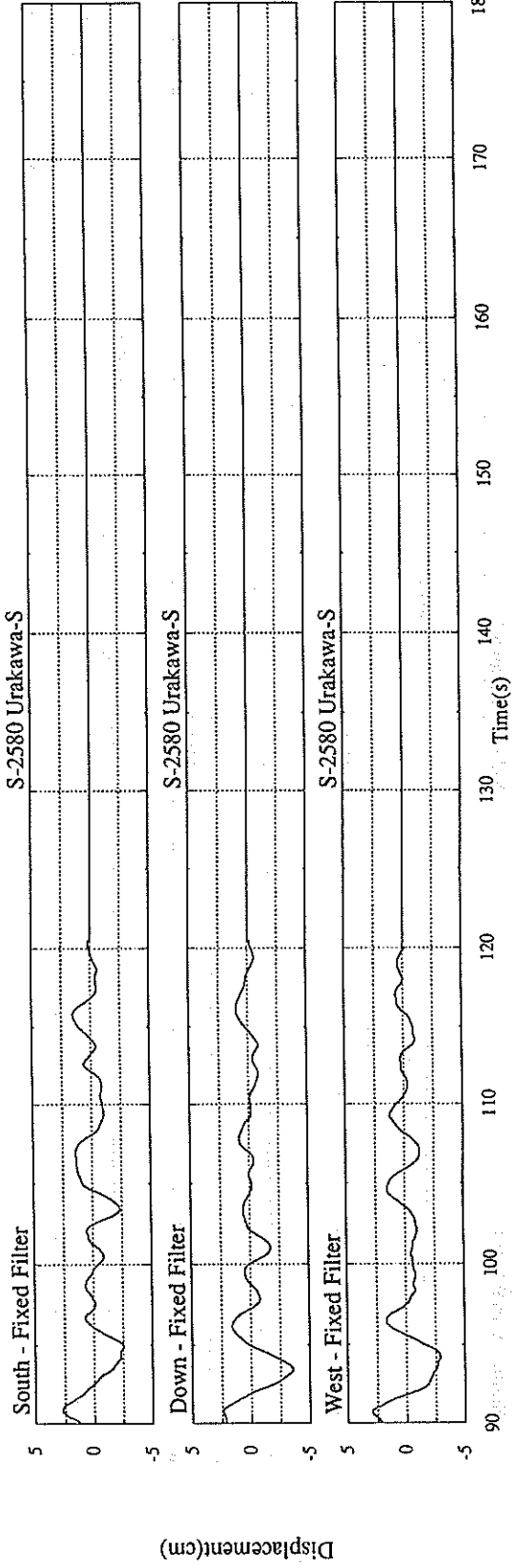
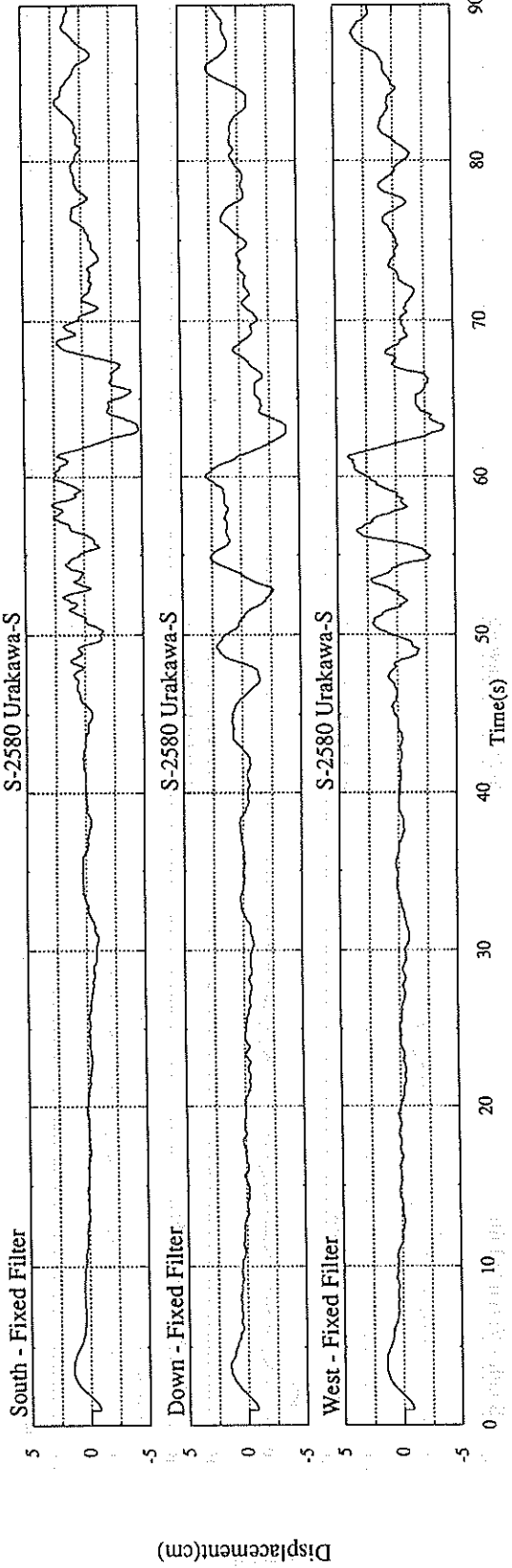
* RESULTANT OF HORIZONTAL COMPONENTS

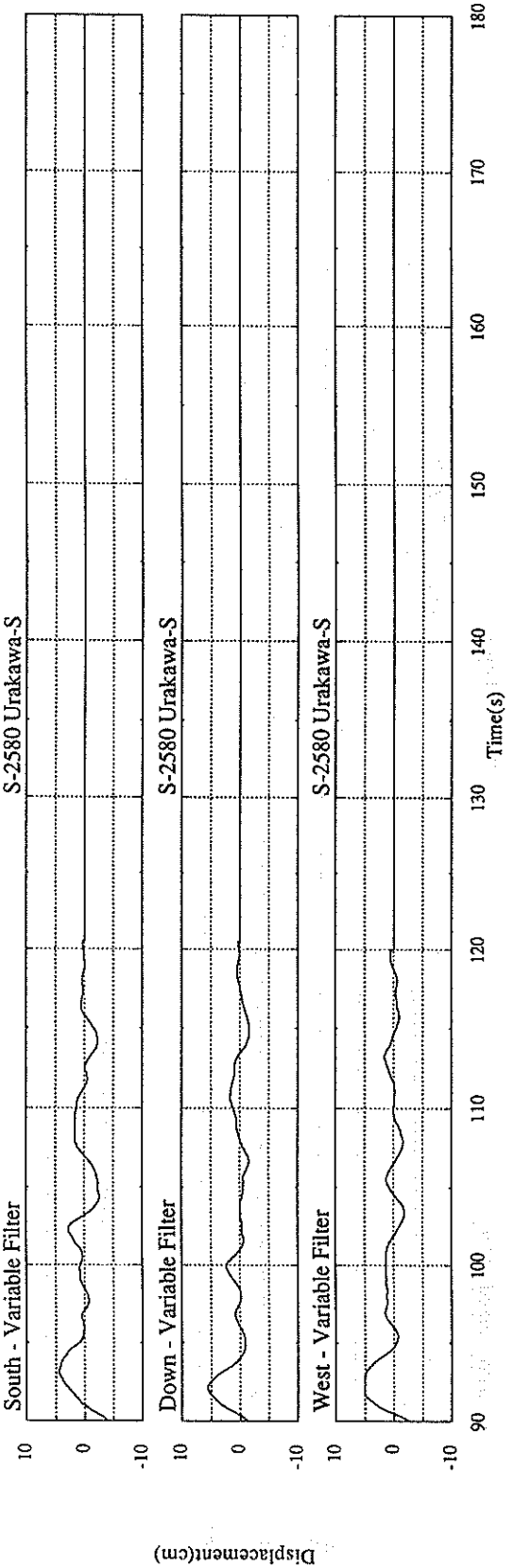
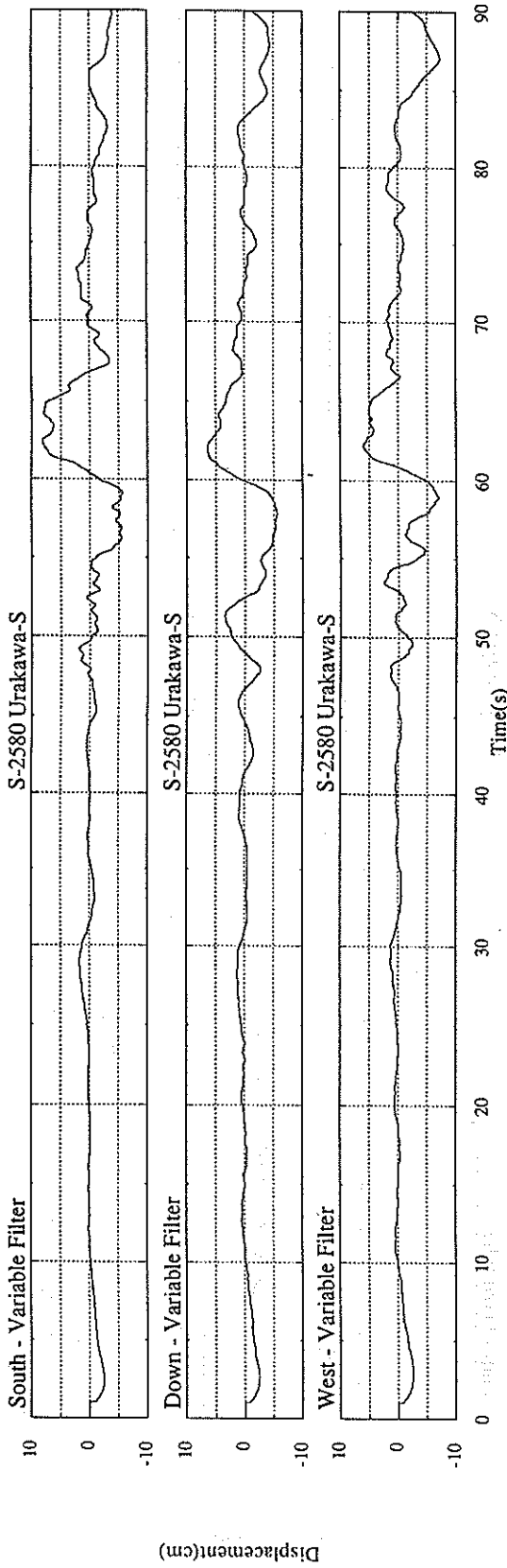




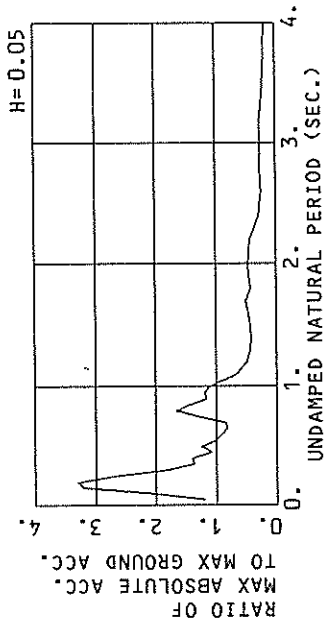




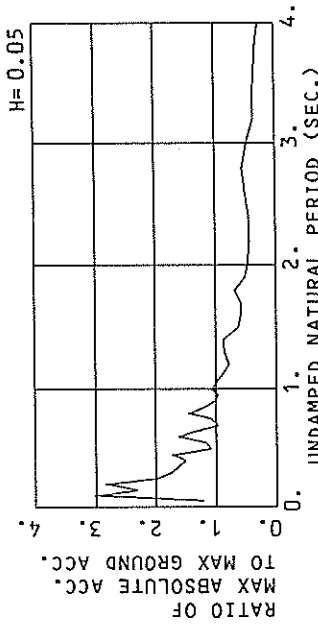




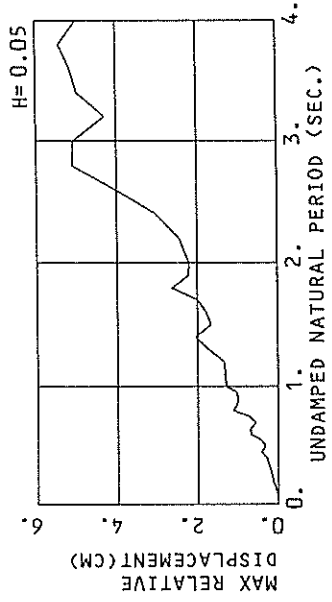
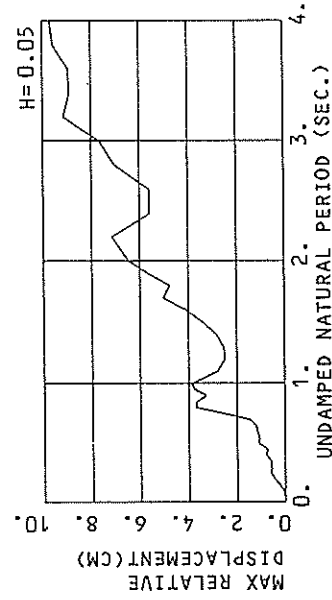
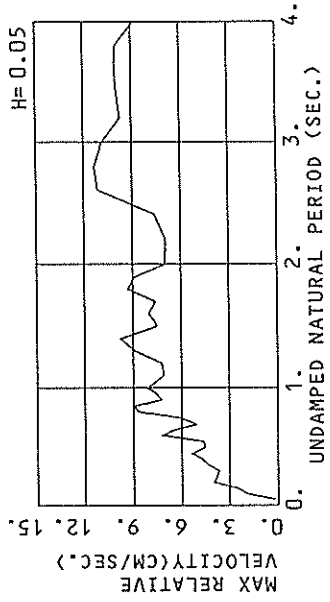
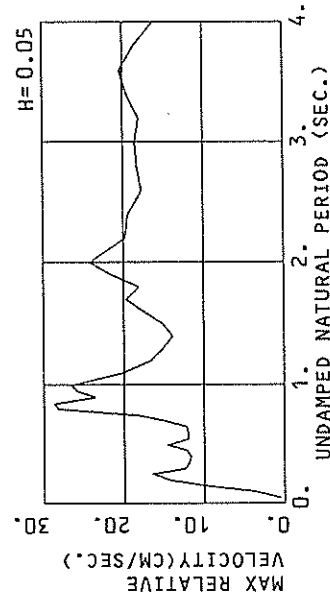
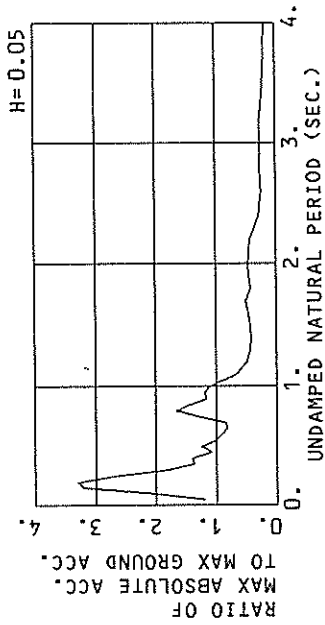
S-2580 SOUTH URAKAWA-S
(1/FC=13.85 SEC.)



S-2580 DOWN URAKAWA-S
(1/FC=13.86 SEC.)



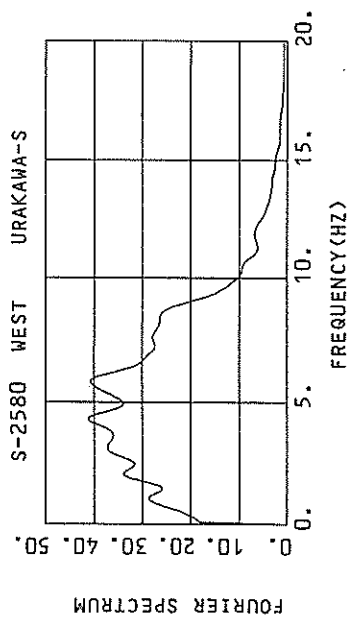
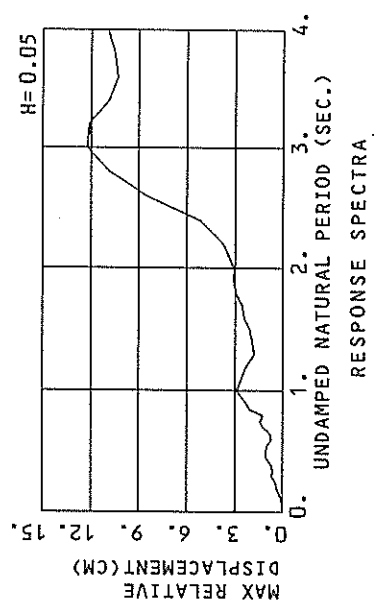
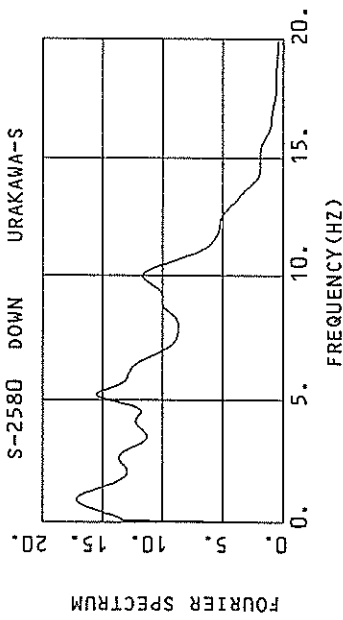
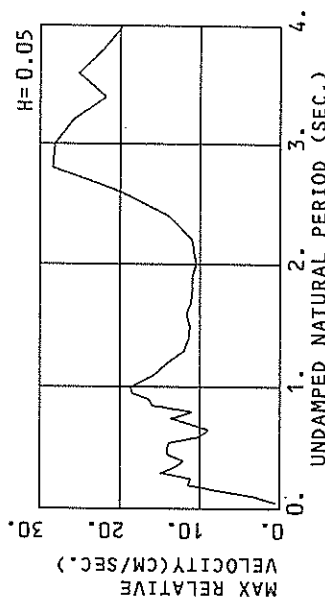
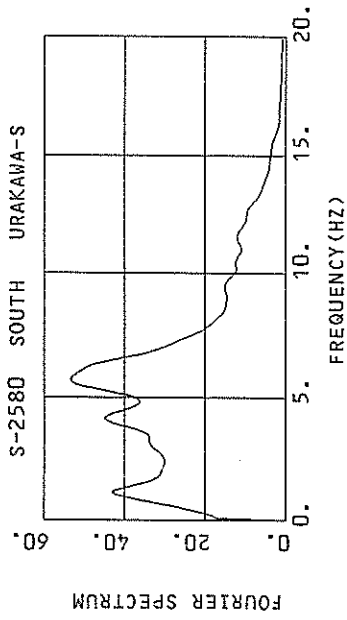
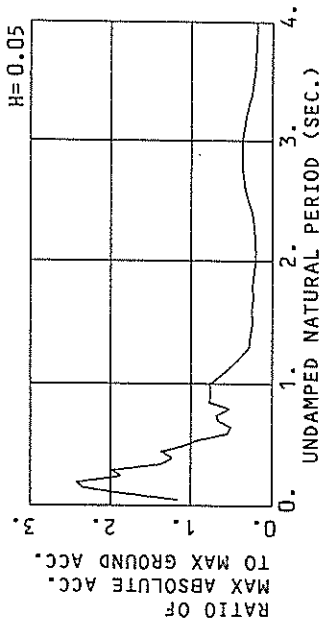
S-2580 SOUTH URAKAWA-S
(1/FC=13.85 SEC.)



RESPONSE SPECTRA

RESPONSE SPECTRA

S-2580 WEST URAKAWA-S
(1/FC=13.73 SEC.)



RESPONSE SPECTRUM

RECORD = S-2580 COMPONENT = SOUTH SIGNAL = GR. ACC. CORRECTION = STATION = URAKAWA-S
 DATE AND TIME = 1994-10-04-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 138.30 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	189.2	1.18	0.012	166.2	0.51	0.011	164.6	0.49	0.010	163.1	0.47	0.010	159.1	0.45	0.010
0.10	1107.5	16.64	0.281	358.1	4.80	0.090	293.5	3.74	0.074	293.4	2.81	0.061	202.3	1.93	0.049
0.15	1458.8	34.18	0.831	560.7	12.13	0.318	483.6	9.85	0.255	331.4	7.35	0.189	233.4	4.32	0.120
0.20	1489.2	47.18	1.509	574.5	18.37	0.579	455.1	14.41	0.457	340.1	10.84	0.340	214.5	6.90	0.198
0.25	2606.4	103.09	4.126	573.9	24.24	0.911	366.6	16.41	0.578	258.2	11.44	0.399	185.1	7.24	0.258
0.30	702.5	33.00	1.602	326.2	15.68	0.740	232.2	12.25	0.570	197.9	8.95	0.442	144.4	6.28	0.283
0.35	681.4	37.47	2.114	263.0	15.90	0.815	189.3	11.81	0.583	139.4	8.16	0.417	124.1	6.44	0.314
0.40	877.2	56.38	3.555	250.2	15.27	1.010	193.7	11.66	0.776	146.2	9.93	0.573	110.3	7.54	0.351
0.45	457.7	32.63	2.348	174.5	12.23	0.895	148.1	12.17	0.756	115.0	11.39	0.576	93.5	8.24	0.402
0.50	493.1	40.38	3.123	234.9	19.73	1.486	172.1	14.60	1.084	118.8	11.57	0.738	84.5	8.27	0.467
0.55	517.9	44.96	3.968	195.9	16.01	1.499	139.2	11.97	1.061	97.1	10.23	0.729	84.2	7.76	0.558
0.60	499.7	47.33	4.556	167.7	17.20	1.529	126.5	11.97	1.148	95.6	9.63	0.855	84.0	7.77	0.653
0.65	265.8	27.06	2.845	133.9	15.58	1.432	113.3	12.11	1.207	93.3	10.47	0.982	83.6	7.96	0.776
0.70	176.1	20.08	2.186	142.2	17.50	1.765	115.7	14.67	1.430	102.0	10.98	1.228	84.6	8.28	0.912
0.75	558.5	66.78	7.958	227.2	25.18	3.230	174.8	18.17	2.473	121.9	13.49	1.682	86.4	8.41	1.050
0.80	656.5	82.85	10.643	329.7	41.97	5.336	228.7	28.18	3.687	147.4	16.82	2.328	85.6	9.76	1.238
0.85	604.2	81.45	11.057	258.4	38.01	4.722	201.6	28.63	3.609	141.3	19.66	2.533	86.4	11.21	1.390
0.90	486.9	69.53	9.990	214.0	30.32	4.384	160.1	23.57	3.261	123.6	20.40	2.473	84.9	12.15	1.488
0.95	512.2	77.99	11.710	210.3	29.75	4.800	164.9	25.78	3.744	118.8	20.76	2.628	80.8	12.59	1.541
1.00	502.4	80.70	12.727	203.7	35.02	5.155	154.3	26.59	3.873	108.0	20.29	2.635	74.9	12.60	1.560
1.10	132.6	25.12	4.063	101.3	22.05	3.101	91.3	20.13	2.774	79.1	16.29	2.383	61.5	11.79	1.549
1.20	103.4	20.07	3.773	83.8	17.52	3.053	68.5	16.65	2.523	61.9	14.70	2.189	49.6	11.01	1.564
1.30	170.0	35.42	7.276	73.0	16.41	3.121	59.7	15.12	2.523	53.5	13.91	2.195	41.8	11.13	1.577
1.40	124.8	28.40	6.195	63.7	14.01	3.159	57.5	13.84	2.855	48.9	13.51	2.336	38.7	11.12	1.555
1.50	108.9	27.14	6.207	68.5	16.60	3.903	59.2	15.03	3.362	47.0	13.50	2.636	34.8	10.98	1.511
1.60	174.6	45.62	11.321	86.7	21.89	5.614	63.4	17.46	4.089	44.4	13.85	2.803	30.4	10.64	1.707
1.70	216.1	58.28	15.820	93.4	26.91	6.828	69.1	19.69	5.026	47.0	14.40	3.343	29.5	10.21	1.908
1.80	101.1	30.48	8.296	67.6	20.45	5.538	58.5	18.10	4.768	43.5	14.16	3.489	28.7	9.75	2.068
1.90	150.2	45.75	13.732	86.4	28.88	7.891	62.3	21.45	6.951	44.4	15.55	3.912	27.8	9.43	2.281
2.00	128.4	42.61	13.014	85.4	31.26	8.645	64.0	24.22	6.444	45.2	16.78	4.492	26.6	9.16	2.457
2.20	110.9	37.46	13.600	73.9	25.22	9.043	58.8	19.73	7.141	41.6	13.76	4.922	24.6	9.94	2.567
2.40	78.6	30.78	11.466	49.0	23.49	7.145	38.6	19.41	5.579	29.0	15.69	4.049	21.0	10.70	2.630
2.60	70.5	28.38	12.070	44.0	20.72	7.510	33.0	17.66	5.589	25.6	14.58	4.163	19.6	10.76	2.714
2.80	57.8	28.50	11.473	44.1	21.77	8.744	35.6	18.26	7.005	26.5	14.04	5.011	19.4	10.36	2.967
3.00	57.8	32.46	13.183	42.0	22.78	9.555	33.8	18.46	7.658	25.7	14.45	5.471	18.7	9.88	3.256
3.20	59.6	28.11	15.457	45.0	21.78	11.699	35.5	17.99	9.125	25.4	13.62	6.345	17.2	9.54	3.439
3.40	49.5	28.47	14.497	36.9	23.15	10.778	22.9	14.88	8.888	22.9	14.60	6.384	15.1	9.99	3.407
3.60	52.5	30.63	17.260	33.4	24.39	10.938	20.7	19.40	8.907	20.4	15.41	6.374	15.1	10.34	3.900
3.80	51.7	30.91	18.911	31.0	21.66	11.324	26.4	18.60	9.560	20.4	14.92	7.098	14.9	10.58	4.322
4.00	42.1	26.48	17.069	27.8	19.24	11.250	24.1	16.17	9.694	18.4	13.53	7.265	14.3	10.73	4.645

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = S-2580 COMPONENT = DOWN SIGNAL = GR. ACC. CORRECTION = STATION = URAKAWA-S
 DATE AND TIME = 1994-10-04-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 47.37 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	
0.05	97.8	0.66	0.006	57.3	0.19	0.004	56.9	0.18	0.004	56.2	0.16	0.004	54.7	0.14	0.003	
0.10	1408.9	22.36	0.357	207.4	2.94	0.052	143.0	1.89	0.036	95.2	1.14	0.024	66.9	0.67	0.016	
0.15	471.1	11.27	0.268	153.9	3.51	0.088	109.6	2.45	0.062	98.4	2.03	0.055	71.8	1.50	0.038	
0.20	402.0	12.91	0.407	178.4	5.55	0.180	134.3	3.96	0.136	98.6	2.94	0.098	62.2	1.89	0.057	
0.25	382.0	14.97	0.605	107.5	4.72	0.170	94.2	3.80	0.147	73.8	2.83	0.114	48.5	1.72	0.069	
0.30	215.8	10.24	0.492	99.8	4.91	0.228	82.0	3.67	0.186	67.5	2.62	0.151	45.5	1.73	0.094	
0.35	313.5	16.86	0.973	101.5	5.64	0.314	76.9	4.32	0.237	59.1	3.13	0.181	39.0	1.95	0.113	
0.40	283.5	17.89	1.149	97.1	6.54	0.394	71.6	4.70	0.289	59.3	3.35	0.235	41.5	2.21	0.153	
0.45	328.1	23.05	1.683	113.2	8.01	0.581	81.5	5.35	0.416	58.0	3.72	0.293	40.0	2.45	0.185	
0.50	159.8	12.26	1.012	63.4	5.59	0.402	51.6	4.50	0.325	42.8	3.27	0.266	37.1	2.51	0.211	
0.55	119.6	10.22	0.917	68.4	5.71	0.524	54.9	4.60	0.419	47.8	3.93	0.360	34.9	2.72	0.239	
0.60	331.9	31.53	3.026	98.4	9.53	0.896	76.3	7.20	0.692	54.0	4.95	0.484	32.3	2.99	0.265	
0.65	118.7	12.13	1.270	69.8	6.93	0.746	69.8	6.49	0.679	48.7	5.08	0.511	29.1	3.07	0.282	
0.70	167.0	18.35	2.073	50.8	5.68	0.630	45.4	5.06	0.559	38.9	4.38	0.470	27.4	3.02	0.309	
0.75	211.3	24.82	3.011	66.2	7.58	0.943	50.8	6.13	0.720	39.6	4.57	0.555	28.2	3.50	0.370	
0.80	181.9	22.59	2.949	98.2	11.92	1.590	68.6	8.67	1.106	44.4	6.14	0.708	29.0	3.95	0.433	
0.85	124.2	16.79	2.273	72.8	10.34	1.331	55.9	8.93	1.018	43.0	6.85	0.774	28.8	4.27	0.489	
0.90	172.4	22.45	3.538	72.4	10.06	1.484	48.6	7.24	0.993	38.7	6.57	0.777	28.4	4.42	0.535	
0.95	148.9	22.15	3.403	60.7	8.92	1.385	45.5	7.56	1.034	36.4	6.32	0.814	27.7	4.45	0.572	
1.00	221.7	34.99	5.615	71.3	11.40	1.804	51.1	8.11	1.288	35.6	5.81	0.887	26.7	4.37	0.601	
1.10	132.5	22.82	4.062	48.4	8.37	1.482	43.1	7.09	1.315	32.4	4.97	0.975	24.3	4.03	0.646	
1.20	80.8	15.18	2.948	48.1	9.05	1.751	36.8	7.20	1.334	26.4	5.12	0.941	21.7	3.59	0.673	
1.30	121.0	24.74	5.182	53.2	11.38	2.274	40.3	8.67	1.715	28.8	5.76	1.203	19.1	3.25	0.688	
1.40	116.9	25.83	5.805	56.7	13.23	2.612	41.6	9.80	2.051	26.9	6.52	1.309	17.2	3.49	0.712	
1.50	95.1	23.29	5.421	38.3	9.94	2.178	29.4	7.50	1.667	22.1	5.70	1.221	15.0	3.42	0.758	
1.60	67.7	16.74	4.389	33.8	9.49	2.186	27.5	8.02	1.777	21.3	5.95	1.361	15.3	3.50	0.825	
1.70	64.4	18.16	4.715	36.2	10.19	2.645	27.2	7.60	1.983	22.1	5.66	1.579	14.8	3.54	0.902	
1.80	75.1	21.23	6.167	44.1	12.45	3.614	32.5	9.33	2.643	22.7	6.26	1.718	14.5	3.75	0.985	
1.90	64.0	21.37	5.857	36.0	12.70	3.288	24.5	8.86	2.225	17.2	5.76	1.531	14.3	3.95	1.075	
2.00	37.2	11.28	3.767	26.0	8.15	2.627	22.0	6.97	2.209	15.2	5.91	1.493	14.1	4.06	1.170	
2.20	21.9	8.83	2.689	21.5	7.70	2.633	20.1	6.93	2.441	17.4	5.66	2.049	13.6	4.41	1.337	
2.40	40.8	14.62	5.949	22.5	7.76	3.283	24.0	7.63	3.046	17.6	6.85	2.457	12.6	5.13	1.469	
2.60	44.0	18.44	7.527	30.3	13.34	5.185	21.0	11.15	4.071	17.0	8.63	2.847	11.7	5.66	1.717	
2.80	74.5	33.95	14.795	36.5	15.60	7.237	26.0	11.34	5.100	16.6	8.58	3.134	11.6	5.84	1.960	
3.00	40.5	19.34	9.228	29.2	14.16	6.640	22.4	10.86	5.078	15.0	7.54	3.384	11.3	5.73	2.174	
3.20	38.6	20.39	10.022	19.8	11.95	5.124	16.6	9.70	4.292	12.9	7.02	3.297	10.8	5.50	2.354	
3.40	30.6	16.96	8.968	22.1	12.65	6.451	17.1	9.93	4.971	11.9	7.35	3.369	10.4	5.33	2.516	
3.60	33.4	18.71	10.956	20.2	11.93	6.625	15.8	10.02	5.147	10.9	7.35	3.508	9.9	5.33	2.665	
3.80	32.8	21.30	11.999	19.6	12.79	7.156	14.9	9.98	5.413	11.1	7.28	3.921	9.5	5.48	2.839	
4.00	25.2	15.84	10.233	16.1	11.30	6.500	12.4	8.82	4.981	10.3	7.17	4.074	9.1	5.77	3.003	

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

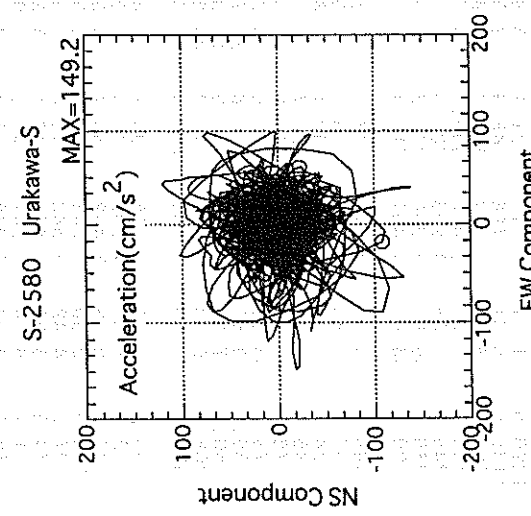
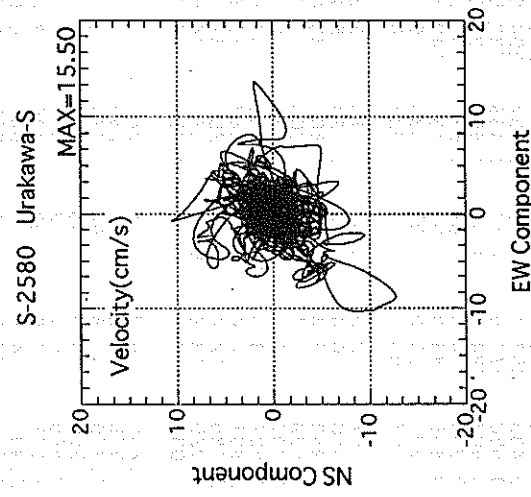
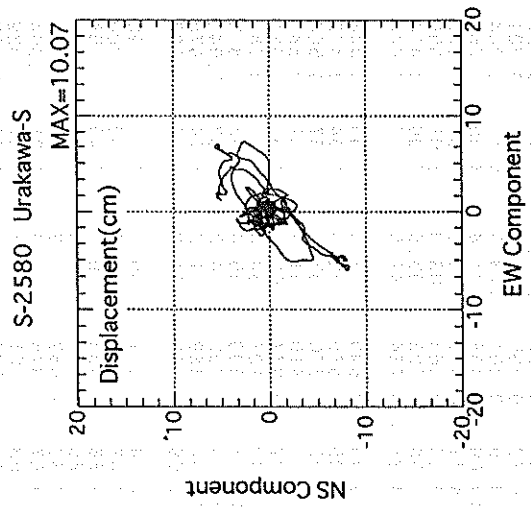
RESPONSE SPECTRUM

RECORD = S-2580 COMPONENT = WEST SIGNAL = GR. ACC. CORRECTION = STATION = URAKAWA-S
 DATE AND TIME = 1994-10-04-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 148.10 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

DAMPING = 0. DAMPING = 0.025 DAMPING = 0.050 DAMPING = 0.100 DAMPING = 0.250

PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	201.4	0.72	0.013	170.3	0.48	0.011	171.9	0.45	0.011	173.0	0.42	0.011	170.9	0.40	0.011
0.10	433.1	5.68	0.110	305.8	3.70	0.077	275.2	3.25	0.070	251.7	2.91	0.063	226.4	2.08	0.054
0.15	1720.5	41.02	0.981	416.6	9.55	0.236	346.8	7.67	0.194	275.1	5.97	0.153	241.4	3.76	0.126
0.20	1296.5	45.41	1.314	431.1	13.81	0.435	358.7	11.50	0.364	294.0	8.72	0.295	222.7	5.69	0.201
0.25	1135.5	45.01	1.798	348.9	13.54	0.550	277.9	11.17	0.438	232.5	9.19	0.361	173.0	6.11	0.244
0.30	763.0	36.29	1.739	398.0	19.80	0.908	294.5	14.82	0.663	196.6	10.09	0.438	131.8	6.55	0.262
0.35	785.2	43.86	2.436	309.1	18.78	0.956	204.3	13.08	0.630	137.5	8.71	0.418	115.3	6.65	0.306
0.40	245.1	16.56	0.993	221.4	14.12	0.896	183.3	12.04	0.739	142.6	9.30	0.565	103.0	6.91	0.369
0.45	986.4	69.61	5.060	272.2	18.94	1.392	203.0	14.07	1.034	140.0	9.98	0.703	95.6	7.06	0.414
0.50	699.7	56.02	4.431	213.4	17.45	1.352	163.1	14.15	1.028	118.1	10.26	0.734	87.5	7.14	0.448
0.55	498.0	44.87	3.816	177.1	17.57	1.357	132.5	13.81	1.010	92.6	10.49	0.690	75.3	7.09	0.446
0.60	137.9	15.83	1.257	96.7	11.67	0.880	80.4	10.10	0.728	65.1	9.06	0.575	62.3	7.34	0.473
0.65	124.9	15.27	1.337	92.1	9.82	0.983	75.8	8.99	0.804	65.0	8.63	0.670	55.0	7.37	0.508
0.70	165.0	19.42	2.297	128.7	14.16	1.569	107.1	11.24	1.203	70.0	9.27	0.810	51.9	7.31	0.587
0.75	376.5	43.91	5.364	134.0	17.63	1.907	102.1	13.53	1.448	67.0	9.27	0.977	53.2	7.61	0.681
0.80	278.3	35.86	4.512	100.5	13.01	1.627	77.3	11.01	1.255	69.5	9.49	1.107	54.8	8.11	0.782
0.85	459.3	63.63	8.406	154.8	20.75	2.831	114.4	15.92	2.082	83.8	12.16	1.500	55.4	8.58	0.875
0.90	260.5	37.33	5.344	135.9	18.33	2.785	112.4	16.30	2.091	87.6	13.34	1.752	54.2	8.82	0.942
0.95	208.7	30.94	4.772	141.2	23.36	3.225	113.2	18.40	2.576	84.6	13.32	1.839	51.2	8.74	0.976
1.00	398.7	62.68	10.098	159.4	25.35	4.034	113.4	18.73	2.856	77.7	13.09	1.933	51.2	8.36	1.082
1.10	193.0	33.71	5.916	105.7	18.86	3.235	84.9	15.68	2.589	60.7	11.74	1.811	49.7	7.71	1.190
1.20	132.7	26.03	4.839	80.4	18.05	2.929	63.2	14.10	2.289	49.6	10.42	1.737	44.7	7.60	1.200
1.30	127.1	29.73	5.442	55.7	14.62	2.379	41.8	11.94	1.774	35.5	9.88	1.433	39.1	7.40	1.158
1.40	146.0	32.90	7.248	59.6	13.66	2.959	38.9	11.40	1.926	32.0	9.86	1.537	33.8	7.20	1.193
1.50	97.2	24.42	5.542	45.4	12.62	2.586	36.1	11.23	2.053	30.7	9.83	1.689	29.3	7.20	1.284
1.60	74.9	18.69	4.857	49.1	13.34	3.178	37.6	11.63	2.406	32.0	9.57	1.976	27.3	7.31	1.394
1.70	71.7	19.14	5.247	41.0	11.97	2.999	34.8	11.06	2.541	30.6	9.63	2.121	26.8	7.57	1.529
1.80	85.1	24.03	6.985	43.2	12.90	3.545	36.2	10.91	2.956	28.6	9.18	2.303	26.3	7.78	1.662
1.90	61.2	17.91	5.599	39.7	13.15	3.626	34.1	10.97	3.101	26.4	8.80	2.465	25.7	8.00	1.789
2.00	53.7	16.34	5.441	30.6	10.99	3.094	30.3	10.48	3.056	26.4	8.90	2.616	24.9	8.25	2.003
2.20	58.5	19.95	7.171	37.4	13.07	4.583	30.7	10.90	3.788	28.9	10.23	3.423	23.7	8.81	2.440
2.40	48.3	16.11	7.040	39.6	14.16	5.765	35.9	13.79	5.186	33.0	12.61	4.632	24.3	9.86	2.922
2.60	87.7	36.22	15.016	59.0	24.79	10.092	50.2	19.84	8.533	39.8	16.90	6.281	24.9	11.44	3.708
2.80	170.5	77.09	33.866	71.1	34.34	14.094	54.8	28.35	10.851	37.8	21.50	7.791	24.2	12.46	4.470
3.00	94.1	43.61	21.456	69.8	33.96	15.903	54.4	28.15	12.224	40.6	20.59	8.980	25.2	12.53	4.991
3.20	75.6	37.23	19.619	59.0	30.93	15.263	47.1	25.84	12.123	35.3	19.33	8.719	24.5	11.76	5.189
3.40	71.7	39.52	21.000	45.3	25.44	13.248	37.4	21.76	10.874	29.1	16.71	8.166	22.9	11.22	5.124
3.60	77.2	44.64	25.355	44.0	31.84	14.430	31.7	25.11	10.338	23.1	18.02	7.122	20.9	11.46	4.934
3.80	50.4	31.24	18.427	37.6	25.48	13.731	29.2	22.16	10.524	22.0	17.14	7.891	18.9	11.55	4.832
4.00	39.2	26.09	15.886	31.2	21.80	12.617	27.4	19.63	10.958	22.7	15.57	8.855	17.1	11.75	5.155

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)



RECORD NUMBER : M-1524
 STATION : KAMAISHI-MB

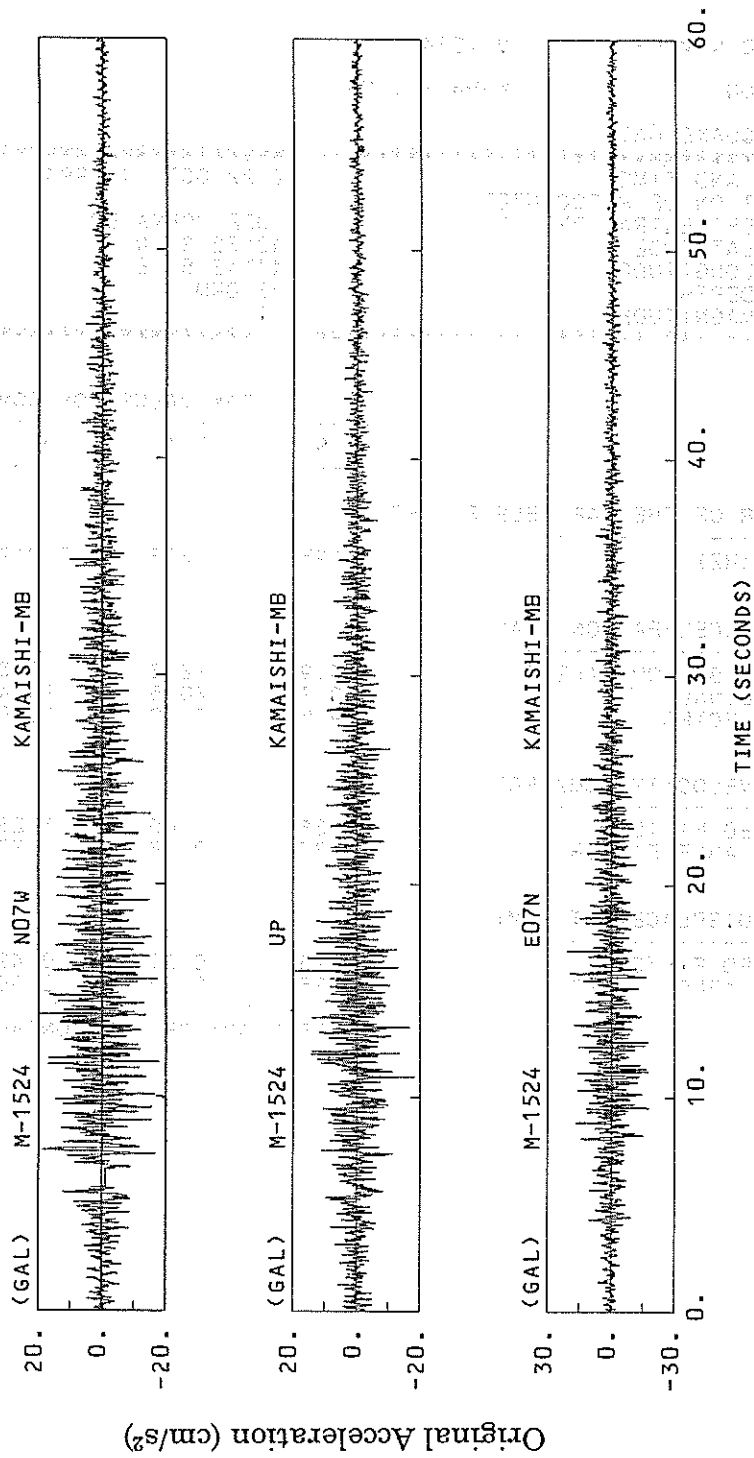
EARTHQUAKE DATA

 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

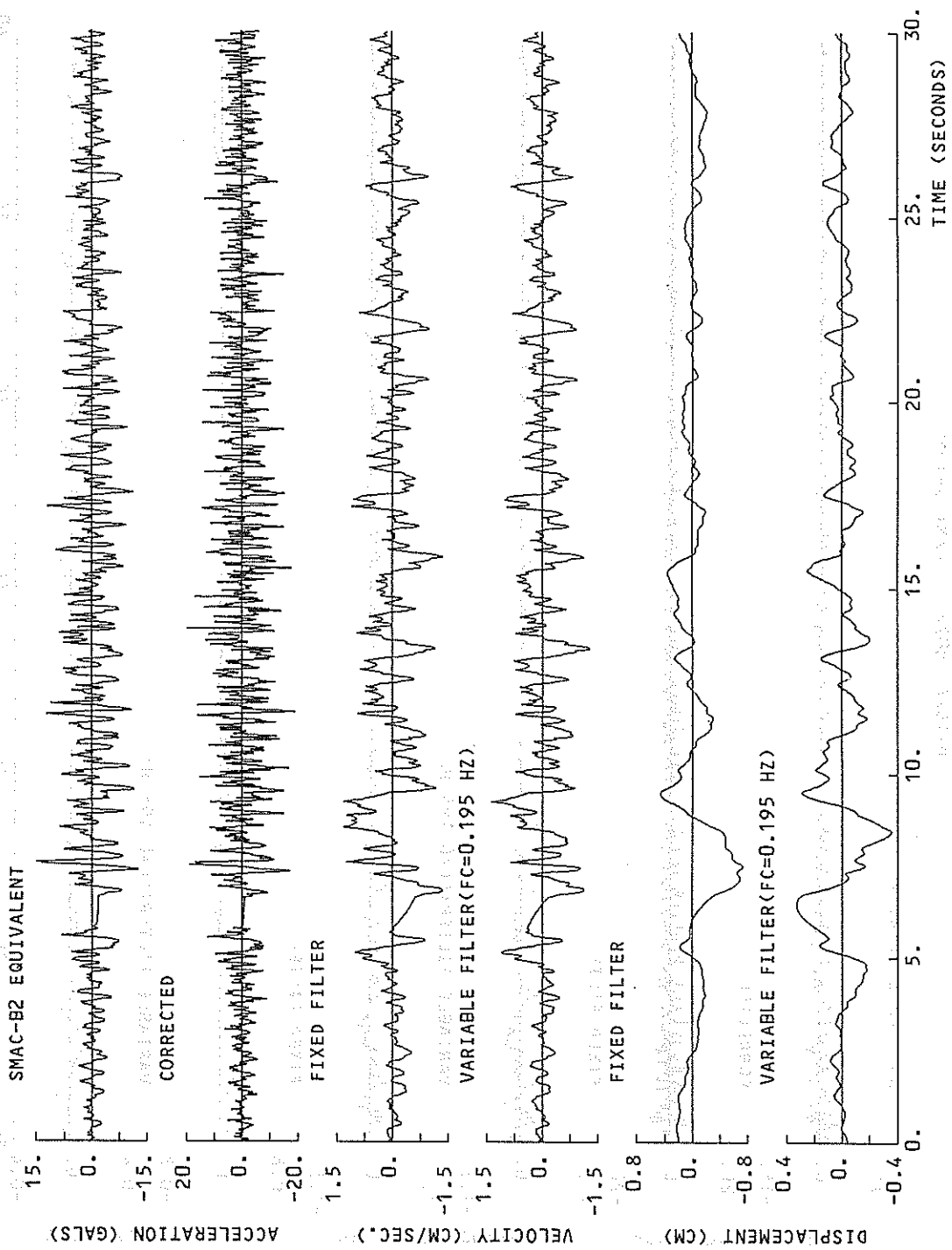
PEAK VALUES OF COMPONENTS

	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.195	0.256	0.219	
MAXIMUM ACCELERATION (GAL)				
SMAC-BZ EQUIVALENT	14.9	12.8	11.8	14.9
ORIGINAL	19.7	20.6	19.4	22.4
CORRECTED	19.5	21.0	19.0	23.3
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	1.38	1.05	1.28	1.65
VARIABLE FILTER	1.37	0.98	1.27	1.37
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.73	0.37	0.49	0.80
VARIABLE FILTER	0.36	0.24	0.30	0.38

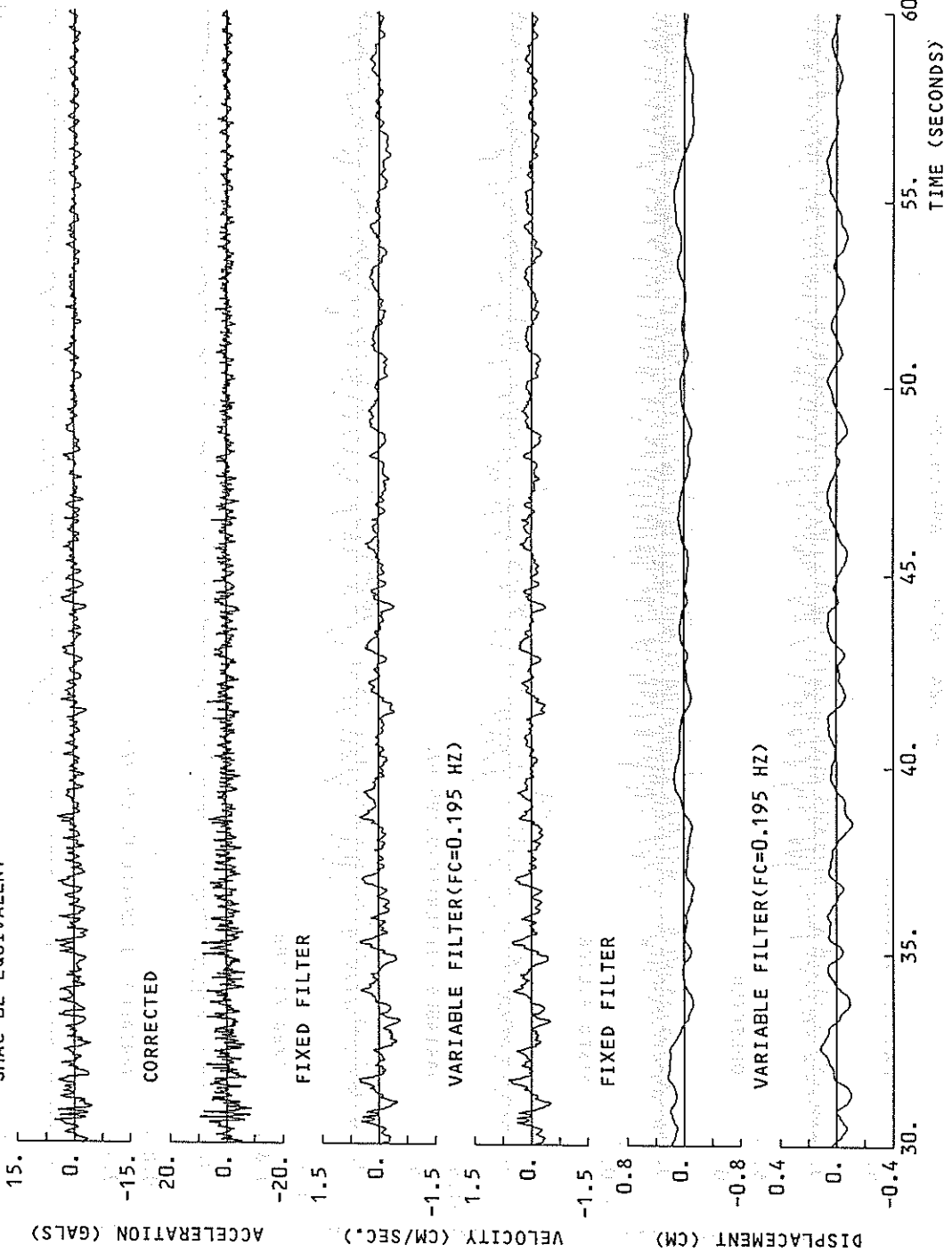
* RESULTANT OF HORIZONTAL COMPONENTS



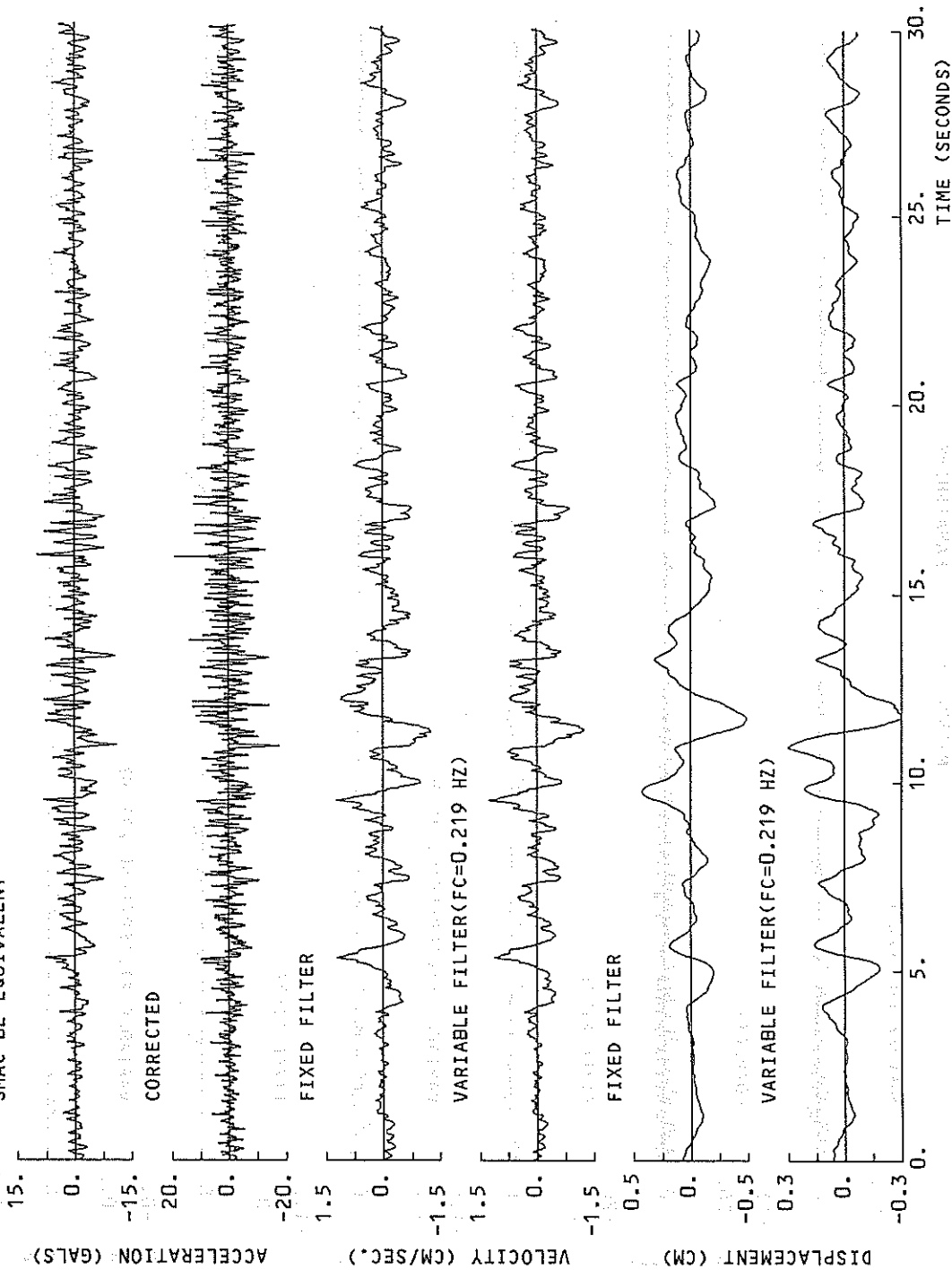
M-1524 N07W KAMAISHI-MB

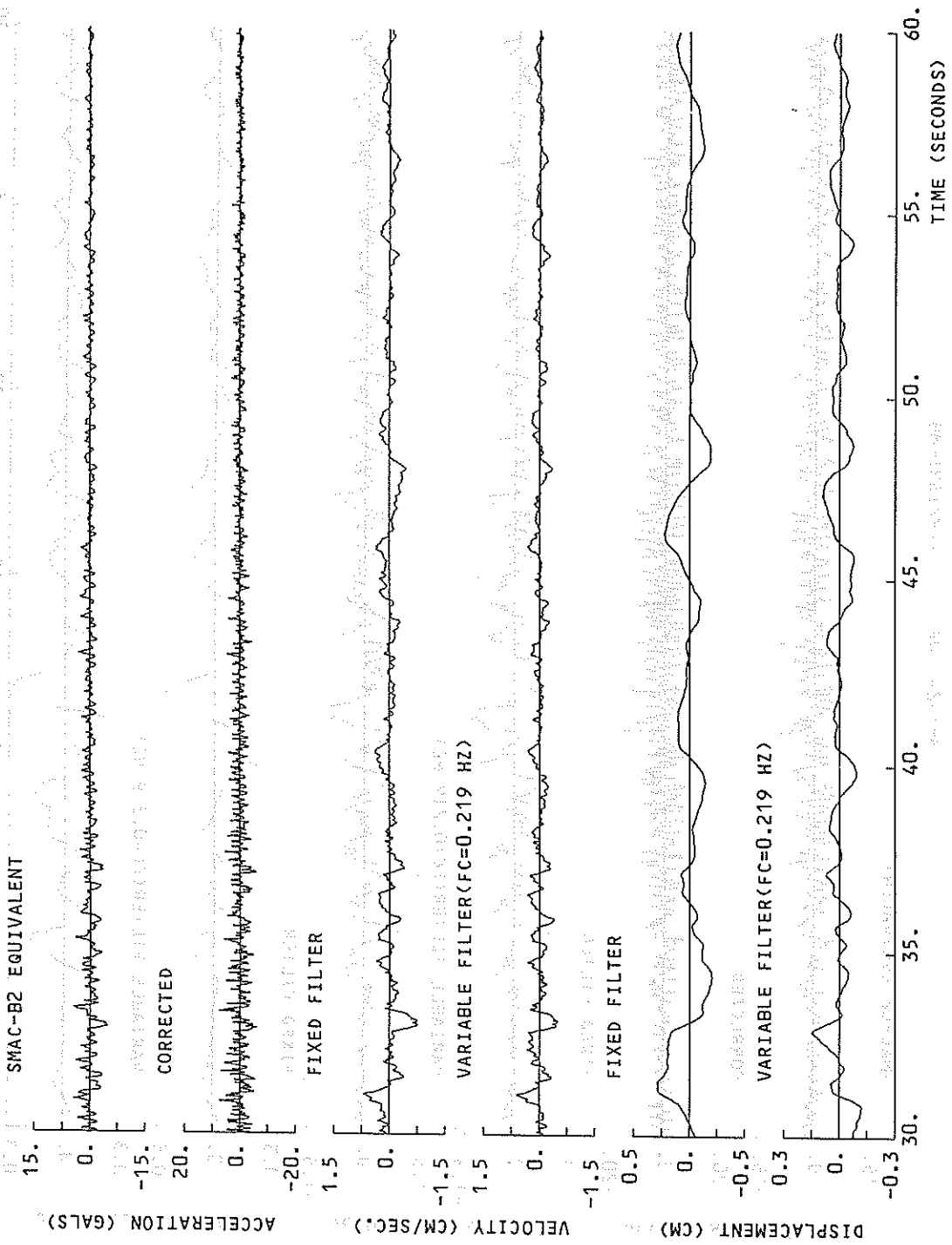


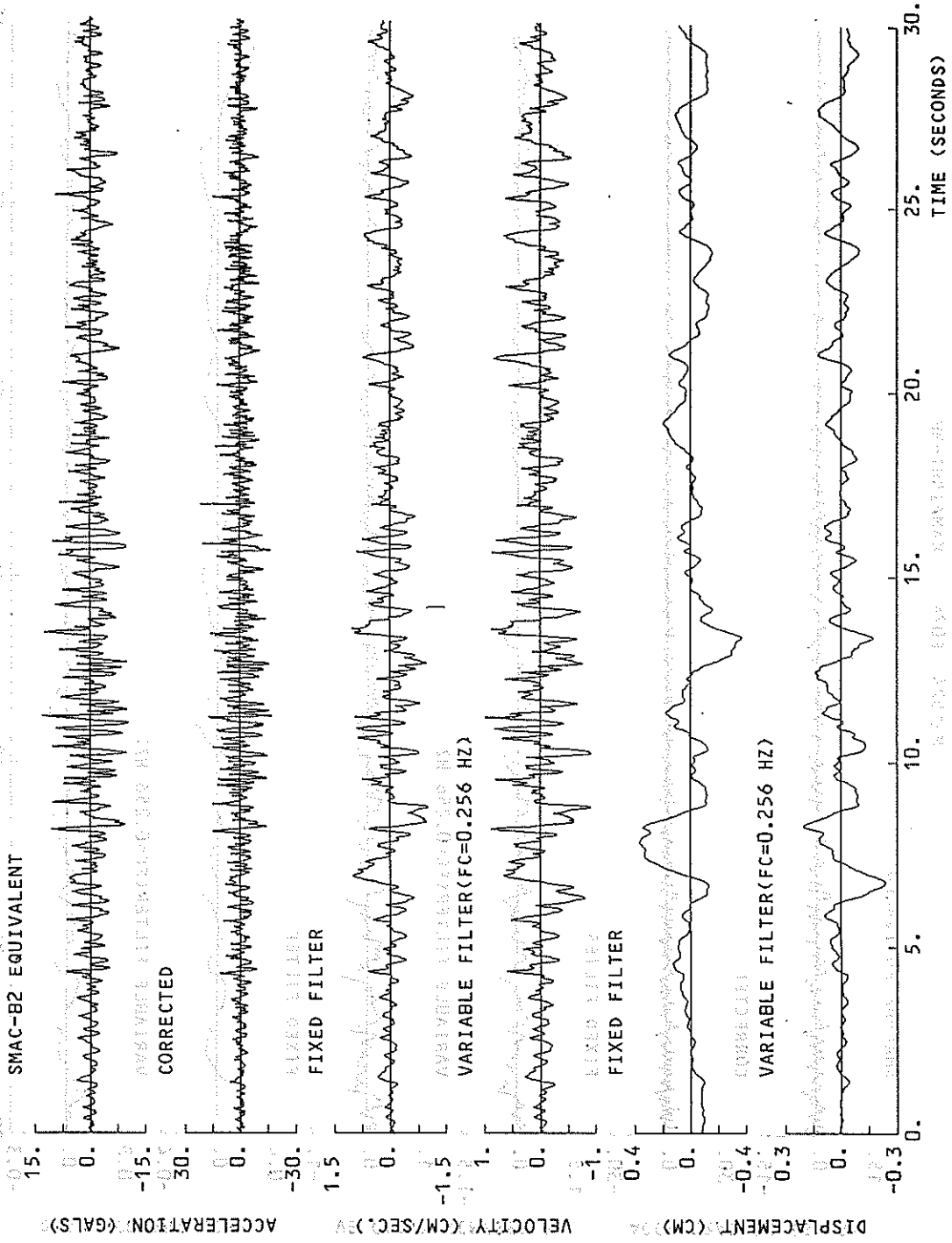
SMAC-B2 EQUIVALENT



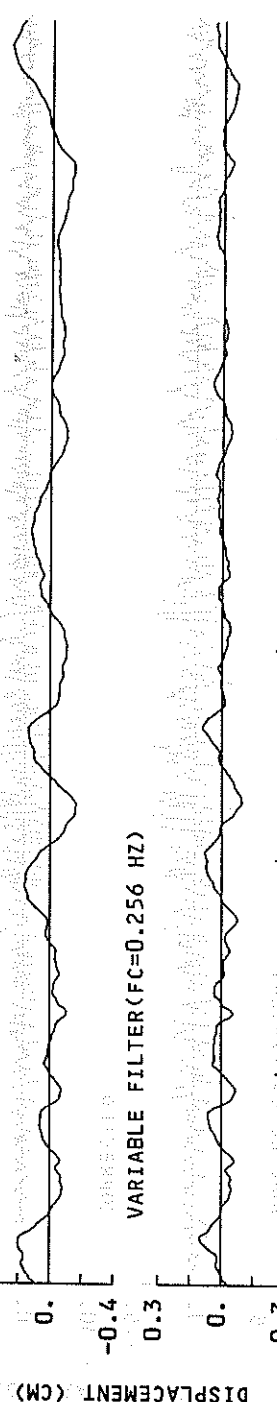
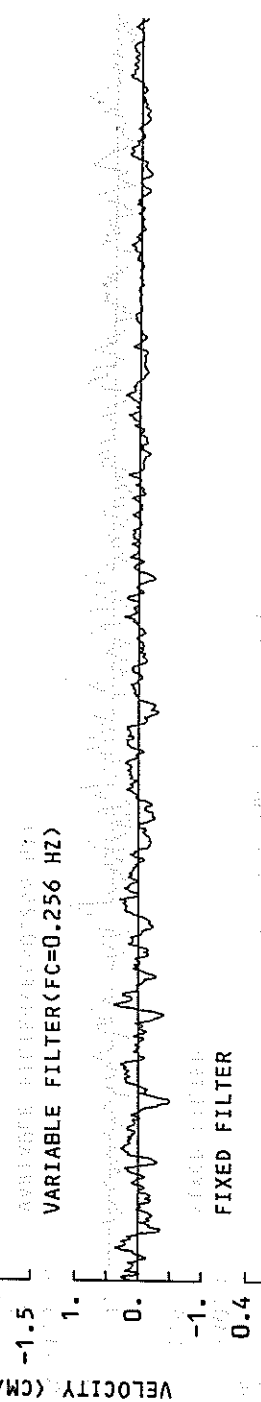
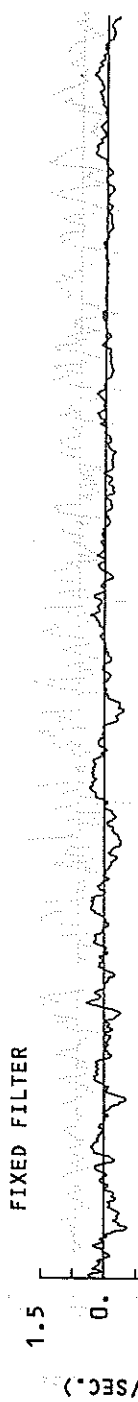
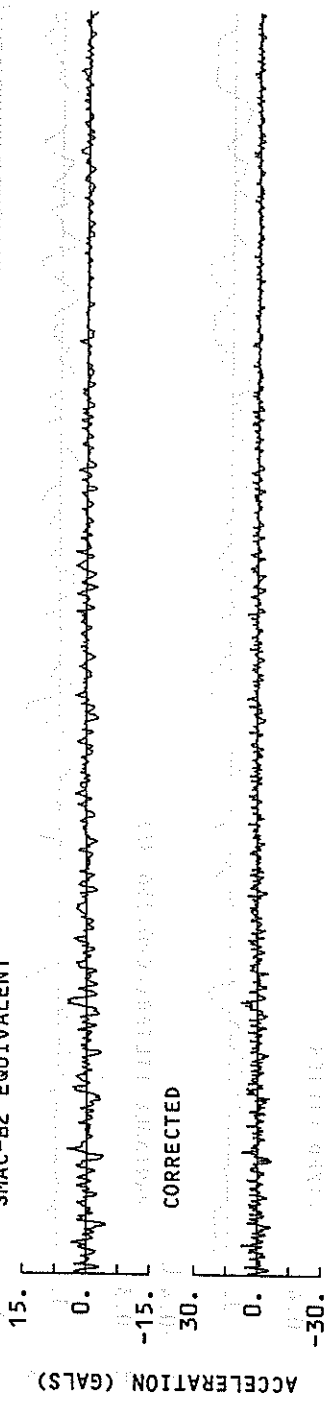
SMAC-B2 EQUIVALENT





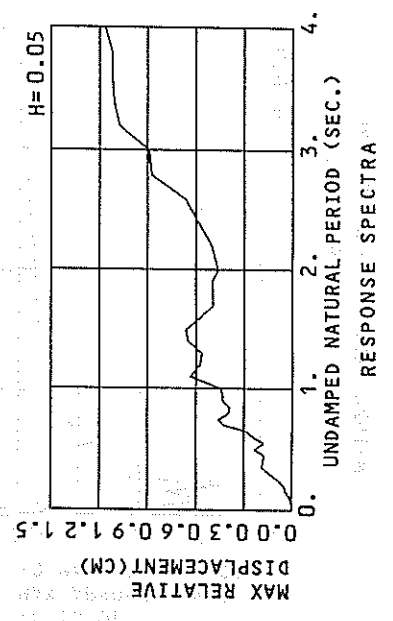
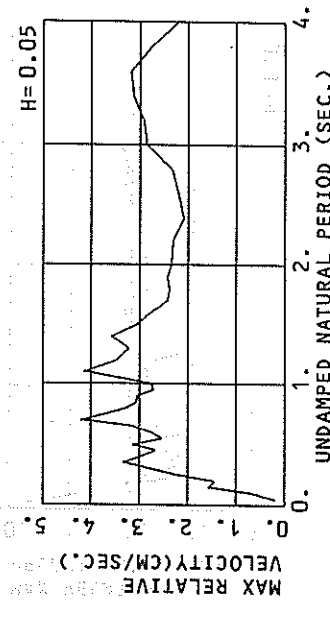
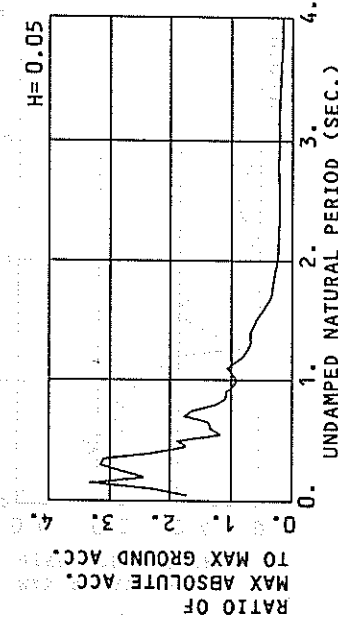


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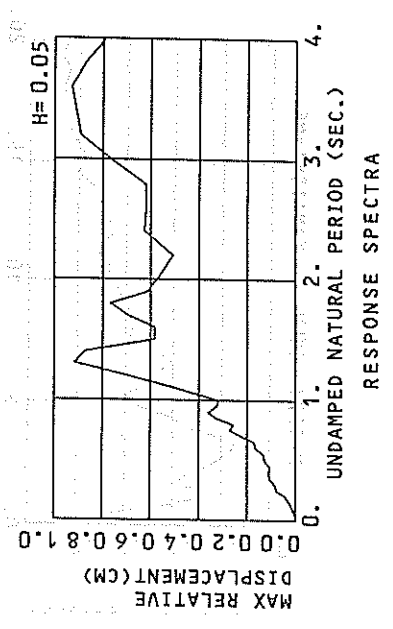
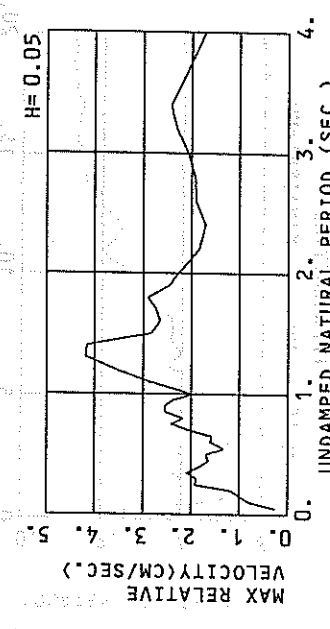
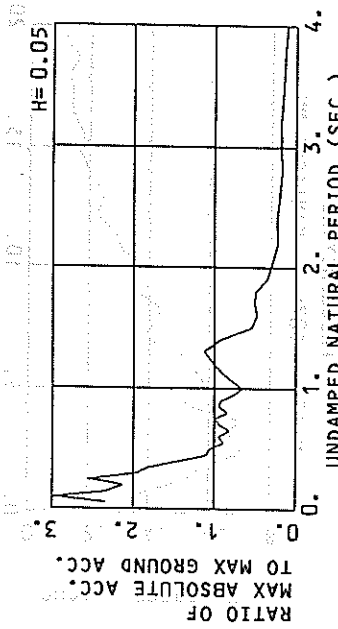


55. 60.
TIME (SECONDS)

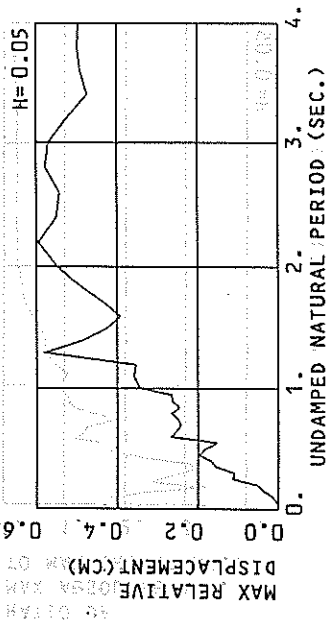
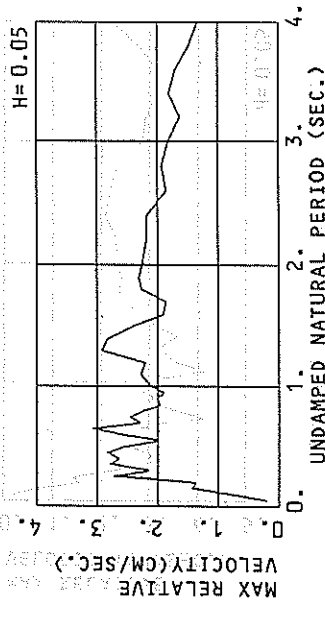
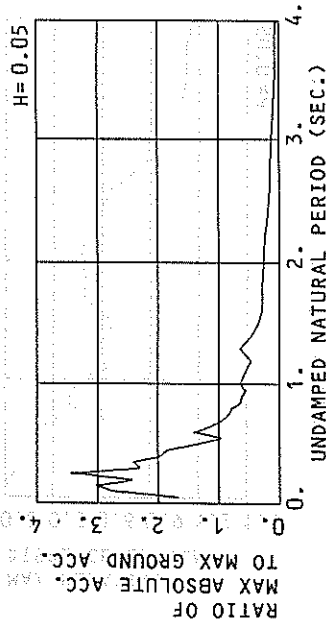
M-1524 ND7W KAMAISHI-MB
(1/FC=5.14 SEC.)



M-1524 UP KAMAISHI-MB
(1/FC=4.56 SEC.)

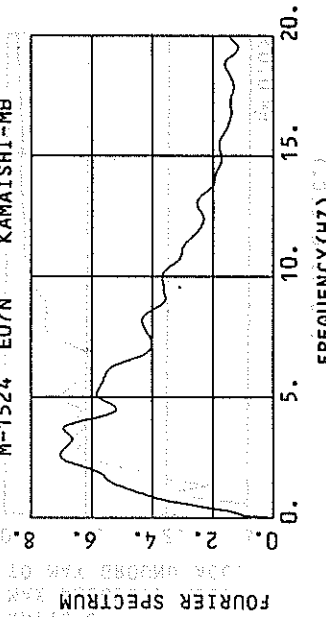
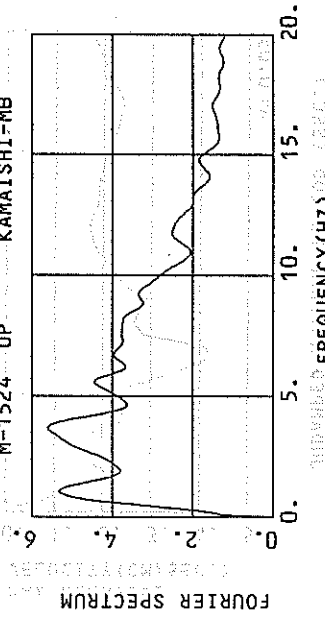
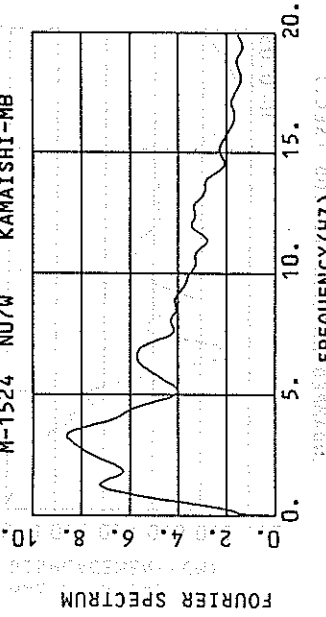


M-1524 E07N KAMAISHI-MB
 H=0.05
 DAMPED (1/FC=3.91 SEC.)



4-1051 RESPONSE SPECTRA

M-1524 N07W KAMAISHI-MB
 H=0.05
 DAMPED (1/FC=3.91 SEC.)



4-1051 RESPONSE SPECTRA

RESPONSE SPECTRUM

RECORD = M-1524
 DATE AND TIME = 1994-10-4-22-23
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = NOTW
 SIGNAL = GR. ACC.
 SAMPLING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION = MAX.GROUND ACC. = 19.53 (GAL)
 STATION = KAMAISHI-MB

PER	DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250					
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD			
0.05	262.9	2.07	0.017	42.9	0.27	0.003	33.8	0.19	0.002	27.8	0.14	0.002	24.5	0.11	0.001
0.10	248.7	3.87	0.063	62.0	0.97	0.016	49.0	0.69	0.011	33.8	0.47	0.009	25.0	0.31	0.006
0.15	307.8	7.43	0.175	88.9	2.08	0.051	65.0	1.56	0.037	42.9	1.00	0.024	25.0	0.57	0.014
0.20	162.2	5.14	0.164	55.9	1.74	0.056	47.7	1.44	0.048	36.1	1.02	0.036	27.4	0.61	0.025
0.25	170.9	6.83	0.271	67.1	2.67	0.105	55.3	2.25	0.087	43.1	1.64	0.067	28.6	0.98	0.043
0.30	267.2	12.95	0.509	71.7	3.42	0.163	61.7	2.76	0.140	47.9	2.19	0.107	31.1	1.30	0.066
0.35	186.9	10.15	0.580	78.7	4.27	0.244	60.5	3.32	0.186	42.1	2.31	0.128	30.1	1.39	0.083
0.40	208.0	13.32	0.843	67.8	4.42	0.273	44.5	3.99	0.178	34.1	2.29	0.135	26.8	1.44	0.093
0.45	131.5	9.54	0.675	53.3	3.73	0.273	34.1	2.67	0.174	29.1	2.17	0.146	23.4	1.45	0.101
0.50	89.7	7.20	0.568	49.7	4.20	0.315	36.8	3.14	0.232	27.4	2.30	0.168	20.1	1.59	0.105
0.55	72.6	6.29	0.556	29.4	2.61	0.225	23.1	2.53	0.176	20.4	2.32	0.152	16.6	1.70	0.102
0.60	117.8	11.12	1.075	34.1	3.59	0.311	26.2	2.75	0.237	20.1	2.29	0.179	13.6	1.71	0.115
0.65	44.5	4.74	0.476	30.2	3.78	0.322	26.8	3.16	0.285	21.0	2.43	0.220	14.1	1.64	0.136
0.70	99.7	11.15	1.237	49.3	5.77	0.610	34.6	4.21	0.427	21.8	2.85	0.265	14.0	1.57	0.150
0.75	72.4	8.70	1.031	43.6	5.31	0.620	32.1	3.76	0.456	21.2	2.65	0.299	13.2	1.59	0.163
0.80	111.0	14.19	1.800	30.6	3.82	0.498	24.4	3.28	0.393	20.1	2.57	0.318	12.7	1.53	0.186
0.85	72.2	9.79	1.321	28.4	3.91	0.520	21.4	3.07	0.390	18.3	2.50	0.327	12.8	1.49	0.204
0.90	73.2	10.67	1.501	25.1	3.92	0.514	21.2	3.05	0.431	17.4	2.41	0.347	12.4	1.54	0.215
0.95	31.8	4.83	0.726	20.3	3.16	0.462	19.0	2.72	0.432	16.0	2.25	0.353	11.6	1.56	0.220
1.00	53.8	8.71	1.362	22.4	3.54	0.567	17.6	2.75	0.443	14.0	2.20	0.351	10.8	1.54	0.229
1.10	55.9	9.97	1.715	29.5	5.74	0.903	20.8	4.13	0.636	13.1	2.66	0.394	8.8	1.56	0.222
1.20	54.7	10.42	1.994	20.7	4.28	0.752	15.9	3.47	0.576	11.0	2.48	0.393	7.6	1.64	0.225
1.30	33.3	7.14	1.428	18.9	4.41	0.806	13.3	3.23	0.564	9.5	2.39	0.392	7.4	1.63	0.259
1.40	35.5	8.41	1.814	16.3	4.27	0.807	13.2	3.58	0.652	10.1	2.72	0.485	7.2	1.69	0.292
1.50	25.8	6.66	1.472	13.7	3.75	0.782	11.7	3.06	0.662	9.1	2.46	0.508	6.7	1.67	0.312
1.60	16.8	4.81	1.091	9.9	3.02	0.641	8.9	2.77	0.571	7.8	2.37	0.490	6.2	1.72	0.323
1.70	15.2	4.15	1.112	7.4	2.62	0.538	6.8	2.43	0.491	6.6	2.30	0.460	5.6	1.79	0.331
1.80	15.0	3.72	1.228	7.3	2.57	0.595	6.1	2.37	0.494	5.8	2.25	0.446	5.0	1.82	0.333
1.90	11.8	3.79	1.081	6.0	2.59	0.551	5.5	2.44	0.496	5.0	2.23	0.430	4.5	1.83	0.330
2.00	9.4	3.37	0.954	6.0	2.49	0.602	4.6	2.34	0.462	4.2	2.15	0.396	4.0	1.83	0.325
2.20	9.3	3.29	1.134	5.3	2.67	0.650	4.2	2.31	0.502	3.6	1.86	0.409	3.4	1.81	0.316
2.40	10.3	4.04	1.539	5.3	2.42	0.774	4.1	2.08	0.583	3.3	1.82	0.440	3.2	1.80	0.318
2.60	4.5	2.43	0.768	4.1	2.31	0.696	3.9	2.20	0.664	3.5	2.02	0.560	3.0	1.83	0.344
2.80	6.7	3.29	1.398	5.3	2.57	1.055	4.5	2.32	0.878	3.5	2.12	0.640	2.7	1.90	0.363
3.00	7.5	4.45	1.716	5.3	3.46	1.199	4.0	2.86	0.891	3.1	2.34	0.669	2.6	1.97	0.395
3.20	7.3	4.33	1.886	5.1	3.49	1.328	4.2	2.92	1.077	3.1	2.49	0.753	2.4	2.01	0.425
3.40	7.1	4.24	2.073	4.5	3.60	1.329	3.8	3.14	1.108	2.9	2.51	0.801	2.2	2.01	0.480
3.60	4.9	4.18	1.615	4.1	3.61	1.336	3.5	3.18	1.119	2.6	2.57	0.814	2.2	1.97	0.545
3.80	5.1	3.36	1.877	3.7	3.02	1.360	3.1	2.76	1.119	2.6	2.36	0.889	2.2	1.97	0.597
4.00	4.1	2.92	1.672	3.4	2.53	1.387	2.9	2.21	1.161	2.5	2.01	0.943	2.1	1.81	0.635

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = M-1524
 DATE AND TIME = 1994-10-4-22-23
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = UP
 SIGNAL = GR. ACC
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION = MAX. GROUND ACC. = 19.00 (GAL)
 STATION = KAMAMISHI-MB

PER	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	114.9	0.86	0.007	55.9	0.35	0.004	44.6	0.27	0.003	34.6	0.20	0.002	27.5	0.13	0.002
0.10	213.1	3.38	0.054	71.1	1.03	0.018	56.7	0.78	0.014	44.8	0.56	0.011	31.6	0.33	0.007
0.15	193.8	4.59	0.110	54.6	1.32	0.031	44.6	0.98	0.025	35.2	0.72	0.020	23.9	0.43	0.013
0.20	84.8	2.68	0.086	52.6	1.57	0.053	40.7	1.18	0.041	31.4	0.85	0.031	21.1	0.48	0.019
0.25	221.0	8.84	0.350	67.2	2.59	0.106	48.6	1.91	0.077	31.9	1.28	0.050	18.9	0.70	0.027
0.30	94.1	4.53	0.215	45.4	2.13	0.104	37.3	1.89	0.084	29.3	1.45	0.070	17.3	0.74	0.034
0.35	136.1	7.58	0.422	46.5	2.79	0.144	34.5	2.08	0.106	23.3	1.40	0.070	15.1	0.78	0.043
0.40	124.8	7.94	0.506	34.8	2.33	0.140	27.3	1.80	0.110	20.8	1.39	0.082	14.7	0.87	0.054
0.45	42.3	2.75	0.217	28.0	1.71	0.143	21.0	1.64	0.107	18.7	1.36	0.093	13.7	0.89	0.062
0.50	44.7	3.51	0.283	25.3	2.01	0.160	20.2	1.69	0.127	14.8	1.28	0.099	12.1	0.84	0.066
0.55	69.5	6.10	0.533	20.4	1.80	0.156	17.0	1.32	0.129	14.2	1.03	0.107	10.6	0.83	0.073
0.60	51.1	4.89	0.466	21.5	1.85	0.196	18.1	1.59	0.164	14.2	1.28	0.127	9.8	0.88	0.081
0.65	31.1	3.19	0.333	17.1	1.62	0.182	15.6	1.57	0.166	12.5	1.29	0.130	9.2	0.89	0.087
0.70	58.8	6.51	0.730	24.7	2.64	0.307	17.8	2.03	0.220	13.0	1.45	0.159	8.8	0.91	0.095
0.75	71.2	8.48	1.014	28.4	3.51	0.405	19.1	2.42	0.270	12.7	1.61	0.178	8.4	0.93	0.109
0.80	39.9	5.14	0.647	22.0	2.73	0.356	16.0	2.16	0.258	12.5	1.68	0.199	8.2	0.98	0.122
0.85	68.4	9.29	1.252	23.4	3.39	0.428	18.0	2.55	0.328	12.8	1.73	0.228	8.0	1.02	0.134
0.90	66.7	9.70	1.368	27.0	3.82	0.552	17.6	2.55	0.359	11.5	1.65	0.229	7.8	1.06	0.147
0.95	46.7	7.00	1.067	19.8	3.19	0.453	14.3	2.38	0.325	9.6	1.69	0.216	7.9	1.08	0.164
1.00	28.9	4.52	0.732	15.9	2.42	0.402	12.6	1.97	0.318	10.4	1.60	0.258	8.0	1.14	0.181
1.10	38.8	6.72	1.188	20.1	3.67	0.614	16.4	2.88	0.501	12.6	2.12	0.379	8.1	1.43	0.224
1.20	47.9	9.17	1.747	21.8	4.06	0.794	19.2	3.58	0.595	14.7	2.82	0.522	8.5	1.61	0.265
1.30	38.9	7.95	1.666	27.7	5.46	1.183	21.5	4.19	0.915	14.5	2.89	0.610	8.0	1.63	0.294
1.40	40.1	9.21	1.991	23.4	5.37	1.163	17.6	4.17	0.870	11.7	2.85	0.574	7.1	1.57	0.312
1.50	20.5	4.96	1.167	12.6	3.58	0.719	10.3	2.83	0.586	9.0	2.36	0.506	6.4	1.57	0.315
1.60	13.7	3.67	0.890	11.0	3.11	0.712	9.1	2.65	0.585	7.6	2.06	0.484	5.7	1.56	0.320
1.70	23.1	6.44	1.690	11.9	3.52	0.868	9.6	2.73	0.697	7.5	2.13	0.536	5.2	1.54	0.333
1.80	30.2	8.65	2.479	12.4	3.99	1.020	9.4	2.91	0.768	6.8	1.99	0.542	4.8	1.48	0.340
1.90	15.9	4.99	1.454	9.0	3.16	0.818	6.8	2.46	0.614	5.2	1.92	0.461	4.4	1.41	0.341
2.00	9.9	3.66	1.007	7.3	2.79	0.737	5.7	2.28	0.575	4.5	1.84	0.448	4.0	1.35	0.341
2.20	7.8	2.71	0.953	4.7	2.09	0.574	4.2	1.83	0.508	3.7	1.68	0.439	3.5	1.37	0.346
2.40	5.4	2.07	0.788	4.8	1.87	0.705	4.3	1.71	0.628	3.6	1.56	0.509	3.1	1.35	0.357
2.60	4.5	2.30	0.764	4.0	2.04	0.680	3.7	1.90	0.618	3.2	1.67	0.517	2.8	1.33	0.371
2.80	6.6	2.98	1.314	3.8	1.98	0.751	3.2	1.91	0.621	2.8	1.74	0.525	2.5	1.34	0.392
3.00	8.0	3.96	1.832	3.9	2.15	0.891	3.4	2.06	0.765	2.7	1.85	0.579	2.3	1.36	0.406
3.20	7.8	4.32	2.029	4.4	2.74	1.139	3.5	2.30	0.891	2.6	1.93	0.637	2.1	1.38	0.407
3.40	5.6	3.83	1.627	4.0	2.98	1.176	3.1	2.43	0.910	2.5	1.85	0.694	2.0	1.40	0.433
3.60	4.8	3.07	1.566	3.5	2.53	1.153	2.9	2.18	0.927	2.2	1.85	0.696	2.0	1.41	0.463
3.80	3.3	2.41	1.222	2.7	2.08	0.994	2.4	1.94	0.871	2.0	1.74	0.696	1.9	1.39	0.481
4.00	2.3	2.06	0.928	2.1	1.87	0.852	2.0	1.71	0.788	1.8	1.58	0.684	1.8	1.37	0.495

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

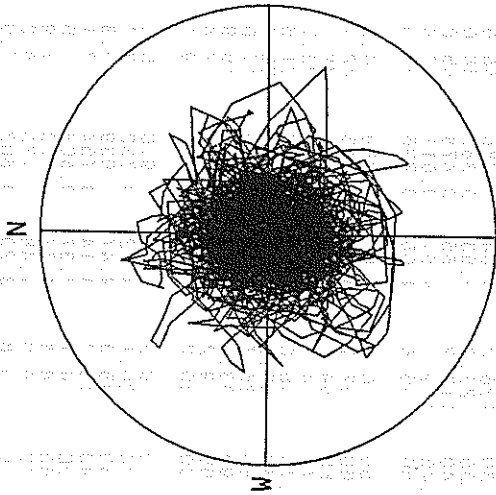
RESPONSE SPECTRUM

RECORD = M-1524
 DATE AND TIME = 1994-10-4-22-23
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = EOTN
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH =
 SIGNAL = GR. ACC.
 CORRECTION =
 MAX. GROUND ACC. =
 STATION = KAMAISHI-MB
 20.97 (GAL)
 DAMPING = 0.
 DAMPING = 0.025
 DAMPING = 0.050
 DAMPING = 0.100
 DAMPING = 0.250

PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	192.5	1.52	0.012	44.5	0.30	0.003	35.0	0.20	0.002	31.1	0.14	0.002	25.2	0.11	0.002
0.10	310.4	4.91	0.079	74.6	1.06	0.019	57.9	0.81	0.015	42.6	0.58	0.011	31.3	0.38	0.007
0.15	106.8	2.30	0.061	79.7	1.80	0.046	63.3	1.42	0.032	45.1	1.01	0.025	29.8	0.55	0.015
0.20	253.2	8.06	0.257	62.3	1.92	0.063	50.9	1.37	0.052	34.7	1.04	0.035	25.5	0.67	0.023
0.25	243.2	6.60	0.385	101.5	3.93	0.160	71.9	2.72	0.113	47.6	1.72	0.074	25.7	0.99	0.038
0.30	126.2	6.04	0.288	58.6	2.69	0.133	48.3	2.14	0.110	39.9	1.83	0.089	27.2	1.12	0.055
0.35	123.2	6.83	0.382	88.0	3.66	0.211	50.5	2.78	0.155	33.8	1.91	0.103	24.0	1.17	0.062
0.40	117.9	7.65	0.478	55.0	3.44	0.222	41.4	2.64	0.167	28.6	1.89	0.114	18.9	1.18	0.070
0.45	119.1	8.51	0.611	47.4	3.64	0.243	38.7	2.83	0.198	28.0	2.13	0.140	17.7	1.18	0.080
0.50	46.8	4.08	0.296	33.3	2.95	0.210	29.1	2.57	0.183	23.5	1.96	0.144	16.4	1.11	0.087
0.55	50.8	4.67	0.389	24.9	2.33	0.191	20.0	1.98	0.152	17.9	1.73	0.132	14.5	1.26	0.089
0.60	92.7	8.87	0.845	42.1	3.85	0.384	29.3	2.60	0.266	19.1	1.89	0.170	12.3	1.35	0.092
0.65	64.0	6.66	0.684	28.1	3.58	0.300	23.7	3.06	0.252	17.5	2.23	0.181	11.4	1.38	0.100
0.70	74.3	8.27	0.923	23.7	2.87	0.293	19.8	2.30	0.244	14.6	1.93	0.178	10.3	1.33	0.110
0.75	45.0	5.50	0.642	21.6	2.86	0.307	17.6	2.45	0.250	13.6	1.98	0.189	9.5	1.35	0.117
0.80	56.3	7.21	0.913	23.4	3.17	0.319	16.5	2.25	0.265	12.5	1.83	0.186	8.8	1.34	0.123
0.85	26.7	3.72	0.489	17.6	2.49	0.322	13.5	1.96	0.246	10.5	1.67	0.186	7.9	1.31	0.133
0.90	33.0	4.74	0.677	15.9	2.47	0.328	12.9	2.01	0.263	9.9	1.59	0.210	7.4	1.27	0.141
0.95	19.2	3.23	0.440	12.4	2.38	0.283	11.7	1.90	0.265	9.4	1.50	0.210	7.4	1.22	0.149
1.00	50.2	8.03	1.271	19.1	2.93	0.482	13.6	2.12	0.342	8.8	1.57	0.219	7.2	1.18	0.157
1.10	29.9	5.29	0.916	15.0	2.80	0.459	11.8	2.28	0.359	8.2	1.68	0.243	6.9	1.13	0.176
1.20	20.1	4.32	0.732	12.7	2.76	0.461	9.8	2.21	0.354	7.8	1.78	0.273	6.6	1.20	0.193
1.30	45.3	9.47	1.939	19.3	4.19	0.824	13.7	2.92	0.580	9.1	1.90	0.373	6.2	1.22	0.200
1.40	15.2	4.14	0.754	12.1	3.44	0.601	9.9	2.83	0.489	7.2	2.08	0.343	5.4	1.28	0.205
1.50	14.1	3.37	0.803	8.5	2.68	0.484	7.5	2.43	0.428	6.0	1.99	0.331	4.5	1.27	0.213
1.60	18.8	4.77	1.220	7.9	2.23	0.511	6.1	1.92	0.392	4.9	1.70	0.298	4.1	1.27	0.217
1.70	16.0	4.48	1.173	8.2	2.47	0.596	5.9	1.87	0.429	4.8	1.65	0.332	3.7	1.26	0.220
1.80	9.8	3.20	0.802	7.0	2.56	0.572	5.9	2.27	0.473	4.5	1.78	0.346	3.5	1.25	0.222
1.90	11.3	4.03	1.036	6.8	2.73	0.624	5.7	2.32	0.512	4.6	1.78	0.394	3.4	1.25	0.228
2.00	9.6	3.44	0.974	6.4	2.64	0.650	5.5	2.26	0.548	4.4	1.75	0.415	3.3	1.24	0.236
2.20	12.3	4.46	1.503	6.1	2.61	0.749	4.9	2.18	0.595	3.9	1.80	0.434	3.0	1.20	0.260
2.40	5.2	2.65	0.755	4.2	2.40	0.617	3.8	2.18	0.551	3.2	1.84	0.444	2.7	1.25	0.267
2.60	4.2	2.24	0.719	3.7	2.03	0.623	3.2	1.86	0.542	2.8	1.64	0.454	2.4	1.23	0.307
2.80	3.0	2.65	1.017	2.7	2.10	0.631	3.0	1.93	0.577	2.7	1.66	0.490	2.2	1.17	0.331
3.00	3.0	2.16	0.682	2.7	1.94	0.622	2.6	1.81	0.571	2.4	1.60	0.489	2.0	1.18	0.339
3.20	5.3	2.91	1.381	2.5	1.80	0.636	2.1	1.63	0.524	2.0	1.47	0.459	2.0	1.20	0.335
3.40	3.0	2.28	0.887	2.0	2.00	0.585	1.6	1.60	0.473	1.7	1.54	0.413	1.8	1.22	0.322
3.60	2.5	2.14	0.831	1.8	1.83	0.576	1.5	1.70	0.491	1.3	1.51	0.375	1.6	1.20	0.304
3.80	2.6	1.79	0.948	1.6	1.52	0.577	1.4	1.48	0.498	1.2	1.40	0.384	1.5	1.22	0.283
4.00	2.4	1.65	0.960	1.4	1.38	0.556	1.3	1.34	0.495	1.1	1.26	0.399	1.3	1.17	0.263

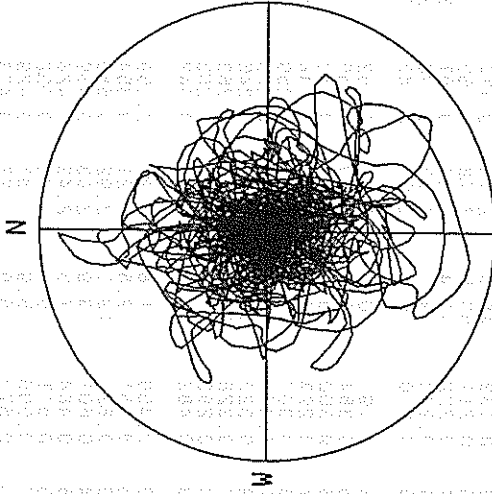
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

M-1524 KAMAISHI-MB



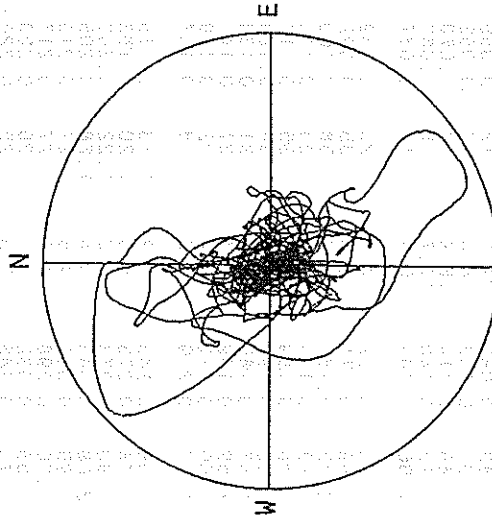
ACCELERATION
R=30.0 GAL
MAX=23.3 GAL

M-1524 KAMAISHI-MB



VELOCITY
R=1.5 CM/SEC.
MAX=1.4 CM/SEC.

M-1524 KAMAISHI-MB



DISPLACEMENT
R=0.40 CM
MAX=0.38 CM

RECORD NUMBER : M-1523
 STATION : KAMAISHI-M

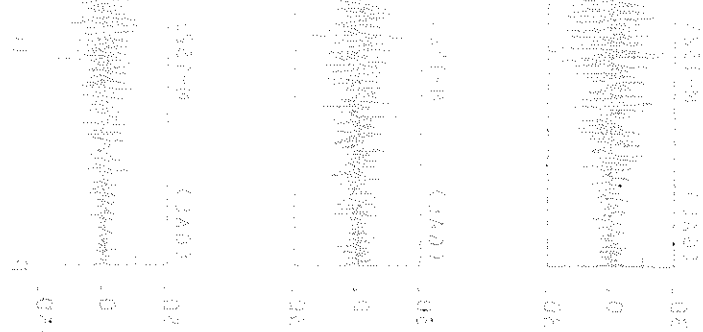
EARTHQUAKE DATA

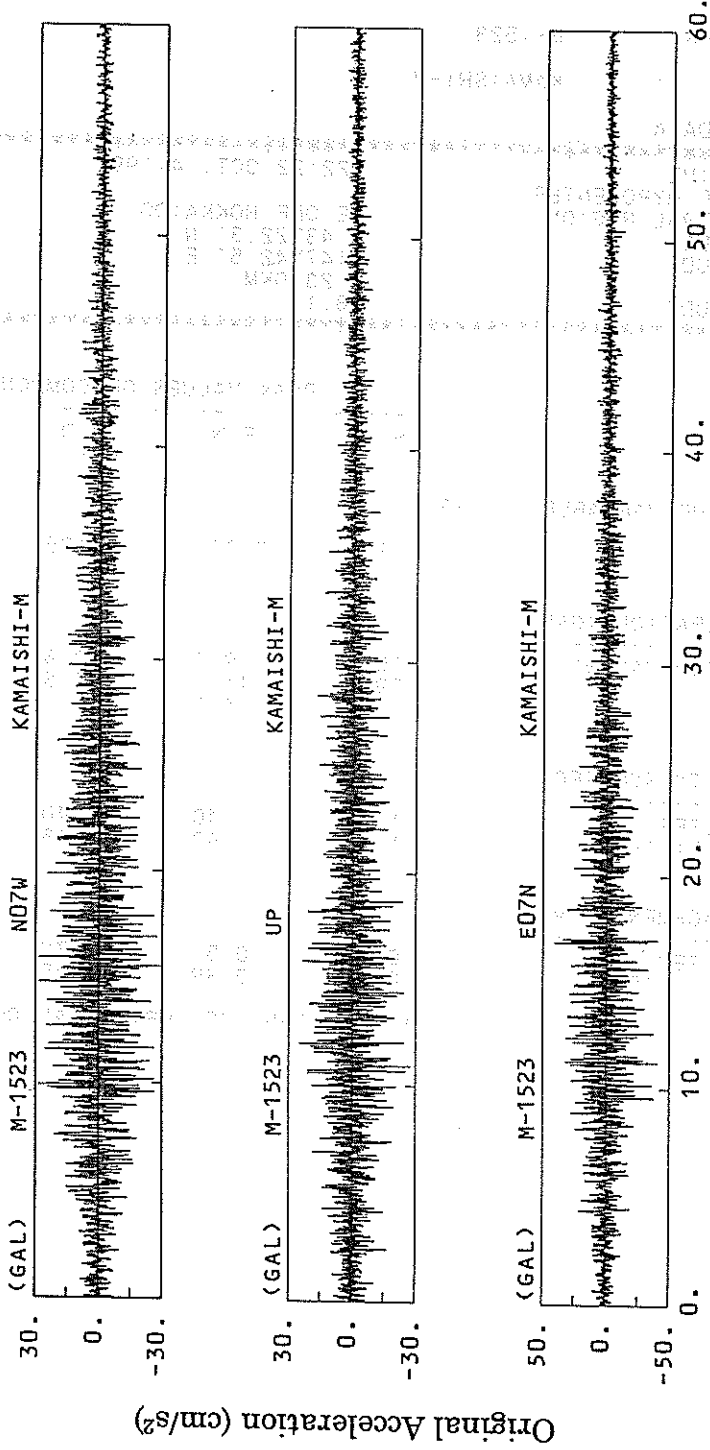
 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

PEAK VALUES OF COMPONENTS

	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.219	0.207	0.195	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	16.5	19.7	12.8	22.9
ORIGINAL	29.6	41.1	27.8	44.9
CORRECTED	30.8	44.1	28.6	48.2
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	1.54	1.40	1.40	1.85
VARIABLE FILTER	1.36	1.43	1.48	1.48
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.52	0.51	0.70	0.72
VARIABLE FILTER	0.31	0.39	0.35	0.47

* RESULTANT OF HORIZONTAL COMPONENTS



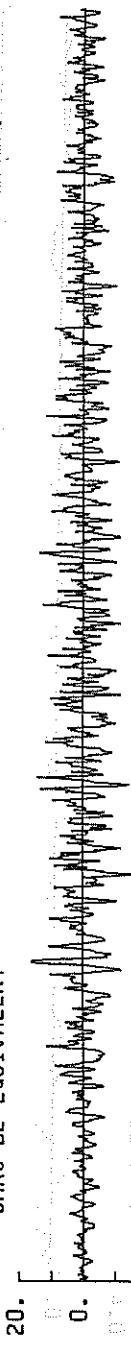


STATION
 KAMAISHI-M
 DATE AND TIME
 LOCATION OF STATION
 EPI-CENTRE
 LATITUDE
 LONGITUDE
 DEPTH
 JMA MAGNITUDE

M-1523 N07W KAMAISHI-M

TIME (SECONDS)

SMAC-B2 EQUIVALENT

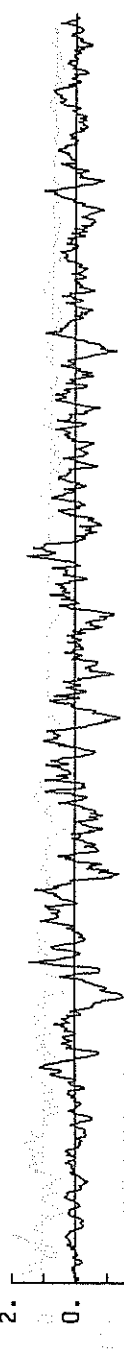


ORIGINAL REFERENCE SIGNAL

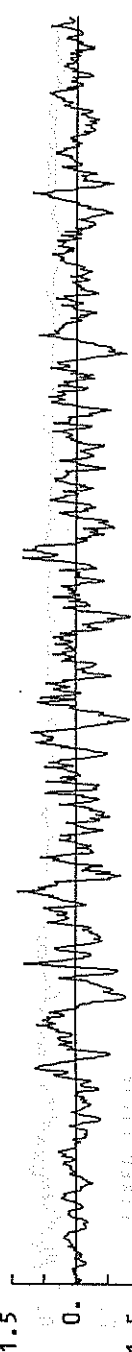
CORRECTED



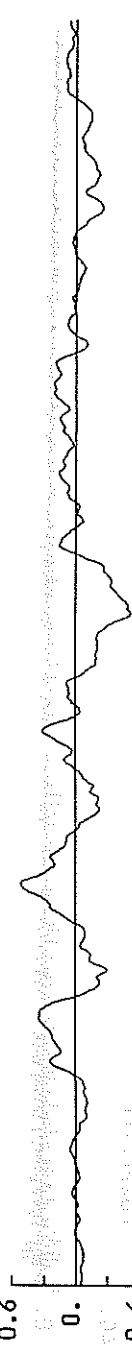
FIXED FILTER



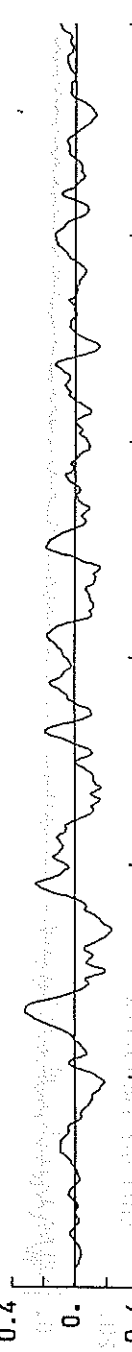
VARIABLE FILTER (FC=0.219 HZ)



FIXED FILTER



VARIABLE FILTER (FC=0.219 HZ)



25. 30.
TIME (SECONDS)

M-1523 N07W KAMAISHI-M

1966 06 09 09 20

SMAC-B2 EQUIVALENT

20.

ACCELERATION (GALS)

0.

-20.

CORRECTED

40.

0.

-40.

FIXED FILTER

2.

VELOCITY (CM/SEC.)

0.

-2.

VARIABLE FILTER (FC=0.219 HZ)

1.5

0.

-1.5

FIXED FILTER

0.6

DISPLACEMENT (CM)

0.

-0.6

VARIABLE FILTER (FC=0.219 HZ)

0.4

0.

-0.4

30.

35.

40.

45.

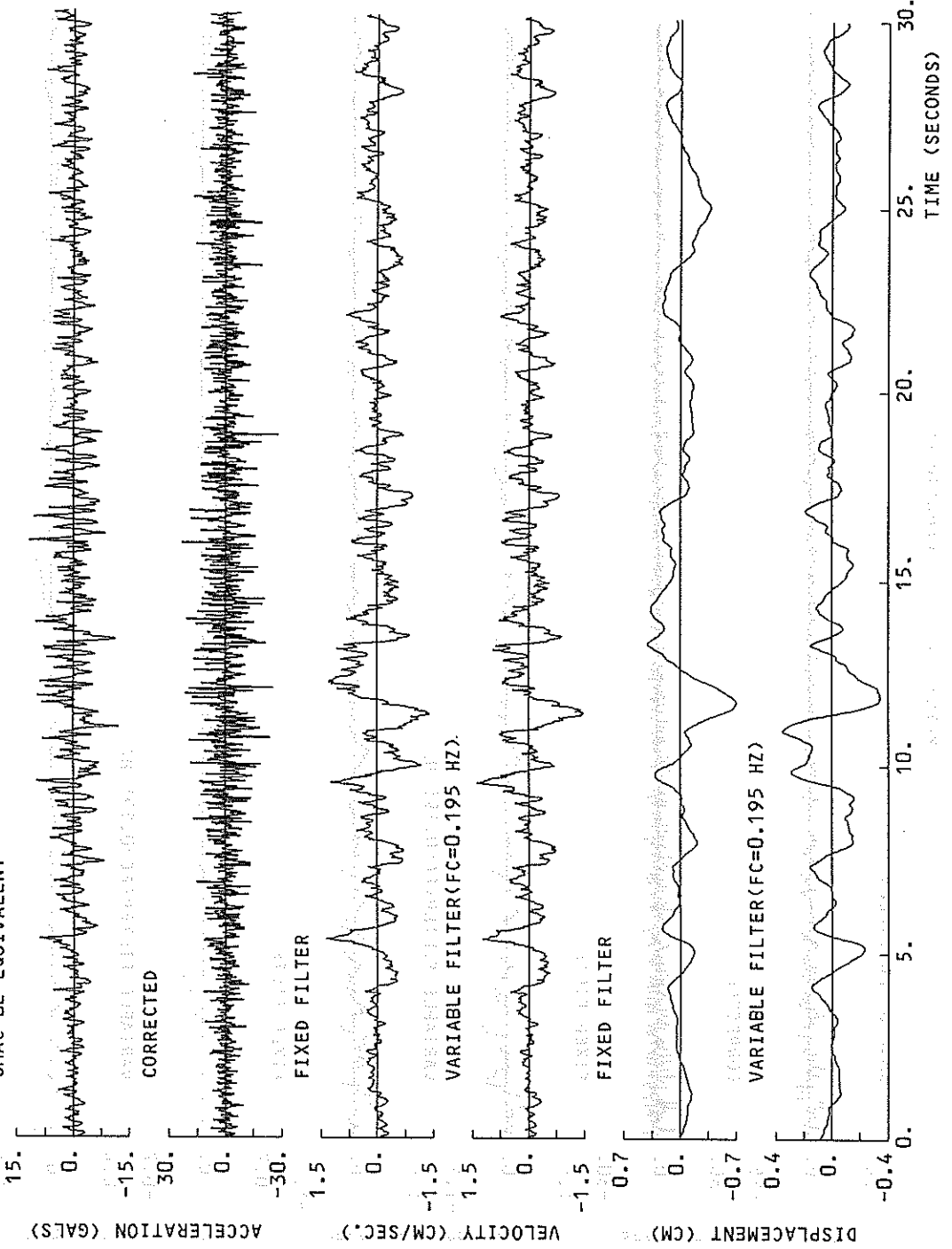
50.

55.

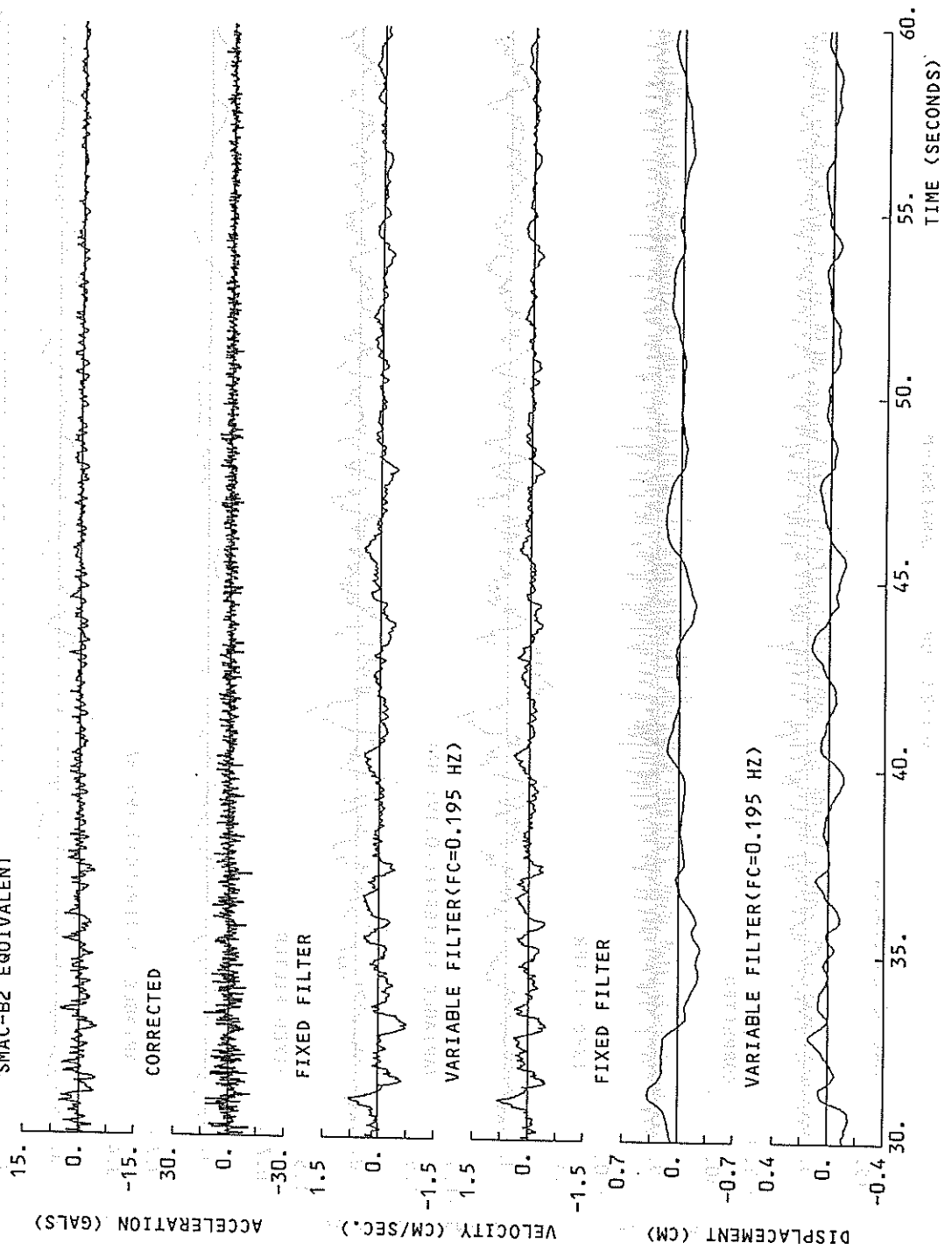
60.

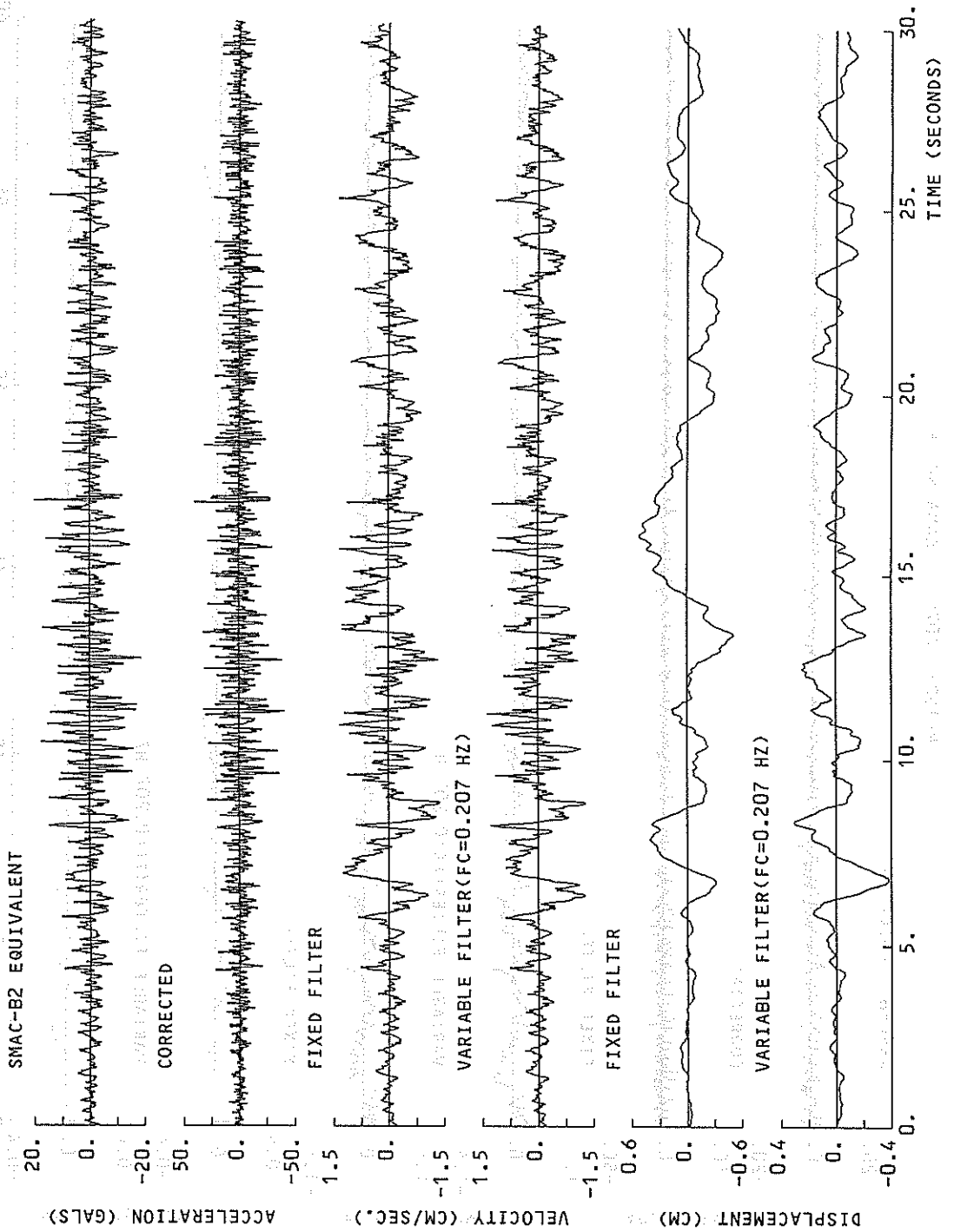
TIME (SECONDS)

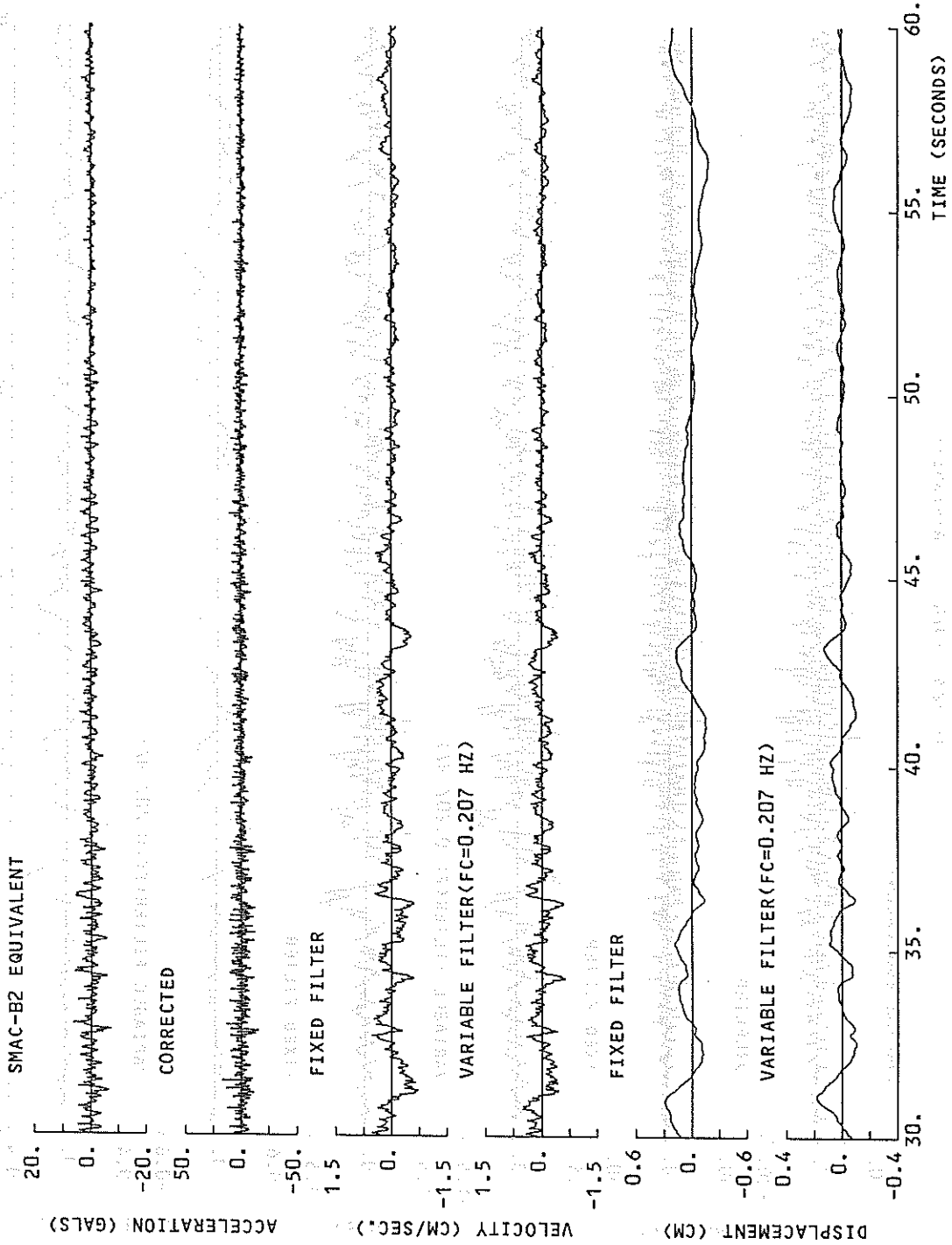
SMAC-B2 EQUIVALENT



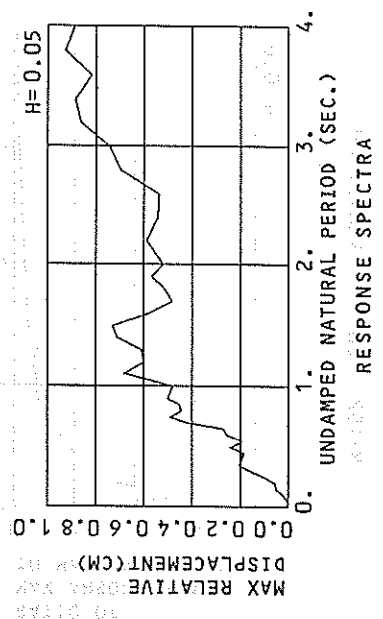
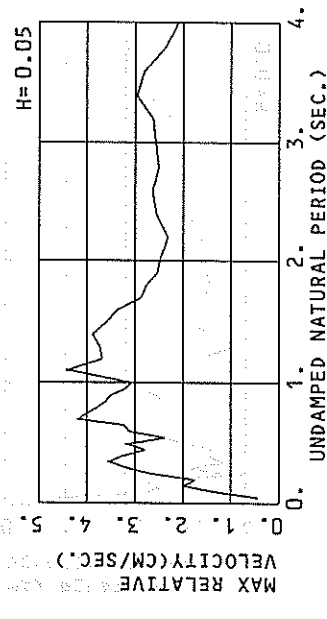
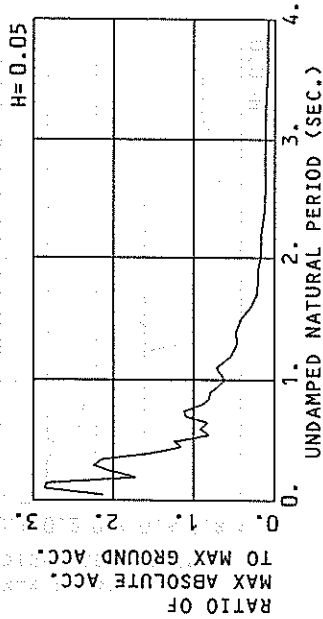
SMAC-B2 EQUIVALENT



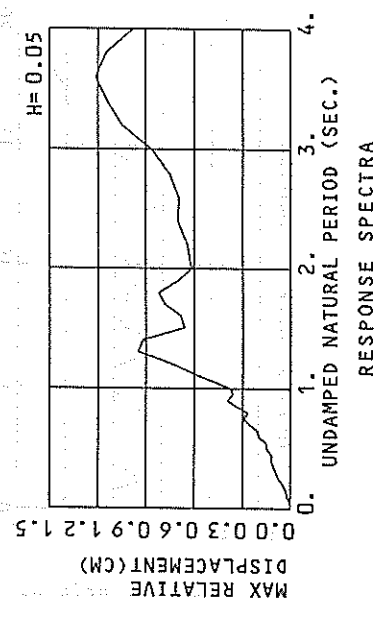
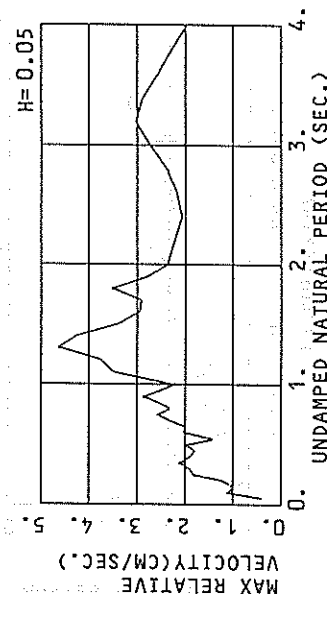
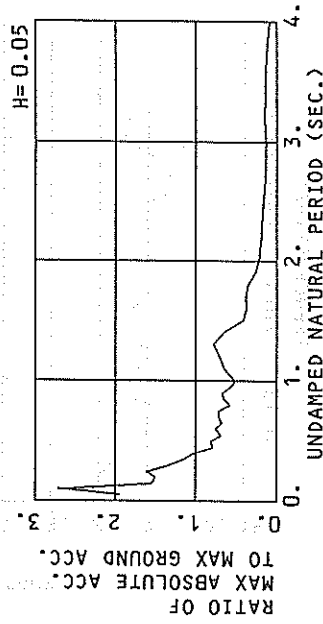




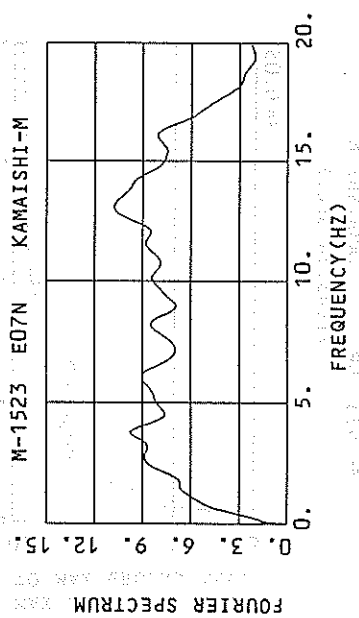
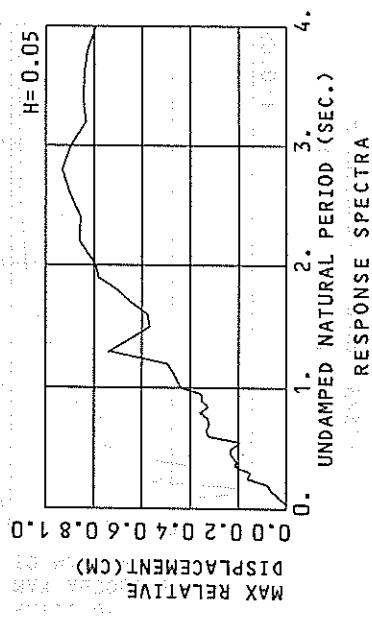
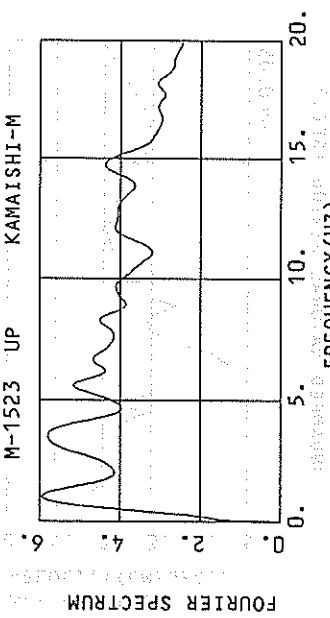
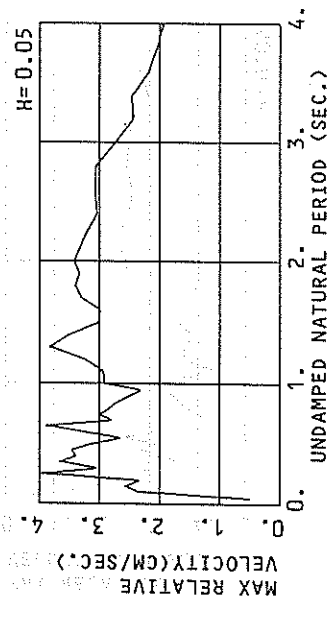
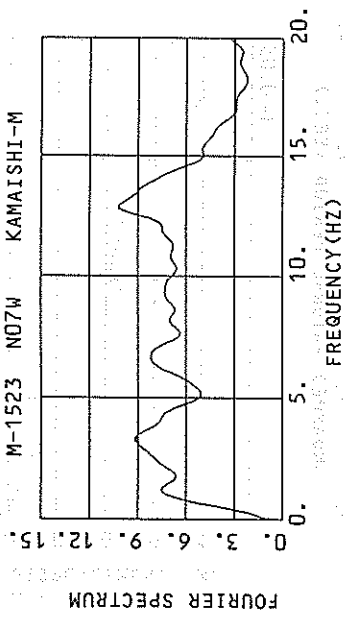
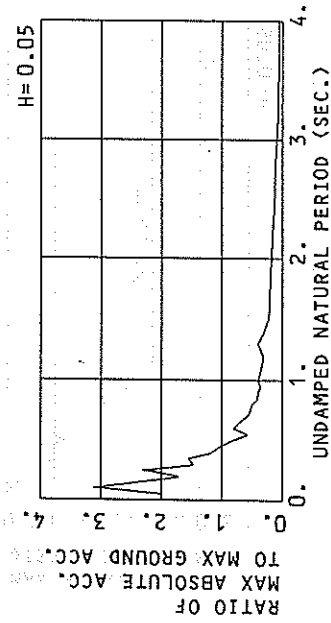
M-1523 N07N KAMAISHI-M
(1/FC=4.56 SEC.)



M-1523 UP KAMAISHI-M
(1/FC=5.14 SEC.)



M-1523 E07N KAMAISHI-M
 (1/FC=4.83 SEC.)



RESPONSE SPECTRUM

RECORD = M-1523 COMPONENT = NOTW SIGNAL = GR ACC CORRECTION = STATION = KAMAISHI-M
 DATE AND TIME = 1994-10-4-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 30.78 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	638.7	5.01	0.040	88.8	0.64	0.006	65.5	0.44	0.004	51.0	0.31	0.003	41.3	0.21	0.003
0.10	654.9	10.33	0.166	128.3	2.08	0.032	88.0	1.40	0.022	62.1	0.92	0.015	45.7	0.61	0.010
0.15	289.3	6.94	0.165	116.2	2.63	0.066	87.2	2.01	0.050	57.8	1.45	0.032	34.8	0.87	0.018
0.20	215.5	6.79	0.218	64.6	2.14	0.065	53.2	1.75	0.054	40.1	1.26	0.040	32.1	0.80	0.030
0.25	228.2	9.03	0.361	81.4	3.20	0.128	63.6	2.71	0.100	47.8	2.04	0.074	32.5	1.15	0.048
0.30	271.8	13.16	0.620	82.8	3.74	0.188	69.0	3.17	0.157	52.5	2.49	0.118	33.4	1.49	0.071
0.35	175.0	9.58	0.543	86.5	4.64	0.268	67.6	3.55	0.204	45.5	2.46	0.139	32.5	1.57	0.090
0.40	238.2	15.24	0.965	62.6	4.06	0.253	47.6	3.25	0.192	36.3	2.54	0.144	28.9	1.47	0.100
0.45	162.6	11.65	0.834	54.6	3.90	0.280	35.9	2.79	0.183	30.1	2.31	0.151	25.2	1.55	0.107
0.50	96.0	7.66	0.608	52.4	4.34	0.332	38.2	3.19	0.240	28.1	2.34	0.172	21.5	1.58	0.111
0.55	72.6	6.36	0.556	30.7	2.89	0.235	25.0	2.37	0.191	19.6	2.25	0.145	17.7	1.68	0.108
0.60	114.5	10.82	1.044	38.1	4.18	0.347	28.2	3.11	0.256	21.0	2.20	0.187	15.4	1.72	0.124
0.65	42.7	4.68	0.457	29.1	3.87	0.310	25.5	3.22	0.271	21.2	2.46	0.220	15.0	1.69	0.145
0.70	93.9	10.43	1.166	47.6	5.63	0.590	33.8	4.19	0.417	23.0	2.91	0.266	14.9	1.66	0.161
0.75	75.8	9.22	1.080	46.7	5.64	0.604	34.5	4.02	0.490	23.3	2.68	0.328	14.1	1.64	0.181
0.80	116.9	14.83	1.896	32.0	4.30	0.518	27.6	3.78	0.445	22.6	2.93	0.360	14.2	1.60	0.207
0.85	77.6	10.55	1.421	29.2	4.24	0.534	24.8	3.61	0.451	21.3	2.93	0.378	14.0	1.71	0.235
0.90	73.0	10.60	1.497	28.9	4.15	0.592	24.6	3.50	0.500	19.8	2.75	0.391	13.5	1.76	0.234
0.95	26.1	4.05	0.596	24.3	3.68	0.556	21.6	3.22	0.489	17.1	2.55	0.380	12.6	1.75	0.234
1.00	58.3	9.75	1.476	24.9	3.91	0.630	19.0	3.07	0.478	15.1	2.55	0.370	11.6	1.70	0.234
1.10	64.5	11.27	1.977	31.8	6.20	0.975	22.2	4.41	0.679	14.2	2.85	0.421	9.8	1.78	0.242
1.20	56.3	10.71	2.055	21.4	4.47	0.799	16.6	3.68	0.601	11.2	2.67	0.399	8.6	1.82	0.247
1.30	38.0	8.27	1.625	21.2	5.11	0.903	14.3	3.72	0.610	9.7	2.58	0.399	7.4	1.77	0.266
1.40	42.6	9.77	2.117	17.9	4.75	0.886	14.5	3.88	0.710	10.4	2.83	0.493	7.1	1.76	0.282
1.50	28.1	6.88	1.599	16.0	4.30	0.908	12.9	3.60	0.730	9.1	2.72	0.509	6.8	1.78	0.289
1.60	22.9	6.01	1.488	11.8	3.84	0.764	9.0	3.55	0.580	7.4	2.68	0.447	6.2	1.82	0.294
1.70	10.1	3.50	0.742	8.2	3.15	0.599	6.6	2.87	0.481	5.6	2.45	0.394	5.6	1.81	0.294
1.80	21.7	6.13	1.781	8.0	3.35	0.655	6.3	2.76	0.514	4.6	2.40	0.361	5.0	1.89	0.295
1.90	17.8	5.30	1.625	8.5	3.01	0.778	6.2	2.54	0.566	4.3	2.29	0.371	4.5	1.94	0.296
2.00	10.4	3.72	1.057	6.5	2.88	0.661	5.2	2.49	0.518	4.1	2.21	0.392	4.0	1.97	0.302
2.20	12.5	4.47	1.535	6.5	2.62	0.789	4.9	2.31	0.587	4.1	2.26	0.469	3.4	2.02	0.317
2.40	7.0	2.89	1.022	4.4	2.68	0.637	3.7	2.57	0.542	3.4	2.39	0.456	3.1	2.05	0.345
2.60	6.9	2.92	1.177	3.9	2.75	0.667	3.2	2.63	0.538	2.9	2.43	0.479	2.9	2.07	0.373
2.80	8.7	3.86	1.737	4.4	2.83	0.863	3.6	2.51	0.696	2.8	2.36	0.523	2.7	2.05	0.395
3.00	6.4	3.76	1.448	4.0	2.87	0.909	3.3	2.58	0.744	2.6	2.27	0.546	2.5	1.99	0.409
3.20	5.3	3.27	1.385	4.2	2.86	1.078	3.4	2.62	0.862	2.5	2.32	0.590	2.2	1.92	0.413
3.40	4.5	3.89	1.307	3.7	3.35	1.066	3.1	2.95	0.883	2.3	2.44	0.632	2.0	1.84	0.412
3.60	4.6	3.47	1.511	3.1	3.11	1.008	2.5	2.81	0.819	2.2	2.40	0.632	1.9	1.82	0.414
3.80	5.6	3.48	2.037	3.1	2.57	1.108	2.6	2.36	0.926	2.0	2.17	0.681	1.9	1.79	0.442
4.00	3.7	3.10	1.479	2.7	2.49	1.102	2.3	2.10	0.888	1.9	1.87	0.686	1.8	1.73	0.457

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = M-1523
 DATE AND TIME = 1994-10-4-22-23
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = UP
 SIGNAL = GR. ACC.
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION = MAX. GROUND ACC. = 28.60 (GAL)
 STATION = KAMAISHI-M

PER	DAMPING = 0			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	253.2	2.01	0.016	75.0	0.54	0.005	55.8	0.40	0.004	48.0	0.29	0.003	35.1	0.19	0.002
0.10	358.6	5.68	0.091	97.3	1.46	0.025	77.4	1.11	0.020	59.6	0.79	0.015	39.5	0.45	0.009
0.15	251.5	5.98	0.143	59.6	1.44	0.034	44.5	1.00	0.025	36.7	0.70	0.021	26.2	0.48	0.014
0.20	84.0	2.63	0.085	54.3	1.56	0.055	43.3	1.21	0.043	34.8	0.90	0.034	23.6	0.53	0.022
0.25	230.9	9.25	0.365	63.9	2.65	0.101	46.2	1.83	0.073	30.6	1.33	0.047	21.2	0.75	0.030
0.30	119.7	5.77	0.273	49.6	2.36	0.113	38.5	1.90	0.087	31.1	1.48	0.069	19.5	0.81	0.038
0.35	141.3	7.92	0.438	44.4	2.68	0.137	33.3	2.11	0.103	22.7	1.49	0.069	16.0	0.86	0.046
0.40	117.8	7.44	0.477	38.1	2.48	0.154	29.3	1.91	0.118	21.9	1.43	0.087	16.1	0.90	0.058
0.45	37.3	2.31	0.191	25.3	1.92	0.129	22.6	1.79	0.115	19.9	1.46	0.100	15.0	0.95	0.068
0.50	52.2	4.15	0.331	28.5	2.31	0.180	23.2	1.96	0.146	17.4	1.49	0.109	13.3	0.93	0.075
0.55	82.7	7.28	0.634	22.3	1.88	0.171	19.7	1.42	0.151	15.7	1.22	0.119	12.0	0.95	0.082
0.60	69.8	6.71	0.636	26.6	2.44	0.242	19.4	2.04	0.196	16.3	1.59	0.146	10.9	1.04	0.092
0.65	38.1	4.02	0.408	21.3	2.13	0.228	19.4	1.99	0.207	14.7	1.59	0.154	10.7	1.06	0.103
0.70	72.7	7.89	0.902	28.6	3.15	0.354	20.2	2.32	0.250	14.9	1.73	0.183	10.2	1.03	0.115
0.75	64.9	7.79	0.924	29.6	3.65	0.421	20.5	2.57	0.291	15.6	1.81	0.217	10.3	1.08	0.133
0.80	43.3	5.68	0.701	22.6	2.94	0.365	16.5	2.31	0.266	14.1	1.77	0.221	10.5	1.20	0.147
0.85	78.4	10.58	1.434	24.7	3.53	0.451	18.7	2.58	0.340	13.3	1.83	0.237	10.4	1.29	0.160
0.90	76.9	11.19	1.578	29.5	4.12	0.605	19.2	2.87	0.393	12.7	1.94	0.255	10.0	1.35	0.171
0.95	43.7	6.58	0.998	20.9	3.35	0.478	15.0	2.52	0.363	12.5	1.97	0.279	9.4	1.39	0.184
1.00	29.6	4.64	0.750	17.3	2.84	0.437	14.7	2.23	0.369	12.4	1.96	0.305	9.4	1.41	0.201
1.10	53.7	9.23	1.645	25.7	4.72	0.786	18.5	3.49	0.566	13.7	2.39	0.414	9.1	1.52	0.242
1.20	62.2	11.99	2.270	22.9	4.74	0.835	20.2	3.76	0.733	15.5	2.88	0.549	8.9	1.65	0.279
1.30	38.9	8.35	1.666	28.5	5.88	1.218	22.4	4.64	0.950	15.5	3.27	0.641	8.4	1.75	0.313
1.40	40.1	9.00	1.990	24.8	5.62	1.228	18.6	4.24	0.918	12.6	2.98	0.614	7.8	1.80	0.326
1.50	23.6	5.69	1.344	14.6	4.30	0.832	11.6	3.37	0.659	9.5	2.31	0.529	6.9	1.73	0.334
1.60	17.4	4.53	1.128	13.5	3.62	0.871	10.6	2.95	0.684	8.1	2.17	0.513	6.2	1.63	0.351
1.70	25.4	7.33	1.862	13.7	3.88	1.001	10.7	2.91	0.780	8.1	2.18	0.581	5.8	1.59	0.363
1.80	34.8	9.85	2.857	14.4	4.64	1.183	10.1	3.51	0.818	7.3	2.46	0.577	5.3	1.55	0.369
1.90	16.2	5.01	1.482	9.8	3.28	0.894	7.7	2.79	0.699	5.7	2.35	0.510	4.8	1.59	0.370
2.00	10.1	3.57	1.020	6.9	2.83	0.697	6.1	2.36	0.614	5.3	2.07	0.520	4.4	1.58	0.369
2.20	7.2	3.02	0.885	5.9	2.45	0.723	5.3	2.22	0.641	4.6	1.99	0.549	3.8	1.57	0.371
2.40	5.5	2.43	0.767	5.2	2.22	0.752	4.9	2.06	0.699	4.3	1.89	0.601	3.4	1.61	0.396
2.60	4.5	2.26	0.766	4.3	2.22	0.731	4.1	2.16	0.693	3.8	2.02	0.610	3.1	1.62	0.411
2.80	4.9	2.45	0.974	4.1	2.42	0.810	3.8	2.37	0.749	3.4	2.20	0.628	2.8	1.71	0.441
3.00	9.4	4.59	2.139	4.6	2.89	1.035	3.8	2.72	0.860	3.2	2.41	0.691	2.6	1.78	0.463
3.20	8.6	5.03	2.227	5.3	3.38	1.367	4.1	3.02	1.047	3.2	2.53	0.798	2.3	1.80	0.482
3.40	8.2	4.57	2.388	5.0	3.55	1.457	4.0	2.88	1.139	3.1	2.41	0.872	2.3	1.77	0.505
3.60	6.0	3.78	1.958	4.5	3.00	1.467	3.7	2.56	1.209	2.9	2.18	0.916	2.3	1.68	0.547
3.80	4.2	3.03	1.545	3.6	2.62	1.303	3.2	2.27	1.148	2.7	2.03	0.916	2.2	1.60	0.580
4.00	3.0	2.39	1.207	2.6	2.15	1.060	2.5	1.97	0.979	2.3	1.83	0.848	2.1	1.58	0.603

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = M-1523
 DATE AND TIME = 1994-10-4-22-23
 TIME LENGTH = 59.99 (SEC)

COMPONENT = E07N
 SIGNAL = GR. ACC.
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)

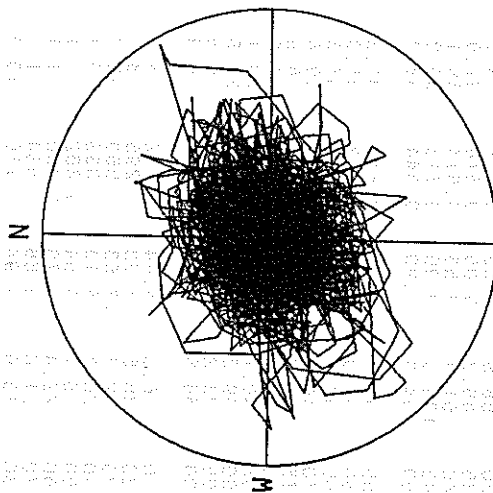
CORRECTION =
 MAX. GROUND ACC. = 44.11 (GAL)

STATION = KAMAISHI-M

PER	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	395.0	3.07	0.025	100.7	0.62	0.006	87.4	0.49	0.006	76.5	0.39	0.005	61.5	0.28	0.004
0.10	790.8	12.55	0.200	162.7	2.79	0.041	137.4	2.36	0.034	101.8	1.76	0.025	68.6	0.98	0.015
0.15	168.5	3.91	0.096	136.3	3.17	0.077	107.7	2.57	0.061	73.3	1.82	0.041	52.2	1.13	0.027
0.20	408.0	12.97	0.413	90.6	2.75	0.092	75.3	2.34	0.076	49.2	1.84	0.049	38.4	1.19	0.035
0.25	354.4	14.07	0.561	146.7	5.78	0.231	101.3	3.97	0.160	64.5	2.47	0.101	36.6	1.60	0.051
0.30	158.5	7.68	0.361	79.1	3.63	0.179	65.2	3.04	0.148	50.1	2.78	0.111	31.7	1.87	0.066
0.35	186.2	10.06	0.578	91.9	5.18	0.285	68.4	3.66	0.211	45.2	2.51	0.137	28.6	1.63	0.075
0.40	151.4	9.53	0.614	68.1	4.45	0.276	52.1	3.39	0.210	37.3	2.39	0.149	24.3	1.61	0.092
0.45	139.3	9.95	0.715	56.2	4.29	0.288	45.0	3.46	0.230	36.1	2.73	0.180	23.4	1.57	0.107
0.50	54.3	4.90	0.344	42.2	3.75	0.268	36.9	3.16	0.231	29.1	2.33	0.179	20.6	1.54	0.110
0.55	67.3	5.99	0.516	31.3	2.95	0.239	25.2	2.65	0.192	22.4	2.32	0.165	17.5	1.66	0.107
0.60	107.8	10.22	0.983	51.0	4.59	0.464	35.3	3.26	0.320	23.1	2.51	0.206	15.3	1.76	0.117
0.65	94.8	9.91	1.014	37.8	4.67	0.403	31.4	3.88	0.333	22.3	2.84	0.232	14.5	1.77	0.132
0.70	84.3	9.18	1.046	29.8	3.41	0.369	26.0	2.79	0.319	20.0	2.29	0.236	13.7	1.66	0.140
0.75	74.9	9.15	1.067	28.9	3.87	0.412	23.0	3.00	0.325	17.9	2.39	0.247	12.3	1.70	0.150
0.80	63.9	8.03	1.035	30.0	3.93	0.485	22.1	2.83	0.356	16.3	2.43	0.259	11.2	1.76	0.155
0.85	40.1	5.63	0.733	23.1	3.36	0.422	17.8	2.71	0.325	13.7	2.35	0.243	10.2	1.77	0.159
0.90	39.2	5.63	0.805	21.6	3.10	0.442	17.3	2.49	0.349	12.9	2.20	0.259	9.2	1.74	0.159
0.95	23.2	3.80	0.531	16.6	2.72	0.378	15.6	2.32	0.353	12.3	2.06	0.272	8.5	1.69	0.171
1.00	66.5	10.54	1.684	24.9	3.95	0.629	17.4	2.92	0.438	11.0	2.15	0.273	8.6	1.64	0.195
1.10	36.3	6.44	1.112	18.2	3.53	0.557	15.2	2.94	0.462	11.3	2.20	0.338	8.9	1.52	0.237
1.20	35.5	7.03	1.295	18.2	4.03	0.662	13.6	3.25	0.493	11.3	2.32	0.403	8.7	1.59	0.271
1.30	59.8	12.63	2.560	25.7	5.51	1.099	17.4	3.83	0.738	11.0	2.54	0.461	8.2	1.69	0.295
1.40	20.8	5.13	1.033	16.1	4.21	0.800	13.2	3.51	0.651	10.2	2.68	0.490	7.4	1.70	0.321
1.50	15.1	3.64	0.862	11.1	3.30	0.630	10.1	3.01	0.570	8.8	2.52	0.488	6.8	1.80	0.334
1.60	22.4	5.79	1.450	11.1	3.59	0.718	9.0	2.99	0.578	7.7	2.48	0.483	6.3	1.88	0.342
1.70	21.0	5.68	1.534	11.1	3.80	0.813	8.9	3.31	0.649	6.8	2.70	0.477	5.9	1.90	0.350
1.80	13.6	4.94	1.116	10.5	4.05	0.861	8.7	3.41	0.703	6.4	2.64	0.497	5.4	1.85	0.355
1.90	18.5	6.08	1.694	10.6	3.96	0.967	8.7	3.34	0.780	6.3	2.55	0.553	4.9	1.75	0.365
2.00	12.3	4.74	1.244	9.6	3.99	0.971	7.9	3.42	0.791	6.2	2.65	0.593	4.7	1.66	0.378
2.20	19.7	7.05	2.414	9.6	3.72	1.170	7.1	3.26	0.860	6.0	2.58	0.666	4.6	1.66	0.398
2.40	7.9	3.74	1.149	6.8	3.37	0.984	5.9	3.04	0.854	4.9	2.52	0.669	4.1	1.64	0.436
2.60	7.4	3.73	1.267	5.8	3.38	0.987	5.4	3.08	0.900	4.7	2.52	0.758	3.6	1.72	0.490
2.80	6.4	3.68	1.281	5.2	3.35	1.029	4.8	3.07	0.932	4.3	2.62	0.782	3.5	1.81	0.514
3.00	5.0	3.25	1.129	4.4	2.91	1.002	4.0	2.73	0.895	3.7	2.43	0.747	3.3	1.80	0.510
3.20	7.4	4.28	1.924	3.6	2.75	0.939	3.2	2.45	0.833	2.9	2.13	0.694	3.0	1.74	0.487
3.40	5.9	3.72	1.718	3.6	2.81	1.057	3.0	2.47	0.845	2.3	2.04	0.699	2.6	1.65	0.454
3.60	4.8	3.21	1.562	3.1	2.59	1.011	2.6	2.19	0.842	2.1	1.97	0.609	2.4	1.56	0.418
3.80	4.9	3.18	1.775	2.6	2.12	0.949	2.3	2.05	0.829	2.0	1.91	0.659	2.1	1.51	0.406
4.00	2.9	2.30	1.181	2.2	1.98	0.866	2.1	1.93	0.793	1.8	1.84	0.664	1.9	1.53	0.429

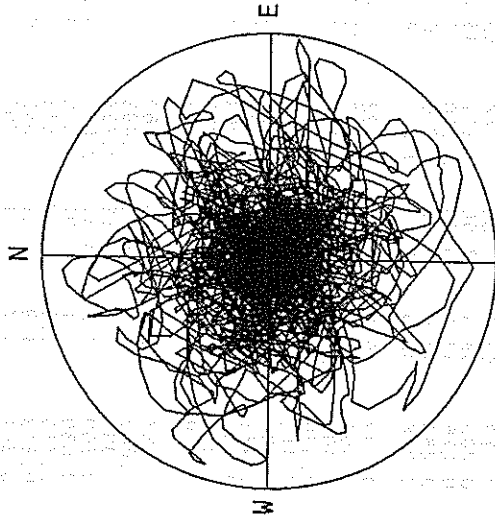
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

M-1523 KAMAISHI-M



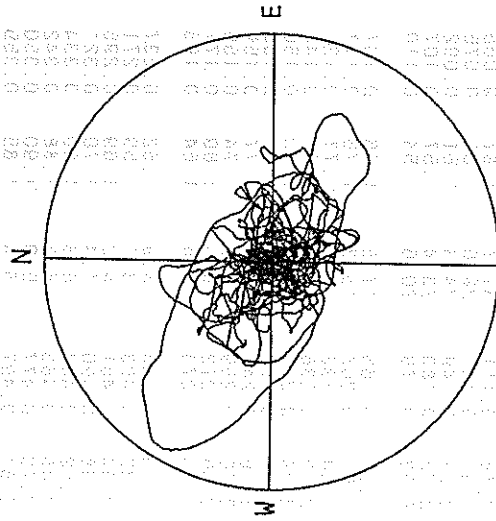
ACCELERATION
R=50.0 GAL
MAX=48.2 GAL

M-1523 KAMAISHI-M



VELOCITY
R=1.5 CM/SEC.
MAX=1.5 CM/SEC.

M-1523 KAMAISHI-M



DISPLACEMENT
R=0.50 CM
MAX=0.47 CM

RECORD NUMBER : S-2581

STATION : TOMAKOMAI-S

EARTHQUAKE DATA

DATE AND TIME 22:22 OCT. 4, 1994
LOCATION OF HYPOCENTER
EPICENTRAL REGION E OFF HOKKAIDO
LATITUDE 43° 22.3' N
LONGITUDE 147° 42.5' E
DEPTH 23.0KM
JMA MAGNITUDE 8.1

PEAK VALUES OF COMPONENTS

	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				

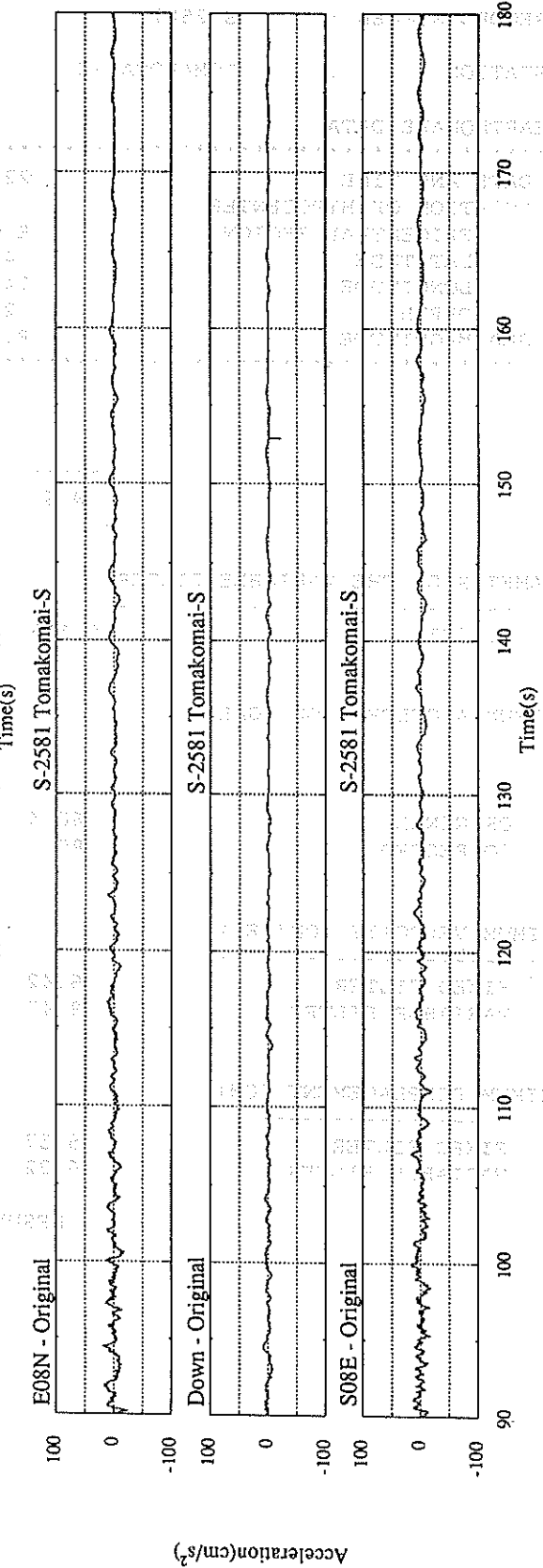
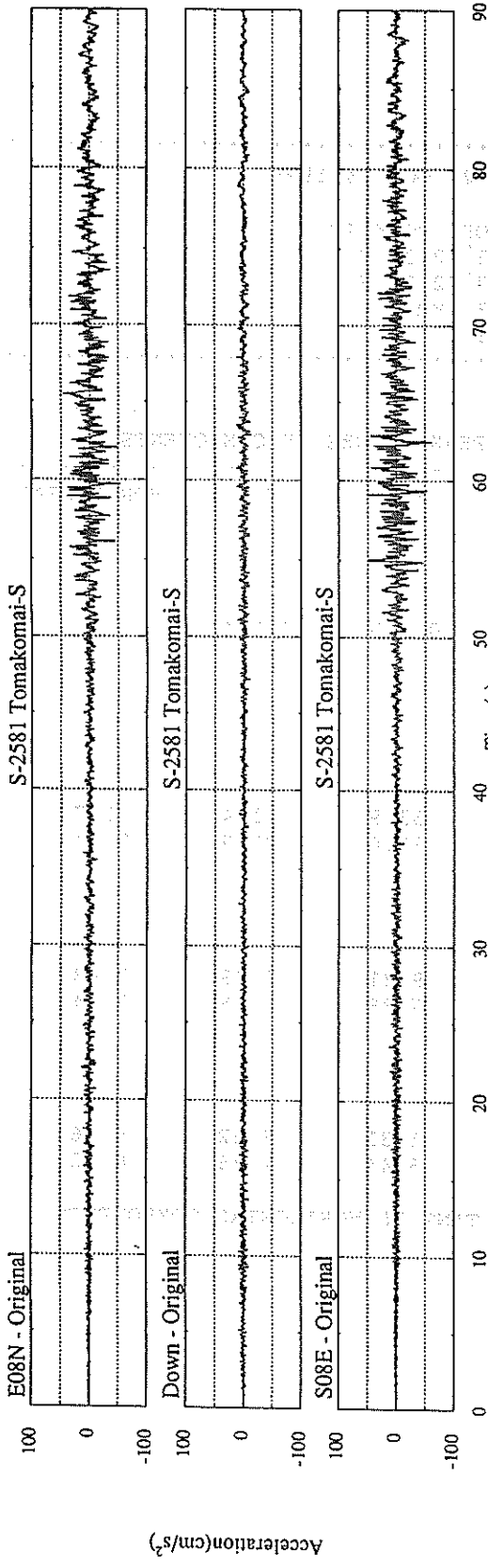
FC (HZ)	0.103	0.115	0.194	
MAXIMUM ACCELERATION (GAL)				

ORIGINAL	60.4	53.9	21.4	60.7
CORRECTED	80.7	80.0	21.9	81.4
MAXIMUM VELOCITY (CM/SEC)				

FIXED FILTER	6.42	9.31	3.49	9.43
VARIABLE FILTER	8.47	8.88	2.85	9.34
MAXIMUM DISPLACEMENT (CM)				

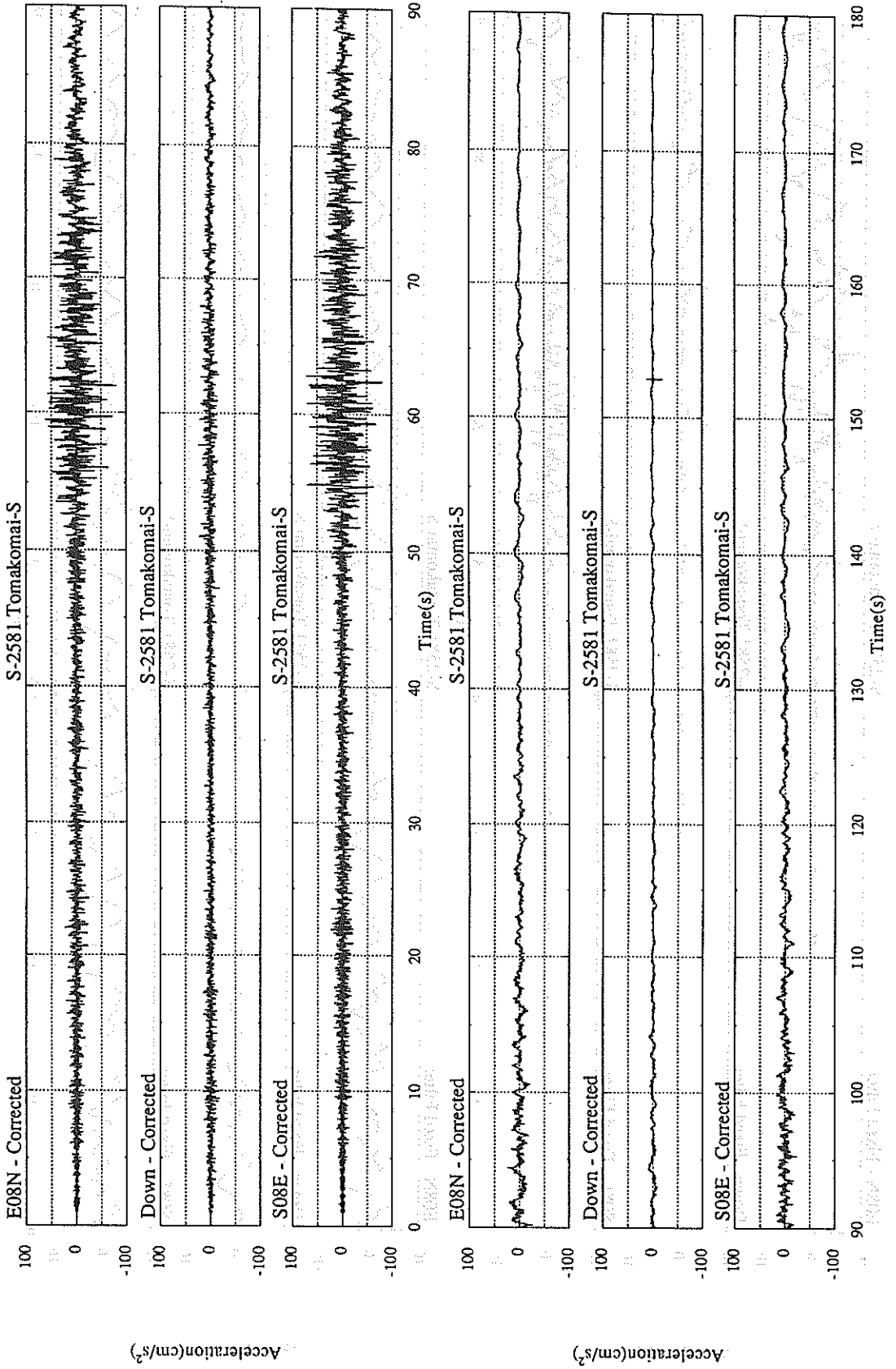
FIXED FILTER	5.57	6.31	2.32	6.46
VARIABLE FILTER	6.22	6.44	1.36	6.62

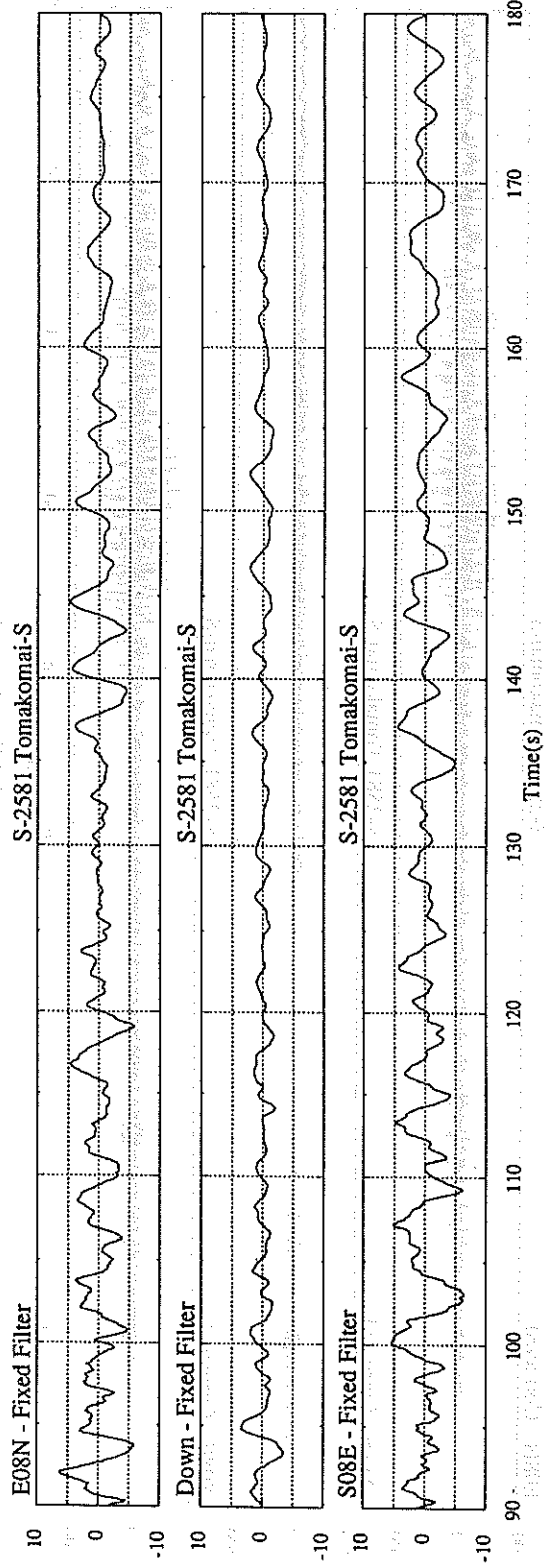
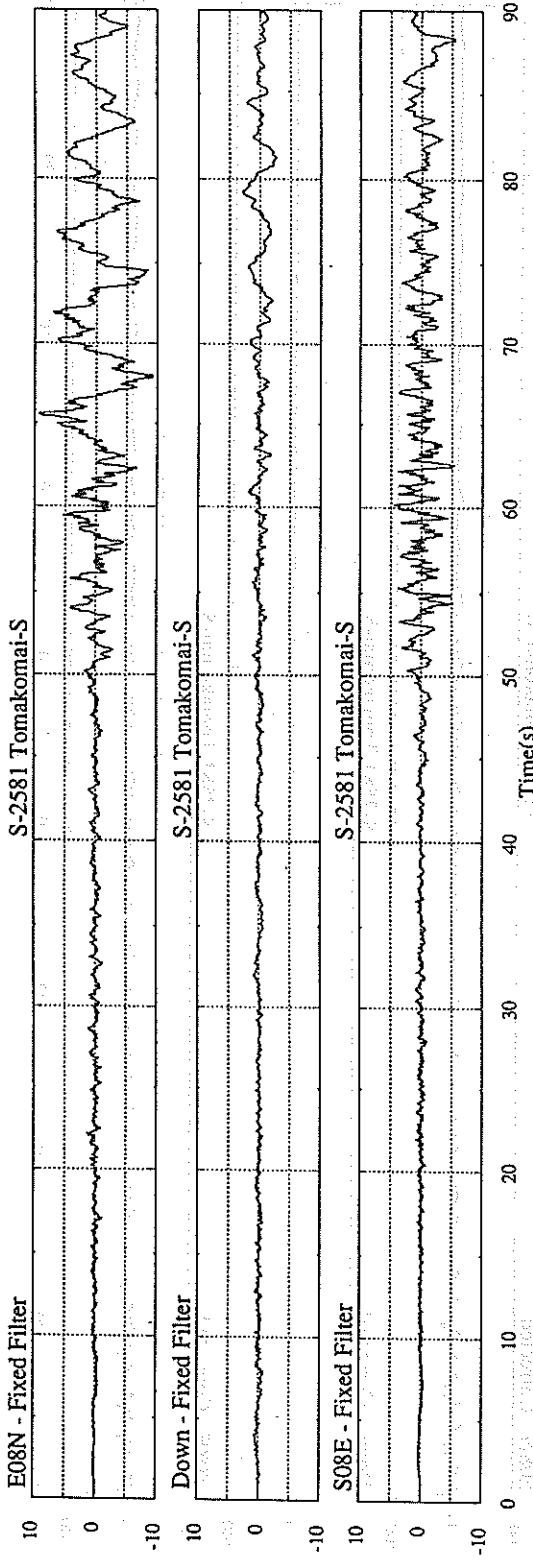
* RESULTANT OF HORIZONTAL COMPONENTS

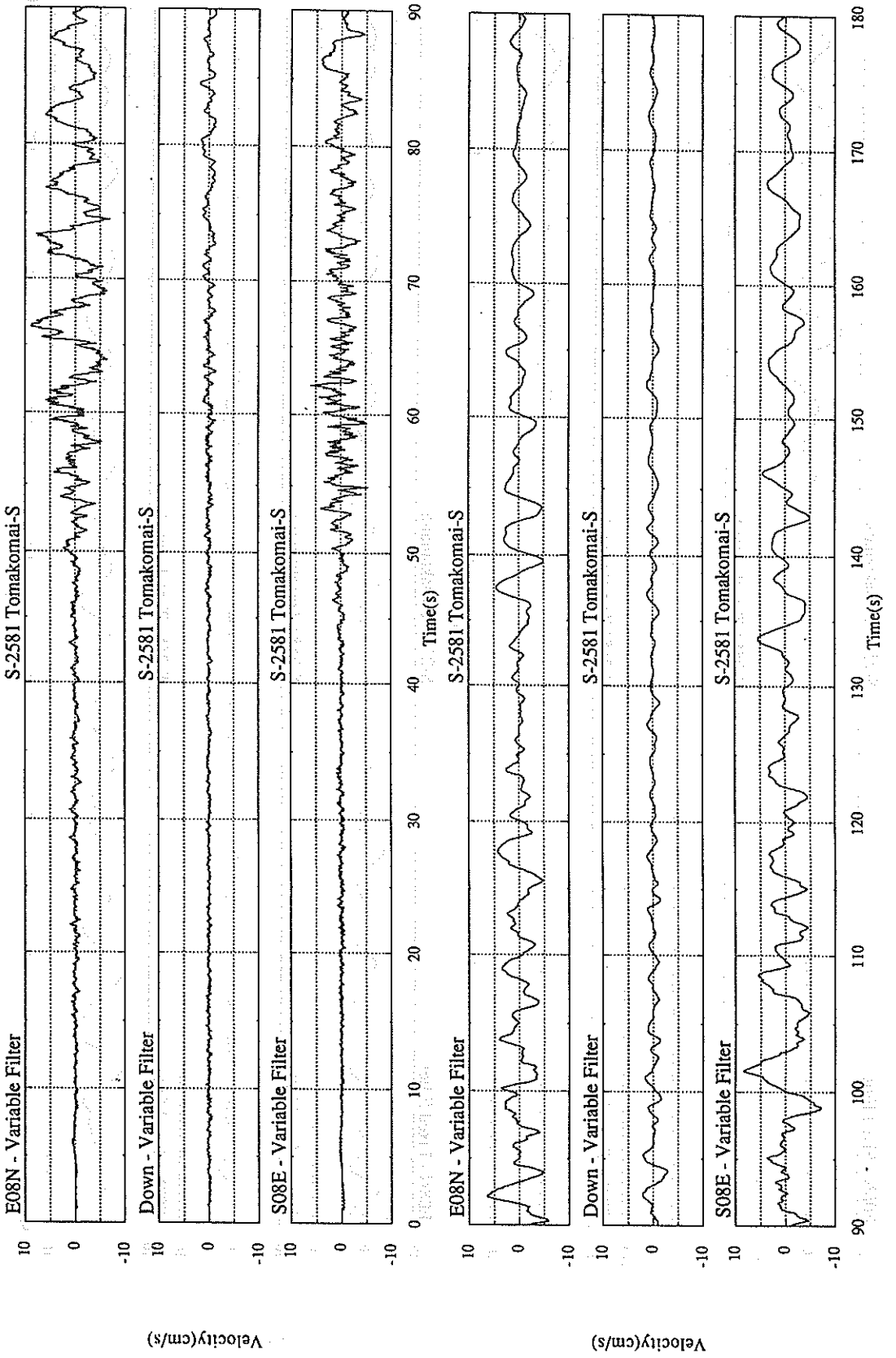


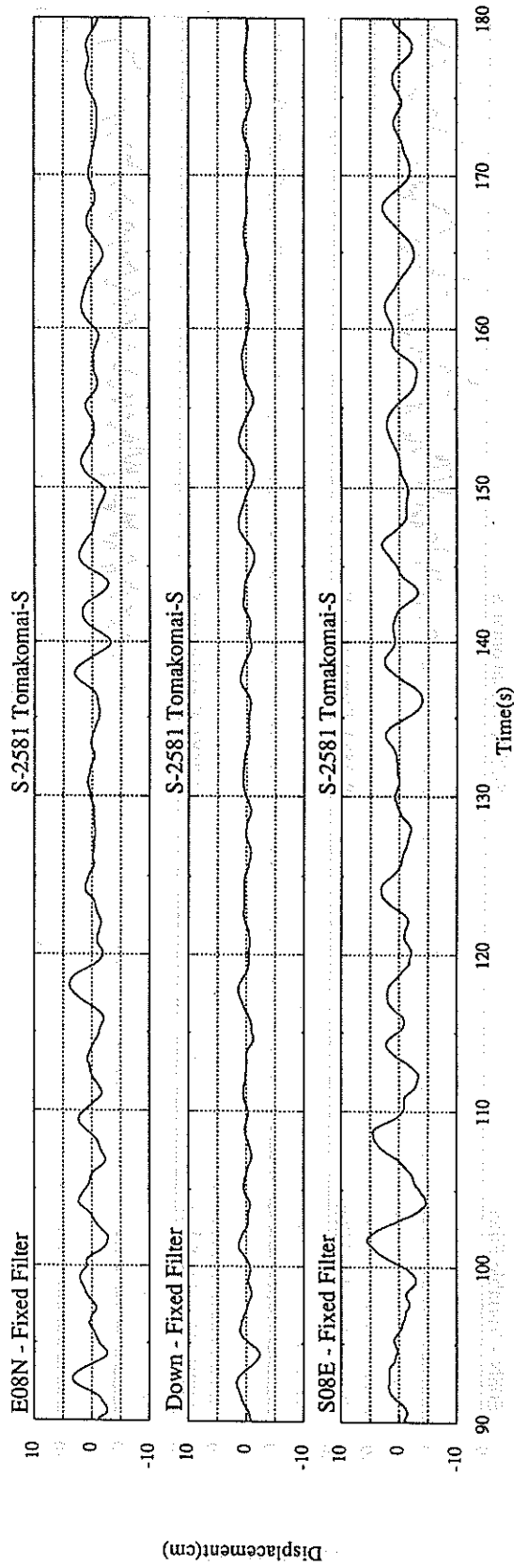
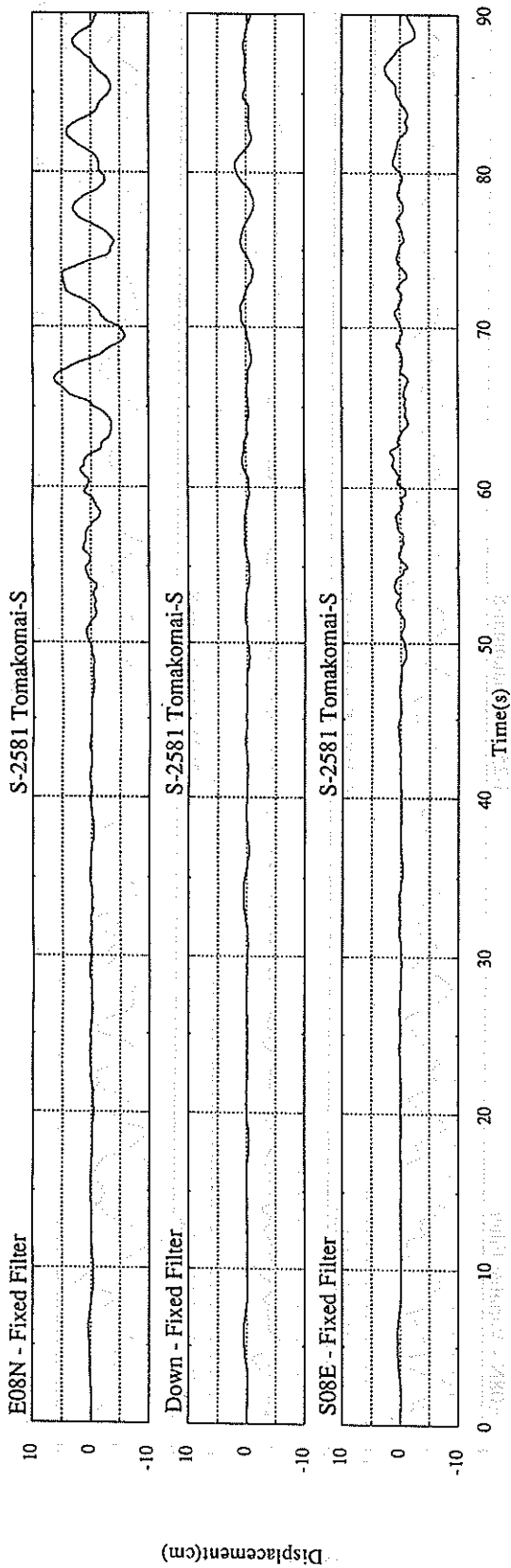
Acceleration(cm/s²)

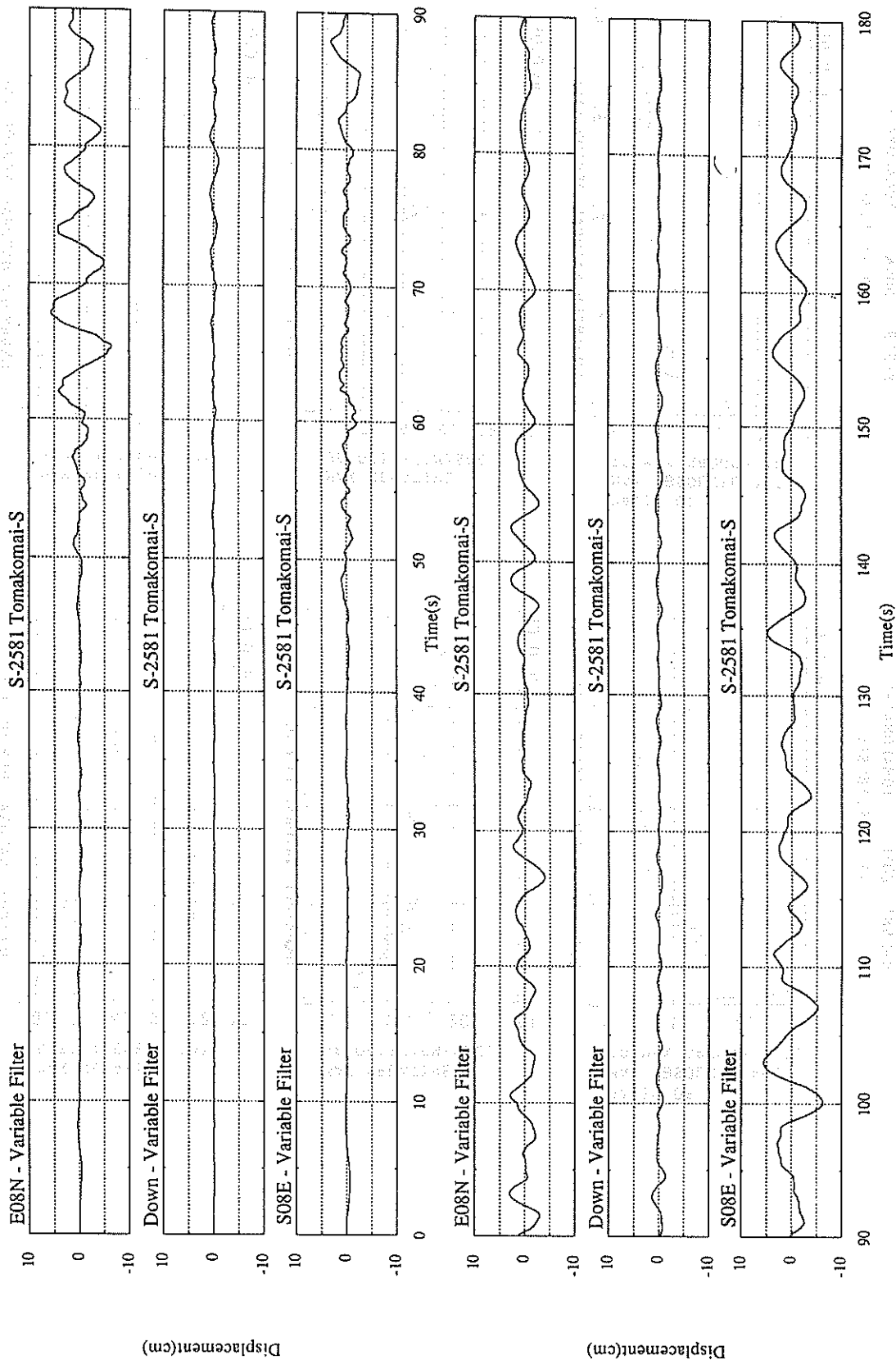
Acceleration(cm/s²)



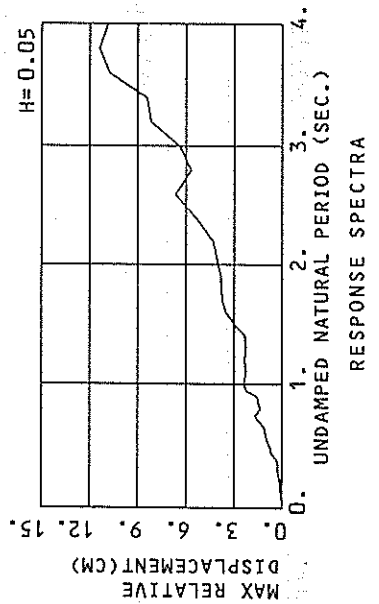
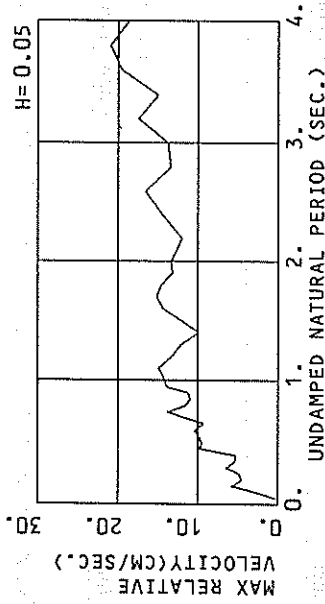
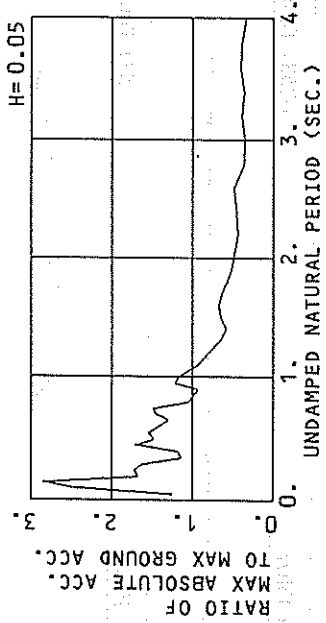




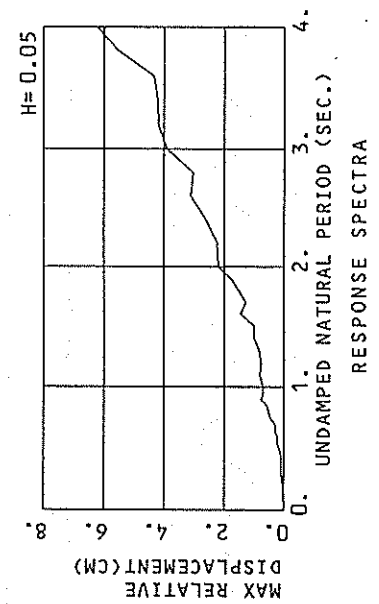
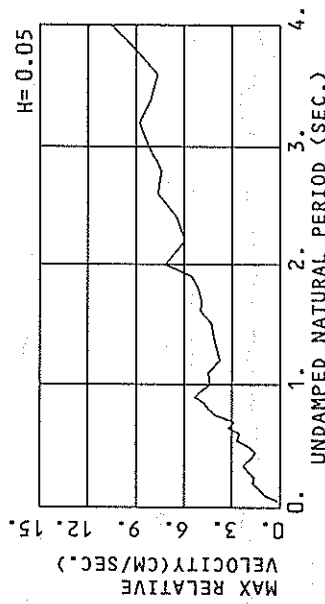
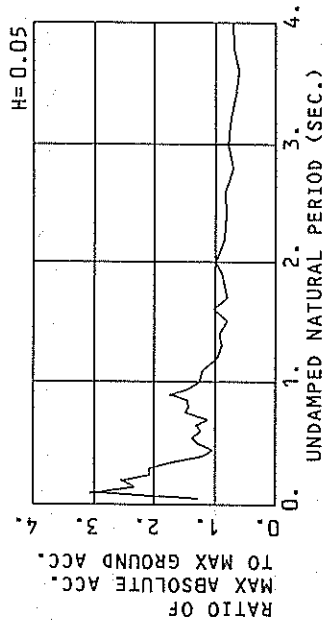




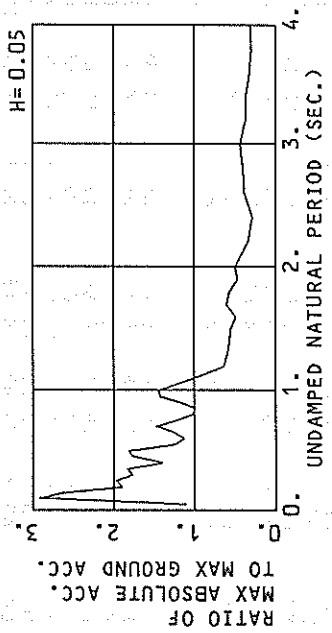
S-2581 E08N TOMAKOMAI-S
(1/FC=9.18 SEC.)



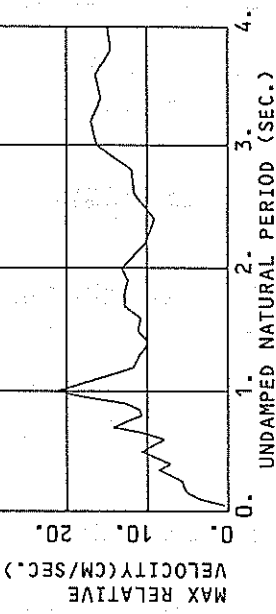
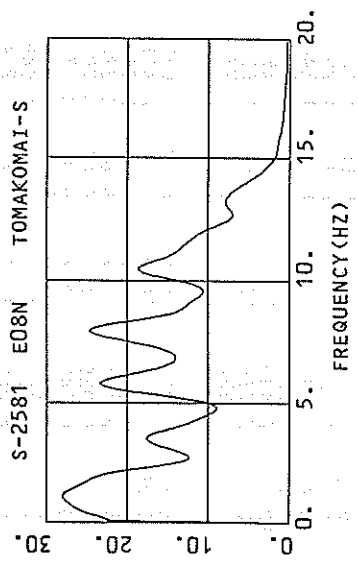
S-2581 DOWN TOMAKOMAI-S
(1/FC=5.49 SEC.)



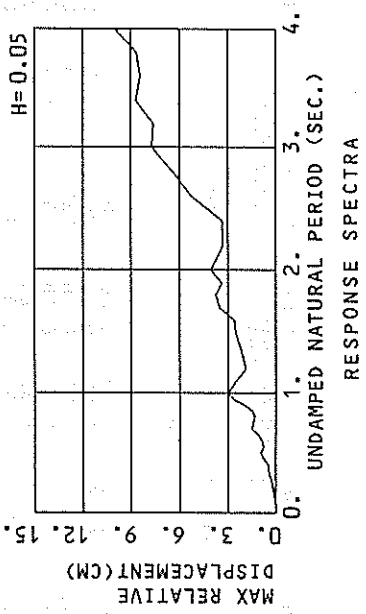
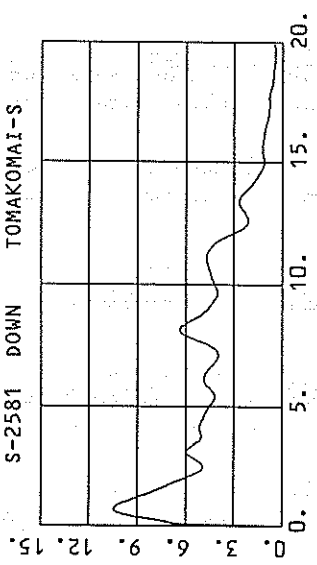
S-2581 S08E TOMAKOMAI-S
(1/FC=10.34SEC.)



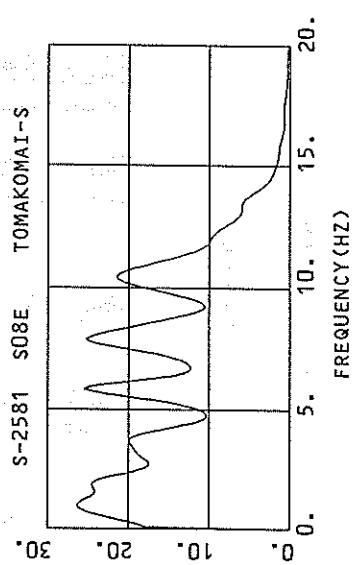
FOURIER SPECTRUM



FOURIER SPECTRUM



FOURIER SPECTRUM



RESPONSE SPECTRA

RESPONSE SPECTRUM

RECORD = S-2581 COMPONENT = E08N SIGNAL = GR. ACC. CORRECTION = STATION = TOMAKOMAI-S
 DATE AND TIME = 1994-10-04-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 80.31 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0.				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	124.3	0.49	0.008	101.5	0.33	0.005	100.2	0.30	0.005	99.2	0.28	0.006	95.7	0.26	0.006	95.7	0.26	0.006		
0.10	2373.6	37.75	0.601	263.6	3.92	0.067	201.1	3.01	0.051	149.8	2.19	0.037	99.7	1.27	0.024	99.7	1.27	0.024		
0.15	1079.0	25.67	0.615	294.1	7.23	0.167	228.3	5.66	0.128	155.0	3.81	0.086	102.4	2.05	0.053	102.4	2.05	0.053		
0.20	365.1	12.66	0.395	165.5	5.33	0.166	134.5	4.47	0.136	108.0	3.44	0.107	86.6	2.20	0.080	86.6	2.20	0.080		
0.25	365.1	14.19	0.578	164.2	6.33	0.259	137.9	4.85	0.216	120.9	3.95	0.187	87.3	2.56	0.121	87.3	2.56	0.121		
0.30	692.8	32.97	1.579	172.7	7.98	0.392	130.7	6.42	0.298	101.1	5.13	0.227	70.9	3.29	0.144	70.9	3.29	0.144		
0.35	223.1	12.39	0.692	111.9	6.81	0.347	92.3	5.42	0.283	75.5	4.21	0.231	66.2	3.34	0.186	66.2	3.34	0.186		
0.40	198.4	12.60	0.804	110.4	6.81	0.447	94.7	5.25	0.383	73.4	4.50	0.294	67.3	3.46	0.246	67.3	3.46	0.246		
0.45	324.4	23.21	1.664	185.0	13.52	0.947	137.0	9.74	0.701	97.6	6.44	0.490	69.2	3.81	0.314	69.2	3.81	0.314		
0.50	465.1	36.84	2.946	176.3	13.66	1.116	119.1	9.53	0.751	80.1	6.38	0.495	65.4	3.87	0.360	65.4	3.87	0.360		
0.55	331.5	28.43	2.540	171.3	13.71	1.311	124.1	9.81	0.947	91.1	7.20	0.687	63.2	4.48	0.445	63.2	4.48	0.445		
0.60	415.4	39.47	3.788	151.2	13.63	1.377	114.2	10.40	1.036	86.7	8.07	0.774	62.9	4.98	0.520	62.9	4.98	0.520		
0.65	339.5	34.12	3.634	137.9	13.53	1.475	104.1	9.29	1.108	83.8	8.28	0.878	60.2	5.23	0.587	60.2	5.23	0.587		
0.70	240.2	26.15	2.981	145.0	16.39	1.797	116.7	11.66	1.441	85.5	9.44	1.038	56.7	5.75	0.647	56.7	5.75	0.647		
0.75	261.5	30.79	3.726	161.8	18.47	2.303	119.8	13.81	1.699	80.3	9.55	1.128	53.4	5.93	0.698	53.4	5.93	0.698		
0.80	214.7	27.75	3.480	106.5	14.09	1.733	84.5	11.54	1.365	68.5	8.81	1.086	49.9	5.91	0.739	49.9	5.91	0.739		
0.85	158.0	20.98	2.891	94.7	13.44	1.731	80.2	10.96	1.461	65.2	8.60	1.167	46.9	6.17	0.777	46.9	6.17	0.777		
0.90	227.1	32.54	4.664	106.6	14.67	2.187	75.7	11.17	1.549	63.9	8.80	1.279	45.8	6.42	0.818	45.8	6.42	0.818		
0.95	397.6	59.70	9.089	143.9	21.95	3.287	98.1	13.86	2.233	65.4	9.34	1.461	42.8	6.55	0.856	42.8	6.55	0.856		
1.00	276.8	44.64	7.012	128.8	21.02	3.258	94.7	14.14	2.386	64.2	9.91	1.598	40.6	6.58	0.881	40.6	6.58	0.881		
1.10	147.3	25.72	4.513	92.3	18.03	2.824	74.8	14.94	2.278	53.9	10.73	1.615	35.3	6.41	0.895	35.3	6.41	0.895		
1.20	162.9	30.80	5.943	80.5	16.09	2.929	64.7	13.23	2.342	48.8	9.65	1.730	31.3	6.04	0.998	31.3	6.04	0.998		
1.30	120.2	24.48	5.148	64.1	14.42	2.742	53.4	12.01	2.273	42.3	9.07	1.730	29.9	5.56	1.121	29.9	5.56	1.121		
1.40	90.9	20.10	4.512	57.5	12.49	2.851	47.0	9.91	2.526	39.7	8.80	1.927	28.2	6.16	1.208	28.2	6.16	1.208		
1.50	119.8	28.41	6.826	64.5	14.04	3.670	52.8	12.04	2.993	39.4	9.46	2.195	25.3	6.50	1.248	25.3	6.50	1.248		
1.60	285.2	72.44	18.495	80.0	19.51	5.182	54.2	14.35	3.493	37.2	9.85	2.256	22.5	6.70	1.252	22.5	6.70	1.252		
1.70	85.4	22.26	6.251	63.2	17.64	4.621	51.5	15.14	3.748	35.0	10.85	2.490	21.7	6.77	1.452	21.7	6.77	1.452		
1.80	189.1	53.66	15.519	65.3	20.37	5.350	46.4	14.58	3.787	34.1	10.11	2.726	22.6	6.65	1.632	22.6	6.65	1.632		
1.90	107.7	32.39	9.846	54.7	15.86	4.989	42.0	13.13	3.822	31.8	9.52	2.852	22.6	6.51	1.632	22.6	6.51	1.632		
2.00	89.3	29.28	9.045	55.2	17.21	5.593	39.6	13.29	3.992	28.3	9.02	2.809	21.9	6.41	1.883	21.9	6.41	1.883		
2.20	89.9	31.70	11.019	46.9	16.06	5.739	35.2	11.98	4.299	26.9	8.55	3.229	19.5	6.34	2.039	19.5	6.34	2.039		
2.40	81.3	31.36	11.861	46.2	17.78	6.734	36.9	14.45	5.357	29.3	10.26	4.181	18.8	6.70	2.418	18.8	6.70	2.418		
2.60	90.4	37.30	15.471	49.8	21.13	8.518	39.1	16.60	6.663	28.8	12.34	4.837	18.0	7.89	2.816	18.0	7.89	2.816		
2.80	58.8	26.24	11.677	34.6	15.01	6.864	28.7	13.40	5.681	22.6	12.26	4.741	17.4	8.66	3.236	17.4	8.66	3.236		
3.00	37.2	18.41	8.474	30.8	14.81	7.019	28.2	13.69	6.396	22.6	12.72	5.050	18.1	9.09	3.704	18.1	9.09	3.704		
3.20	77.9	39.11	20.196	44.5	22.87	11.538	31.6	17.44	8.167	24.1	13.87	6.042	18.4	9.40	4.170	18.4	9.40	4.170		
3.40	49.6	25.94	14.509	35.9	18.68	10.499	28.9	15.00	8.401	23.4	13.88	6.632	18.3	9.50	4.549	18.3	9.50	4.549		
3.60	79.3	44.40	26.041	43.3	24.45	14.185	32.9	19.54	10.744	24.4	14.27	7.823	17.6	9.33	4.945	17.6	9.33	4.945		
3.80	80.6	48.40	29.477	41.6	26.41	15.184	31.3	20.96	11.392	24.6	15.63	8.655	16.8	8.89	5.274	16.8	8.89	5.274		
4.00	42.0	24.91	17.014	32.2	20.28	13.030	26.9	18.60	10.880	22.5	15.39	8.933	16.7	9.17	5.536	16.7	9.17	5.536		

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = S-2581 COMPONENT = DOWN SIGNAL = GR. ACC. CORRECTION = STATION = TOMAKOMAI-S
 DATE AND TIME = 1994-10-04-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 21.84 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0.				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	77.1	0.55	0.005	28.2	0.13	0.002	28.1	0.12	0.002	28.3	0.11	0.002	27.4	0.09	0.002	27.4	0.09	0.002		
0.10	184.6	2.90	0.047	88.7	1.28	0.023	66.8	0.95	0.017	47.6	0.68	0.012	34.6	0.38	0.012	34.6	0.38	0.008		
0.15	265.8	6.34	0.151	74.3	1.78	0.042	56.0	1.26	0.029	35.4	0.87	0.020	29.4	0.51	0.020	29.4	0.51	0.015		
0.20	243.8	7.58	0.247	69.8	2.19	0.070	55.5	1.68	0.056	41.5	1.17	0.041	27.8	0.68	0.041	27.8	0.68	0.026		
0.25	127.6	5.03	0.202	59.5	2.20	0.094	45.4	1.63	0.071	32.2	1.08	0.051	22.2	0.77	0.051	22.2	0.77	0.037		
0.30	214.4	10.15	0.489	62.0	3.09	0.142	45.7	2.02	0.104	31.8	1.42	0.071	18.0	0.84	0.071	18.0	0.84	0.049		
0.35	135.0	7.24	0.419	50.2	2.94	0.155	37.9	2.29	0.117	26.1	1.57	0.079	17.3	0.93	0.079	17.3	0.93	0.049		
0.40	71.8	4.58	0.291	36.9	2.48	0.149	26.1	1.81	0.105	18.9	1.24	0.074	16.9	0.92	0.074	16.9	0.92	0.061		
0.45	60.3	4.03	0.309	28.4	1.98	0.146	22.8	1.53	0.116	17.9	1.13	0.090	16.6	0.86	0.090	16.6	0.86	0.073		
0.50	122.1	9.55	0.774	36.2	2.80	0.229	28.0	2.02	0.177	19.6	1.47	0.121	16.6	0.98	0.121	16.6	0.98	0.089		
0.55	113.5	10.26	0.870	43.5	3.91	0.333	30.1	2.69	0.243	21.2	1.81	0.158	16.4	1.13	0.158	16.4	1.13	0.105		
0.60	173.9	16.65	0.674	29.8	2.67	0.272	26.8	2.53	0.229	19.7	1.92	0.176	15.8	1.38	0.176	15.8	1.38	0.125		
0.65	134.6	13.75	1.440	37.8	4.15	0.404	28.7	3.19	0.306	20.5	2.26	0.216	15.8	1.64	0.216	15.8	1.64	0.155		
0.70	118.0	8.67	0.975	31.2	3.54	0.386	24.7	2.85	0.304	21.3	2.50	0.260	16.8	1.88	0.260	16.8	1.88	0.187		
0.75	118.0	13.33	1.682	40.7	4.87	0.579	32.5	4.00	0.461	23.8	3.20	0.344	17.5	2.09	0.344	17.5	2.09	0.219		
0.80	64.0	7.85	1.037	36.4	4.92	0.589	31.6	4.44	0.510	25.2	3.63	0.359	17.7	2.22	0.359	17.7	2.22	0.250		
0.85	91.9	12.01	1.682	36.2	5.18	0.861	31.7	4.75	0.577	25.9	3.79	0.467	17.3	2.24	0.467	17.3	2.24	0.277		
0.90	96.1	13.38	1.972	51.1	7.36	1.046	37.9	5.31	0.774	26.5	3.56	0.531	16.2	2.15	0.531	16.2	2.15	0.297		
0.95	68.2	10.29	1.559	38.4	6.27	0.876	30.8	4.92	0.701	23.3	3.51	0.518	15.3	2.03	0.518	15.3	2.03	0.307		
1.00	59.3	9.44	1.502	35.7	5.57	0.903	27.5	4.39	0.694	20.2	3.28	0.504	14.4	1.86	0.504	14.4	1.86	0.328		
1.10	120.0	20.96	3.679	33.1	6.06	1.013	26.2	4.48	0.800	19.7	3.16	0.591	14.0	2.27	0.591	14.0	2.27	0.385		
1.20	43.9	8.21	1.602	22.5	4.16	0.821	20.8	3.75	0.755	17.5	3.25	0.625	13.1	2.33	0.625	13.1	2.33	0.431		
1.30	62.6	12.42	2.678	27.6	5.41	1.181	19.6	3.98	0.834	15.8	3.38	0.664	12.5	2.33	0.664	12.5	2.33	0.473		
1.40	96.1	21.04	4.771	27.7	5.94	1.373	20.2	4.17	1.000	15.0	3.42	0.732	11.8	2.29	0.732	11.8	2.29	0.518		
1.50	45.4	10.14	2.587	24.4	5.50	1.392	17.5	4.26	0.995	13.6	3.59	0.758	10.7	2.39	0.758	10.7	2.39	0.565		
1.60	64.9	15.97	4.208	33.0	7.60	2.139	22.2	4.97	1.435	14.2	3.92	0.902	10.2	2.54	0.902	10.2	2.54	0.612		
1.70	38.7	9.85	2.832	23.5	6.06	1.717	17.4	4.91	1.270	14.1	3.96	1.015	10.2	2.72	1.015	10.2	2.72	0.692		
1.80	41.6	12.61	3.412	24.2	6.54	1.986	18.4	5.12	1.504	14.1	4.02	1.125	10.5	2.88	1.125	10.5	2.88	0.798		
1.90	47.7	14.36	4.365	25.1	7.30	2.289	19.3	5.51	1.755	13.7	4.39	1.232	10.9	2.98	1.232	10.9	2.98	0.916		
2.00	73.7	23.36	7.472	32.9	10.67	3.326	21.7	7.16	2.188	14.4	4.65	1.444	11.2	3.02	1.444	11.2	3.02	1.035		
2.20	22.2	8.32	2.721	20.7	6.93	2.529	18.3	5.93	2.229	14.7	4.81	1.765	11.5	3.03	1.765	11.5	3.03	1.258		
2.40	30.3	12.03	4.421	20.6	7.54	3.005	17.9	6.45	2.601	14.5	5.48	2.073	11.3	3.49	2.073	11.3	3.49	1.466		
2.60	52.7	22.23	9.016	23.0	9.50	3.935	18.2	7.64	3.103	14.0	6.04	2.351	10.8	3.81	2.351	10.8	3.81	1.660		
2.80	20.3	8.24	4.030	17.3	8.54	3.430	15.3	7.42	3.032	12.9	6.05	2.506	10.4	4.00	2.506	10.4	4.00	1.852		
3.00	34.8	16.92	7.931	23.6	11.06	5.370	17.2	8.19	3.898	13.4	6.58	2.999	10.0	4.22	2.999	10.0	4.22	2.044		
3.20	38.1	19.53	9.878	21.7	11.42	5.632	16.2	8.79	4.186	13.5	6.95	3.426	9.6	4.58	3.426	9.6	4.58	2.223		
3.40	24.6	14.04	7.206	16.4	9.83	4.792	14.5	8.07	4.218	12.8	6.74	3.651	9.1	4.88	3.651	9.1	4.88	2.354		
3.60	13.0	7.98	4.258	13.9	8.21	4.553	13.3	7.67	4.934	12.2	6.99	3.903	8.7	5.09	3.903	8.7	5.09	2.458		
3.80	25.5	15.00	9.330	17.6	10.82	6.439	15.1	9.04	5.477	12.0	7.69	4.274	8.1	5.29	4.274	8.1	5.29	2.497		
4.00	24.0	16.62	9.714	19.0	12.53	7.703	15.5	10.56	6.226	11.2	8.11	4.429	7.4	5.29	4.429	7.4	5.29	2.476		

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

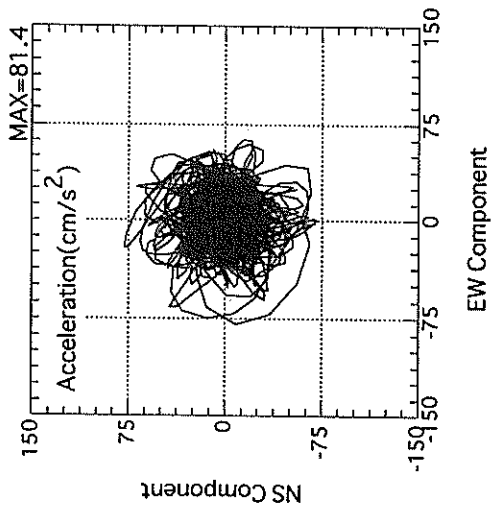
RECORD = S-2581 COMPONENT = S08E SIGNAL = GR. ACC. CORRECTION = STATION = TOMAKOMA1-S
 DATE AND TIME = 1994-10-04-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 80.67 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

DAMPING = 0.025 DAMPING = 0.050 DAMPING = 0.100 DAMPING = 0.250

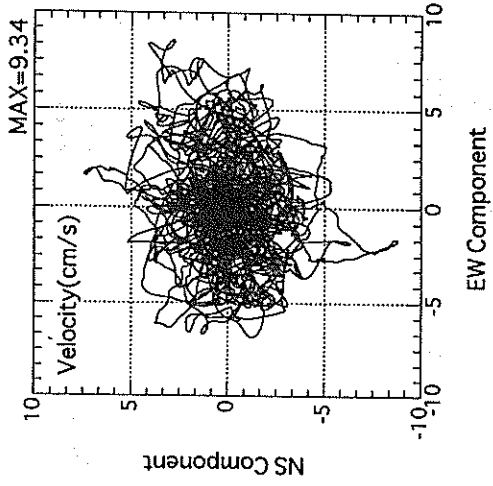
PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	114.3	0.58	0.007	90.1	0.39	0.006	89.2	0.36	0.006	88.5	0.32	0.006
0.10	1565.2	24.77	0.396	297.0	4.59	0.076	235.0	3.48	0.059	171.8	2.49	0.043
0.15	512.1	11.83	0.292	274.0	6.24	0.155	211.8	4.93	0.120	154.3	3.31	0.086
0.20	687.2	21.78	0.696	184.7	6.53	0.185	153.3	5.46	0.155	120.9	4.20	0.118
0.25	799.4	31.58	1.266	219.7	7.79	0.347	159.1	5.59	0.251	116.3	4.31	0.181
0.30	798.9	37.72	1.821	209.5	9.76	0.479	143.1	7.02	0.325	118.0	5.13	0.112
0.35	248.7	13.36	0.772	153.0	9.11	0.475	148.3	8.55	0.460	124.3	6.76	0.329
0.40	196.0	12.12	0.794	143.4	8.79	0.579	142.6	7.11	0.454	97.6	5.58	0.304
0.45	208.7	14.28	1.071	174.2	11.56	0.894	142.7	8.96	0.728	107.9	6.36	0.543
0.50	657.2	52.08	4.162	216.1	16.01	1.369	146.2	10.59	0.921	98.1	6.96	0.607
0.55	203.7	16.82	1.561	136.6	12.27	1.045	100.3	9.33	0.765	80.2	6.68	0.601
0.60	399.1	37.10	3.612	110.9	11.45	1.010	91.5	7.88	0.829	78.0	6.73	0.694
0.65	259.1	26.51	2.773	112.5	11.15	1.202	102.1	10.35	1.086	86.0	8.71	0.900
0.70	382.7	42.81	4.750	167.3	18.82	2.073	118.5	14.12	1.463	90.7	10.37	1.099
0.75	190.2	21.86	2.710	111.5	14.28	1.586	100.4	12.80	1.424	83.3	10.32	1.173
0.80	300.0	37.43	4.863	96.3	11.76	1.559	82.8	10.73	1.334	73.9	9.42	1.173
0.85	191.8	15.10	1.862	88.9	12.73	1.445	79.6	10.95	1.445	68.7	8.90	1.228
0.90	101.2	27.04	3.922	116.7	15.59	2.391	95.8	12.77	1.960	72.9	10.41	1.460
0.95	423.5	64.00	9.682	152.7	22.11	3.485	115.4	17.38	2.625	77.9	13.19	1.741
1.00	397.8	82.54	10.076	157.2	27.72	3.977	116.4	21.34	2.933	78.1	14.62	1.939
1.10	193.7	32.96	5.936	101.3	20.24	3.101	82.0	16.58	2.500	60.3	12.37	1.789
1.20	25.50	25.50	4.839	63.6	13.97	2.316	51.6	11.70	1.871	44.2	9.16	1.564
1.30	110.6	24.32	4.736	65.8	13.72	2.814	47.7	10.96	2.036	34.2	8.93	1.434
1.40	111.6	24.31	5.541	62.3	13.25	3.086	45.4	9.84	2.251	30.9	8.41	1.487
1.50	138.5	32.45	7.894	61.9	15.02	3.526	44.4	11.13	2.520	29.8	7.63	1.671
1.60	137.7	35.05	8.932	59.2	15.51	3.836	39.7	10.75	2.566	31.5	8.28	2.015
1.70	89.8	23.79	6.577	61.0	16.36	4.456	48.1	12.78	3.501	34.3	8.95	2.453
1.80	86.5	24.37	7.102	59.3	17.06	4.863	45.9	12.78	3.748	32.1	8.92	2.566
1.90	149.2	45.06	13.642	54.5	17.21	4.978	37.4	12.35	3.393	26.4	8.23	2.365
2.00	92.6	29.25	9.387	53.8	17.82	5.445	40.1	13.06	4.047	25.9	8.15	2.572
2.20	62.7	21.26	7.684	35.7	11.76	4.374	26.9	10.15	3.287	21.6	7.67	2.585
2.40	55.1	19.12	8.042	25.3	11.01	3.678	23.0	9.00	3.338	22.3	7.32	2.922
2.60	64.1	24.62	10.978	40.8	15.13	6.987	30.8	11.57	5.263	22.4	8.79	3.759
2.80	45.4	18.29	9.021	40.2	15.48	7.967	32.4	11.87	6.417	23.8	8.99	4.626
3.00	83.1	36.47	18.954	48.8	22.00	10.979	35.2	16.26	7.702	23.9	10.83	5.031
3.20	37.7	19.72	9.781	37.5	21.52	9.716	29.5	16.93	7.632	21.6	11.21	5.469
3.40	60.7	33.21	17.779	38.3	20.67	11.209	29.9	15.67	8.707	21.1	11.20	6.041
3.60	47.7	27.59	15.668	32.5	19.95	10.639	25.8	16.38	8.421	19.7	11.91	6.386
3.80	28.9	19.09	10.559	25.1	17.45	9.155	23.7	14.48	8.644	20.4	10.89	7.345
4.00	44.2	29.28	17.899	29.6	18.27	11.963	24.8	14.80	10.005	20.7	11.45	8.249

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

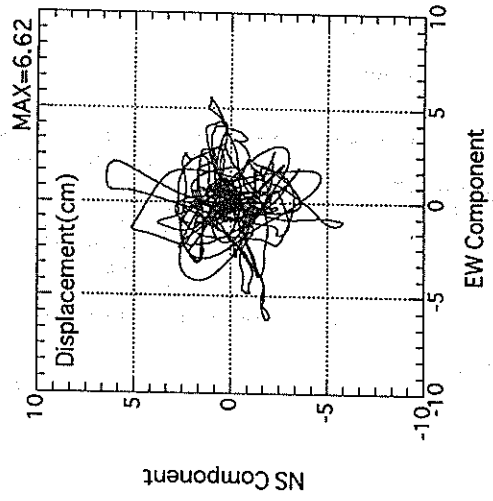
S-2581 Tomakomai-S



S-2581 Tomakomai-S



S-2581 Tomakomai-S



RECORD NUMBER : F-676
 STATION : OTARU-G

EARTHQUAKE DATA

 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

PEAK VALUES OF COMPONENTS

	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.042	0.048	0.048	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	7.5	6.8	5.8	9.2
ORIGINAL	8.8	7.9	6.3	11.0
CORRECTED	8.6	8.0	6.4	10.7
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	1.72	1.74	1.06	2.00
VARIABLE FILTER	1.87	1.49	1.82	2.00
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.94	0.71	0.70	0.96
VARIABLE FILTER	2.60	1.61	1.75	2.61

* RESULTANT OF HORIZONTAL COMPONENTS

ATM. CORRECTED
SF

10

20

30

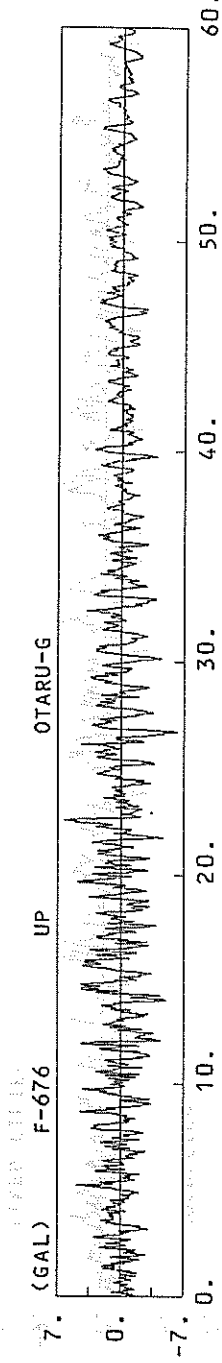
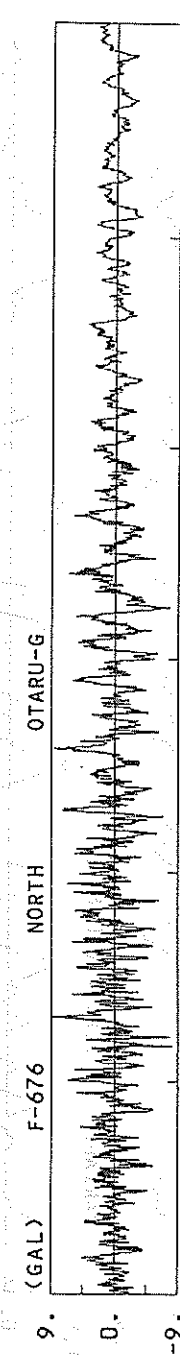
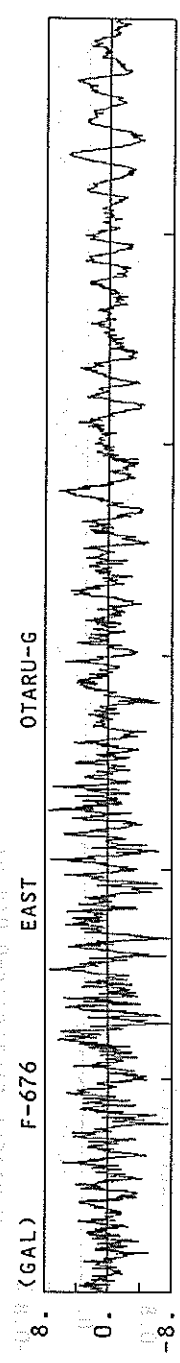
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50

60

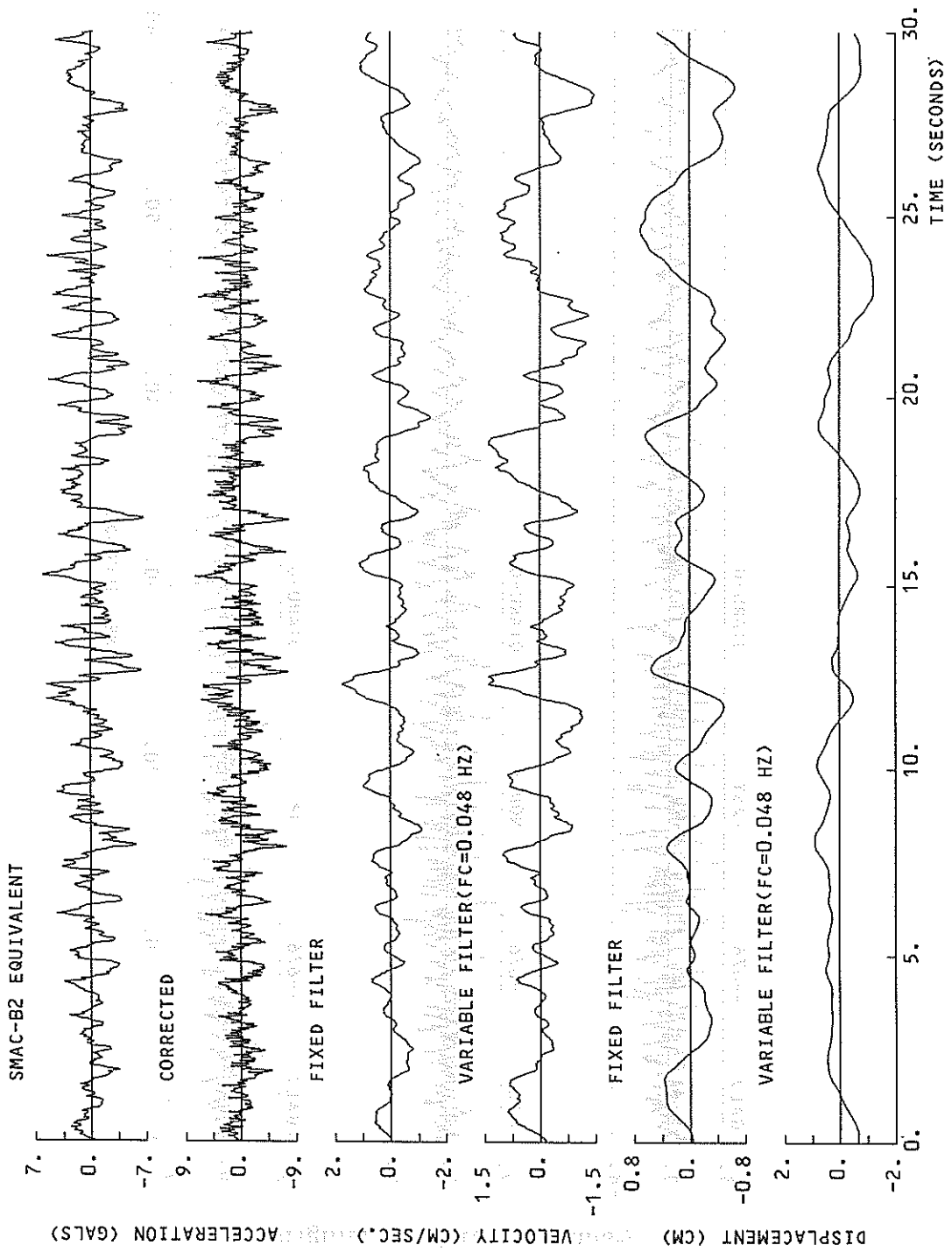
Original Acceleration (cm/s²)

ANALYZED BY: J. G. DAVIS, JR.



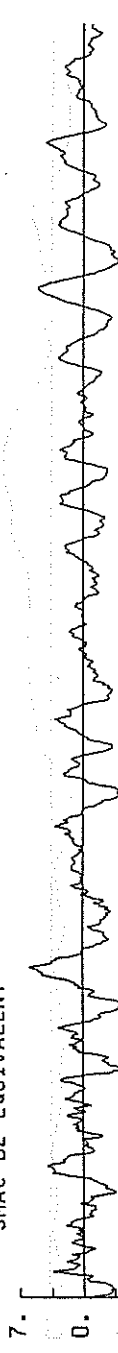
TIME (SECONDS)

2071-05 08:11:00.114



F-676 EAST OTARU-G

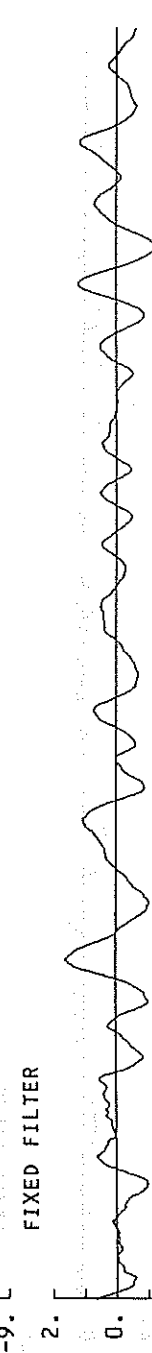
SMAC-B2 EQUIVALENT



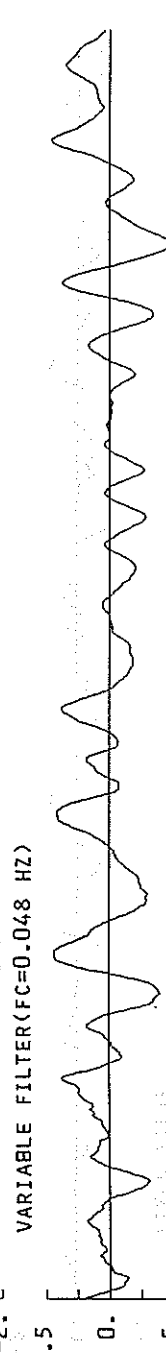
CORRECTED



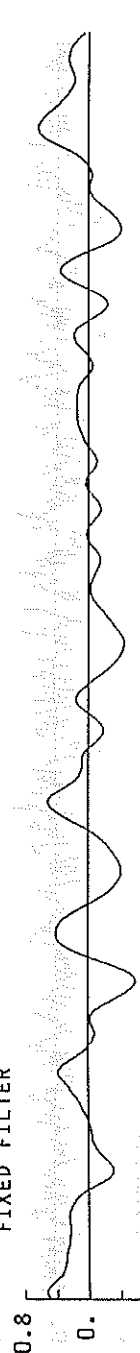
FIXED FILTER



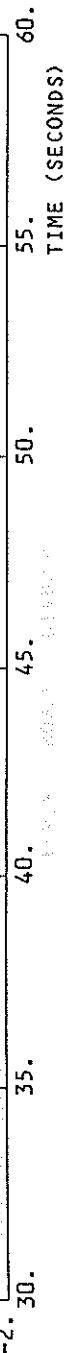
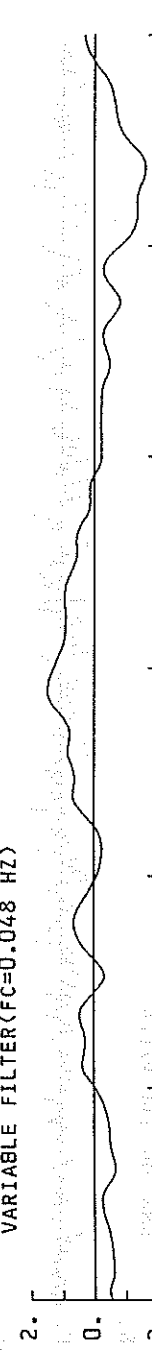
VARIABLE FILTER (FC=0.048 HZ)



FIXED FILTER



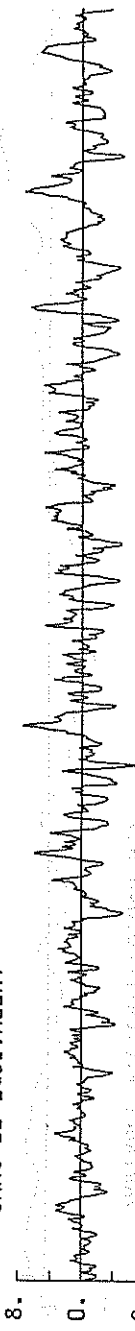
VARIABLE FILTER (FC=0.048 HZ)



F-676 NORTH OTARU-G

120 100 80 60 40 20 0

SMAC-B2 EQUIVALENT



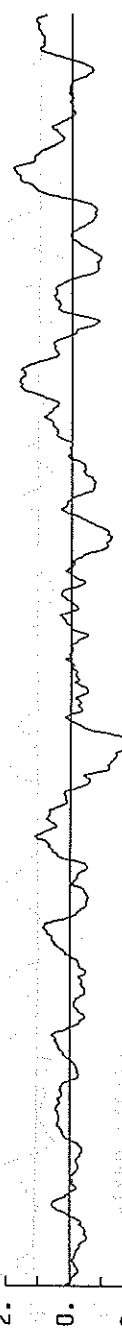
CORRECTED



FIXED FILTER



VARIABLE FILTER (FC=0.042 HZ)



FIXED FILTER



VARIABLE FILTER (FC=0.042 HZ)



F-676 NORTH OTARU-G

TIME (SECONDS)

30

50

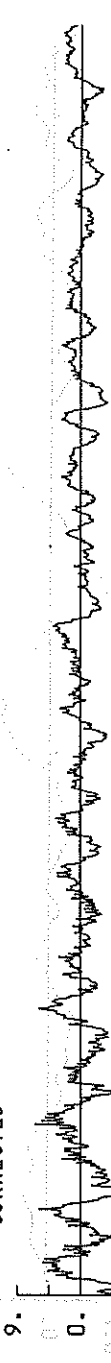
10

SMAC-B2 EQUIVALENT



APPROXIMATE ACCELERATION (GALS)

CORRECTED

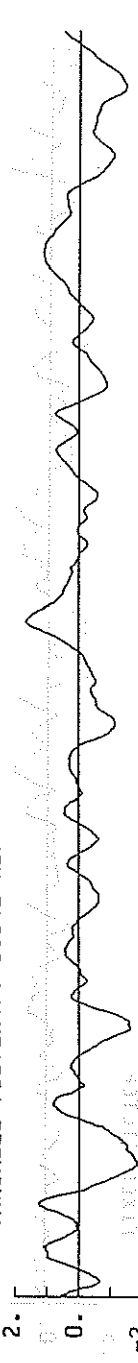


FIXED FILTER



APPROXIMATE VELOCITY (CM/SEC)

VARIABLE FILTER (FC=0.042 HZ)

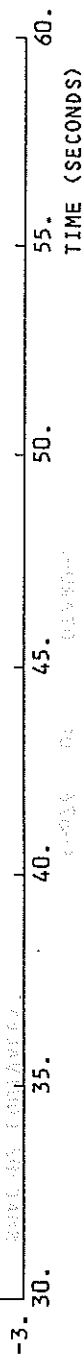


FIXED FILTER

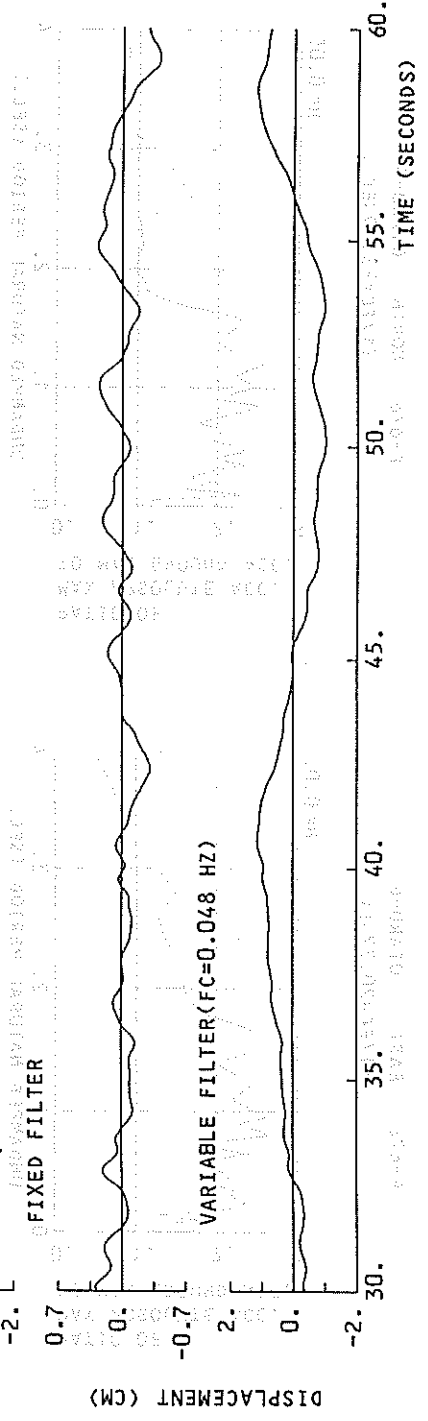
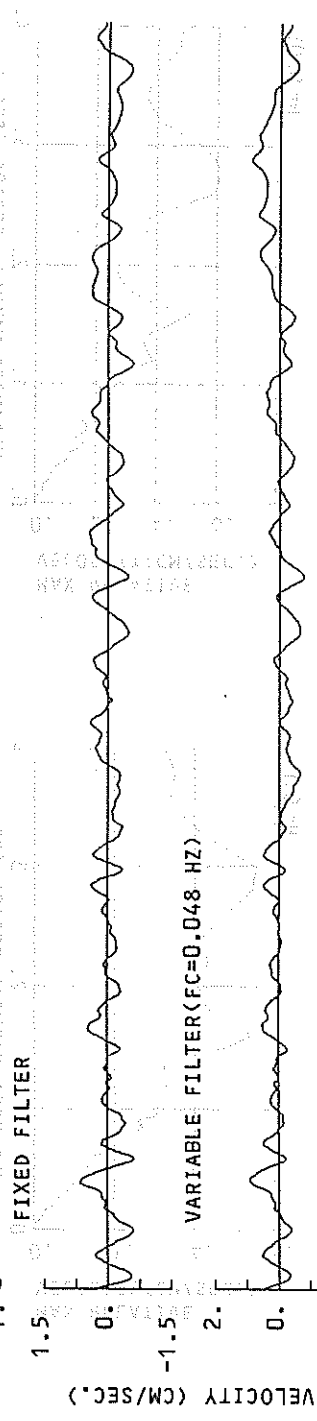
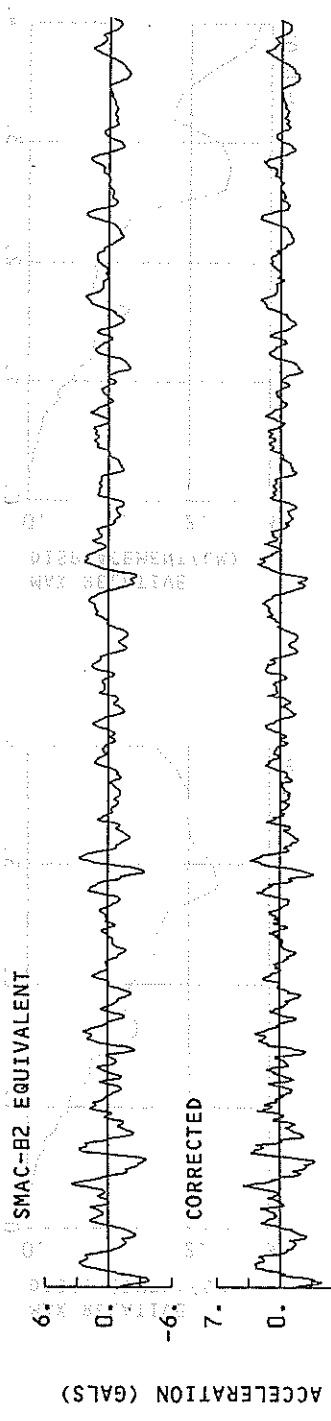


APPROXIMATE DISPLACEMENT (CM)

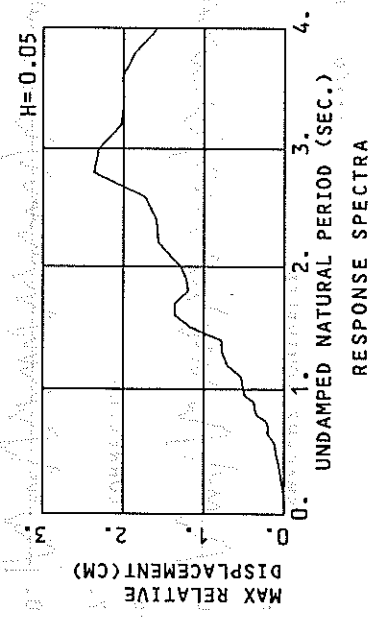
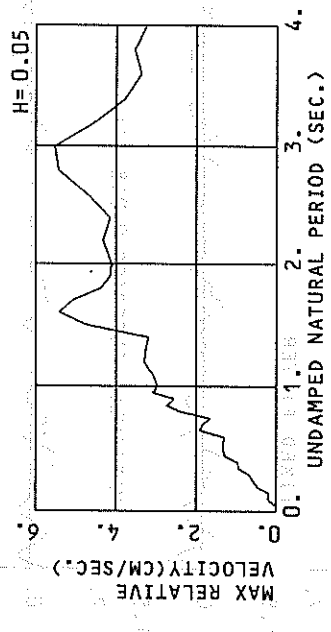
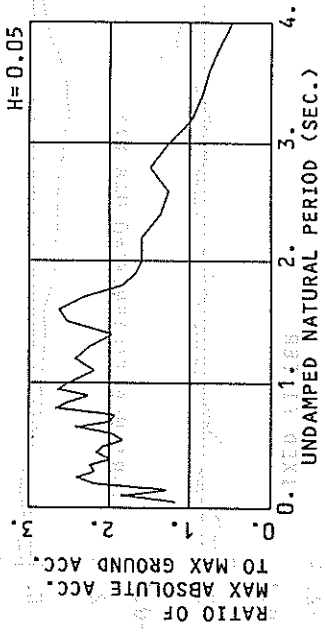
VARIABLE FILTER (FC=0.042 HZ)



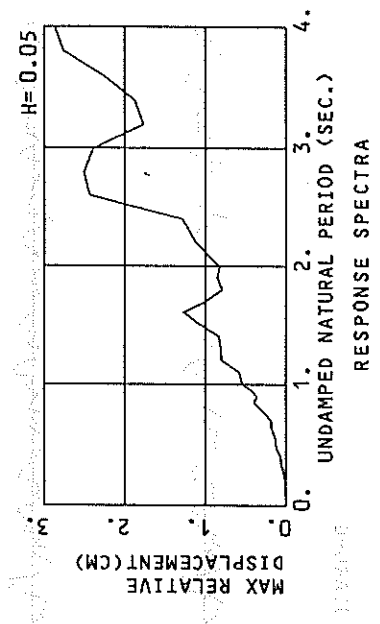
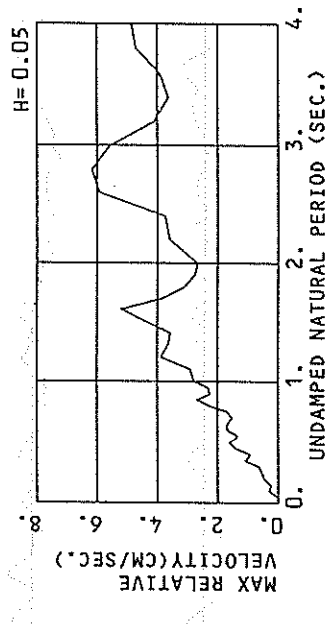
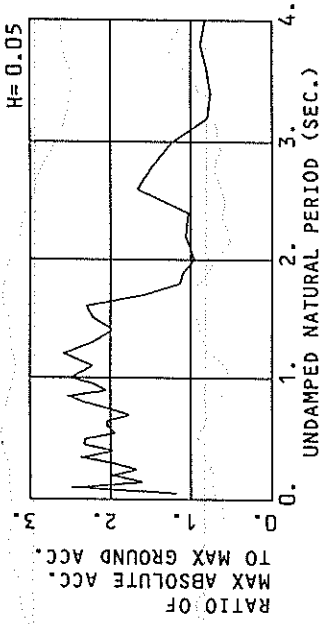
RECORDED 206115 F-676 UP OTARU-G



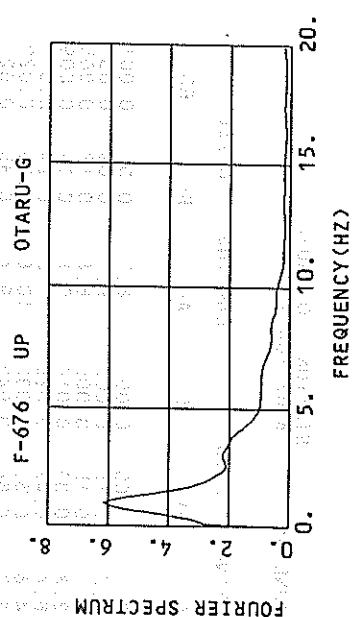
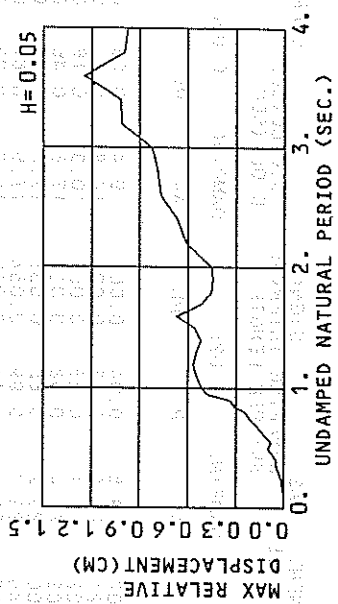
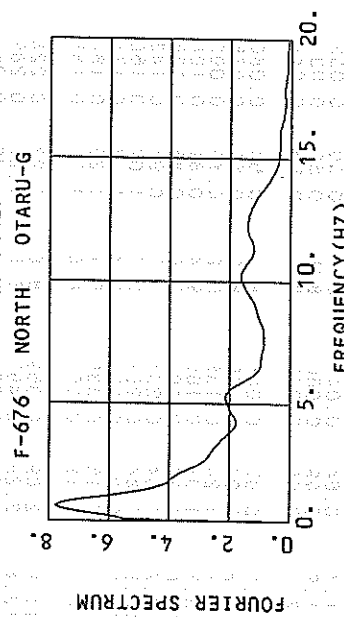
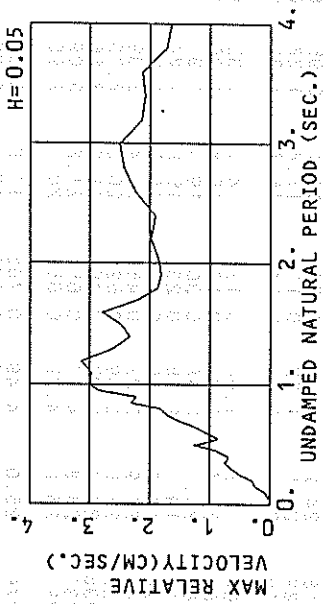
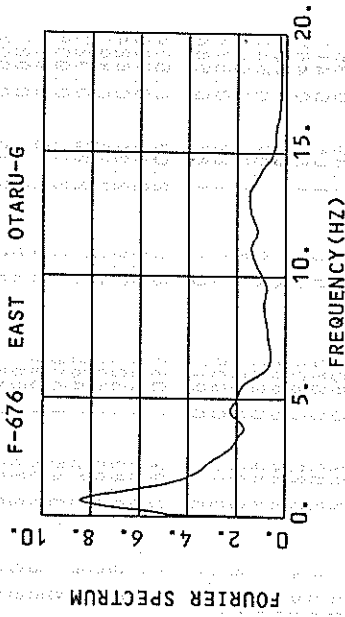
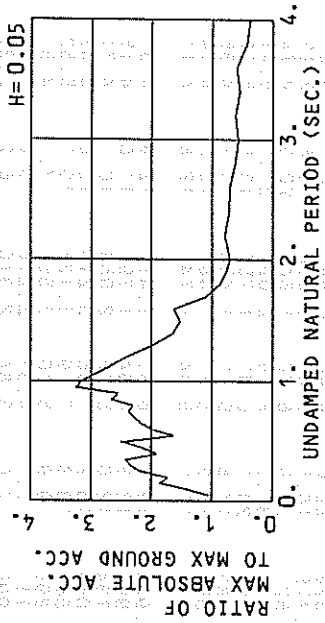
F-676 EAST OTARU-G
(1/FC=20.77 SEC.)



F-676 NORTH OTARU-G
(1/FC=23.79 SEC.)



F-676 UP OTARU-G
(1/FC=20.77 SEC.)



RESPONSE SPECTRA

RESPONSE SPECTRUM

RECORD = F-676
 DATE AND TIME = 1994.10.04.22.25
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = EAST
 SIGNAL SAMPLING INTERVAL = 0.0100(SEC)
 MAX. GROUND ACC. = 8.02 (GAL)
 STATION = OTARU-G
 CORRECTION =

PER	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	28.0	0.20	0.002	9.5	0.04	0.001	9.4	0.03	0.001	9.1	0.03	0.001	8.7	0.02	0.001
0.10	33.1	1.31	0.021	21.0	0.32	0.005	14.8	0.21	0.004	11.2	0.15	0.003	9.1	0.09	0.002
0.15	38.3	0.88	0.022	12.1	0.23	0.007	10.3	0.18	0.006	9.2	0.15	0.005	8.8	0.12	0.005
0.20	102.0	3.16	0.103	20.9	0.58	0.022	17.3	0.46	0.018	13.8	0.33	0.014	9.8	0.24	0.009
0.25	63.0	2.32	0.100	20.4	0.65	0.033	19.3	0.56	0.030	16.4	0.43	0.026	11.5	0.24	0.017
0.30	63.5	2.89	0.145	23.7	0.99	0.034	17.5	0.67	0.040	14.6	0.50	0.033	10.6	0.30	0.022
0.35	43.9	2.36	0.136	21.1	1.14	0.055	18.0	0.93	0.055	13.7	0.66	0.042	9.4	0.35	0.027
0.40	78.4	4.79	0.318	24.2	1.45	0.098	16.1	0.95	0.065	11.7	0.64	0.047	8.7	0.39	0.033
0.45	75.8	5.39	0.389	22.5	1.62	0.115	17.4	1.28	0.089	11.9	0.89	0.060	8.1	0.50	0.039
0.50	65.6	5.01	0.415	23.1	1.71	0.146	16.7	1.32	0.105	12.1	0.98	0.075	8.0	0.56	0.047
0.55	47.5	4.08	0.364	17.8	1.64	0.136	15.7	1.32	0.112	11.3	0.97	0.085	8.4	0.54	0.060
0.60	62.2	5.84	0.567	21.7	1.90	0.198	14.8	1.30	0.143	11.8	0.94	0.106	8.9	0.61	0.075
0.65	90.3	9.33	0.966	28.3	2.88	0.302	19.4	1.91	0.206	13.1	1.24	0.138	9.2	0.73	0.092
0.70	58.0	6.29	0.719	19.1	2.16	0.237	15.9	1.84	0.197	13.5	1.33	0.165	9.6	0.81	0.108
0.75	48.7	5.55	0.694	18.3	2.15	0.261	15.6	1.64	0.221	14.0	1.39	0.195	9.6	0.85	0.125
0.80	97.5	12.16	1.581	28.9	3.32	0.468	21.4	2.39	0.344	14.9	1.64	0.237	9.7	0.95	0.143
0.85	61.3	8.03	1.122	28.9	3.89	0.528	20.3	2.73	0.369	14.5	1.84	0.261	9.7	1.07	0.160
0.90	53.5	7.54	1.098	22.4	2.97	0.459	18.2	2.56	0.372	15.0	2.03	0.301	9.4	1.17	0.174
0.95	53.9	8.05	1.232	28.8	4.17	0.657	21.2	3.09	0.482	15.1	2.15	0.336	9.1	1.23	0.184
1.00	50.6	7.99	1.281	26.0	4.29	0.659	20.2	2.95	0.509	14.1	2.18	0.351	8.6	1.25	0.188
1.10	74.3	12.81	2.279	25.0	4.49	0.766	17.6	3.09	0.537	11.9	2.09	0.359	8.0	1.23	0.228
1.20	31.6	15.92	1.154	24.2	4.19	0.883	19.4	3.29	0.706	13.8	2.26	0.497	8.5	1.29	0.289
1.30	54.4	10.88	2.328	22.0	4.46	0.943	18.1	3.27	0.770	14.2	2.52	0.601	8.8	1.49	0.351
1.40	35.8	7.92	1.726	16.8	3.69	0.838	15.8	3.19	0.781	13.6	2.62	0.674	9.0	1.66	0.411
1.50	81.2	19.16	4.627	28.9	6.70	1.646	20.3	4.74	1.150	14.4	3.22	0.809	9.0	1.89	0.485
1.60	103.5	26.11	6.712	32.3	8.19	2.094	21.1	5.41	1.360	14.1	3.44	0.898	8.7	1.92	0.507
1.70	32.7	8.97	2.392	24.1	6.40	1.757	18.6	5.08	1.357	13.0	3.49	0.932	8.2	1.92	0.541
1.80	32.7	9.60	2.893	17.8	5.13	1.458	14.7	4.36	1.200	11.6	3.32	0.930	7.7	1.91	0.564
1.90	38.9	11.99	3.553	16.3	5.27	1.489	14.7	4.14	1.225	10.4	3.01	0.935	7.1	1.88	0.574
2.00	40.6	13.13	4.117	17.2	5.44	1.743	12.8	4.11	1.290	9.3	3.01	0.917	6.5	1.86	0.584
2.20	48.8	16.72	5.984	19.8	6.81	2.430	12.8	4.31	1.567	9.1	2.99	1.083	6.0	2.03	0.624
2.40	20.5	8.14	4.734	12.3	4.64	1.796	11.0	4.15	1.591	8.7	3.36	1.236	5.6	2.12	0.709
2.60	27.6	11.77	4.734	16.0	5.20	2.054	10.1	4.71	1.728	7.9	3.83	1.323	5.6	2.31	0.824
2.80	20.5	18.95	8.053	12.0	7.35	3.210	10.2	5.43	2.366	8.0	3.93	1.532	5.2	2.36	0.897
3.00	20.5	10.06	4.667	13.8	7.19	3.138	10.2	5.52	2.307	6.6	3.75	1.485	4.7	2.29	0.920
3.20	18.9	9.88	4.890	9.9	5.70	2.558	7.9	4.51	2.033	6.1	3.46	1.546	4.3	2.15	0.908
3.40	9.3	5.07	2.717	7.6	4.33	2.216	6.8	3.77	1.992	5.6	3.08	1.599	3.8	2.10	0.918
3.60	9.1	5.76	2.990	7.0	3.84	2.310	6.2	3.38	2.009	5.0	2.76	1.581	3.5	2.11	0.927
3.80	11.3	6.95	4.128	5.9	4.25	2.161	5.1	3.54	1.861	4.2	2.76	1.473	3.2	2.13	0.907
4.00	6.3	4.19	2.564	4.3	3.46	1.739	3.9	3.25	1.577	3.3	2.69	1.314	2.9	2.20	0.874

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

STATION = OTARU-G
MAX. GROUND ACC. = 8.56 (GAL)

CORRECTION =
0.0100 (SEC)
0.00 (SEC)

COMPONENT = NORTH
SIGNAL SAMPLING INTERVAL =
1994.10.04.22.25
SKIPPED LENGTH =

RECORD = F-676
DATE AND TIME = 1994.10.04.22.25
TIME LENGTH = 59.99 (SEC)

DAMPING = 0.100

DAMPING = 0.050

DAMPING = 0.025

DAMPING = 0.010

DAMPING = 0.005

DAMPING = 0.250

PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	16.4	0.09	0.001	10.0	0.03	0.001	10.1	0.03	0.001	10.1	0.03	0.001	10.1	0.03	0.001	9.8	0.03	0.001
0.10	109.7	1.71	0.028	30.7	0.46	0.008	21.3	0.30	0.005	13.7	0.18	0.003	13.7	0.18	0.003	10.3	0.09	0.002
0.15	60.7	1.36	0.035	15.0	0.27	0.009	13.8	0.23	0.006	11.5	0.18	0.006	11.5	0.18	0.006	9.3	0.13	0.005
0.20	59.4	1.77	0.060	23.8	0.65	0.024	17.1	0.47	0.017	14.5	0.37	0.015	14.5	0.37	0.015	11.3	0.24	0.011
0.25	44.7	1.71	0.071	19.3	0.61	0.031	14.4	0.52	0.023	13.3	0.44	0.021	13.3	0.44	0.021	11.7	0.31	0.017
0.30	72.9	3.40	0.166	21.0	0.86	0.048	16.9	0.64	0.038	14.3	0.52	0.032	14.3	0.52	0.032	11.8	0.36	0.024
0.35	68.2	3.72	0.212	25.1	1.37	0.078	20.3	1.07	0.062	16.2	0.79	0.049	16.2	0.79	0.049	11.6	0.44	0.033
0.40	28.6	1.81	0.116	21.1	1.08	0.085	16.9	0.94	0.068	15.0	0.78	0.060	15.0	0.78	0.060	11.2	0.54	0.042
0.45	53.5	3.58	0.214	24.6	1.69	0.126	20.0	1.41	0.102	14.4	1.04	0.073	14.4	1.04	0.073	10.8	0.59	0.051
0.50	63.6	4.91	0.403	29.8	2.25	0.189	19.9	1.61	0.125	12.8	1.01	0.080	12.8	1.01	0.080	10.0	0.58	0.059
0.55	46.6	3.83	0.357	21.2	1.67	0.162	16.7	1.33	0.127	12.1	1.07	0.091	12.1	1.07	0.091	9.6	0.61	0.068
0.60	83.3	7.92	0.759	23.7	2.33	0.216	17.5	1.69	0.159	12.4	1.21	0.111	12.4	1.21	0.111	9.6	0.66	0.081
0.65	69.5	7.13	0.744	24.2	2.40	0.259	17.5	1.69	0.186	13.4	1.18	0.141	13.4	1.18	0.141	9.9	0.68	0.097
0.70	40.4	4.21	0.502	17.4	1.62	0.215	15.2	1.53	0.188	13.2	1.23	0.161	13.2	1.23	0.161	9.9	0.79	0.114
0.75	78.6	9.24	1.120	23.2	2.30	0.300	17.4	1.67	0.247	13.2	1.29	0.184	13.2	1.29	0.184	10.1	0.88	0.132
0.80	43.3	5.14	0.701	24.4	2.79	0.394	19.9	2.28	0.321	14.2	1.58	0.227	14.2	1.58	0.227	10.1	0.97	0.149
0.85	58.2	7.81	1.065	29.6	3.82	0.542	21.7	2.68	0.395	14.6	1.73	0.264	14.6	1.73	0.264	10.2	1.04	0.168
0.90	45.4	6.16	0.931	21.7	2.89	0.444	17.7	2.27	0.361	13.5	1.60	0.274	13.5	1.60	0.274	10.3	1.09	0.180
0.95	51.6	7.37	1.180	21.8	3.37	0.497	19.0	2.33	0.433	14.7	1.78	0.331	14.7	1.78	0.331	10.4	1.13	0.214
1.00	50.9	7.88	1.289	21.2	3.71	0.637	21.4	2.79	0.541	16.1	2.02	0.400	16.1	2.02	0.400	10.3	1.29	0.238
1.10	67.0	11.68	2.052	23.9	3.95	0.731	19.0	2.92	0.581	16.1	2.50	0.485	16.1	2.50	0.485	10.0	1.54	0.283
1.20	60.7	11.48	2.216	29.5	5.52	1.074	22.1	3.89	0.804	16.4	2.93	0.587	16.4	2.93	0.587	9.6	1.66	0.319
1.30	46.3	9.62	1.983	25.4	4.90	1.087	18.9	3.65	0.807	14.9	2.85	0.628	14.9	2.85	0.628	8.8	1.67	0.346
1.40	32.4	6.99	1.607	18.8	4.09	0.933	16.9	3.57	0.836	13.4	2.67	0.655	13.4	2.67	0.655	7.9	1.57	0.362
1.50	68.0	16.19	3.878	26.4	6.27	1.505	19.1	4.43	1.080	12.1	2.91	0.675	12.1	2.91	0.675	7.3	1.57	0.376
1.60	72.1	18.65	4.677	30.3	8.02	1.951	19.7	5.20	1.269	12.0	3.15	0.765	12.0	3.15	0.765	6.7	1.66	0.381
1.70	28.2	7.12	2.066	18.2	5.08	1.329	13.6	3.83	0.989	10.1	2.96	0.719	10.1	2.96	0.719	6.1	1.77	0.395
1.80	16.8	4.42	1.383	10.7	3.40	0.878	9.8	3.10	0.798	8.0	2.63	0.643	8.0	2.63	0.643	5.9	1.80	0.410
1.90	20.6	6.28	1.887	11.6	3.25	1.058	9.3	3.25	0.848	7.0	2.42	0.623	7.0	2.42	0.623	5.5	1.80	0.457
2.00	36.2	11.66	3.666	11.9	3.50	1.184	8.2	2.67	0.825	6.6	2.27	0.652	6.6	2.27	0.652	5.5	1.78	0.523
2.20	22.9	7.78	2.810	12.1	4.20	1.478	9.2	3.60	1.119	7.7	2.99	0.925	7.7	2.99	0.925	5.9	2.00	0.666
2.40	19.5	7.48	2.843	11.0	4.38	1.607	8.9	3.74	1.290	8.4	3.44	1.202	8.4	3.44	1.202	6.1	2.15	0.812
2.60	41.0	17.75	7.029	20.2	8.57	3.354	14.3	5.93	2.440	9.9	3.84	1.657	9.9	3.84	1.657	6.1	2.10	0.934
2.80	19.3	8.70	3.827	15.4	7.34	3.083	12.7	6.17	2.509	9.2	4.27	1.785	9.2	4.27	1.785	5.8	2.29	1.008
3.00	28.3	13.94	6.448	15.2	7.54	3.480	10.5	5.55	2.387	7.4	4.13	1.646	7.4	4.13	1.646	5.3	2.41	1.036
3.20	14.1	7.17	3.665	9.1	4.81	2.360	6.9	4.12	1.770	6.1	3.47	1.533	6.1	3.47	1.533	4.7	2.37	1.038
3.40	14.3	7.71	4.197	8.2	4.51	2.389	6.5	3.63	1.878	5.4	3.20	1.532	5.4	3.20	1.532	4.3	2.35	1.042
3.60	11.0	6.37	3.606	8.5	4.75	2.759	6.9	3.93	2.263	5.0	2.91	1.594	5.0	2.91	1.594	4.0	2.32	1.064
3.80	17.1	10.77	6.243	10.6	6.73	3.873	7.6	4.71	2.761	5.0	3.01	1.767	5.0	3.01	1.767	3.7	2.36	1.083
4.00	20.4	13.26	8.254	10.8	6.98	4.381	7.1	4.86	2.867	4.9	3.25	1.910	4.9	3.25	1.910	3.5	2.45	1.104

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

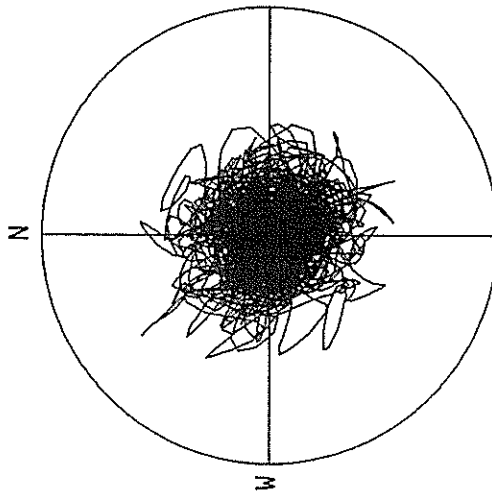
RESPONSE SPECTRUM

RECORD = F-676 COMPONENT = UP SIGNAL = CORRECTION = STATION = OTARU-G
 DATE AND TIME = 1994.10.04.22.25 SAMPRING INTERVAL = 0.0100(SEC) MAX.GROUND ACC. = 6.39 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	35.6	0.27	0.002	7.7	0.03	0.000	6.7	0.02	0.000	6.5	0.02	0.000	6.5	0.01	0.000	6.5	0.01	0.000		
0.10	34.7	0.50	0.009	9.9	0.11	0.003	9.2	0.09	0.002	8.1	0.06	0.002	7.1	0.04	0.002	7.1	0.04	0.002		
0.15	87.6	2.06	0.050	17.5	0.36	0.010	11.9	0.24	0.007	8.9	0.17	0.005	6.9	0.09	0.004	6.9	0.09	0.004		
0.20	40.0	1.22	0.041	14.0	0.38	0.014	11.1	0.29	0.011	8.6	0.20	0.009	7.1	0.14	0.007	7.1	0.14	0.007		
0.25	65.7	2.52	0.104	18.5	0.67	0.029	13.9	0.50	0.022	12.0	0.37	0.019	8.5	0.25	0.012	8.5	0.25	0.012		
0.30	57.0	2.65	0.130	19.3	0.85	0.044	15.0	0.63	0.034	13.0	0.54	0.029	8.7	0.33	0.018	8.7	0.33	0.018		
0.35	39.1	2.15	0.121	20.6	0.95	0.064	15.5	0.75	0.048	11.5	0.54	0.035	8.1	0.36	0.023	8.1	0.36	0.023		
0.40	32.4	1.98	0.131	15.1	0.90	0.061	12.2	0.69	0.049	9.9	0.69	0.040	8.0	0.37	0.031	8.0	0.37	0.031		
0.45	61.2	4.22	0.314	18.4	1.16	0.094	13.9	0.89	0.071	10.7	0.89	0.054	8.0	0.43	0.039	8.0	0.43	0.039		
0.50	72.9	5.61	0.461	22.7	1.81	0.144	16.0	1.25	0.101	11.4	1.25	0.071	7.6	0.48	0.045	7.6	0.48	0.045		
0.55	19.6	1.65	0.150	12.3	0.99	0.094	10.4	0.87	0.080	9.1	0.72	0.068	7.2	0.52	0.051	7.2	0.52	0.051		
0.60	48.4	4.56	0.441	15.8	1.35	0.143	12.7	1.06	0.115	9.7	0.96	0.087	7.0	0.57	0.060	7.0	0.57	0.060		
0.65	58.9	6.04	0.630	17.6	1.78	0.188	13.9	1.26	0.148	10.6	1.26	0.112	7.1	0.64	0.071	7.1	0.64	0.071		
0.70	55.4	6.12	0.688	18.1	1.93	0.225	14.6	1.52	0.180	10.5	1.06	0.128	7.1	0.70	0.081	7.1	0.70	0.081		
0.75	52.9	6.21	0.753	20.2	2.28	0.287	15.2	1.71	0.216	10.7	1.27	0.150	7.0	0.75	0.093	7.0	0.75	0.093		
0.80	45.7	5.68	0.740	19.9	2.42	0.323	14.8	1.81	0.239	11.3	1.27	0.180	7.3	0.77	0.110	7.3	0.77	0.110		
0.85	116.9	15.85	2.140	23.5	3.41	0.465	17.0	2.31	0.310	12.4	1.49	0.224	7.4	0.80	0.128	7.4	0.80	0.128		
0.90	75.8	10.92	1.554	23.2	3.32	0.476	16.4	2.24	0.334	12.9	1.64	0.260	7.6	0.84	0.146	7.6	0.84	0.146		
0.95	68.6	10.23	1.568	20.2	4.14	0.668	20.7	2.83	0.471	13.4	1.78	0.301	7.6	0.88	0.160	7.6	0.88	0.160		
1.00	40.8	6.33	1.033	26.6	3.93	0.672	20.3	2.99	0.511	13.6	1.97	0.339	7.4	0.98	0.172	7.4	0.98	0.172		
1.10	75.8	13.32	2.324	27.0	4.66	0.826	17.8	2.97	0.543	11.3	1.87	0.338	7.3	1.08	0.200	7.3	1.08	0.200		
1.20	39.5	7.72	1.442	22.1	4.20	0.804	15.7	3.15	0.568	10.5	2.16	0.375	6.9	1.14	0.222	6.9	1.14	0.222		
1.30	37.6	8.09	1.611	18.5	3.91	0.792	12.8	2.63	0.546	9.4	1.91	0.397	6.7	1.14	0.247	6.7	1.14	0.247		
1.40	25.2	5.56	1.251	14.0	3.09	0.695	10.5	2.34	0.520	8.3	1.91	0.403	6.3	1.14	0.266	6.3	1.14	0.266		
1.50	27.6	6.62	1.571	13.5	3.32	0.769	9.8	2.48	0.554	7.2	1.91	0.403	5.9	1.17	0.285	5.9	1.17	0.285		
1.60	30.5	8.07	1.976	14.7	3.92	0.920	10.4	2.79	0.673	7.4	1.91	0.465	5.5	1.20	0.300	5.5	1.20	0.300		
1.70	13.6	3.88	0.997	9.2	2.81	0.640	7.1	2.22	0.516	6.3	1.82	0.446	5.1	1.27	0.309	5.1	1.27	0.309		
1.80	9.3	3.02	0.765	6.6	2.18	0.540	5.6	1.87	0.454	5.2	1.73	0.411	4.6	1.31	0.312	4.6	1.31	0.312		
1.90	8.5	2.78	0.775	5.5	2.14	0.503	4.9	1.82	0.445	4.4	1.67	0.392	4.2	1.33	0.312	4.2	1.33	0.312		
2.00	16.1	5.23	1.627	6.1	2.29	0.622	4.5	1.83	0.452	3.7	1.58	0.361	3.9	1.33	0.313	3.9	1.33	0.313		
2.20	9.6	3.35	1.182	6.6	2.45	0.813	5.0	1.98	0.613	3.6	1.55	0.426	3.3	1.35	0.323	3.3	1.35	0.323		
2.40	13.5	5.45	1.966	6.2	2.53	0.910	4.6	2.25	0.766	3.4	1.49	0.481	3.0	1.41	0.342	3.0	1.41	0.342		
2.60	6.0	2.86	1.020	5.1	2.53	0.899	4.5	2.25	0.766	3.6	1.50	0.592	2.7	1.50	0.354	2.7	1.50	0.354		
2.80	9.0	3.74	1.779	4.6	2.63	0.915	4.0	2.44	0.822	3.1	1.90	0.599	2.3	1.55	0.366	2.3	1.55	0.366		
3.00	9.6	4.28	2.183	5.1	2.87	1.155	3.6	2.51	0.822	2.5	2.10	0.555	1.9	1.56	0.366	1.9	1.56	0.366		
3.20	7.1	3.80	1.853	5.0	2.53	1.291	3.9	2.14	1.015	2.7	1.85	0.684	1.8	1.52	0.400	1.8	1.52	0.400		
3.40	10.1	5.51	2.969	5.1	2.58	1.482	3.5	2.08	1.015	2.5	1.54	0.713	1.8	1.45	0.445	1.8	1.45	0.445		
3.60	8.1	4.51	2.668	5.3	2.90	1.735	3.8	2.12	1.242	2.5	1.52	0.794	1.7	1.38	0.509	1.7	1.38	0.509		
3.80	4.8	3.08	1.747	3.4	2.20	1.255	2.7	1.72	0.991	2.0	1.43	0.726	1.8	1.39	0.581	1.8	1.39	0.581		
4.00	3.8	2.73	1.543	2.7	1.82	1.074	2.4	1.64	0.972	2.1	1.44	0.804	1.8	1.29	0.661	1.8	1.29	0.661		

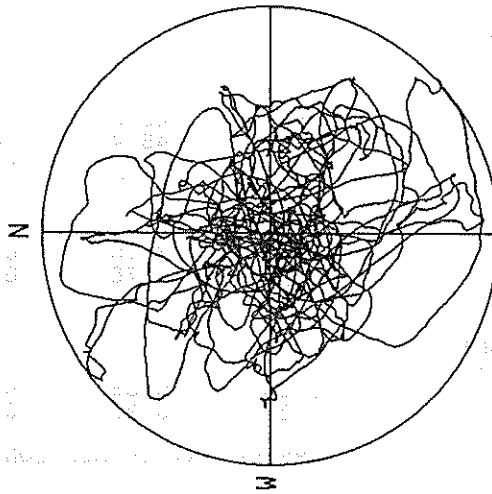
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

F-676 OTARU-G



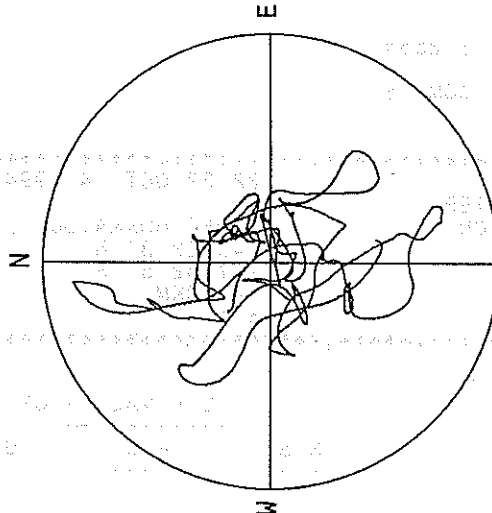
ACCELERATION
R=15.0 GAL
MAX=10.7 GAL

F-676 OTARU-G



VELOCITY
R=2.0 CM/SEC.
MAX=2.0 CM/SEC.

F-676 OTARU-G



DISPLACEMENT
R=3.00 CM
MAX=2.61 CM

RECORD NUMBER : S-2584

STATION : SOMA-S

EARTHQUAKE DATA

 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43°22.3' N
 LONGITUDE 147°42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

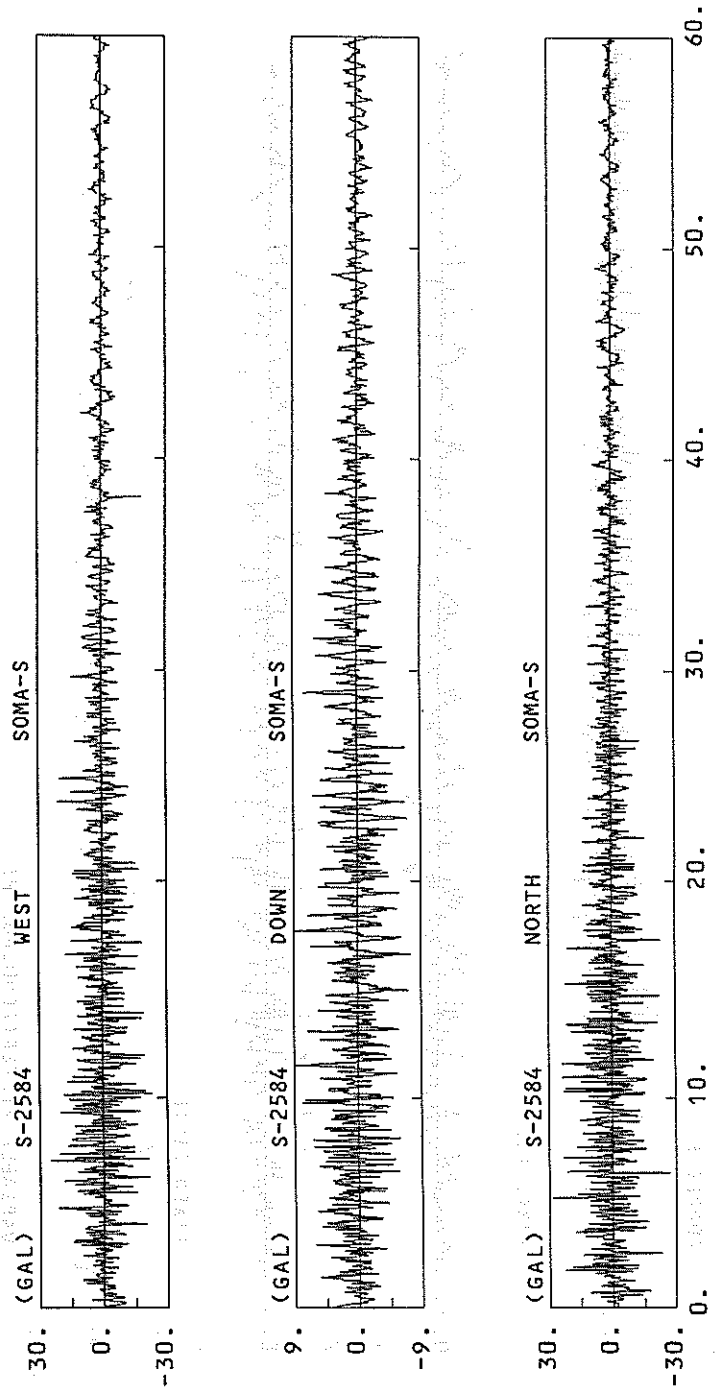
PEAK VALUES OF COMPONENTS

	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.487	0.463	0.915	
MAXIMUM ACCELERATION (GAL)				
ORIGINAL	28.7	25.0	9.0	28.7
CORRECTED	54.4	46.4	14.7	57.4
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	2.28	2.16	0.78	2.40
VARIABLE FILTER	1.92	1.76	0.57	1.95
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.50	0.68	0.47	0.82
VARIABLE FILTER	0.23	0.26	0.05	0.27

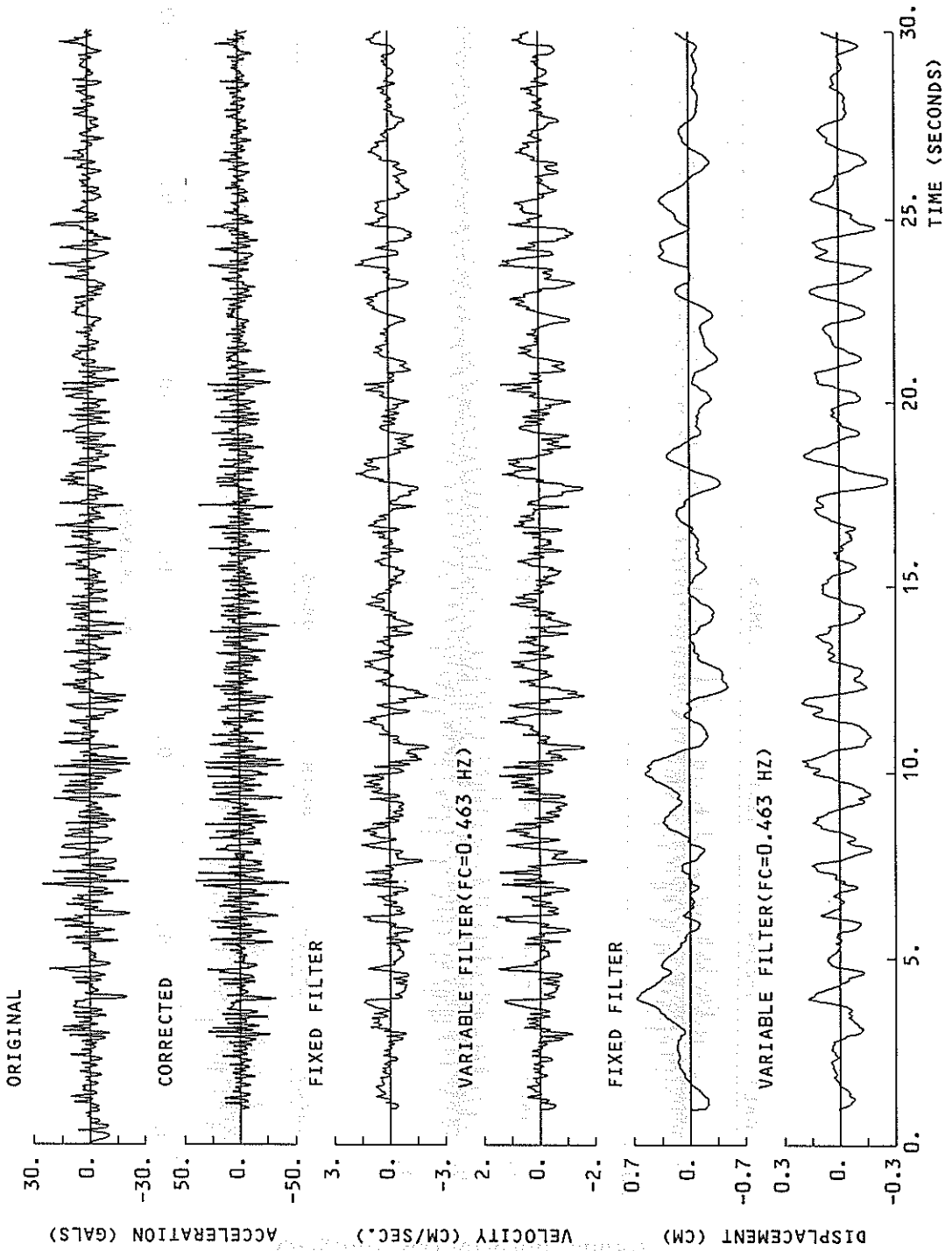
* RESULTANT OF HORIZONTAL COMPONENTS

3100 1257 0000

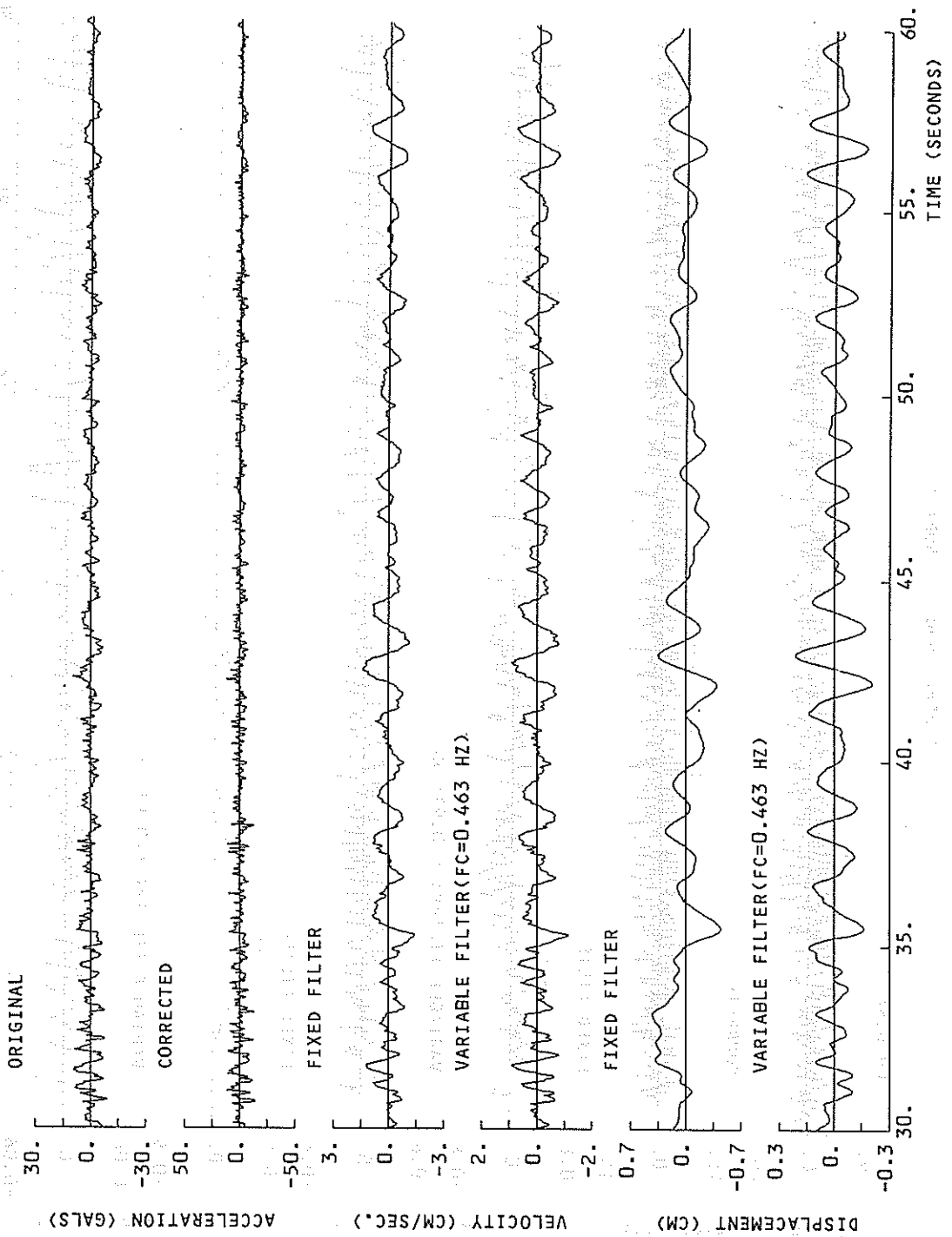
30
SOMA-S

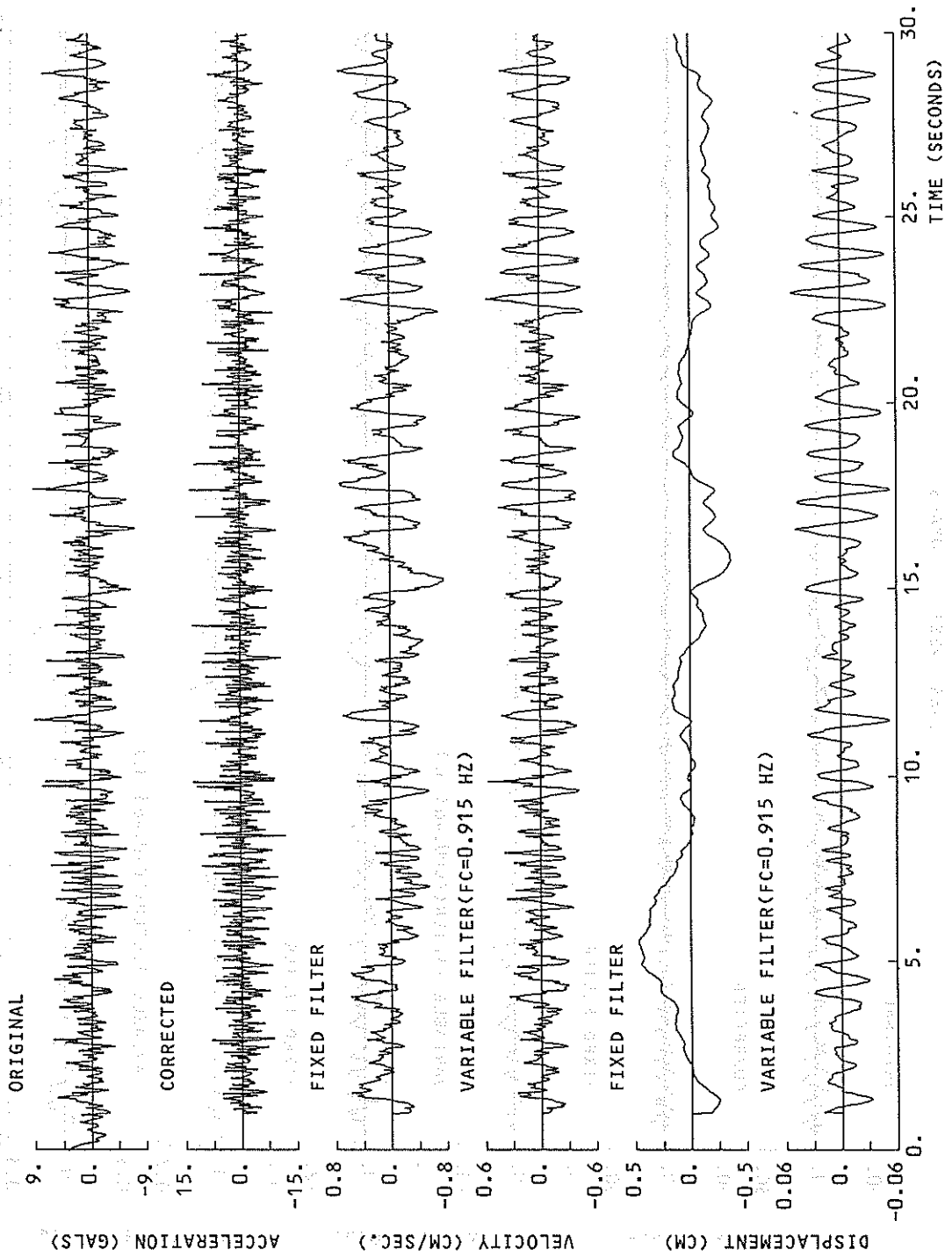


Original Acceleration (cm/s²)



S-2584 WEST SOMA-S

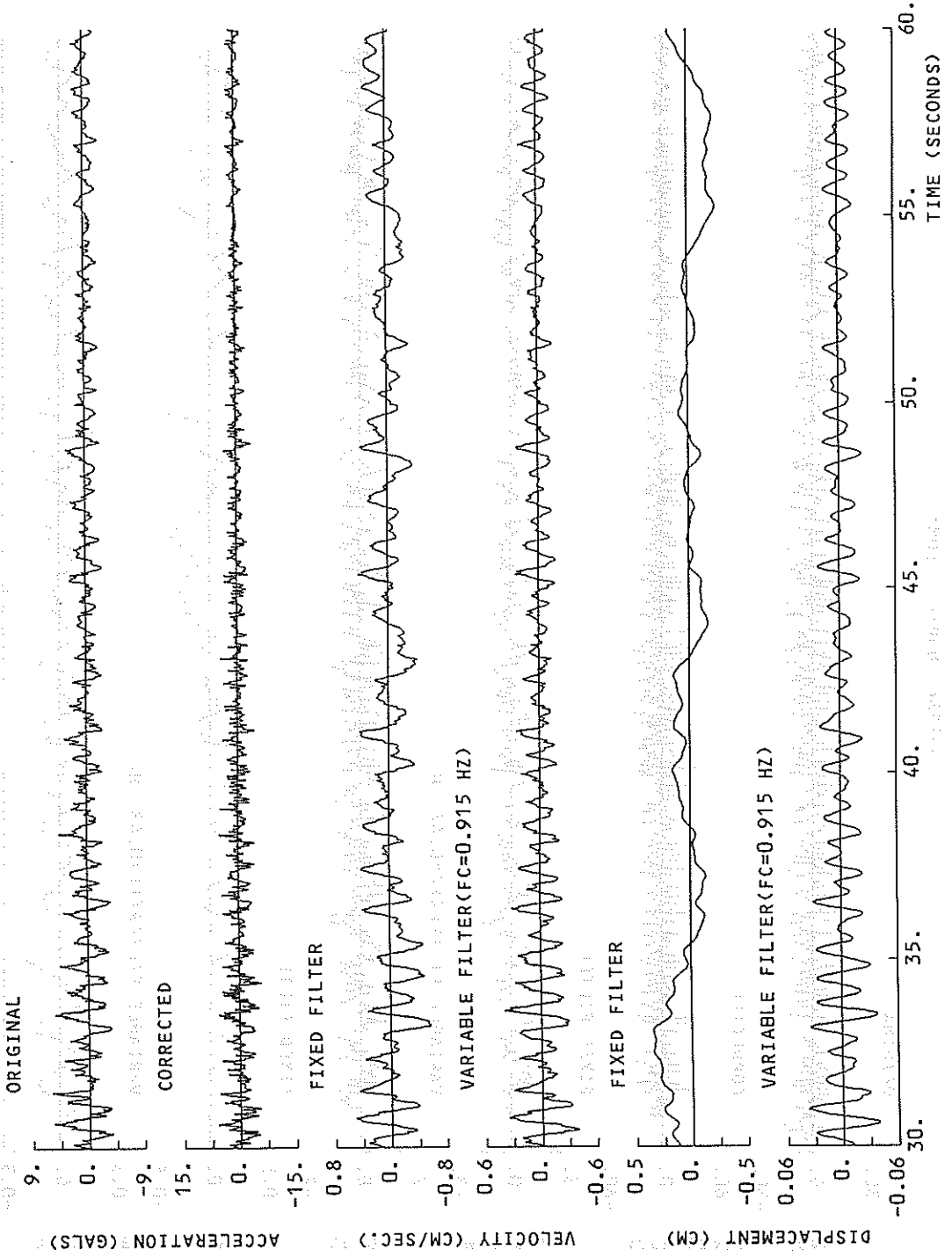


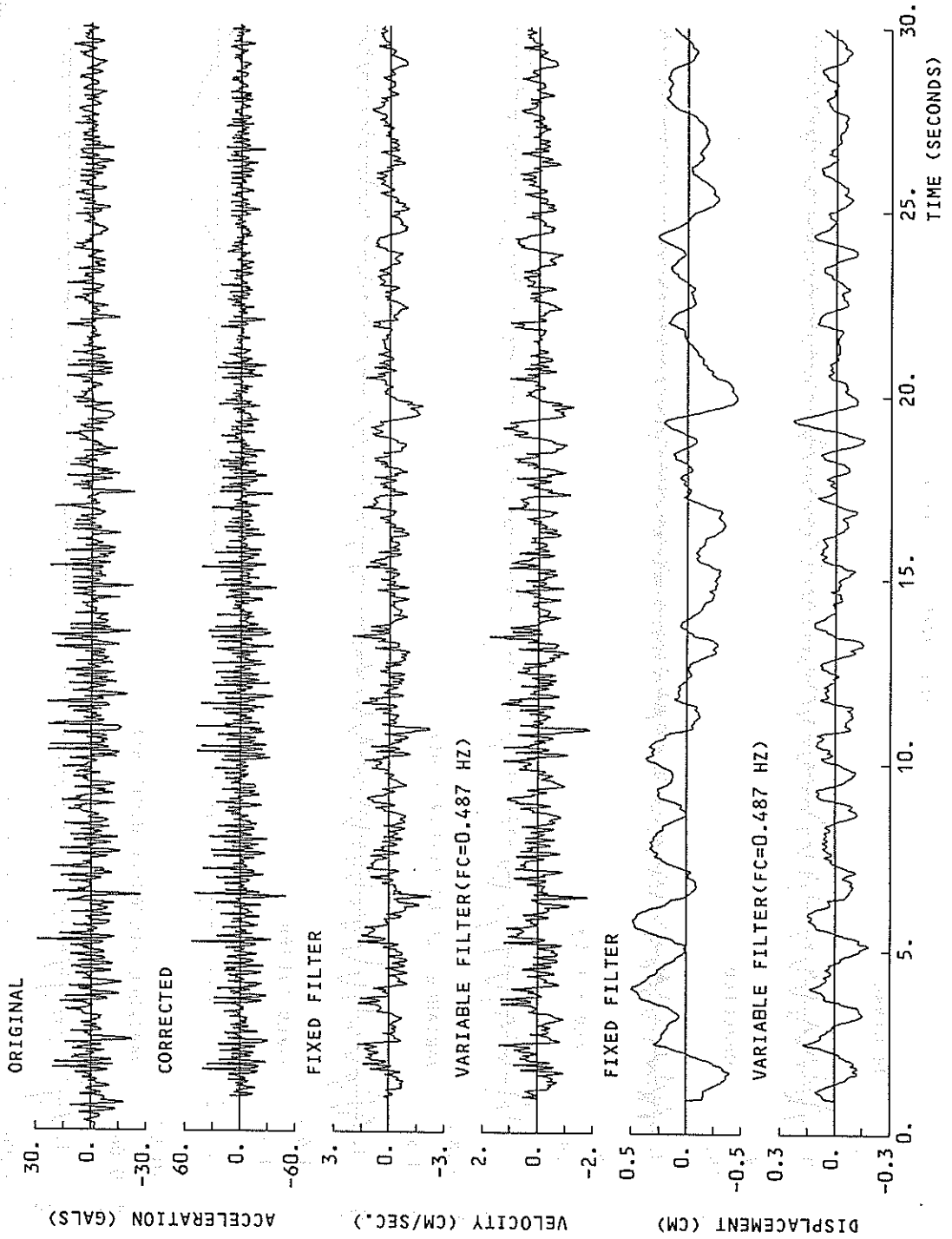


S-2584 DOWN SOMA-S

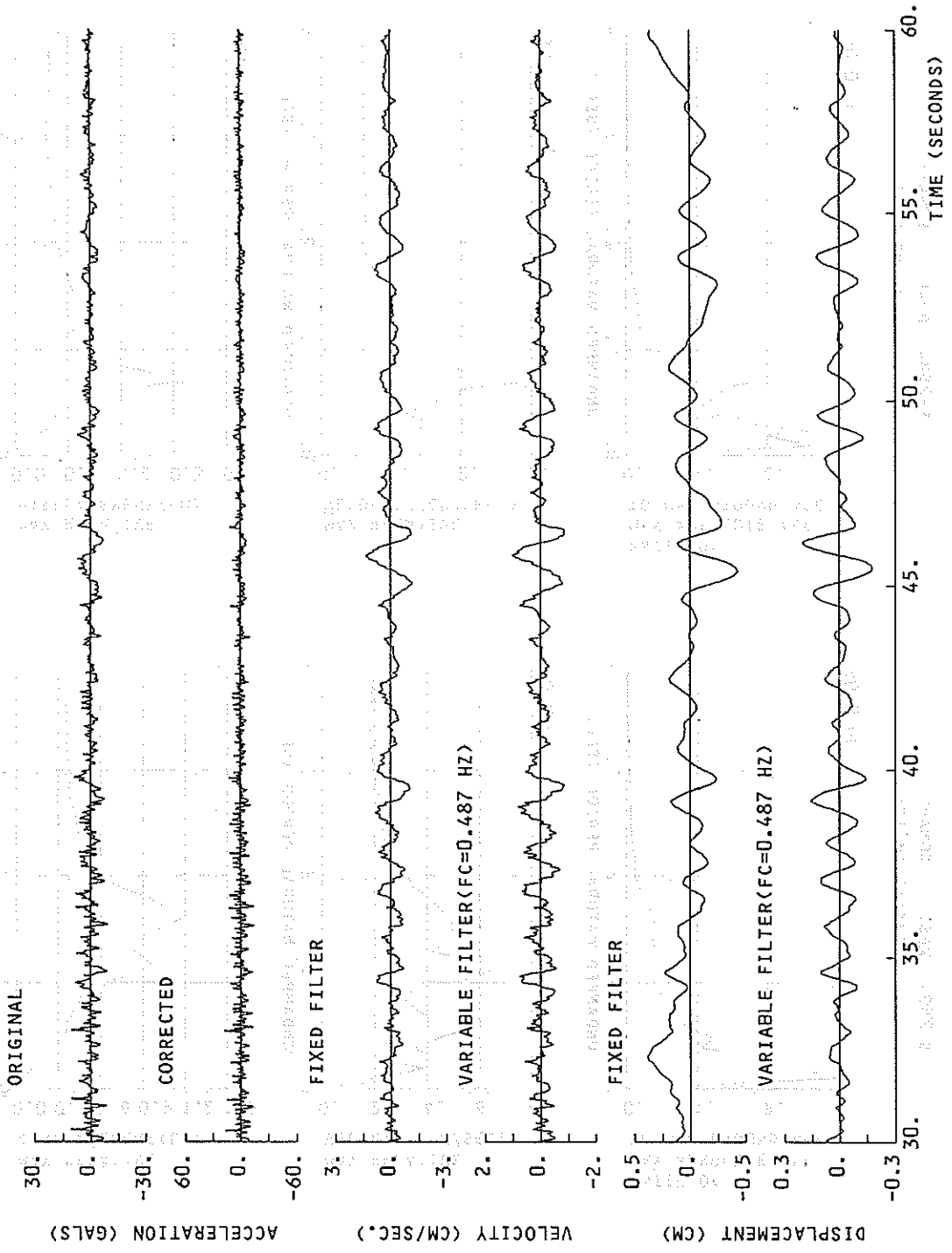
ALPHA POS COND 2

30

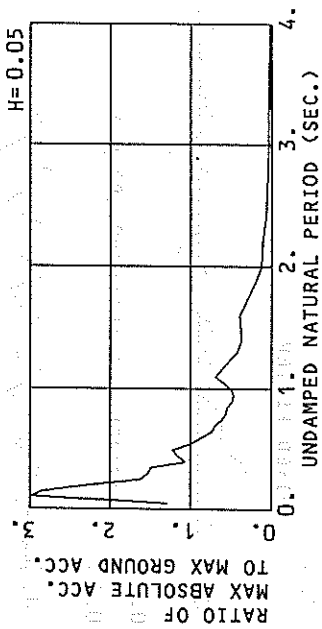




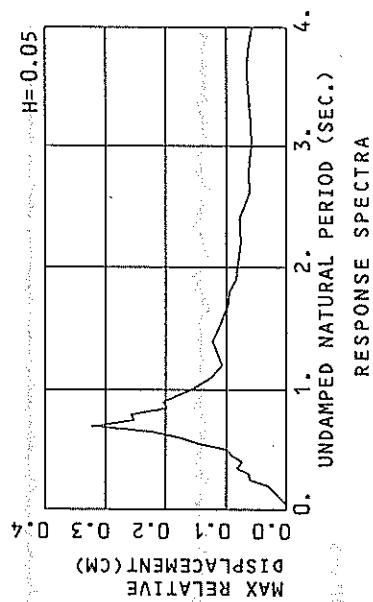
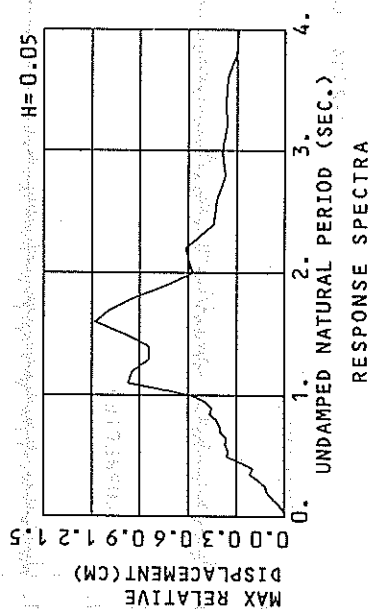
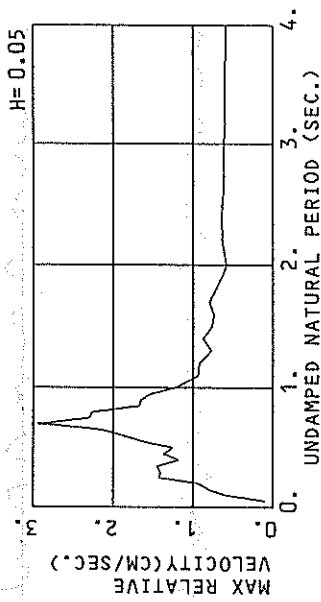
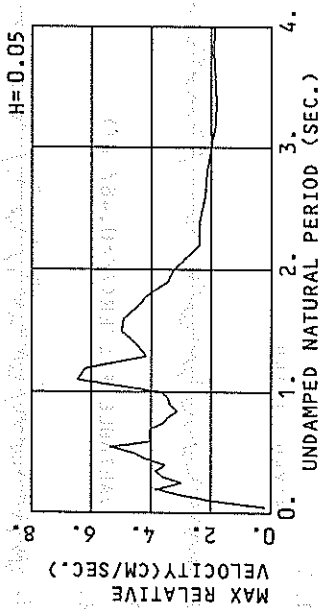
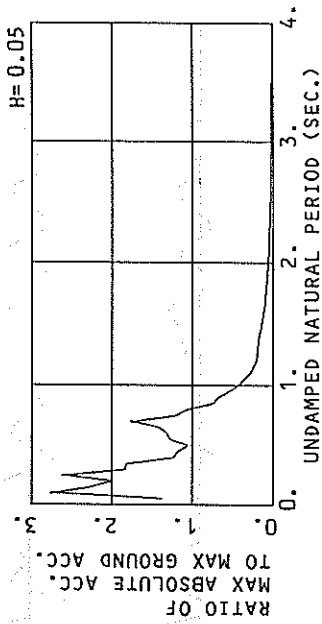
S-2584 NORTH SOMA-S



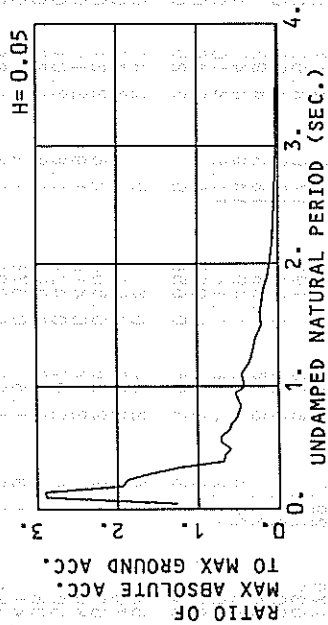
S-2584 WEST SOMA-S
(1/FC=2.16 SEC.)



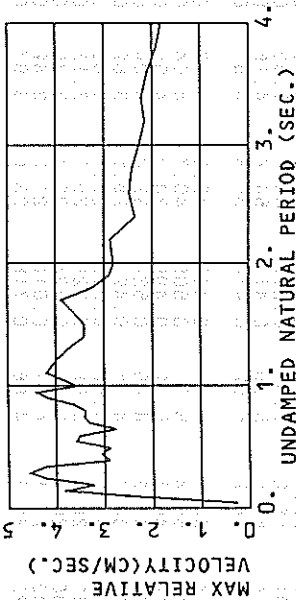
S-2584 DOWN SOMA-S
(1/FC=1.09 SEC.)



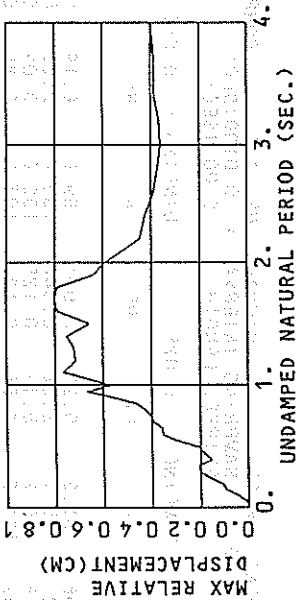
S-2584 NORTH SOMA-S
($1/FC=2.05$ SEC.)



H=0.05

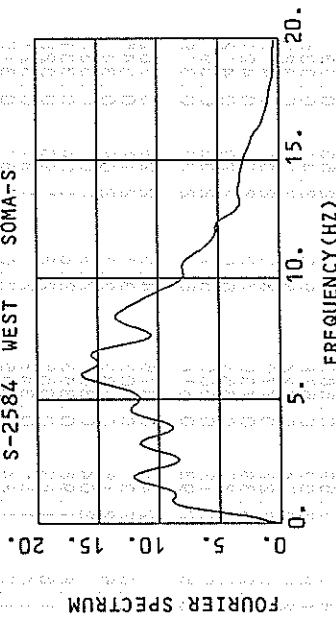


H=0.05

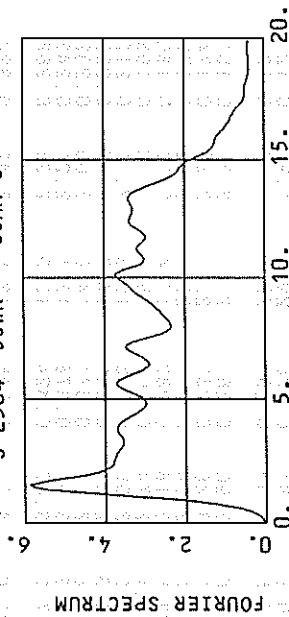


RESPONSE SPECTRA

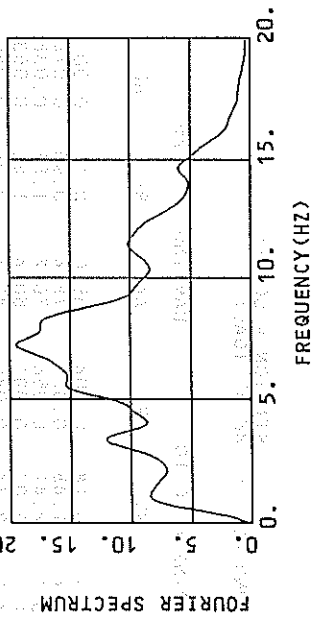
S-2584 WEST SOMA-S



S-2584 DOWN SOMA-S



S-2584 NORTH SOMA-S



RESPONSE SPECTRUM

RECORD = S-2584 COMPONENT = WEST SIGNAL = GR. ACC. CORRECTION = STATION = SOMA-S
 DATE AND TIME = 1994-10-04-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 46.37 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	
0.05	88.4	0.52	0.006	61.3	0.20	0.004	59.6	0.19	0.004	57.9	0.18	0.004	55.0	0.17	0.003	
0.10	476.0	7.54	0.128	175.1	2.56	0.044	139.4	2.03	0.037	107.4	1.48	0.027	78.4	0.95	0.018	
0.15	1348.3	32.03	0.761	220.2	5.11	0.125	132.0	3.09	0.075	100.1	2.41	0.056	70.2	1.63	0.036	
0.20	462.9	14.75	0.469	131.0	4.55	0.133	107.5	3.85	0.107	91.7	3.07	0.091	60.4	1.83	0.053	
0.25	267.6	10.58	0.424	102.0	4.12	0.162	75.1	3.00	0.118	54.6	2.74	0.085	43.7	2.04	0.079	
0.30	327.7	15.71	0.747	94.5	4.66	0.216	71.1	3.61	0.162	54.0	3.16	0.121	39.9	2.20	0.060	
0.35	182.7	10.34	0.567	95.0	4.99	0.294	69.2	3.85	0.213	47.2	2.63	0.143	35.8	2.00	0.094	
0.40	123.7	7.71	0.501	58.2	3.95	0.236	49.4	3.53	0.200	39.4	2.84	0.156	31.5	1.82	0.110	
0.45	217.2	15.39	1.114	51.5	5.96	0.417	54.4	4.16	0.277	39.8	2.87	0.200	29.1	1.97	0.125	
0.50	274.9	21.71	1.741	74.9	5.92	0.474	56.8	4.57	0.358	37.5	3.35	0.232	25.1	2.24	0.134	
0.55	196.2	16.98	1.504	64.8	6.87	0.496	46.3	5.37	0.352	35.0	3.90	0.261	24.1	2.37	0.161	
0.60	92.2	9.72	0.841	55.4	5.51	0.505	40.7	4.04	0.369	32.2	3.26	0.285	22.7	2.39	0.174	
0.65	119.5	12.24	1.279	46.7	5.22	0.499	34.2	4.06	0.364	26.0	3.24	0.271	20.1	2.38	0.176	
0.70	130.8	15.19	1.624	42.3	4.89	0.524	32.4	4.04	0.399	23.5	3.18	0.282	17.4	2.27	0.180	
0.75	62.1	7.70	0.884	34.7	4.35	0.493	28.5	3.62	0.401	21.4	2.74	0.291	15.3	2.10	0.198	
0.80	73.7	9.34	1.194	35.2	4.56	0.570	26.1	3.42	0.422	19.2	2.65	0.305	15.3	2.01	0.212	
0.85	59.2	7.89	1.083	28.8	3.68	0.526	25.7	3.13	0.466	20.3	2.54	0.359	14.7	1.90	0.222	
0.90	40.4	5.83	0.830	26.3	3.87	0.538	22.4	3.39	0.455	18.8	2.84	0.371	14.0	2.05	0.232	
0.95	45.6	7.12	1.043	27.1	4.31	0.518	22.5	3.42	0.487	17.3	3.01	0.378	13.1	2.21	0.243	
1.00	60.1	9.19	1.522	28.3	4.66	0.716	23.0	3.67	0.579	17.2	3.40	0.424	12.9	2.35	0.268	
1.10	130.6	23.09	4.003	44.9	8.92	1.374	31.9	6.47	0.974	21.0	4.31	0.636	12.5	2.42	0.324	
1.20	101.6	19.58	3.705	41.2	8.42	1.502	26.2	6.19	0.949	18.2	4.25	0.646	11.1	2.48	0.347	
1.30	76.4	15.93	3.270	29.7	6.16	1.271	19.7	4.17	0.840	14.1	3.59	0.583	9.8	2.53	0.337	
1.40	61.0	13.75	3.030	24.1	5.10	1.196	17.0	4.52	0.840	11.9	3.63	0.578	9.0	2.41	0.335	
1.50	33.5	8.43	1.907	21.9	6.95	1.247	17.5	4.99	0.991	12.9	3.74	0.724	8.5	2.35	0.389	
1.60	40.8	10.97	2.647	26.1	6.86	1.639	18.3	4.93	1.180	12.5	3.22	0.779	8.0	2.31	0.419	
1.70	27.6	11.94	3.101	20.4	5.99	1.490	14.9	4.47	1.086	10.2	3.27	0.730	7.3	2.27	0.421	
1.80	42.4	8.31	2.264	14.2	4.76	1.161	11.5	4.10	0.934	8.3	3.27	0.654	6.6	2.29	0.412	
1.90	15.2	5.05	1.390	9.9	3.68	0.906	8.1	3.46	0.734	6.9	3.12	0.600	5.9	2.33	0.393	
2.00	8.6	4.13	0.873	6.5	3.56	0.656	5.7	3.25	0.572	5.5	2.93	0.518	5.2	2.33	0.379	
2.20	12.6	4.82	1.548	6.6	2.84	0.814	5.1	2.41	0.617	4.1	2.44	0.475	4.3	2.26	0.362	
2.40	5.5	2.76	0.797	3.5	2.52	0.516	3.1	2.40	0.442	3.0	2.31	0.403	3.7	2.09	0.345	
2.60	3.7	2.64	0.627	2.9	2.26	0.500	2.6	2.21	0.423	2.5	2.16	0.389	3.2	2.09	0.341	
2.80	3.0	2.41	0.591	2.1	2.24	0.416	1.9	2.16	0.369	2.1	2.04	0.361	2.9	2.01	0.336	
3.00	2.2	2.13	0.507	1.9	2.07	0.424	1.8	2.01	0.368	1.8	1.98	0.363	2.6	1.94	0.331	
3.20	1.4	1.94	0.364	1.4	1.87	0.354	1.5	1.87	0.362	1.6	1.89	0.356	2.3	1.90	0.326	
3.40	1.4	1.77	0.411	1.3	1.81	0.376	1.3	1.83	0.364	1.4	1.85	0.348	2.0	1.87	0.321	
3.60	1.4	1.99	0.458	1.2	1.90	0.393	1.2	1.88	0.360	1.2	1.84	0.335	2.0	1.87	0.315	
3.80	1.1	2.05	0.410	0.8	1.97	0.292	0.9	1.92	0.301	1.1	1.86	0.309	1.8	1.86	0.308	
4.00	0.9	2.01	0.356	0.8	1.95	0.315	0.8	1.91	0.286	0.9	1.89	0.292	1.7	1.86	0.303	

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = S-2584
 DATE AND TIME = 1994-10-04-22-23
 T TIME LENGTH = 59.99 (SEC)

COMPONENT = DOWN
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH =

SIGNAL = GR. ACC.
 CORRECTION = STATION = SOMA-S
 MAX.GROUND ACC. = 14.73 (GAL)

DAMPING = 0.025
 DAMPING = 0.050
 DAMPING = 0.100
 DAMPING = 0.250

PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	69.8	0.52	0.004	21.0	0.09	0.001	19.7	0.09	0.001	19.0	0.07	0.001
0.10	240.3	3.80	0.061	58.9	0.86	0.015	31.9	0.43	0.008	22.0	0.29	0.005
0.15	159.6	3.77	0.091	42.9	1.03	0.024	24.5	0.54	0.014	15.6	0.39	0.008
0.20	160.9	5.07	0.163	34.4	1.11	0.035	23.5	0.70	0.023	15.1	0.40	0.014
0.25	82.0	3.13	0.130	49.1	1.89	0.078	26.6	0.93	0.041	15.4	0.50	0.022
0.30	80.5	3.74	0.184	33.8	1.74	0.077	27.1	1.42	0.041	13.1	0.59	0.026
0.35	61.2	3.38	0.190	41.4	2.24	0.128	26.9	1.45	0.083	10.8	0.64	0.028
0.40	44.6	2.95	0.181	22.0	1.56	0.089	18.2	1.18	0.073	9.7	0.57	0.034
0.45	59.8	4.22	0.307	23.9	1.76	0.122	17.5	1.36	0.089	9.3	0.60	0.044
0.50	71.0	5.63	0.449	20.3	1.46	0.128	15.6	1.25	0.098	9.8	0.64	0.056
0.55	63.3	5.52	0.485	23.2	1.99	0.177	18.7	1.61	0.143	9.9	0.69	0.068
0.60	95.2	9.00	0.868	26.2	2.56	0.239	19.5	1.88	0.177	9.7	0.78	0.078
0.65	76.2	7.87	0.815	25.9	2.74	0.277	20.9	2.15	0.222	9.0	0.84	0.087
0.70	126.1	14.11	1.566	42.6	4.75	0.528	28.0	2.94	0.321	8.4	0.92	0.092
0.75	38.3	4.69	0.546	23.4	3.03	0.333	17.9	2.29	0.253	7.7	0.95	0.095
0.80	49.4	6.43	0.800	21.4	3.00	0.347	15.9	2.26	0.257	6.9	0.95	0.095
0.85	33.0	4.72	0.605	14.5	2.09	0.265	10.9	1.42	0.198	5.4	0.92	0.092
0.90	23.6	3.65	0.485	13.7	2.17	0.282	10.0	1.65	0.204	5.4	0.90	0.090
0.95	9.6	1.68	0.219	9.7	1.79	0.222	8.0	1.52	0.181	4.7	0.88	0.088
1.00	12.3	2.19	0.311	7.7	1.48	0.195	6.4	1.24	0.160	4.3	0.84	0.089
1.10	7.9	1.68	0.241	4.7	1.06	0.145	4.2	0.94	0.125	3.6	0.76	0.088
1.20	10.7	2.11	0.391	4.2	0.99	0.152	3.0	0.92	0.107	3.0	0.73	0.085
1.30	5.8	1.44	0.249	3.1	0.90	0.133	2.7	0.77	0.115	2.5	0.71	0.082
1.40	4.7	1.38	0.233	3.1	1.01	0.152	2.5	0.87	0.123	2.2	0.70	0.078
1.50	3.0	0.90	0.173	2.2	0.76	0.125	2.0	0.76	0.112	1.9	0.69	0.075
1.60	2.4	0.90	0.156	1.8	0.74	0.117	1.7	0.74	0.105	1.6	0.68	0.072
1.70	1.6	0.90	0.118	1.4	0.85	0.119	1.4	0.79	0.096	1.5	0.67	0.069
1.80	2.2	0.91	0.181	1.5	0.76	0.109	1.2	0.72	0.095	1.3	0.66	0.066
1.90	1.2	0.72	0.110	1.0	0.69	0.093	0.9	0.64	0.084	1.2	0.65	0.064
2.00	1.0	0.64	0.100	0.8	0.59	0.084	0.8	0.58	0.081	1.1	0.64	0.063
2.20	0.6	0.63	0.076	0.6	0.64	0.075	0.7	0.64	0.075	0.9	0.63	0.062
2.40	0.8	0.72	0.113	0.6	0.66	0.088	0.6	0.64	0.078	0.8	0.62	0.062
2.60	0.5	0.61	0.085	0.4	0.61	0.067	0.4	0.62	0.062	0.8	0.61	0.061
2.80	0.4	0.63	0.081	0.4	0.60	0.063	0.4	0.61	0.063	0.7	0.61	0.060
3.00	0.3	0.65	0.078	0.3	0.62	0.063	0.3	0.61	0.058	0.6	0.60	0.059
3.20	0.3	0.57	0.077	0.3	0.59	0.064	0.3	0.60	0.059	0.6	0.60	0.058
3.40	0.3	0.58	0.082	0.2	0.59	0.069	0.3	0.59	0.063	0.6	0.60	0.058
3.60	0.2	0.62	0.079	0.2	0.60	0.065	0.3	0.59	0.060	0.5	0.59	0.057
3.80	0.2	0.57	0.074	0.2	0.57	0.068	0.2	0.58	0.064	0.5	0.59	0.057
4.00	0.2	0.59	0.071	0.2	0.58	0.061	0.2	0.58	0.057	0.5	0.59	0.057

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

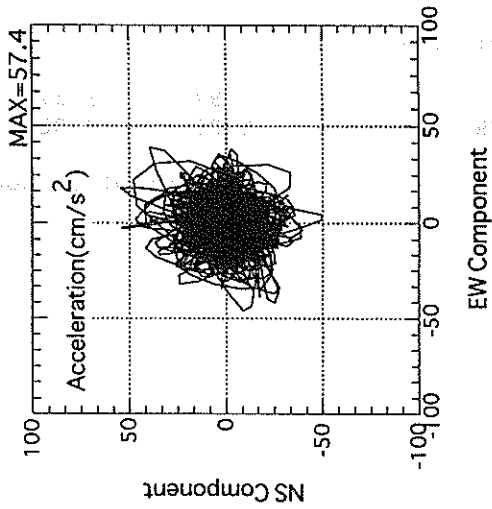
RESPONSE SPECTRUM

RECORD = S-2584 COMPONENT = NORTH SIGNAL = GR ACC. CORRECTION = STATION = SOMA-S
 DATE AND TIME = 1994-10-04-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 54.44 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

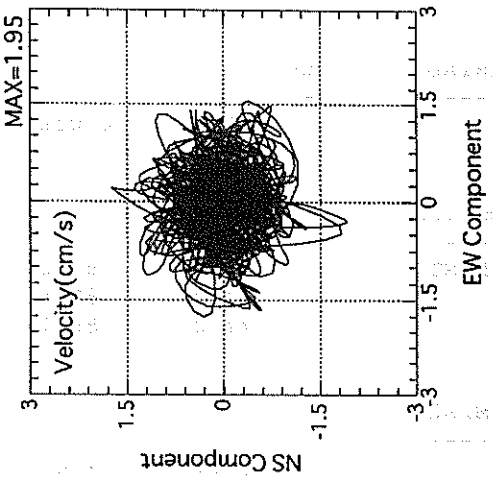
PER	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	77.9	0.54	0.005	68.0	0.26	0.004	68.8	0.26	0.004	68.4	0.25	0.004	66.6	0.23	0.004
0.10	581.3	9.19	0.147	179.9	2.85	0.045	157.5	2.40	0.040	132.7	1.86	0.033	97.5	1.13	0.023
0.15	1348.0	32.25	0.768	223.7	5.32	0.128	157.8	3.83	0.090	113.0	2.79	0.075	74.1	1.58	0.037
0.20	575.7	18.39	0.583	135.8	4.37	0.138	105.5	3.23	0.105	74.7	2.50	0.075	58.3	1.98	0.054
0.25	239.5	9.45	0.319	128.8	5.39	0.203	102.3	4.21	0.161	78.3	3.12	0.122	53.2	1.98	0.078
0.30	424.3	20.76	0.967	135.7	6.80	0.310	88.1	4.56	0.200	66.3	3.06	0.147	45.4	2.04	0.090
0.35	199.8	11.13	0.620	92.9	5.64	0.288	67.1	4.20	0.207	48.8	3.11	0.147	34.9	2.04	0.090
0.40	127.6	8.57	0.517	50.1	3.54	0.203	37.6	2.90	0.151	30.3	2.49	0.116	25.3	1.97	0.082
0.45	76.0	5.82	0.390	44.9	3.94	0.229	36.1	3.06	0.184	26.9	2.24	0.133	22.1	1.97	0.090
0.50	82.4	6.47	0.522	41.0	3.71	0.259	32.3	2.88	0.203	23.9	2.15	0.143	19.6	1.74	0.095
0.55	204.6	18.17	1.568	56.8	5.08	0.435	38.8	3.58	0.297	24.6	2.56	0.185	17.5	1.76	0.104
0.60	124.1	11.67	1.311	53.0	4.82	0.483	38.7	3.51	0.352	25.6	2.46	0.230	15.9	1.77	0.128
0.65	113.4	11.58	1.214	38.3	3.66	0.409	33.3	2.76	0.354	26.2	2.30	0.215	15.1	1.78	0.155
0.70	99.0	10.94	1.229	43.5	4.64	0.539	31.6	3.30	0.390	24.1	2.37	0.290	15.8	1.76	0.170
0.75	70.4	8.33	1.002	29.3	4.09	0.417	28.1	3.41	0.399	22.1	2.49	0.310	14.9	1.81	0.189
0.80	63.6	8.03	1.030	29.8	4.06	0.483	26.5	3.40	0.427	22.2	2.65	0.352	15.4	1.83	0.218
0.85	91.3	12.11	1.672	29.8	4.40	0.546	25.2	3.62	0.459	21.4	2.76	0.382	15.3	1.80	0.241
0.90	108.2	15.54	2.220	35.3	5.19	0.724	27.6	4.18	0.565	21.2	3.02	0.428	14.7	1.91	0.260
0.95	112.7	17.04	2.576	38.5	5.74	0.880	29.3	4.42	0.667	20.7	3.15	0.462	13.8	2.05	0.274
1.00	30.2	5.07	0.765	26.2	4.37	0.662	22.7	3.57	0.572	18.9	3.12	0.468	12.8	2.13	0.282
1.10	109.1	18.80	3.344	34.5	5.87	1.056	25.0	4.20	0.764	16.3	3.09	0.488	11.1	2.12	0.282
1.20	33.6	6.65	1.225	25.8	5.07	0.941	19.7	4.02	0.714	14.8	3.08	0.529	9.1	2.05	0.299
1.30	52.2	11.27	2.235	22.0	4.56	0.942	16.9	3.75	0.720	13.5	2.97	0.567	8.8	1.98	0.332
1.40	34.8	7.83	1.728	17.5	4.02	0.867	15.2	3.41	0.748	12.0	2.63	0.583	8.1	1.88	0.351
1.50	44.9	10.93	2.562	14.9	3.87	0.850	11.7	3.41	0.658	9.7	2.78	0.534	7.2	1.90	0.360
1.60	38.8	10.11	2.517	16.9	5.00	1.092	12.3	3.63	0.785	8.9	2.59	0.539	6.5	1.93	0.357
1.70	33.6	9.21	2.458	15.5	5.09	1.129	11.2	3.88	0.803	8.2	2.73	0.553	5.8	2.00	0.346
1.80	29.3	8.76	2.408	12.8	4.08	1.046	9.7	3.25	0.790	7.3	2.65	0.529	5.6	2.05	0.327
1.90	21.8	6.90	1.992	9.7	3.72	0.885	7.1	2.89	0.641	5.7	2.46	0.507	5.3	2.10	0.326
2.00	15.0	5.38	1.515	7.1	3.20	0.717	5.9	2.81	0.592	4.9	2.48	0.477	4.9	2.12	0.325
2.20	6.3	3.41	0.768	4.2	3.10	0.508	3.8	2.86	0.447	3.7	2.54	0.399	4.2	2.13	0.312
2.40	5.1	2.84	0.749	3.4	2.52	0.407	3.1	2.35	0.326	3.1	2.20	0.387	3.6	2.09	0.295
2.60	4.4	2.95	0.758	2.4	2.66	0.485	2.4	2.47	0.390	2.6	2.23	0.359	3.2	2.02	0.284
2.80	2.4	2.70	0.476	2.1	2.54	0.418	1.9	2.42	0.374	2.1	2.24	0.324	2.8	1.97	0.274
3.00	2.2	2.41	0.498	1.8	2.34	0.410	1.7	2.27	0.361	1.8	2.16	0.336	2.5	1.97	0.288
3.20	1.9	2.31	0.484	1.5	2.21	0.425	1.5	2.15	0.366	1.6	2.08	0.348	2.3	1.97	0.301
3.40	1.6	2.27	0.474	1.5	2.33	0.425	1.4	2.22	0.384	1.5	2.10	0.358	2.1	1.97	0.312
3.60	1.5	2.27	0.482	1.3	2.14	0.423	1.3	2.10	0.384	1.4	2.04	0.367	1.9	1.96	0.322
3.80	1.2	2.00	0.425	1.1	1.94	0.399	1.2	1.92	0.390	1.3	1.96	0.374	1.8	1.95	0.330
4.00	1.1	1.79	0.444	1.0	1.77	0.409	1.1	1.81	0.397	1.2	1.91	0.380	1.7	1.94	0.338

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

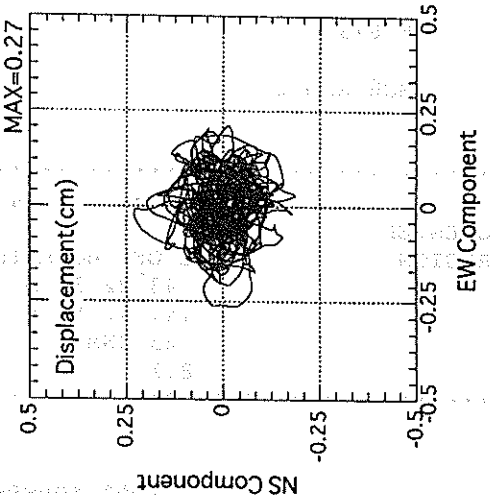
S-2584 Soma-S



S-2584 Soma-S



S-2584 Soma-S



RECORD NUMBER : F-679
 STATION : MURORAN-G

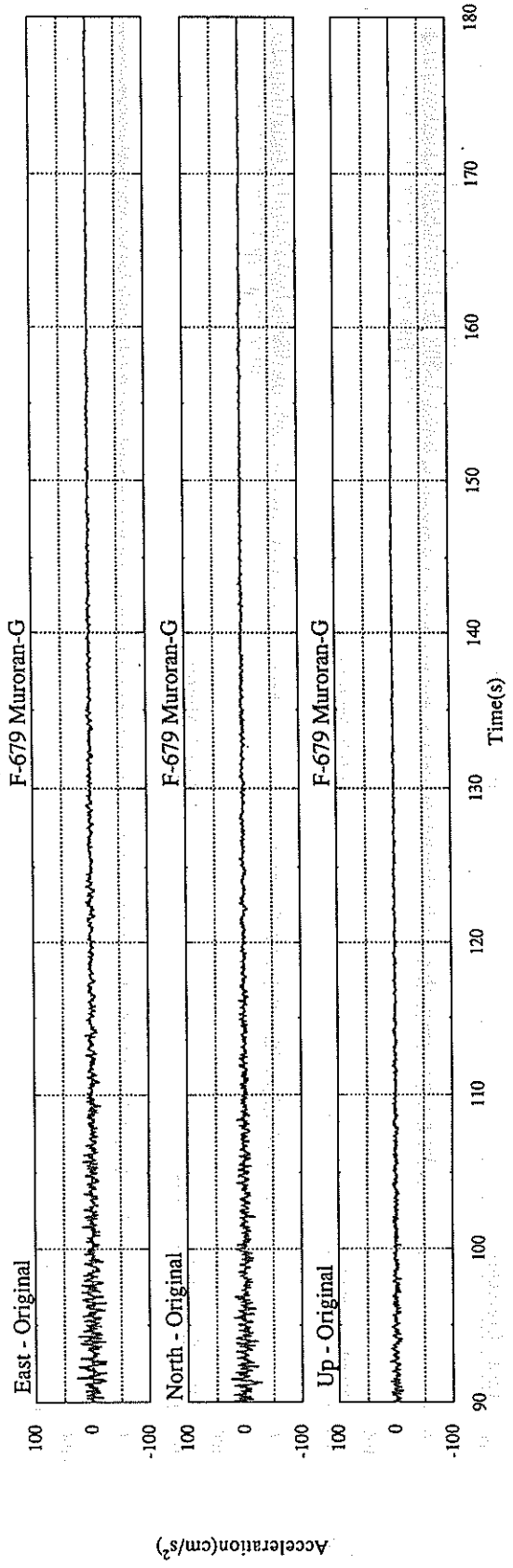
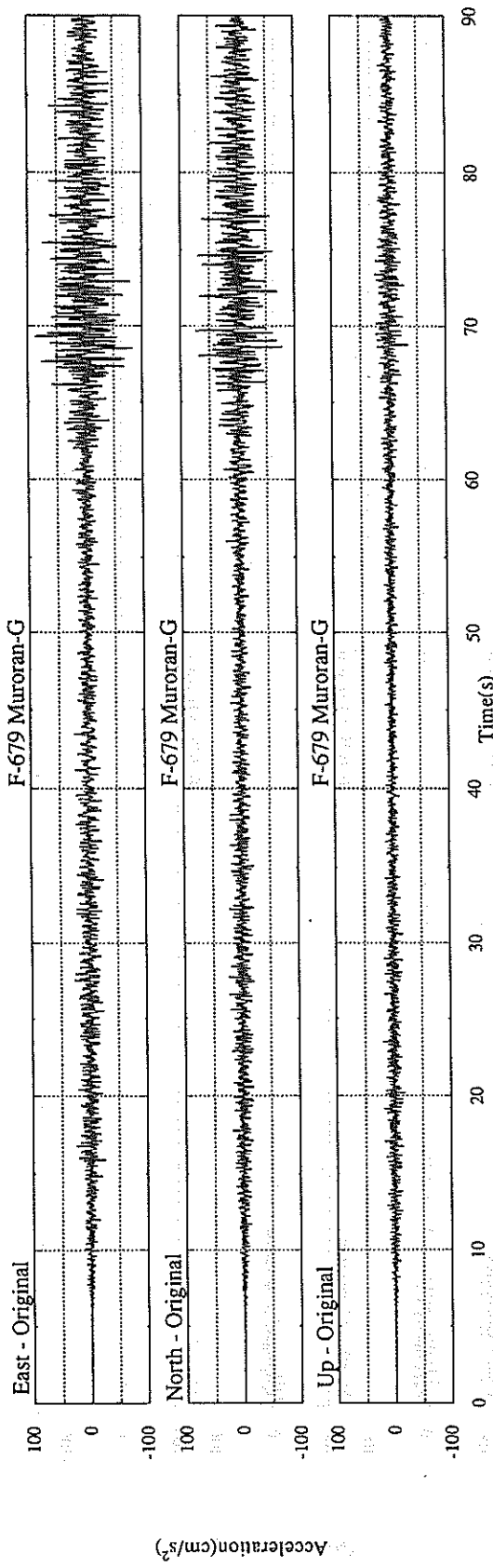
EARTHQUAKE DATA

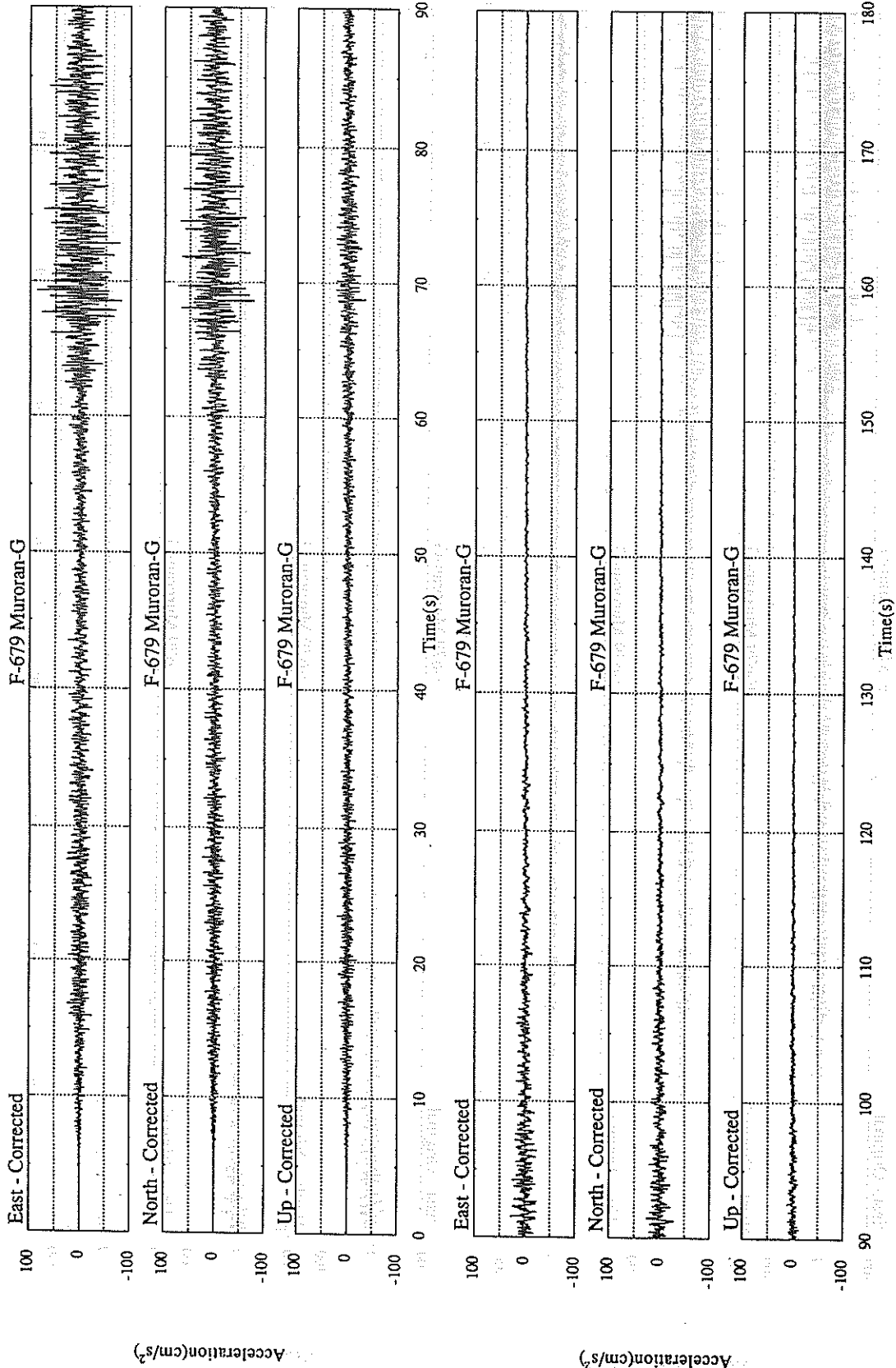
 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

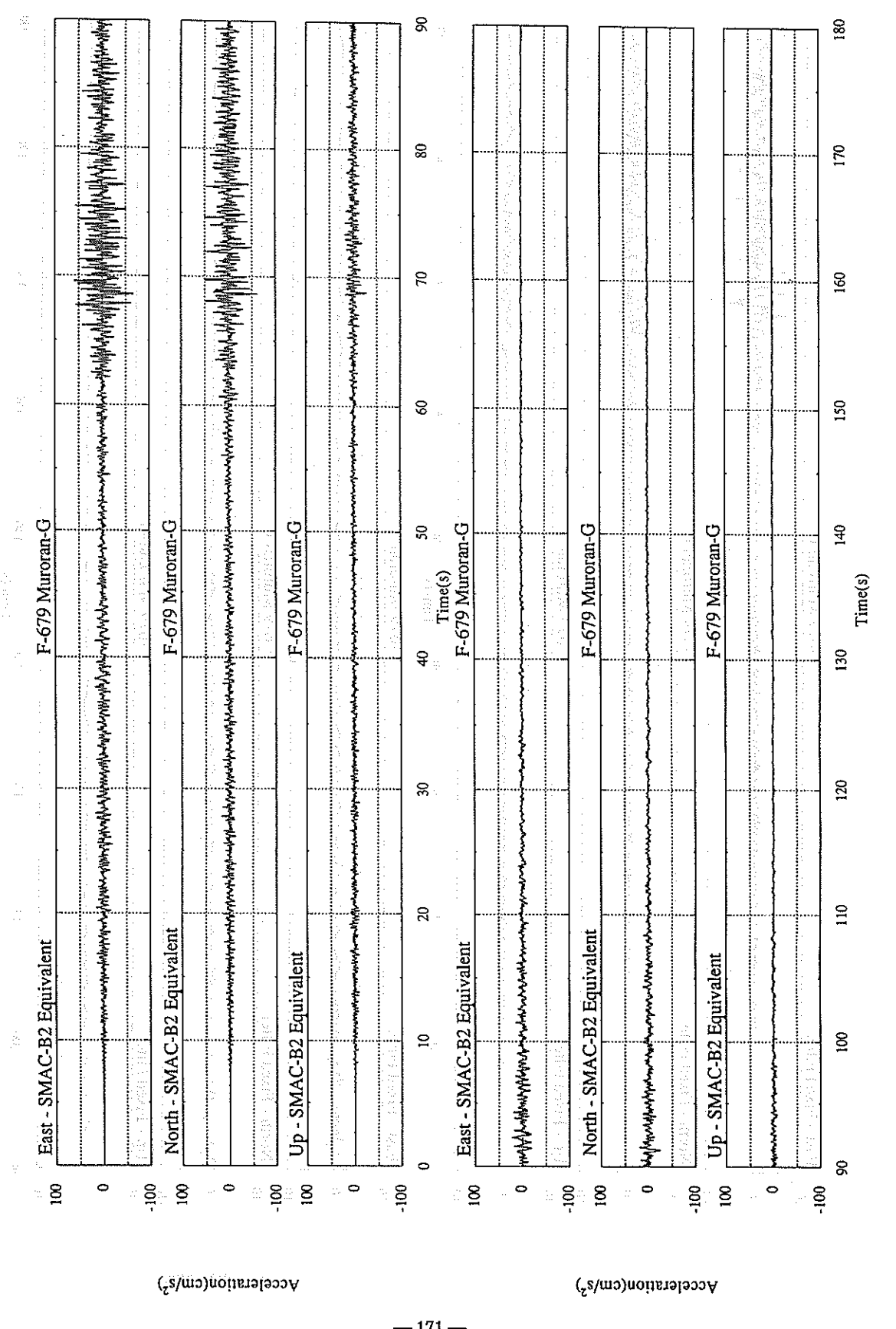
PEAK VALUES OF COMPONENTS

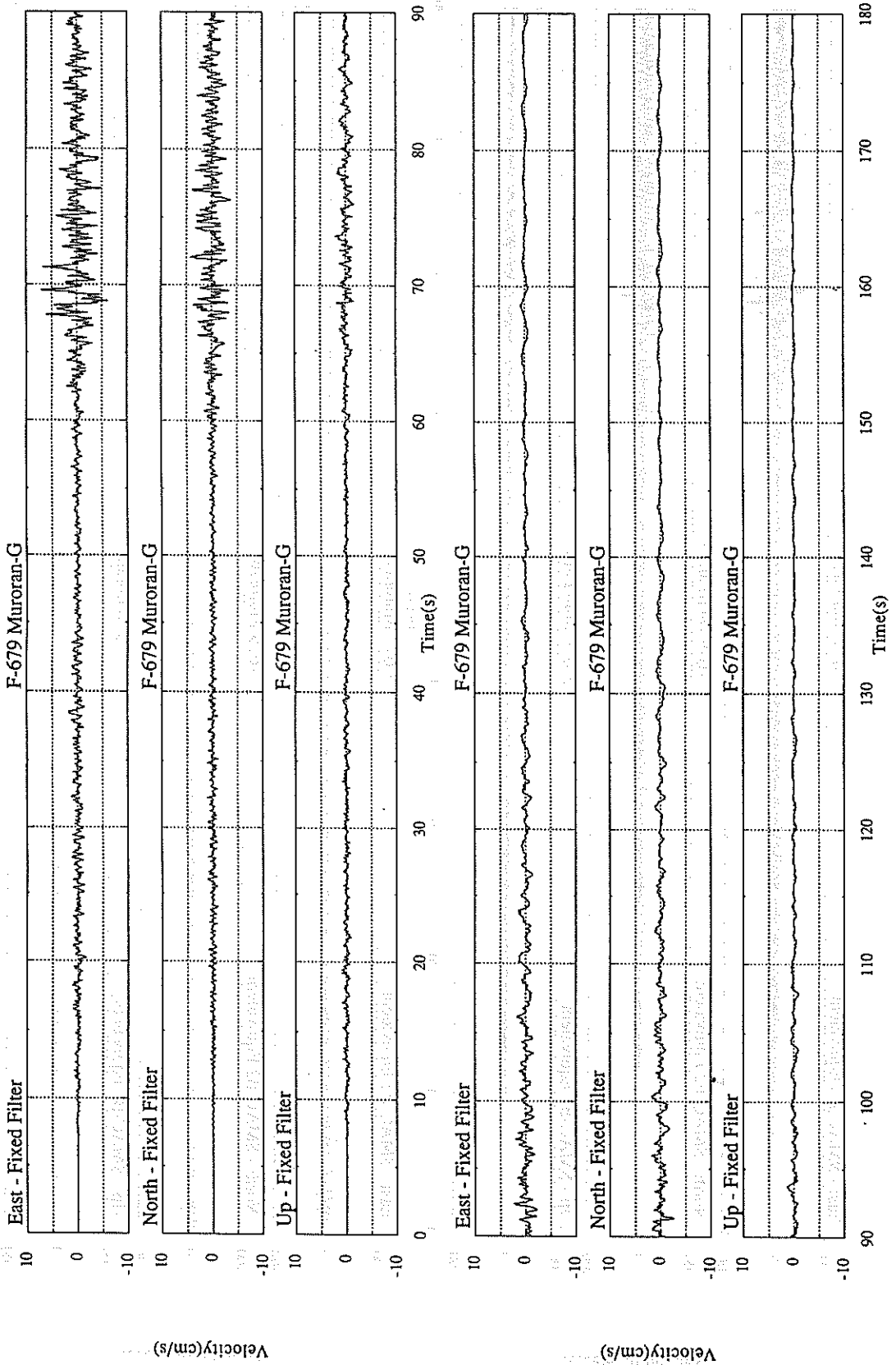
	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.029	0.038	0.060	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	61.1	67.2	27.0	71.8
ORIGINAL	77.0	86.5	34.3	88.9
CORRECTED	77.2	86.1	34.0	88.2
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	4.17	7.07	1.94	7.87
VARIABLE FILTER	4.38	6.91	2.18	6.91
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.97	1.37	0.59	1.41
VARIABLE FILTER	5.80	3.08	0.90	5.86

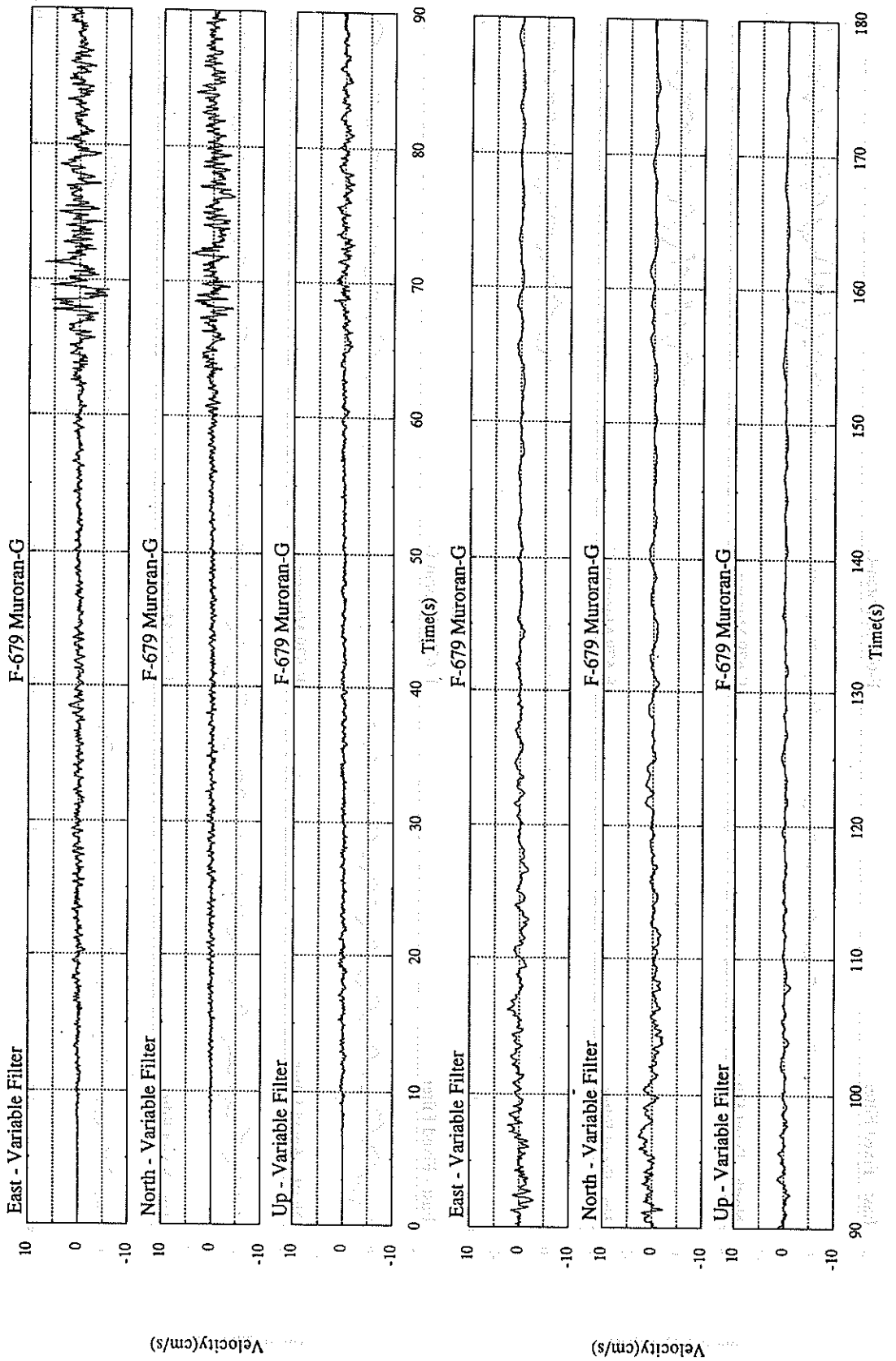
* RESULTANT OF HORIZONTAL COMPONENTS

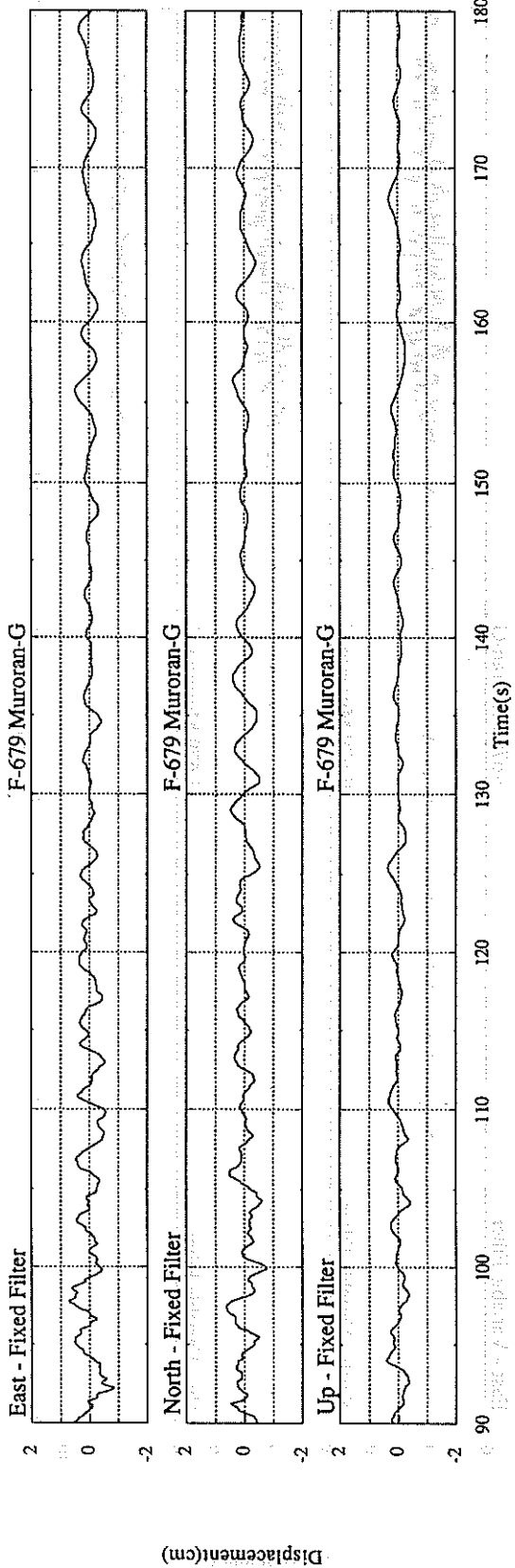
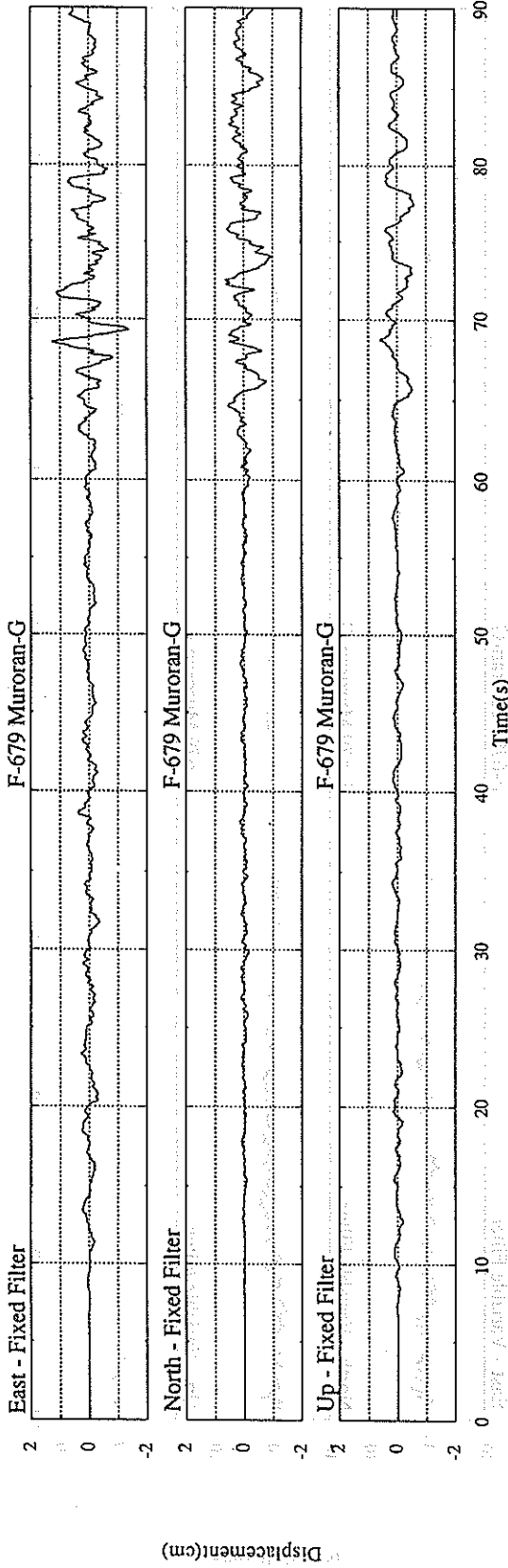


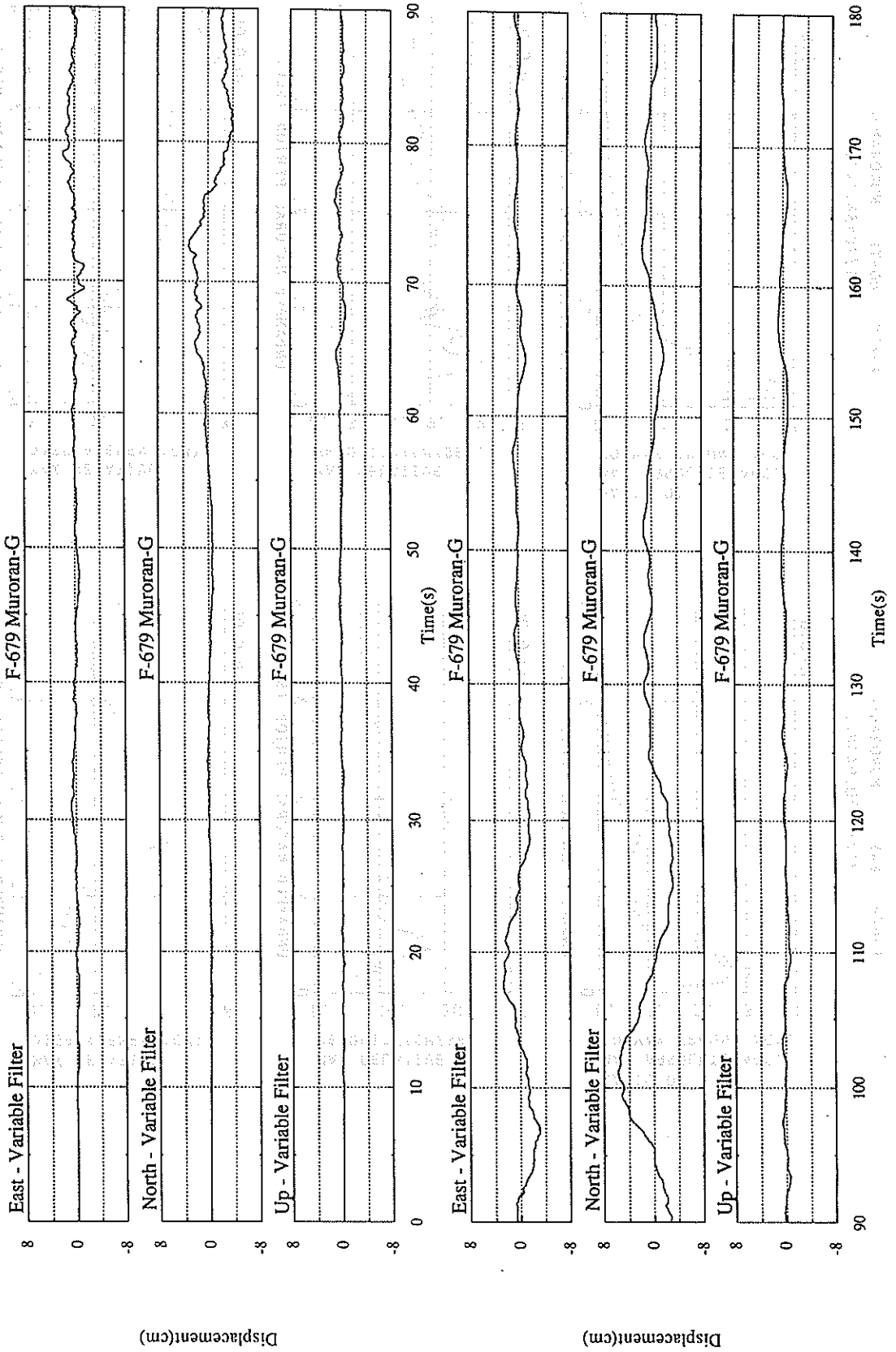




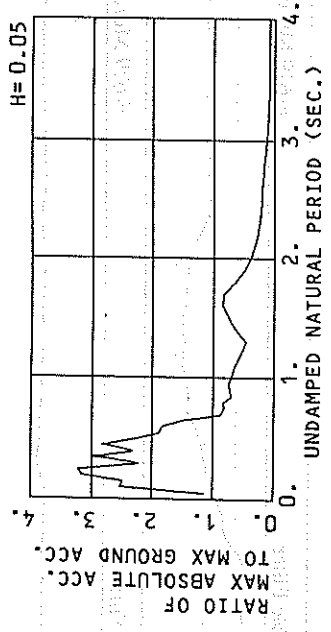




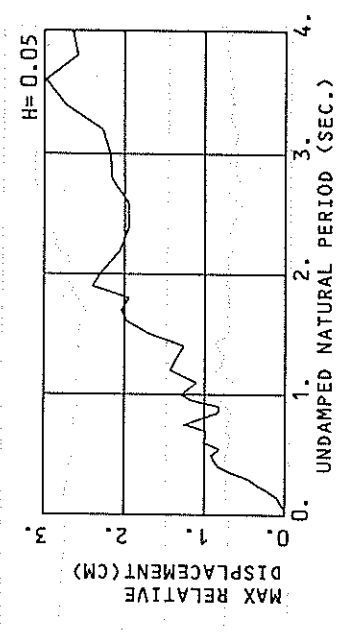
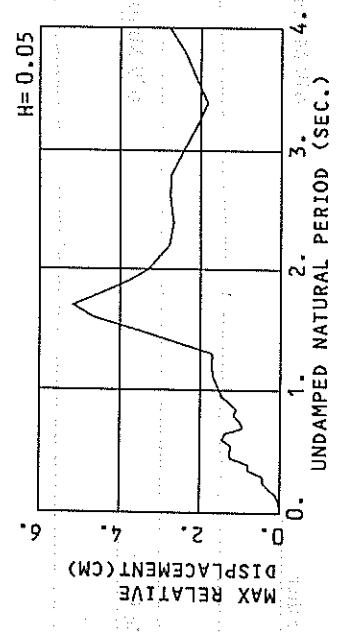
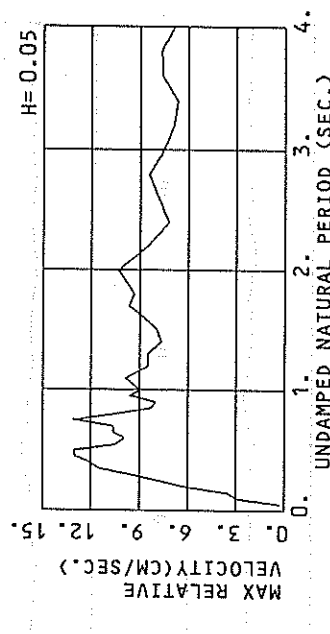
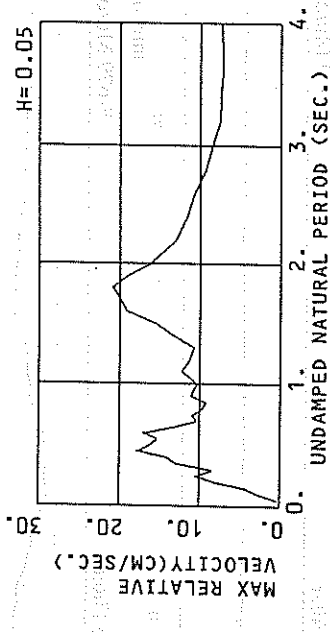
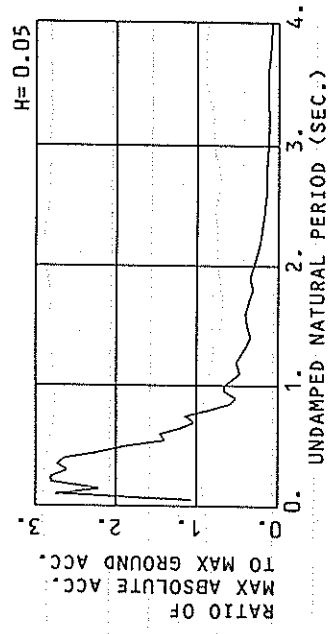




F-679 EAST MURORAN-G
(1/FC=30.94 SEC.)



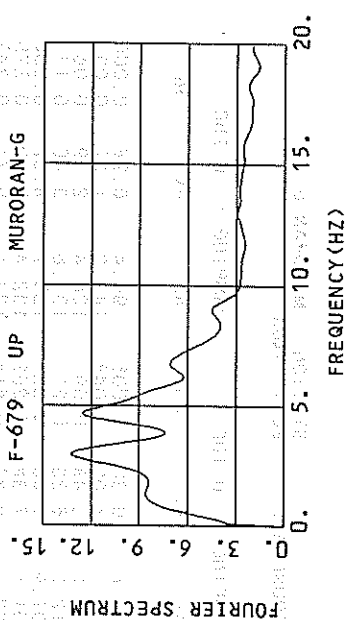
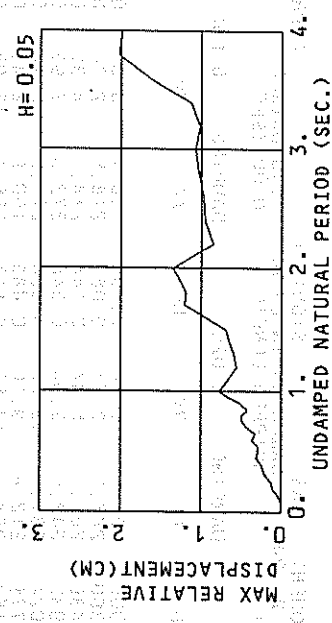
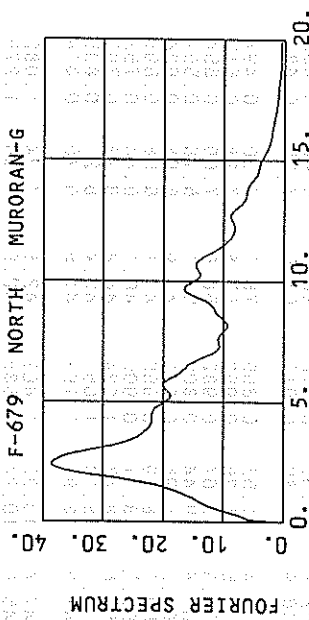
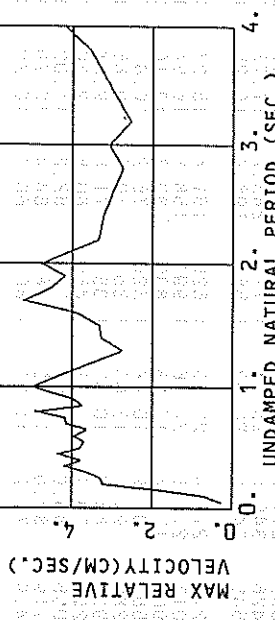
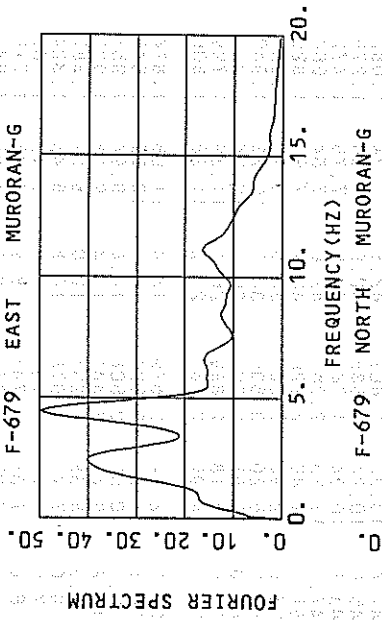
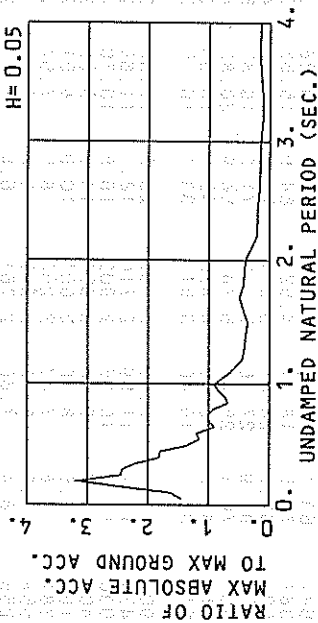
F-679 NORTH MURORAN-G
(1/FC=38.14 SEC.)



RESPONSE SPECTRA

RESPONSE SPECTRA

F-679 UP MURORAN-G
(1/FC=22.463SEC.)



RESPONSE SPECTRA

RESPONSE SPECTRUM

RECORD = F-679
 DATE AND TIME = 1994.10.04.22.24
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = EAST
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION =
 MAX. GROUND ACC. =
 STATION = MUORAN-G
 86.17 (GAL)

PER	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	146.0	0.87	0.009	99.9	0.34	0.006	98.1	0.32	0.006	96.6	0.30	0.006	96.4	0.28	0.006
0.10	1422.1	22.61	0.360	247.3	3.71	0.063	218.5	2.76	0.055	191.7	2.00	0.048	143.2	1.37	0.034
0.15	755.3	17.93	0.430	261.1	5.44	0.148	214.7	4.39	0.121	173.8	3.48	0.097	128.4	2.19	0.067
0.20	920.1	28.50	0.932	342.5	9.94	0.348	272.5	7.93	0.273	212.9	6.23	0.211	131.6	3.40	0.125
0.25	646.9	25.64	1.024	331.5	12.33	0.524	277.5	10.44	0.436	207.9	7.88	0.324	135.9	4.52	0.200
0.30	341.6	16.09	0.779	212.4	9.10	0.483	190.9	8.40	0.433	161.6	7.38	0.363	132.4	5.30	0.275
0.35	694.1	38.18	2.154	264.1	14.50	0.817	258.9	13.93	0.789	202.7	9.84	0.616	124.1	5.71	0.343
0.40	735.9	47.50	2.982	287.2	18.73	1.163	195.9	13.93	0.802	148.4	10.33	0.500	108.6	5.87	0.384
0.45	863.0	61.76	4.426	346.5	25.12	1.779	243.2	17.73	1.242	162.9	11.55	0.816	98.7	6.46	0.439
0.50	401.9	33.70	2.545	247.9	20.93	1.567	198.4	16.25	1.248	148.9	11.80	0.917	91.0	7.05	0.487
0.55	688.1	60.43	5.273	212.4	20.83	1.625	161.4	15.27	1.230	114.4	11.52	0.855	76.7	7.30	0.497
0.60	659.9	63.00	6.017	218.5	22.16	1.991	158.8	16.94	1.440	106.5	11.36	0.952	63.8	7.28	0.510
0.65	271.2	29.07	2.902	171.4	17.88	1.830	130.7	13.10	1.388	94.3	9.67	0.982	58.6	7.09	0.554
0.70	287.0	31.84	3.562	98.9	10.84	1.253	76.2	10.41	0.937	67.4	9.44	0.809	53.1	6.76	0.567
0.75	230.9	27.45	3.289	95.1	13.63	1.353	70.6	10.85	1.000	62.2	8.96	0.871	47.9	6.68	0.634
0.80	119.2	15.30	1.932	83.9	10.92	1.359	71.6	9.64	1.154	60.7	8.39	0.960	47.1	6.58	0.698
0.85	287.3	38.90	5.258	79.7	11.33	1.455	60.5	9.20	1.093	55.7	8.11	0.990	46.1	6.44	0.752
0.90	148.9	21.32	3.055	85.0	14.56	1.742	62.2	11.02	1.272	51.6	8.47	1.024	44.4	6.23	0.797
0.95	223.9	33.17	5.119	82.6	13.43	1.886	64.4	10.79	1.467	48.3	8.14	1.067	42.4	6.27	0.835
1.00	95.5	15.12	2.419	71.2	11.27	1.801	60.3	10.29	1.518	47.3	8.92	1.169	41.5	6.70	0.874
1.10	102.5	19.32	3.143	63.3	13.55	1.936	54.8	12.21	1.666	47.4	10.32	1.403	42.8	7.34	1.082
1.20	60.7	14.19	2.212	50.4	11.95	1.835	47.4	11.25	1.715	45.0	10.24	1.585	42.9	7.66	1.279
1.30	63.6	13.97	2.721	44.4	10.25	1.893	39.9	10.67	1.695	43.2	10.34	1.787	42.5	7.75	1.472
1.40	94.3	20.37	4.681	63.1	14.91	3.129	53.9	13.28	2.660	47.1	11.23	2.267	42.0	7.64	1.664
1.50	182.3	42.85	10.387	79.5	18.77	4.520	64.6	15.55	3.652	51.2	11.40	2.826	40.7	7.99	1.825
1.60	131.1	36.00	8.501	92.3	24.04	5.971	72.6	19.12	4.675	52.6	12.98	3.289	38.3	9.19	1.921
1.70	227.2	61.21	16.630	91.9	27.10	6.718	71.2	19.87	5.174	49.0	15.20	3.505	34.7	10.23	1.940
1.80	114.6	32.50	9.407	70.1	25.41	5.747	54.9	20.82	4.469	41.8	16.58	3.308	30.4	10.94	1.901
1.90	60.3	22.07	5.514	48.6	20.49	4.435	42.0	18.93	3.813	32.6	16.18	2.889	26.1	11.29	1.799
2.00	65.3	21.19	6.611	35.7	16.40	3.613	33.1	16.15	3.306	27.9	14.99	2.767	22.2	11.36	1.806
2.20	40.0	14.71	4.904	23.4	12.89	2.860	23.2	13.00	2.779	22.2	12.84	2.579	18.4	11.05	1.874
2.40	23.5	11.67	3.434	18.7	11.69	2.716	18.7	11.68	2.663	18.5	11.54	2.504	16.1	10.52	1.940
2.60	23.0	12.22	3.930	17.0	10.86	2.902	16.6	10.70	2.755	16.1	10.52	2.508	14.8	9.94	1.958
2.80	17.1	10.63	3.401	14.9	9.46	2.951	14.2	9.29	2.738	13.8	9.41	2.443	13.4	9.38	1.937
3.00	18.3	8.95	4.164	11.5	8.70	2.601	10.9	8.51	2.431	11.3	8.38	2.237	12.0	8.87	1.887
3.20	16.9	9.39	4.381	8.8	7.47	2.259	8.5	7.54	2.094	9.0	7.70	1.978	10.8	8.45	1.824
3.40	12.1	8.12	3.554	7.9	8.13	2.299	6.6	7.41	1.822	7.5	7.43	1.798	8.8	8.12	1.766
3.60	13.0	8.93	4.255	8.4	7.80	2.761	6.6	7.21	2.115	6.6	7.35	1.746	8.9	7.86	1.719
3.80	16.1	10.28	5.879	9.3	7.32	3.389	6.8	7.24	2.385	6.1	7.27	1.777	8.1	7.65	1.683
4.00	17.4	11.33	7.038	9.7	7.64	3.921	6.9	7.33	2.773	5.7	7.25	1.837	7.5	7.47	1.651

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = F-679 COMPONENT = NORTH SIGNAL = CORRECTION = STATION = MURORAN-G
 DATE AND TIME = 1994.10.04.22.24 SAMPLING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 77.21 (GAL)

TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC) DAMPING = 0.050 DAMPING = 0.100 DAMPING = 0.250

PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	115.5	0.77	0.007	83.2	0.26	0.005	82.5	0.25	0.005	83.3	0.24	0.005
0.10	737.4	11.49	0.187	280.1	4.00	0.071	212.5	2.93	0.054	162.1	2.10	0.040
0.15	681.3	16.13	0.388	202.8	4.91	0.116	171.2	3.49	0.097	135.8	2.83	0.076
0.20	940.7	29.85	0.953	278.9	8.84	0.281	217.1	6.27	0.218	158.6	4.46	0.158
0.25	720.3	28.57	1.140	276.1	10.23	0.435	217.3	7.77	0.340	160.1	5.73	0.250
0.30	524.8	21.96	1.196	263.7	10.23	0.600	201.6	9.64	0.456	147.5	6.72	0.330
0.35	427.5	24.06	1.327	315.3	12.41	0.978	211.2	11.52	0.651	121.8	6.74	0.370
0.40	493.1	30.57	1.998	257.1	15.81	1.044	204.6	12.08	0.824	136.1	8.37	0.538
0.45	324.6	58.35	4.230	254.1	18.46	1.303	173.6	12.97	0.885	122.4	9.12	0.614
0.50	374.4	29.90	2.371	205.1	17.06	1.298	145.1	13.09	0.913	98.8	9.08	0.611
0.55	212.6	19.22	1.629	132.6	13.17	1.014	108.0	10.49	0.822	88.7	7.95	0.661
0.60	257.5	24.50	2.348	142.7	12.93	1.299	112.6	9.94	1.020	86.1	7.71	0.763
0.65	311.4	32.16	3.333	124.5	13.73	1.330	92.6	10.63	0.984	69.4	8.07	0.721
0.70	261.6	29.32	3.246	106.3	13.27	1.317	79.9	10.64	0.986	63.9	8.39	0.758
0.75	257.5	30.73	3.668	123.5	16.76	1.759	88.6	13.10	1.255	60.5	9.84	0.840
0.80	220.8	30.73	3.580	75.9	11.14	1.229	66.0	10.74	1.064	54.0	9.43	0.857
0.85	205.5	28.06	3.760	51.1	8.20	0.933	45.6	8.28	0.830	44.2	8.40	0.790
0.90	85.6	13.04	1.756	48.6	8.92	0.997	40.1	8.01	0.818	39.7	8.06	0.796
0.95	208.5	31.36	4.767	71.2	11.75	1.625	51.3	9.59	1.167	40.3	8.05	0.897
1.00	130.7	20.95	3.310	64.3	10.30	1.626	51.4	9.00	1.291	39.3	8.01	0.966
1.10	51.9	12.27	1.591	42.2	10.83	1.290	36.2	9.88	1.100	32.4	8.63	0.960
1.20	84.9	16.06	3.096	48.2	9.77	1.756	39.4	8.47	1.428	30.6	8.10	1.085
1.30	101.6	20.86	4.349	37.7	9.70	1.613	32.1	8.47	1.356	27.1	7.57	1.106
1.40	64.4	14.71	3.195	35.9	8.79	1.779	25.8	7.68	1.266	20.3	7.31	0.964
1.50	84.6	21.01	4.824	37.5	10.32	2.134	29.9	7.93	1.688	23.1	6.97	1.259
1.60	55.9	15.74	3.626	40.0	11.34	2.587	30.7	8.75	1.962	23.8	6.48	1.465
1.70	86.7	23.99	6.349	37.8	12.76	2.762	28.1	9.67	2.038	21.1	7.11	1.441
1.80	59.2	17.40	4.855	29.7	11.94	2.433	23.8	9.35	1.947	18.3	7.04	1.427
1.90	52.5	14.96	4.802	35.9	11.53	3.277	26.6	9.85	2.397	17.7	7.83	1.603
2.00	60.4	19.44	5.115	29.2	12.67	2.951	23.2	10.33	2.312	17.8	7.84	1.665
2.20	45.3	17.06	5.559	20.8	9.73	2.535	17.1	8.52	2.053	13.4	6.84	1.551
2.40	36.1	13.58	5.266	14.9	8.67	2.153	13.7	7.23	1.943	11.8	6.40	1.598
2.60	19.0	9.81	3.262	14.0	8.57	2.392	11.6	7.86	1.954	9.2	7.04	1.458
2.80	18.6	10.39	3.693	12.6	9.28	2.492	11.1	8.46	2.159	9.3	7.35	1.744
3.00	20.1	9.96	4.591	10.2	7.71	2.325	9.7	7.54	2.177	8.8	6.98	1.873
3.20	19.7	10.74	5.102	9.4	7.14	2.425	8.8	6.89	2.269	8.0	6.41	1.953
3.40	13.4	9.09	3.909	10.6	7.65	3.085	9.5	6.67	2.729	7.9	6.03	2.178
3.60	18.3	11.34	6.037	10.9	8.48	3.569	9.2	6.71	2.980	7.4	6.47	2.237
3.80	18.3	11.40	6.703	9.5	8.67	3.444	7.3	7.71	2.578	6.1	6.46	1.996
4.00	12.6	9.18	5.117	8.3	7.38	3.327	6.6	6.87	2.642	5.2	6.07	1.982
4.20	45.3	17.06	5.559	20.8	9.73	2.535	17.1	8.52	2.053	13.4	6.84	1.551
4.40	36.1	13.58	5.266	14.9	8.67	2.153	13.7	7.23	1.943	11.8	6.40	1.598
4.60	19.0	9.81	3.262	14.0	8.57	2.392	11.6	7.86	1.954	9.2	7.04	1.458
4.80	18.6	10.39	3.693	12.6	9.28	2.492	11.1	8.46	2.159	9.3	7.35	1.744
5.00	20.1	9.96	4.591	10.2	7.71	2.325	9.7	7.54	2.177	8.8	6.98	1.873
5.20	19.7	10.74	5.102	9.4	7.14	2.425	8.8	6.89	2.269	8.0	6.41	1.953
5.40	13.4	9.09	3.909	10.6	7.65	3.085	9.5	6.67	2.729	7.9	6.03	2.178
5.60	18.3	11.34	6.037	10.9	8.48	3.569	9.2	6.71	2.980	7.4	6.47	2.237
5.80	18.3	11.40	6.703	9.5	8.67	3.444	7.3	7.71	2.578	6.1	6.46	1.996
6.00	12.6	9.18	5.117	8.3	7.38	3.327	6.6	6.87	2.642	5.2	6.07	1.982

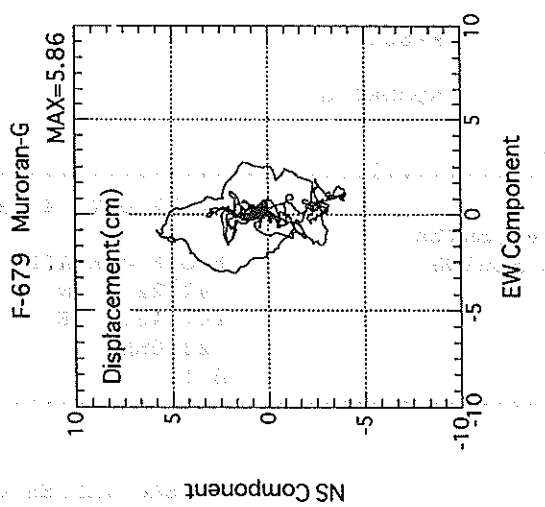
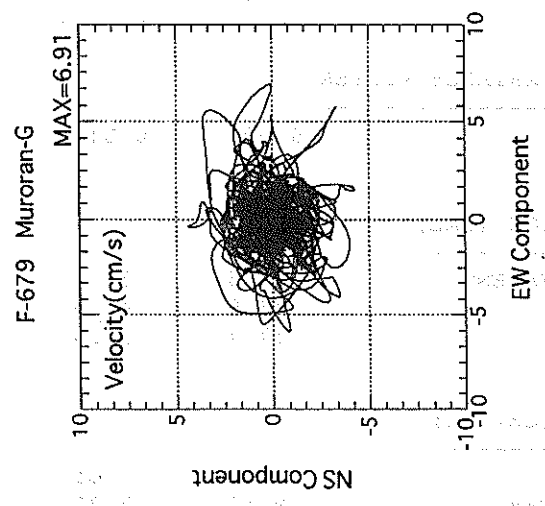
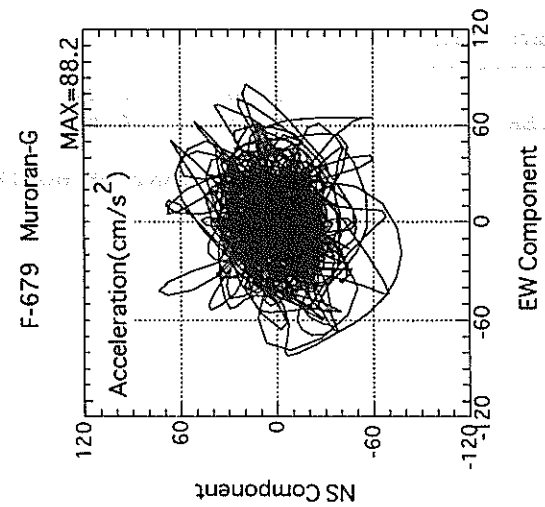
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = F-679
 DATE AND TIME = 1994.10.04.22.24
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = UP
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION = MAX. GROUND ACC. = 34.01 (GAL)
 STATION = MURORAN-G

PER	DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	300.1	2.38	0.019	56.0	0.34	0.004	49.2	0.25	0.003	42.7	0.19	0.003
0.10	315.0	5.00	0.080	62.0	0.90	0.016	55.1	0.70	0.014	49.2	0.49	0.012
0.15	324.3	5.37	0.134	113.9	2.48	0.065	83.4	1.80	0.048	58.6	1.23	0.033
0.20	382.0	11.99	0.387	153.4	4.59	0.157	108.8	3.22	0.110	77.5	2.23	0.076
0.25	143.0	15.77	0.226	98.0	3.98	0.155	83.2	3.22	0.131	70.9	2.62	0.110
0.30	329.8	15.72	0.752	110.0	4.85	0.251	83.0	3.54	0.188	60.1	2.76	0.135
0.35	400.7	22.19	1.243	101.3	5.57	0.314	75.1	4.18	0.231	61.5	3.17	0.187
0.40	236.4	14.99	0.958	72.0	4.57	0.291	62.0	3.78	0.249	48.2	2.84	0.192
0.45	184.6	13.21	0.947	76.1	5.35	0.389	61.2	4.34	0.312	44.0	3.16	0.228
0.50	104.2	8.44	0.660	65.3	5.05	0.413	46.4	3.81	0.292	33.0	2.84	0.203
0.55	113.2	9.99	0.868	55.1	4.98	0.422	39.3	3.69	0.299	29.5	2.72	0.221
0.60	172.6	10.77	1.027	52.9	5.05	0.482	40.7	3.94	0.369	30.1	2.74	0.268
0.65	177.4	7.92	0.828	40.2	4.68	0.429	30.7	3.64	0.328	25.3	2.82	0.258
0.70	137.6	15.39	1.707	44.0	5.35	0.545	33.9	4.14	0.419	25.6	2.95	0.313
0.75	62.2	7.51	0.886	41.1	5.11	0.585	34.5	4.15	0.489	24.9	3.06	0.346
0.80	73.5	9.49	1.192	44.2	6.51	0.716	31.3	4.90	0.505	20.3	3.31	0.320
0.85	84.3	11.80	1.542	33.1	5.05	0.604	23.2	3.74	0.422	17.9	2.81	0.318
0.90	81.3	11.61	1.668	33.6	5.11	0.687	25.1	3.93	0.513	19.0	2.88	0.381
0.95	57.2	9.51	1.308	32.8	5.48	0.748	28.6	4.44	0.649	20.2	3.15	0.448
1.00	98.9	15.63	2.505	44.3	7.67	1.122	30.8	5.00	0.774	20.6	3.10	0.507
1.10	83.0	14.75	2.545	29.8	5.36	0.913	21.6	4.27	0.659	15.3	2.96	0.460
1.20	38.1	7.28	1.388	19.7	4.15	0.718	15.4	3.52	0.556	12.8	2.79	0.445
1.30	23.1	4.91	0.989	15.8	3.05	0.677	13.9	2.74	0.590	10.5	2.38	0.439
1.40	27.7	6.56	1.377	14.5	3.69	0.719	13.0	3.27	0.642	9.8	2.49	0.474
1.50	28.5	6.98	1.623	15.4	4.16	0.875	12.2	3.31	0.688	9.2	2.59	0.513
1.60	34.0	9.10	2.205	19.7	5.25	1.275	14.7	3.87	0.945	10.4	2.73	0.649
1.70	40.7	12.14	3.252	24.3	7.21	1.778	16.6	5.19	1.210	10.2	3.48	0.728
1.80	49.7	13.91	4.081	19.9	5.92	1.631	14.6	5.19	1.210	9.6	3.32	0.728
1.90	41.0	12.55	3.745	18.7	5.76	1.707	13.9	4.53	1.262	9.7	3.28	0.776
2.00	37.5	11.85	3.800	18.6	6.47	1.883	13.4	4.74	1.347	9.2	3.23	0.898
2.20	11.8	4.76	1.450	9.1	3.77	1.119	7.0	3.32	0.849	5.7	2.71	0.668
2.40	16.1	6.33	2.353	8.6	4.04	1.256	6.6	3.22	0.953	5.7	2.54	0.715
2.60	12.1	4.96	2.079	5.8	3.44	0.987	5.7	2.98	0.959	5.0	2.38	0.807
2.80	8.9	4.47	1.758	6.4	3.13	1.270	5.3	2.73	1.036	4.4	2.27	0.837
3.00	10.6	5.06	2.410	6.2	3.67	1.417	4.7	3.08	1.089	3.9	2.25	0.826
3.20	7.1	3.59	1.839	4.5	2.64	1.176	4.0	2.54	1.020	3.7	2.39	0.916
3.40	6.6	3.79	1.921	4.2	3.24	1.231	3.9	2.88	1.132	3.7	2.47	1.062
3.60	8.7	5.28	2.859	5.7	3.82	1.870	5.0	3.21	1.826	4.0	2.57	1.276
3.80	12.7	7.83	4.655	7.3	4.27	2.671	5.6	3.53	2.023	4.1	2.80	1.420
4.00	11.7	7.49	4.730	6.2	5.00	2.501	5.0	4.18	1.993	3.8	3.20	1.452

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)



RECORD NUMBER : F-680
 STATION : AOMORI-G

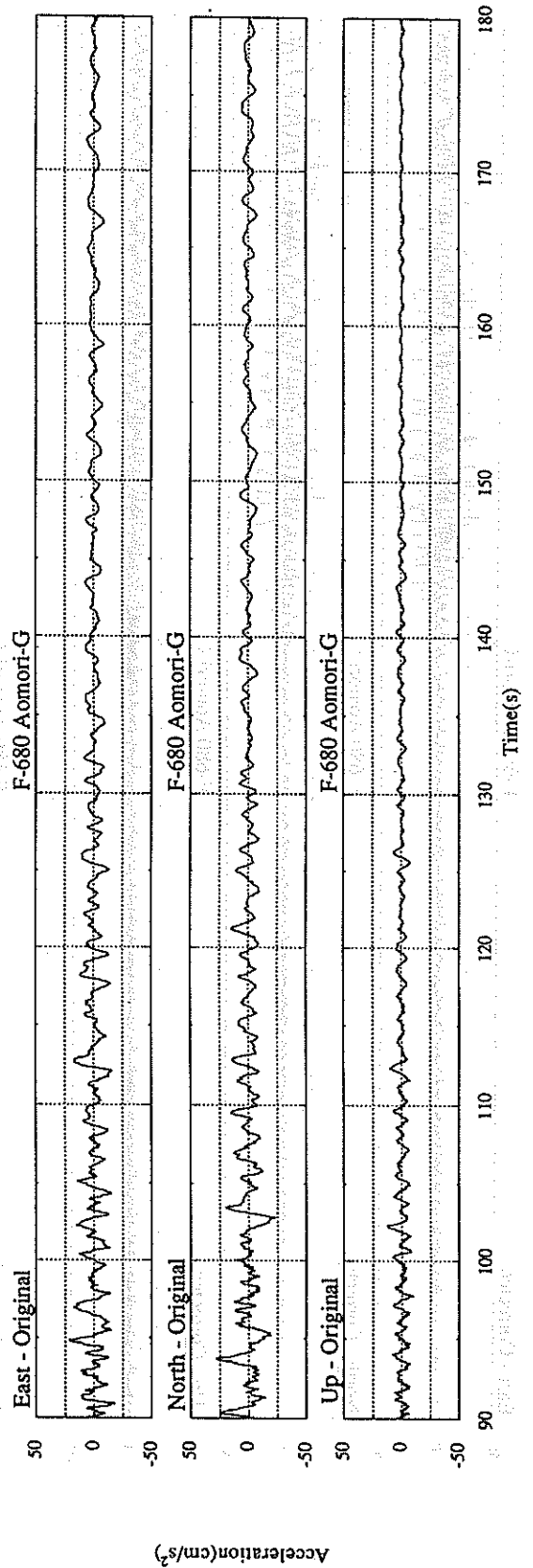
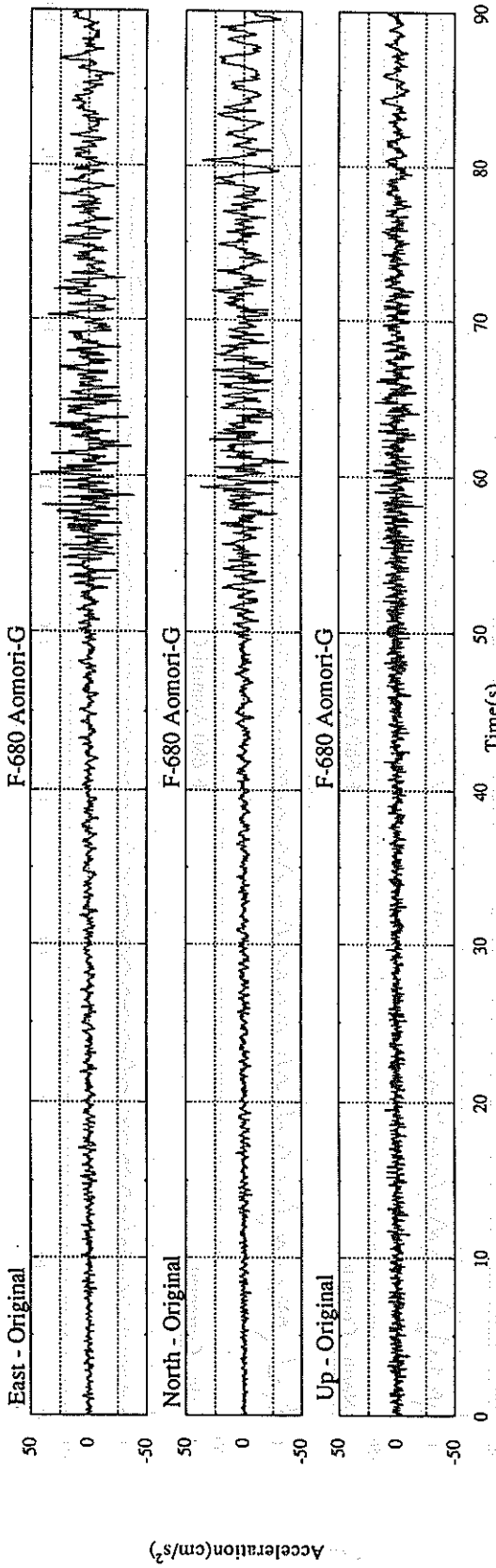
EARTHQUAKE DATA

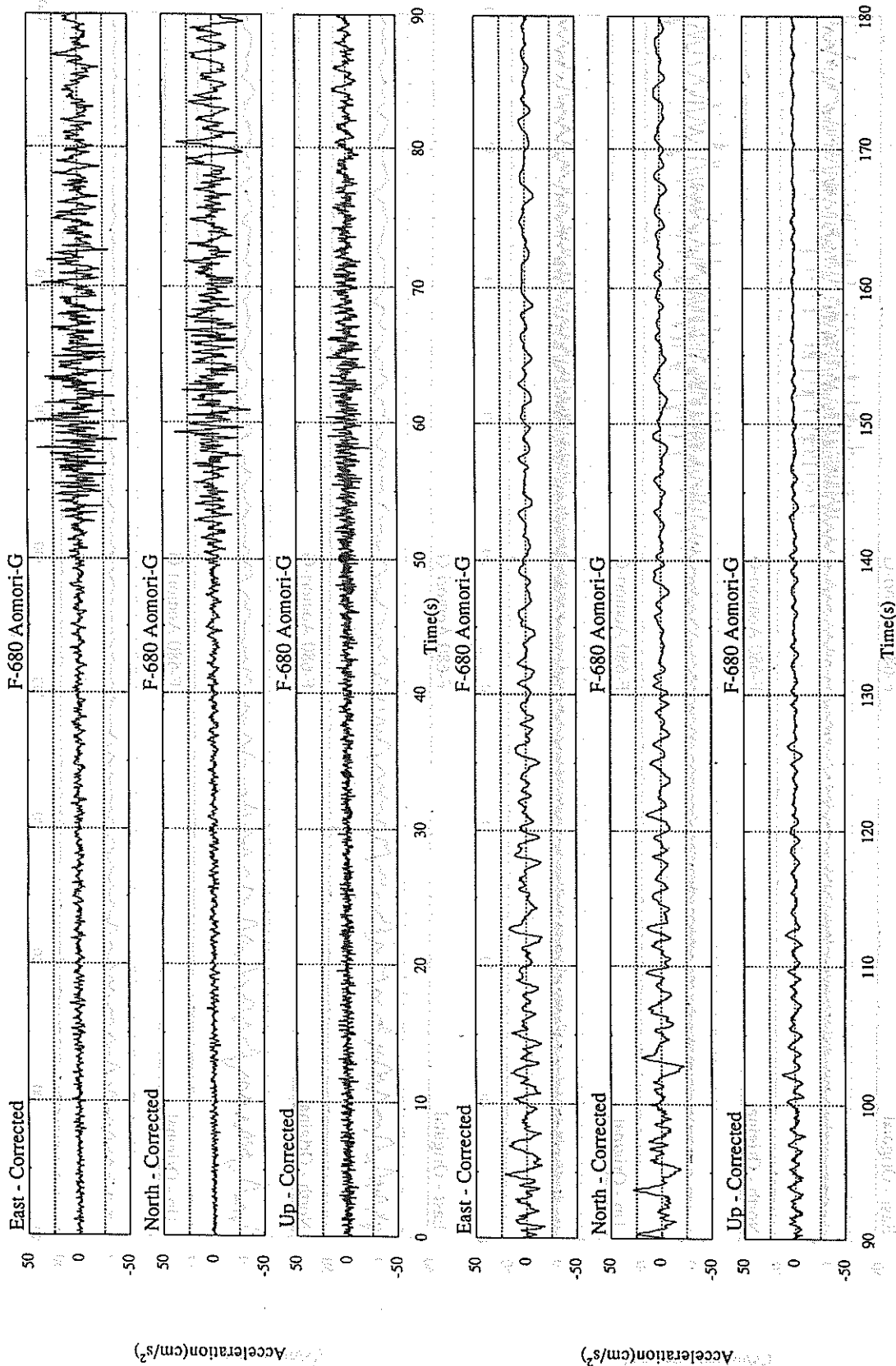
 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

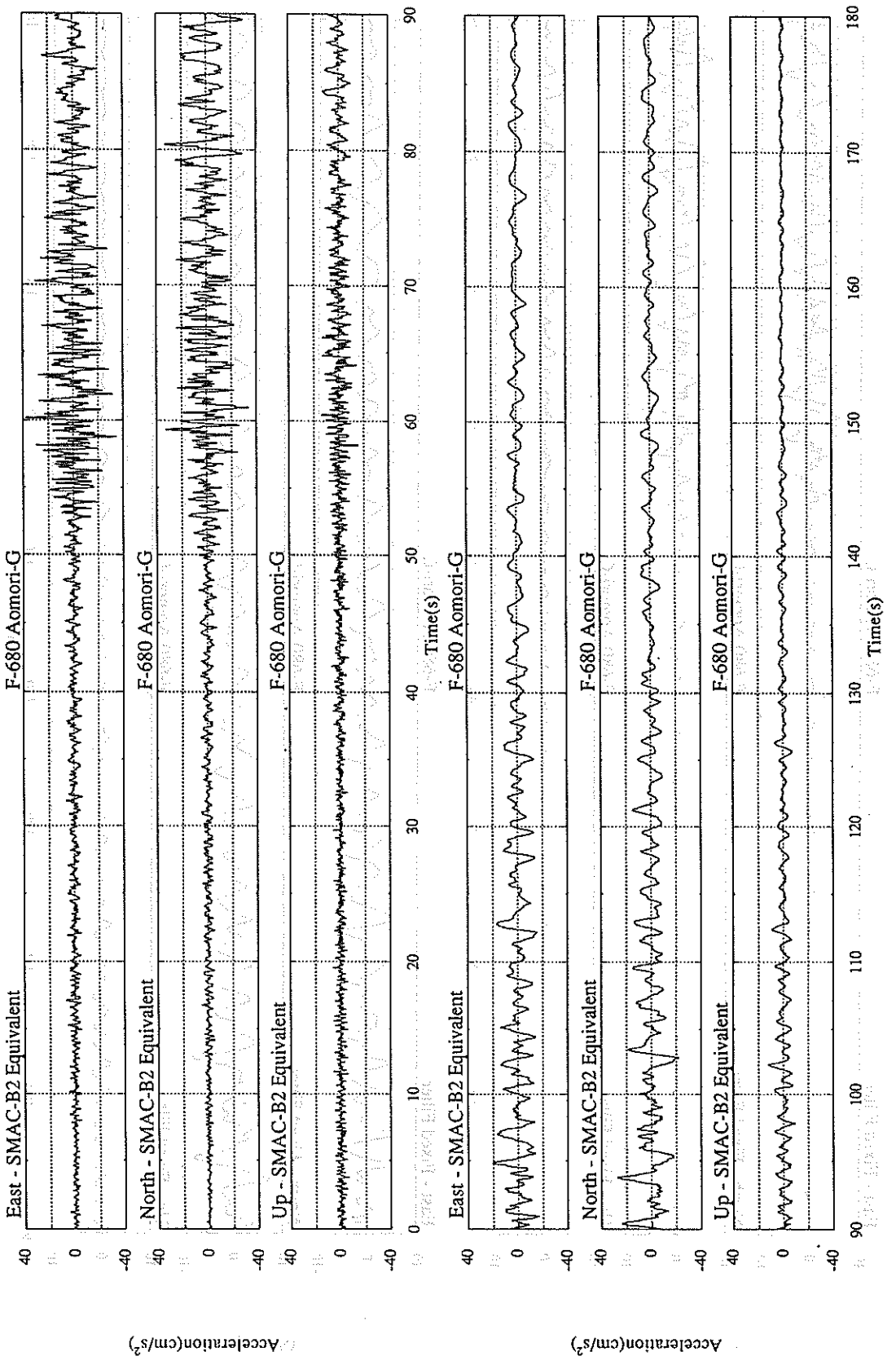
PEAK VALUES OF COMPONENTS

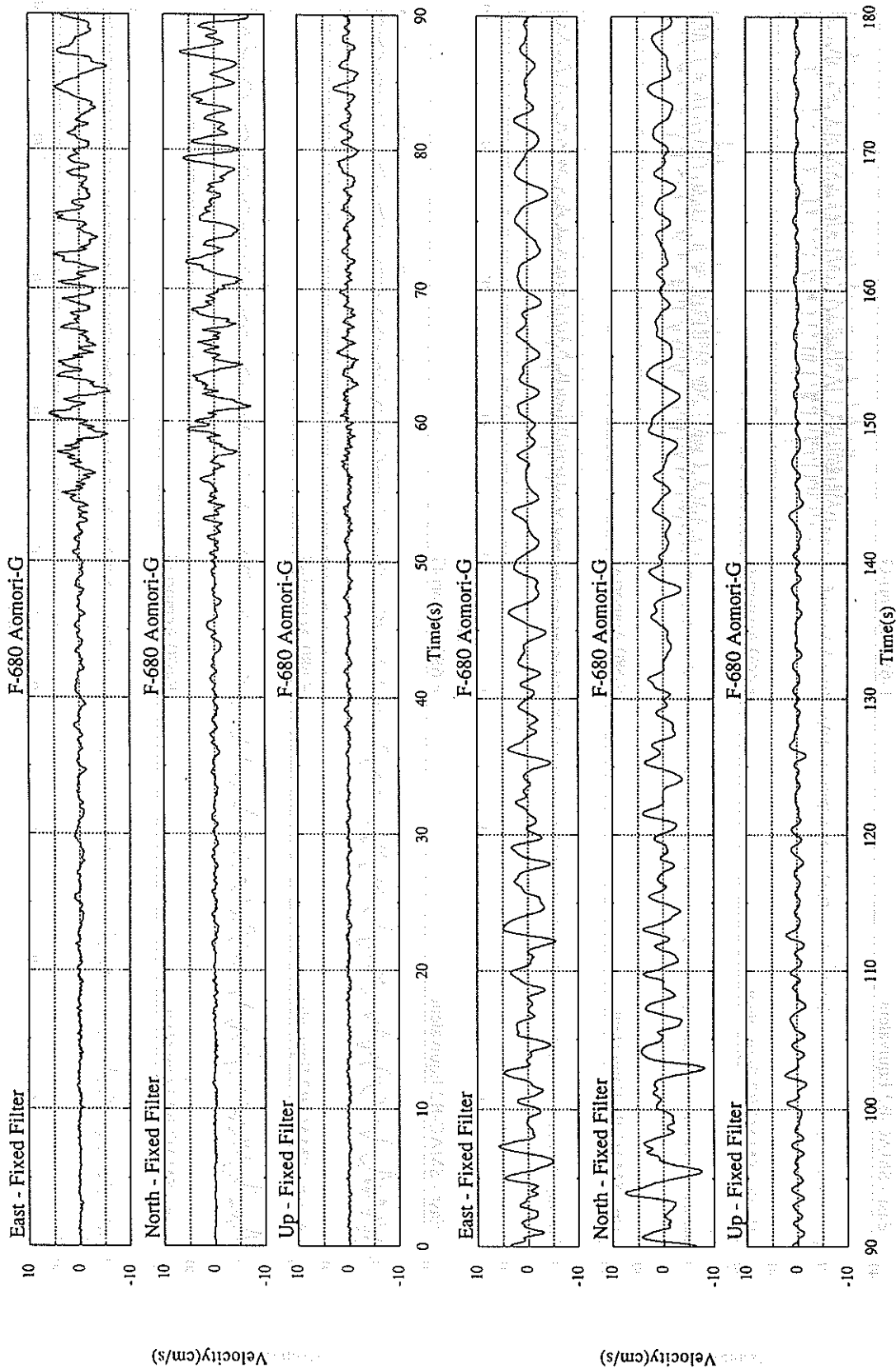
	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.026	0.035	0.038	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	33.5	37.8	15.6	39.0
ORIGINAL	37.9	42.0	23.2	43.1
CORRECTED	37.7	42.0	23.1	42.9
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	8.11	6.01	2.96	8.47
VARIABLE FILTER	9.15	7.39	2.68	9.24
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	3.60	2.81	0.95	3.87
VARIABLE FILTER	11.41	4.84	3.74	11.68

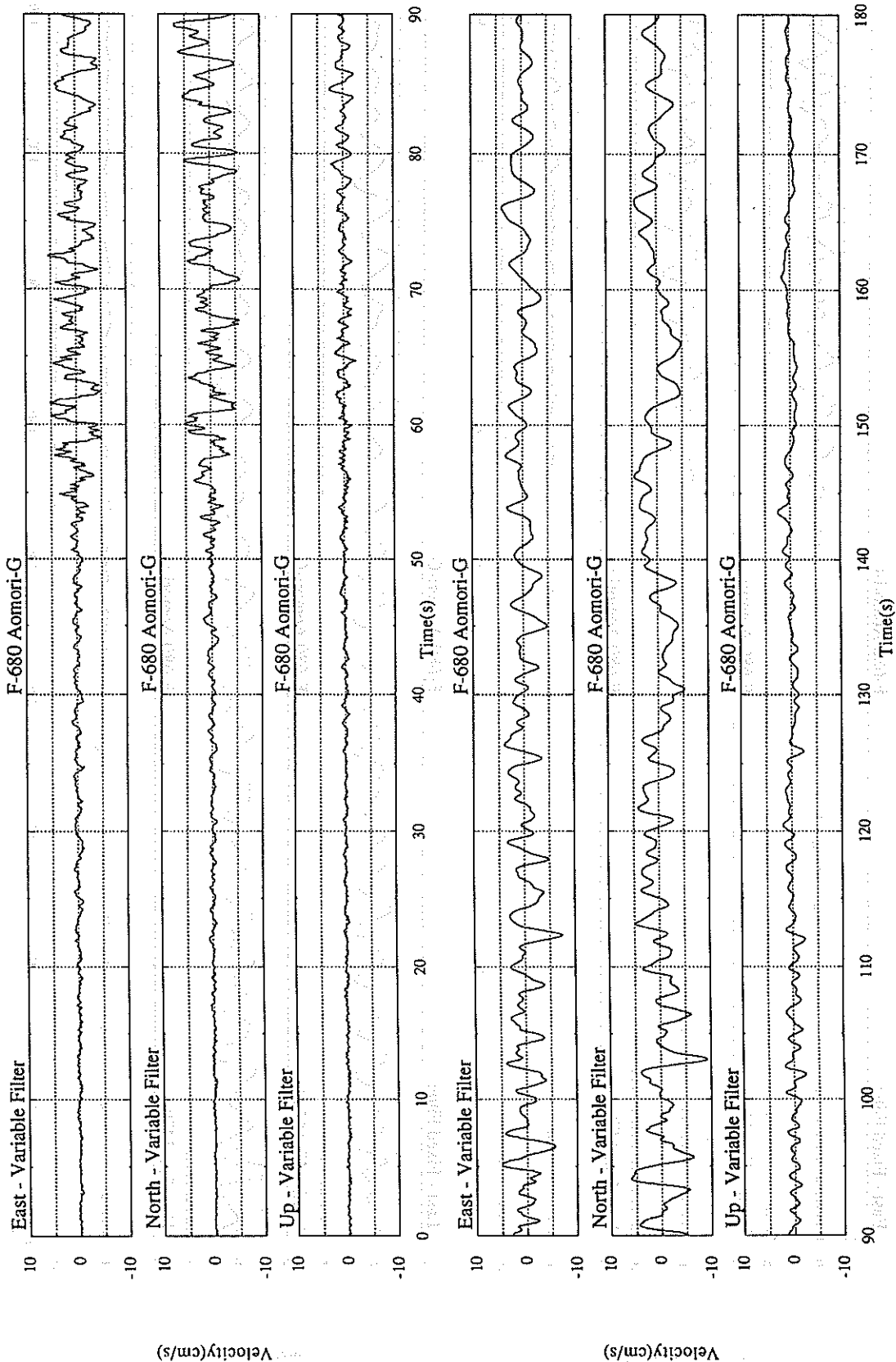
* RESULTANT OF HORIZONTAL COMPONENTS

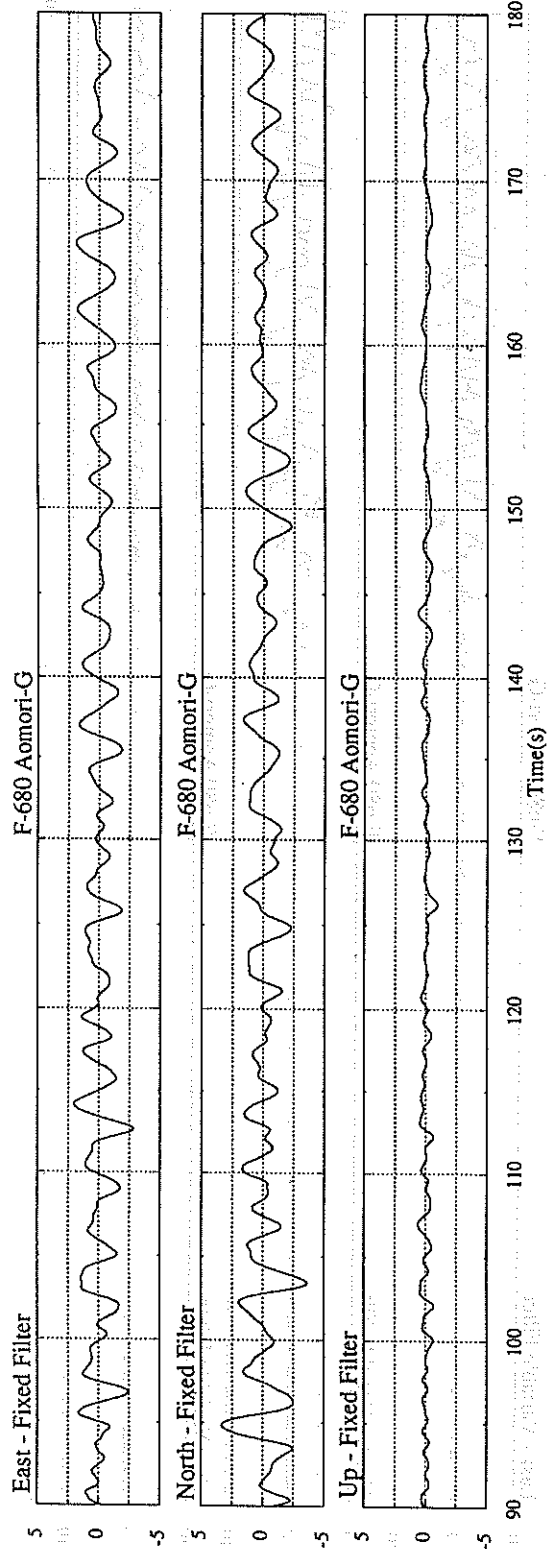
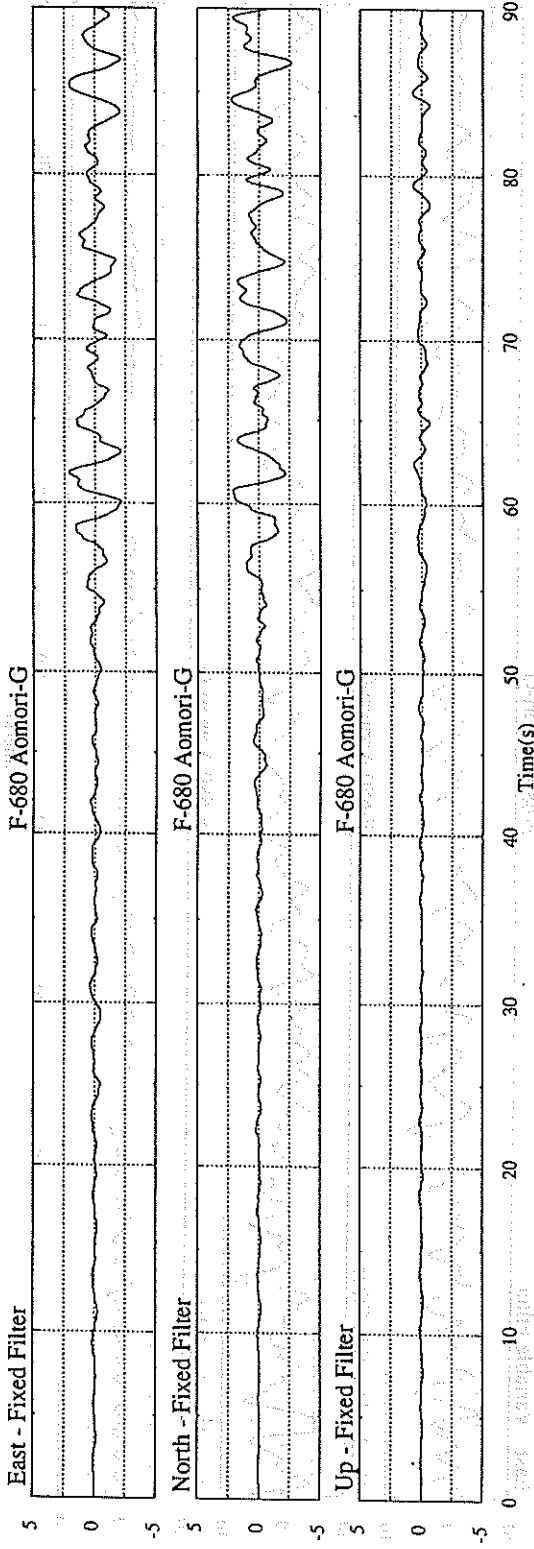


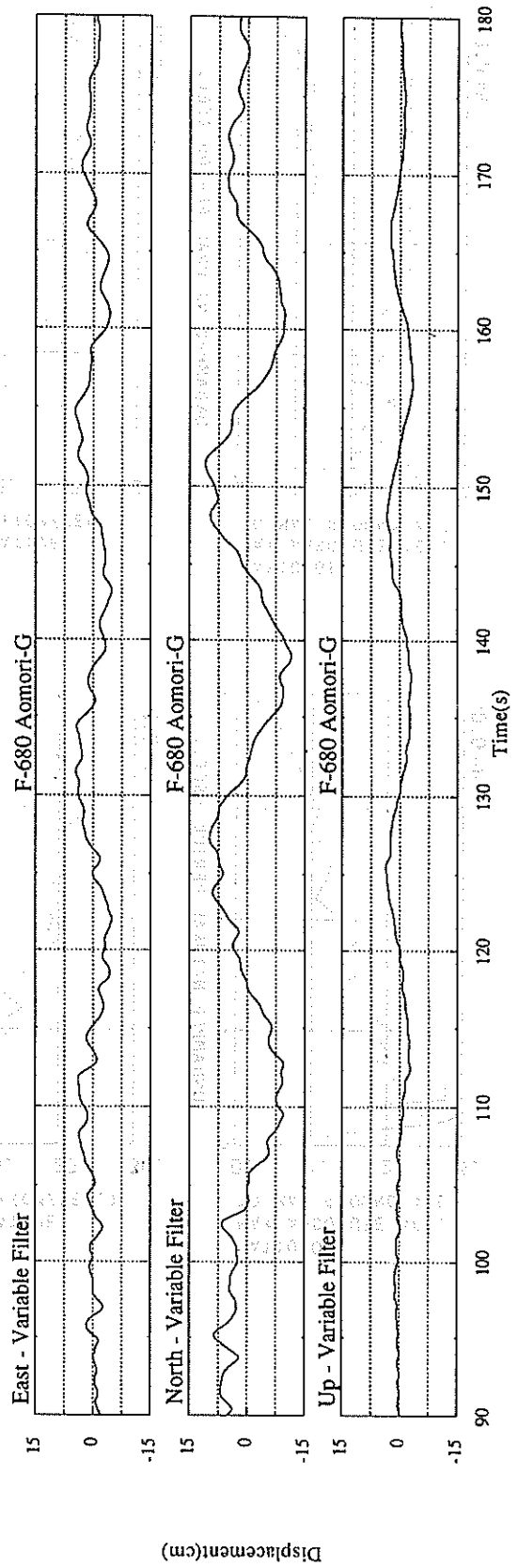
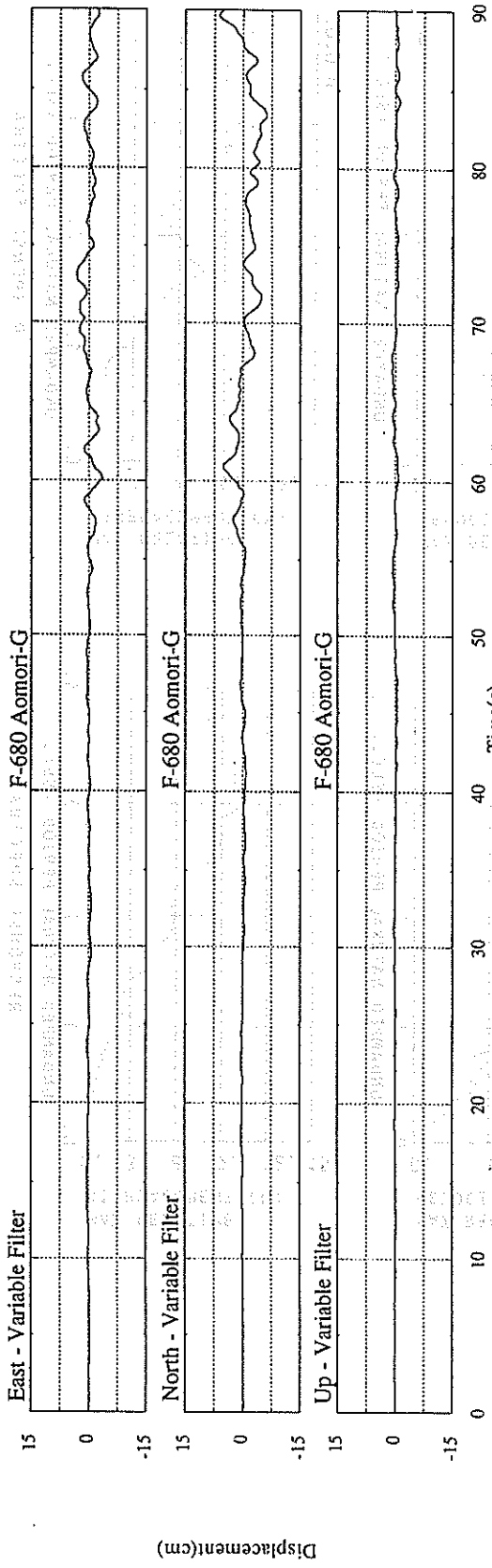






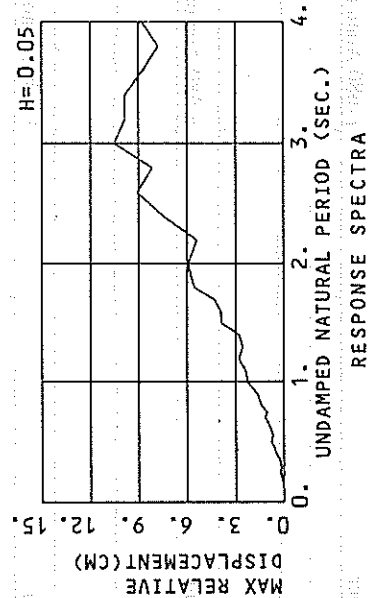
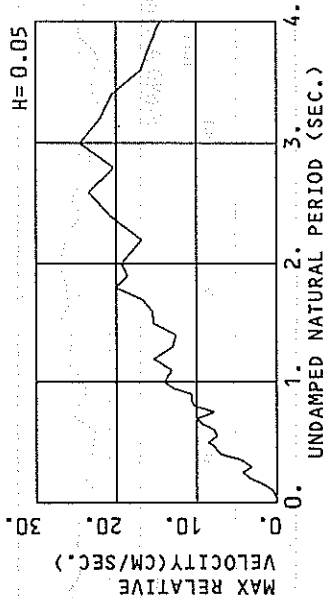
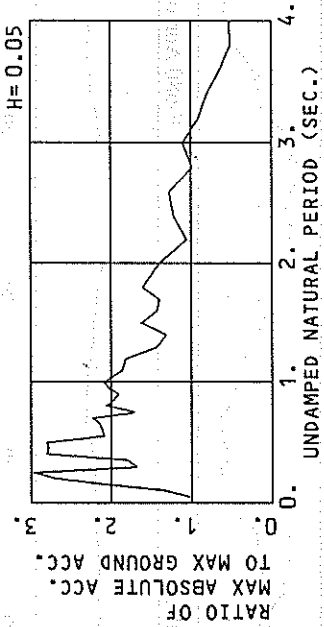




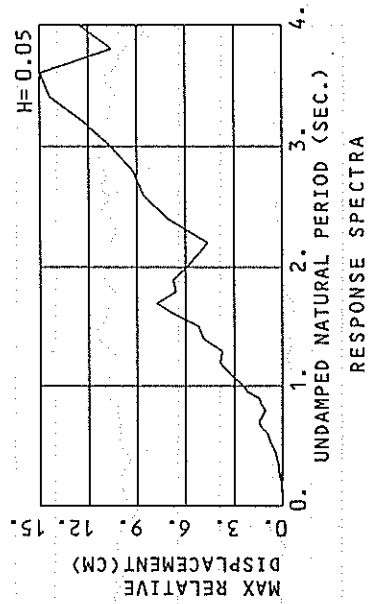
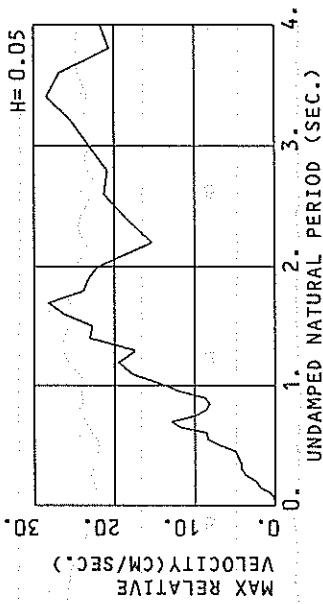
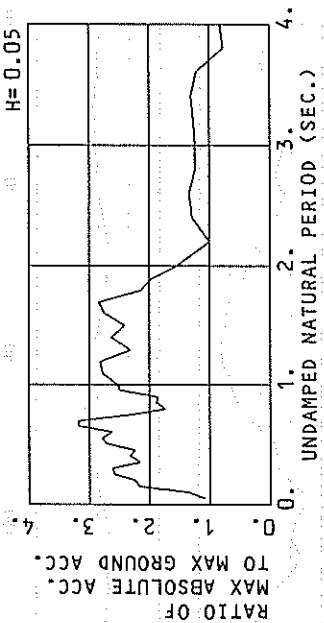


2013年10月10日 10:00:00
 2013年10月10日 10:00:00
 2013年10月10日 10:00:00

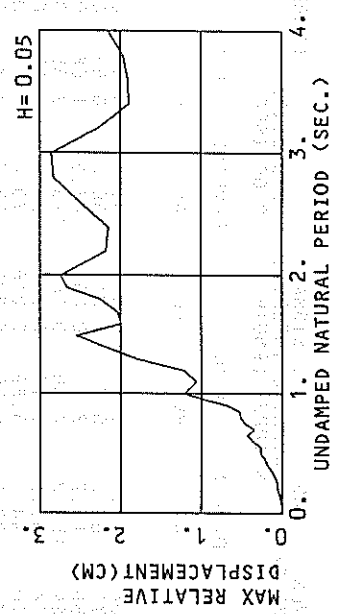
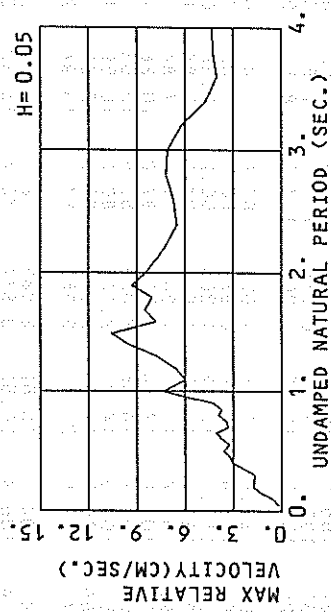
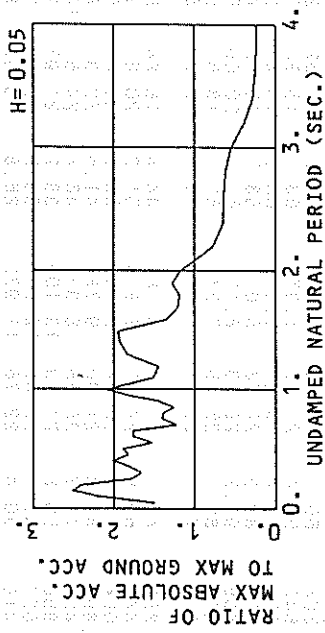
F-680 EAST AOMORI-G
(1/FC=26.02 SEC.)



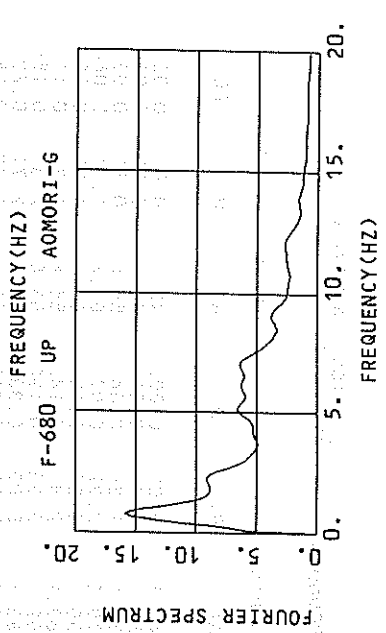
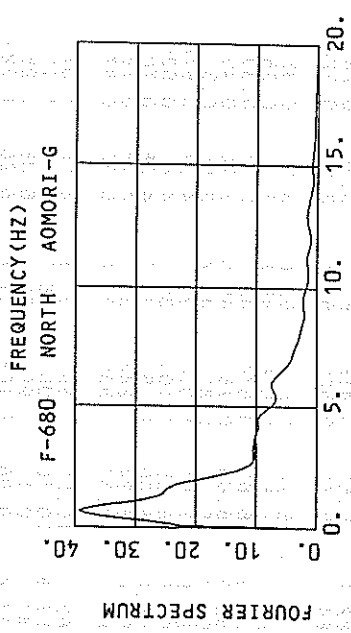
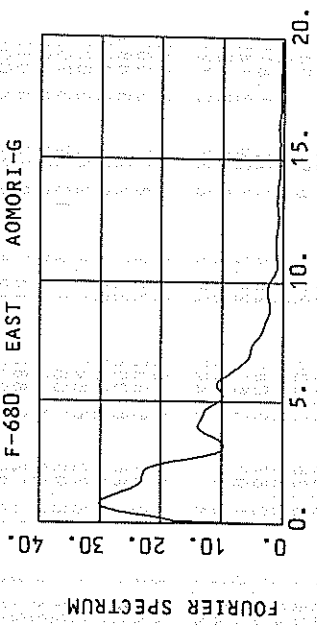
F-680 NORTH AOMORI-G
(1/FC=49.71 SEC.)



F-680 UP AOMORI-G
(1/FC=17.63SEC.)



RESPONSE SPECTRA



RESPONSE SPECTRUM

RECORD = F-680
 DATE AND TIME = 1994.10.04.22.24
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = NORTH
 SIGNAL = 0.0100(SEC)
 SAMPRING INTERVAL = 0.00 (SEC)
 SKIPPED LENGTH =
 CORRECTION =
 MAX. GROUND ACC. = 37.71 (GAL)
 STATION = AOMORI-G

PER	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	59.5	0.24	0.004	41.2	0.09	0.003	40.7	0.08	0.003	40.3	0.07	0.003	39.8	0.06	0.003
0.10	151.8	2.15	0.038	52.8	0.51	0.013	51.4	0.45	0.013	48.9	0.39	0.012	44.4	0.31	0.011
0.15	337.1	7.74	0.192	97.2	2.13	0.056	81.9	1.81	0.047	59.2	1.29	0.033	44.3	0.69	0.027
0.20	344.9	10.38	0.349	107.3	3.00	0.109	84.2	2.36	0.086	62.2	1.75	0.063	54.9	1.05	0.053
0.25	262.8	10.01	0.416	120.0	4.60	0.190	97.0	3.58	0.152	57.4	2.38	0.127	57.4	1.35	0.085
0.30	566.6	25.84	1.292	118.2	5.29	0.268	98.7	4.20	0.224	74.5	2.89	0.157	50.0	1.76	0.106
0.35	175.7	8.76	0.545	93.5	4.49	0.289	81.7	4.16	0.253	65.4	3.34	0.199	47.0	2.24	0.128
0.40	162.8	9.38	0.660	109.4	5.85	0.442	87.5	4.58	0.354	69.2	3.59	0.277	47.0	2.52	0.178
0.45	142.2	9.42	0.730	87.5	5.40	0.449	84.8	4.90	0.433	74.4	4.34	0.376	48.7	2.67	0.231
0.50	545.0	42.48	3.451	136.0	10.71	0.860	102.5	7.02	0.646	78.3	5.29	0.488	47.3	2.92	0.277
0.55	456.0	39.06	3.494	144.8	11.93	1.108	105.3	8.39	0.803	71.5	5.49	0.538	44.7	3.11	0.307
0.60	324.4	30.26	2.958	132.8	11.39	1.210	99.2	8.49	0.902	70.5	6.20	0.630	45.3	3.66	0.383
0.65	530.9	53.40	5.682	182.7	19.03	1.952	120.0	11.85	1.279	82.2	7.36	0.866	46.8	4.09	0.469
0.70	265.5	29.74	3.235	162.1	17.89	2.012	119.9	12.86	1.482	80.6	8.19	0.985	46.3	4.37	0.538
0.75	310.3	36.61	4.421	110.1	12.67	1.567	86.9	9.84	1.231	66.9	7.69	0.935	44.1	4.61	0.585
0.80	169.6	20.36	2.750	72.5	9.57	1.175	65.7	8.55	1.061	55.9	6.75	0.887	44.3	4.92	0.673
0.85	229.7	29.77	4.203	86.7	11.05	1.585	71.2	8.18	1.300	60.4	6.54	1.092	46.6	5.14	0.793
0.90	106.3	13.14	2.181	78.5	10.32	1.608	70.4	8.75	1.440	64.8	7.03	1.312	48.8	5.33	0.926
0.95	263.6	39.06	6.027	126.8	16.95	2.898	93.9	11.95	2.138	69.8	8.18	1.572	51.0	5.60	1.070
1.00	250.0	37.75	6.332	127.1	18.71	3.217	95.0	13.57	2.393	71.3	10.11	1.780	52.7	6.18	1.219
1.10	383.9	65.56	11.765	124.8	20.83	3.820	104.9	17.75	3.200	82.3	13.18	2.477	54.6	7.10	1.505
1.20	204.6	38.98	7.484	121.2	22.96	4.416	106.2	19.40	3.854	80.5	14.21	2.878	53.7	8.61	1.742
1.30	261.3	53.27	11.185	89.9	18.40	3.842	87.7	17.38	3.736	74.8	15.15	3.135	50.8	9.76	1.923
1.40	194.5	40.31	9.658	126.7	28.33	6.283	99.0	23.08	4.889	74.6	17.04	3.521	47.1	10.56	2.041
1.50	157.3	36.39	8.955	128.8	30.08	7.328	91.0	22.73	5.167	67.9	17.46	3.780	42.9	10.97	2.153
1.60	350.3	88.87	22.718	142.8	36.50	9.244	103.6	26.34	6.684	66.1	16.41	4.208	40.5	11.02	2.281
1.70	370.4	98.59	27.113	163.6	43.06	11.963	107.1	28.20	7.801	68.9	17.58	4.942	38.4	10.86	2.480
1.80	188.0	53.70	15.430	92.1	27.91	7.547	80.6	23.89	6.582	62.9	18.38	5.050	36.3	10.46	2.596
1.90	259.2	77.55	23.700	97.9	30.23	8.940	74.1	23.25	6.741	54.7	17.82	4.900	33.2	10.58	2.639
2.00	125.0	41.74	12.664	74.4	26.65	7.523	58.7	22.12	5.918	45.5	16.79	4.513	30.2	10.57	2.720
2.20	70.5	24.01	8.645	44.9	15.99	5.504	37.8	15.30	4.613	35.5	13.92	4.276	26.6	10.21	3.038
2.40	119.1	42.72	16.500	62.9	23.65	9.173	48.5	18.51	7.080	37.3	14.17	5.364	27.7	9.61	3.712
2.60	147.8	56.76	25.506	73.3	28.35	12.540	50.4	21.26	8.596	40.4	16.41	6.798	28.2	9.46	4.361
2.80	95.2	42.69	18.899	57.4	25.03	11.391	45.8	20.82	9.234	39.4	16.76	7.646	27.8	9.63	4.883
3.00	98.5	49.65	22.464	61.3	30.78	13.959	46.7	23.06	10.593	38.3	16.63	8.525	26.6	10.03	5.243
3.20	172.0	90.49	44.504	70.2	36.61	18.180	47.7	25.32	12.303	36.5	17.78	9.226	24.6	10.92	5.432
3.40	114.0	61.76	31.372	67.5	38.59	19.736	49.3	28.39	14.353	31.8	18.45	9.943	20.2	11.41	5.437
3.60	96.2	57.57	31.583	62.3	36.59	20.433	45.9	26.82	14.957	31.2	17.98	9.943	20.2	11.41	5.437
3.80	55.2	37.12	20.201	36.9	24.74	13.468	29.0	20.58	10.552	25.9	16.26	9.145	19.0	11.34	5.676
4.00	75.3	47.41	30.530	44.6	29.14	18.052	31.1	21.67	12.469	21.6	16.03	8.423	17.4	11.15	5.640

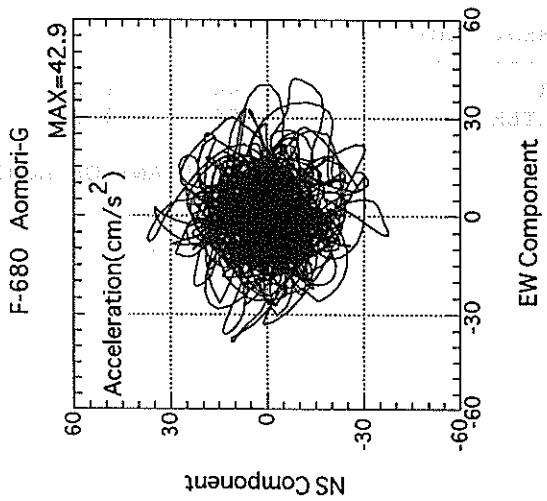
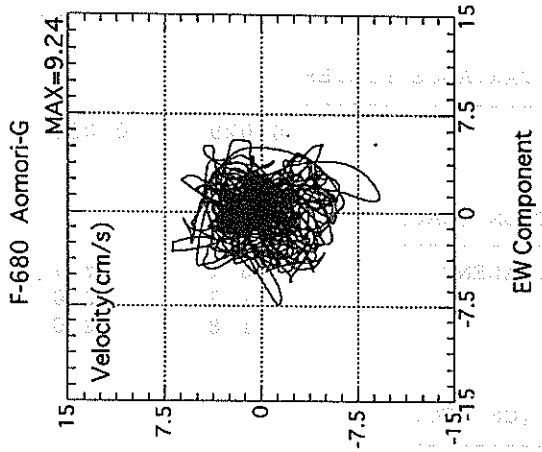
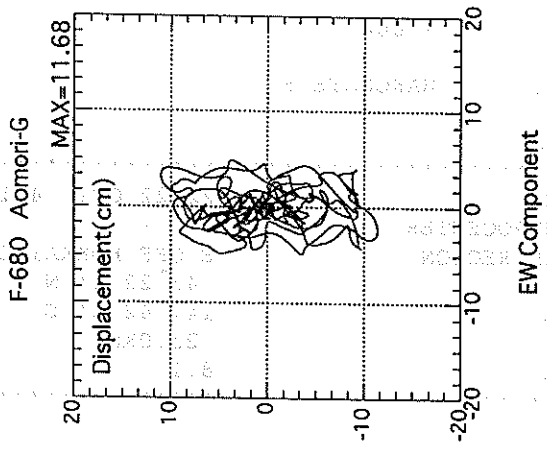
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = F-680
 DATE AND TIME = 1994.10.04.22.24
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = UP
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION = MAX.GROUND ACC. = 23.08 (GAL)
 STATION = AOMORI-G

PER	DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	110.8	0.84	0.007	38.1	0.17	0.002	34.4	0.14	0.002	30.6	0.11	0.002
0.10	301.8	4.73	0.076	55.3	0.73	0.014	50.7	0.57	0.013	41.0	0.41	0.010
0.15	273.1	6.32	0.156	80.7	1.77	0.046	58.0	1.31	0.033	41.5	0.97	0.024
0.20	212.0	6.83	0.215	85.1	2.59	0.092	55.5	1.73	0.056	37.4	1.08	0.037
0.25	213.2	8.48	0.338	58.0	2.24	0.086	41.2	1.72	0.065	32.0	1.31	0.050
0.30	128.5	6.11	0.293	44.8	1.97	0.102	38.4	1.67	0.087	30.1	1.27	0.067
0.35	81.2	4.51	0.252	54.6	3.14	0.170	41.9	2.36	0.129	29.9	1.60	0.092
0.40	151.1	9.44	0.613	71.2	4.48	0.289	46.5	3.05	0.188	32.5	1.89	0.129
0.45	99.8	7.12	0.512	50.0	3.80	0.257	42.0	3.20	0.214	31.7	2.27	0.158
0.50	118.0	9.54	0.748	56.9	4.77	0.358	43.5	3.61	0.274	30.8	2.46	0.191
0.55	75.9	6.26	0.582	44.0	3.93	0.336	35.3	3.23	0.268	25.5	2.37	0.191
0.60	156.2	15.64	1.507	51.6	4.98	0.470	40.6	3.73	0.369	27.6	2.38	0.248
0.65	107.7	15.72	1.672	58.2	6.19	0.622	40.6	4.04	0.433	26.2	2.42	0.276
0.70	67.9	7.44	0.842	36.0	4.32	0.447	32.4	3.34	0.351	23.9	2.63	0.292
0.75	103.7	12.05	1.478	40.8	4.54	0.581	28.4	3.46	0.460	24.8	2.60	0.348
0.80	99.0	12.20	1.605	38.2	4.82	0.619	32.2	3.91	0.519	24.6	2.78	0.392
0.85	41.7	5.47	0.763	36.6	4.59	0.668	29.0	3.73	0.528	23.0	2.77	0.418
0.90	74.6	10.42	1.531	45.6	6.06	0.935	33.5	4.22	0.685	26.9	3.18	0.545
0.95	131.3	19.17	3.001	55.3	7.92	1.264	42.4	5.88	0.967	30.7	4.02	0.692
1.00	209.0	32.62	5.284	70.9	10.84	1.795	48.2	7.36	1.215	31.7	4.56	0.790
1.10	113.3	19.96	3.474	43.3	7.00	1.327	34.8	5.98	1.062	23.9	4.06	0.719
1.20	184.4	35.01	6.728	47.1	8.92	1.716	33.5	6.57	1.216	23.1	4.84	0.900
1.30	107.7	22.44	4.612	55.8	10.34	2.387	42.2	7.71	1.800	25.1	5.58	1.289
1.40	173.3	38.25	8.889	58.7	12.55	2.910	44.5	9.48	2.197	30.8	6.65	1.496
1.50	156.0	37.08	8.889	67.6	16.28	3.848	44.9	10.60	2.544	29.4	6.58	1.643
1.60	48.3	12.67	3.131	36.6	9.37	2.370	31.0	7.80	1.996	24.5	6.02	1.653
1.70	69.9	19.42	5.116	35.2	10.79	2.573	28.0	8.53	2.038	22.5	6.08	1.615
1.80	73.3	19.70	6.012	41.0	11.42	3.359	27.5	8.04	2.243	22.0	6.53	1.770
1.90	91.6	28.69	8.372	42.1	12.87	3.849	29.3	9.30	2.669	20.7	6.89	1.851
2.00	72.0	22.76	7.298	40.1	12.71	4.053	27.2	8.49	2.749	17.6	6.48	1.734
2.20	31.6	11.55	3.877	21.7	8.51	2.661	17.9	7.28	2.180	14.4	5.77	1.721
2.40	29.9	11.90	4.365	18.9	7.96	2.756	14.9	6.50	2.155	12.6	5.44	1.782
2.60	26.6	11.57	4.553	16.8	7.79	2.878	14.7	6.72	2.497	11.5	5.14	1.909
2.80	26.9	12.91	5.333	18.5	8.99	3.661	14.4	7.18	2.831	10.3	5.24	1.960
3.00	25.2	12.35	5.749	16.2	8.79	3.678	12.6	7.11	2.856	9.2	5.39	2.013
3.20	16.7	9.29	4.396	11.1	6.91	2.863	8.9	6.24	2.275	6.9	5.19	1.738
3.40	9.0	5.73	2.838	8.1	5.26	2.370	6.5	4.73	1.897	5.4	4.55	1.505
3.60	10.2	5.95	2.967	7.0	4.77	2.292	5.9	4.00	1.907	4.5	4.10	1.412
3.80	13.1	7.29	3.715	6.4	4.68	2.321	5.5	4.23	1.972	4.2	3.95	1.492
4.00	13.1	8.44	5.314	6.9	5.37	2.795	5.4	4.29	2.148	3.8	3.70	1.453

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)



RECORD NUMBER : F-668
 STATION : HAKODATE-F

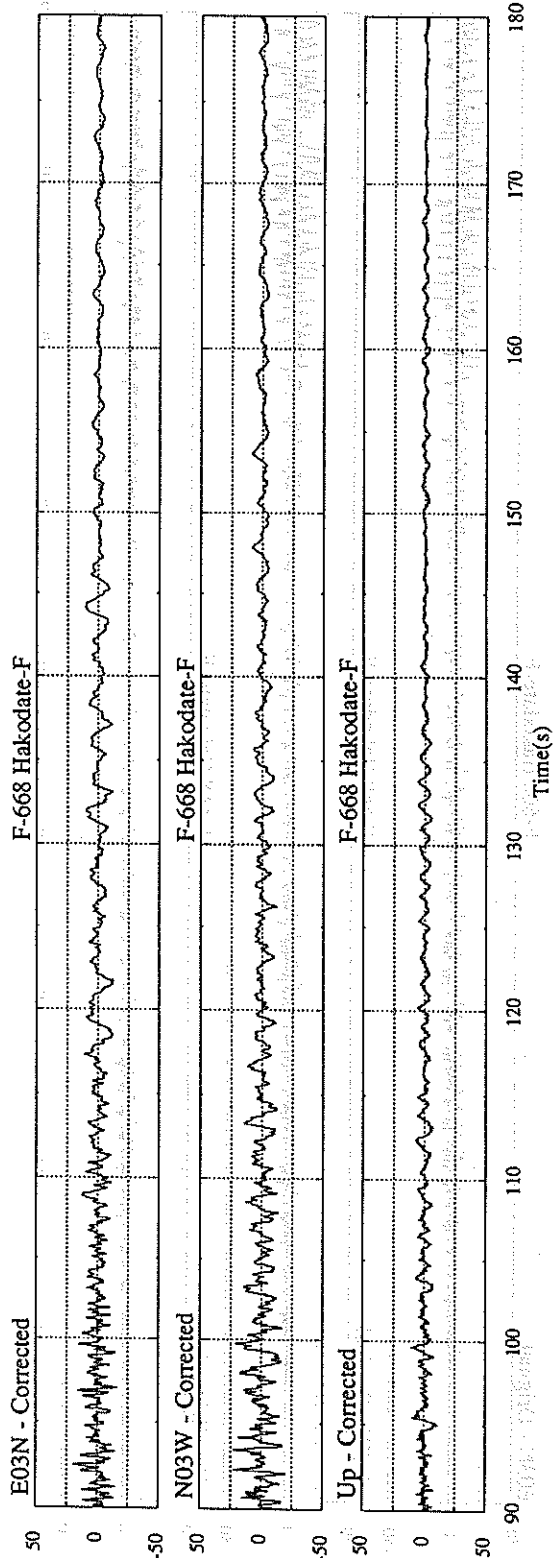
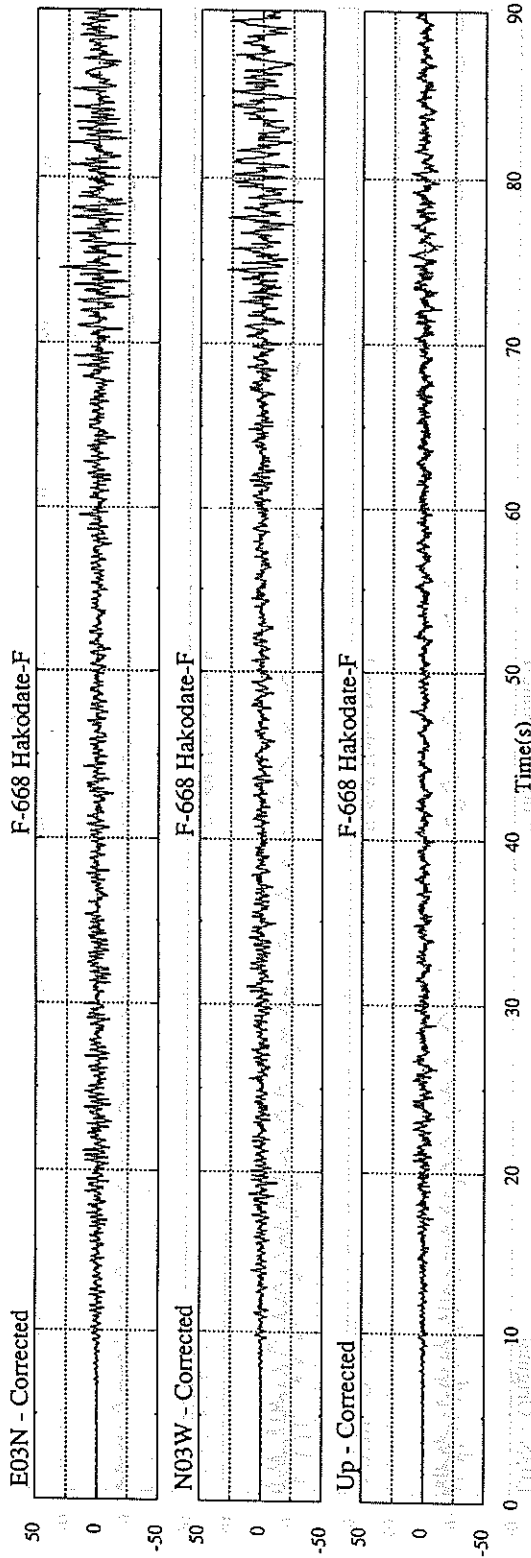
EARTHQUAKE DATA

 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

PEAK VALUES OF COMPONENTS

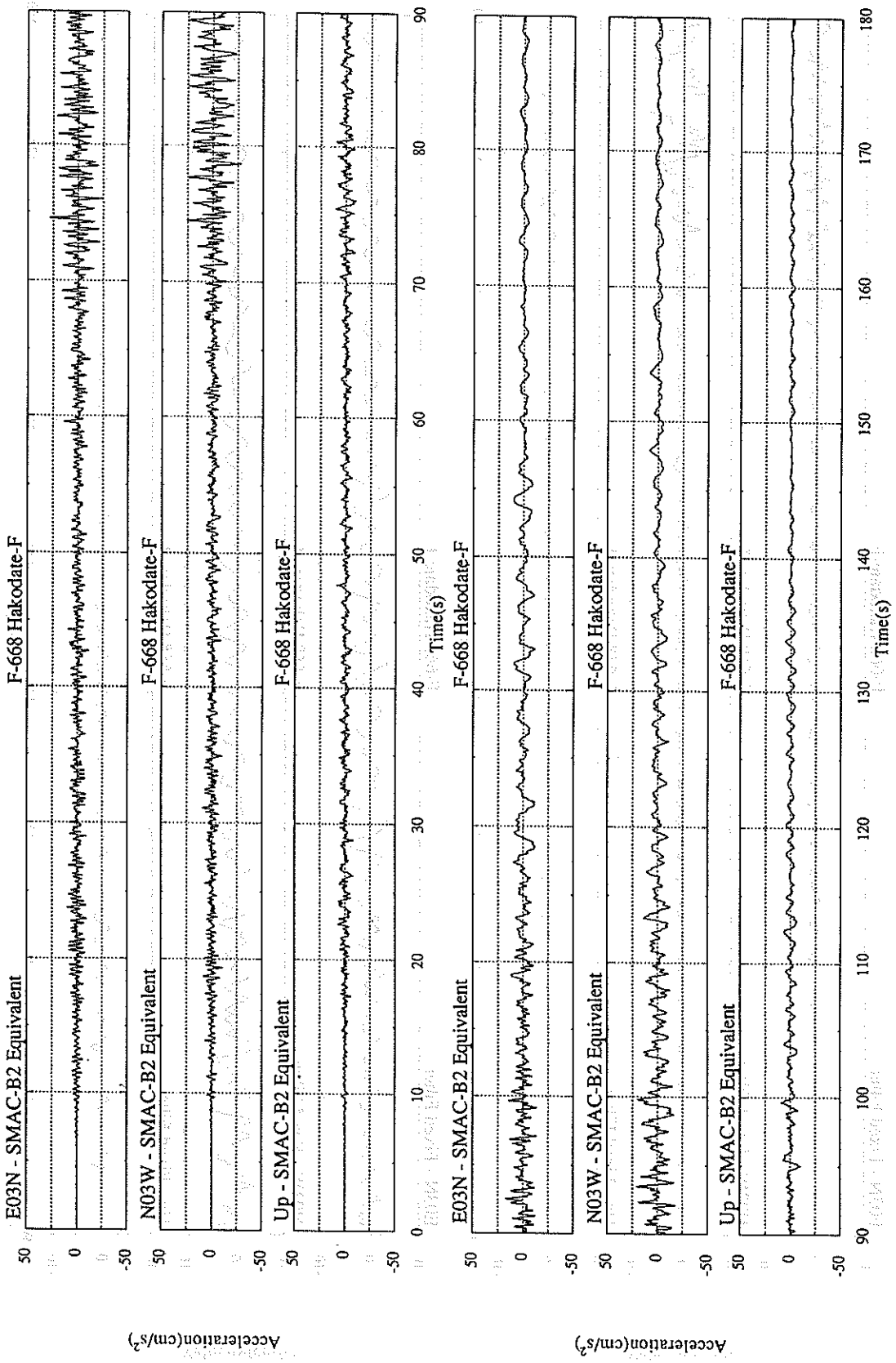
	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.029	0.038	0.057	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	28.1	28.7	10.8	32.3
ORIGINAL	31.7	32.0	13.7	36.3
CORRECTED	31.8	32.0	14.0	36.4
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	6.68	4.62	2.12	6.76
VARIABLE FILTER	7.50	5.40	2.19	7.59
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	3.44	2.38	0.81	3.45
VARIABLE FILTER	7.58	3.33	1.20	7.60

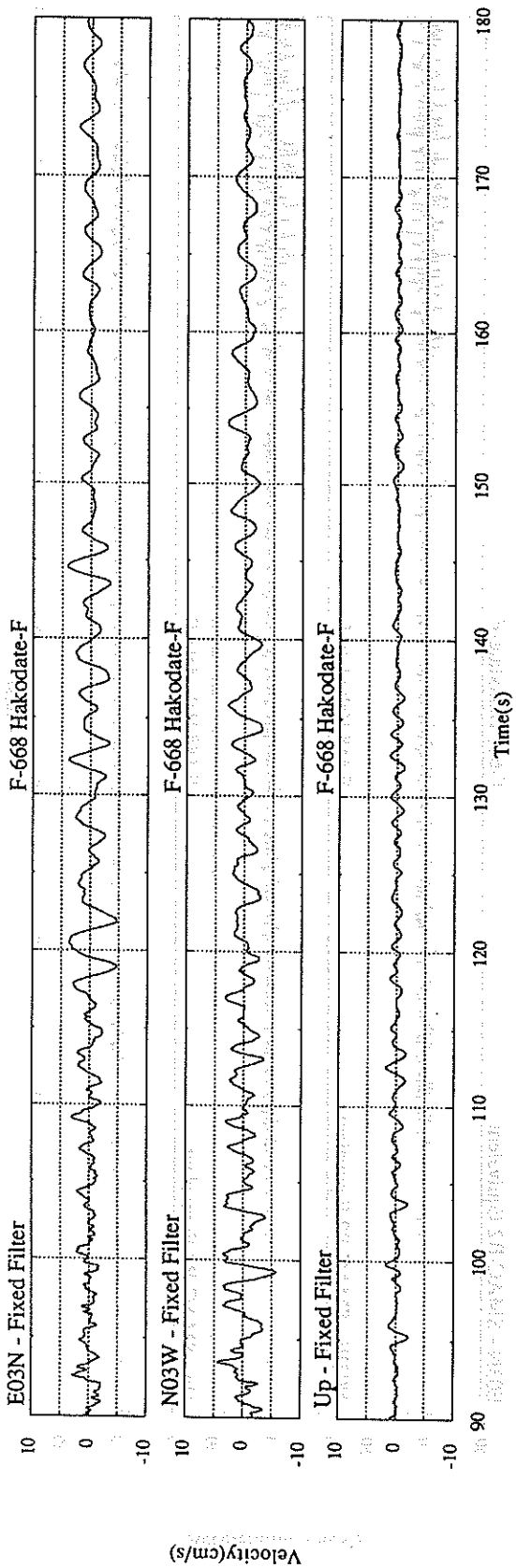
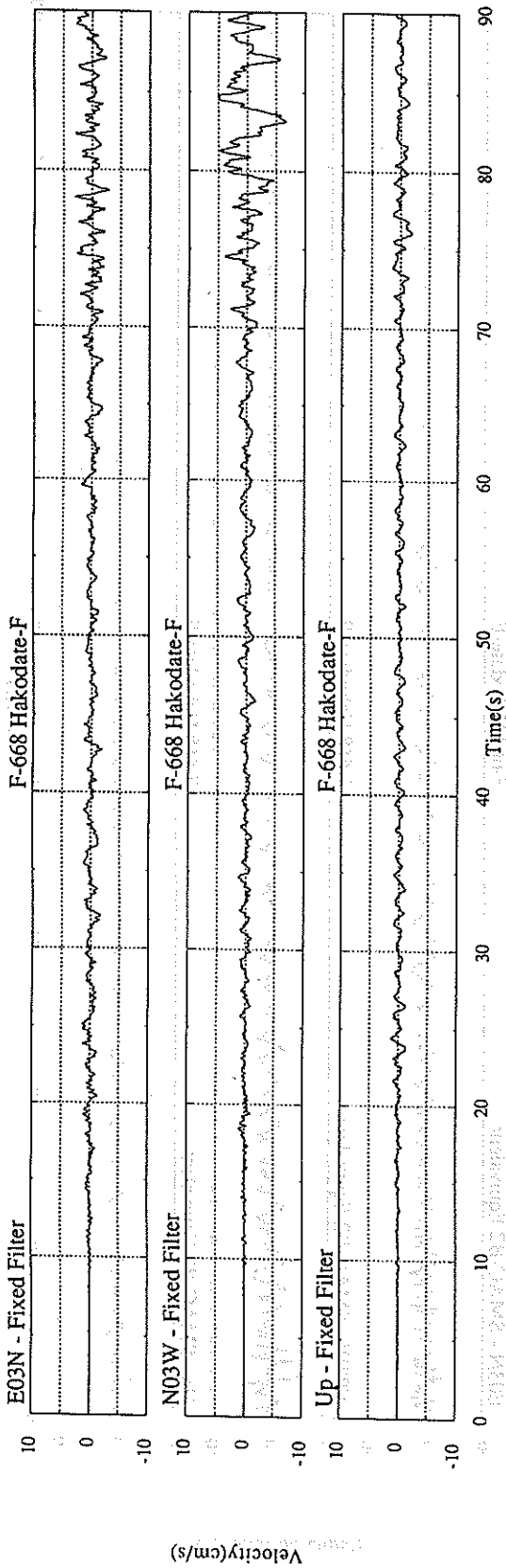
* RESULTANT OF HORIZONTAL COMPONENTS

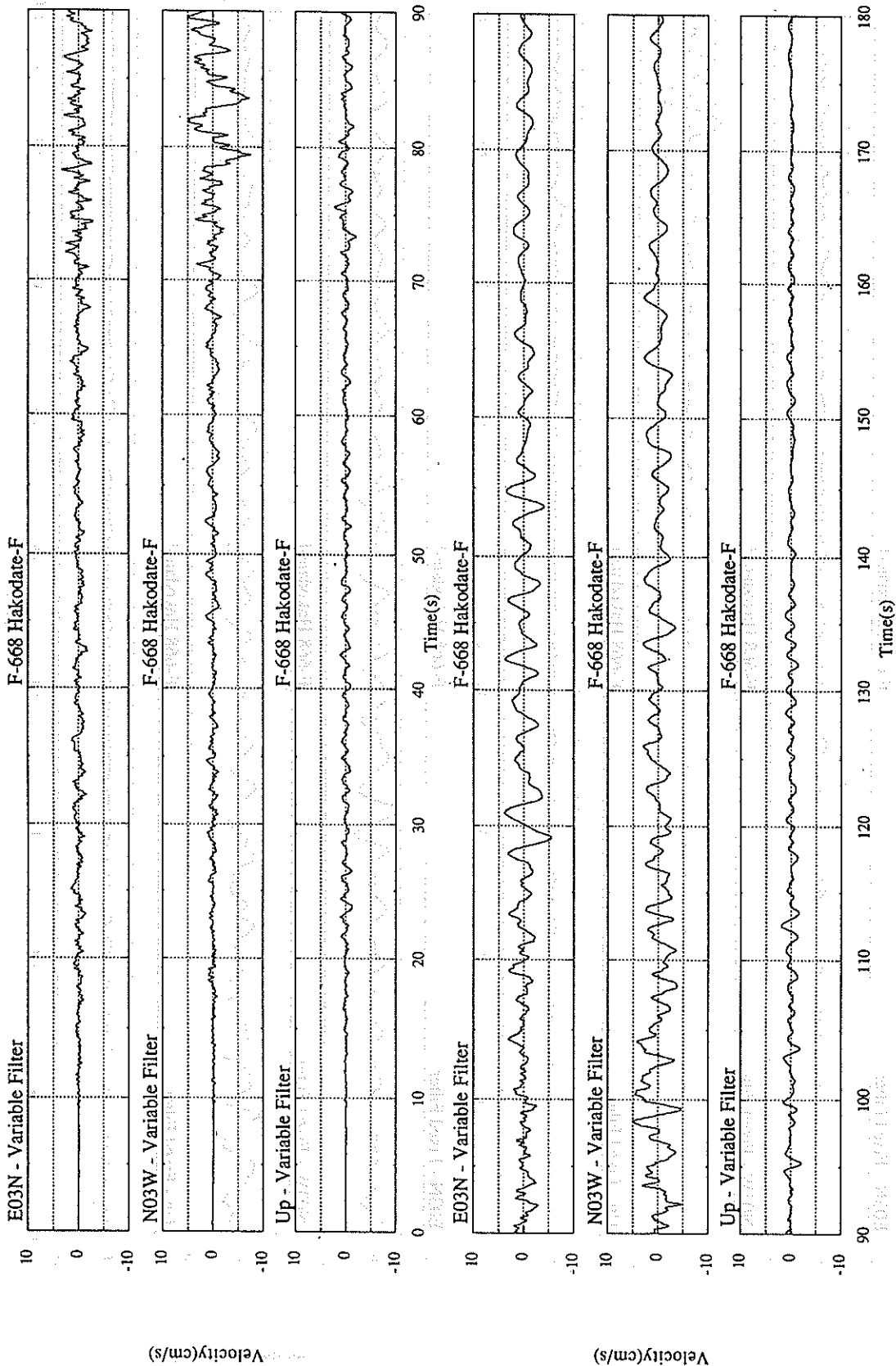


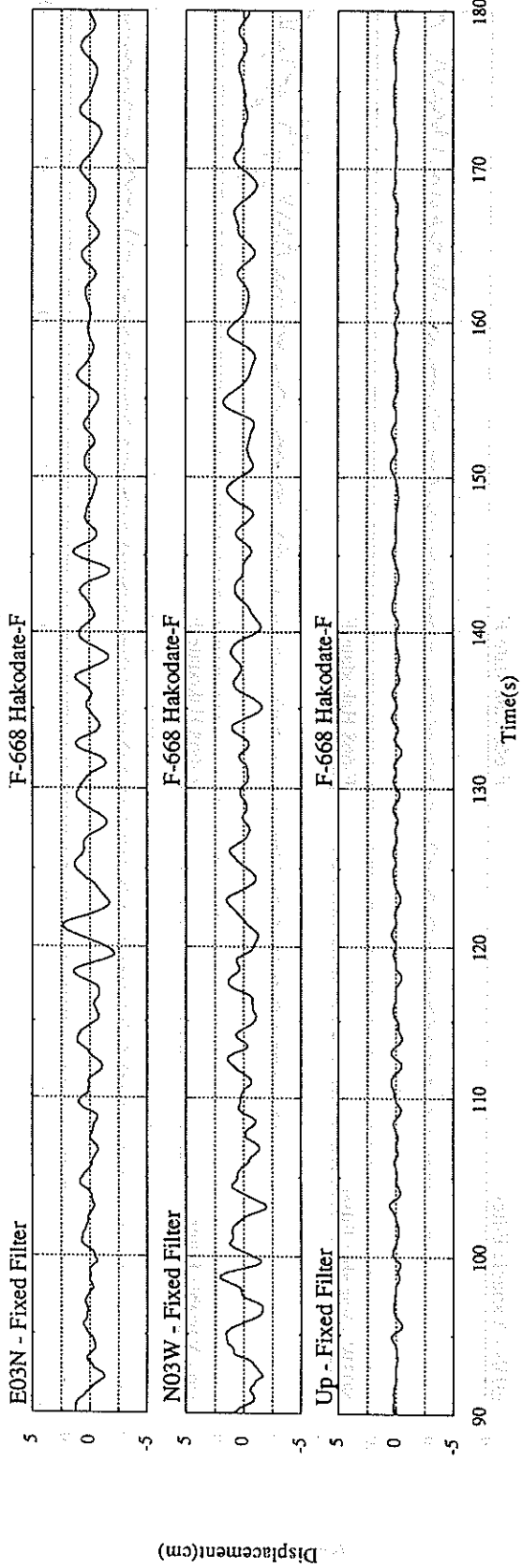
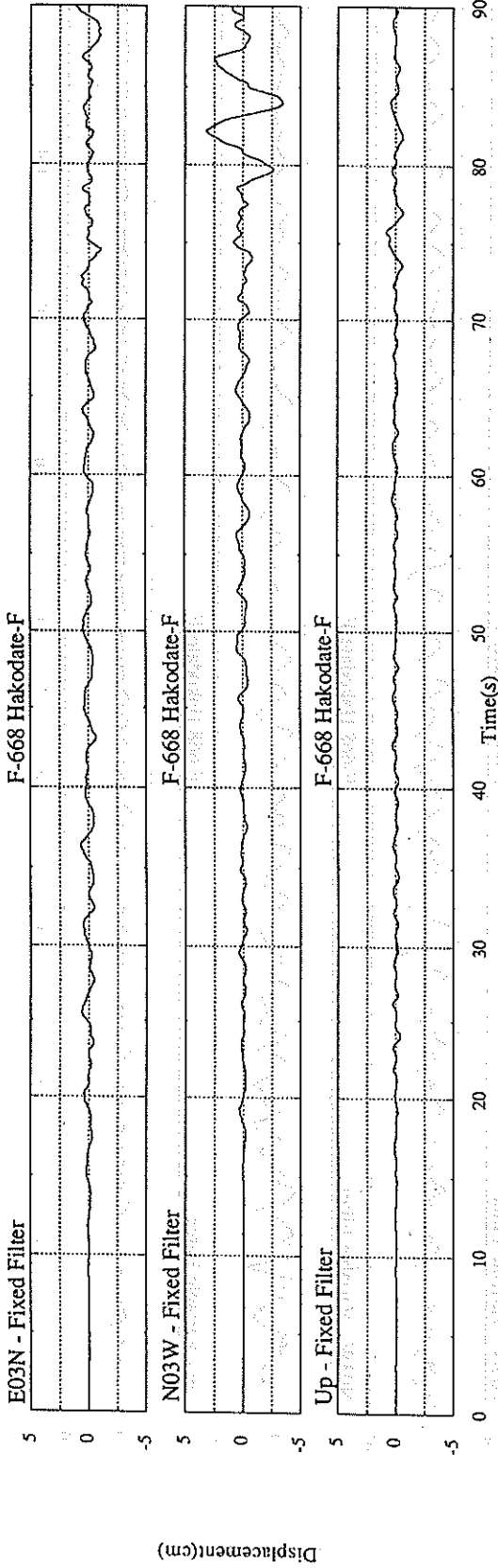
Acceleration(cm/s²)

Acceleration(cm/s²)

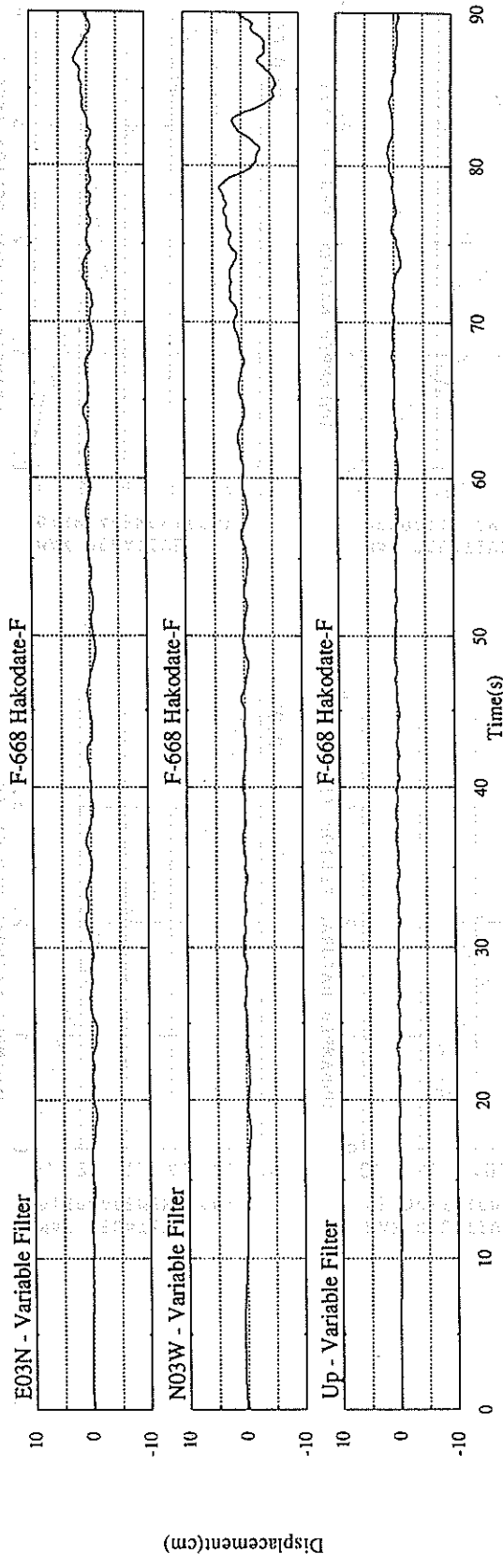




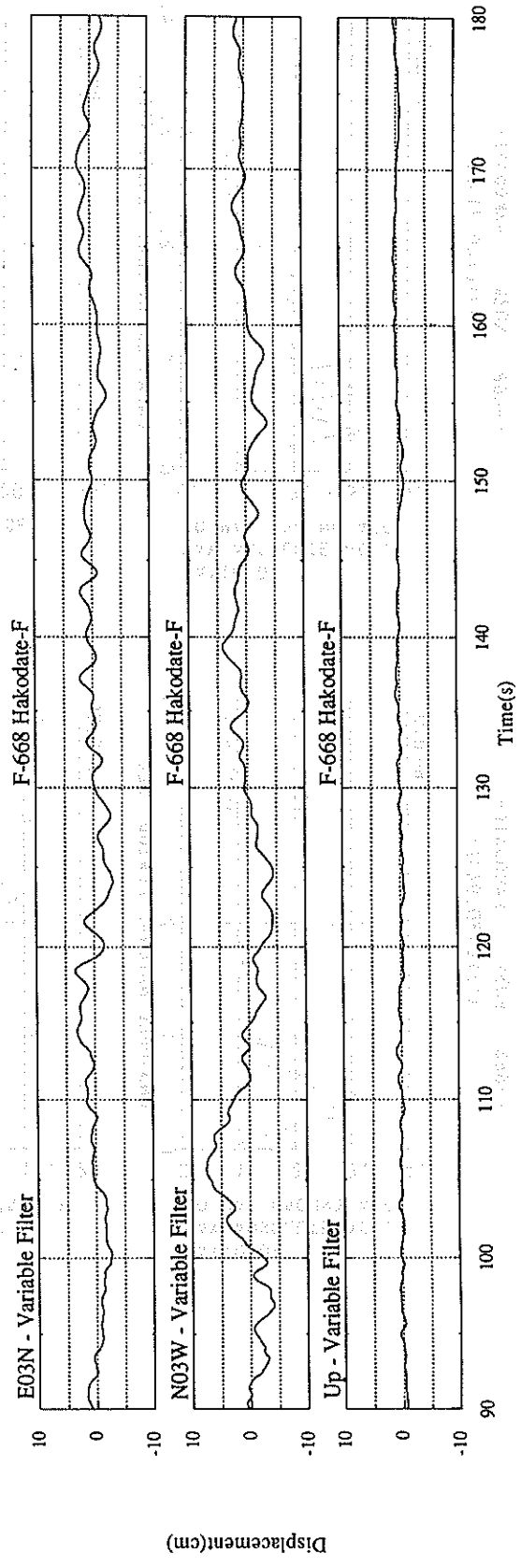




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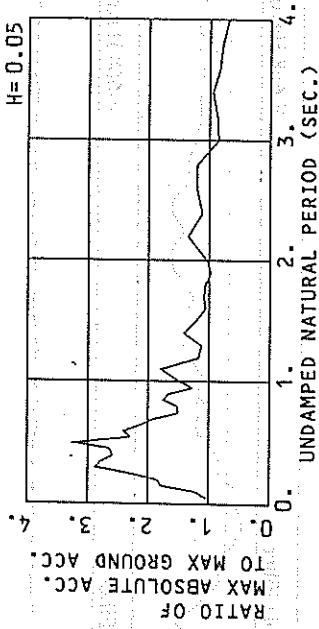


Displacement(cm)

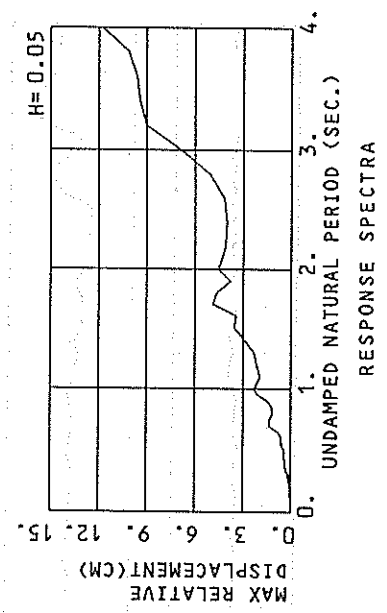
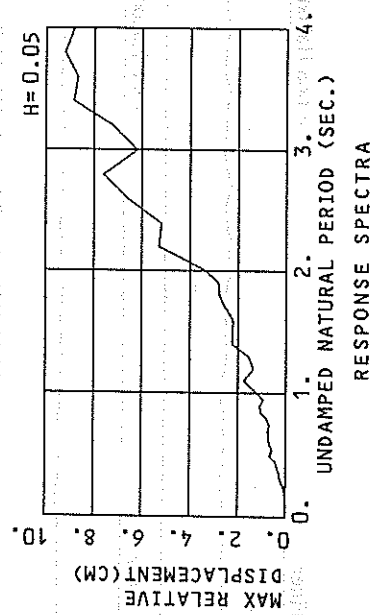
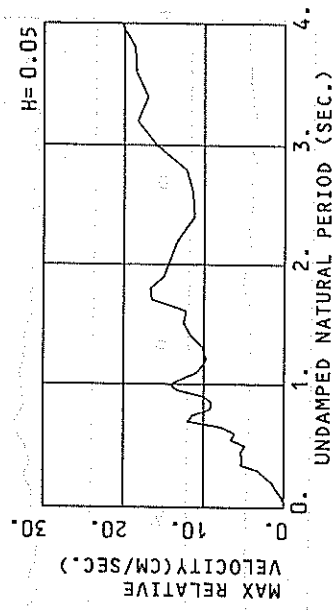
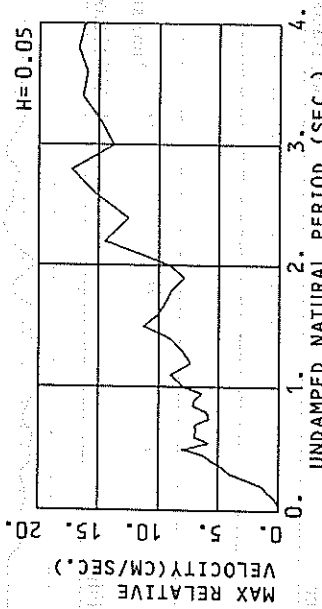
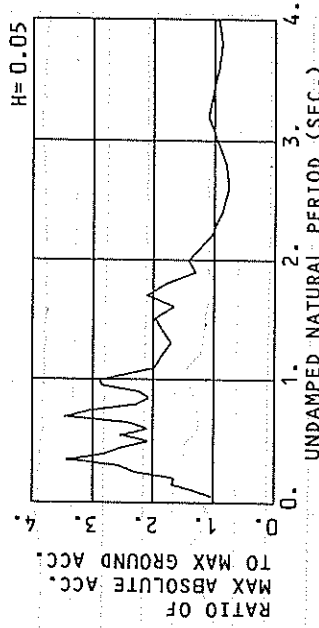


Displacement(cm)

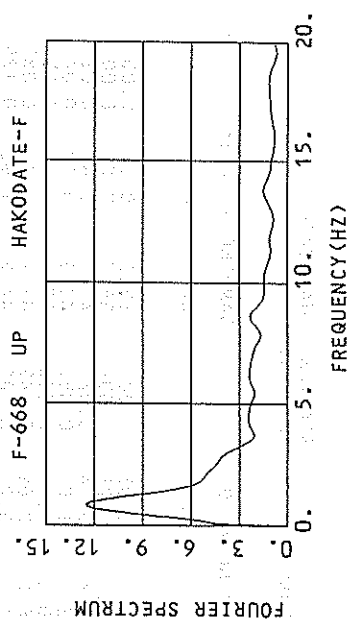
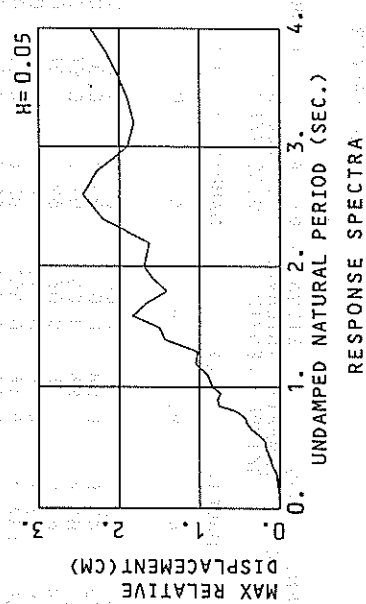
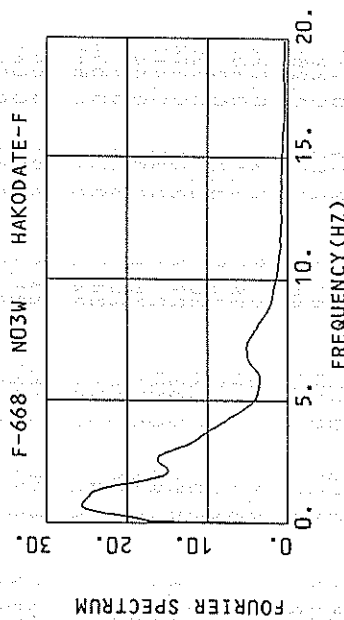
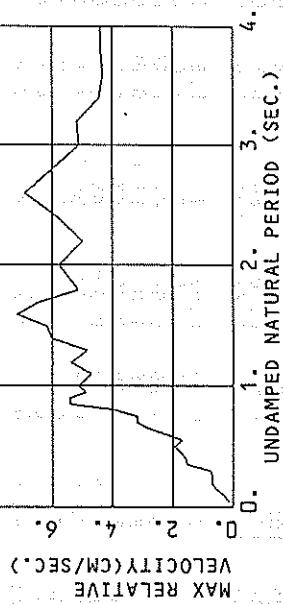
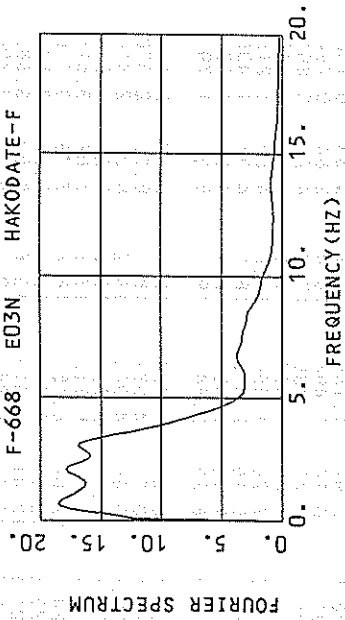
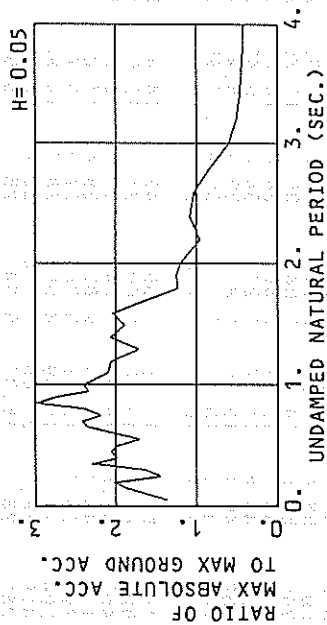
F-668 E03N HAKODATE-F
(1/FC=30.94 SEC.)



F-668 N03W HAKODATE-F
(1/FC=49.71 SEC.)



F-668 UP HAKODATE-F
(1/FC=15.91SEC.)



RESPONSE SPECTRUM

RECORD = F-668
 DATE AND TIME = 1994-10-4-22-24
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = E03N
 SIGNAL = GR. ACC.
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION =
 MAX. GROUND ACC. =
 STATION = HAKODATE-F
 32.01 (GAL)

PER	DAMPING = 0.				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	70.6	0.46	0.004	32.7	0.07	0.002	33.0	0.06	0.002	33.2	0.05	0.002	33.2	0.04	0.002	33.2	0.002	0.002		
0.10	92.7	1.25	0.023	42.6	0.54	0.011	39.1	0.37	0.010	37.3	0.28	0.009	36.7	0.20	0.009	36.7	0.009	0.009		
0.15	264.9	6.09	0.151	68.4	1.28	0.039	57.2	0.96	0.032	47.4	0.74	0.027	41.3	0.46	0.023	41.3	0.023	0.023		
0.20	181.3	5.57	0.184	65.5	1.65	0.066	59.2	1.36	0.060	52.7	1.06	0.053	42.3	0.70	0.041	42.3	0.041	0.041		
0.25	426.3	16.68	0.675	112.9	4.19	0.178	74.6	2.69	0.118	50.9	1.64	0.080	37.2	1.01	0.056	37.2	0.056	0.056		
0.30	289.1	13.68	0.659	134.4	6.16	0.307	92.0	4.05	0.210	66.2	2.69	0.149	41.2	1.43	0.087	41.2	0.087	0.087		
0.35	401.7	22.19	1.246	119.1	6.23	0.369	89.3	4.64	0.276	61.6	3.27	0.188	44.2	1.92	0.129	44.2	0.129	0.129		
0.40	326.5	20.26	1.323	106.7	6.84	0.432	83.1	5.88	0.336	58.8	3.68	0.234	45.5	2.18	0.171	45.5	0.171	0.171		
0.45	363.7	25.96	1.866	137.2	9.69	0.703	84.6	6.24	0.431	64.4	4.27	0.325	47.3	2.53	0.222	47.3	0.222	0.222		
0.50	368.5	29.14	2.334	140.1	10.97	0.884	104.0	7.96	0.654	72.2	5.22	0.448	46.5	2.71	0.265	46.5	0.265	0.265		
0.55	293.3	25.34	2.247	75.7	6.85	0.580	73.7	5.80	0.562	61.2	4.87	0.461	42.9	2.94	0.290	42.9	0.290	0.290		
0.60	133.8	12.57	1.221	94.0	8.39	0.856	77.2	7.00	0.701	57.6	5.33	0.516	38.7	3.18	0.306	38.7	0.306	0.306		
0.65	261.3	26.06	2.796	93.4	9.50	0.998	67.9	6.90	0.723	49.5	4.95	0.523	34.5	3.20	0.317	34.5	0.317	0.317		
0.70	178.7	20.08	2.218	87.0	9.56	1.079	61.0	6.99	0.753	43.2	5.06	0.528	30.1	3.20	0.336	30.1	0.336	0.336		
0.75	130.3	16.09	1.856	69.6	8.15	0.991	48.2	5.80	0.683	37.8	4.55	0.531	27.8	3.21	0.374	27.8	0.374	0.374		
0.80	174.6	22.05	2.830	57.8	7.13	0.936	48.7	5.97	0.786	39.4	4.96	0.629	27.4	3.30	0.412	27.4	0.412	0.412		
0.85	108.0	14.63	1.977	70.0	8.98	1.279	56.2	7.11	1.024	41.0	5.26	0.737	26.8	3.31	0.448	26.8	0.448	0.448		
0.90	277.8	39.88	5.699	70.6	9.81	1.447	53.3	7.02	1.089	38.1	5.00	0.767	25.9	3.24	0.477	25.9	0.477	0.477		
0.95	84.4	12.52	1.929	41.0	8.41	1.273	41.0	6.41	0.931	34.5	5.30	0.781	24.7	3.37	0.504	24.7	0.504	0.504		
1.00	192.4	30.51	4.874	55.9	9.22	1.415	47.7	7.90	1.205	38.3	6.01	0.954	24.0	3.53	0.555	24.0	0.555	0.555		
1.10	143.5	25.16	4.399	75.6	12.30	2.313	57.3	9.00	1.745	39.5	6.06	1.183	23.6	3.68	0.642	23.6	0.642	0.642		
1.20	170.5	30.74	6.220	49.9	9.79	1.819	37.3	7.36	1.361	28.4	5.73	1.020	21.9	3.65	0.685	21.9	0.685	0.685		
1.30	112.4	23.09	4.810	43.4	10.34	1.857	36.0	8.06	1.531	28.5	5.92	1.188	20.7	3.83	0.750	20.7	0.750	0.750		
1.40	114.7	26.18	5.696	58.8	12.34	2.912	45.2	11.26	2.228	31.2	6.16	1.498	19.4	3.84	0.794	19.4	0.794	0.794		
1.50	157.0	37.10	8.946	53.5	14.67	3.049	39.1	11.26	2.217	25.9	7.47	1.436	17.6	4.25	0.891	17.6	0.891	0.891		
1.60	80.6	20.42	5.230	44.3	12.37	2.866	34.0	10.03	2.194	23.5	7.26	1.487	17.0	4.49	1.040	17.0	1.040	1.040		
1.70	89.2	23.43	6.529	44.8	11.54	3.279	34.6	9.42	2.521	23.2	7.26	1.666	17.6	4.53	1.215	17.6	1.215	1.215		
1.80	106.8	29.17	8.762	46.4	13.36	3.805	33.9	8.92	2.768	26.9	7.10	2.076	18.2	4.37	1.406	18.2	1.406	1.406		
1.90	52.4	15.82	4.792	34.1	10.42	3.112	30.9	7.85	2.812	26.9	7.10	2.422	18.7	4.80	1.601	18.7	1.601	1.601		
2.00	78.4	24.36	7.941	31.9	10.36	3.120	33.0	9.11	3.333	28.5	8.23	2.840	19.1	5.33	1.793	19.1	1.793	1.793		
2.20	53.2	20.45	7.747	53.9	17.78	6.595	43.3	14.47	5.290	31.2	10.60	3.759	19.1	6.10	2.131	19.1	2.131	2.131		
2.40	45.4	17.53	6.623	41.2	15.20	6.001	35.7	12.54	5.195	28.5	10.37	4.089	18.1	6.32	2.370	18.1	2.370	2.370		
2.60	55.2	22.01	9.457	45.8	18.06	7.840	38.5	15.21	6.957	29.6	10.89	4.980	18.2	6.22	2.816	18.2	2.816	2.816		
2.80	71.1	30.68	14.112	49.7	22.44	9.852	38.4	17.23	7.595	28.9	12.18	5.624	18.2	6.26	3.227	18.2	3.227	3.227		
3.00	43.0	21.25	9.798	25.3	12.61	5.765	27.3	13.75	6.193	25.6	11.95	5.710	17.6	7.08	3.515	17.6	3.515	3.515		
3.20	43.2	22.11	11.204	31.1	16.59	8.066	28.0	14.84	6.723	24.2	12.04	6.155	16.4	7.78	3.716	16.4	3.716	3.716		
3.40	66.5	36.00	19.479	38.0	21.09	11.118	30.4	16.36	8.846	23.5	12.93	6.724	15.0	8.28	3.834	15.0	3.834	3.834		
3.60	28.3	18.02	9.287	28.5	16.37	9.342	26.6	15.96	8.672	21.5	13.41	6.915	13.6	8.50	3.865	13.6	3.865	3.865		
3.80	43.4	24.63	15.860	31.4	19.25	11.478	25.3	16.68	9.203	19.2	13.31	6.855	12.1	8.47	3.806	12.1	3.806	3.806		
4.00	40.0	27.23	16.209	28.6	19.66	11.436	22.1	16.22	8.845	16.4	12.59	6.491	11.0	8.22	3.829	11.0	3.829	3.829		

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = F-668
 DATE AND TIME = 1994-10-4-22-24
 TIME LENGTH = 59.99 (SEC)

COMPONENT = N03W
 SIGNAL = GR. ACC.
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)

CORRECTION =
 MAX. GROUND ACC. = 31.79 (GAL)
 STATION = HAKODATE-F

PER	DAMPING = 0.				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	RD	AA	RV	RD	RD	AA	RV	RD	RD	AA	RV	RD	RD	AA	RV	RD	
0.05	87.8	0.52	0.006	0.002	32.8	0.06	0.002	0.002	32.6	0.05	0.002	0.002	32.2	0.05	0.002	0.002	32.2	0.05	0.002	
0.10	124.9	1.92	0.032	0.012	42.2	0.35	0.011	0.011	40.3	0.27	0.010	0.010	36.6	0.20	0.010	0.010	36.6	0.20	0.009	
0.15	379.6	8.97	0.216	0.040	53.5	0.93	0.030	0.030	43.3	0.64	0.024	0.024	38.3	0.42	0.024	0.024	38.3	0.42	0.009	
0.20	151.0	4.36	0.153	0.070	52.6	1.42	0.053	0.053	43.2	0.99	0.044	0.044	40.4	0.72	0.044	0.044	40.4	0.72	0.039	
0.25	235.7	9.25	0.373	0.133	73.1	2.28	0.116	0.116	58.4	1.65	0.092	0.092	43.9	1.09	0.092	0.092	43.9	1.09	0.066	
0.30	232.2	10.55	0.529	0.244	81.5	3.17	0.185	0.185	59.5	2.50	0.134	0.134	43.3	1.90	0.134	0.134	43.3	1.90	0.092	
0.35	511.8	28.46	1.588	0.459	108.9	5.29	0.335	0.335	73.2	3.35	0.224	0.224	44.4	2.11	0.224	0.224	44.4	2.11	0.168	
0.40	263.9	16.56	1.070	0.447	88.8	5.18	0.358	0.358	66.1	3.64	0.264	0.264	43.1	2.11	0.264	0.264	43.1	2.11	0.168	
0.45	377.2	26.83	1.935	0.590	80.9	5.39	0.414	0.414	57.8	4.12	0.291	0.291	40.0	2.33	0.291	0.291	40.0	2.33	0.190	
0.50	224.1	17.65	1.419	0.515	66.5	4.80	0.419	0.419	53.1	3.59	0.330	0.330	39.2	2.47	0.330	0.330	39.2	2.47	0.227	
0.55	222.9	19.08	1.708	0.788	80.9	6.56	0.617	0.617	55.4	4.24	0.416	0.416	39.1	2.66	0.416	0.416	39.1	2.66	0.283	
0.60	200.4	19.30	1.827	0.835	66.8	6.11	0.606	0.606	53.3	4.32	0.481	0.481	40.9	2.89	0.481	0.481	40.9	2.89	0.350	
0.65	245.6	25.33	2.628	1.202	76.4	7.80	0.814	0.814	61.6	5.69	0.650	0.650	42.3	3.31	0.650	0.650	42.3	3.31	0.418	
0.70	492.6	54.76	6.115	1.746	110.3	11.95	1.382	1.382	71.9	7.36	0.878	0.878	42.1	3.65	0.878	0.878	42.1	3.65	0.477	
0.75	217.3	25.94	3.097	1.975	96.4	11.38	1.368	1.368	65.5	7.31	0.916	0.916	40.1	4.04	0.916	0.916	40.1	4.04	0.517	
0.80	301.9	37.46	4.894	1.521	72.8	9.17	1.173	1.173	53.9	6.27	0.853	0.853	37.5	4.31	0.853	0.853	37.5	4.31	0.553	
0.85	158.4	20.93	2.900	1.537	66.0	9.02	1.202	1.202	48.1	6.57	0.863	0.863	38.1	4.46	0.863	0.863	38.1	4.46	0.629	
0.90	261.8	36.13	5.371	2.184	70.7	9.95	1.444	1.444	50.6	7.11	1.023	1.023	38.8	4.49	1.023	1.023	38.8	4.49	0.713	
0.95	163.0	24.41	3.727	1.748	90.5	13.33	2.060	2.060	61.3	8.73	1.375	1.375	39.0	4.43	1.375	1.375	39.0	4.43	0.791	
1.00	224.1	36.26	5.676	3.099	91.5	14.17	2.307	2.307	62.7	9.41	1.555	1.555	38.3	4.61	1.555	1.555	38.3	4.61	0.853	
1.10	117.8	20.14	3.612	2.122	63.0	10.83	1.920	1.920	49.1	8.61	1.475	1.475	34.5	5.28	1.475	1.475	34.5	5.28	0.914	
1.20	173.8	32.83	6.338	2.977	59.0	9.64	2.145	2.145	43.1	7.61	1.550	1.550	29.9	5.55	1.550	1.550	29.9	5.55	0.955	
1.30	99.2	19.79	4.247	2.754	54.3	10.13	2.316	2.316	44.6	7.66	1.884	1.884	30.7	5.62	1.884	1.884	30.7	5.62	1.210	
1.40	147.2	32.24	7.308	3.259	58.8	11.69	2.907	2.907	48.1	8.79	2.347	2.347	32.2	5.69	2.347	2.347	32.2	5.69	1.446	
1.50	125.0	28.90	7.122	3.653	62.7	12.51	3.552	3.552	49.5	9.84	2.770	2.770	32.4	6.03	2.770	2.770	32.4	6.03	1.646	
1.60	74.9	19.29	4.857	4.015	52.8	12.21	3.408	3.408	47.9	10.75	3.043	3.043	31.4	6.32	3.043	3.043	31.4	6.32	1.797	
1.70	344.3	93.04	25.206	7.427	67.1	16.52	4.892	4.892	47.2	11.25	3.385	3.385	29.6	6.88	3.385	3.385	29.6	6.88	1.888	
1.80	200.9	58.03	16.488	7.177	56.9	16.69	4.650	4.650	41.5	12.08	3.347	3.347	27.3	7.28	3.347	3.347	27.3	7.28	1.961	
1.90	121.0	36.34	11.061	5.539	41.6	14.95	3.780	3.780	34.3	10.82	3.090	3.090	24.9	7.52	3.090	3.090	24.9	7.52	2.006	
2.00	105.5	34.43	10.688	6.319	45.1	14.47	4.539	4.539	30.1	10.40	3.004	3.004	22.7	7.61	3.004	3.004	22.7	7.61	2.055	
2.20	64.6	23.47	7.922	4.869	33.6	13.32	4.100	4.100	26.2	10.44	3.152	3.152	19.6	7.66	3.152	3.152	19.6	7.66	2.227	
2.40	38.5	14.03	5.623	4.381	27.6	11.23	3.999	3.999	23.9	9.60	3.422	3.422	18.4	7.74	3.422	3.422	18.4	7.74	2.437	
2.60	54.5	20.99	9.328	29.7	13.51	11.42	4.167	4.167	22.1	9.17	3.695	3.695	17.7	7.88	3.695	3.695	17.7	7.88	2.727	
2.80	44.9	20.55	8.919	6.489	25.5	12.22	5.047	5.047	22.6	10.19	4.398	4.398	17.7	8.01	4.398	4.398	17.7	8.01	3.056	
3.00	53.4	29.21	12.177	19.38	30.1	15.93	6.811	6.811	23.4	11.59	5.211	5.211	17.5	8.01	5.211	5.211	17.5	8.01	3.370	
3.20	87.8	47.12	22.775	25.71	35.0	18.32	9.023	9.023	24.4	13.49	6.103	6.103	17.2	8.16	6.103	6.103	17.2	8.16	3.616	
3.40	54.9	31.49	16.083	39.3	32.4	17.01	9.421	9.421	24.5	13.49	6.937	6.937	16.4	9.06	6.937	6.937	16.4	9.06	4.150	
3.60	54.6	30.81	17.936	22.34	29.4	18.45	9.595	9.595	22.2	15.01	7.210	7.210	15.9	9.78	7.210	7.210	15.9	9.78	4.675	
3.80	72.9	44.73	26.681	39.3	27.9	18.63	10.110	10.110	21.4	15.30	7.688	7.688	16.1	10.19	7.688	7.688	16.1	10.19	5.125	
4.00	69.6	46.36	28.206	41.0	27.03	20.27	11.765	11.765	20.6	15.37	8.148	8.148	15.9	10.32	8.148	8.148	15.9	10.32	5.506	

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = F-668
DATE AND TIME = 1994-10-4-22-24
TIME LENGTH = 59.99 (SEC)

COMPONENT = UP
SAMPLING INTERVAL = 0.0100(SEC)
SKIPPED LENGTH = 0.00 (SEC)

SIGNAL = GR. ACC.
CORRECTION = MAX.GROUND ACC. = 13.98 (GAL)

STATION = HAKODATE-F

DAMPING = 0.

DAMPING = 0.025

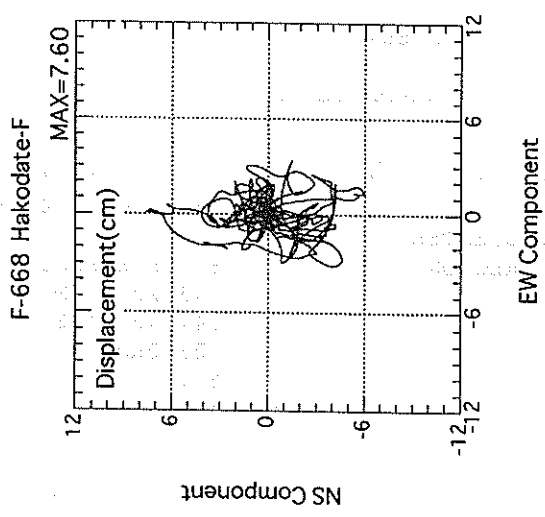
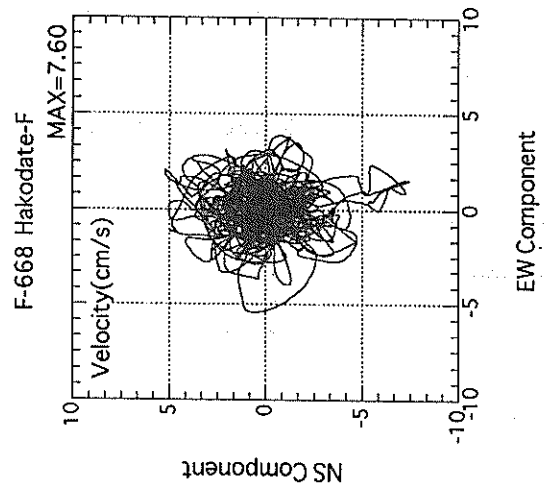
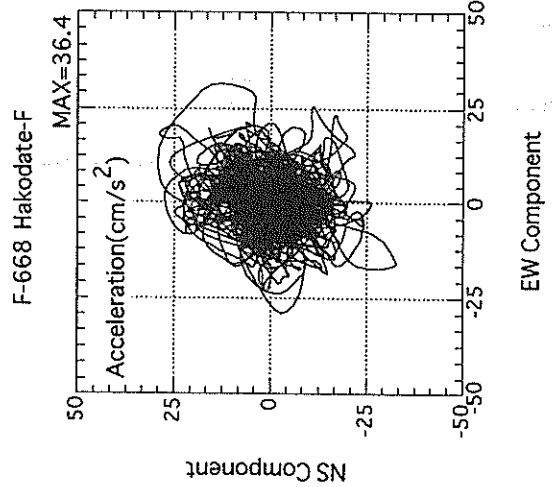
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DAMPING = 0.250

PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	190.2	1.50	0.012	21.0	0.15	0.001	19.0	0.13	0.001	16.4	0.09	0.001
0.10	96.5	3.18	0.074	29.8	0.43	0.008	22.8	0.32	0.006	21.0	0.25	0.005
0.15	137.4	1.83	0.078	29.7	0.66	0.017	26.1	0.55	0.015	20.2	0.37	0.011
0.20	65.1	1.83	0.066	38.4	0.95	0.039	28.2	0.70	0.029	20.2	0.48	0.020
0.25	89.3	3.52	0.141	26.9	0.86	0.042	20.3	0.68	0.032	15.4	0.53	0.024
0.30	55.3	2.50	0.126	26.9	1.05	0.061	22.9	0.73	0.052	19.0	0.63	0.043
0.35	109.2	5.98	0.339	38.6	1.98	0.120	32.1	1.33	0.099	24.3	1.13	0.074
0.40	54.9	3.34	0.223	28.2	1.61	0.114	27.7	1.57	0.112	22.8	1.32	0.091
0.45	62.6	4.10	0.321	37.4	2.30	0.192	28.8	1.72	0.147	20.7	1.18	0.105
0.50	83.3	6.44	0.528	38.1	2.80	0.241	27.7	1.94	0.175	20.9	1.28	0.131
0.55	50.3	3.99	0.386	26.4	2.21	0.202	23.9	1.70	0.182	20.8	1.46	0.157
0.60	52.3	4.71	0.477	29.4	2.27	0.268	28.1	2.22	0.256	23.8	1.89	0.214
0.65	73.6	7.50	0.788	38.2	3.35	0.408	32.9	3.19	0.350	26.0	2.23	0.214
0.70	85.4	9.37	1.060	41.0	4.05	0.507	33.7	3.16	0.417	26.1	2.44	0.320
0.75	75.5	8.71	1.076	37.1	4.12	0.527	30.5	3.16	0.433	24.7	2.39	0.347
0.80	111.3	13.79	1.805	41.0	5.06	0.664	33.2	3.89	0.537	26.3	2.86	0.419
0.85	123.2	16.89	2.255	59.4	7.88	1.086	41.9	5.41	0.763	28.7	3.39	0.517
0.90	141.3	19.97	2.900	53.0	7.59	1.086	38.2	5.42	0.780	28.0	3.64	0.565
0.95	104.5	15.06	2.388	47.3	6.93	1.081	32.5	4.69	0.741	25.1	3.53	0.564
1.00	64.5	10.34	1.634	42.7	6.42	1.079	33.5	5.12	0.846	22.9	3.53	0.569
1.10	65.5	11.33	2.008	37.5	6.58	1.147	29.4	4.72	0.896	22.0	3.46	0.665
1.20	150.0	28.56	5.473	39.5	7.57	1.438	28.8	5.38	1.047	21.3	3.66	0.763
1.30	80.7	16.30	3.455	34.0	6.81	1.452	24.0	4.84	1.023	17.8	3.43	0.747
1.40	99.8	22.51	4.955	42.9	9.61	2.129	28.9	6.02	1.426	19.4	3.77	0.946
1.50	100.7	24.35	5.739	31.9	7.65	1.814	26.5	6.17	1.503	20.0	4.45	1.120
1.60	124.4	31.63	8.064	38.1	9.85	2.471	28.5	7.18	1.837	19.6	5.03	1.248
1.70	75.4	20.79	5.519	28.7	7.99	2.100	22.9	6.42	1.669	17.4	4.93	1.250
1.80	48.5	14.25	3.984	22.0	6.83	1.799	17.3	5.11	1.409	15.0	4.61	1.209
1.90	40.1	12.28	3.670	22.0	6.82	2.005	17.5	5.47	1.590	13.9	4.49	1.245
2.00	48.9	15.92	4.951	22.5	7.33	2.275	16.8	5.77	1.695	13.7	4.56	1.357
2.20	14.1	5.21	1.726	12.4	4.86	1.519	13.4	4.99	1.629	12.5	4.36	1.492
2.40	17.0	6.68	2.473	17.2	6.70	2.505	15.2	5.80	2.196	11.7	4.75	1.661
2.60	18.0	7.76	3.087	17.4	8.35	2.968	14.4	6.92	2.451	10.2	4.94	1.898
2.80	35.3	16.55	7.008	16.3	7.84	3.234	11.5	6.01	2.275	8.2	4.53	1.581
3.00	12.8	7.26	2.919	9.0	5.14	2.057	8.4	5.11	1.894	6.7	4.23	1.479
3.20	17.1	9.40	4.445	9.3	6.17	2.416	7.1	5.17	1.814	5.5	4.11	1.385
3.40	8.1	5.47	2.367	7.3	4.82	2.123	6.5	4.45	1.886	5.1	3.91	1.477
3.60	9.4	6.47	3.090	7.0	4.64	2.289	6.2	4.31	2.005	5.2	3.78	1.655
3.80	10.7	8.45	3.922	6.9	5.71	2.501	6.0	4.37	2.161	5.1	3.51	1.818
4.00	13.8	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
4.20	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
4.40	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
4.60	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
4.80	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
5.00	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
5.20	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
5.40	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
5.60	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
5.80	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
6.00	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
6.20	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
6.40	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
6.60	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
6.80	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
7.00	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
7.20	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
7.40	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
7.60	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
7.80	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
8.00	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
8.20	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
8.40	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
8.60	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
8.80	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
9.00	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
9.20	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
9.40	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
9.60	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
9.80	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930
10.00	14.1	9.23	5.601	7.6	5.30	3.092	5.9	4.39	2.360	4.9	3.54	1.930

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)



RECORD NUMBER : F-667
 STATION : HAKODATE-FB

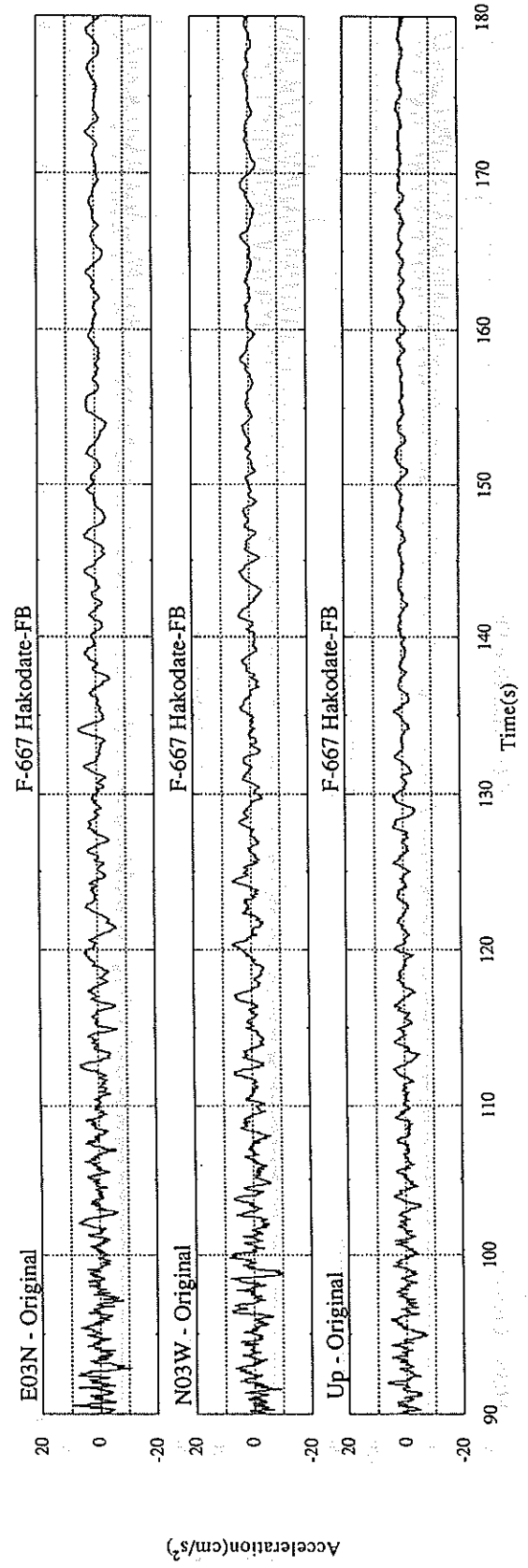
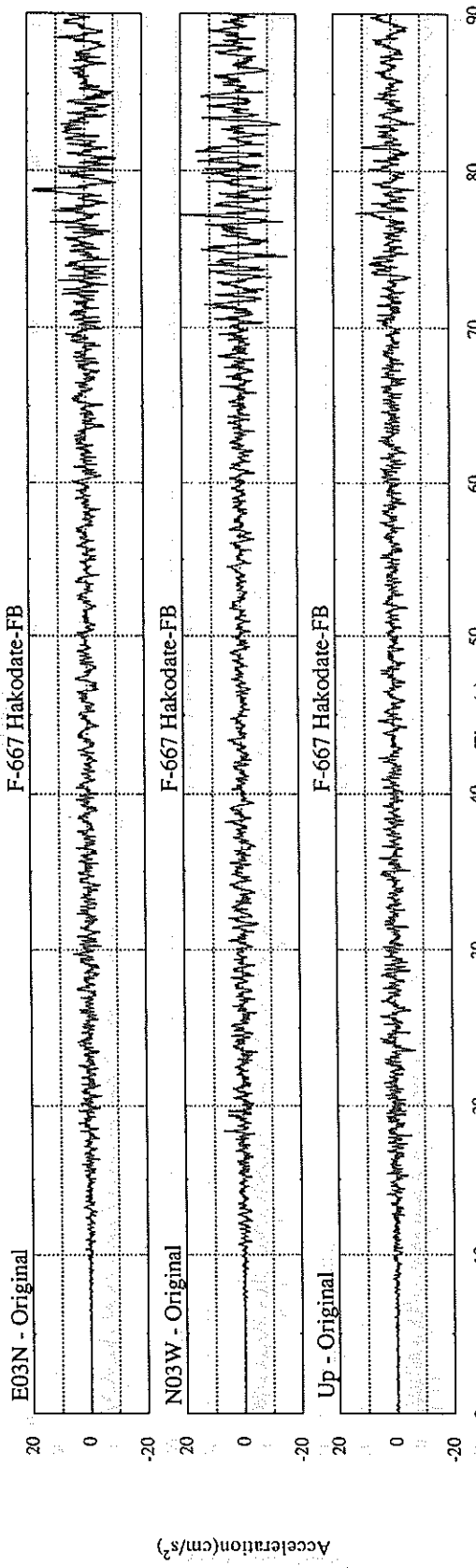
EARTHQUAKE DATA

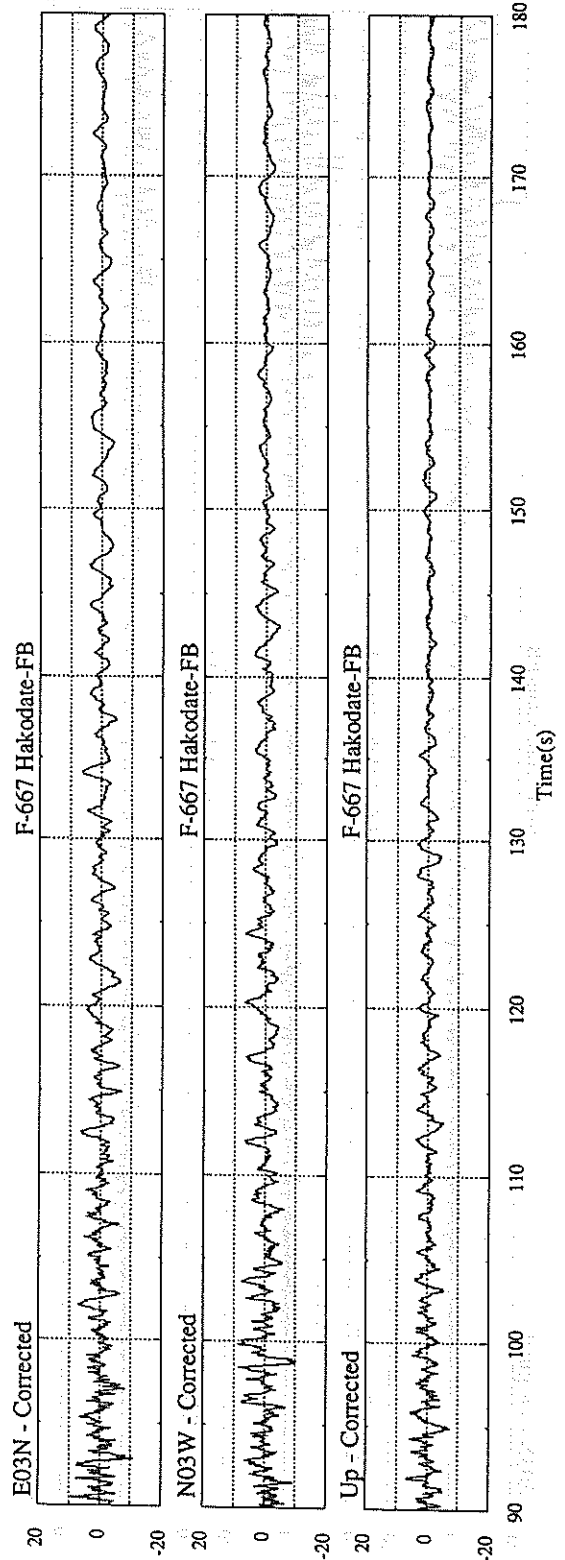
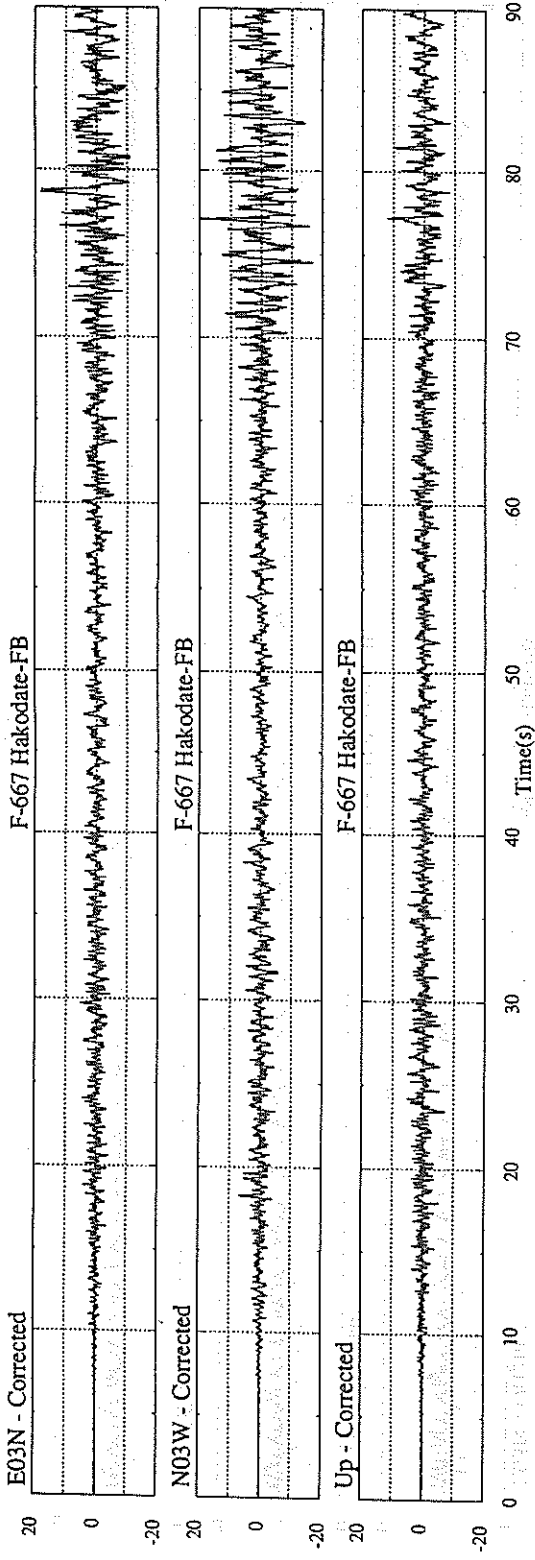
 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

PEAK VALUES OF COMPONENTS

	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.020	0.023	0.026	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	19.2	16.8	10.3	19.8
ORIGINAL	22.0	18.3	12.0	22.5
CORRECTED	21.9	18.4	11.9	22.4
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	3.78	3.29	1.79	4.83
VARIABLE FILTER	3.78	4.46	2.29	5.65
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	1.67	1.77	0.86	2.42
VARIABLE FILTER	9.19	7.19	3.34	11.03

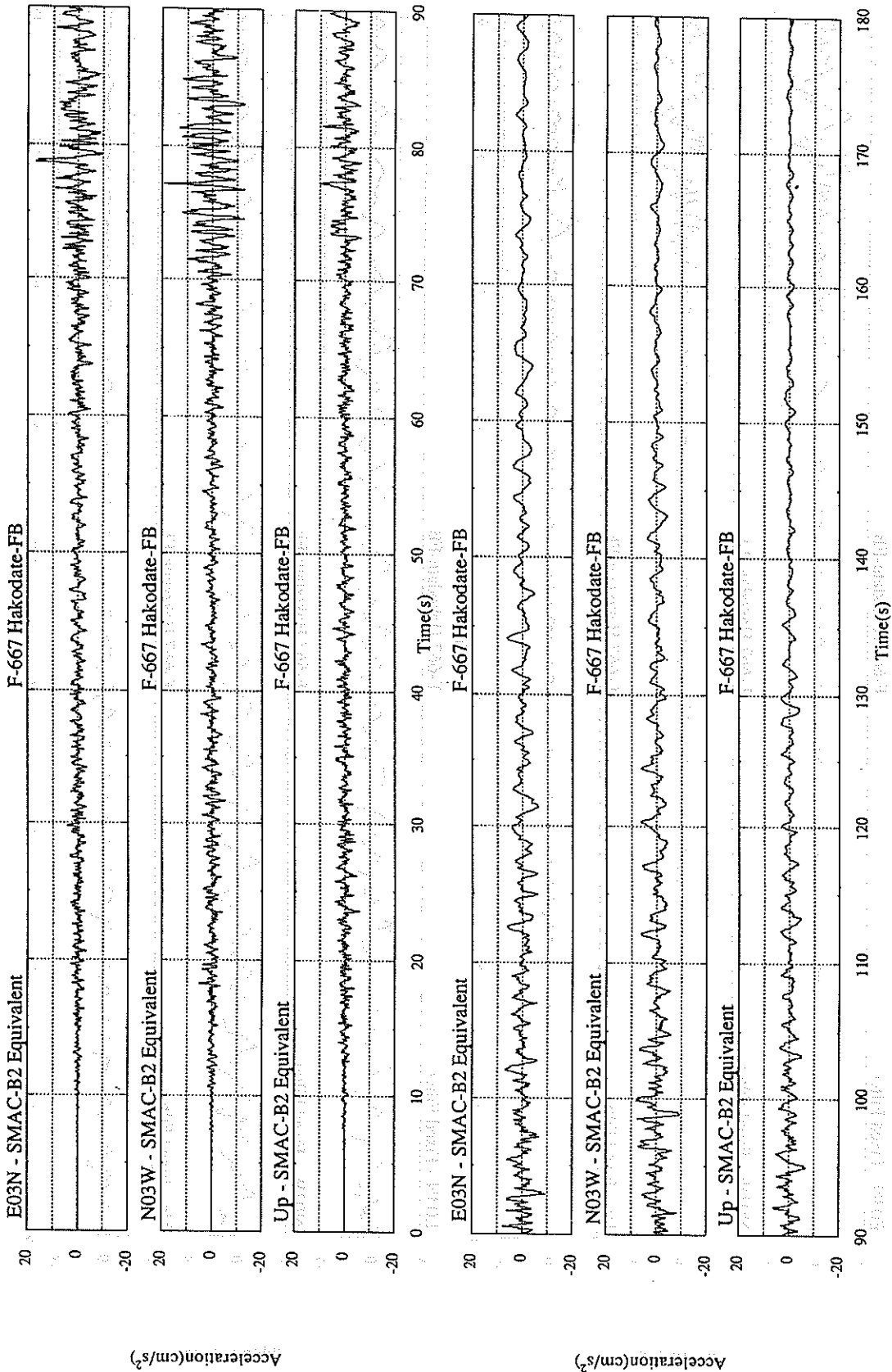
* RESULTANT OF HORIZONTAL COMPONENTS

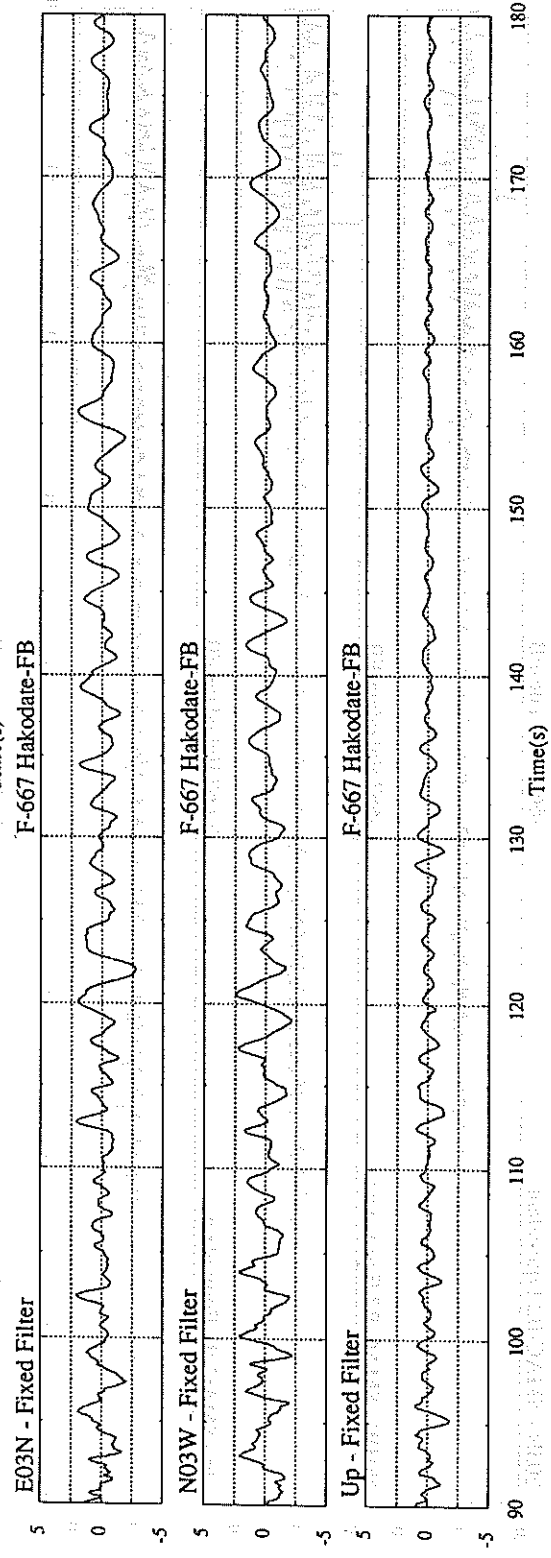
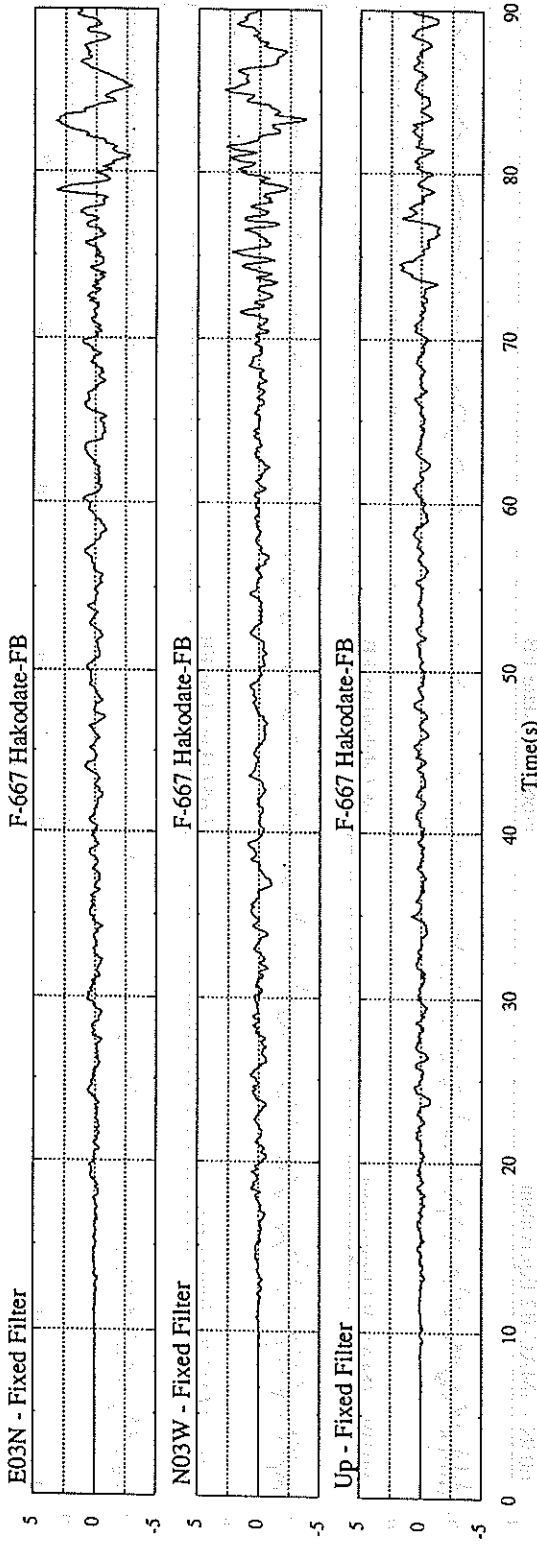


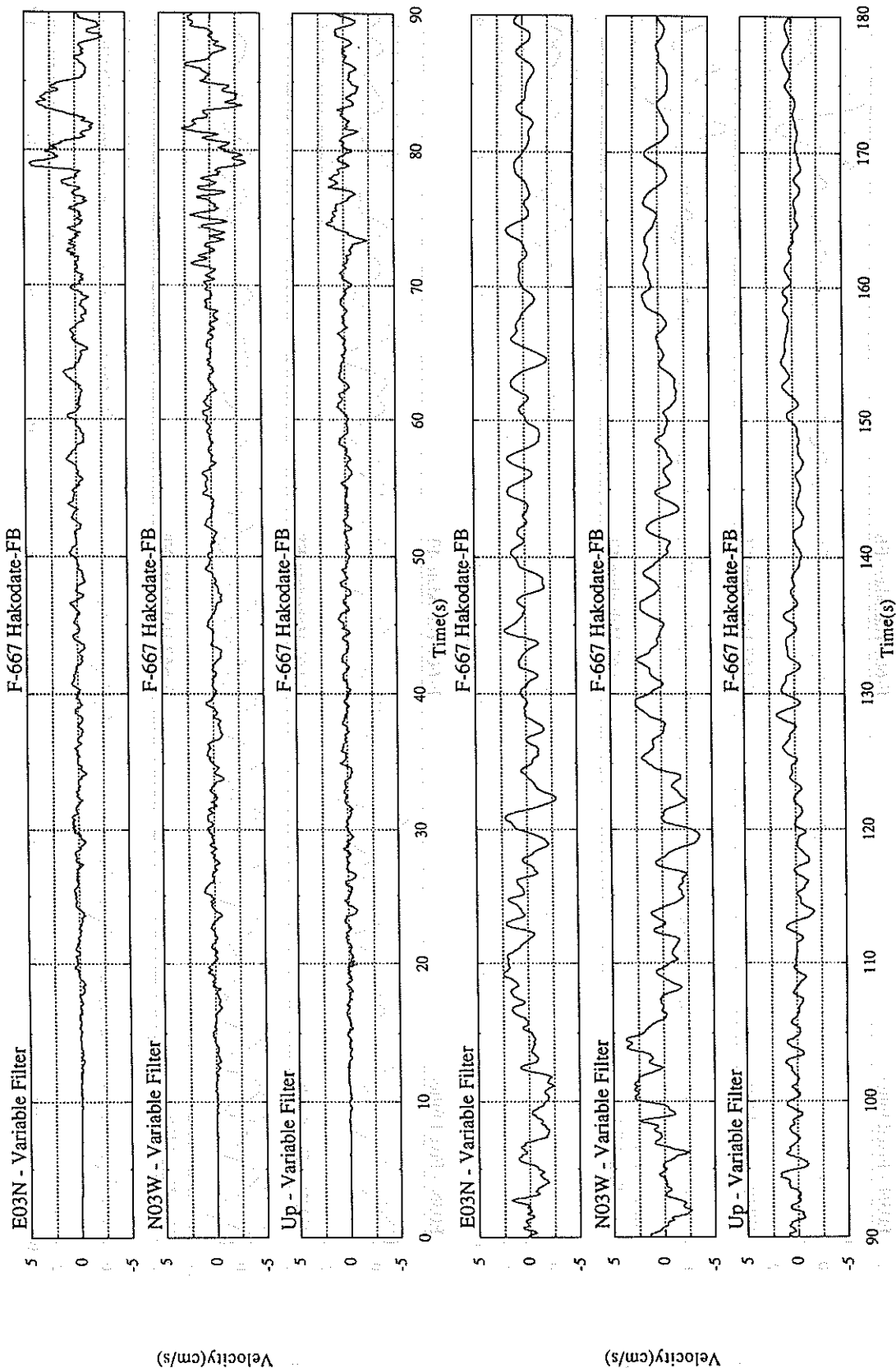


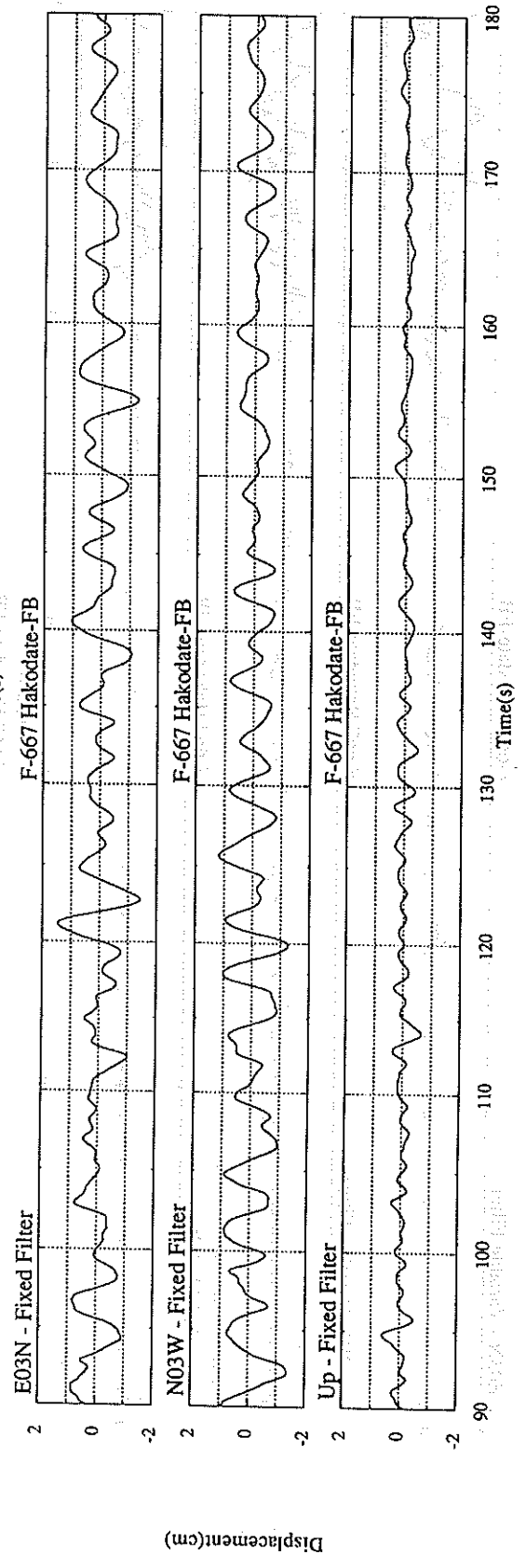
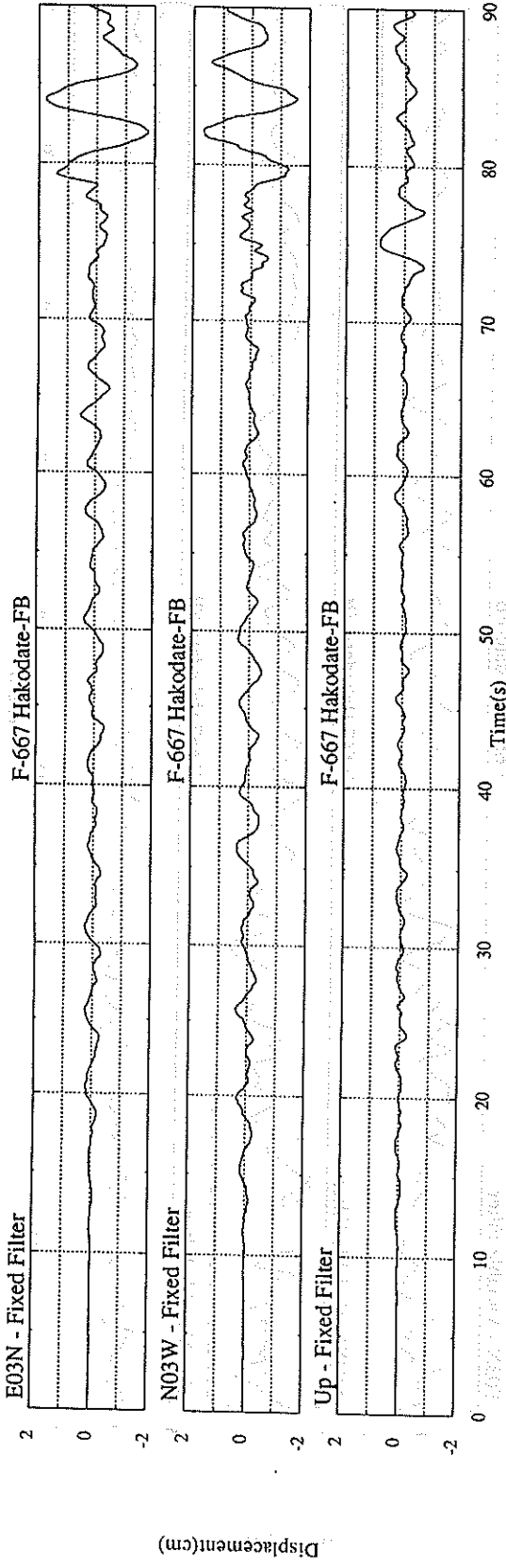
Acceleration(cm/s²)

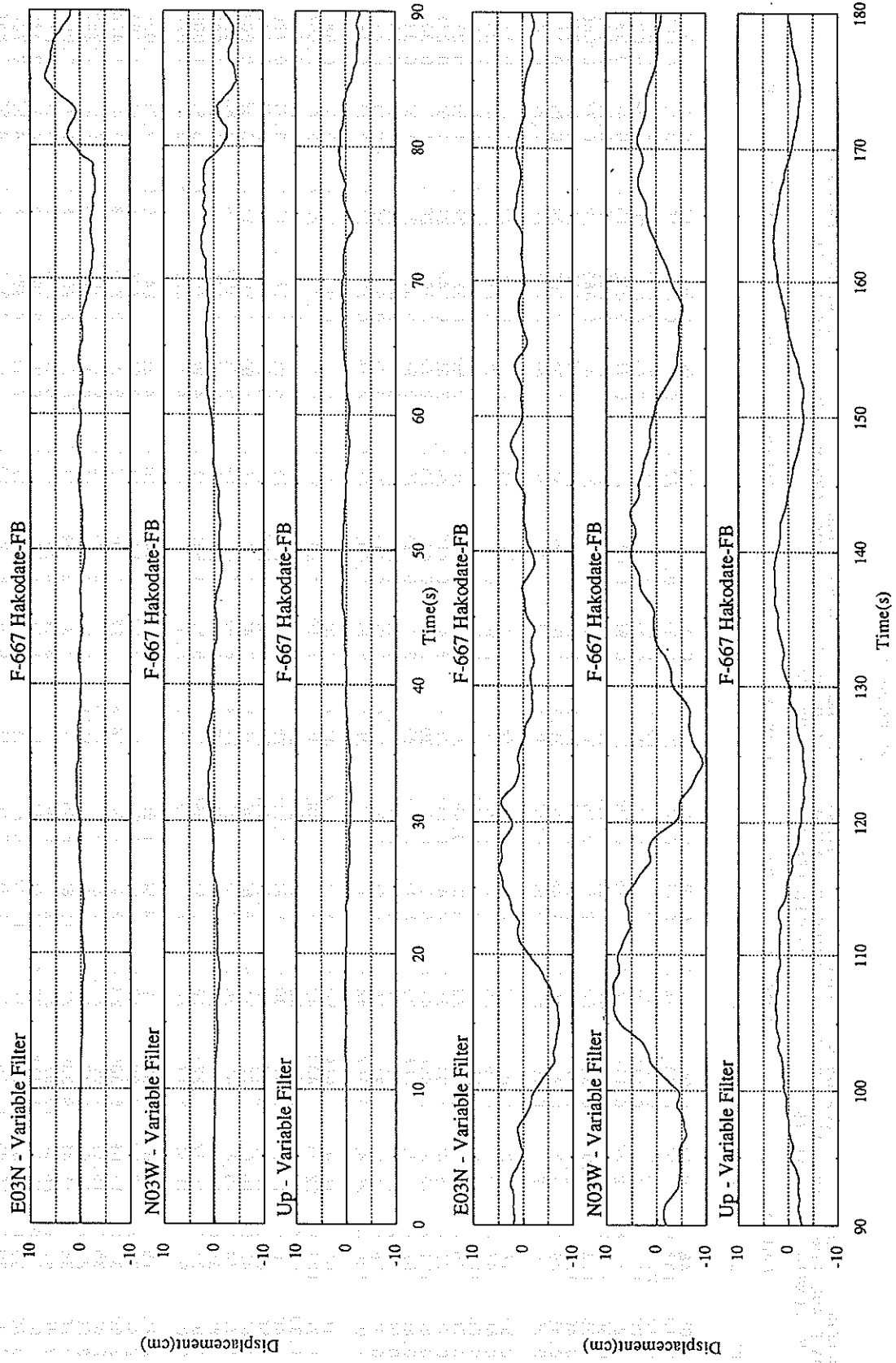
Acceleration(cm/s²)











RESPONSE SPECTRUM

RECORD = F-667 COMPONENT = E03N SIGNAL = IN. ACC. CORRECTION = STATION = HAKODATE-FB
 DATE AND TIME = 1994-10-4-22-24 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 18.43 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

DAMPING = 0.025 DAMPING = 0.050 DAMPING = 0.100 DAMPING = 0.250

PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	48.1	0.34	0.003	21.4	0.06	0.001	20.5	0.05	0.001	19.4	0.04	0.001
0.10	132.0	1.98	0.033	34.4	0.49	0.009	26.1	0.33	0.007	22.0	0.21	0.006
0.15	212.7	5.04	0.121	37.5	0.71	0.021	29.4	0.52	0.017	25.2	0.41	0.014
0.20	116.7	3.54	0.118	32.3	1.02	0.033	23.2	0.74	0.024	21.9	0.53	0.022
0.25	71.8	2.84	0.114	34.4	1.86	0.055	27.7	0.99	0.043	21.3	0.75	0.033
0.30	100.2	4.70	0.228	44.0	1.86	0.100	33.4	1.38	0.076	26.2	1.04	0.059
0.35	113.5	6.04	0.352	50.6	2.51	0.157	37.6	1.89	0.116	27.3	1.41	0.083
0.40	104.7	6.40	0.424	42.2	2.61	0.170	33.2	2.04	0.134	28.8	1.48	0.116
0.45	49.3	3.35	0.253	40.0	2.48	0.205	36.3	2.02	0.186	31.5	1.35	0.160
0.50	126.9	9.57	0.803	51.1	3.52	0.323	35.8	2.39	0.226	30.7	1.89	0.193
0.55	118.9	10.33	0.911	34.8	2.97	0.267	28.6	2.26	0.219	28.8	2.06	0.219
0.60	42.8	4.17	0.391	35.9	3.17	0.327	34.1	2.90	0.310	30.4	2.39	0.274
0.65	126.2	12.86	1.350	49.7	4.82	0.530	39.5	3.66	0.421	31.0	2.61	0.325
0.70	75.8	8.15	0.941	39.6	3.93	0.491	33.6	3.17	0.416	26.7	2.50	0.325
0.75	73.4	8.40	1.047	38.2	4.48	0.544	28.9	3.40	0.417	24.8	2.30	0.348
0.80	151.4	18.81	2.454	41.5	5.22	0.671	30.2	3.85	0.480	23.0	2.73	0.367
0.85	59.4	8.12	1.088	39.3	5.18	0.719	29.3	3.71	0.533	20.3	2.94	0.364
0.90	77.8	10.77	1.597	37.6	5.05	0.769	29.3	3.86	0.597	21.4	3.19	0.432
0.95	58.9	8.57	1.347	39.5	6.25	0.902	31.6	5.05	0.718	25.7	3.78	0.578
1.00	130.4	20.62	3.304	44.5	7.16	1.127	35.8	5.89	0.903	28.9	4.19	0.720
1.10	97.5	16.94	2.989	50.8	8.70	1.554	41.4	7.02	1.262	31.6	5.01	0.950
1.20	122.9	22.74	4.484	40.9	8.11	1.492	35.8	7.10	1.297	29.0	5.47	1.038
1.30	62.4	12.67	2.671	35.2	7.03	1.504	29.1	6.11	1.241	24.9	5.11	1.042
1.40	70.0	15.61	3.475	30.6	6.93	1.518	25.6	5.34	1.262	22.2	5.05	1.075
1.50	69.5	16.32	3.963	32.7	7.28	1.860	26.6	6.42	1.509	21.4	5.54	1.198
1.60	42.0	10.62	2.721	31.9	8.67	2.067	26.5	7.42	1.707	20.4	5.93	1.295
1.70	74.2	19.82	5.431	30.3	7.98	2.213	22.4	6.13	1.631	19.1	5.79	1.369
1.80	38.0	11.28	3.119	21.2	6.52	1.739	19.3	6.13	1.572	17.2	5.36	1.378
1.90	35.3	10.34	3.223	18.6	5.95	1.696	17.1	5.53	1.552	15.4	4.95	1.367
2.00	51.1	16.42	5.175	20.1	6.77	2.035	15.0	5.30	1.507	13.6	4.82	1.335
2.20	15.1	5.63	1.850	12.7	4.60	1.557	11.9	4.55	1.449	10.4	4.36	1.247
2.40	20.8	7.57	3.028	17.6	5.67	2.568	15.1	4.57	2.192	8.6	3.93	1.705
2.60	31.0	13.08	5.309	23.4	8.95	4.009	18.8	7.22	3.198	13.5	5.26	2.283
2.80	35.3	15.82	7.001	21.1	9.29	4.193	17.4	7.71	3.431	13.2	6.01	2.569
3.00	28.4	13.67	6.475	18.2	8.96	4.140	15.6	7.52	3.550	12.3	6.21	2.766
3.20	36.0	18.48	9.339	21.2	10.82	5.493	14.7	7.34	3.786	11.7	6.21	2.955
3.40	47.8	26.30	13.997	21.7	12.19	6.343	15.5	8.58	4.530	8.8	6.50	3.374
3.60	27.0	15.93	8.858	20.4	11.60	6.679	15.5	8.58	5.079	11.8	6.98	3.795
3.80	35.6	22.04	13.019	18.1	11.74	6.621	15.4	9.55	5.622	12.2	7.18	4.326
4.00	30.0	20.49	12.167	17.7	12.29	7.160	15.2	9.80	5.120	8.1	7.41	4.851
4.20	20.8	13.08	5.309	23.4	8.95	4.009	18.8	7.22	3.198	13.5	5.26	2.283
4.40	35.3	15.82	7.001	21.1	9.29	4.193	17.4	7.71	3.431	13.2	6.01	2.569
4.60	28.4	13.67	6.475	18.2	8.96	4.140	15.6	7.52	3.550	12.3	6.21	2.766
4.80	36.0	18.48	9.339	21.2	10.82	5.493	14.7	7.34	3.786	11.7	6.21	2.955
5.00	47.8	26.30	13.997	21.7	12.19	6.343	15.5	8.58	4.530	8.8	6.50	3.374
5.20	27.0	15.93	8.858	20.4	11.60	6.679	15.5	8.58	5.079	11.8	6.98	3.795
5.40	35.6	22.04	13.019	18.1	11.74	6.621	15.4	9.55	5.622	12.2	7.18	4.326
5.60	30.0	20.49	12.167	17.7	12.29	7.160	15.2	9.80	5.120	8.1	7.41	4.851

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = F-667
 DATE AND TIME = 1994-10-4-22-24
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = N03W
 SIGNAL = IN. ACC.
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION =
 MAX. GROUND ACC. = 21.90 (GAL)
 STATION = HAKODATE-FB

PER	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	44.2	0.28	0.003	27.4	0.08	0.002	25.4	0.05	0.002	23.8	0.05	0.002	22.7	0.04	0.001
0.10	95.8	1.49	0.024	34.1	0.35	0.009	30.8	0.27	0.008	28.2	0.23	0.007	25.1	0.17	0.006
0.15	175.0	4.10	0.100	48.1	1.00	0.027	36.0	0.65	0.021	28.2	0.48	0.016	24.9	0.38	0.014
0.20	100.6	3.09	0.102	53.7	1.46	0.054	37.0	1.02	0.038	29.6	0.67	0.030	24.7	0.55	0.024
0.25	64.6	2.45	0.102	38.6	1.30	0.061	32.6	1.19	0.052	29.3	1.01	0.046	26.0	0.73	0.039
0.30	75.6	3.32	0.172	35.0	1.41	0.079	31.9	1.40	0.072	30.1	1.22	0.068	26.1	0.83	0.056
0.35	66.1	3.36	0.205	34.3	1.52	0.106	32.8	1.28	0.101	28.0	1.00	0.086	24.5	0.86	0.070
0.40	98.0	6.21	0.397	45.0	2.26	0.183	37.3	1.72	0.150	28.0	1.28	0.112	24.5	0.96	0.092
0.45	150.4	10.44	0.771	51.8	3.46	0.265	37.7	2.37	0.193	30.5	1.76	0.155	26.6	1.12	0.125
0.50	111.6	8.61	0.707	55.2	4.26	0.350	41.7	3.18	0.262	35.2	2.25	0.219	28.4	1.36	0.162
0.55	72.8	6.23	0.558	49.3	3.90	0.377	43.7	3.34	0.333	37.5	2.73	0.281	29.0	1.62	0.197
0.60	137.3	12.78	1.252	57.6	5.20	0.524	48.5	4.21	0.440	38.1	3.24	0.341	28.6	1.93	0.228
0.65	98.6	9.97	1.035	60.9	6.14	0.652	51.4	5.34	0.547	38.5	3.74	0.405	27.1	2.29	0.254
0.70	384.4	42.67	4.771	117.7	13.10	1.459	71.0	7.80	1.578	42.2	4.54	0.515	24.9	2.56	0.274
0.75	128.2	15.48	1.826	74.0	9.19	1.055	56.1	6.60	0.796	38.1	4.44	0.534	22.9	2.71	0.296
0.80	105.2	12.99	1.705	44.5	5.64	0.720	42.7	5.14	0.689	35.0	4.06	0.558	21.6	2.76	0.324
0.85	87.1	11.54	1.594	45.0	6.08	0.824	40.7	5.31	0.742	33.4	4.10	0.599	20.6	2.79	0.351
0.90	129.5	18.41	2.656	48.5	6.90	0.994	40.9	5.64	0.836	31.9	4.29	0.644	20.0	2.88	0.375
0.95	76.0	11.52	1.736	47.5	7.60	1.084	36.5	5.72	0.831	29.8	4.30	0.668	19.3	3.01	0.395
1.00	70.7	10.65	1.790	45.7	7.76	1.155	37.6	6.38	0.948	27.7	4.71	0.686	18.4	3.15	0.413
1.10	104.7	18.08	3.209	48.0	9.02	1.470	37.7	7.40	1.147	25.7	5.40	0.771	16.5	3.17	0.436
1.20	114.1	21.27	4.161	43.1	8.45	1.571	33.9	6.69	1.228	23.7	4.65	0.838	14.3	2.84	0.437
1.30	34.5	7.77	1.476	26.6	6.34	1.135	21.6	5.43	0.919	15.9	4.32	0.666	12.2	2.62	0.462
1.40	45.5	9.83	2.257	25.4	5.44	1.259	22.1	4.78	1.093	16.9	3.56	0.822	12.0	2.60	0.519
1.50	74.7	17.28	4.256	33.1	7.80	1.881	25.0	5.62	1.443	18.4	3.85	1.034	11.4	2.50	0.611
1.60	50.9	12.79	3.302	26.1	6.29	1.691	22.4	5.40	1.418	18.7	4.28	1.193	12.0	2.48	0.712
1.70	83.4	22.29	6.104	30.7	8.22	2.246	24.4	6.31	1.778	18.7	4.48	1.340	12.0	2.55	0.789
1.80	63.2	18.76	5.188	30.5	8.18	2.501	23.6	6.13	1.931	17.3	4.26	1.394	11.6	2.52	0.843
1.90	41.2	12.11	3.769	21.7	6.21	1.979	17.5	5.02	1.595	14.5	3.80	1.304	11.0	2.40	0.879
2.00	20.9	6.48	2.122	17.4	5.23	1.733	14.2	4.16	1.432	11.8	3.37	1.174	10.2	2.34	0.909
2.20	30.5	10.29	3.740	17.4	5.83	2.129	14.1	4.63	1.715	10.5	3.48	1.263	9.1	2.47	0.982
2.40	21.1	8.04	3.085	16.9	6.57	2.460	13.8	5.50	2.009	9.8	3.75	1.401	8.5	2.68	1.080
2.60	20.8	8.48	3.562	15.3	6.63	2.613	13.7	5.79	2.328	11.1	4.35	1.864	8.1	2.95	1.246
2.80	41.1	18.63	8.158	24.3	10.86	4.814	17.7	7.75	3.489	12.2	5.07	2.385	8.2	3.21	1.456
3.00	26.1	12.60	5.948	17.8	8.93	4.047	14.7	6.77	3.344	11.2	5.04	2.483	8.1	3.41	1.647
3.20	39.2	19.48	10.166	20.4	10.95	5.293	15.7	7.99	4.067	11.2	5.73	2.861	7.9	3.55	1.824
3.40	21.8	11.23	6.391	19.1	10.45	5.598	15.3	8.54	4.470	11.2	6.33	3.228	8.1	3.69	1.980
3.60	56.1	21.82	11.856	21.9	12.24	7.167	16.7	9.03	5.444	11.2	6.50	3.601	8.1	3.96	2.110
3.80	45.0	27.29	16.477	25.4	15.54	9.289	16.6	10.67	6.057	11.1	7.05	3.986	7.9	4.27	2.252
4.00	63.8	39.70	25.857	28.3	17.69	11.439	17.3	11.38	6.993	11.4	7.61	4.536	7.6	4.47	2.414

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

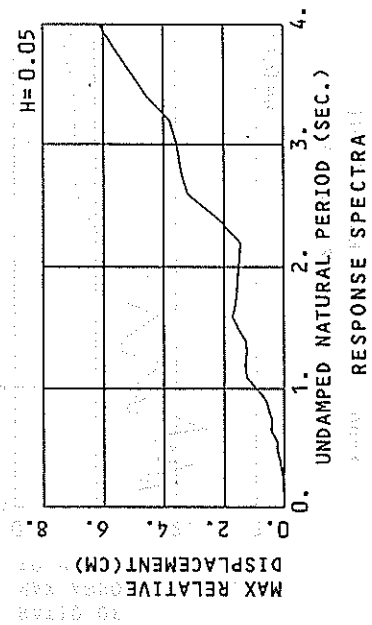
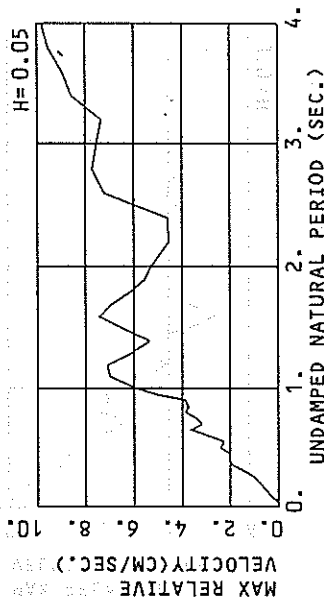
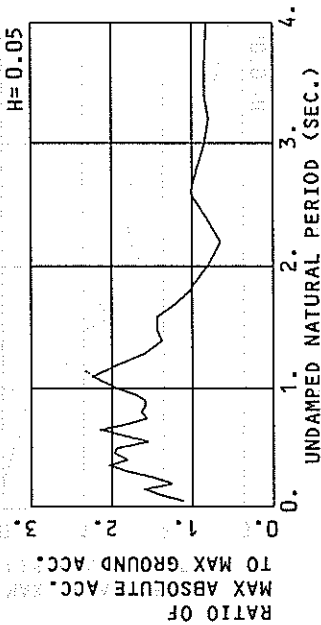
RESPONSE SPECTRUM

RECORD = F-667 COMPONENT = UP SIGNAL = IN. ACC. CORRECTION = STATION = HAKODATE-FB
 DATE AND TIME = 1994-10-4-22-24 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 11.82 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

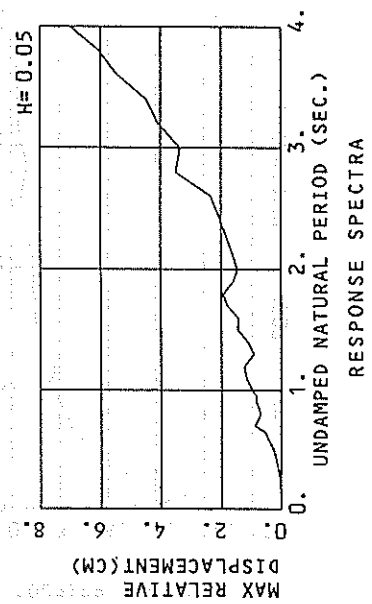
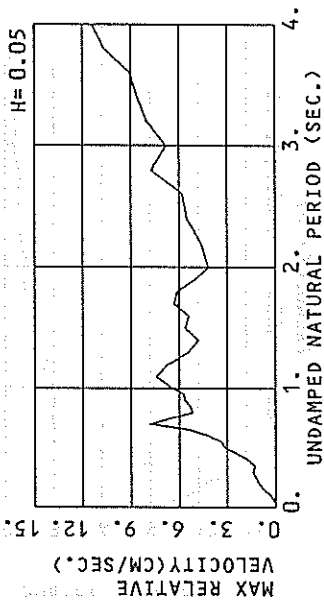
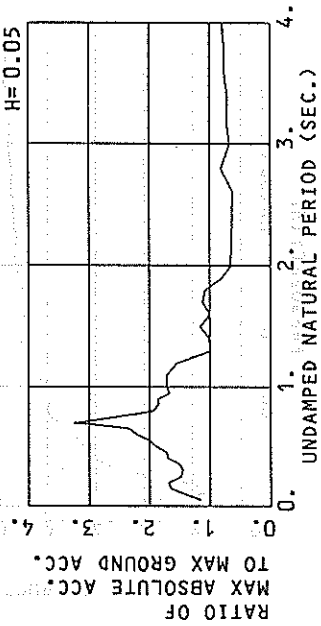
PER	DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	47.8	0.35	0.003	14.6	0.04	0.001	13.2	0.03	0.001	12.8	0.02	0.001
0.10	70.9	1.06	0.018	18.5	0.26	0.005	16.0	0.19	0.004	14.0	0.08	0.003
0.15	108.6	2.54	0.062	23.3	0.40	0.013	18.7	0.29	0.011	16.6	0.14	0.008
0.20	60.5	1.71	0.061	29.0	0.75	0.029	22.9	0.52	0.018	14.2	0.24	0.014
0.25	64.7	2.40	0.102	22.6	0.83	0.036	16.8	0.55	0.027	14.0	0.33	0.021
0.30	44.0	1.87	0.100	30.0	1.43	0.068	22.8	1.07	0.052	17.4	0.42	0.022
0.35	69.9	3.76	0.217	35.6	1.81	0.110	26.2	1.31	0.081	18.1	0.72	0.039
0.40	65.4	4.02	0.265	28.2	1.62	0.115	20.8	1.19	0.084	16.2	0.88	0.040
0.45	118.2	8.33	0.606	29.3	1.92	0.150	23.0	1.57	0.118	17.7	1.00	0.065
0.50	84.6	6.56	0.536	28.3	2.16	0.179	23.3	1.57	0.118	18.1	1.27	0.089
0.55	57.2	4.89	0.438	26.9	2.25	0.205	20.5	1.65	0.156	16.0	1.12	0.120
0.60	58.1	5.37	0.530	28.8	2.89	0.262	22.1	2.01	0.201	16.2	1.46	0.145
0.65	102.4	10.24	1.096	37.4	3.75	0.400	25.3	2.73	0.302	18.3	1.67	0.191
0.70	82.3	9.08	1.022	37.7	3.98	0.467	28.9	2.81	0.320	17.0	1.88	0.207
0.75	77.3	9.01	1.101	32.0	3.91	0.456	23.9	2.86	0.338	16.4	1.91	0.229
0.80	64.6	8.13	1.048	21.7	2.81	0.352	16.3	2.26	0.263	13.5	1.81	0.215
0.85	46.6	6.04	0.852	21.9	3.00	0.400	16.3	2.34	0.301	13.0	1.84	0.235
0.90	77.8	10.81	1.597	29.3	3.85	0.600	19.4	2.54	0.396	13.5	1.92	0.274
0.95	33.5	5.02	0.767	21.2	3.24	0.484	16.3	2.41	0.371	12.3	1.87	0.247
1.00	53.2	8.33	1.349	22.5	3.20	0.568	17.2	2.53	0.433	12.8	2.01	0.317
1.10	61.2	10.71	1.877	30.9	5.29	0.947	19.8	3.49	0.602	13.6	2.33	0.409
1.20	99.1	18.46	3.614	32.8	5.94	1.195	22.3	3.96	0.809	14.0	2.58	0.504
1.30	49.3	9.63	2.113	20.6	3.89	0.881	15.6	3.34	0.663	13.4	2.81	0.564
1.40	50.4	11.19	2.502	22.7	4.60	1.126	15.8	3.49	0.779	13.5	3.04	0.659
1.50	25.5	6.01	1.452	20.7	5.28	1.179	18.5	4.53	1.051	14.7	3.36	0.822
1.60	100.7	26.27	6.530	30.0	7.41	1.940	21.2	5.20	1.367	14.8	3.62	0.939
1.70	56.1	14.89	4.105	24.3	6.44	1.776	16.4	4.46	1.192	13.0	3.57	0.926
1.80	58.4	17.03	4.795	26.8	7.80	2.198	18.0	5.21	1.469	12.5	3.51	1.009
1.90	53.5	16.94	4.888	27.7	8.56	2.526	19.8	5.87	1.797	13.5	3.69	1.208
2.00	82.0	27.01	8.313	23.9	8.18	2.423	17.4	5.64	1.756	12.3	3.95	1.223
2.20	22.0	8.56	2.702	16.3	6.09	1.991	13.0	4.92	1.588	9.8	3.68	1.175
2.40	14.7	6.17	3.162	12.5	5.17	1.816	10.7	4.48	1.555	7.9	3.20	1.122
2.60	18.5	7.89	3.150	11.1	5.02	1.893	9.0	3.85	1.540	6.9	3.10	1.153
2.80	23.7	11.14	4.700	11.2	5.61	2.212	8.7	4.36	1.725	6.9	3.40	1.332
3.00	12.9	6.91	2.930	10.7	5.38	2.430	9.0	4.43	2.035	6.7	3.92	1.509
3.20	21.9	11.61	5.670	10.4	6.14	2.702	8.9	5.29	2.313	5.1	4.48	1.782
3.40	13.0	7.88	3.793	10.4	6.31	3.035	8.9	5.67	2.599	6.8	4.73	1.957
3.60	13.0	7.94	4.278	9.9	6.10	3.234	8.2	5.52	2.682	6.3	4.64	1.994
3.80	17.8	10.96	6.499	9.4	6.24	3.447	7.5	4.92	2.723	6.2	4.24	2.194
4.00	14.3	9.48	5.781	8.3	5.83	3.361	7.2	4.98	2.895	5.9	3.88	2.338

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

F-667 E03N HAKODATE-FB
(1/FC=49.71 SEC.)

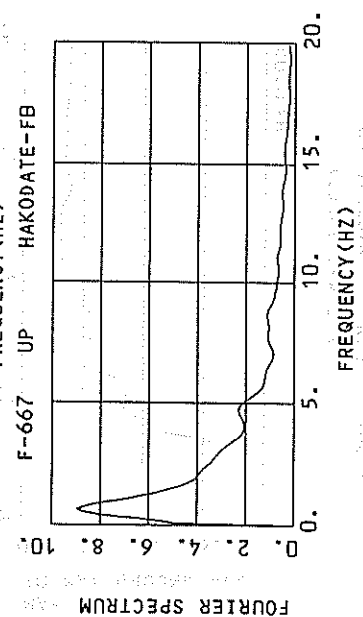
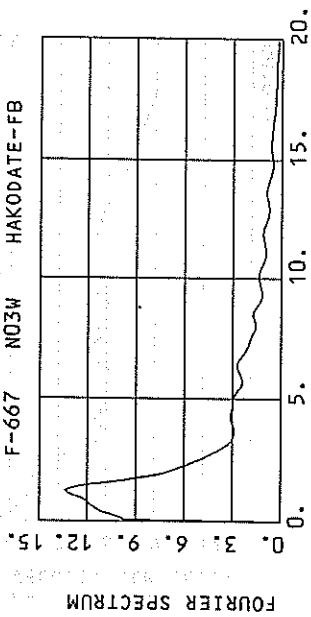
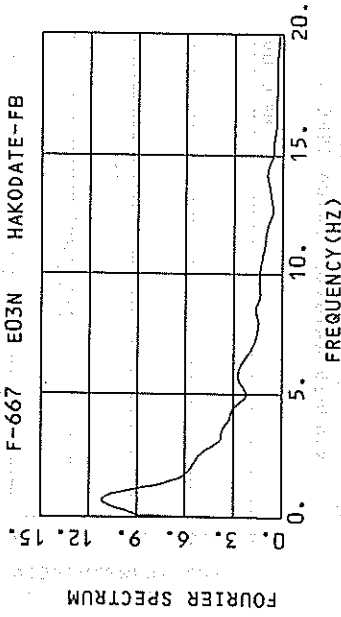
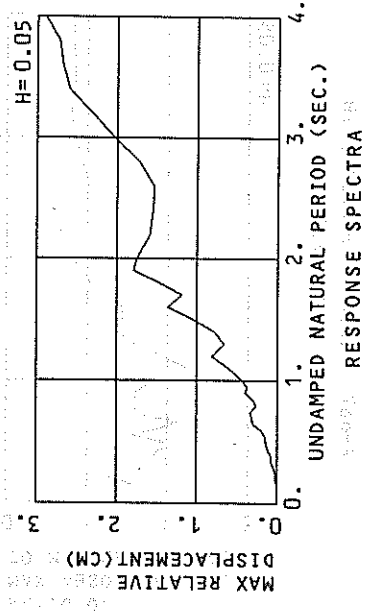
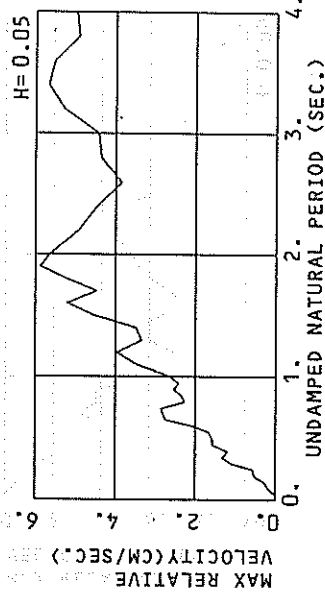
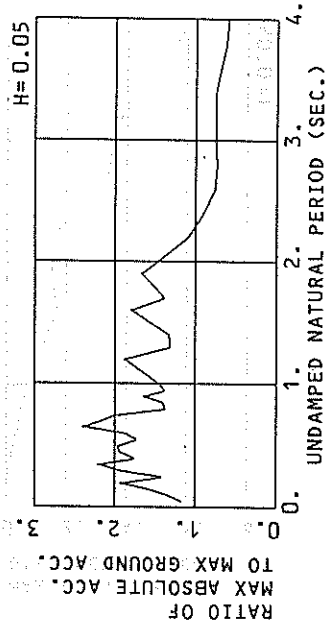


F-667 N03W HAKODATE-FB
(1/FC=49.71 SEC.)

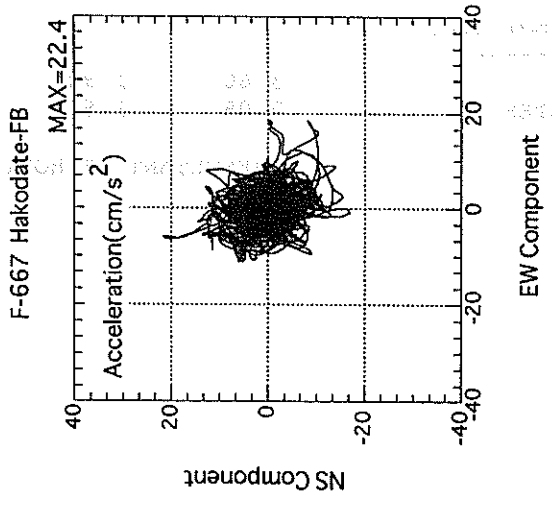


F-667 UP HAKODATE-FB

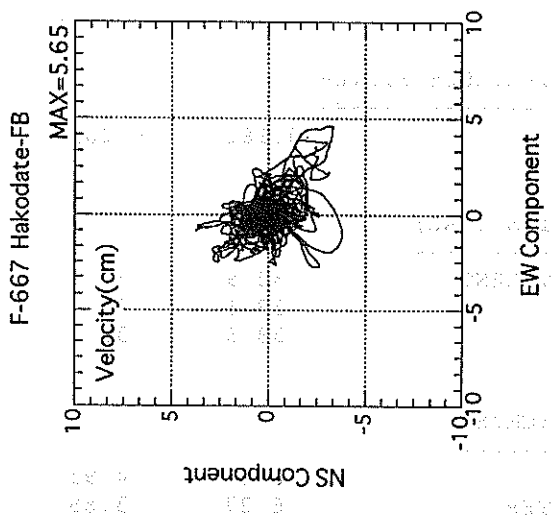
(1/FC=49.71 SEC.)



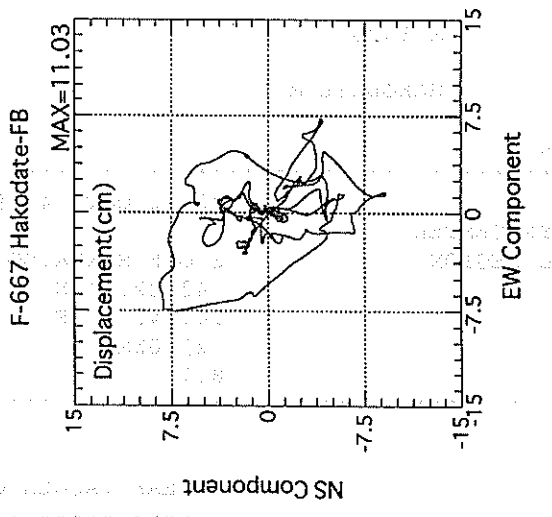
76 0.0
 91 0.0
 92 0.0



88 0.0
 93 0.0



94 0.0
 95 0.0
 96 0.0



RECORD NUMBER : M-1520
 STATION : HAKODATE-M

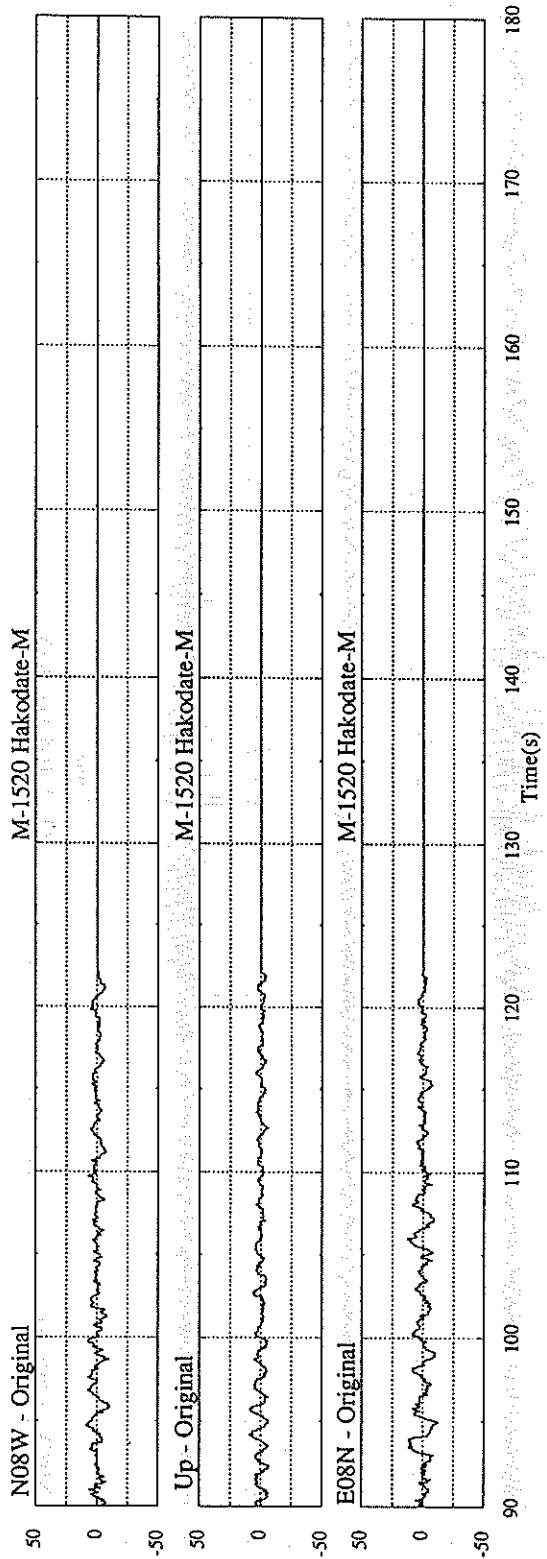
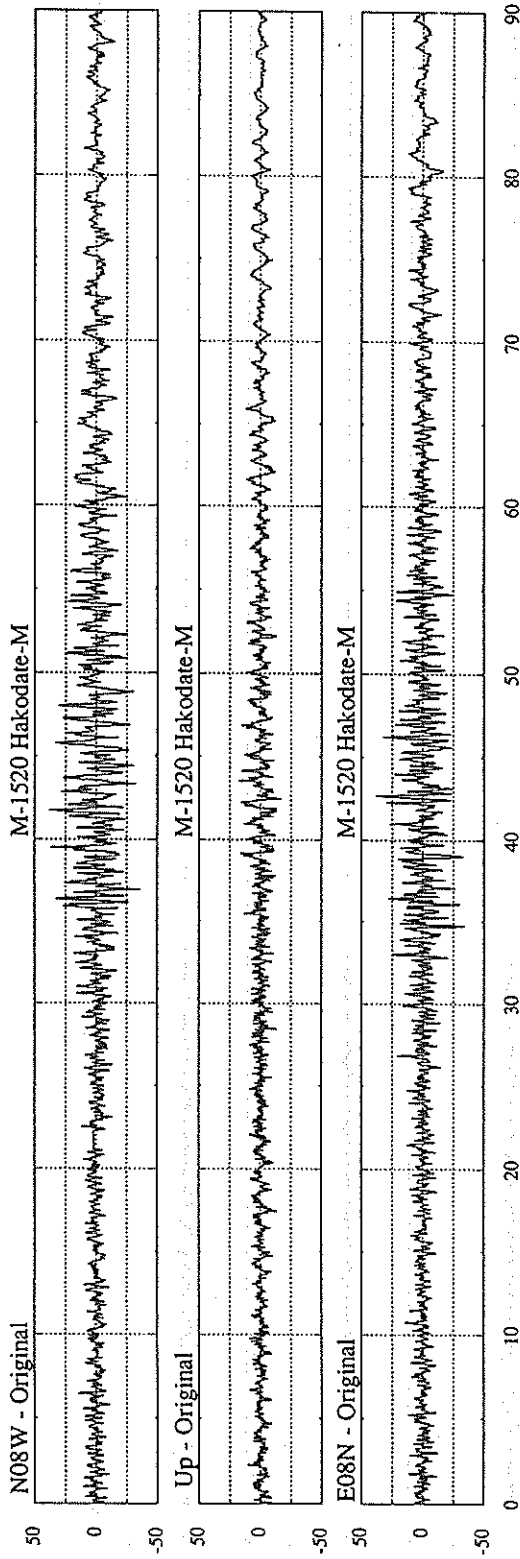
EARTHQUAKE DATA

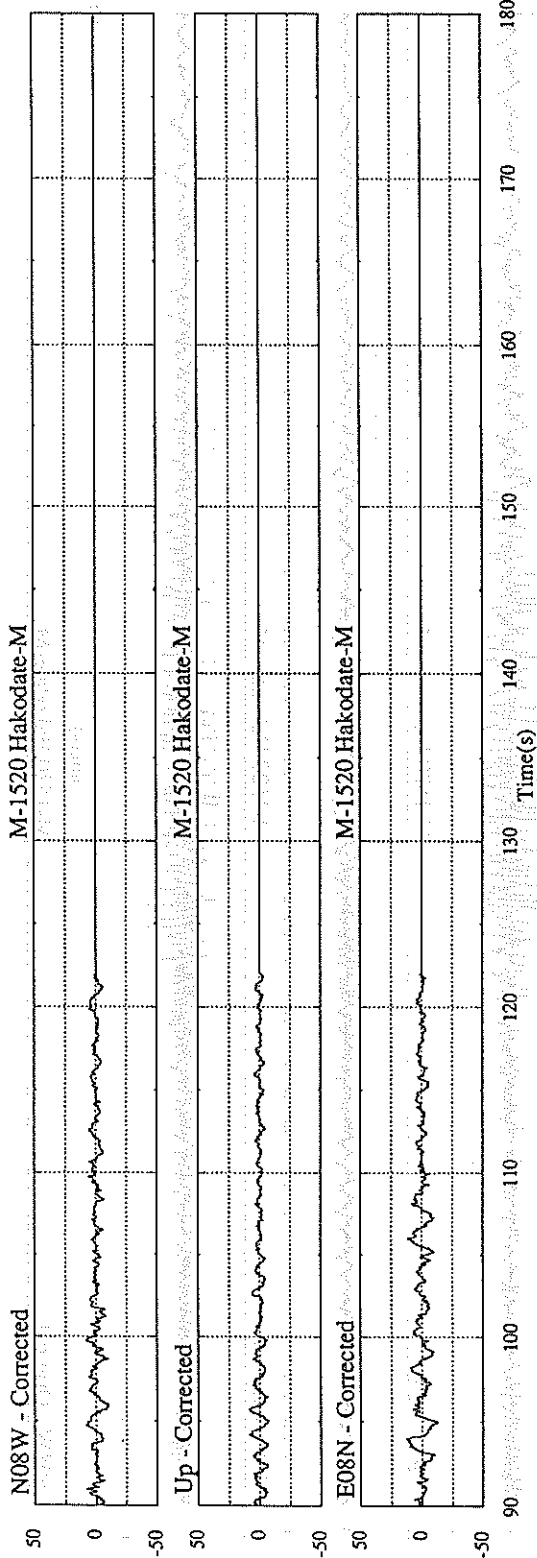
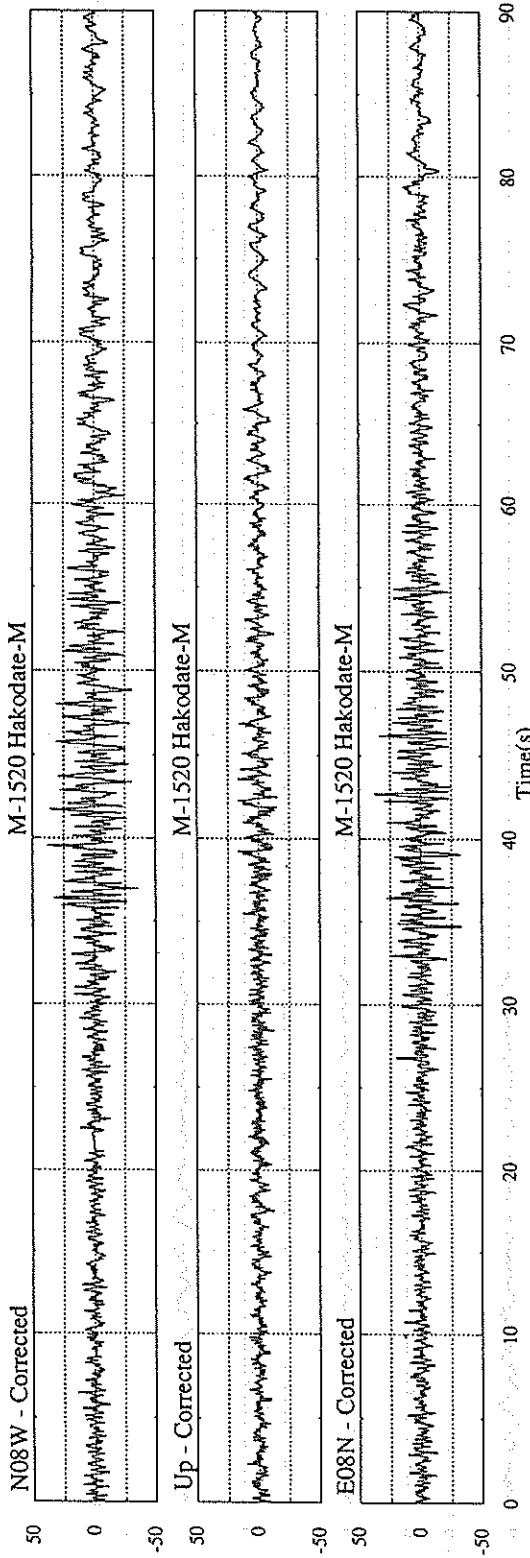
 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

PEAK VALUES OF COMPONENTS

	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.181	0.205	0.303	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	32.9	32.7	14.5	35.3
ORIGINAL	38.1	37.3	17.4	40.6
CORRECTED	38.5	38.1	16.7	42.0
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	6.63	4.93	2.83	6.69
VARIABLE FILTER	6.27	3.89	2.25	6.29
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	3.60	1.99	0.98	3.69
VARIABLE FILTER	2.08	1.66	0.56	2.11

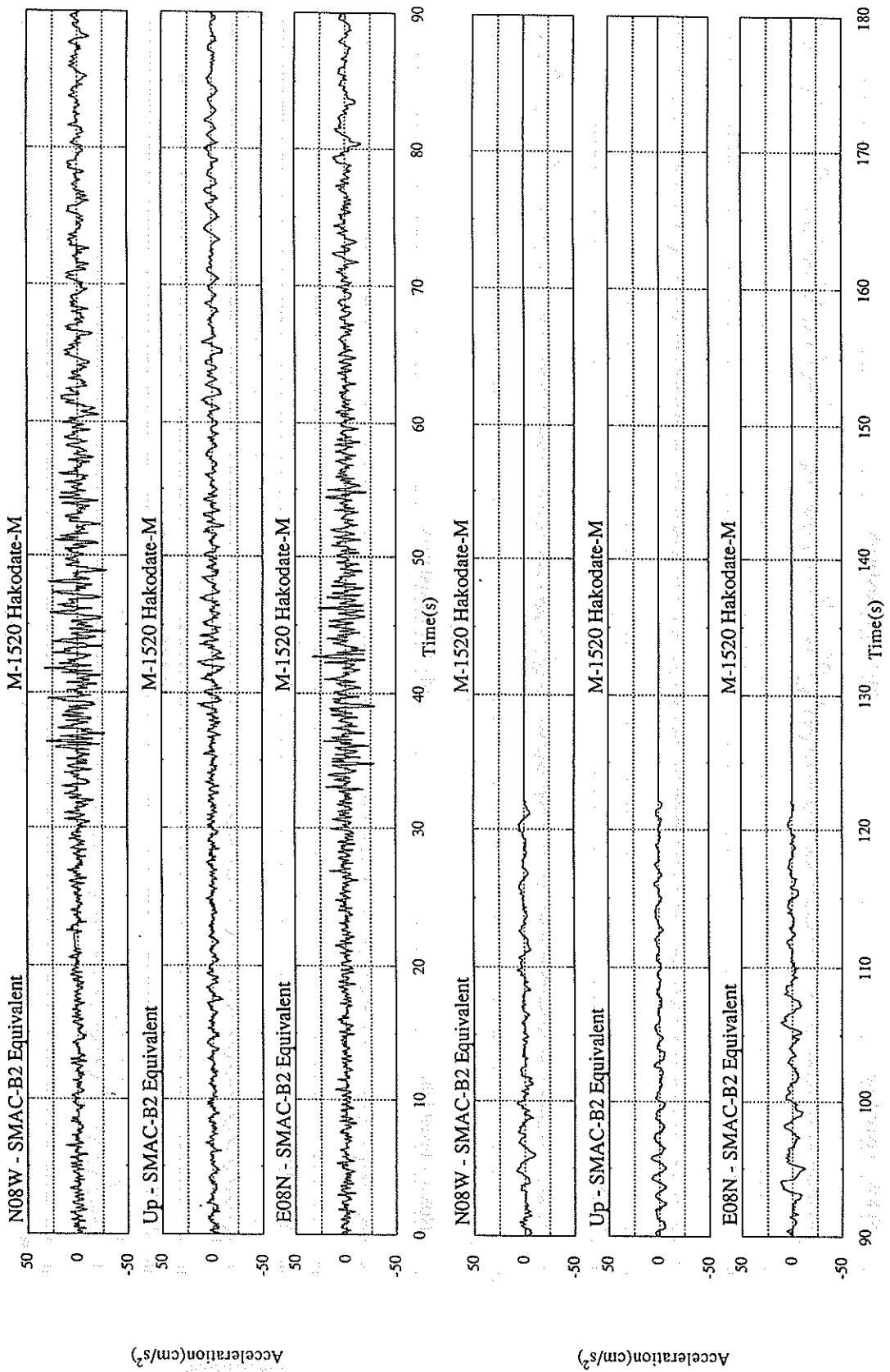
* RESULTANT OF HORIZONTAL COMPONENTS





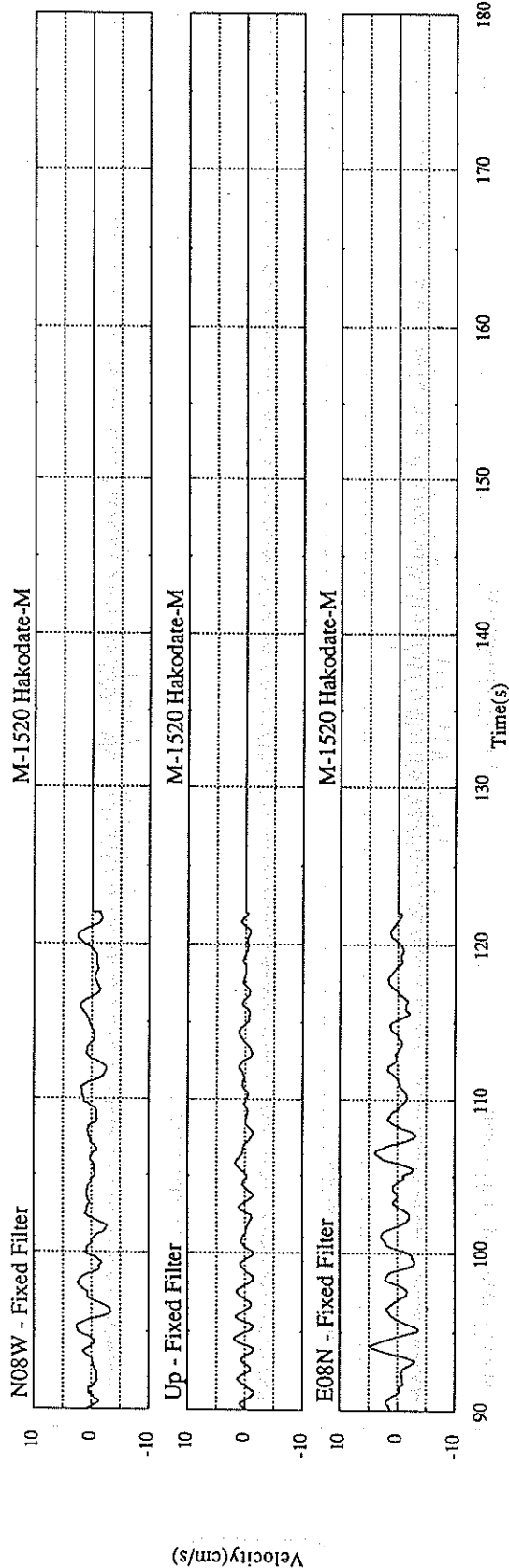
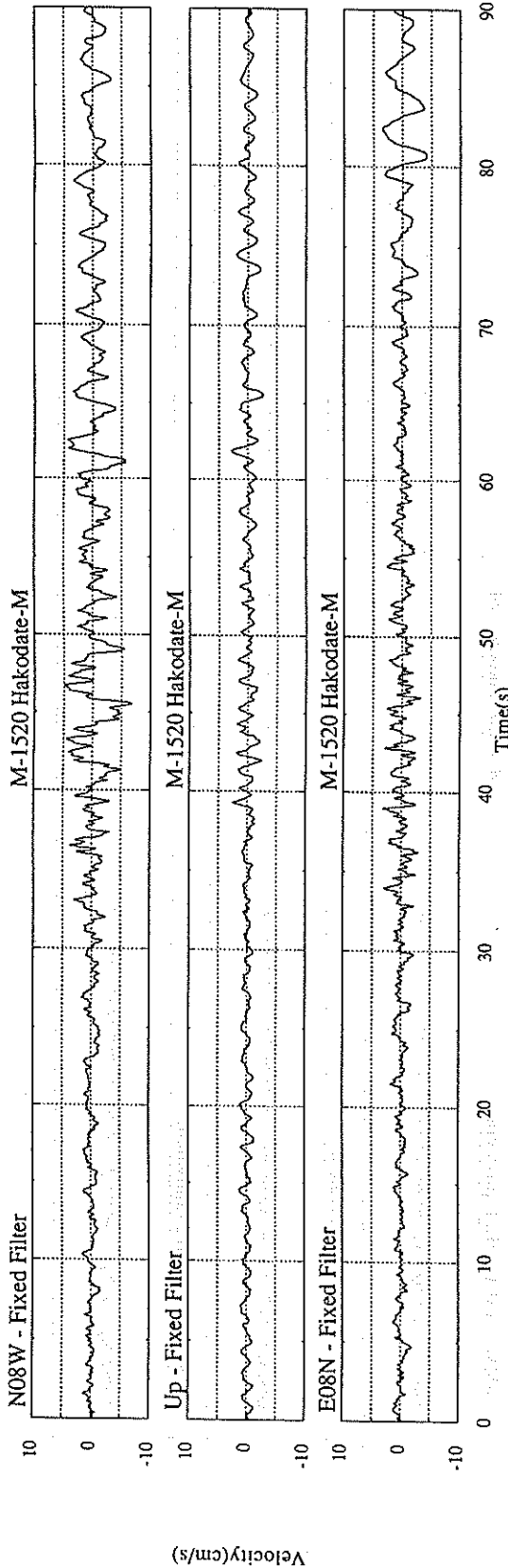
Acceleration(cm/s²)

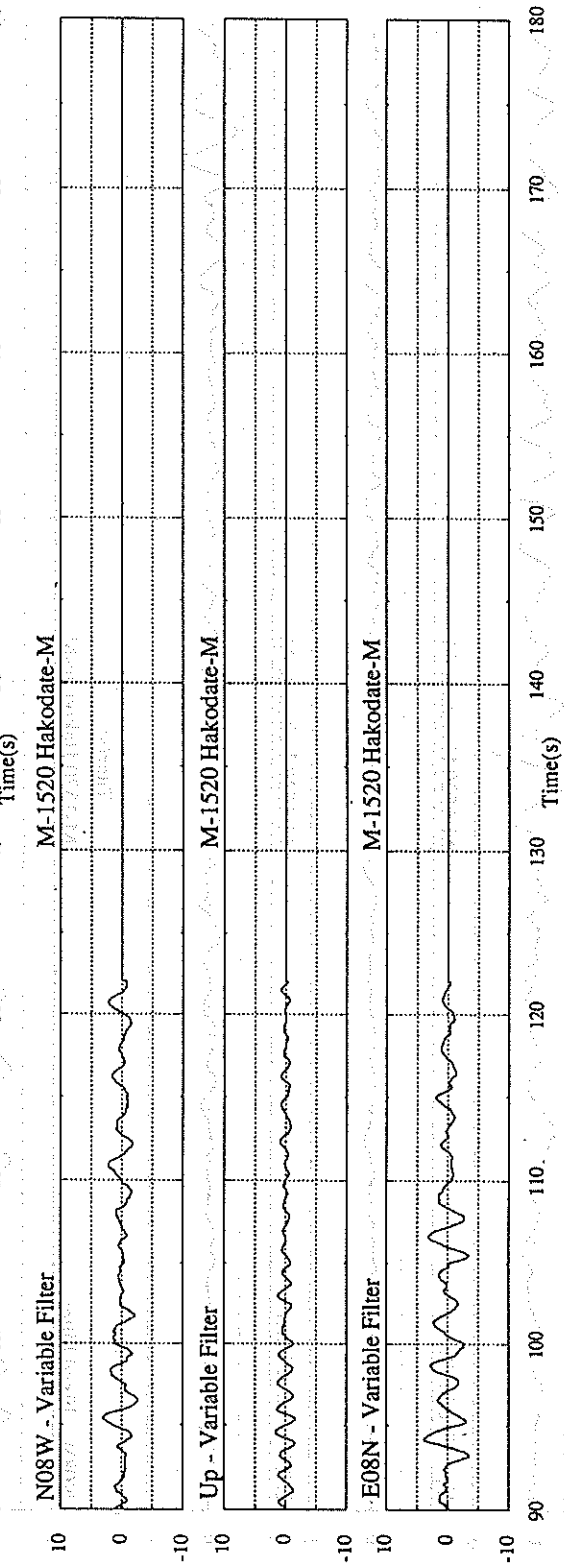
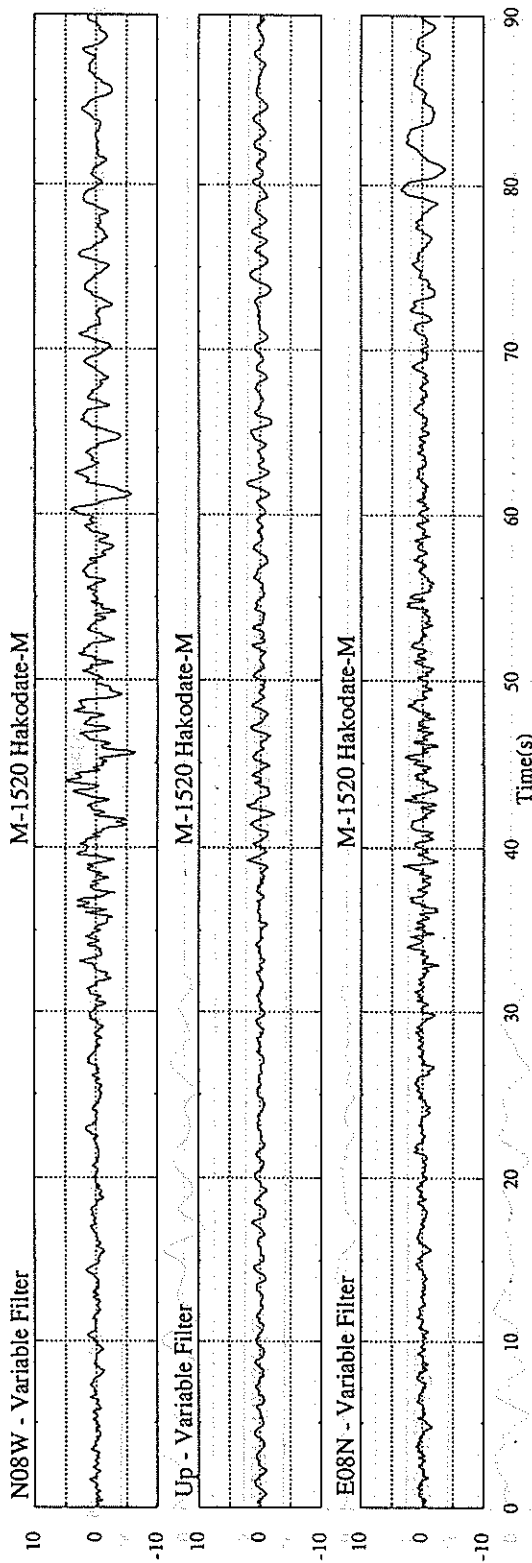
Acceleration(cm/s²)



Acceleration(cm/s²)

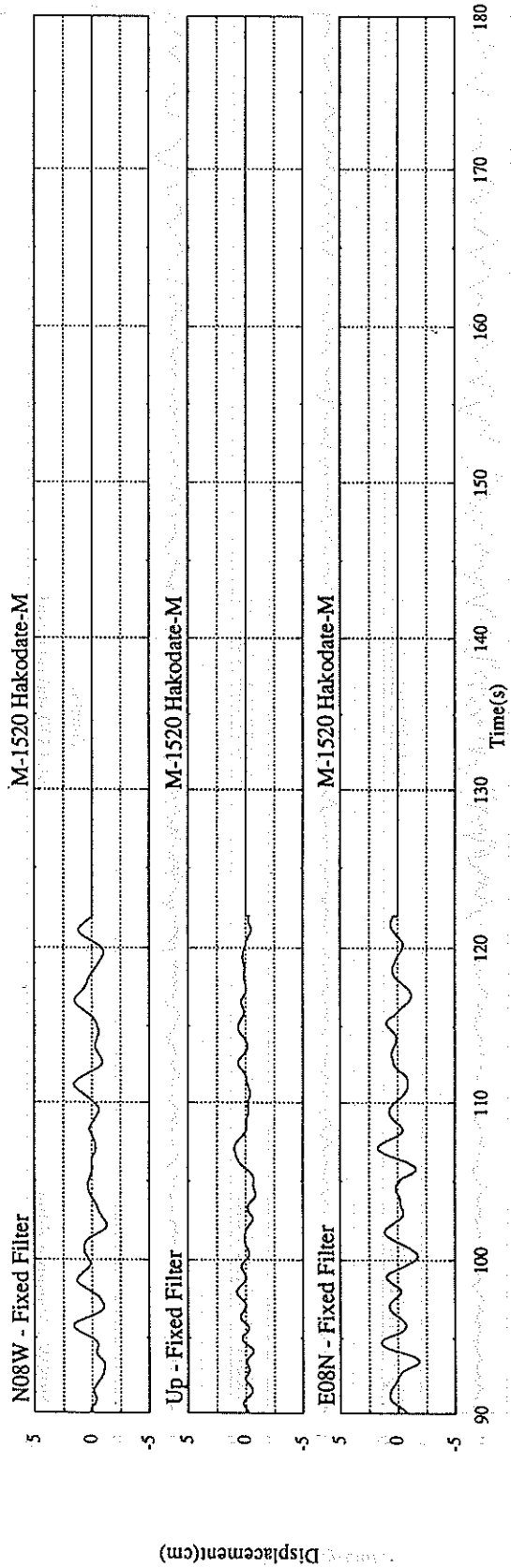
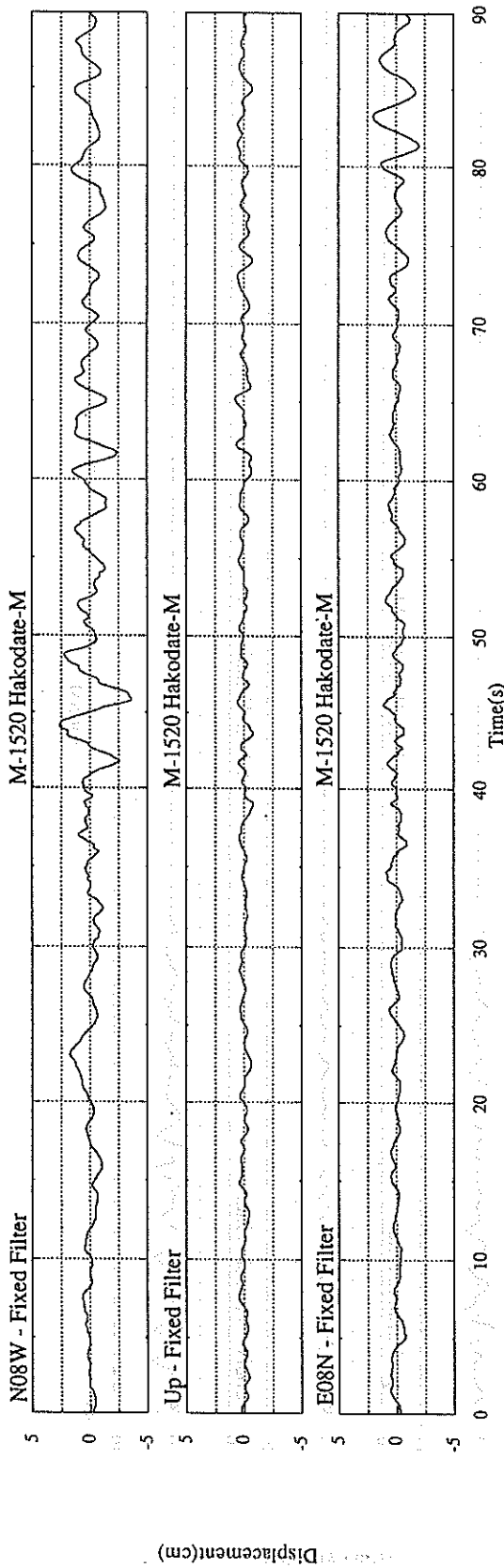
Acceleration(cm/s²)



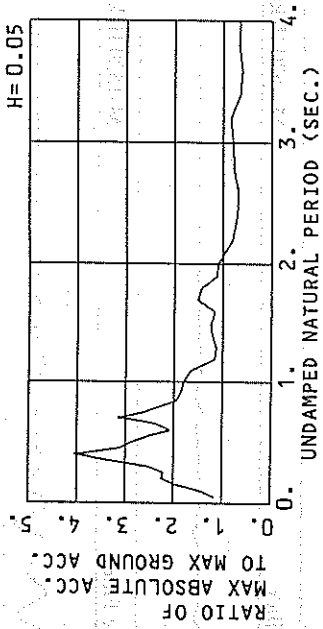


Velocity(cm/s)

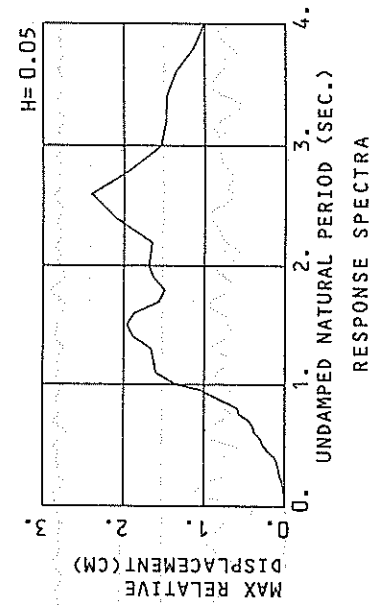
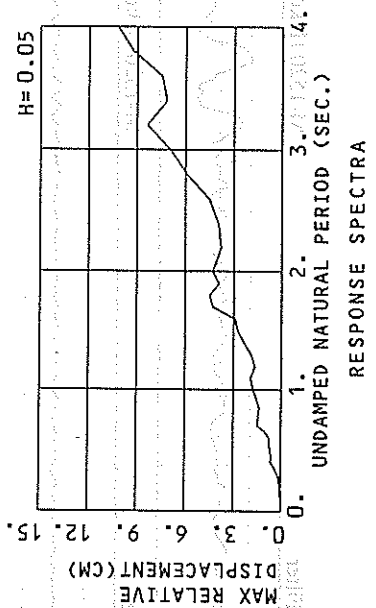
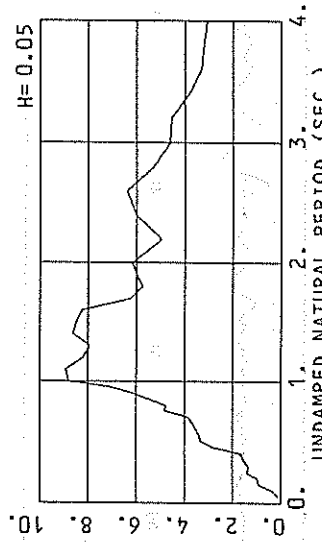
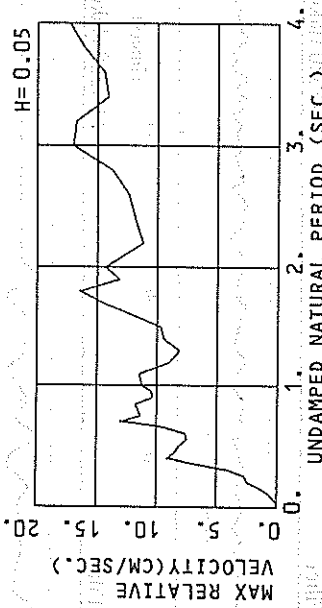
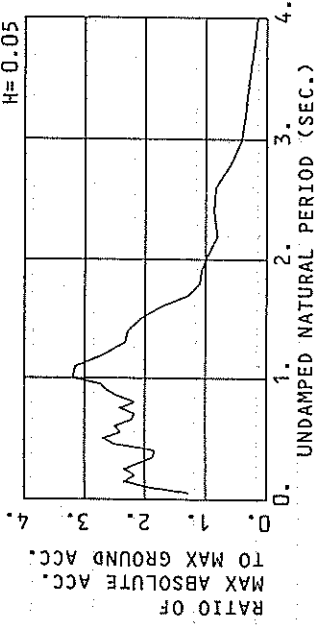
Velocity(cm/s)



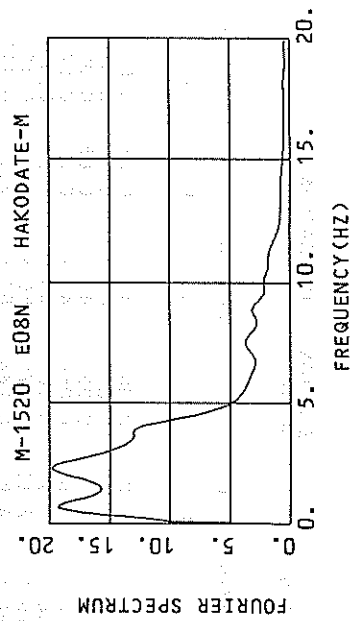
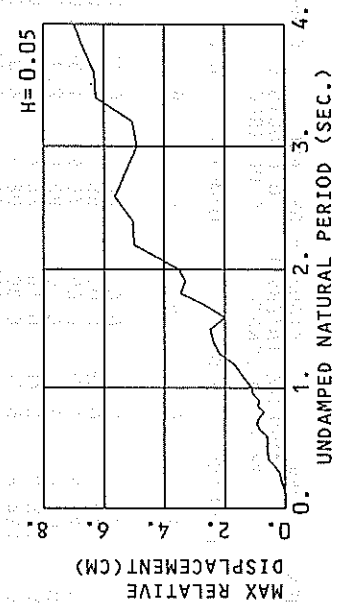
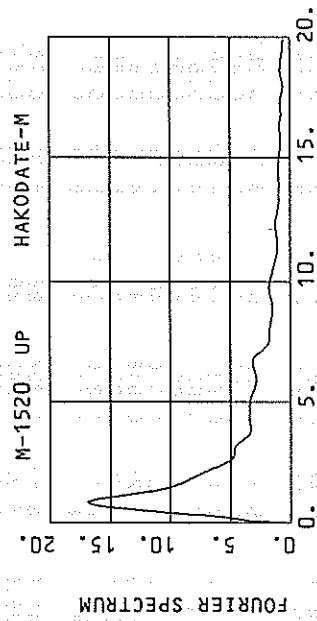
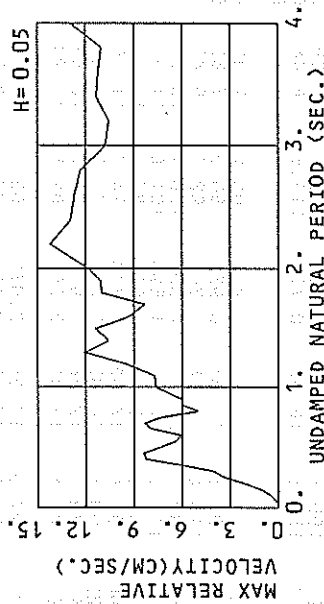
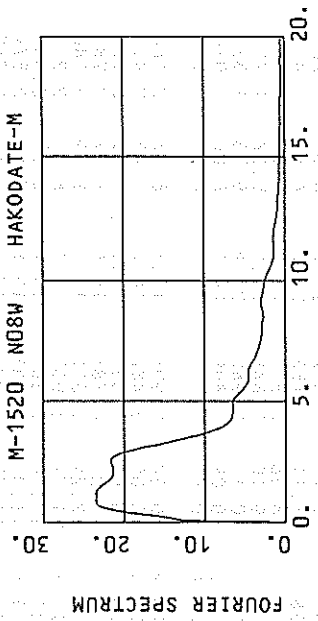
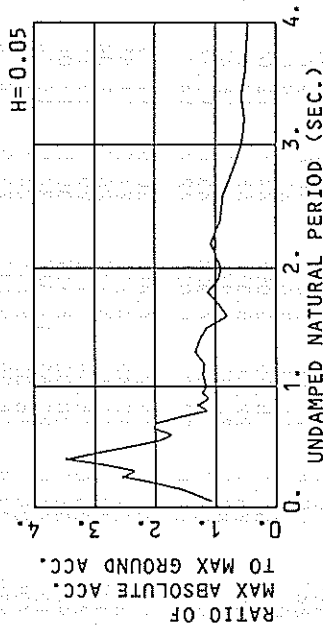
M-1520 N08W HAKODATE-M
(1/FC=5.93 SEC.)



M-1520 UP HAKODATE-M
(1/FC=3.44 SEC.)



M-1520 E08N HAKODATE-M
(1/FC=5.18 SEC.)



RESPONSE SPECTRUM

RECORD = M-1520 COMPONENT = N08W SIGNAL = GR. ACC. CORRECTION = STATION = HAKODATE-M
 DATE AND TIME = 1994-10-4-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 38.44 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0.				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	90.8	0.50	0.006	45.9	0.12	0.003	44.2	0.10	0.003	42.4	0.09	0.003	40.6	0.08	0.003	0.003	0.003	0.003		
0.10	201.3	3.07	0.051	72.3	0.85	0.018	56.7	0.61	0.014	48.1	0.43	0.012	43.1	0.33	0.011	0.011	0.011	0.011		
0.15	182.2	3.97	0.104	95.3	1.78	0.054	75.9	1.35	0.043	58.8	1.00	0.033	46.7	0.58	0.026	0.026	0.026	0.026		
0.20	199.7	5.72	0.202	106.4	3.11	0.108	86.0	2.41	0.087	64.2	1.86	0.064	44.9	0.91	0.043	0.043	0.043	0.043		
0.25	429.4	16.92	0.680	105.2	3.46	0.167	85.4	2.68	0.134	64.8	1.92	0.102	46.9	1.24	0.072	0.072	0.072	0.072		
0.30	287.6	12.99	0.856	134.8	5.74	0.307	98.3	4.00	0.223	79.2	2.83	0.179	56.9	1.79	0.123	0.123	0.123	0.123		
0.35	540.9	29.67	1.878	169.9	9.11	0.525	132.3	6.99	0.408	94.5	4.67	0.288	62.0	2.71	0.178	0.178	0.178	0.178		
0.40	443.5	28.14	1.797	195.4	11.68	0.791	155.1	9.09	0.626	106.2	6.16	0.422	63.6	3.40	0.235	0.235	0.235	0.235		
0.45	364.8	25.95	1.871	151.5	10.62	0.777	119.5	8.48	0.610	90.8	6.44	0.457	59.4	3.56	0.272	0.272	0.272	0.272		
0.50	359.2	28.08	2.274	159.5	12.33	1.010	110.7	8.15	0.698	75.6	5.56	0.473	51.9	3.66	0.287	0.287	0.287	0.287		
0.55	180.3	15.28	1.381	113.3	9.19	0.868	96.2	7.49	0.734	69.5	5.32	0.522	50.1	3.67	0.351	0.351	0.351	0.351		
0.60	185.8	17.20	1.694	101.5	10.35	0.926	80.3	7.63	0.728	62.6	5.63	0.561	49.6	3.71	0.410	0.410	0.410	0.410		
0.65	212.3	21.72	2.272	113.0	11.18	1.207	92.7	9.47	0.982	68.8	6.75	0.723	48.4	4.22	0.465	0.465	0.465	0.465		
0.70	503.4	55.46	6.249	190.3	20.71	2.598	120.7	13.02	1.490	76.9	8.75	0.937	46.2	4.56	0.513	0.513	0.513	0.513		
0.75	145.3	17.13	2.070	112.0	12.92	1.593	101.0	11.37	1.418	72.4	8.46	1.007	44.0	4.69	0.554	0.554	0.554	0.554		
0.80	243.3	30.02	3.944	103.6	13.13	1.774	87.9	11.57	1.611	63.8	8.51	1.010	40.6	4.86	0.575	0.575	0.575	0.575		
0.85	103.3	14.07	1.890	97.0	14.62	1.775	74.7	11.79	1.361	53.2	8.28	0.948	38.1	4.87	0.613	0.613	0.613	0.613		
0.90	293.3	40.45	6.022	99.6	14.85	2.042	71.7	10.40	1.463	52.6	7.45	1.059	35.6	5.05	0.652	0.652	0.652	0.652		
0.95	130.8	19.51	2.991	83.7	12.66	1.910	60.6	10.43	1.606	54.0	8.17	1.210	32.9	5.28	0.687	0.687	0.687	0.687		
1.00	106.4	17.48	2.695	81.5	12.43	2.061	69.5	11.24	1.750	54.0	8.71	1.271	34.8	5.38	0.710	0.710	0.710	0.710		
1.10	289.5	49.18	8.873	97.3	17.35	2.979	63.1	11.45	1.925	41.6	8.63	1.254	28.0	5.39	0.788	0.788	0.788	0.788		
1.20	205.8	40.05	7.507	59.9	10.50	2.184	44.7	8.97	1.618	35.0	7.32	1.240	26.6	5.20	0.877	0.877	0.877	0.877		
1.30	78.7	15.84	3.369	50.6	9.96	2.166	43.5	8.16	1.855	34.9	6.33	1.478	24.8	4.78	0.978	0.978	0.978	0.978		
1.40	117.8	25.37	5.847	56.8	11.95	2.817	46.6	9.47	2.307	37.7	7.11	1.852	26.0	4.57	1.205	1.205	1.205	1.205		
1.50	123.1	28.54	7.015	61.6	13.15	3.504	47.7	9.69	2.705	38.5	7.11	2.153	27.2	4.89	1.410	1.410	1.410	1.410		
1.60	125.4	31.96	8.133	61.1	15.69	3.956	44.5	12.09	2.873	37.4	8.36	2.377	27.5	5.05	1.583	1.583	1.583	1.583		
1.70	298.4	80.83	21.865	86.7	22.68	6.338	58.2	14.61	4.243	39.8	9.10	2.848	27.0	5.28	1.724	1.724	1.724	1.724		
1.80	174.8	50.30	14.342	84.5	24.87	6.923	55.2	16.42	4.500	37.1	10.12	2.980	25.8	5.73	1.833	1.833	1.833	1.833		
1.90	98.2	31.56	8.981	53.7	18.82	4.904	43.0	13.16	3.909	32.3	9.09	2.899	24.3	6.06	1.916	1.916	1.916	1.916		
2.00	129.4	40.04	12.705	59.6	20.20	6.032	42.4	14.37	4.274	28.3	9.42	2.874	22.6	6.30	1.991	1.991	1.991	1.991		
2.20	75.1	25.60	9.211	36.7	13.23	4.495	30.9	11.19	3.765	24.8	9.34	2.998	19.8	6.86	2.168	2.168	2.168	2.168		
2.40	28.3	11.24	3.842	29.1	12.43	4.237	27.2	11.85	3.942	24.1	10.09	3.482	18.0	7.43	2.412	2.412	2.412	2.412		
2.60	52.0	21.98	8.896	30.2	13.11	5.172	26.3	12.34	4.479	24.0	10.63	4.039	16.9	7.93	2.723	2.723	2.723	2.723		
2.80	81.6	36.60	15.202	36.0	16.39	7.135	29.7	13.75	5.860	24.7	11.27	4.788	16.9	8.32	2.986	2.986	2.986	2.986		
3.00	43.6	22.08	9.941	35.7	20.02	8.127	30.5	17.00	6.913	24.1	12.29	5.328	15.1	8.40	3.146	3.146	3.146	3.146		
3.20	73.8	39.37	19.131	44.0	22.53	11.387	32.9	16.74	8.378	21.8	11.72	5.537	15.1	8.40	3.267	3.267	3.267	3.267		
3.40	50.2	27.43	14.709	29.1	16.32	8.110	24.7	14.13	7.153	19.1	11.10	5.388	14.4	8.09	3.448	3.448	3.448	3.448		
3.60	45.2	26.95	14.839	29.9	16.55	9.813	23.0	14.44	7.459	17.0	11.65	5.438	13.6	7.62	3.579	3.579	3.579	3.579		
3.80	66.0	40.21	24.142	36.0	22.84	13.133	25.5	15.10	9.249	16.7	11.65	5.923	12.6	7.62	3.759	3.759	3.759	3.759		
4.00	66.3	43.09	26.885	35.0	23.55	14.159	25.3	17.34	10.181	16.7	12.08	6.513	12.3	7.80	4.030	4.030	4.030	4.030		

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = M-1520 COMPONENT = UP SIGNAL = GR. ACC. CORRECTION = STATION = HAKODATE-M
 DATE AND TIME = 1994-10-4-22-23 SAMPRING INTERVAL = 0.0100(SEC) MAX. GROUND ACC. = 16.70 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

DAMPING = 0. DAMPING = 0.025 DAMPING = 0.050 DAMPING = 0.100 DAMPING = 0.250

PER	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	84.5	0.59	0.005	25.5	0.15	0.002	21.3	0.11	0.001	18.2	0.08	0.001	17.6	0.05	0.001
0.10	120.3	1.86	0.030	42.3	0.47	0.011	32.8	0.35	0.008	25.8	0.24	0.006	19.6	0.14	0.005
0.15	283.9	6.62	0.162	53.2	1.20	0.031	39.1	0.89	0.022	27.8	0.60	0.016	21.4	0.33	0.012
0.20	175.0	5.40	0.177	45.0	1.21	0.046	36.3	0.98	0.037	29.0	0.71	0.029	20.2	0.48	0.019
0.25	170.0	6.72	0.269	53.0	1.92	0.084	39.1	1.39	0.062	28.3	0.98	0.044	18.9	0.63	0.028
0.30	78.2	3.48	0.178	46.3	1.96	0.105	35.1	1.34	0.079	25.3	0.90	0.058	19.0	0.70	0.040
0.35	54.9	2.94	0.171	38.0	1.89	0.118	31.2	1.53	0.096	26.3	1.16	0.080	19.7	0.78	0.056
0.40	113.4	7.14	0.459	40.7	2.22	0.164	31.1	1.63	0.125	24.7	1.18	0.099	19.2	0.88	0.073
0.45	133.4	9.26	0.684	58.8	3.92	0.302	42.0	2.78	0.214	29.1	1.90	0.147	19.3	1.04	0.095
0.50	156.5	12.21	0.991	59.6	4.41	0.377	44.9	3.33	0.283	30.6	2.26	0.190	20.0	1.20	0.121
0.55	84.7	7.15	0.649	53.4	4.62	0.409	40.1	3.37	0.306	29.0	2.16	0.219	20.7	1.44	0.154
0.60	175.9	16.42	1.604	54.9	4.78	0.500	41.8	3.51	0.380	30.5	2.49	0.274	21.7	1.77	0.189
0.65	97.1	9.76	1.040	46.5	4.57	0.497	37.1	3.68	0.396	30.0	2.74	0.315	22.3	2.07	0.225
0.70	142.2	15.52	1.765	51.0	4.97	0.596	36.4	3.82	0.450	28.7	3.11	0.348	22.8	2.35	0.264
0.75	108.0	12.15	1.539	48.0	5.90	0.726	40.4	4.81	0.574	30.0	3.75	0.420	23.1	2.59	0.304
0.80	98.7	12.90	1.601	45.8	5.80	0.741	36.3	4.78	0.586	27.9	3.85	0.444	23.3	2.78	0.346
0.85	167.4	22.44	3.063	57.8	7.75	1.056	41.1	5.53	0.749	29.1	4.02	0.524	23.5	2.94	0.393
0.90	82.5	11.25	1.692	58.2	7.74	1.193	43.9	6.15	0.897	29.6	4.31	0.596	24.0	3.09	0.447
0.95	118.9	17.73	2.718	63.5	9.39	1.449	45.7	7.08	1.039	33.5	5.29	0.753	24.5	3.21	0.507
1.00	167.7	26.28	4.248	68.8	11.05	1.741	53.4	8.81	1.345	39.0	6.17	0.971	24.8	3.25	0.565
1.10	90.8	15.97	2.784	66.0	11.37	2.022	52.7	8.94	1.607	39.7	6.27	1.188	24.0	3.46	0.652
1.20	153.9	28.98	5.612	65.5	10.44	2.022	44.8	8.22	1.624	32.1	6.36	1.139	21.8	3.85	0.678
1.30	120.0	24.31	5.138	54.1	11.11	2.315	38.9	7.93	1.659	26.4	5.70	1.100	18.9	3.95	0.662
1.40	137.7	31.05	6.836	64.8	14.55	3.213	38.1	8.63	1.883	25.7	5.55	1.249	16.0	3.89	0.663
1.50	161.5	38.98	9.202	46.7	11.89	2.657	34.6	8.48	1.958	22.9	5.85	1.274	13.5	3.80	0.674
1.60	143.8	37.34	9.322	40.4	11.12	2.618	29.0	8.25	1.872	20.1	5.43	1.272	10.2	3.70	0.693
1.70	57.5	15.79	4.207	24.9	7.52	1.563	21.5	6.23	1.563	17.3	4.91	1.224	10.8	3.42	0.747
1.80	41.6	12.67	3.416	23.2	7.11	1.898	18.3	5.75	1.496	15.2	4.91	1.224	10.8	3.42	0.747
1.90	36.0	11.43	3.291	23.8	7.78	2.168	18.0	5.97	1.631	14.3	4.95	1.282	10.2	3.22	0.828
2.00	50.4	16.52	5.104	21.3	7.63	2.159	16.8	6.20	1.689	13.9	4.95	1.371	9.6	3.18	0.856
2.20	25.8	9.76	3.168	16.9	6.19	2.073	13.5	4.95	1.650	12.2	4.46	1.458	8.5	3.13	0.904
2.40	18.1	7.12	2.634	16.8	6.64	2.448	13.5	6.00	2.097	10.2	4.83	1.547	7.7	3.06	0.971
2.60	22.9	10.44	3.929	17.2	7.79	2.945	14.1	6.40	2.396	10.2	4.87	1.695	6.9	2.98	0.991
2.80	25.9	12.57	5.141	13.6	6.64	2.703	9.8	5.30	1.929	7.5	4.24	1.426	5.9	2.98	0.961
3.00	7.8	4.52	1.784	6.7	4.59	1.532	6.8	4.61	1.540	6.1	4.05	1.306	5.1	2.99	0.909
3.20	12.2	6.97	3.175	6.9	5.20	1.785	5.8	4.53	1.476	4.6	3.85	1.149	4.4	2.96	0.854
3.40	7.4	5.24	2.181	5.7	4.41	1.664	5.1	3.81	1.469	4.2	3.44	1.173	3.8	2.87	0.857
3.60	6.1	4.69	2.012	4.8	3.55	1.565	4.2	3.31	1.360	3.6	3.15	1.132	3.6	2.80	0.853
3.80	2.8	3.71	1.039	3.2	3.34	1.150	3.2	3.20	1.137	3.1	3.07	1.052	3.3	2.78	0.840
4.00	3.5	3.63	1.435	2.7	3.10	1.070	2.5	3.06	1.007	2.6	2.98	0.969	3.0	2.75	0.821

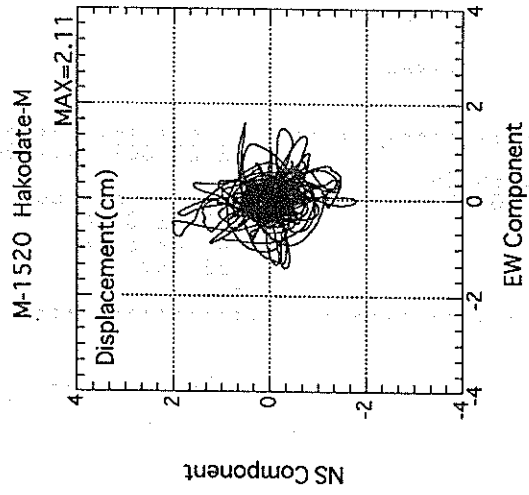
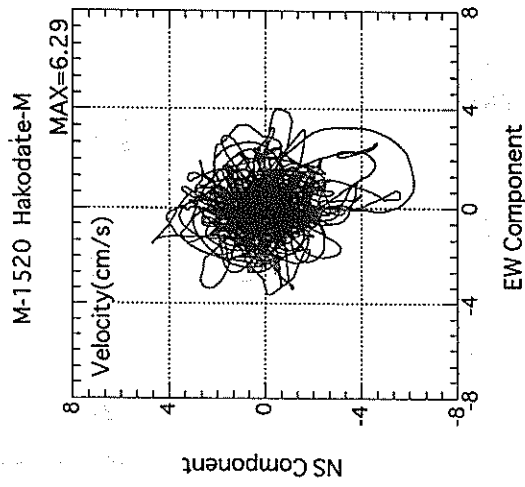
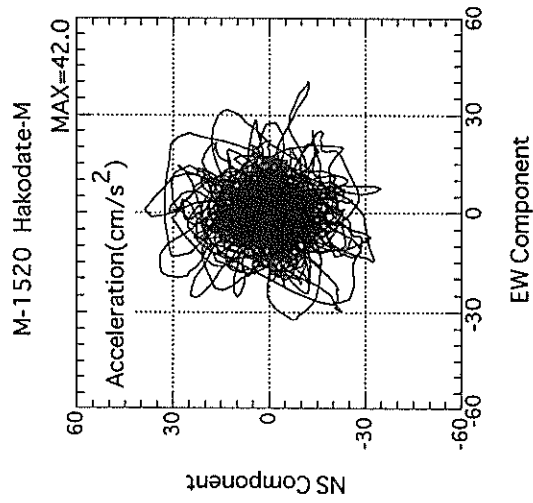
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = M-1520 COMPONENT = E08N SIGNAL = GR. ACC. CORRECTION = STATION = HAKODATE-M
 DATE AND TIME = 1994-10-4-22-23 SAMPRING INTERVAL = 0.0100 (SEC) MAX. GROUND ACC. = 38.05 (GAL)
 TIME LENGTH = 59.99 (SEC) SKIPPED LENGTH = 0.00 (SEC)

PER	DAMPING = 0				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	80.5	0.56	0.005	43.2	0.08	0.003	40.8	0.07	0.003	39.5	0.06	0.003	38.9	0.05	0.002					
0.10	163.8	2.40	0.041	59.3	0.16	0.015	50.8	0.48	0.013	44.1	0.35	0.011	41.1	0.24	0.010					
0.15	93.4	1.76	0.053	63.9	1.12	0.036	60.2	1.06	0.034	50.4	0.83	0.028	43.0	0.51	0.024					
0.20	129.4	3.72	0.131	84.9	2.35	0.086	76.4	2.10	0.077	65.0	1.62	0.065	48.1	0.93	0.047					
0.25	371.4	14.57	0.588	145.2	5.08	0.229	96.9	3.40	0.153	69.8	2.30	0.109	50.3	1.23	0.075					
0.30	209.7	9.62	0.478	119.4	5.59	0.272	89.1	4.05	0.202	68.7	2.72	0.154	51.8	1.75	0.113					
0.35	494.0	27.35	1.533	142.1	7.84	0.441	109.2	6.11	0.336	83.1	4.35	0.254	59.6	2.55	0.172					
0.40	373.4	23.79	1.514	166.0	10.47	0.674	132.7	8.23	0.535	95.3	5.99	0.380	61.0	3.30	0.226					
0.45	215.5	15.73	1.105	144.2	10.64	0.738	112.6	8.40	0.575	78.3	5.90	0.394	56.6	3.60	0.282					
0.50	401.3	31.85	2.541	131.2	10.26	0.829	93.8	7.37	0.592	65.8	5.27	0.409	50.5	3.57	0.284					
0.55	160.4	13.73	1.229	95.1	8.15	0.729	74.1	6.39	0.565	56.1	4.83	0.419	44.5	3.36	0.308					
0.60	276.4	25.39	2.521	86.1	8.03	0.785	65.8	6.06	0.597	48.8	4.67	0.435	41.8	3.29	0.344					
0.65	149.7	15.48	1.603	95.6	10.06	1.021	76.9	7.89	0.819	52.2	5.38	0.549	40.0	3.47	0.383					
0.70	194.5	21.18	2.414	102.6	11.29	1.272	75.4	8.33	0.931	51.0	5.91	0.620	37.9	3.53	0.418					
0.75	122.8	15.52	1.750	76.2	9.26	1.083	61.3	7.42	0.868	45.9	5.51	0.641	35.4	3.49	0.443					
0.80	97.5	12.59	1.580	54.2	6.47	0.878	43.7	4.97	0.706	37.9	4.64	0.600	32.9	3.53	0.485					
0.85	109.6	15.36	2.005	65.2	7.97	1.192	49.2	5.96	0.897	34.4	4.35	0.614	30.8	3.60	0.490					
0.90	206.7	29.12	4.242	53.8	7.99	1.102	42.6	6.02	0.869	35.2	4.75	0.703	29.3	3.71	0.517					
0.95	112.6	17.49	2.573	56.5	8.70	1.290	46.7	6.79	1.059	35.1	5.26	0.783	27.8	3.86	0.544					
1.00	162.9	25.81	4.126	52.7	9.10	1.334	44.0	7.56	1.106	35.0	5.79	0.863	26.3	3.99	0.564					
1.10	131.2	21.40	4.021	62.6	10.28	1.917	46.1	7.75	1.405	31.7	5.70	0.947	22.7	4.11	0.578					
1.20	205.7	39.03	7.541	58.6	11.74	2.132	45.3	9.47	1.644	31.7	7.38	1.135	19.7	4.30	0.638					
1.30	152.3	30.07	6.519	67.4	15.67	2.884	51.1	12.07	2.178	32.0	8.02	1.353	19.9	4.37	0.748					
1.40	133.5	30.45	6.629	62.7	13.96	3.106	48.1	10.60	2.381	32.9	7.03	1.603	19.1	4.06	0.891					
1.50	141.1	32.79	8.043	59.0	14.88	3.357	43.8	11.37	2.480	29.9	7.63	1.662	19.4	4.26	1.038					
1.60	66.3	16.73	4.302	37.1	11.51	2.401	30.7	9.30	1.986	26.2	6.85	1.680	20.0	4.49	1.184					
1.70	90.7	24.20	6.641	46.0	11.10	3.361	36.2	8.33	2.639	27.9	6.62	2.011	20.3	4.65	1.346					
1.80	107.1	30.15	8.790	59.9	15.77	4.881	42.8	11.04	3.448	30.8	7.83	2.379	20.3	4.70	1.509					
1.90	68.1	22.37	6.228	40.7	12.05	3.722	36.4	11.06	3.312	29.2	8.46	2.584	20.0	4.78	1.665					
2.00	77.8	24.51	7.880	41.6	14.46	4.212	34.6	11.80	3.484	28.6	8.60	2.845	19.6	5.14	1.811					
2.20	52.6	18.60	6.453	50.0	16.92	5.119	40.9	14.18	4.994	29.3	10.52	3.592	18.6	5.86	2.057					
2.40	41.5	18.19	6.061	38.7	13.84	6.149	34.7	12.93	5.045	26.3	10.19	3.770	17.0	6.08	2.206					
2.60	63.0	26.05	10.786	41.5	16.57	7.101	33.1	12.70	5.634	23.2	9.05	3.893	15.0	5.98	2.252					
2.80	65.5	31.48	13.012	33.8	17.30	6.707	26.7	10.80	5.278	20.5	8.81	3.989	13.0	5.96	2.340					
3.00	36.5	17.95	8.319	26.3	12.52	5.995	21.7	10.80	4.921	17.6	8.55	3.928	11.0	5.96	2.363					
3.20	33.3	17.44	8.639	23.8	12.85	6.166	19.6	10.54	5.068	16.1	8.51	4.240	10.9	5.77	2.498					
3.40	50.7	28.16	14.856	29.2	15.56	8.536	21.5	11.34	6.271	18.1	9.09	4.614	10.0	5.76	2.585					
3.60	22.9	16.66	7.857	22.4	13.51	7.350	19.3	11.23	6.311	14.7	9.18	4.718	9.3	5.84	2.605					
3.80	40.1	22.13	14.682	24.9	13.93	9.094	18.3	11.04	6.661	12.8	8.63	4.569	8.7	6.07	2.606					
4.00	29.6	20.65	11.990	22.6	16.27	9.126	17.4	12.93	6.993	11.9	9.39	4.693	8.0	6.29	2.609					

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)



RECORD NUMBER : F-754
 STATION : YAMASHITA-F

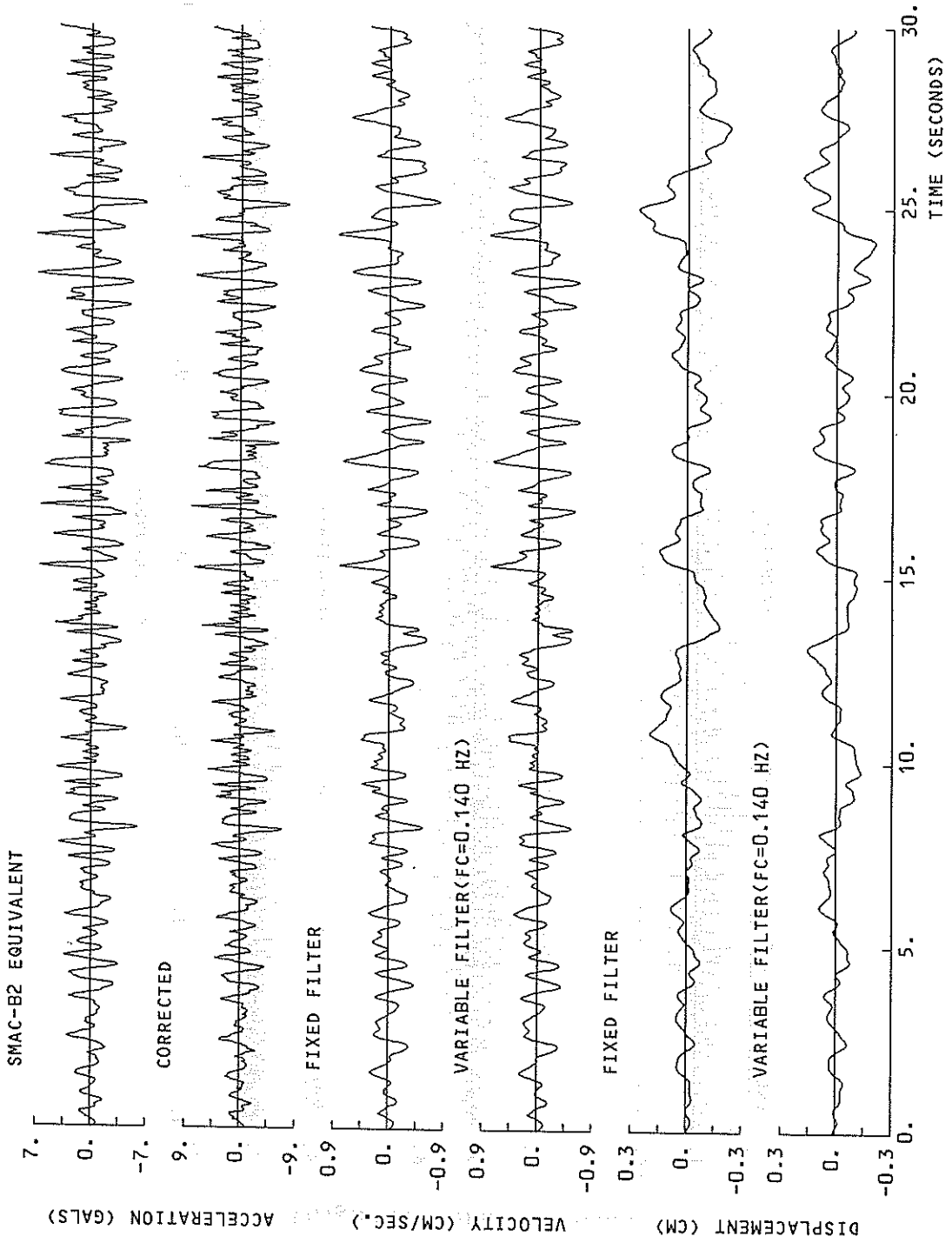
EARTHQUAKE DATA

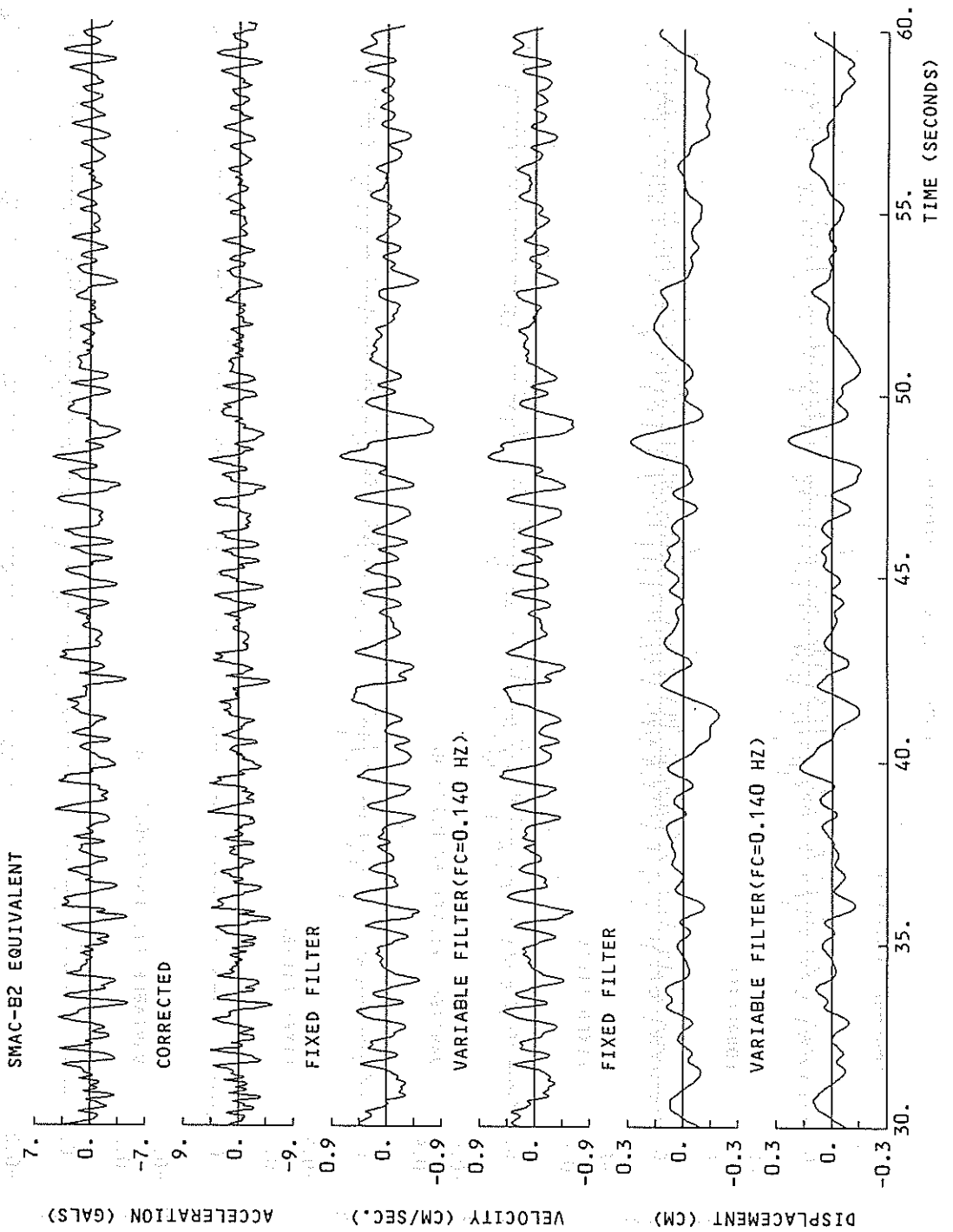
 DATE AND TIME 22:22 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 22.3' N
 LONGITUDE 147° 42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

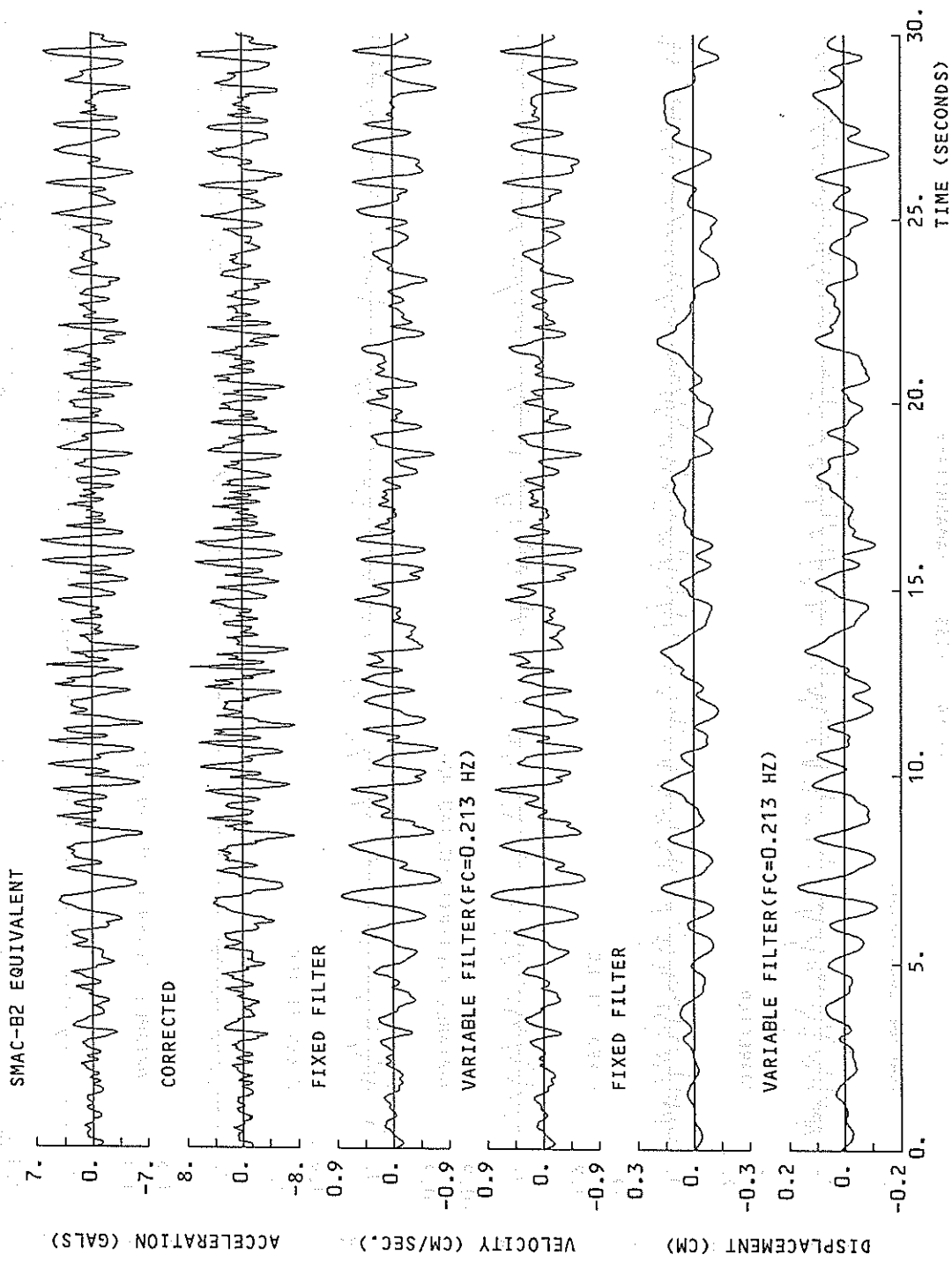
PEAK VALUES OF COMPONENTS

	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.213	0.140	0.341	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	6.5	7.0	3.5	8.0
ORIGINAL	7.7	8.0	4.1	8.9
CORRECTED	7.7	8.1	3.9	8.8
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	0.84	0.84	0.40	0.98
VARIABLE FILTER	0.84	0.81	0.39	0.86
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.22	0.29	0.14	0.29
VARIABLE FILTER	0.17	0.24	0.07	0.24

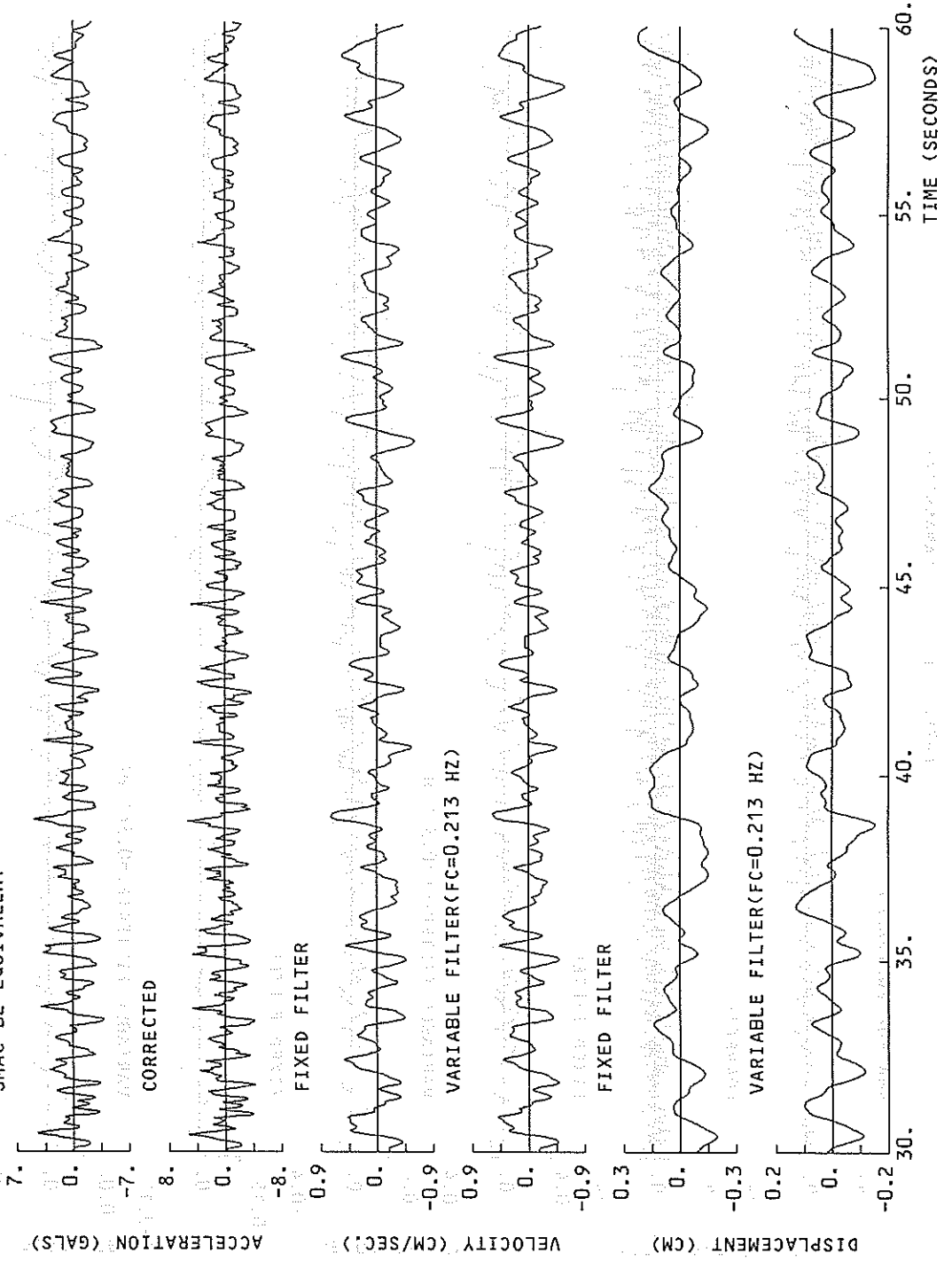
* RESULTANT OF HORIZONTAL COMPONENTS

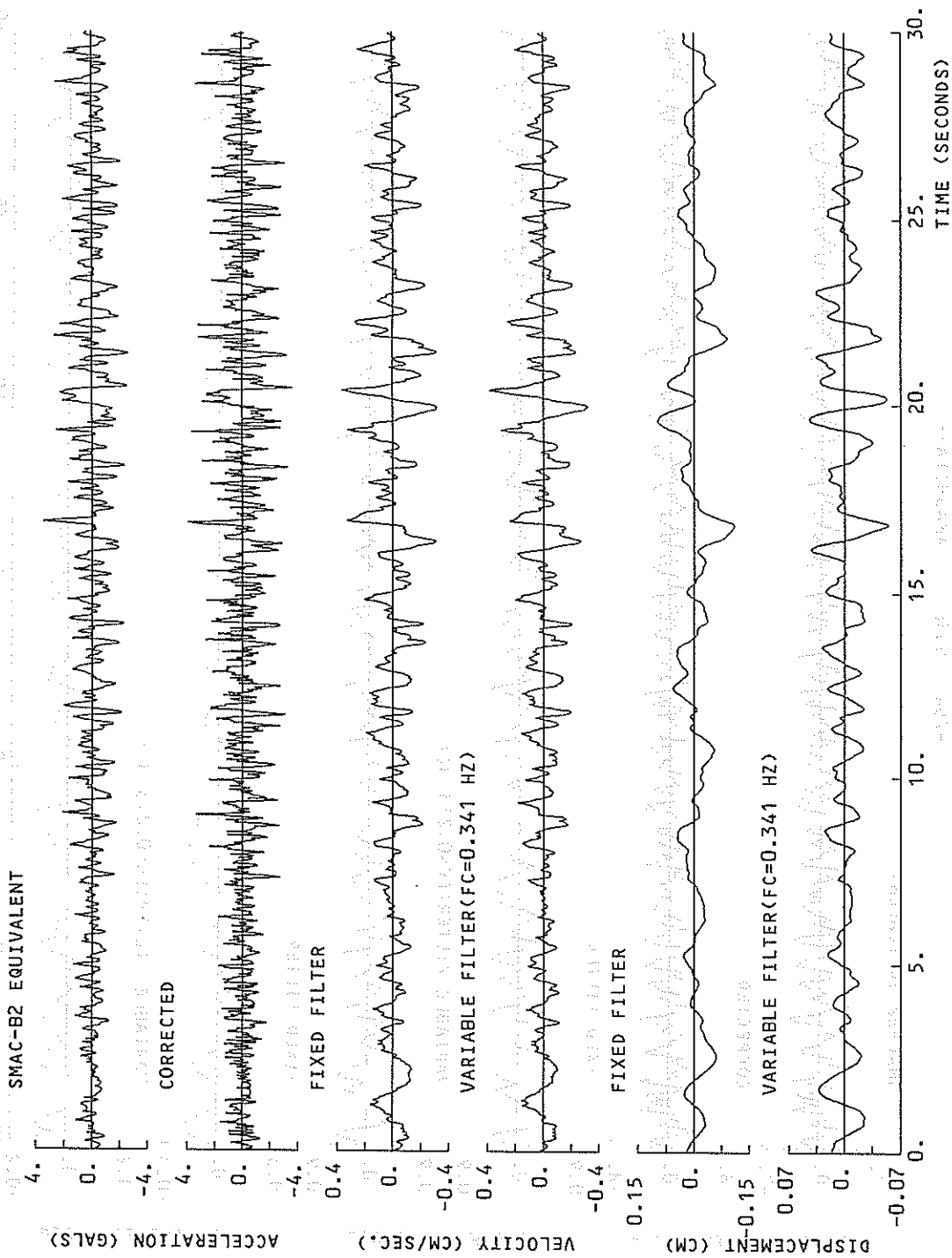




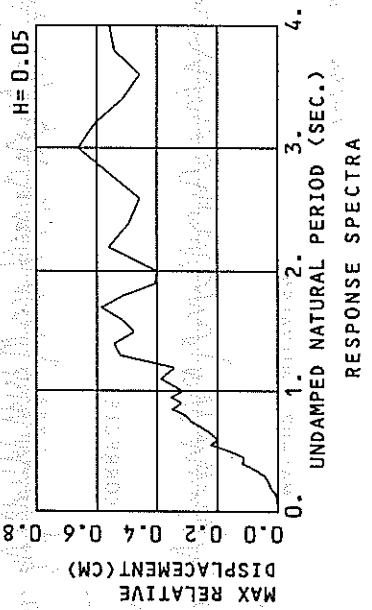
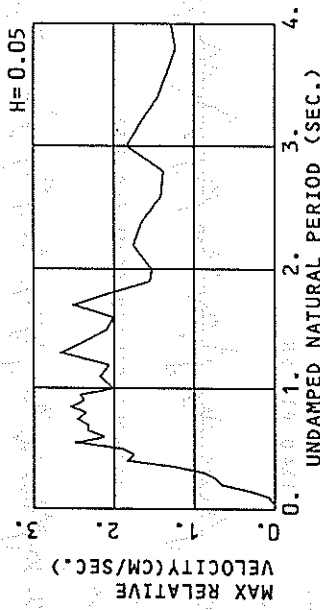
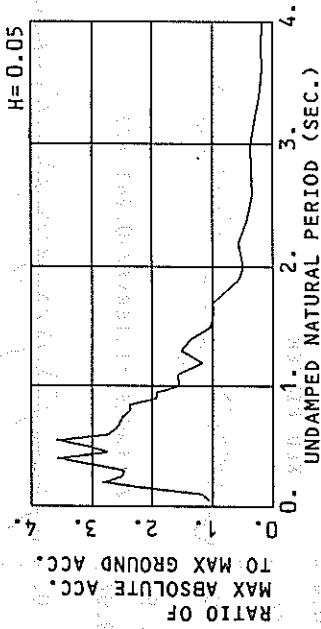


SMAC-B2 EQUIVALENT

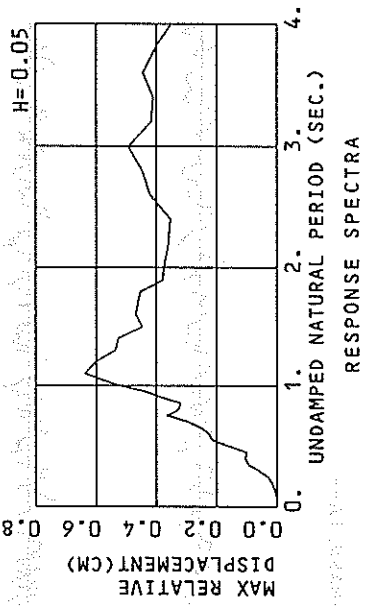
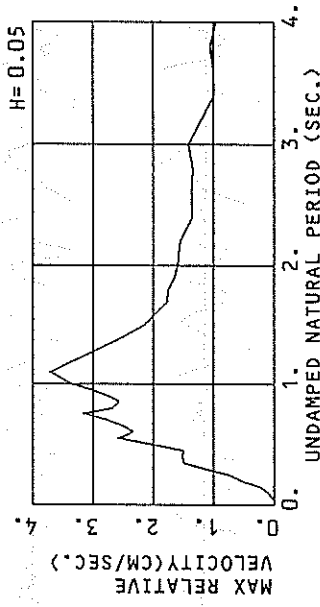
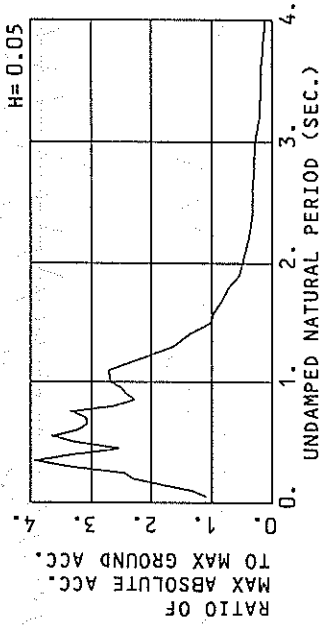




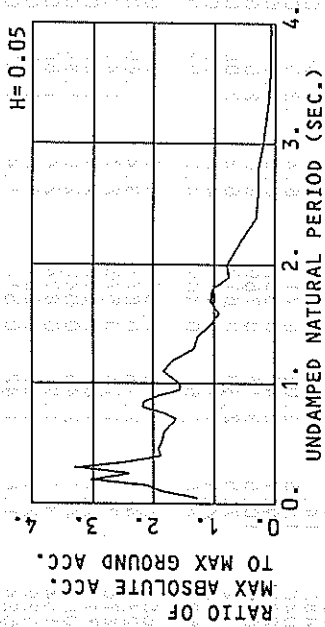
F-754 E33S YAMASHITA-F
(1/FC=7.16 SEC.)



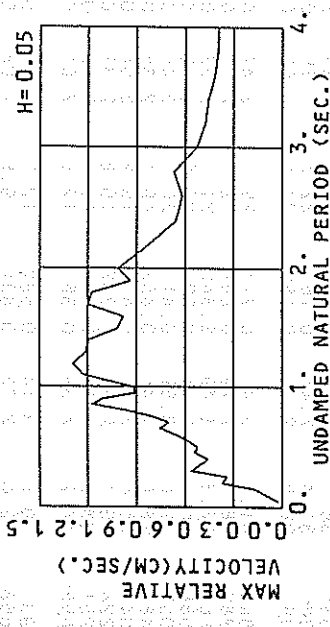
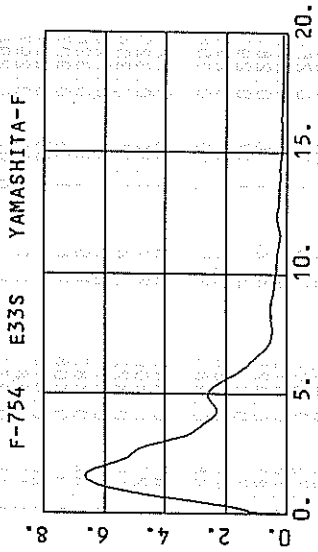
F-754 N33E YAMASHITA-F
(1/FC=4.70 SEC.)



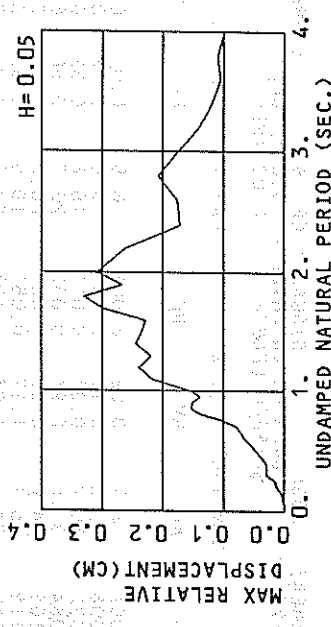
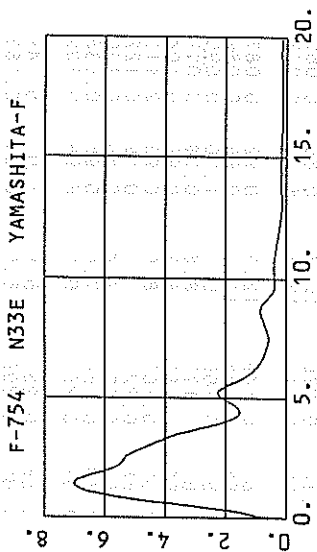
F-754 UP YAMASHITA-F
(1/FC=2.93 SEC.)



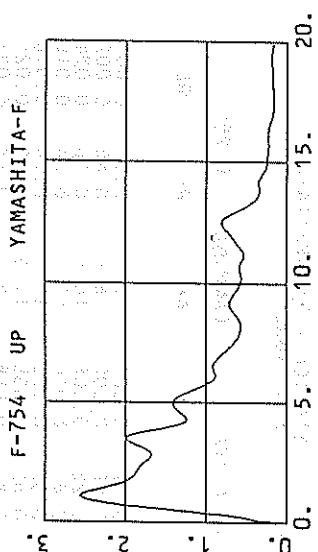
FOURIER SPECTRUM



FOURIER SPECTRUM



FOURIER SPECTRUM



RESPONSE SPECTRA

RESPONSE SPECTRUM

RECORD = F-754
 DATE AND TIME = 1994-10-4-22-27
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = E333
 SIGNAL = GR. ACC.
 SAMPLING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION =
 MAX. GROUND ACC. = 8.09 (GAL)
 STATION = YAMASHITA-F

PER	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	23.7	0.15	0.002	8.7	0.02	0.001	8.5	0.02	0.001	8.6	0.02	0.001	8.5	0.01	0.001
0.10	31.8	0.47	0.008	11.2	0.11	0.003	9.5	0.08	0.002	8.6	0.06	0.002	8.6	0.06	0.002
0.15	36.2	1.26	0.032	19.4	0.37	0.011	16.8	0.32	0.010	13.6	0.25	0.008	10.6	0.16	0.006
0.20	82.9	2.46	0.084	31.5	0.94	0.032	22.7	0.66	0.023	15.8	0.42	0.016	11.0	0.24	0.010
0.25	65.0	2.49	0.103	24.0	0.90	0.038	20.3	0.73	0.032	15.9	0.52	0.025	10.7	0.34	0.016
0.30	49.5	2.28	0.113	25.1	1.17	0.057	19.9	0.86	0.045	15.7	0.62	0.035	11.3	0.43	0.025
0.35	59.7	3.19	0.185	34.3	1.87	0.107	24.6	1.26	0.076	18.1	0.87	0.056	12.7	0.54	0.037
0.40	132.0	8.31	0.535	36.7	2.36	0.149	28.9	1.83	0.116	20.1	1.20	0.080	12.7	0.59	0.047
0.45	75.1	5.25	0.385	31.4	2.44	0.161	22.2	1.75	0.113	15.2	1.18	0.076	12.7	0.66	0.060
0.50	61.7	4.77	0.391	28.5	2.19	0.180	24.8	1.90	0.116	18.5	1.36	0.115	12.8	0.79	0.073
0.55	113.3	9.89	0.868	41.4	3.44	0.317	29.0	2.47	0.221	19.8	1.67	0.149	12.3	0.92	0.083
0.60	41.9	4.03	0.382	28.7	2.79	0.262	22.1	2.12	0.201	16.6	1.62	0.148	11.1	0.99	0.089
0.65	80.8	5.11	0.865	32.3	3.49	0.345	21.0	2.32	0.223	14.9	1.58	0.156	9.7	1.00	0.090
0.70	47.4	5.56	0.588	26.2	2.97	0.324	20.5	2.32	0.252	14.5	1.61	0.177	8.8	0.98	0.097
0.75	76.8	9.12	1.095	29.0	3.51	0.412	20.2	2.45	0.286	13.1	1.56	0.183	8.3	0.96	0.104
0.80	91.8	11.71	1.488	28.0	3.47	0.453	19.1	2.35	0.308	12.6	1.56	0.200	8.0	0.93	0.113
0.85	57.3	7.63	1.049	25.9	3.47	0.473	19.2	2.54	0.349	12.2	1.68	0.220	7.7	0.89	0.122
0.90	59.7	8.73	1.224	19.1	2.94	0.392	15.6	2.37	0.319	11.5	1.63	0.231	7.4	0.89	0.130
0.95	54.7	8.63	1.251	20.2	3.16	0.460	15.6	2.42	0.354	11.4	1.69	0.254	7.0	0.95	0.135
1.00	33.6	5.45	0.852	14.2	2.38	0.361	12.6	2.01	0.317	10.3	1.57	0.253	6.5	0.99	0.139
1.10	30.6	5.46	0.937	19.0	3.14	0.583	12.7	2.17	0.387	8.9	1.55	0.267	5.5	1.01	0.148
1.20	18.0	3.48	0.658	12.0	2.73	0.437	9.5	2.06	0.344	8.3	1.68	0.299	5.5	0.96	0.182
1.30	31.1	6.43	1.332	15.7	3.37	0.669	12.3	2.66	0.522	9.0	1.88	0.379	5.5	0.98	0.212
1.40	29.9	6.66	1.483	14.1	3.21	0.700	11.0	2.36	0.543	8.4	1.80	0.410	5.3	1.06	0.236
1.50	35.8	8.32	2.040	12.5	3.03	0.711	8.4	2.08	0.477	7.3	1.73	0.404	5.0	1.13	0.254
1.60	19.0	5.04	1.230	9.1	2.47	0.592	8.0	2.02	0.516	6.6	1.78	0.415	4.7	1.15	0.269
1.70	13.8	3.92	1.008	10.5	3.16	0.765	8.0	2.51	0.584	6.0	1.88	0.428	4.4	1.16	0.281
1.80	13.8	4.06	1.136	7.5	2.33	0.612	7.3	2.06	0.513	5.2	1.73	0.417	4.1	1.17	0.291
1.90	8.5	2.85	0.778	4.9	1.71	0.447	4.5	1.55	0.406	4.3	1.54	0.384	3.8	1.16	0.299
2.00	5.2	1.70	0.522	4.0	1.52	0.405	4.0	1.53	0.400	3.9	1.48	0.385	3.5	1.13	0.308
2.20	5.4	2.18	0.662	5.5	2.10	0.677	4.6	1.76	0.562	3.7	1.43	0.443	3.0	1.10	0.321
2.40	8.7	3.91	1.276	4.6	2.16	0.673	3.4	1.65	0.494	2.9	1.27	0.406	2.7	1.10	0.329
2.60	5.1	2.33	0.876	3.4	1.74	0.575	2.7	1.41	0.458	2.6	1.19	0.422	2.4	1.11	0.334
2.80	3.6	1.95	0.717	2.8	1.62	0.552	2.8	1.38	0.509	2.5	1.31	0.477	2.2	1.11	0.335
3.00	9.0	4.48	2.061	4.1	2.46	0.942	2.9	1.84	0.661	2.2	1.44	0.482	1.9	1.11	0.326
3.20	4.4	2.64	1.154	3.1	1.91	0.804	2.4	1.66	0.605	1.6	1.37	0.408	1.6	1.08	0.307
3.40	4.5	2.46	1.329	2.3	1.68	0.681	1.8	1.45	0.515	1.5	1.26	0.410	1.4	1.06	0.291
3.60	1.6	1.49	0.524	1.6	1.42	0.514	1.4	1.33	0.457	1.3	1.17	0.387	1.2	1.03	0.297
3.80	3.1	1.87	1.146	1.9	1.25	0.713	1.5	1.23	0.541	1.1	1.15	0.377	1.1	0.99	0.298
4.00	1.8	1.46	0.730	1.6	1.37	0.647	1.4	1.29	0.556	1.1	1.16	0.418	1.0	0.97	0.297

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

RESPONSE SPECTRUM

RECORD = F-754
 DATE AND TIME = 1994-10-04-22-27
 TIME LENGTH = 59.99 (SEC)

COMPONENT = N33E
 SIGNAL = GR. ACC.
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)

CORRECTION = MAX. GROUND ACC. = 7.70 (GAL)
 STATION = YAMASHITA-F

PER	DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	
0.05	23.3	0.16	0.001	8.9	0.02	0.001	8.5	0.02	0.001	8.2	0.02	0.001	8.0	0.01	0.001	
0.10	42.7	0.28	0.006	11.3	0.12	0.003	10.2	0.09	0.003	9.5	0.07	0.002	9.0	0.05	0.002	
0.15	20.5	0.90	0.023	15.5	0.25	0.009	14.1	0.22	0.008	12.4	0.19	0.007	10.9	0.14	0.006	
0.20	67.2	1.99	0.068	22.4	0.69	0.023	17.8	0.55	0.018	14.7	0.41	0.015	11.9	0.25	0.011	
0.25	47.7	1.82	0.076	22.7	0.91	0.036	18.9	0.74	0.030	14.8	0.55	0.023	11.5	0.35	0.017	
0.30	155.6	7.31	0.355	34.9	1.61	0.080	26.0	1.15	0.059	19.0	0.77	0.043	12.9	0.41	0.027	
0.35	129.7	6.15	0.343	42.8	2.16	0.133	30.4	1.49	0.094	20.6	0.97	0.063	13.0	0.54	0.037	
0.40	129.5	8.17	0.525	37.9	2.39	0.153	25.5	1.53	0.103	19.8	1.05	0.079	12.4	0.59	0.047	
0.45	45.4	3.17	0.233	23.9	1.68	0.122	19.6	1.50	0.100	17.7	1.27	0.089	13.1	0.71	0.062	
0.50	80.7	6.31	0.511	30.2	2.48	0.191	25.4	2.06	0.160	19.6	1.49	0.122	13.2	0.86	0.075	
0.55	98.0	8.71	0.751	39.0	3.54	0.298	28.1	2.59	0.214	20.4	1.81	0.153	12.6	0.95	0.086	
0.60	65.3	6.20	0.596	32.0	3.00	0.291	24.7	2.34	0.224	17.7	1.74	0.158	11.5	1.01	0.094	
0.65	83.3	8.52	0.893	26.8	2.80	0.286	23.7	2.50	0.253	17.9	1.89	0.188	11.2	1.05	0.106	
0.70	71.3	7.81	0.884	32.8	3.69	0.406	23.8	2.77	0.294	16.3	1.89	0.198	10.4	1.05	0.112	
0.75	114.7	14.04	1.634	39.7	4.99	0.565	25.7	3.16	0.365	15.8	1.98	0.220	9.7	1.07	0.128	
0.80	54.5	6.83	0.884	23.7	3.19	0.383	20.4	2.69	0.328	14.2	1.82	0.224	10.1	1.03	0.150	
0.85	32.6	4.39	0.597	20.4	3.03	0.374	17.6	2.57	0.320	14.8	1.94	0.257	10.4	1.13	0.173	
0.90	45.6	6.57	0.935	21.4	3.15	0.439	18.6	2.76	0.380	15.6	2.18	0.314	10.5	1.22	0.193	
0.95	36.6	5.59	0.836	21.2	3.38	0.484	19.3	3.03	0.439	16.0	2.37	0.359	10.3	1.27	0.211	
1.00	59.7	9.62	1.513	24.0	4.01	0.608	20.7	3.35	0.521	16.1	2.47	0.400	10.0	1.35	0.223	
1.10	59.6	10.38	1.826	27.4	4.90	0.837	20.9	3.71	0.636	14.2	2.53	0.425	8.8	1.46	0.235	
1.20	52.2	10.19	1.903	22.0	4.39	0.800	16.6	3.30	0.602	12.3	2.43	0.438	7.3	1.46	0.231	
1.30	30.8	6.30	1.318	15.0	3.40	0.640	12.6	2.89	0.535	9.5	2.32	0.399	6.2	1.48	0.225	
1.40	19.5	4.26	0.969	12.7	2.91	0.629	10.7	2.49	0.526	7.9	2.13	0.383	5.2	1.50	0.222	
1.50	15.0	3.65	0.853	9.1	2.39	0.516	7.9	2.14	0.445	6.2	1.94	0.341	4.7	1.46	0.231	
1.60	30.8	8.00	1.999	9.8	2.56	0.633	7.3	1.95	0.468	5.4	1.76	0.340	4.3	1.39	0.235	
1.70	13.6	3.87	0.999	8.3	2.36	0.609	6.4	1.77	0.463	4.9	1.57	0.346	3.9	1.30	0.235	
1.80	13.8	4.34	1.132	7.7	2.28	0.628	5.6	1.75	0.453	4.3	1.37	0.340	3.5	1.20	0.232	
1.90	6.7	2.24	0.609	4.9	1.87	0.444	4.2	1.65	0.379	3.6	1.36	0.318	3.1	1.14	0.225	
2.00	14.4	4.77	1.456	5.1	1.88	0.521	3.8	1.60	0.315	3.2	1.29	0.304	2.7	1.11	0.216	
2.20	8.8	3.48	1.076	4.0	1.54	0.495	3.0	1.56	0.361	2.3	1.18	0.273	2.2	1.05	0.197	
2.40	4.1	1.96	0.597	3.1	1.03	0.453	2.5	1.35	0.355	2.1	1.17	0.293	1.8	1.00	0.194	
2.60	5.4	2.42	0.923	3.3	1.57	0.567	2.5	1.36	0.420	1.9	1.19	0.314	1.5	0.97	0.201	
2.80	3.4	1.75	0.669	2.8	1.52	0.559	2.3	1.35	0.446	1.8	1.20	0.328	1.4	0.96	0.200	
3.00	6.8	3.40	1.551	3.3	1.73	0.750	2.2	1.41	0.492	1.6	1.20	0.343	1.3	0.94	0.205	
3.20	2.2	1.41	0.579	1.8	1.27	0.479	1.6	1.20	0.417	1.3	1.09	0.312	1.2	0.93	0.210	
3.40	1.7	1.18	0.501	1.5	1.05	0.439	1.4	0.99	0.412	1.1	0.93	0.321	1.1	0.91	0.208	
3.60	2.9	1.90	0.966	1.8	1.23	0.595	1.4	1.01	0.446	1.0	0.90	0.314	1.0	0.89	0.201	
3.80	2.8	2.04	1.007	1.5	1.30	0.543	1.1	1.06	0.404	0.9	0.88	0.294	1.0	0.87	0.202	
4.00	1.3	1.35	0.543	1.0	1.12	0.420	0.9	0.95	0.352	0.8	0.89	0.271	0.9	0.86	0.204	

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

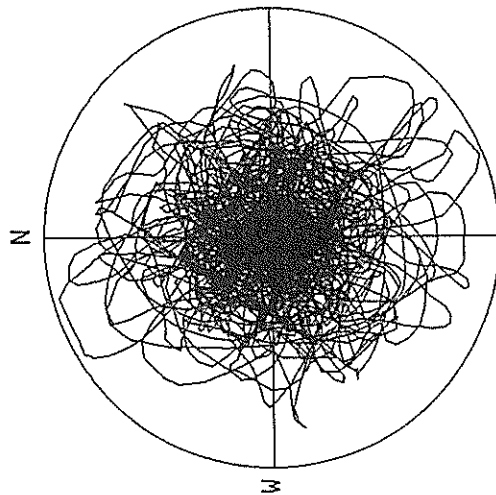
RESPONSE SPECTRUM

RECORD = F-754
 DATE AND TIME = 1994-10-4-22-27
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = UP
 SIGNAL = GR. ACC.
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION =
 MAX. GROUND ACC. = 3.89 (GAL)
 STATION = YAMASHITA-F

PER	DAMPING = 0.			DAMPING = 0.025			DAMPING = 0.050			DAMPING = 0.100			DAMPING = 0.250		
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD
0.05	29.3	0.22	0.002	6.3	0.03	0.000	5.0	0.02	0.000	4.5	0.02	0.000	4.1	0.01	0.000
0.10	72.8	1.15	0.018	9.3	0.13	0.002	7.2	0.10	0.002	5.5	0.07	0.001	4.9	0.04	0.001
0.15	24.7	0.57	0.014	12.0	0.25	0.007	8.2	0.17	0.005	6.8	0.13	0.004	5.2	0.09	0.003
0.20	48.8	1.52	0.049	18.4	0.57	0.019	11.8	0.37	0.012	7.8	0.24	0.008	5.2	0.14	0.005
0.25	49.9	1.96	0.079	11.4	0.43	0.018	9.4	0.34	0.015	7.3	0.28	0.011	5.1	0.18	0.007
0.30	43.9	2.10	0.100	17.7	0.79	0.040	12.8	0.56	0.029	8.1	0.35	0.018	5.2	0.19	0.011
0.35	38.1	2.10	0.118	12.1	0.64	0.038	9.4	0.51	0.029	7.5	0.38	0.023	5.1	0.22	0.014
0.40	51.2	3.22	0.207	10.9	0.67	0.044	7.3	0.45	0.029	6.4	0.37	0.026	4.8	0.23	0.017
0.45	28.2	1.96	0.144	10.7	0.78	0.055	7.5	0.54	0.038	5.8	0.39	0.029	4.2	0.24	0.019
0.50	16.7	1.32	0.106	10.4	0.78	0.065	7.3	0.52	0.046	4.9	0.39	0.029	3.5	0.24	0.019
0.55	20.3	1.84	0.156	9.8	0.83	0.075	7.2	0.58	0.055	4.9	0.40	0.037	3.5	0.26	0.020
0.60	14.6	1.38	0.133	9.3	0.87	0.084	7.1	0.56	0.064	4.8	0.46	0.043	3.4	0.29	0.024
0.65	15.6	1.53	0.167	9.0	0.95	0.096	6.7	0.75	0.071	4.4	0.54	0.047	3.4	0.35	0.034
0.70	29.8	3.25	0.370	8.5	0.90	0.105	6.3	0.70	0.078	4.7	0.53	0.058	3.5	0.39	0.039
0.75	22.6	2.71	0.322	10.3	1.18	0.147	7.1	0.80	0.101	5.3	0.57	0.073	3.5	0.42	0.044
0.80	20.3	2.67	0.329	11.5	1.37	0.186	8.5	0.97	0.137	5.7	0.70	0.090	3.4	0.45	0.051
0.85	28.9	3.88	0.529	12.0	1.61	0.220	8.4	1.17	0.153	5.7	0.80	0.102	3.5	0.48	0.059
0.90	22.2	3.15	0.456	10.3	1.57	0.212	7.4	1.11	0.151	5.4	0.81	0.109	3.5	0.49	0.067
0.95	20.2	3.12	0.462	9.3	1.40	0.212	6.1	0.91	0.138	4.8	0.73	0.108	3.5	0.49	0.074
1.00	25.6	4.17	0.673	7.8	1.24	0.197	6.1	0.92	0.154	4.8	0.73	0.119	3.6	0.51	0.081
1.10	19.2	3.30	0.589	9.0	1.57	0.276	7.1	1.23	0.218	5.1	0.91	0.153	3.5	0.53	0.094
1.20	22.8	4.35	0.831	8.9	1.77	0.324	6.6	1.29	0.239	4.7	0.89	0.165	3.3	0.50	0.100
1.30	20.6	4.20	0.883	7.3	1.53	0.313	5.2	1.21	0.219	3.5	0.86	0.146	2.9	0.54	0.100
1.40	7.3	1.73	0.384	6.6	1.55	0.327	4.9	1.20	0.244	3.3	0.80	0.160	2.6	0.56	0.097
1.50	10.9	2.68	0.621	5.1	1.28	0.291	4.1	1.02	0.235	3.0	0.78	0.164	2.2	0.57	0.093
1.60	19.7	2.41	0.615	4.3	1.18	0.278	3.5	0.98	0.229	2.6	0.81	0.165	1.9	0.58	0.097
1.70	14.7	4.12	1.076	6.5	1.83	0.474	4.1	1.20	0.298	2.7	0.79	0.191	1.6	0.58	0.106
1.80	13.8	3.97	1.132	5.9	1.71	0.481	4.0	1.18	0.329	2.7	0.80	0.212	1.5	0.58	0.111
1.90	4.9	1.54	0.449	3.4	1.03	0.308	2.9	0.94	0.267	2.3	0.76	0.204	1.5	0.56	0.121
2.00	5.8	1.82	0.583	3.9	1.31	0.398	3.1	1.01	0.308	2.3	0.71	0.224	1.5	0.53	0.128
2.20	4.2	1.55	0.513	2.5	0.96	0.311	2.1	0.83	0.261	1.8	0.65	0.209	1.3	0.48	0.130
2.40	3.6	1.45	0.458	1.6	0.73	0.235	1.2	0.66	0.172	1.2	0.60	0.166	1.1	0.44	0.122
2.60	1.4	0.75	0.237	1.1	0.64	0.196	1.0	0.62	0.176	0.9	0.57	0.154	0.9	0.43	0.118
2.80	1.4	0.90	0.288	1.3	0.77	0.249	1.1	0.67	0.208	0.9	0.56	0.165	0.8	0.42	0.117
3.00	0.9	0.68	0.200	0.8	0.58	0.184	0.8	0.53	0.174	0.7	0.50	0.152	0.7	0.42	0.113
3.20	0.8	0.61	0.195	0.6	0.50	0.142	0.5	0.47	0.140	0.5	0.45	0.132	0.6	0.42	0.108
3.40	0.6	0.54	0.163	0.4	0.47	0.122	0.4	0.46	0.119	0.4	0.44	0.114	0.5	0.42	0.103
3.60	0.5	0.57	0.174	0.4	0.45	0.123	0.3	0.42	0.105	0.3	0.42	0.099	0.5	0.41	0.098
3.80	0.5	0.47	0.171	0.4	0.40	0.131	0.3	0.39	0.109	0.3	0.41	0.087	0.4	0.41	0.093
4.00	0.3	0.39	0.121	0.3	0.38	0.113	0.3	0.39	0.098	0.2	0.40	0.087	0.4	0.41	0.091

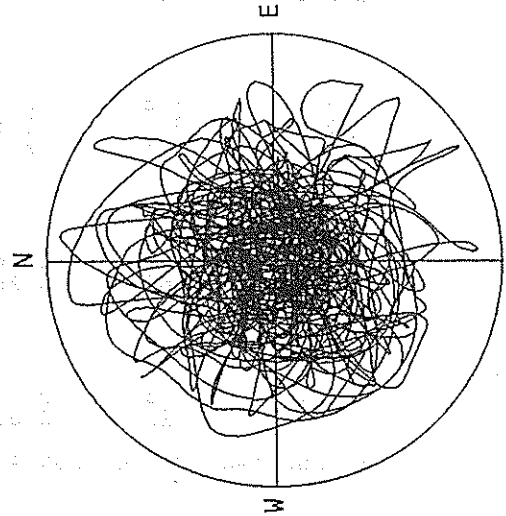
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

F-754 YAMASHITA-F



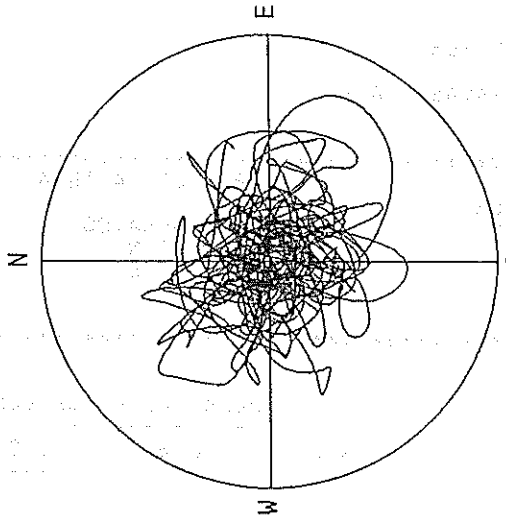
ACCELERATION
R=9.0 GAL
MAX=8.8 GAL

F-754 YAMASHITA-F



VELOCITY
R=0.9 CM/SEC.
MAX=0.9 CM/SEC.

F-754 YAMASHITA-F



DISPLACEMENT
R=0.30 CM
MAX=0.24 CM

RECORD NUMBER : F-753
 STATION : YAMASHITA-FB

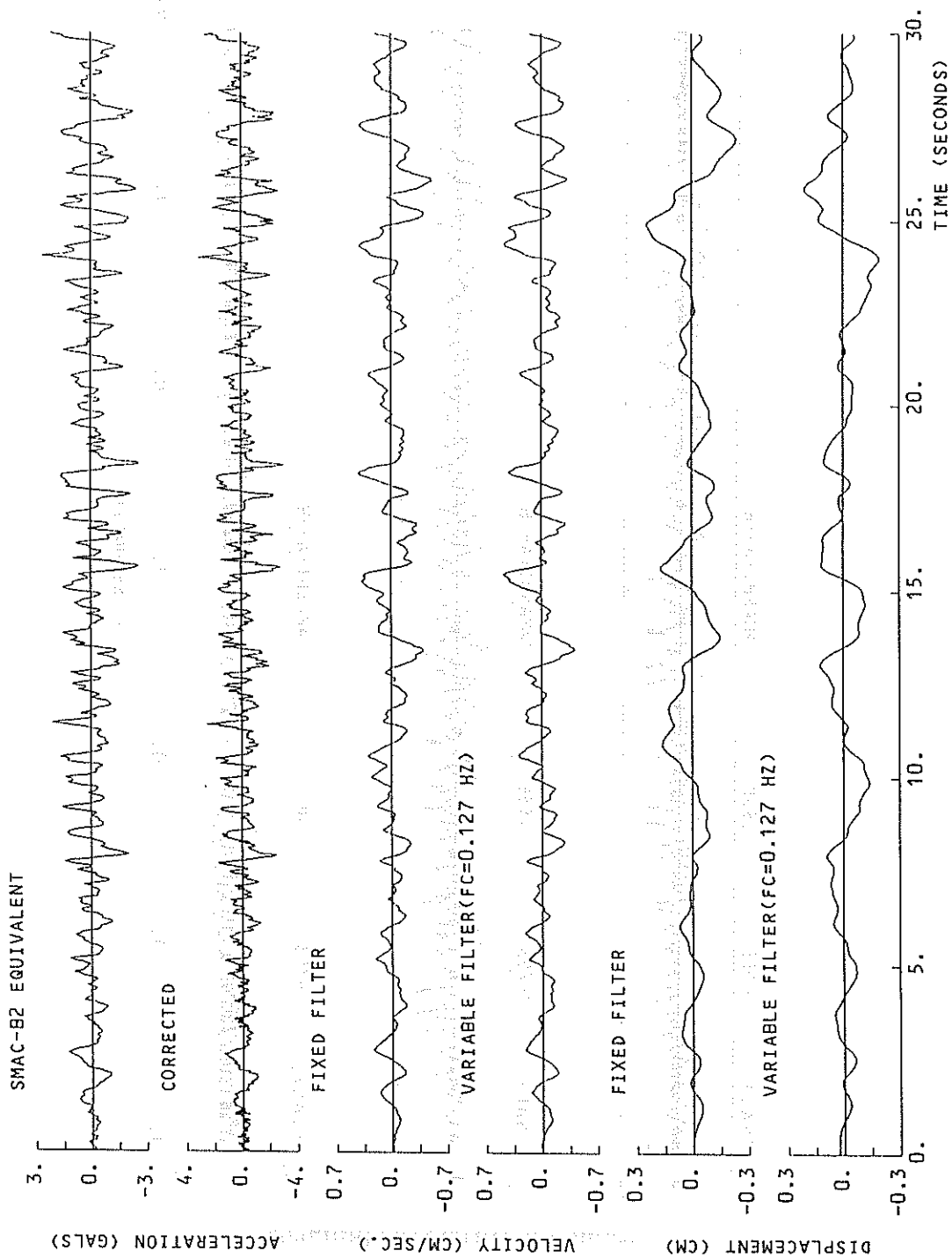
EARTHQUAKE DATA

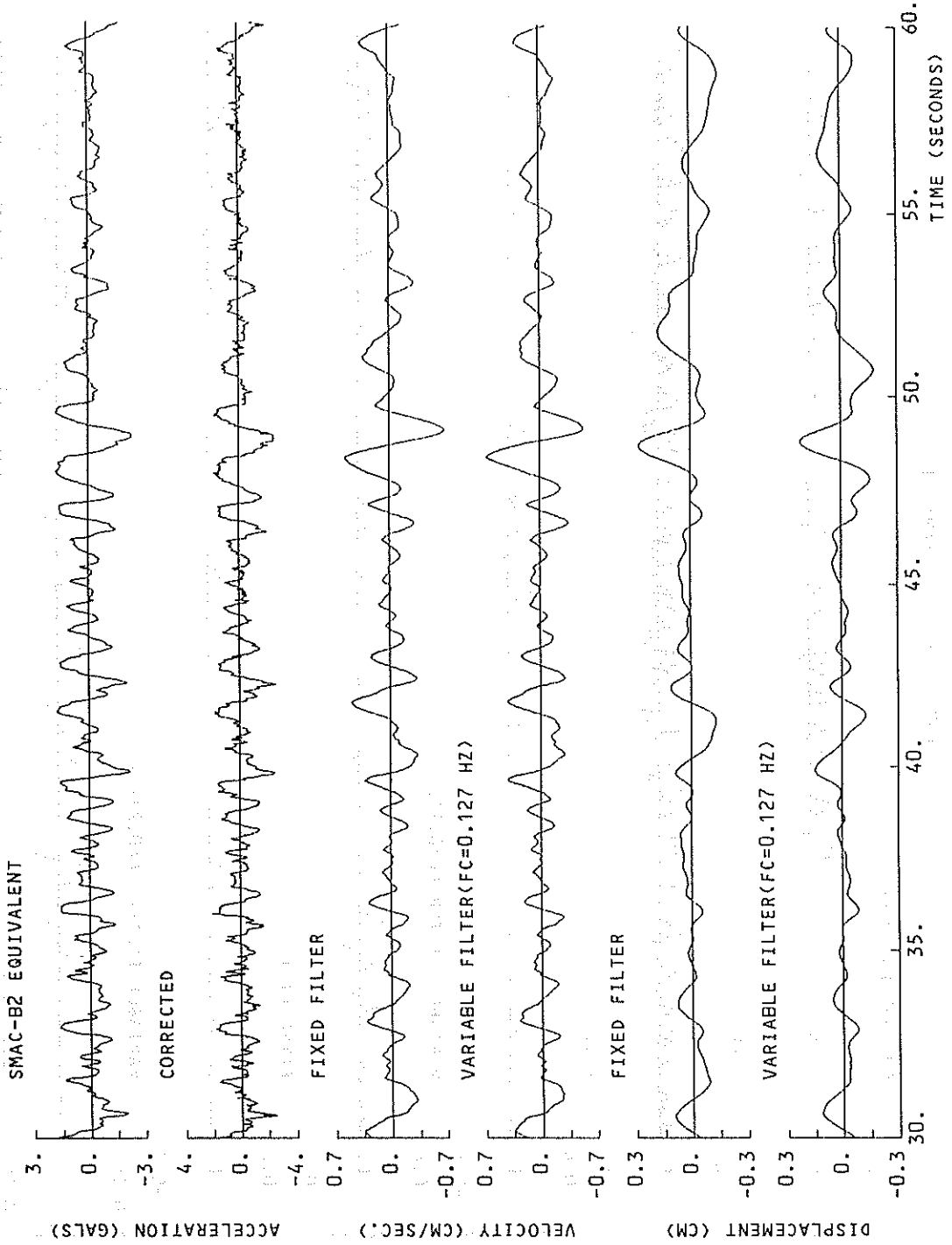
 DATE AND TIME 22:22 OCT. 4,1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43°22.3' N
 LONGITUDE 147°42.5' E
 DEPTH 23.0KM
 JMA MAGNITUDE 8.1

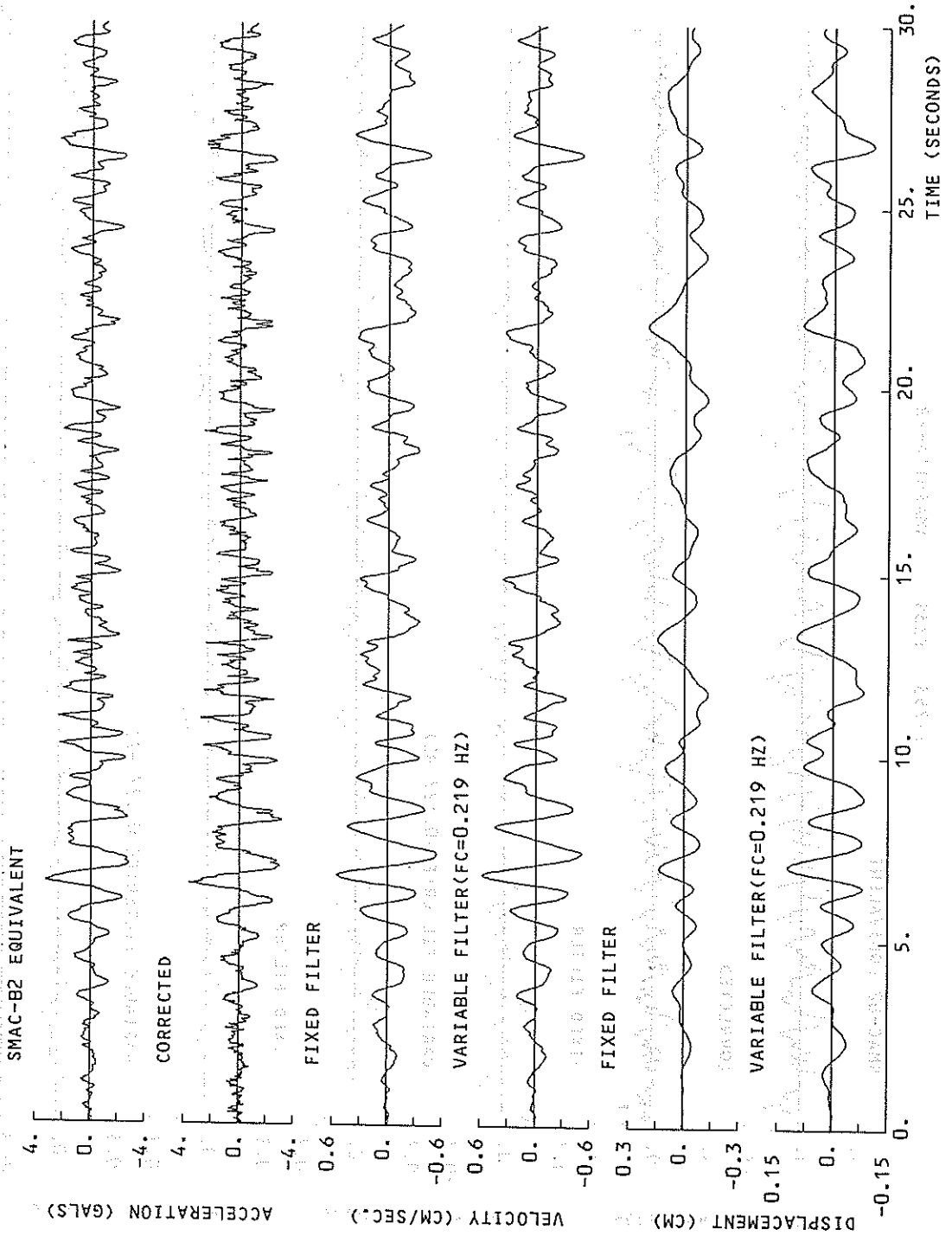
PEAK VALUES OF COMPONENTS

	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.219	0.127	0.347	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	3.3	2.6	2.1	3.3
ORIGINAL	3.6	3.1	2.6	3.6
CORRECTED	3.6	3.1	2.4	3.6
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	0.56	0.69	0.36	0.71
VARIABLE FILTER	0.59	0.66	0.29	0.68
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.21	0.28	0.15	0.28
VARIABLE FILTER	0.15	0.22	0.06	0.22

* RESULTANT OF HORIZONTAL COMPONENTS

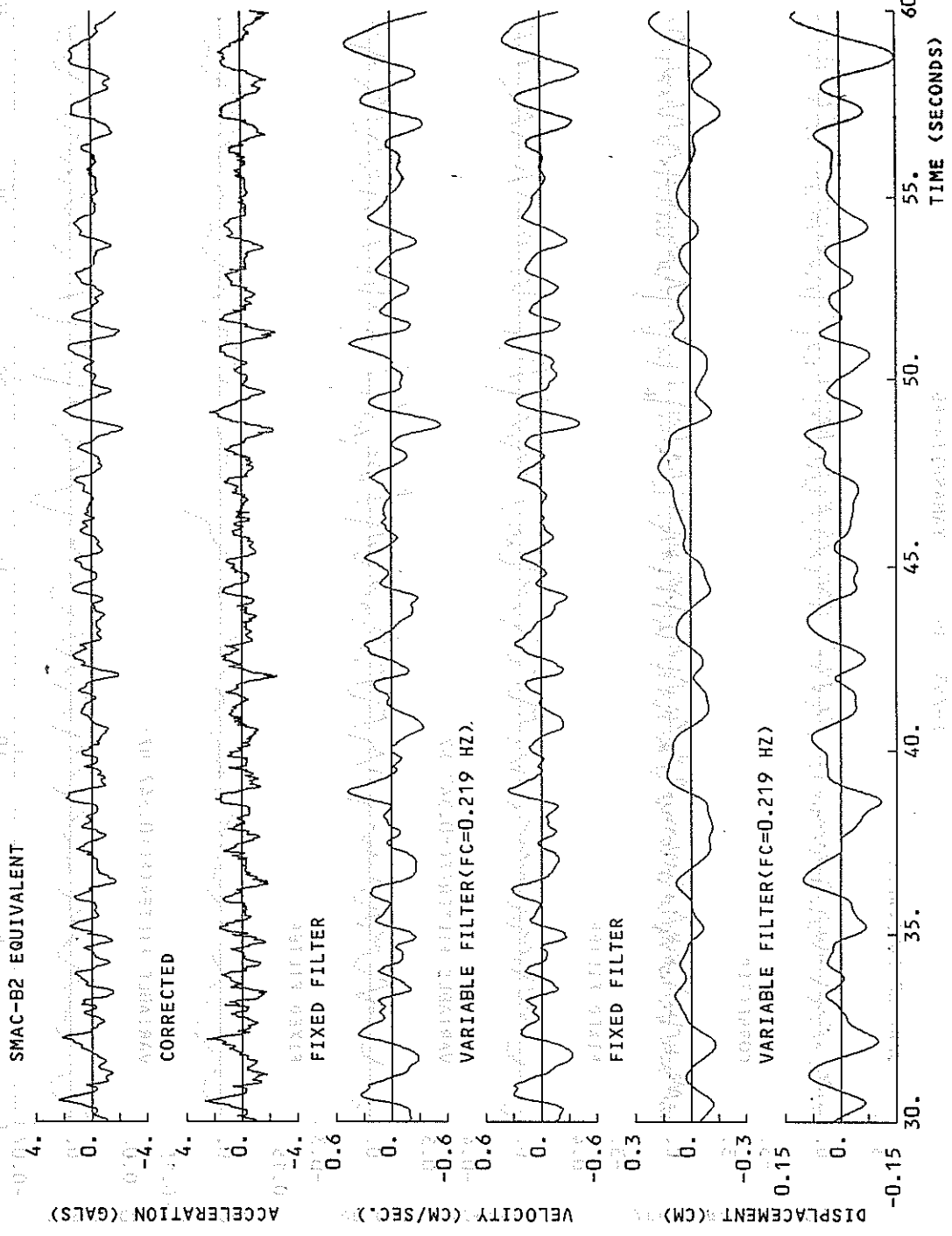


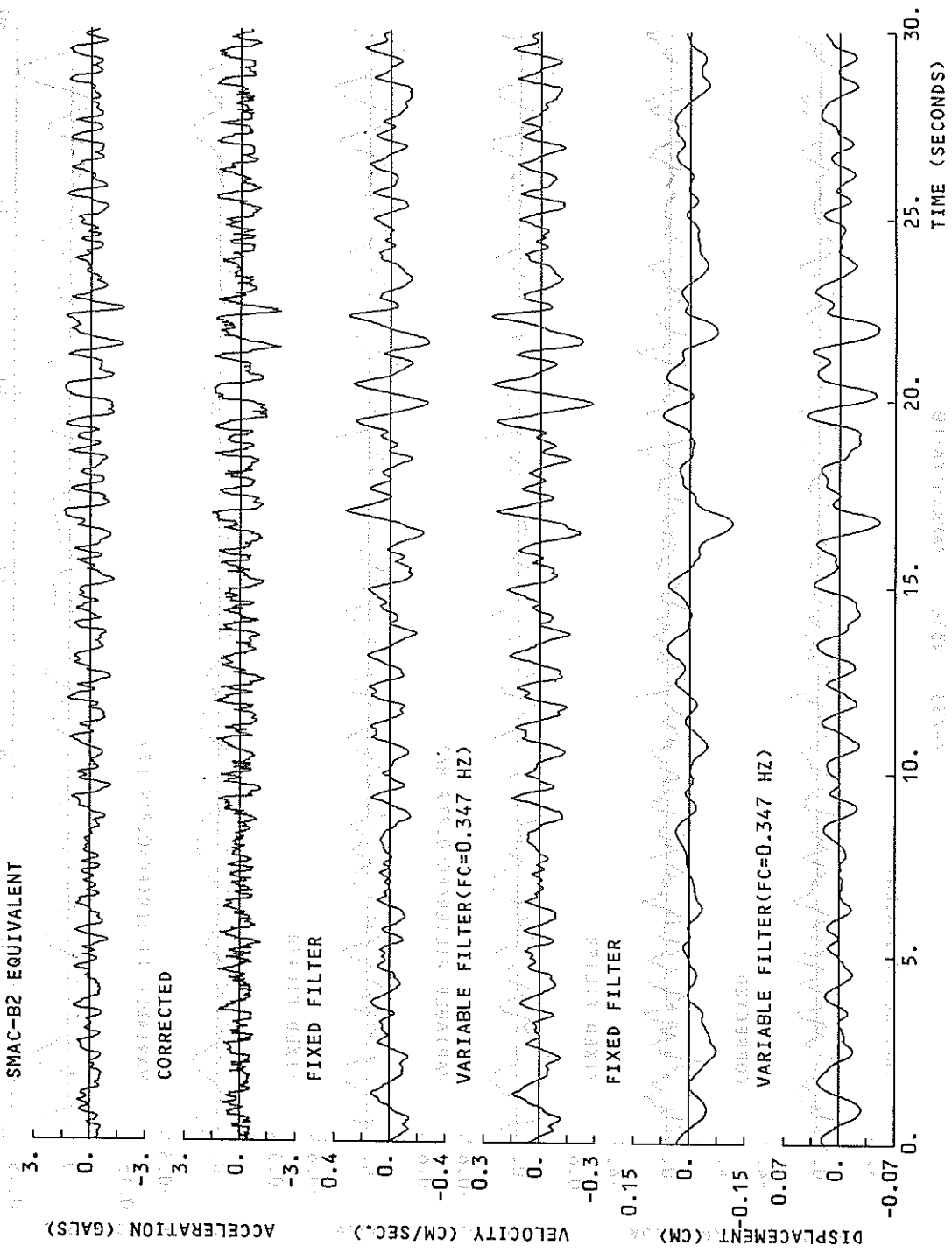




F-753 N33E YAMASHITA-FB

SMAC-B2 EQUIVALENT

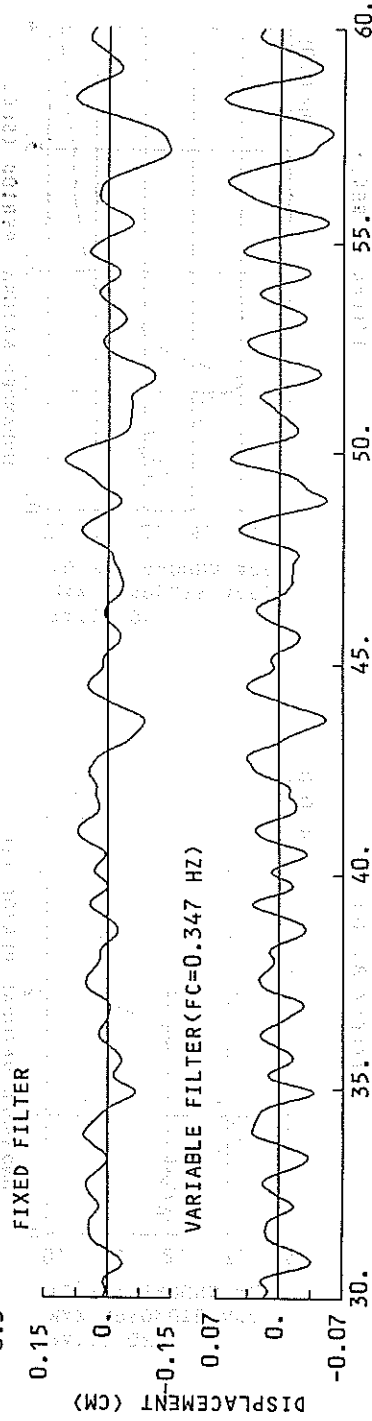
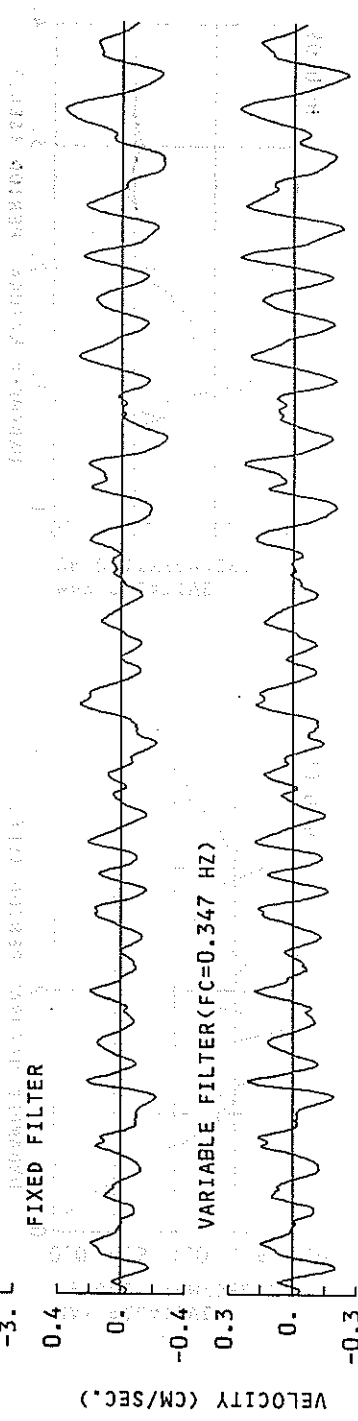
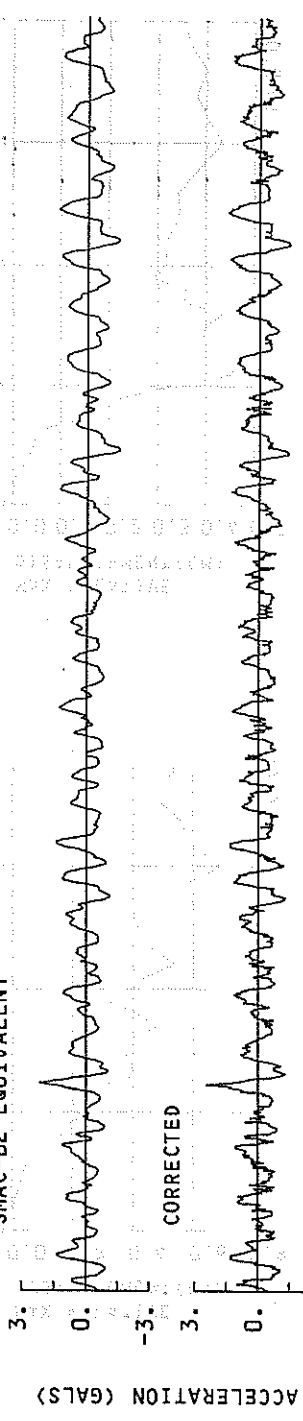




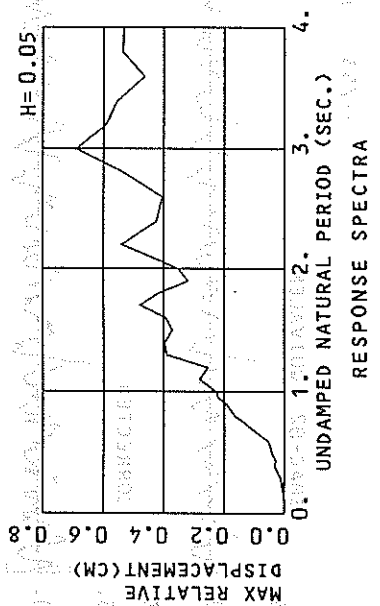
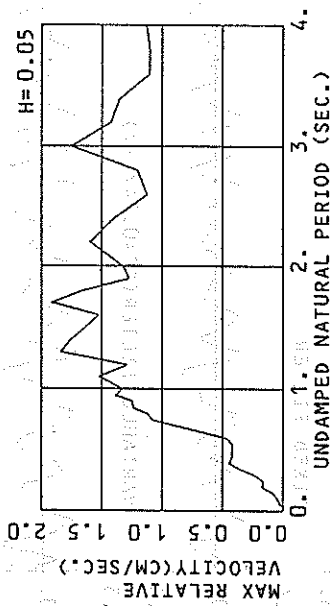
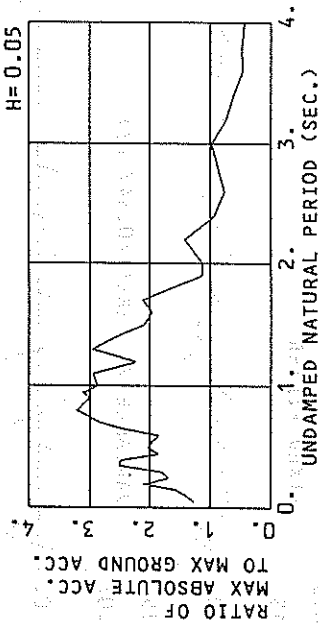
PROJECT: C-117 F-753 UP YAMASHITA-FB

EXCHANGE MEASUREMENT BEZEL: 181

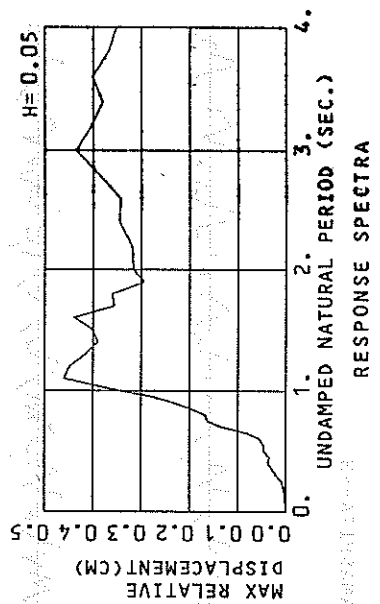
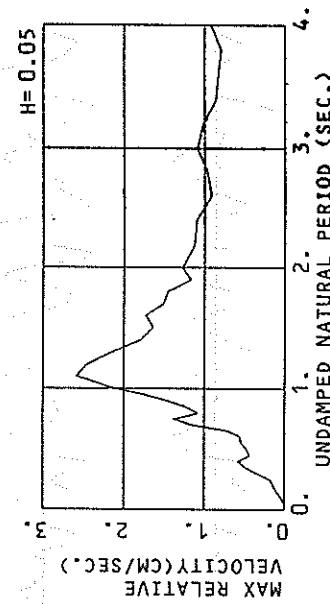
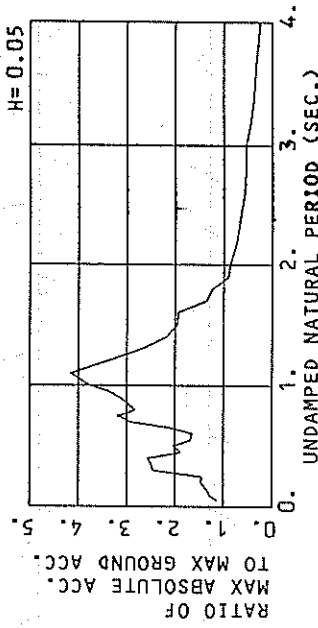
SMAC-B2 EQUIVALENT

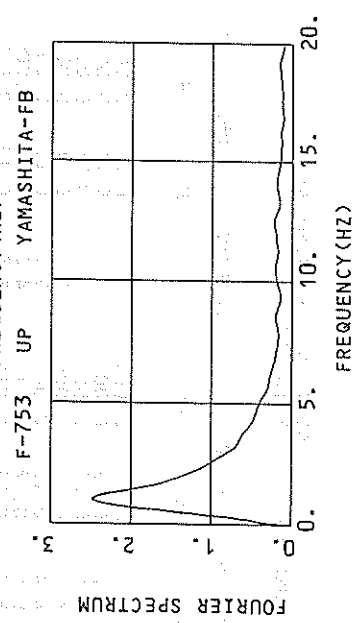
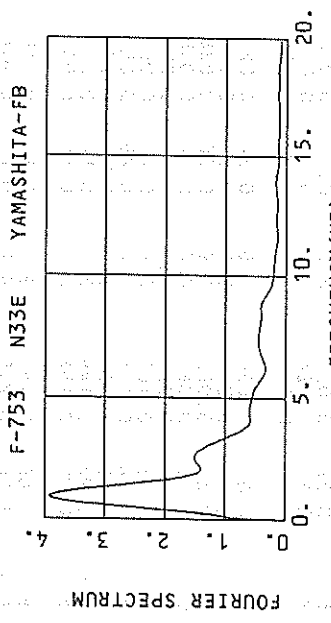
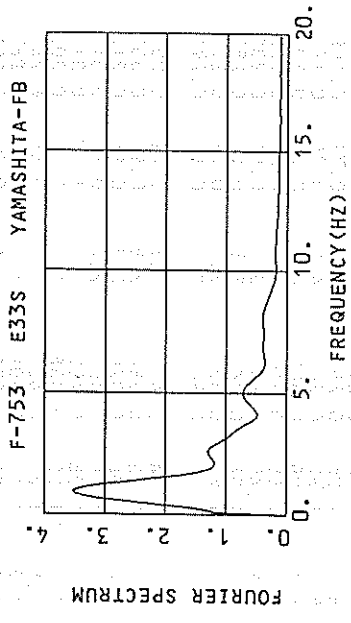
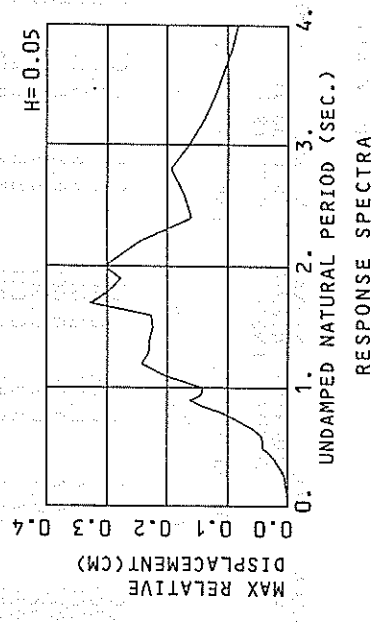
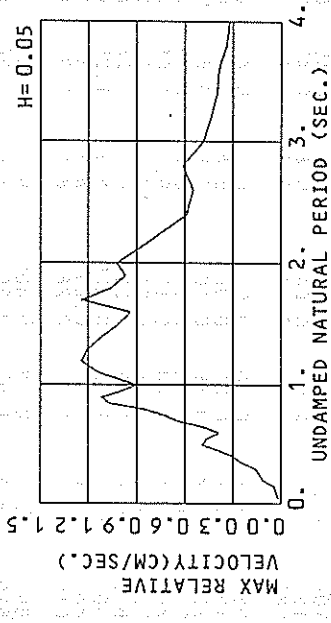
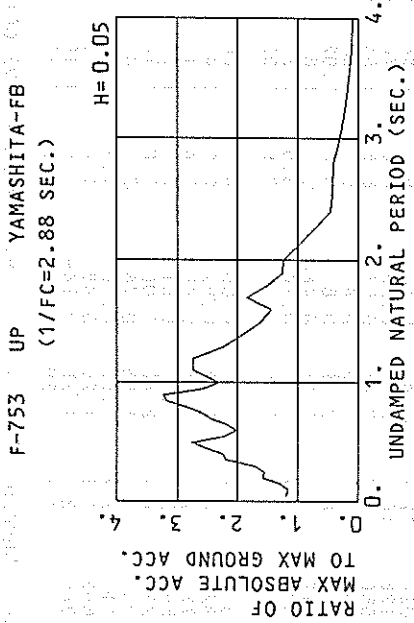


F-753 E33E YAMASHITA-FB
(1/FC=7.84 SEC.)



F-753 N33E YAMASHITA-FB
(1/FC=4.57 SEC.)





RESPONSE SPECTRUM

RECORD = F-753
 DATE AND TIME = 1994-10-4-22-27
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = N33E
 SIGNAL = IN ACC.
 SAMPRING INTERVAL = 0.0100(SEC)
 SKIPPED LENGTH = 0.00 (SEC)
 CORRECTION = MAX.GROUND ACC. = 3.62 (GAL)
 STATION = YAMASHITA-FB

PER	DAMPING = 0.		DAMPING = 0.025		DAMPING = 0.050		DAMPING = 0.100		DAMPING = 0.250	
	AA	RV	AA	RV	AA	RV	AA	RV	AA	RV
0.05	18.7	0.14	4.4	0.02	4.1	0.01	3.9	0.01	3.7	0.01
0.10	13.5	0.19	5.4	0.06	4.7	0.04	4.0	0.07	3.8	0.02
0.15	33.1	0.75	5.7	0.03	4.9	0.09	4.2	0.03	3.8	0.05
0.20	14.4	0.43	6.3	0.17	5.3	0.14	4.5	0.11	3.8	0.06
0.25	13.2	0.49	6.1	0.21	5.3	0.08	4.5	0.14	4.2	0.09
0.30	54.7	2.56	11.4	0.02	8.9	0.35	6.6	0.24	4.5	0.14
0.35	49.9	2.74	14.3	0.48	9.0	0.26	6.6	0.18	4.4	0.17
0.40	29.7	1.84	13.0	0.79	9.3	0.48	5.9	0.28	4.2	0.19
0.45	35.3	2.50	13.0	0.77	9.3	0.58	5.3	0.38	4.3	0.19
0.50	10.9	0.82	9.2	0.61	7.3	0.43	5.4	0.31	4.3	0.21
				0.61		0.48		0.36		0.24
				0.058				0.046		0.034
0.55	36.2	3.11	8.6	0.74	6.1	0.54	5.4	0.39	4.5	0.28
0.60	18.7	1.78	8.1	0.76	6.0	0.55	5.5	0.44	4.8	0.33
0.65	26.9	2.69	8.2	0.81	7.7	0.88	6.5	0.56	5.1	0.38
0.70	37.9	4.14	14.4	1.56	10.6	1.15	7.3	0.82	5.4	0.43
0.75	49.6	5.88	16.7	2.03	11.5	1.37	7.5	0.86	5.7	0.43
0.80	23.1	2.81	11.6	1.26	10.2	0.88	8.5	0.86	5.9	0.58
0.85	19.3	2.58	11.7	1.48	10.8	1.23	9.1	1.01	6.1	0.56
0.90	24.5	3.47	12.5	1.65	11.3	1.23	9.6	1.16	6.3	0.73
0.95	23.6	3.51	14.0	1.97	12.2	1.75	10.0	1.36	6.3	0.80
1.00	36.8	5.79	16.6	2.51	13.6	2.11	10.4	1.54	6.2	0.84
				0.419		0.344		0.258		0.142
1.10	44.5	7.59	20.5	3.47	15.1	2.59	9.9	1.64	5.7	0.88
1.20	40.2	7.71	16.1	3.07	12.4	2.45	9.1	1.72	5.0	0.87
1.30	22.7	4.69	11.8	2.61	9.8	2.14	7.3	1.52	4.5	0.90
1.40	13.5	3.21	9.6	2.13	7.9	1.78	5.9	1.43	3.9	0.89
1.50	11.5	2.81	7.7	1.86	7.1	1.64	5.3	1.33	3.5	0.89
1.60	26.4	6.92	7.7	2.39	7.0	1.73	5.0	1.24	3.1	0.87
1.70	10.6	3.10	6.3	2.00	4.9	1.50	3.8	1.14	2.8	0.83
1.80	13.3	4.01	6.1	2.88	4.4	1.45	3.1	1.06	2.5	0.78
1.90	5.0	1.68	3.9	1.30	3.2	1.16	2.6	0.98	2.2	0.73
2.00	12.0	4.00	4.4	1.67	3.1	1.27	2.5	1.01	2.0	0.71
				0.449		0.316		0.244		0.175
2.20	9.0	3.35	3.7	1.54	2.6	1.12	2.1	0.98	1.7	0.69
2.40	4.1	1.72	3.0	1.34	2.4	1.10	2.0	0.87	1.5	0.68
2.60	4.9	2.08	2.8	1.17	2.0	0.91	1.7	0.76	1.4	0.65
2.80	2.9	1.41	2.3	1.11	2.0	0.86	1.5	0.81	1.2	0.64
3.00	2.7	1.42	3.0	1.53	1.9	1.09	1.3	0.85	1.0	0.64
3.20	7.1	1.35	1.9	1.16	1.6	1.02	1.2	0.82	0.8	0.64
3.40	1.6	0.478	1.4	0.95	1.3	0.85	1.1	0.73	0.8	0.64
3.60	2.8	1.78	1.7	1.08	1.3	0.83	0.9	0.71	0.8	0.63
3.80	2.6	1.91	1.3	1.03	1.0	0.79	0.8	0.68	0.7	0.62
4.00	1.3	1.25	1.0	1.06	0.9	0.92	0.7	0.75	0.6	0.61
				0.405		0.352		0.261		0.197
				0.405		0.352		0.261		0.197
				0.452		0.319		0.245		0.176
				0.441		0.345		0.273		0.180
				0.483		0.345		0.284		0.182
				0.682		0.386		0.288		0.174
				0.574		0.435		0.295		0.175
				0.591		0.403		0.304		0.178
				0.591		0.403		0.295		0.173
				0.478		0.380		0.281		0.179
				0.920		0.545		0.281		0.179
				0.958		0.368		0.261		0.188
				0.536		0.405		0.272		0.197

PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

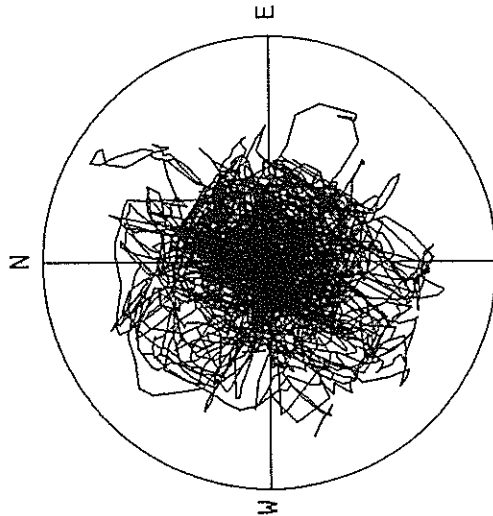
RESPONSE SPECTRUM

RECORD = F-753
 DATE AND TIME = 1994-10-4-22-27
 TIME LENGTH = 59.99 (SEC)
 COMPONENT = UP
 SIGNAL = IN. ACC.
 SAMPRING INTERVAL = 0.0100(SEC)
 CORRECTION =
 MAX. GROUND ACC. =
 STATION = YAMASHITA-FB
 2.43 (GAL)

PER	DAMPING = 0.0				DAMPING = 0.025				DAMPING = 0.050				DAMPING = 0.100				DAMPING = 0.250			
	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD	AA	RV	RD		
0.05	10.4	0.08	0.001	3.0	0.02	0.000	2.9	0.01	0.000	2.7	0.01	0.000	2.5	0.01	0.000	0.01	0.000	0.000		
0.10	24.2	0.37	0.006	3.5	0.04	0.001	2.8	0.03	0.001	2.7	0.03	0.001	2.7	0.02	0.001	0.02	0.001	0.001		
0.15	11.4	0.27	0.006	3.3	0.05	0.002	3.2	0.04	0.002	3.0	0.04	0.002	2.7	0.04	0.002	0.04	0.002	0.002		
0.20	14.5	0.42	0.015	5.1	0.14	0.005	3.8	0.11	0.004	3.1	0.07	0.003	2.7	0.07	0.003	0.04	0.003	0.003		
0.25	13.4	0.52	0.021	4.9	0.17	0.008	3.8	0.14	0.006	3.2	0.09	0.005	2.9	0.09	0.005	0.06	0.004	0.004		
0.30	16.4	0.76	0.037	5.4	0.20	0.012	4.1	0.16	0.009	3.6	0.13	0.008	3.1	0.13	0.008	0.08	0.007	0.007		
0.35	25.3	1.37	0.079	7.0	0.34	0.022	5.3	0.25	0.016	4.2	0.19	0.013	3.3	0.19	0.013	0.11	0.009	0.009		
0.40	24.0	1.52	0.097	7.2	0.41	0.029	5.4	0.30	0.022	4.3	0.21	0.017	3.3	0.21	0.017	0.14	0.012	0.012		
0.45	17.6	1.23	0.091	8.3	0.55	0.043	6.2	0.39	0.032	4.6	0.28	0.023	3.3	0.28	0.023	0.16	0.016	0.016		
0.50	19.2	1.50	0.122	7.4	0.56	0.047	6.7	0.49	0.042	4.9	0.36	0.030	3.2	0.36	0.030	0.19	0.018	0.018		
0.55	22.4	1.92	0.172	7.5	0.61	0.057	5.4	0.46	0.041	4.0	0.35	0.030	2.9	0.35	0.030	0.21	0.021	0.021		
0.60	13.7	1.31	0.125	5.9	0.51	0.054	4.9	0.39	0.045	4.1	0.35	0.036	2.9	0.35	0.036	0.24	0.024	0.024		
0.65	16.1	1.56	0.173	6.8	0.62	0.073	5.3	0.49	0.056	4.3	0.41	0.045	2.8	0.41	0.045	0.27	0.028	0.028		
0.70	25.0	2.75	0.311	7.7	0.83	0.096	5.9	0.64	0.073	4.3	0.45	0.053	2.8	0.45	0.053	0.28	0.031	0.031		
0.75	26.2	3.05	0.373	9.7	1.11	0.138	6.3	0.72	0.089	4.2	0.47	0.058	2.8	0.47	0.058	0.29	0.038	0.038		
0.80	16.9	2.09	0.274	9.4	1.14	0.152	7.0	0.86	0.113	4.7	0.59	0.075	2.9	0.59	0.075	0.32	0.044	0.044		
0.85	26.1	3.49	0.478	10.6	1.48	0.194	7.7	1.07	0.141	4.9	0.68	0.088	2.9	0.68	0.088	0.36	0.050	0.050		
0.90	21.3	3.05	0.438	10.9	1.55	0.224	7.9	1.12	0.161	4.9	0.70	0.099	2.9	0.70	0.099	0.39	0.056	0.056		
0.95	26.7	3.03	0.449	9.6	1.45	0.219	6.3	1.00	0.143	4.2	0.70	0.094	2.9	0.70	0.094	0.41	0.061	0.061		
1.00	19.1	4.14	0.661	7.8	1.27	0.198	5.5	0.90	0.141	4.1	0.65	0.102	2.9	0.65	0.102	0.41	0.066	0.066		
1.10	15.2	2.60	0.467	8.3	1.45	0.253	6.7	1.14	0.204	4.8	0.77	0.145	2.8	0.77	0.145	0.42	0.076	0.076		
1.20	23.6	4.52	0.859	7.8	1.49	0.284	6.7	1.24	0.242	4.7	0.86	0.167	2.6	0.86	0.167	0.42	0.081	0.081		
1.30	23.0	4.67	0.986	7.7	1.63	0.329	5.4	1.21	0.230	3.6	0.81	0.151	2.3	0.81	0.151	0.43	0.083	0.083		
1.40	7.7	1.84	0.385	6.1	1.44	0.305	4.7	1.12	0.230	3.2	0.75	0.154	2.0	0.75	0.154	0.44	0.082	0.082		
1.50	11.4	2.85	0.647	5.0	1.27	0.285	4.0	1.02	0.224	2.8	0.72	0.158	1.7	0.72	0.158	0.45	0.085	0.085		
1.60	8.8	2.23	0.569	4.5	1.13	0.292	3.5	0.94	0.256	2.6	0.70	0.165	1.6	0.70	0.165	0.46	0.094	0.094		
1.70	15.4	4.30	1.129	6.9	1.93	0.508	4.5	1.24	0.327	2.9	0.80	0.206	1.5	0.80	0.206	0.47	0.102	0.102		
1.80	11.8	3.39	0.964	5.3	1.52	0.432	3.6	1.05	0.296	2.7	0.83	0.215	1.5	0.83	0.215	0.48	0.114	0.114		
1.90	5.4	1.75	0.494	3.4	1.06	0.314	3.0	0.97	0.277	2.4	0.80	0.214	1.5	0.80	0.214	0.48	0.123	0.123		
2.00	5.1	1.60	0.520	3.8	1.29	0.380	3.0	1.02	0.303	2.3	0.75	0.225	1.4	0.75	0.225	0.48	0.123	0.123		
2.20	3.3	1.22	0.410	2.4	0.91	0.291	2.0	0.79	0.247	1.7	0.64	0.200	1.3	0.64	0.200	0.41	0.128	0.128		
2.40	3.3	1.34	0.475	1.4	0.65	0.210	1.1	0.59	0.159	1.1	0.54	0.158	1.0	0.54	0.158	0.40	0.120	0.120		
2.60	1.6	0.72	0.273	1.1	0.62	0.191	1.0	0.55	0.172	0.9	0.51	0.146	0.9	0.51	0.146	0.38	0.114	0.114		
2.80	1.2	0.69	0.239	1.2	0.69	0.228	1.0	0.61	0.194	0.8	0.51	0.156	0.9	0.51	0.156	0.37	0.114	0.114		
3.00	0.9	0.61	0.206	0.7	0.50	0.167	0.7	0.48	0.164	0.7	0.46	0.147	0.6	0.46	0.147	0.36	0.111	0.111		
3.20	0.8	0.59	0.210	0.6	0.47	0.146	0.5	0.43	0.140	0.5	0.40	0.131	0.6	0.40	0.131	0.35	0.107	0.107		
3.40	0.4	0.40	0.116	0.4	0.41	0.122	0.4	0.40	0.122	0.4	0.38	0.117	0.5	0.38	0.117	0.34	0.103	0.103		
3.60	0.5	0.49	0.155	0.4	0.42	0.117	0.3	0.39	0.107	0.3	0.38	0.105	0.4	0.38	0.105	0.32	0.098	0.098		
3.80	0.4	0.40	0.164	0.3	0.33	0.111	0.3	0.34	0.092	0.3	0.34	0.094	0.4	0.34	0.094	0.32	0.094	0.094		
4.00	0.3	0.36	0.104	0.2	0.33	0.087	0.2	0.32	0.083	0.2	0.32	0.083	0.3	0.32	0.083	0.31	0.091	0.091		

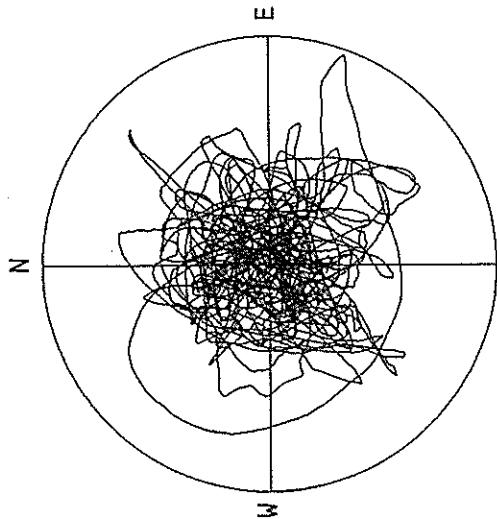
PER = PERIOD (SEC) AA = ABSOLUTE ACC. (GAL) RV = RELATIVE VELOCITY (CM/SEC) RD = RELATIVE DISPLACEMENT (CM)

F-753 YAMASHITA-FB



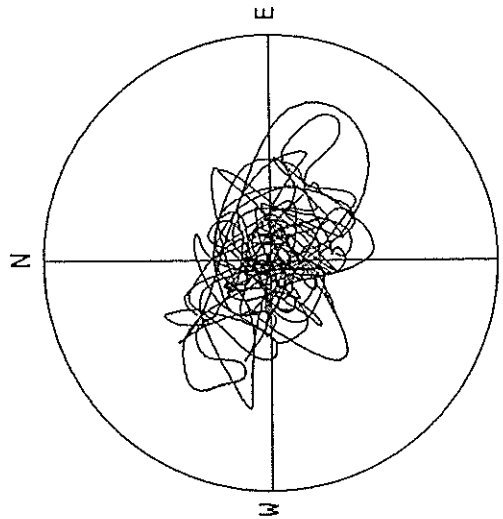
ACCELERATION
R=4.0 GAL
MAX=3.6 GAL

F-753 YAMASHITA-FB



VELOCITY
R=0.7 CM/SEC.
MAX=0.7 CM/SEC.

F-753 YAMASHITA-FB



DISPLACEMENT
R=0.30 CM
MAX=0.22 CM

010000Z JAN 1995
 FM : 010000Z JAN 1995
 TO : 010000Z JAN 1995
 FROM : 010000Z JAN 1995
 INFO : 010000Z JAN 1995
 010000Z JAN 1995
 010000Z JAN 1995
 010000Z JAN 1995

010000Z JAN 1995
 010000Z JAN 1995
 010000Z JAN 1995
 010000Z JAN 1995

Strong-Motion Earthquake Observation Results of the After Shock at 22:42:51, October 4, 1994

Station	Amplitude	Period	Phase	Direction	Remarks
010000Z	0.15	0.15	0.15	0.15	0.15
010000Z	0.15	0.15	0.15	0.15	0.15

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

22:42 OCT. 4, 1994

E OFF HOKKAIDO

EPICENTER : 43°37.9'N 147°1.3 'E

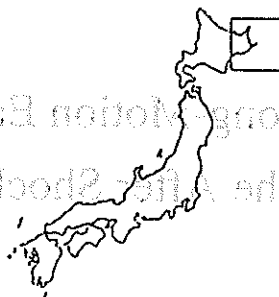
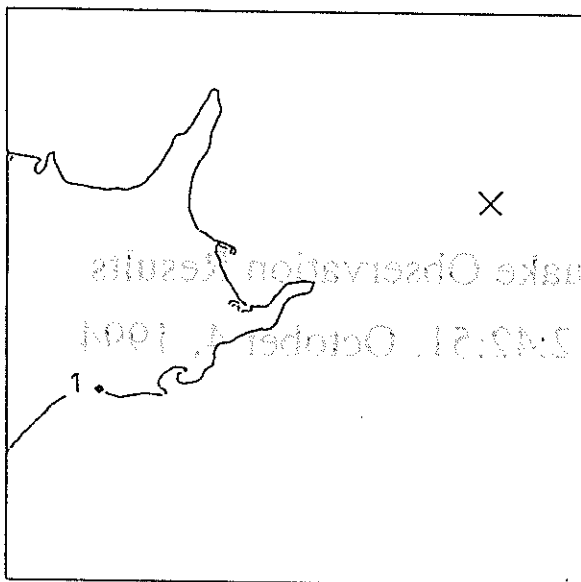
DEPTH : 4.0KM MAGNITUDE : 6.3

JMA INTENSITIES

Ⅲ : KUSHIRO, NEMURO

Ⅱ : OBIHIRO, URAKAWA, HIROO,
MORIOKA

Ⅰ : TOMAKOMAI, ABASHIRI,
AOMORI, HACHINOHE,
OFUNATO, MUTSU



STATION	CONDITION	RECORD NUMBER	MAX. ACC. (GAL)			DIST. (KM)
			(NS)	(EW)	(UD)	
1 KUSHIRO-G	ON GROUND	F- 673	10	12	4	226
1 KUSHIRO-GB	IN GROUND	F- 672	4	4	2	226

RECORD NUMBER : F-673
 STATION : KUSHIRO-G

EARTHQUAKE DATA

 DATE AND TIME 22:42 OCT. 4,1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 37.9' N
 LONGITUDE 147° 1.3' E
 DEPTH 4.0KM
 JMA MAGNITUDE 6.3

PEAK VALUES OF COMPONENTS

 N S E W U D HORIZONTAL*

PARAMETER OF THE VARIABLE FILTER

 FC (HZ) 0.390 0.439 0.835

MAXIMUM ACCELERATION (GAL)

 SMAC-B2 EQUIVALENT 8.6 8.7 2.4 9.1
 ORIGINAL 9.8 12.0 4.1 13.9
 CORRECTED 9.8 12.1 4.1 13.9

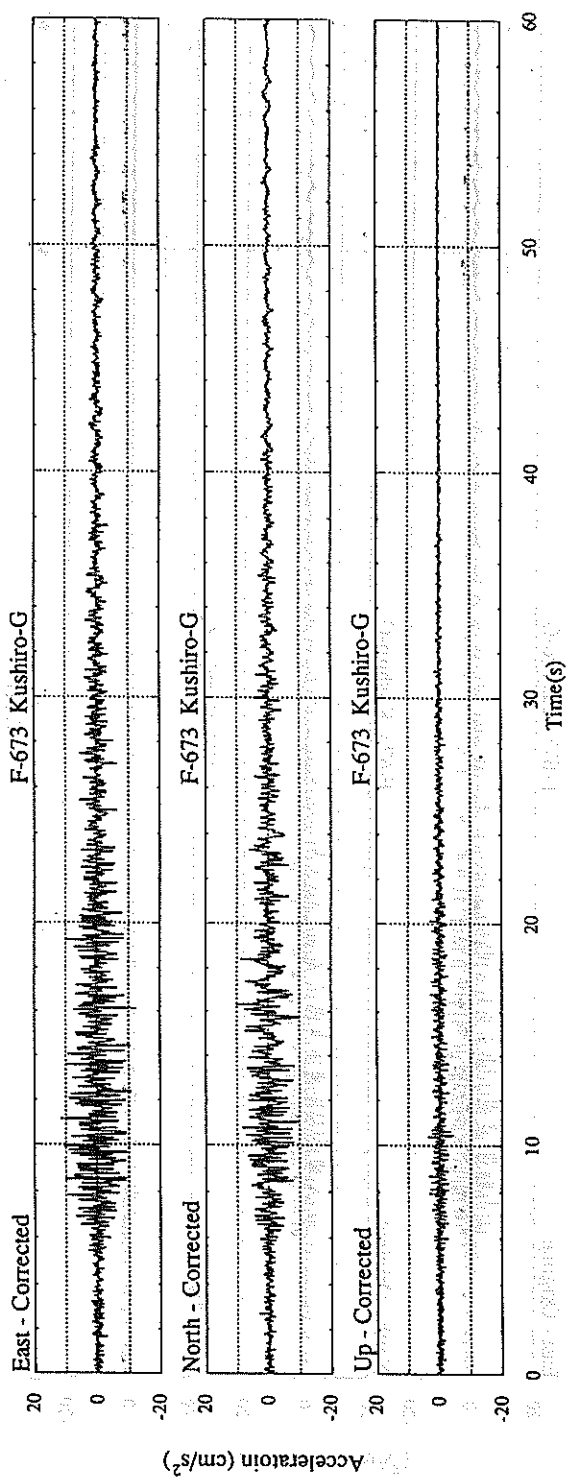
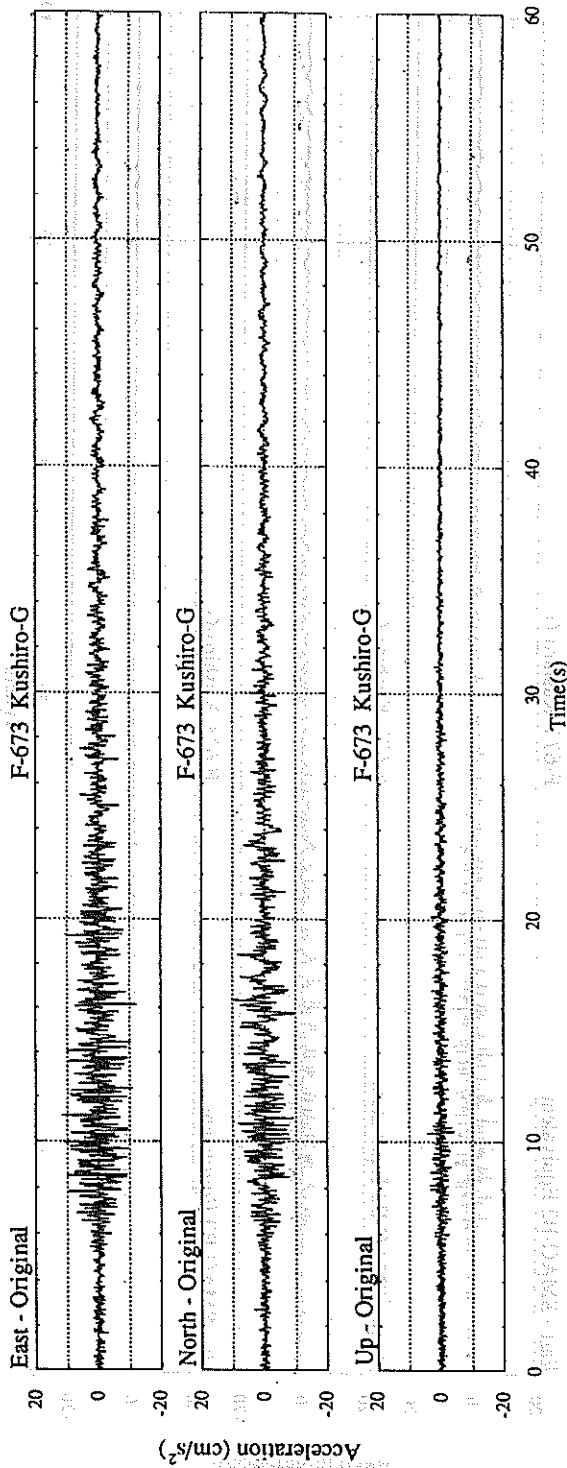
MAXIMUM VELOCITY (CM/SEC)

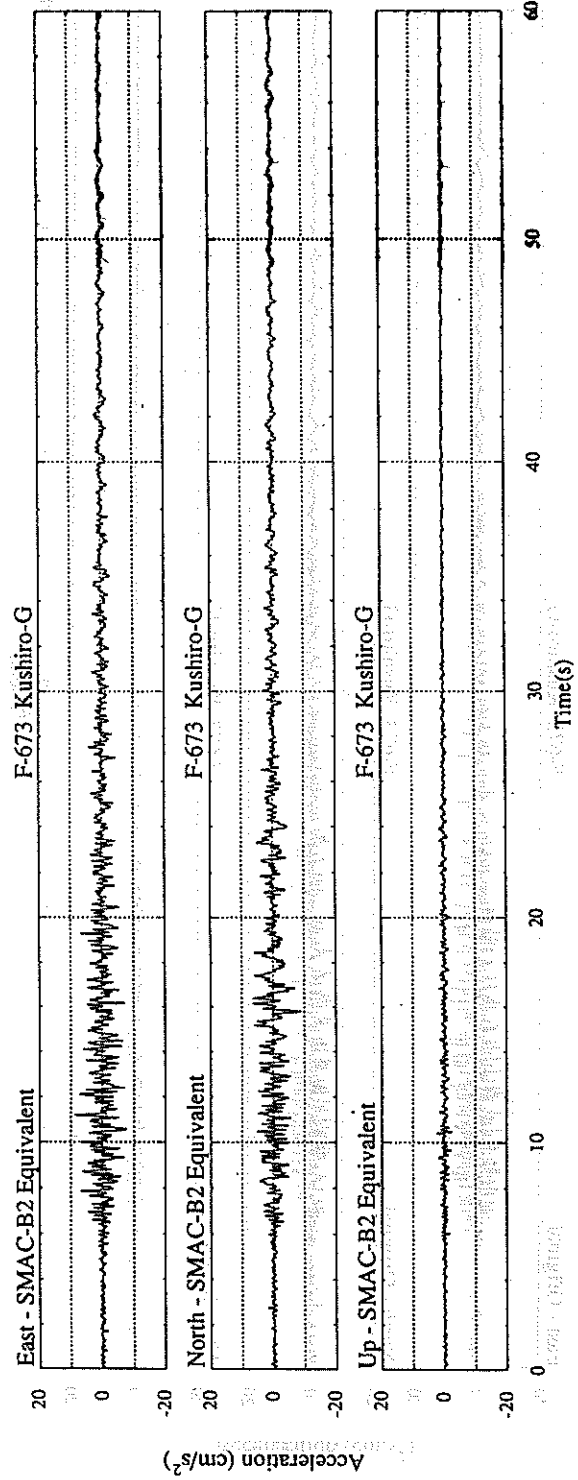
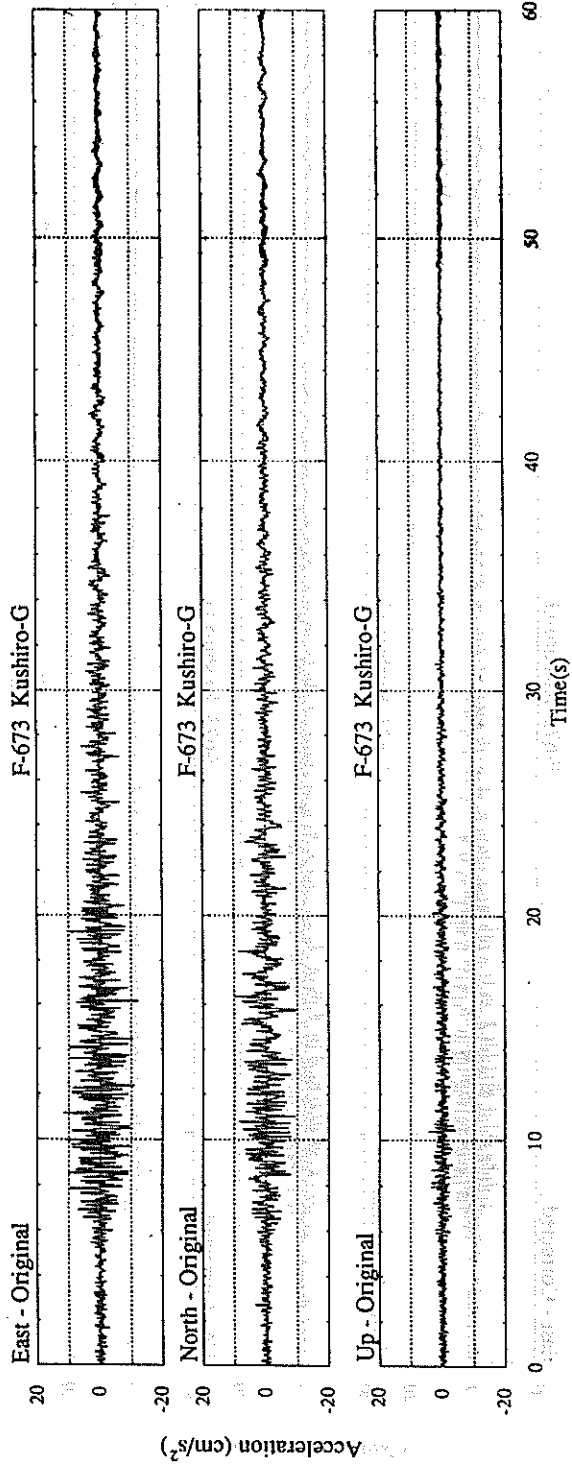
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 VARIABLE FILTER 0.79 0.61 0.17 0.88

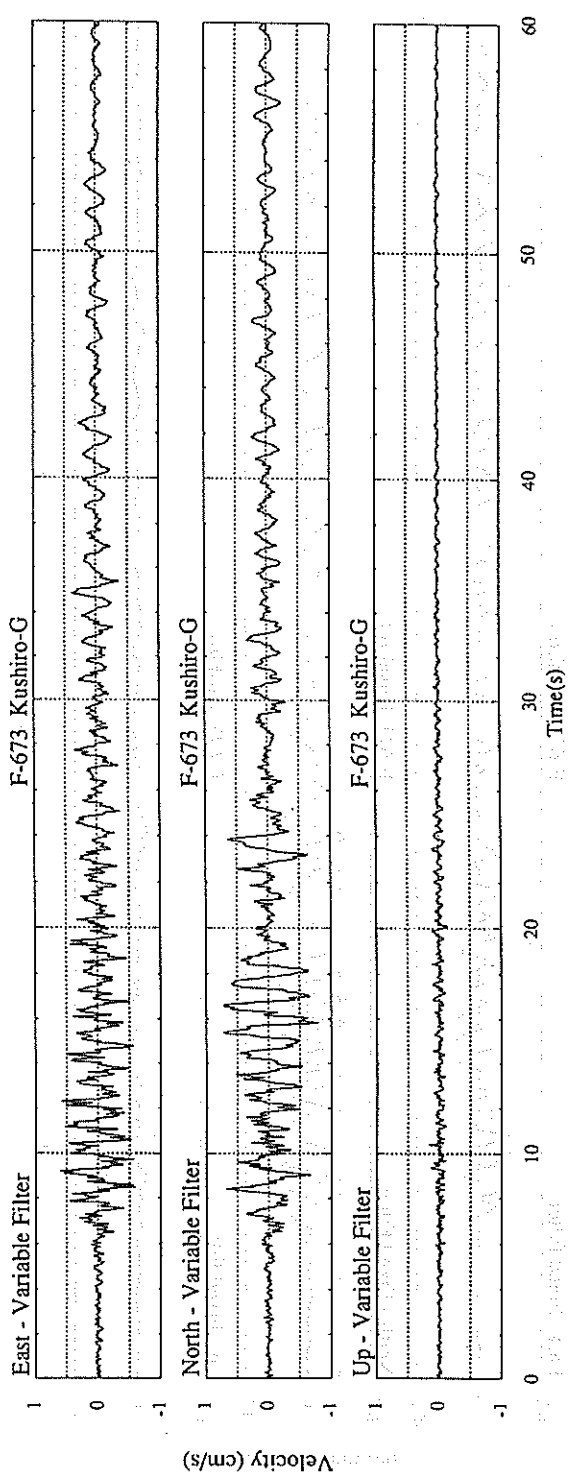
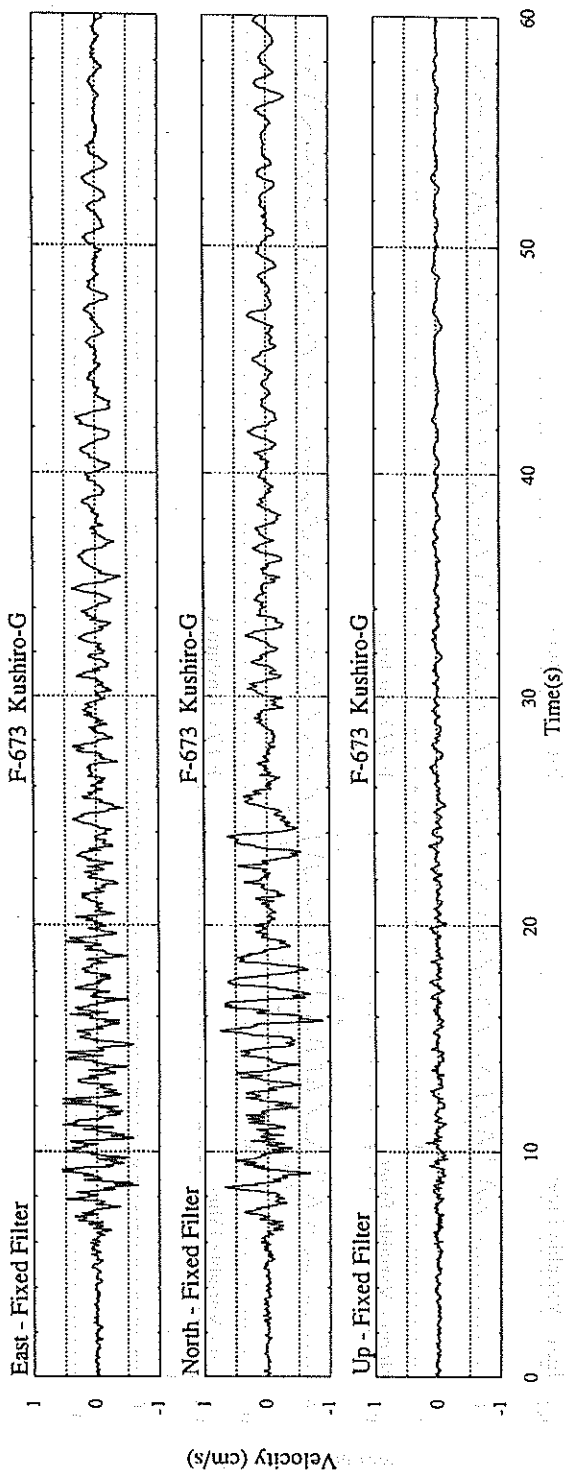
MAXIMUM DISPLACEMENT (CM)

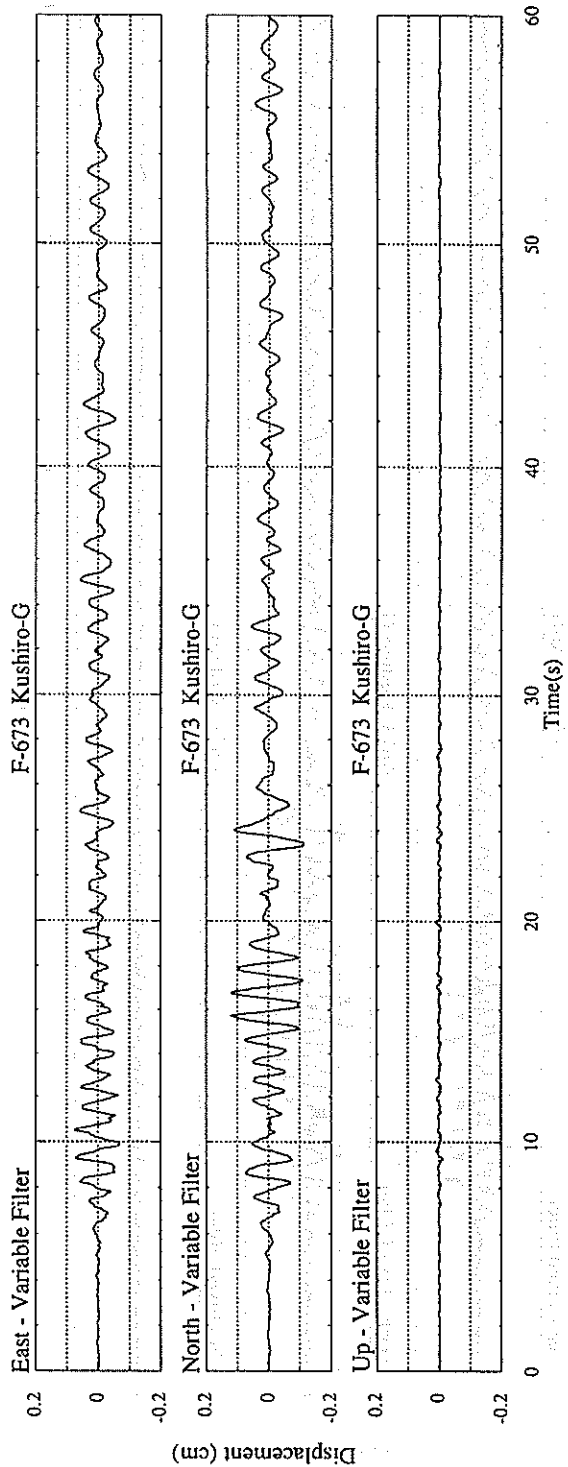
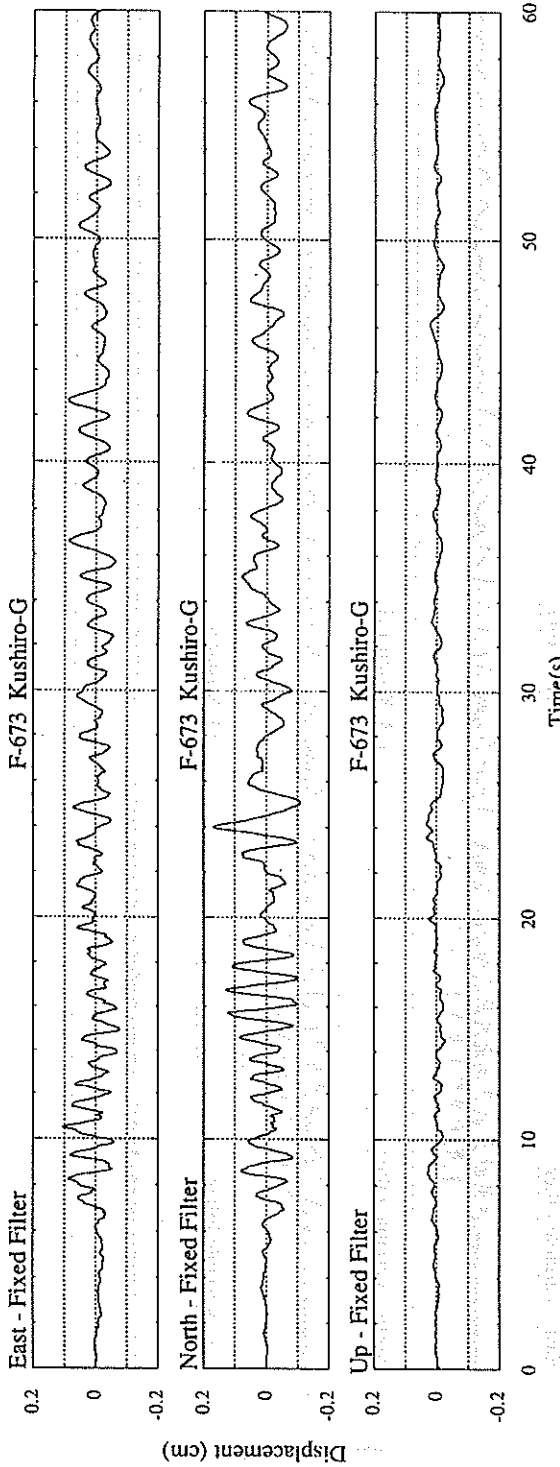
 FIXED FILTER 0.17 0.10 0.03 0.17
 VARIABLE FILTER 0.12 0.08 0.01 0.12

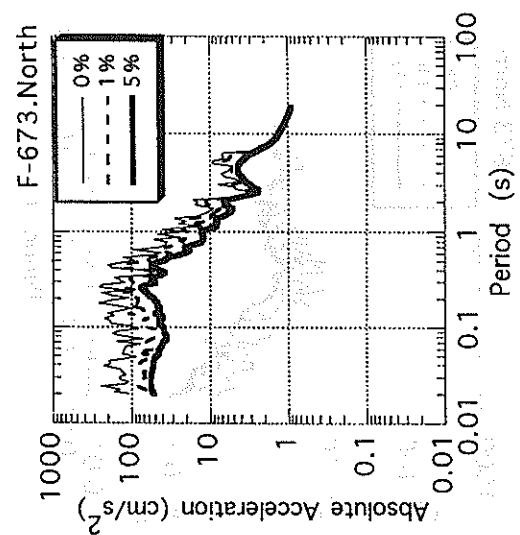
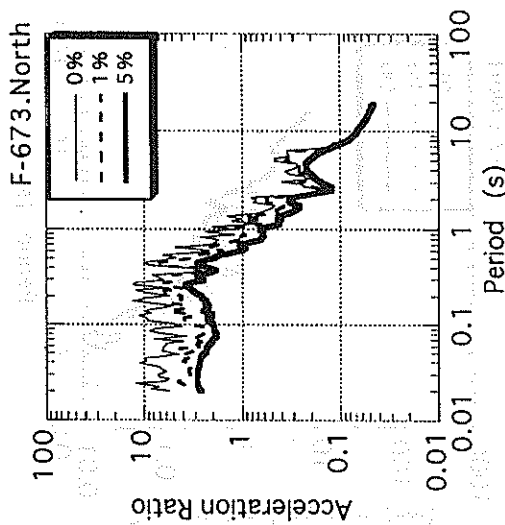
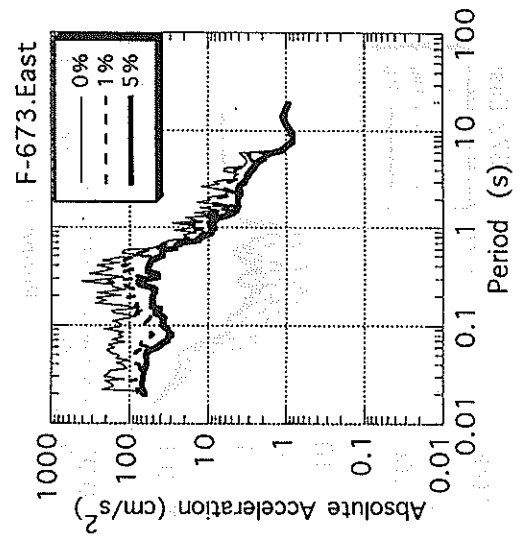
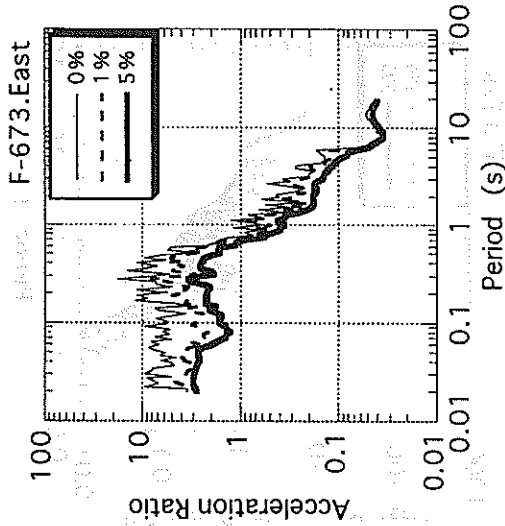
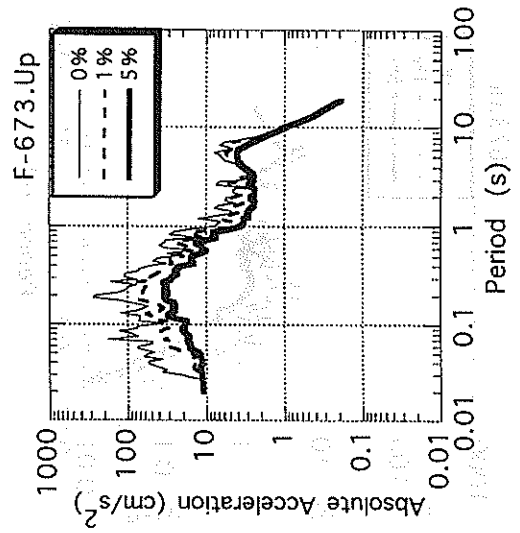
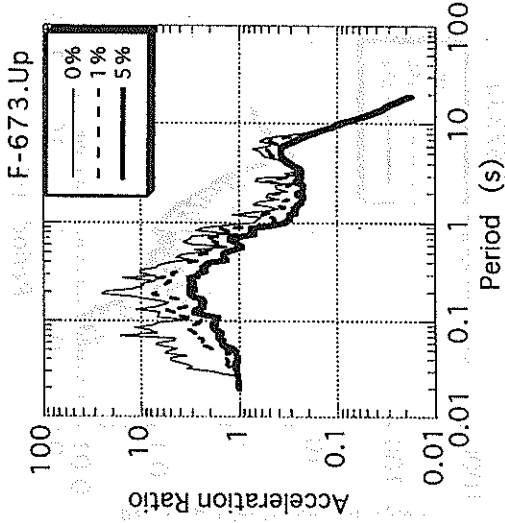
* RESULTANT OF HORIZONTAL COMPONENTS

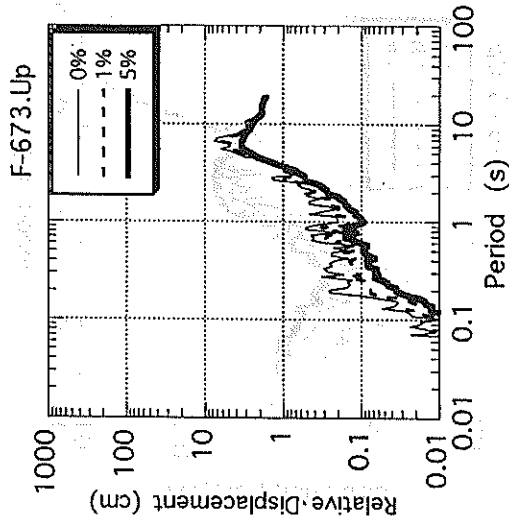
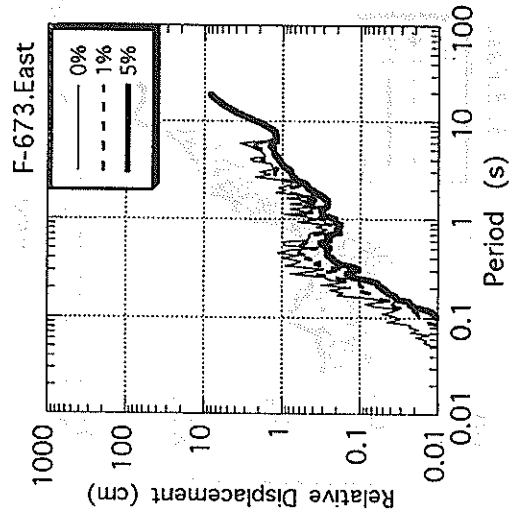
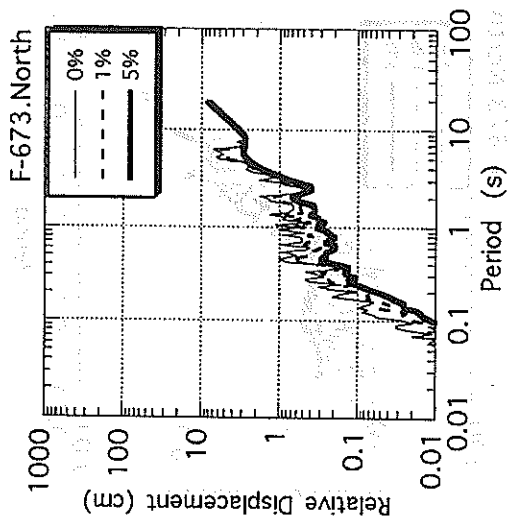
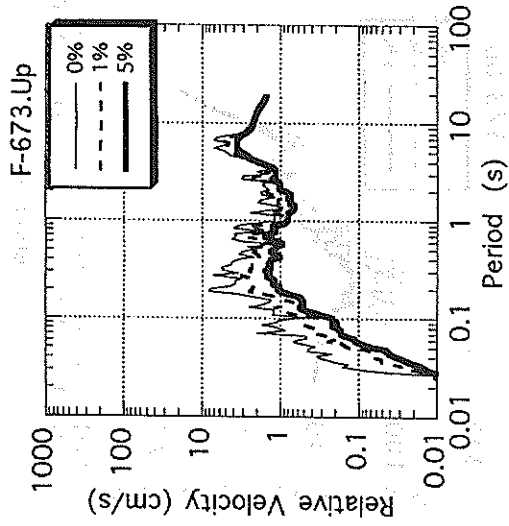
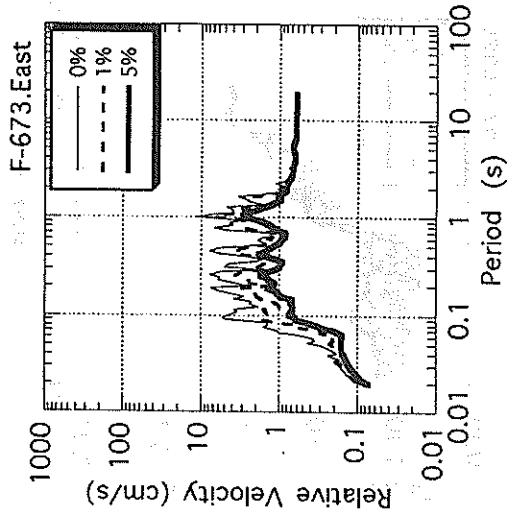
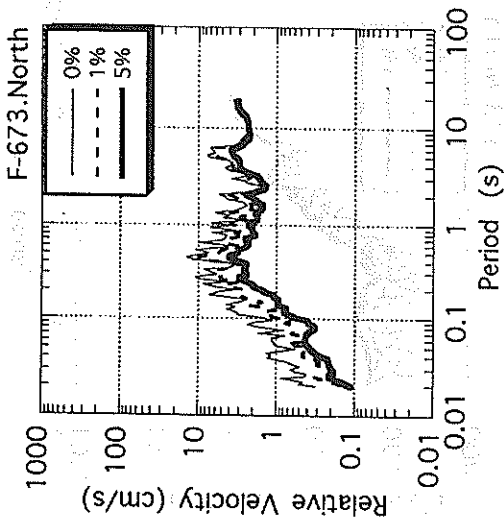


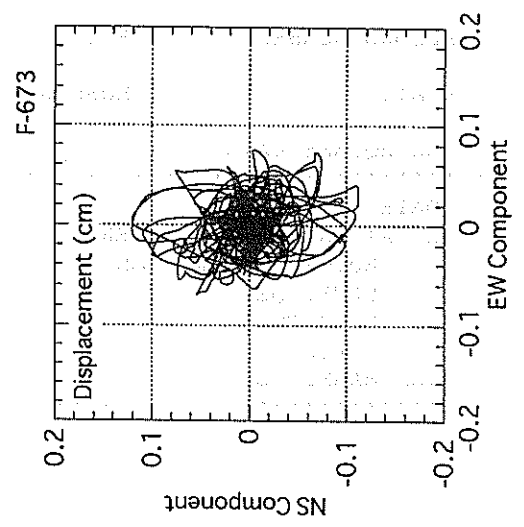
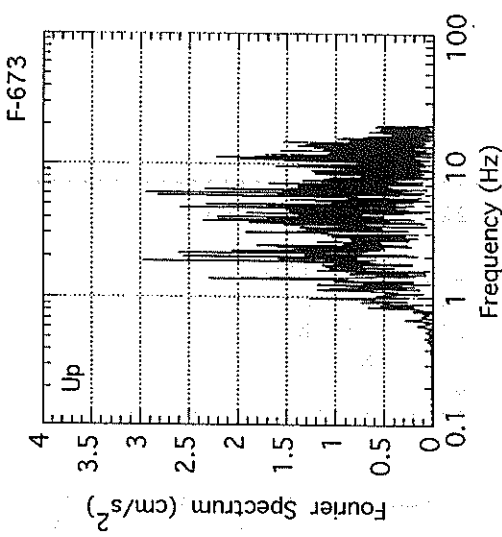
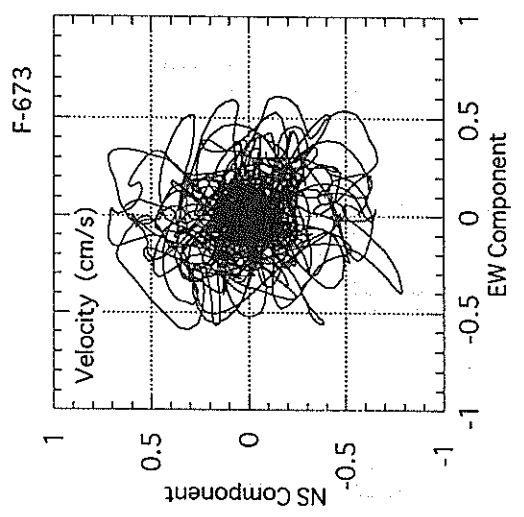
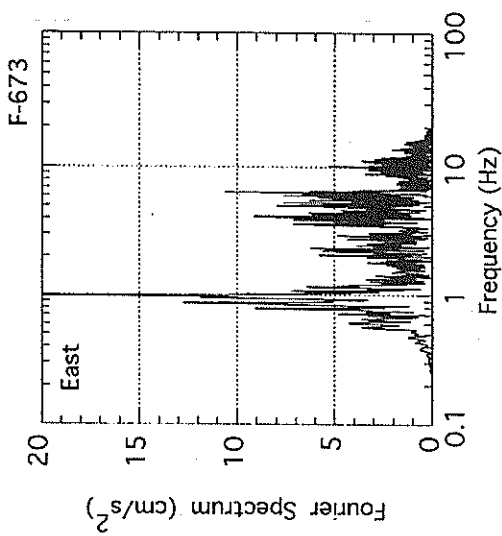
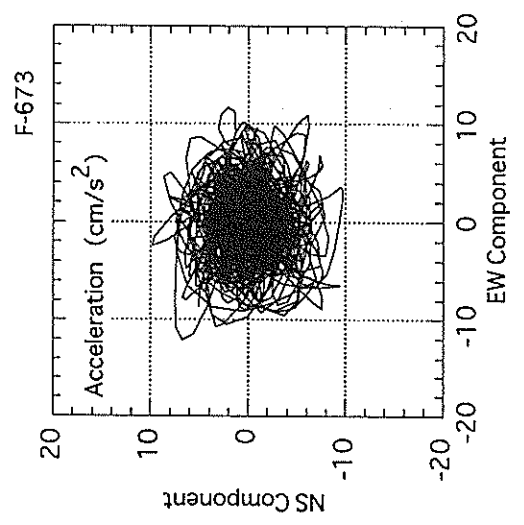
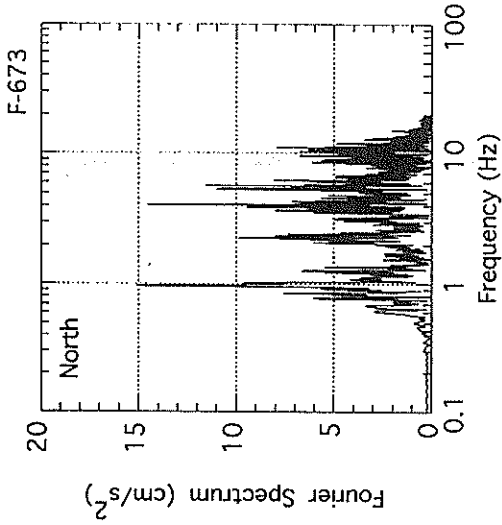












RECORD NUMBER : F-672
 STATION : KUSHIRO-GB

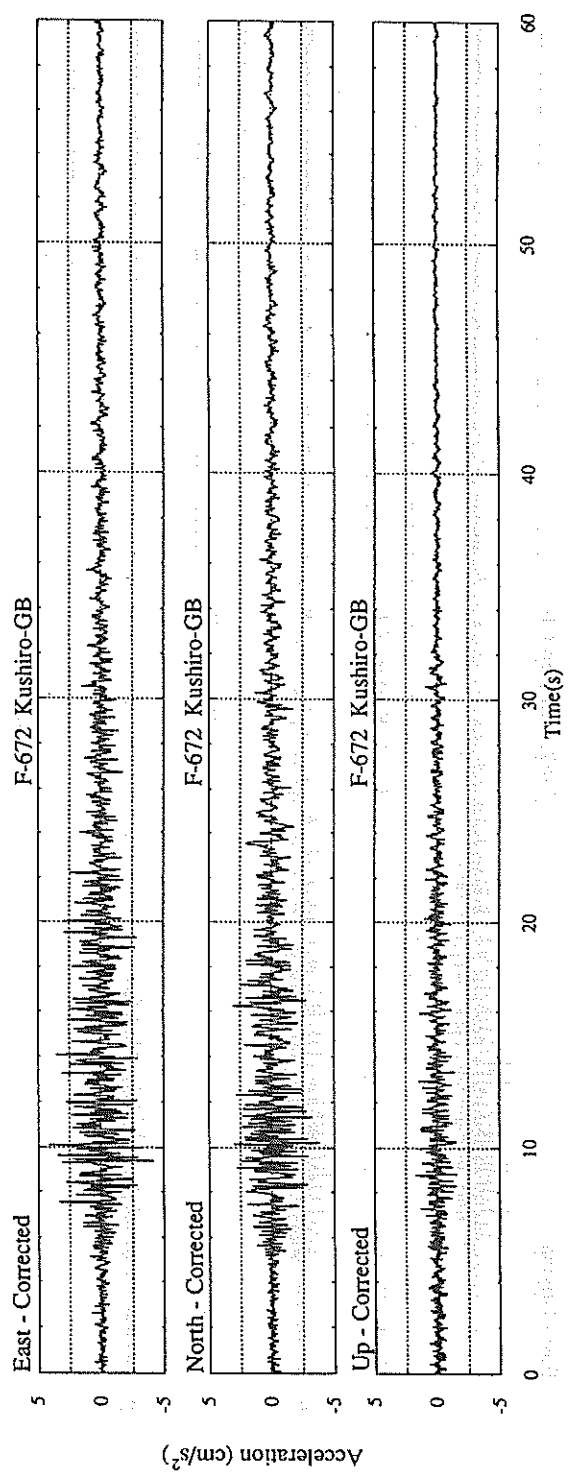
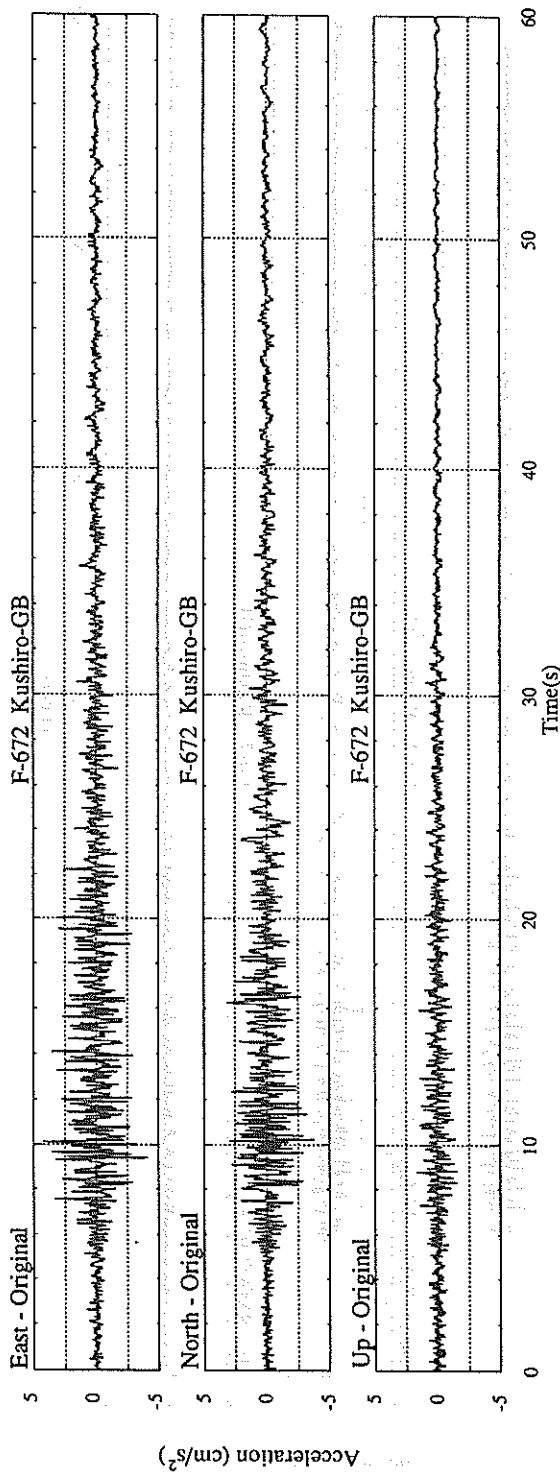
EARTHQUAKE DATA

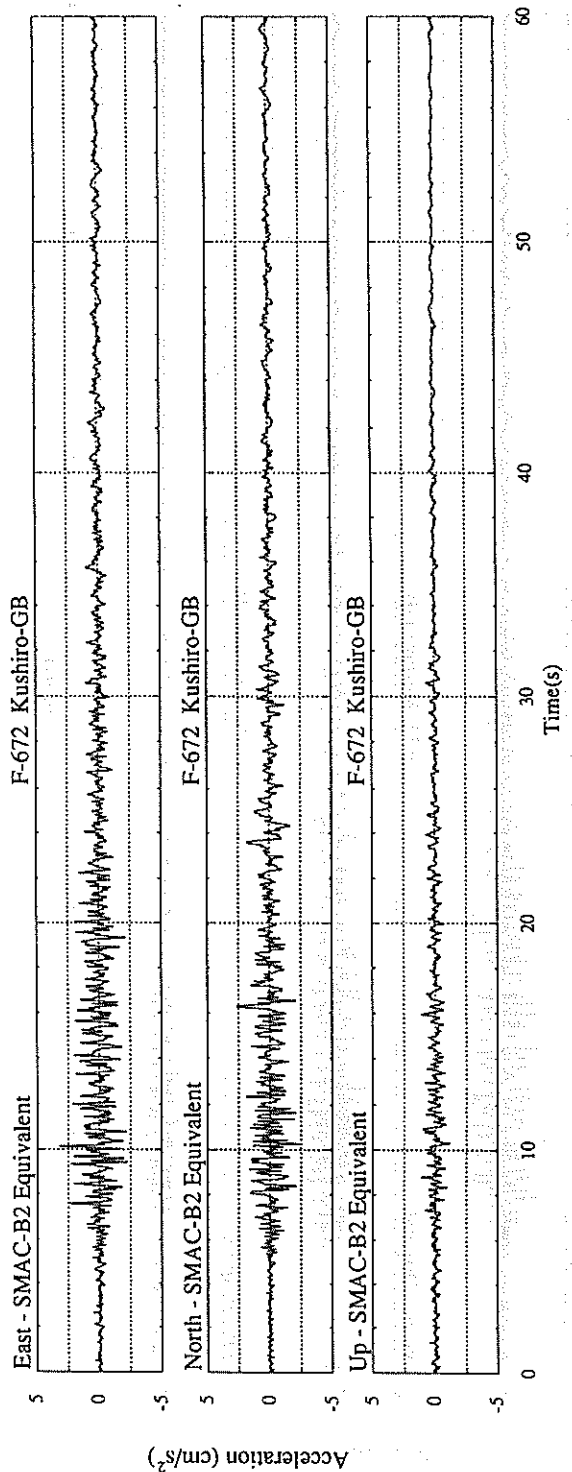
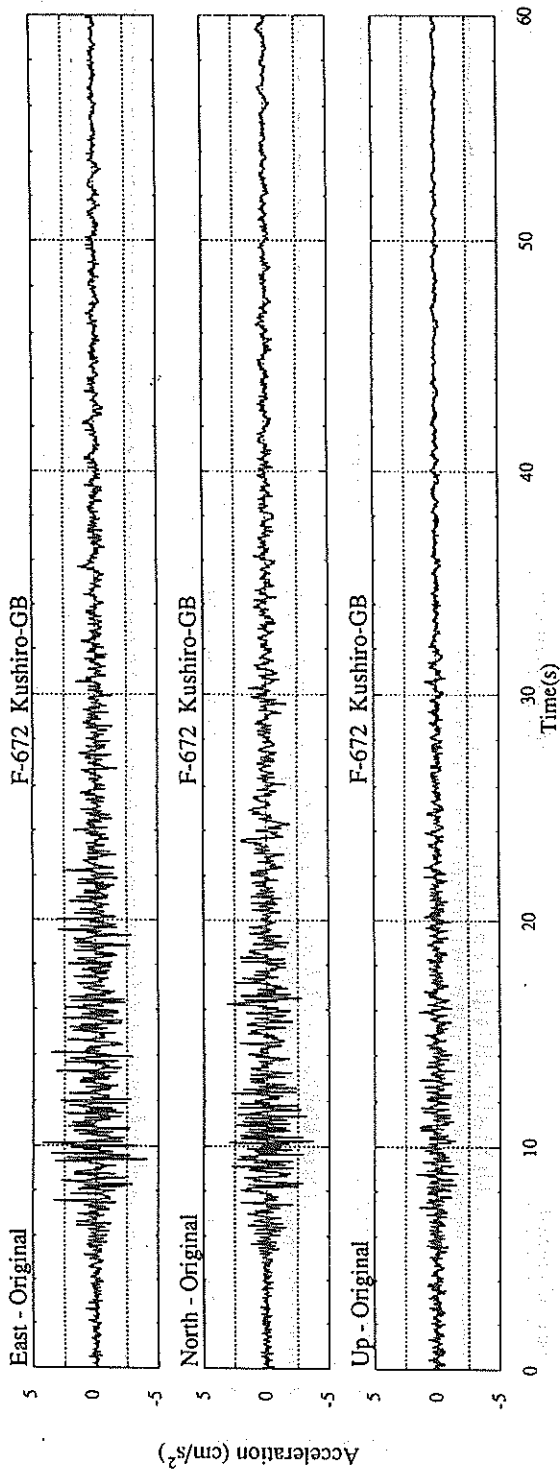
 DATE AND TIME 22:42 OCT. 4, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 37.9' N
 LONGITUDE 147° 1.3' E
 DEPTH 4.0KM
 JMA MAGNITUDE 6.3

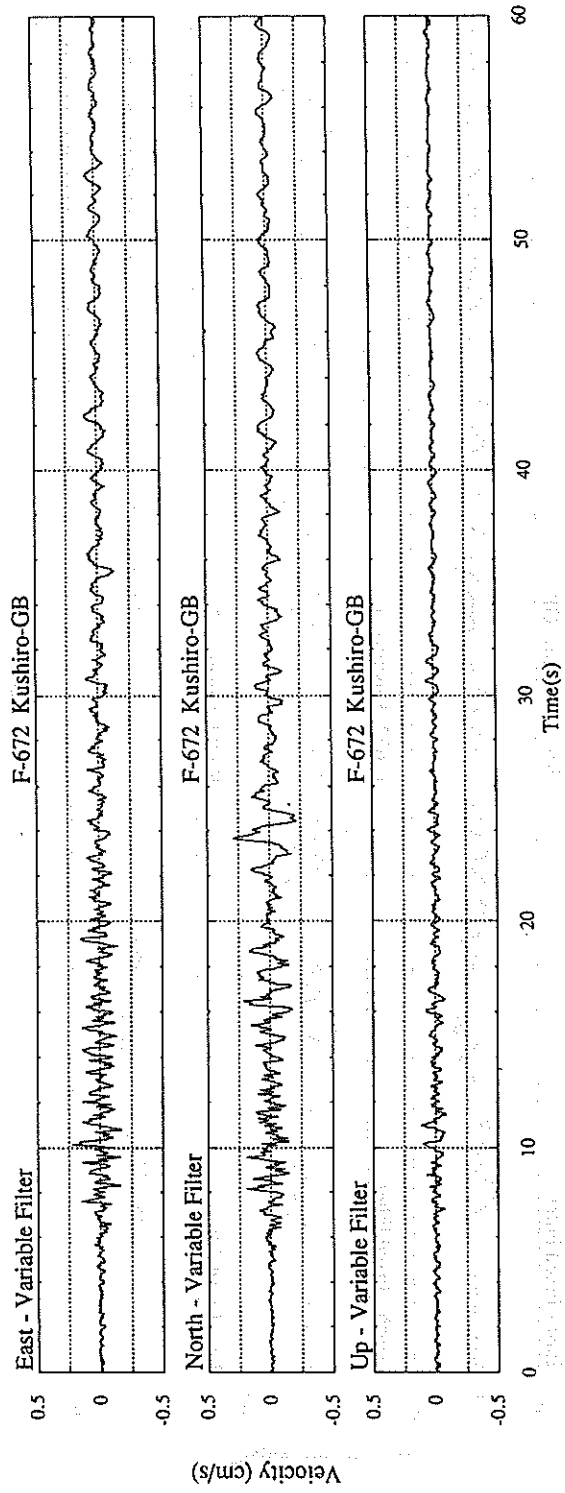
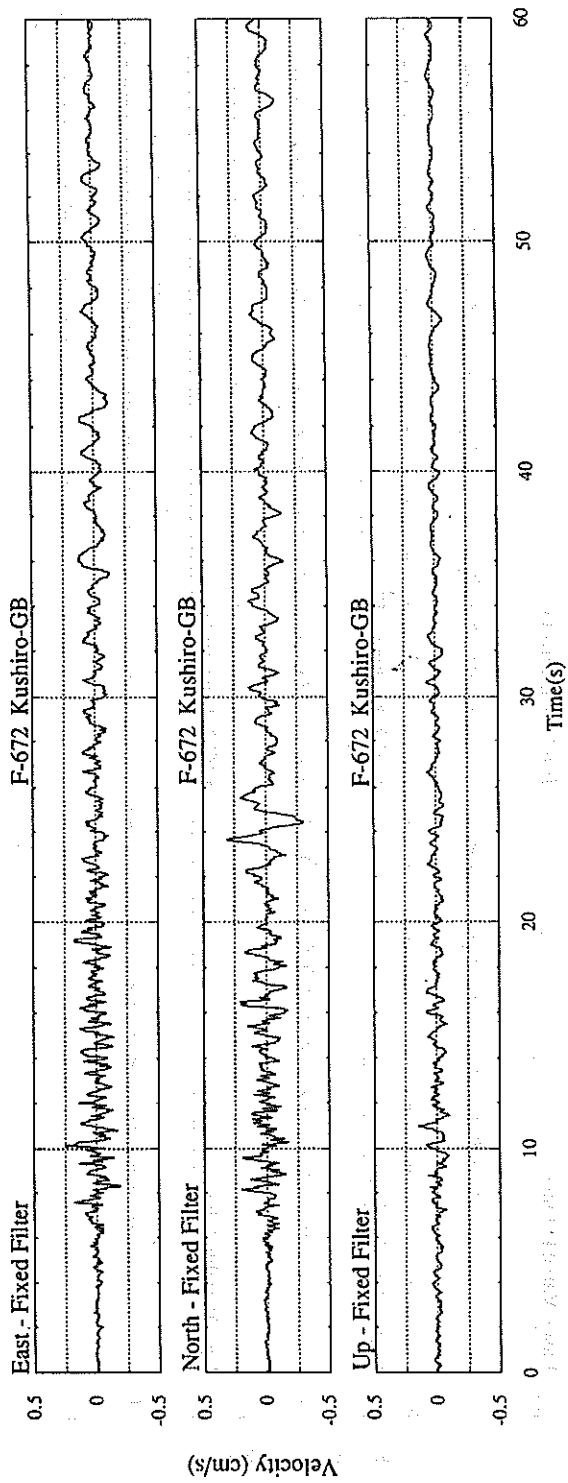
PEAK VALUES OF COMPONENTS

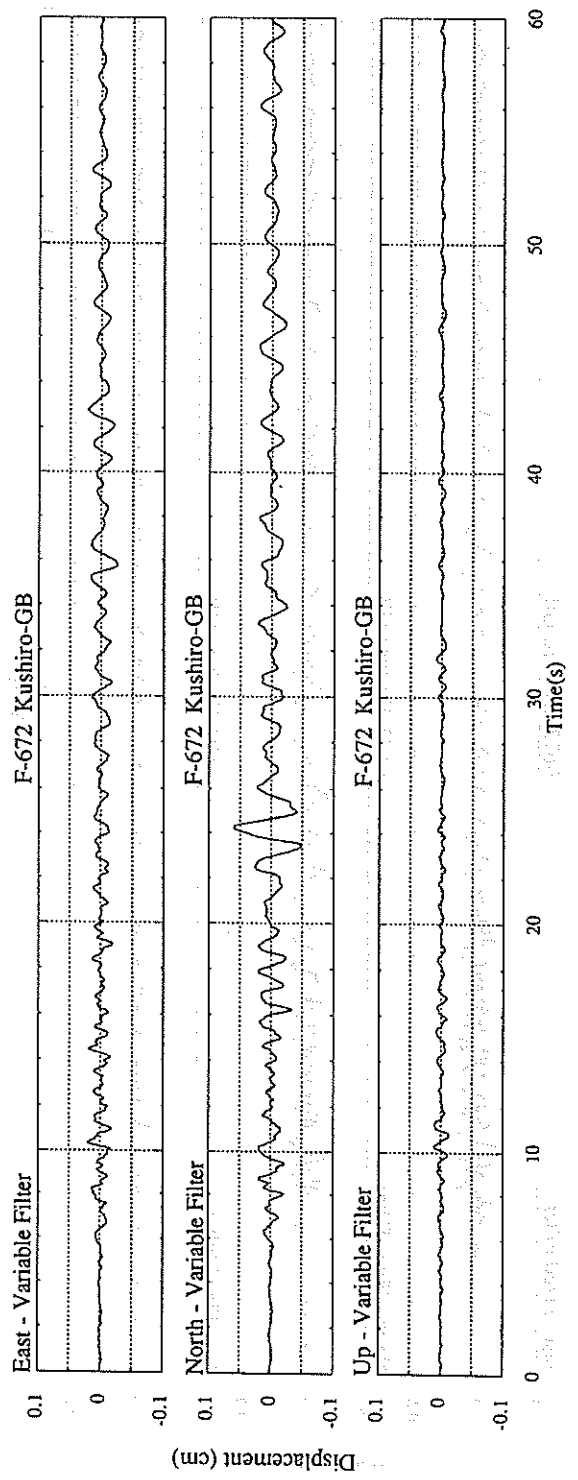
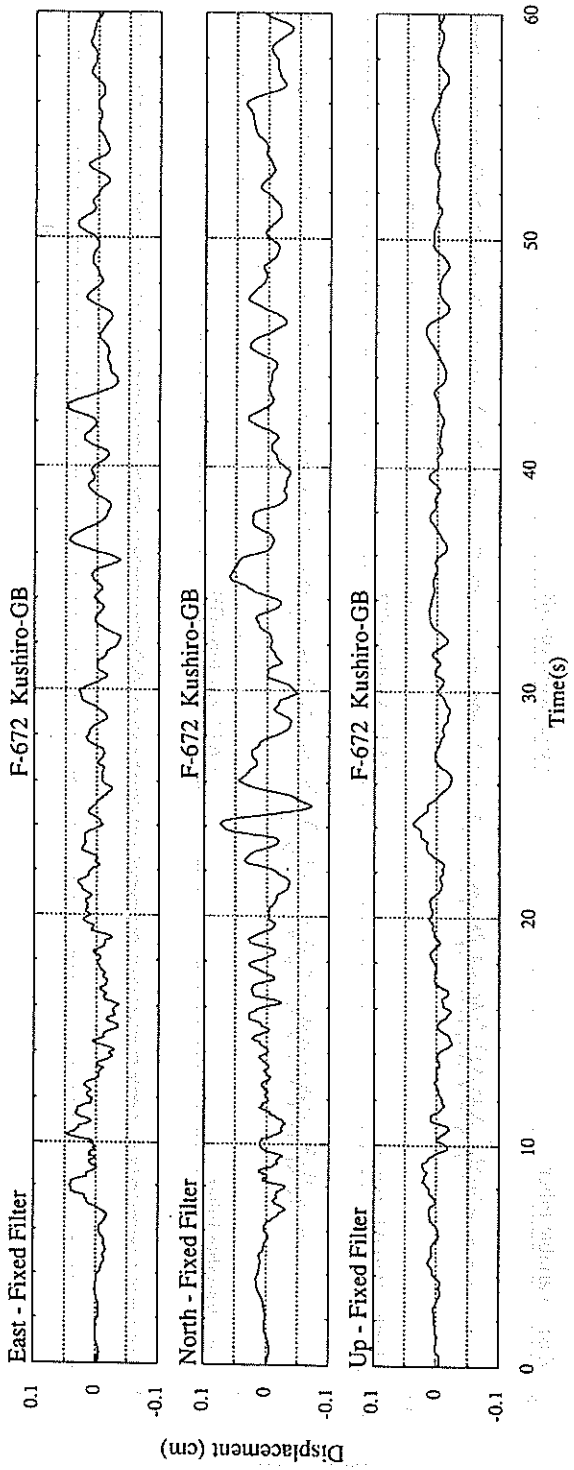
	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.335	0.402	0.573	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	2.7	3.2	1.1	3.3
ORIGINAL	3.8	4.3	1.6	4.7
CORRECTED	3.8	4.2	1.7	4.8
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	0.31	0.25	0.15	0.32
VARIABLE FILTER	0.29	0.22	0.12	0.29
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.07	0.05	0.04	0.07
VARIABLE FILTER	0.06	0.03	0.01	0.06

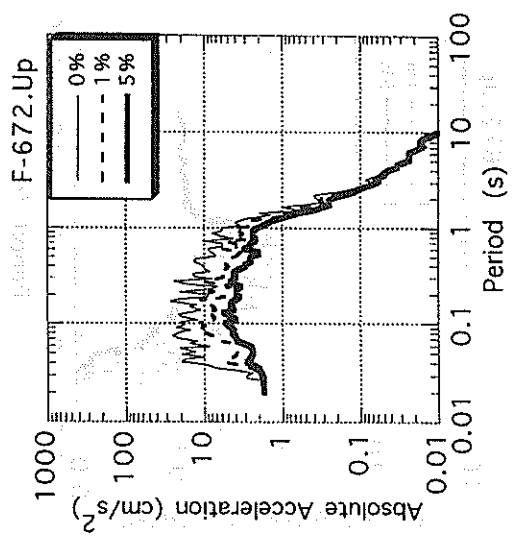
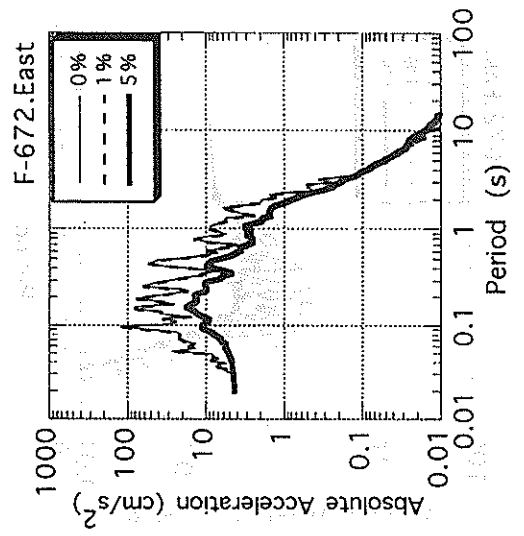
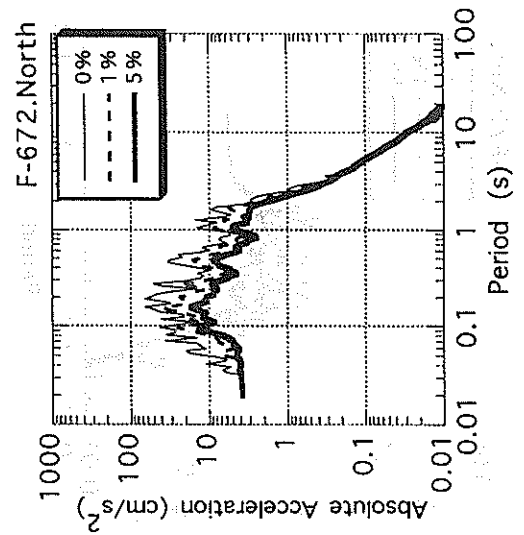
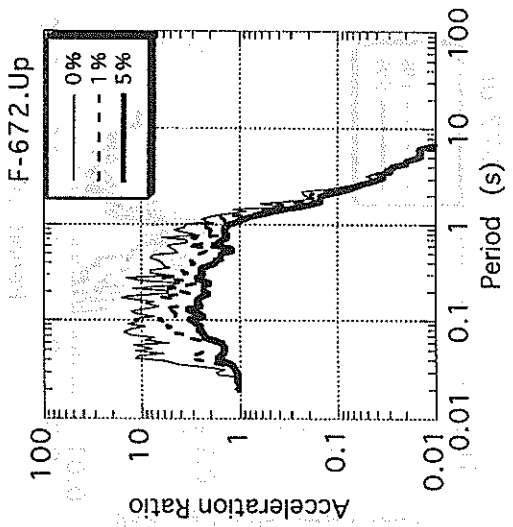
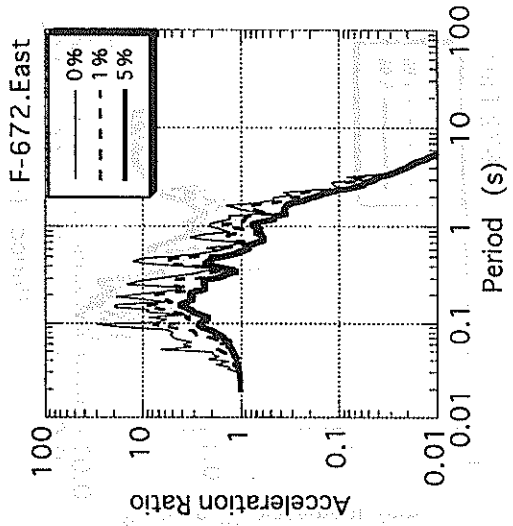
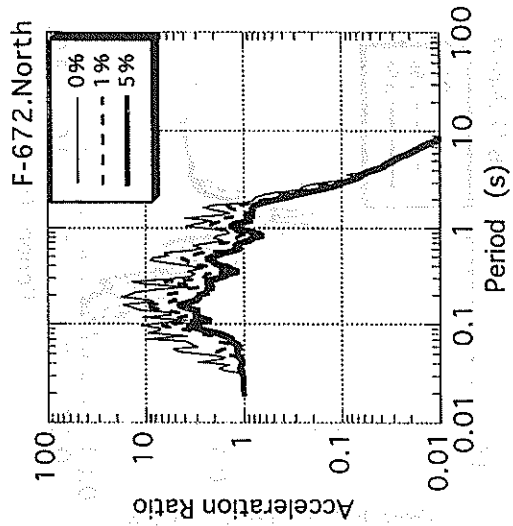
* RESULTANT OF HORIZONTAL COMPONENTS

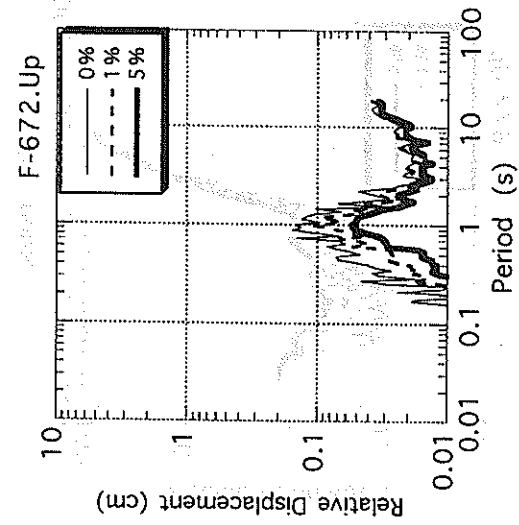
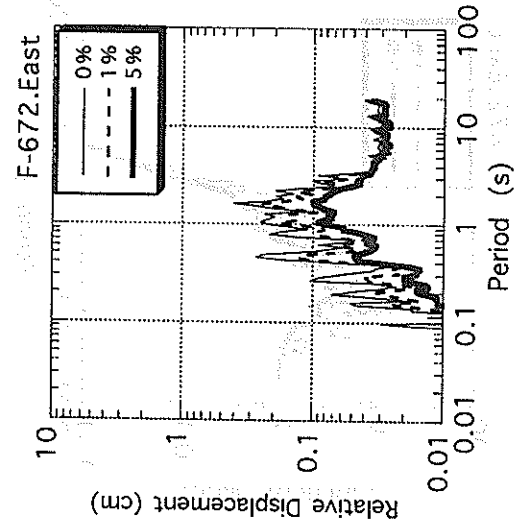
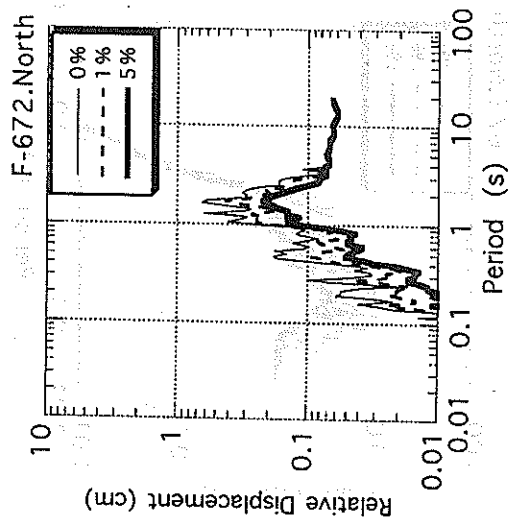
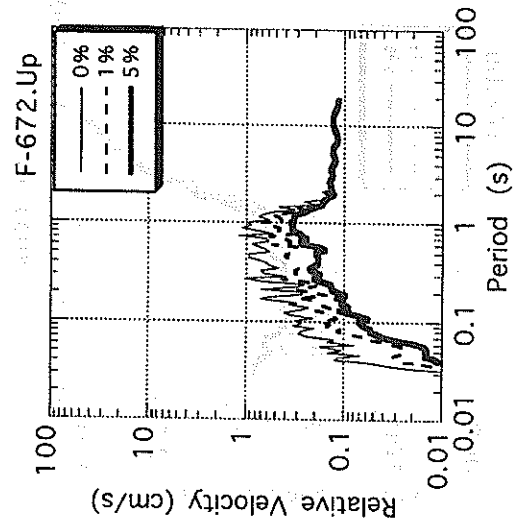
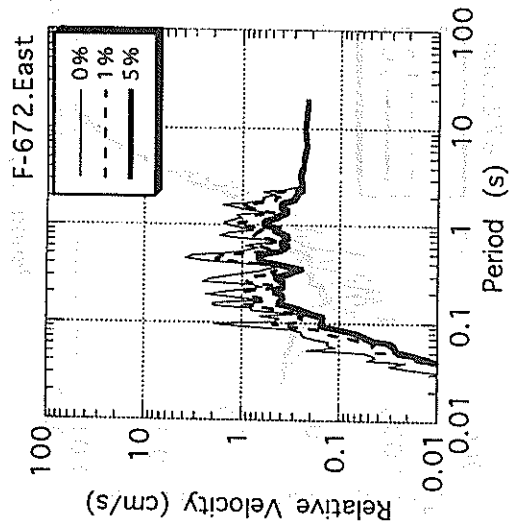
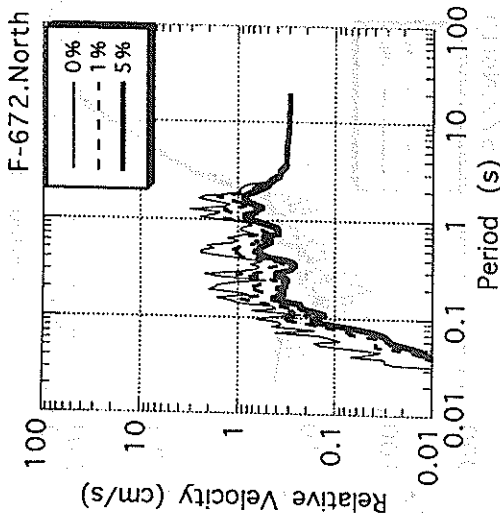


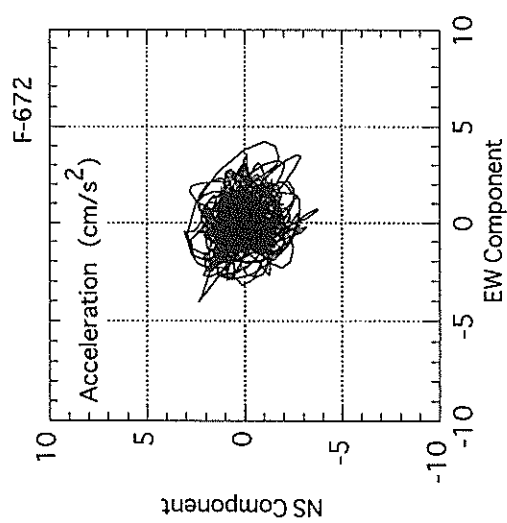
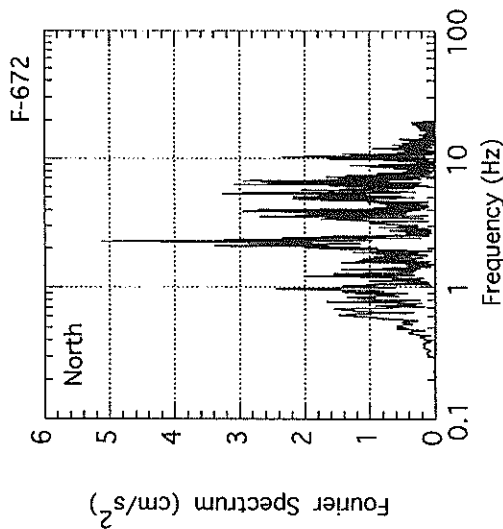
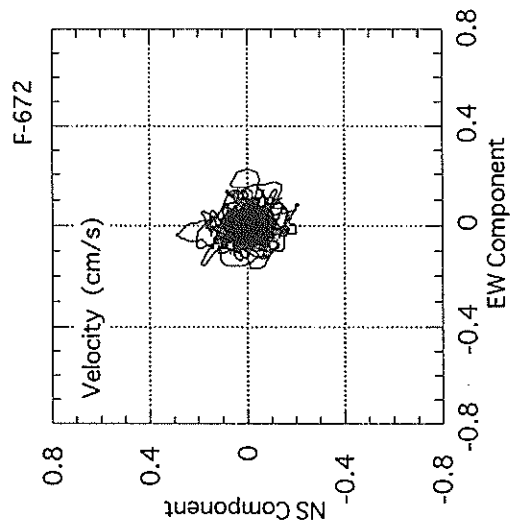
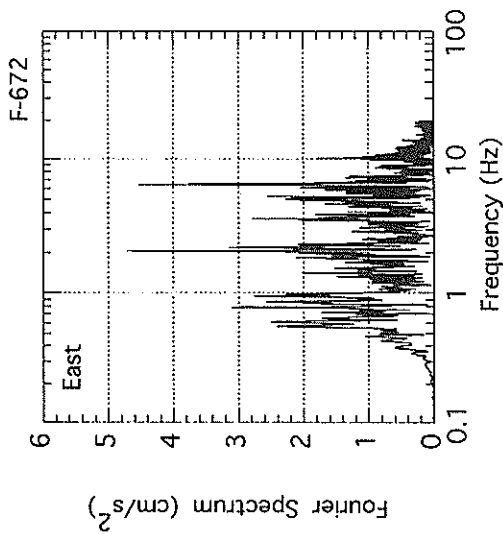
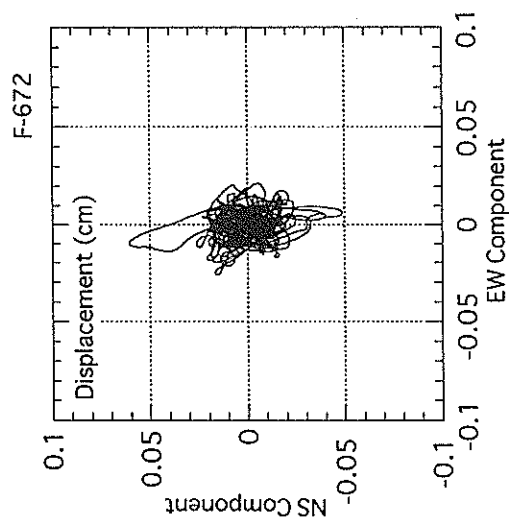
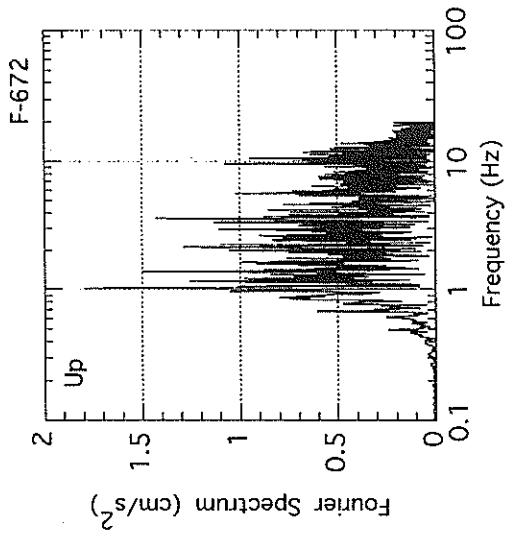












U.S. Geological Survey

Open-File Report 94-10

Earthquake Observations

1994

Strong-Motion Earthquake Observations

of the After Shock at 05:39:51, October 6, 1994

by

John R. Anderson, Robert W. Herrin, and

William H. Hodges

U.S. Geological Survey

Menlo Park, California

1994

U.S. Geological Survey

Strong-Motion Earthquake Observation Results of the After Shock at 05:39:51, October 6, 1994

Station	Latitude	Longitude	Depth	Distance	Direction	Component	Amplitude
024	37.7	-122.5	10	100	N	EW	0.001
025	37.7	-122.5	10	100	N	NS	0.001
026	37.7	-122.5	10	100	N	EW	0.001
027	37.7	-122.5	10	100	N	NS	0.001
028	37.7	-122.5	10	100	N	EW	0.001
029	37.7	-122.5	10	100	N	NS	0.001

STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

05:39 OCT. 6, 1994

E OFF HOKKAIDO

EPICENTER : 43°40.9'N 147°10.2'E

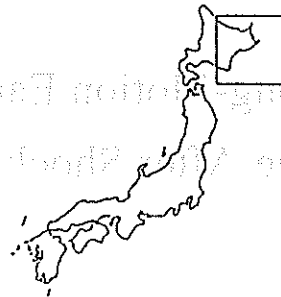
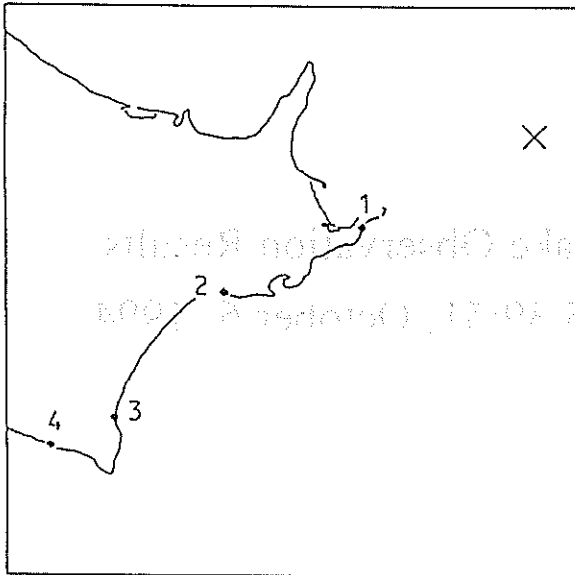
DEPTH : 30.0KM MAGNITUDE : 6.2

JMA INTENSITIES

III : KUSHIRO, NEMURO

II : OBIHIRO, URAKAWA, HIROO, TOMAKOMAI

I : ABASHIRI, SAPPORO, OTARU, IWAMIZAWA, KUTCHAN, MORI, HAKODATE, MORIOKA, HACHINOHE, MUTSU, OFUNATO, ISHINOMAKI, AOMORI



	STATION	CONDITION	RECORD NUMBER	MAX. ACC. (GAL)			DIST. (KM)
				(NS)	(EW)	(UD)	
1	HANASAKI-F	ON GROUND	F- 773	14	13	9	135
2	KUSHIRO-G	ON GROUND	F- 675	13	17	4	239
2	KUSHIRO-GB	IN GROUND	F- 674	4	5	2	239
3	TOKACHI-M	ON GROUND	M-1527	6	4	2	348
4	URAKAWA-S	ON GROUND	S-2590	3	3	1	395

11-11-94

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11-11-94

Results of Preliminary Analyses of the After Shock

at 05:39:51, October 6, 1994

11-11-94

11-11-94

11-11-94

11-11-94

11-11-94

11-11-94

11-11-94

11-11-94	11-11-94	11-11-94	11-11-94
11-11-94	11-11-94	11-11-94	11-11-94
11-11-94	11-11-94	11-11-94	11-11-94

11-11-94

11-11-94

11-11-94

11-11-94	11-11-94	11-11-94	11-11-94
11-11-94	11-11-94	11-11-94	11-11-94

11-11-94

11-11-94

11-11-94

11-11-94	11-11-94	11-11-94	11-11-94
11-11-94	11-11-94	11-11-94	11-11-94

11-11-94

RECORD NUMBER : F-773
 STATION : HANASAKI-F

EARTHQUAKE DATA

 DATE AND TIME 5:39 OCT. 6,1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 40.9' N
 LONGITUDE 147° 10.2' E
 DEPTH 30.0KM
 JMA MAGNITUDE 6.2

PEAK VALUES OF COMPONENTS

 N S E W U D HORIZONTAL*

PARAMETER OF THE VARIABLE FILTER

 FC (HZ) 0.494 0.518 0.604

MAXIMUM ACCELERATION (GAL)

 SMAC-B2 EQUIVALENT 8.9 8.2 5.0 9.0
 ORIGINAL 14.2 12.5 8.7 14.3
 CORRECTED 14.6 12.7 8.9 14.7

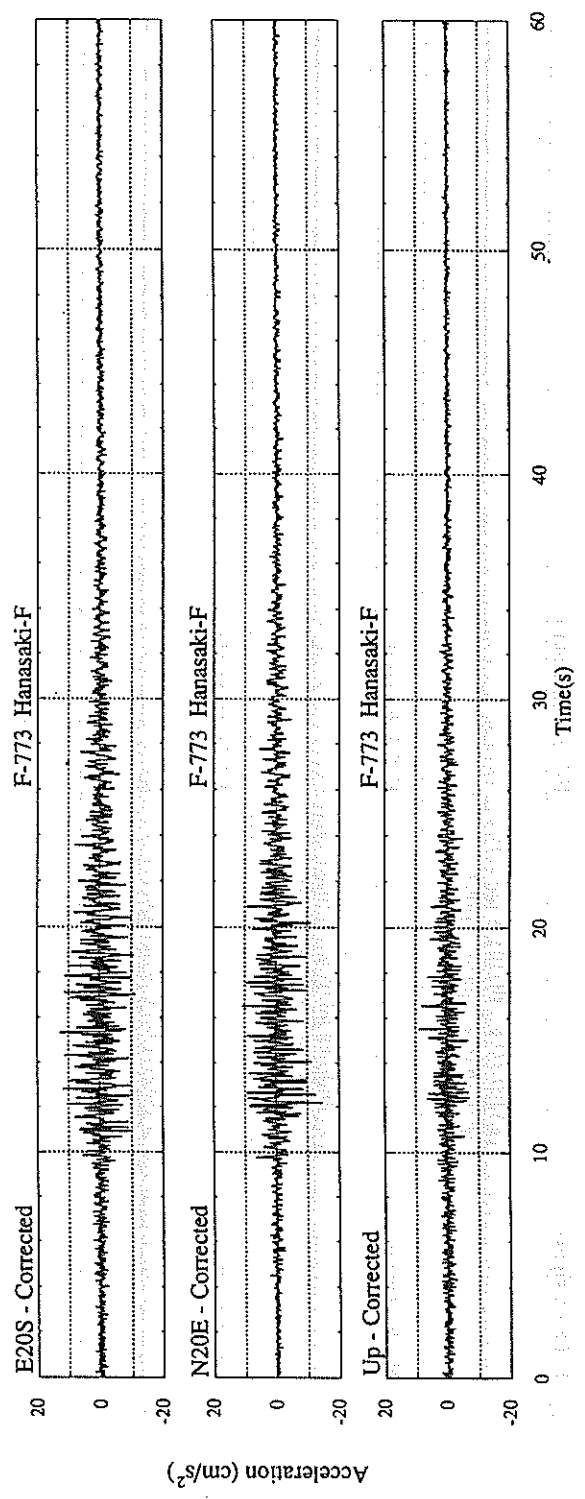
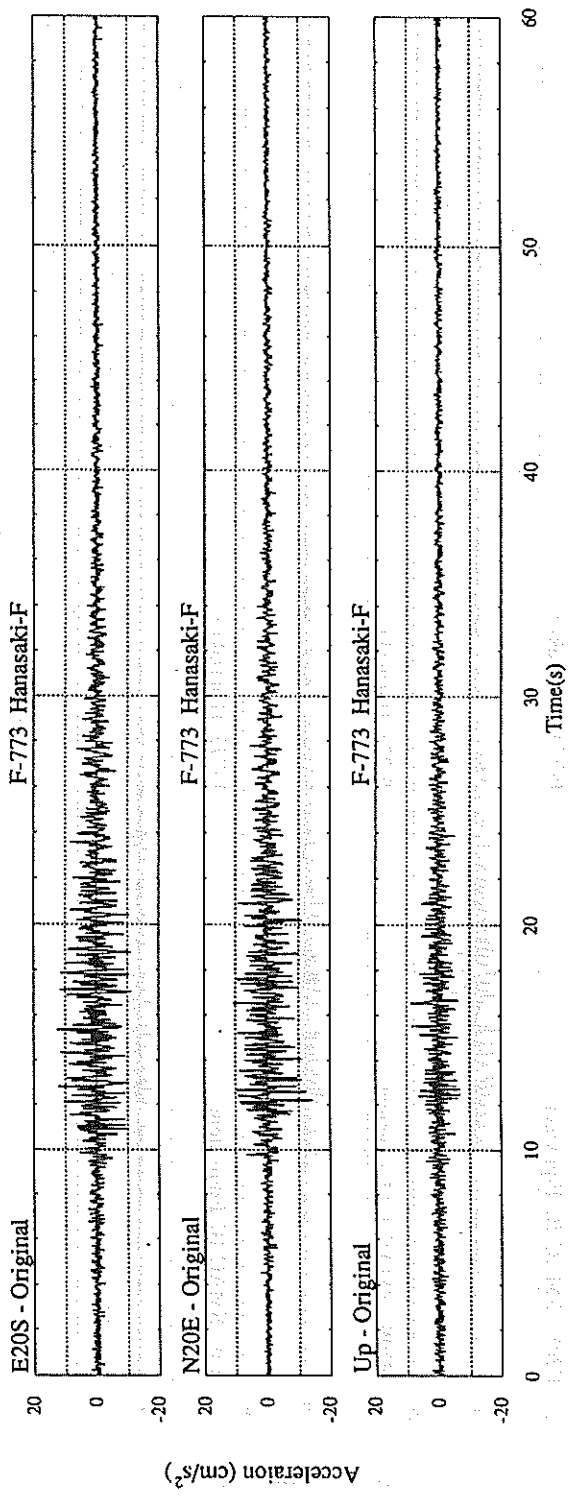
MAXIMUM VELOCITY (CM/SEC)

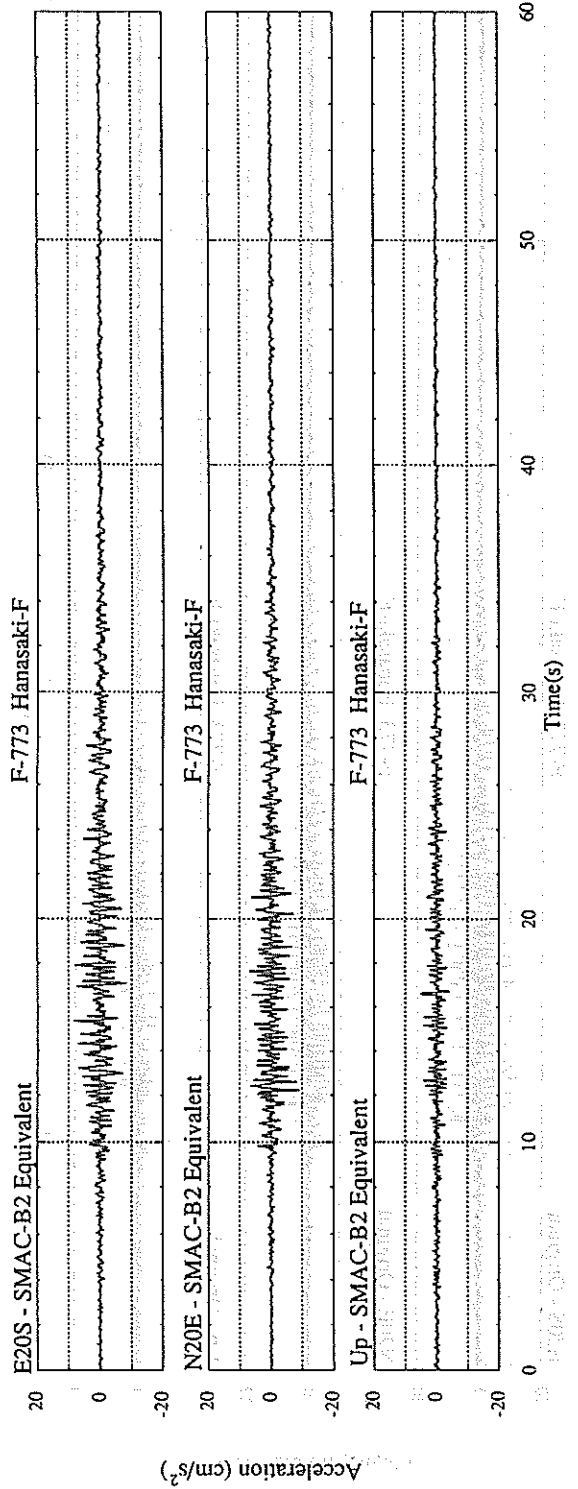
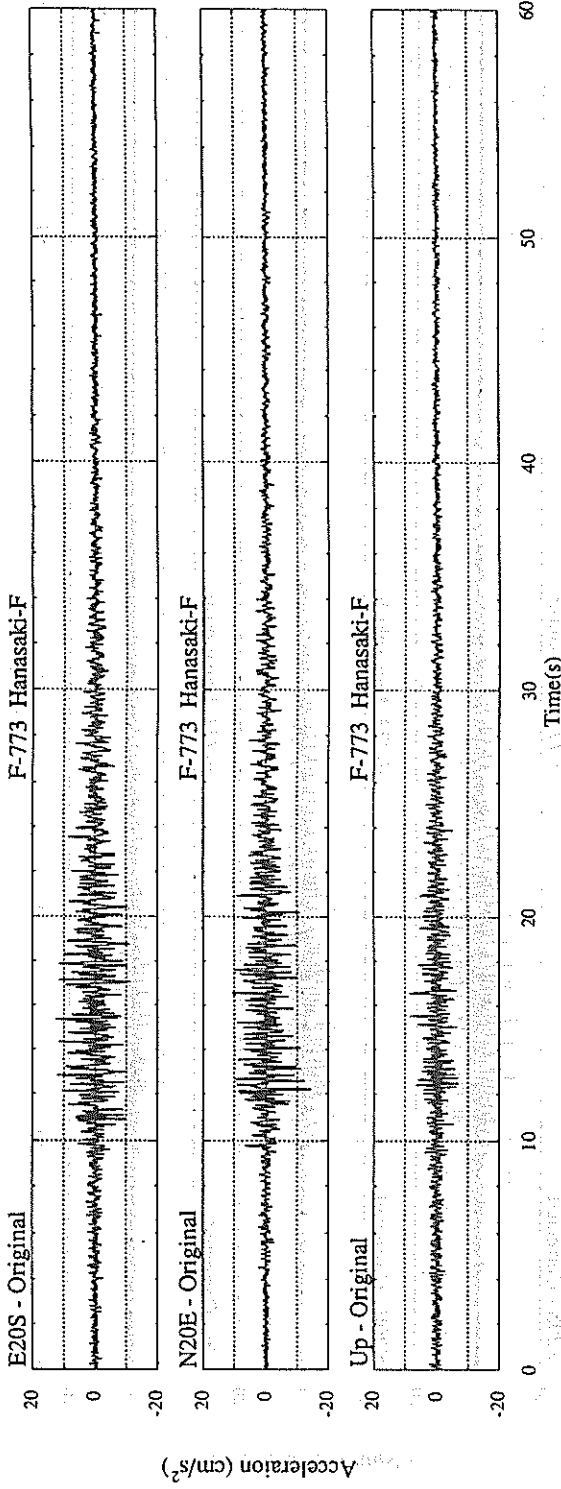
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 VARIABLE FILTER 0.47 0.58 0.34 0.71

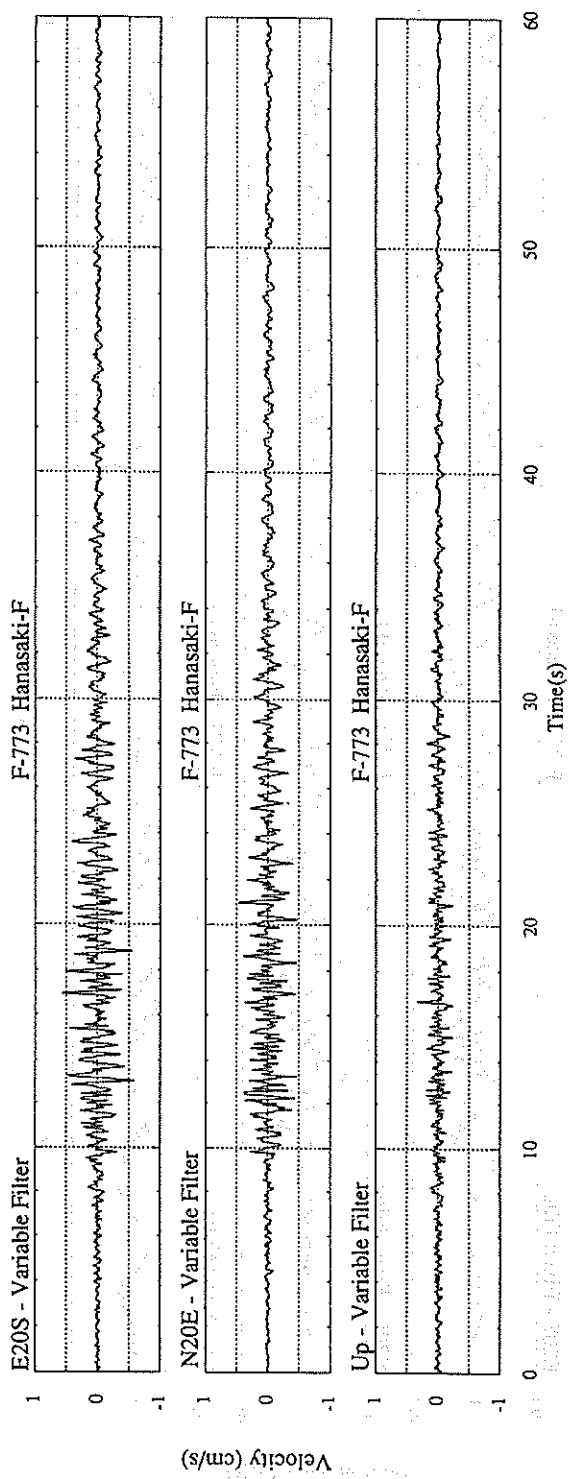
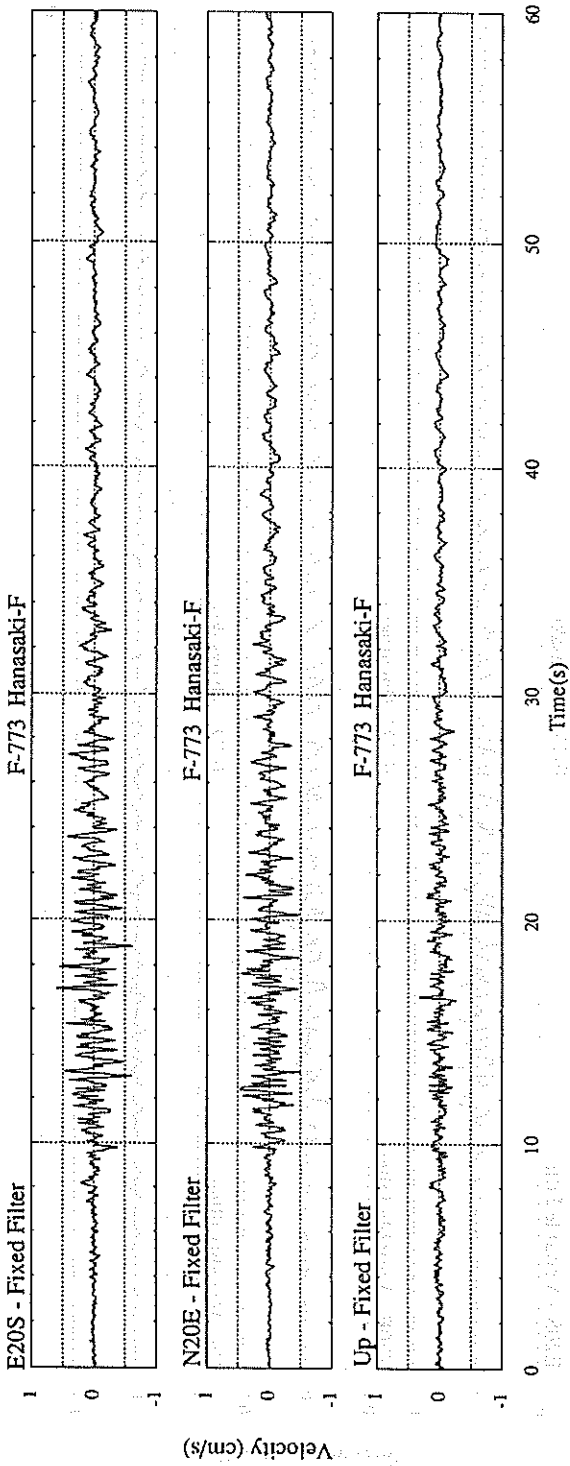
MAXIMUM DISPLACEMENT (CM)

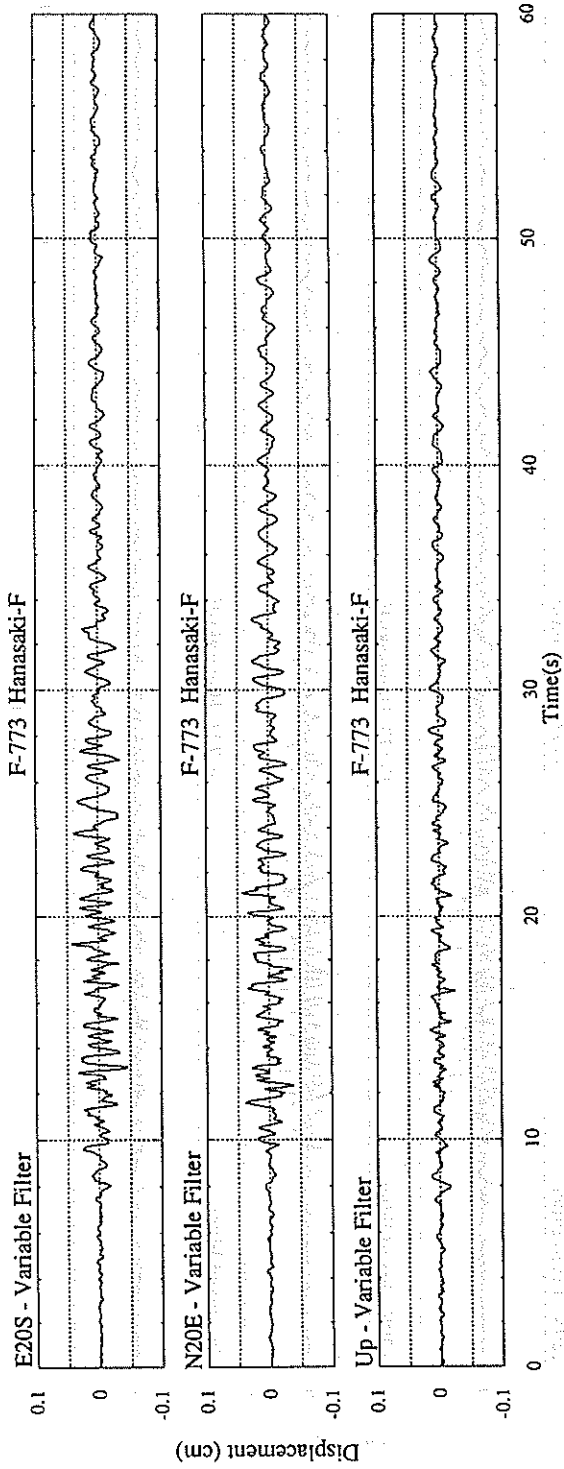
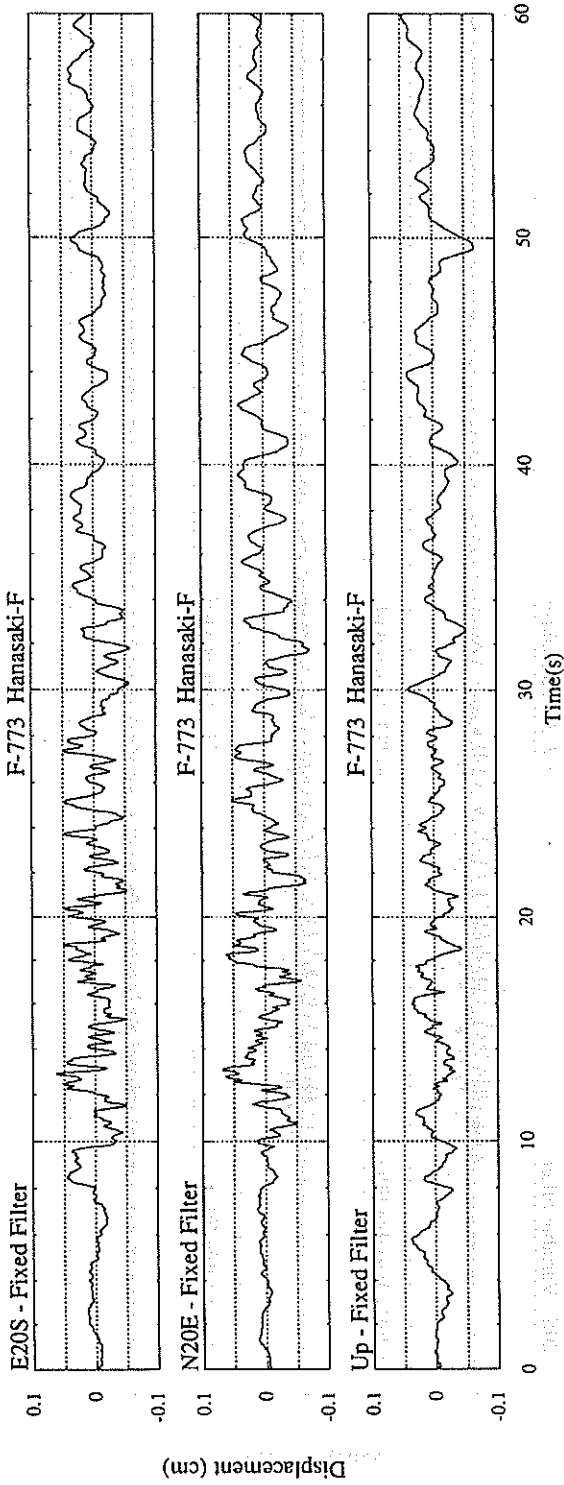
 FIXED FILTER 0.07 0.06 0.07 0.09
 VARIABLE FILTER 0.04 0.05 0.02 0.05

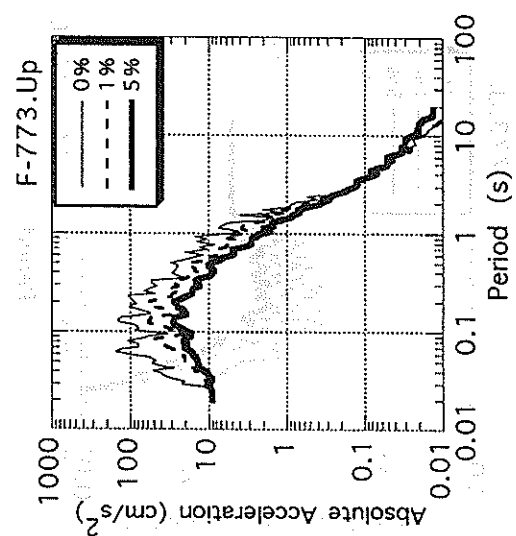
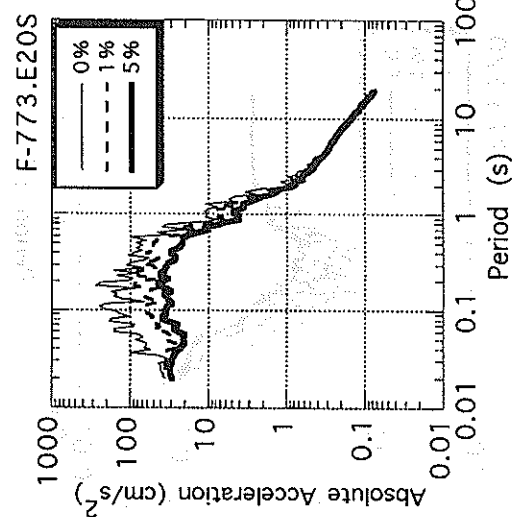
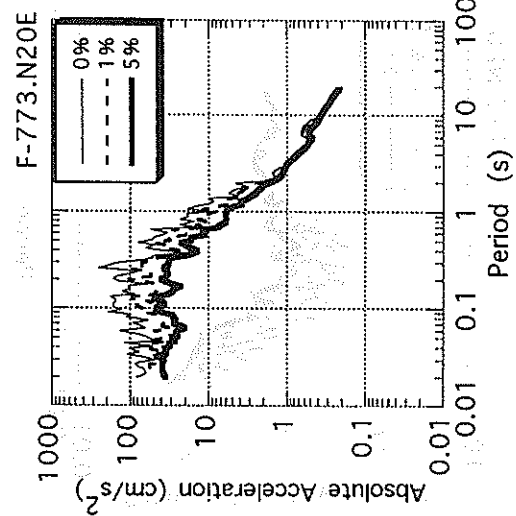
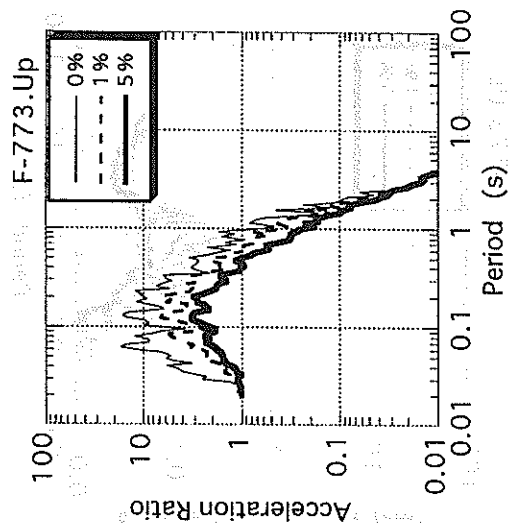
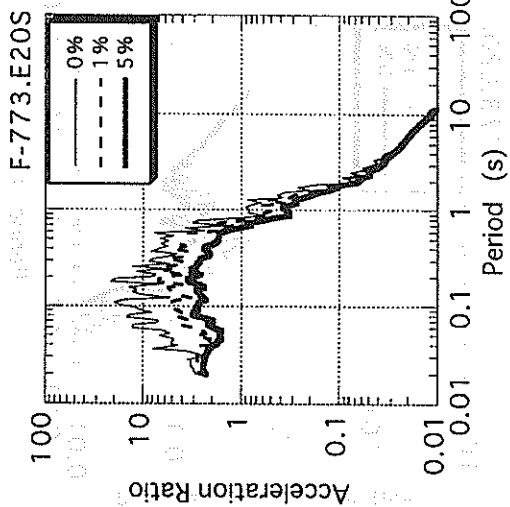
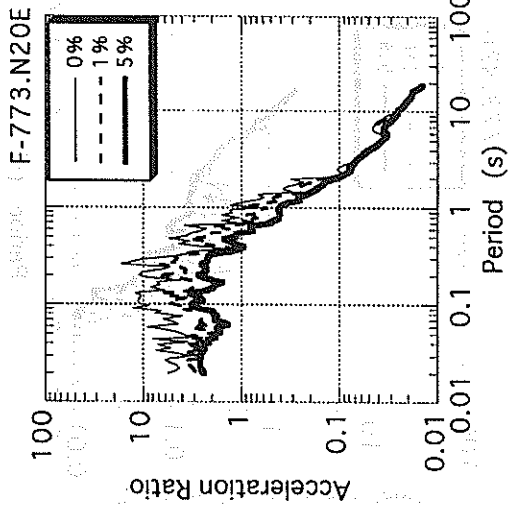
* RESULTANT OF HORIZONTAL COMPONENTS

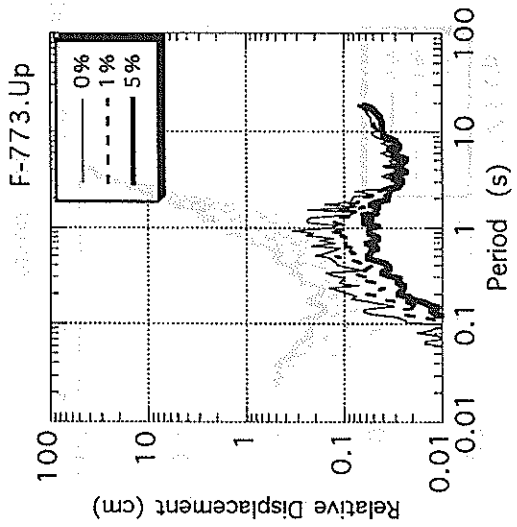
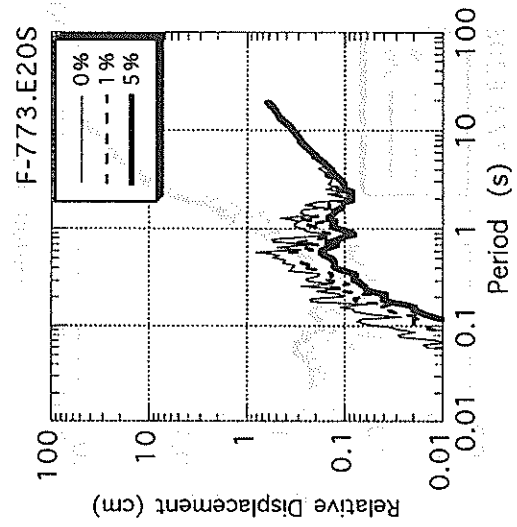
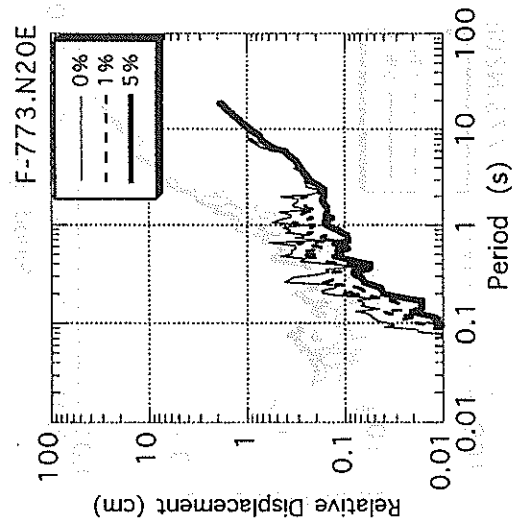
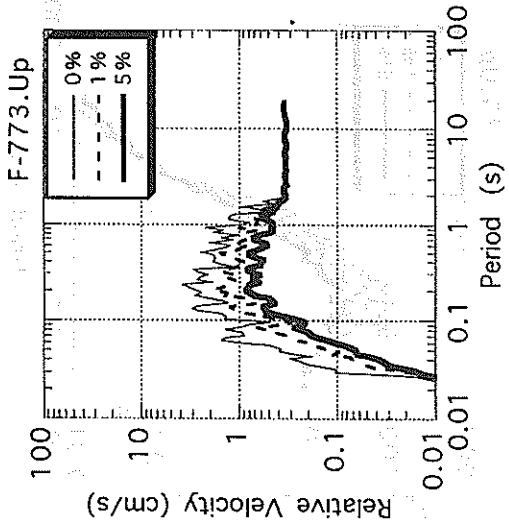
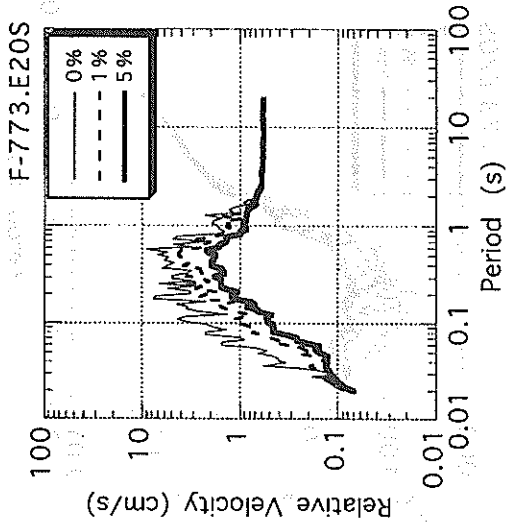
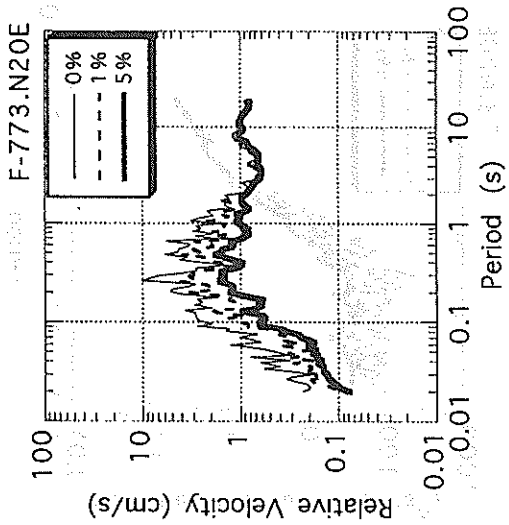


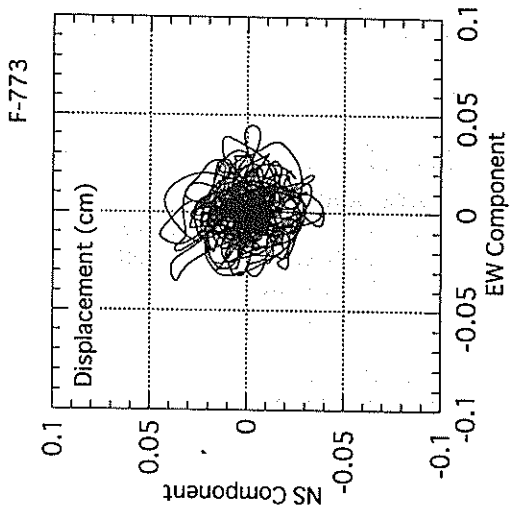
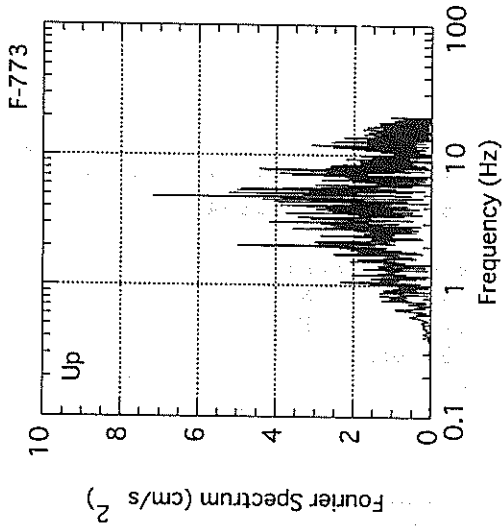
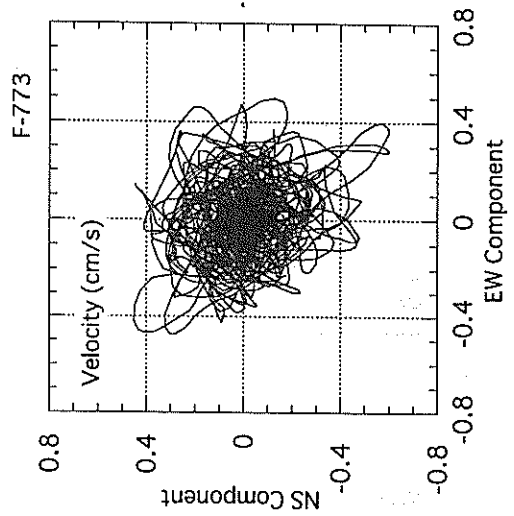
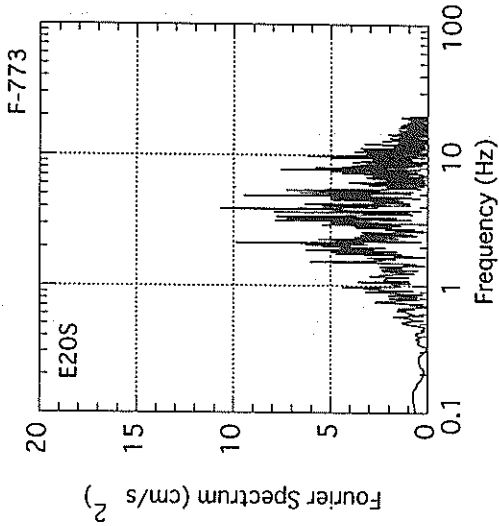
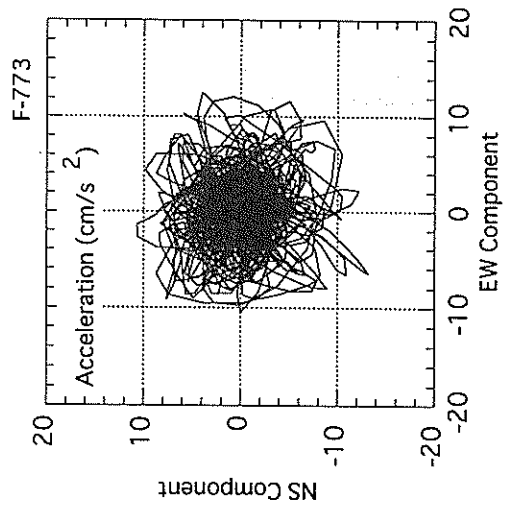
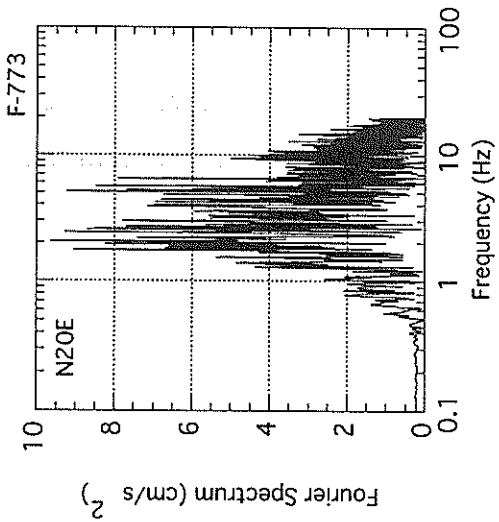












RECORD NUMBER : F-675
 STATION : KUSHIRO-G

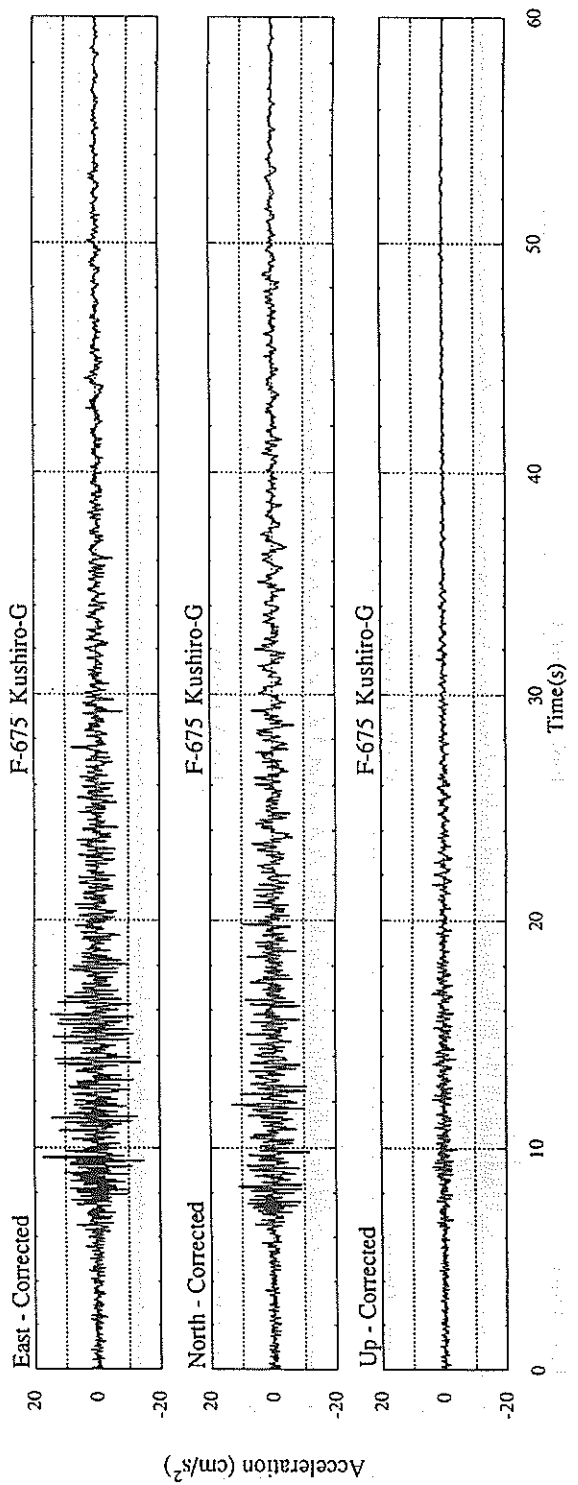
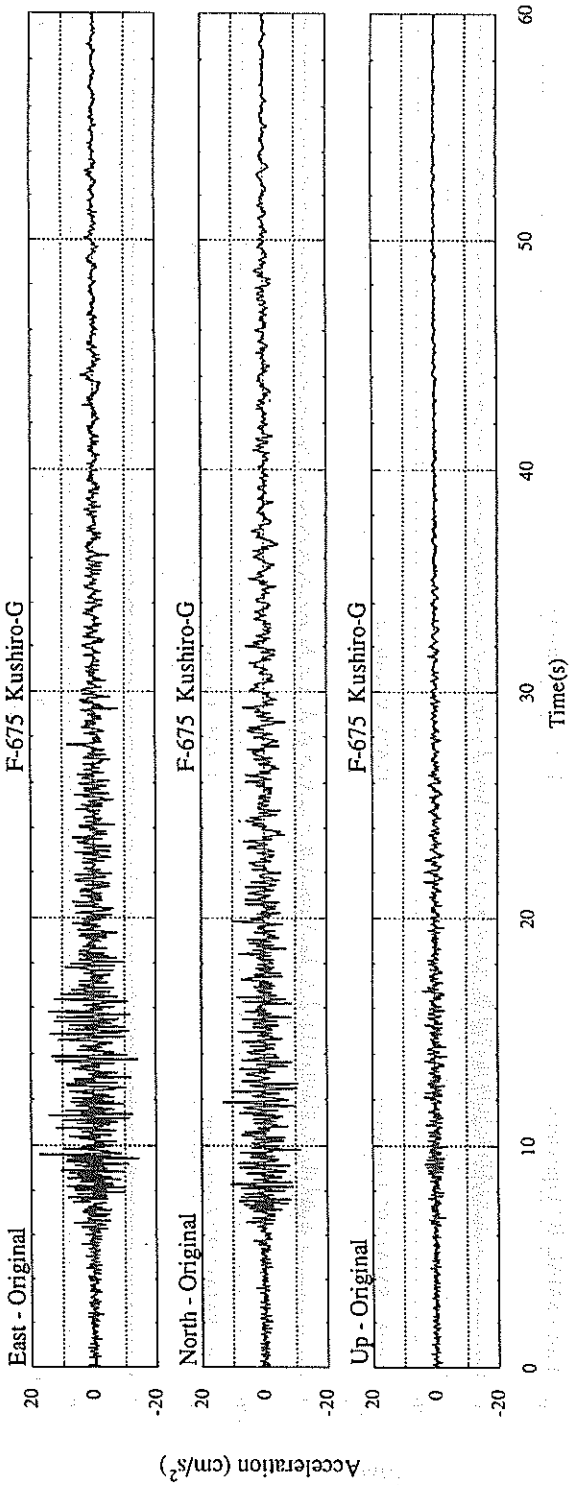
EARTHQUAKE DATA

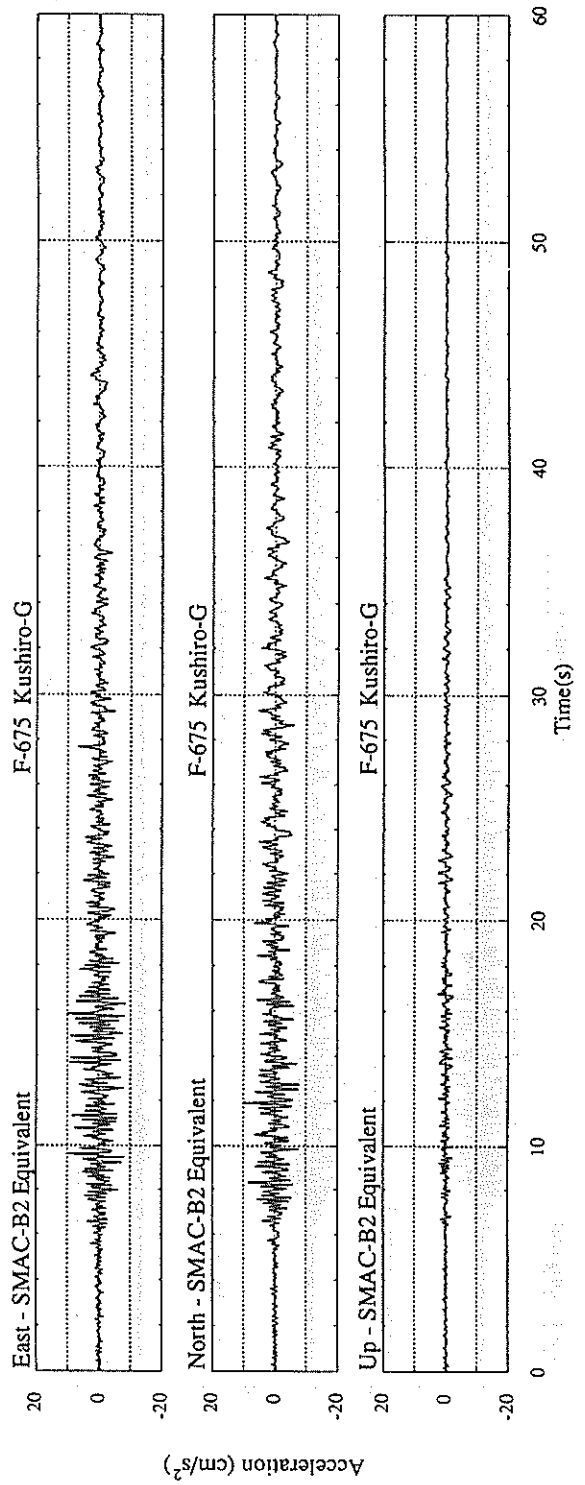
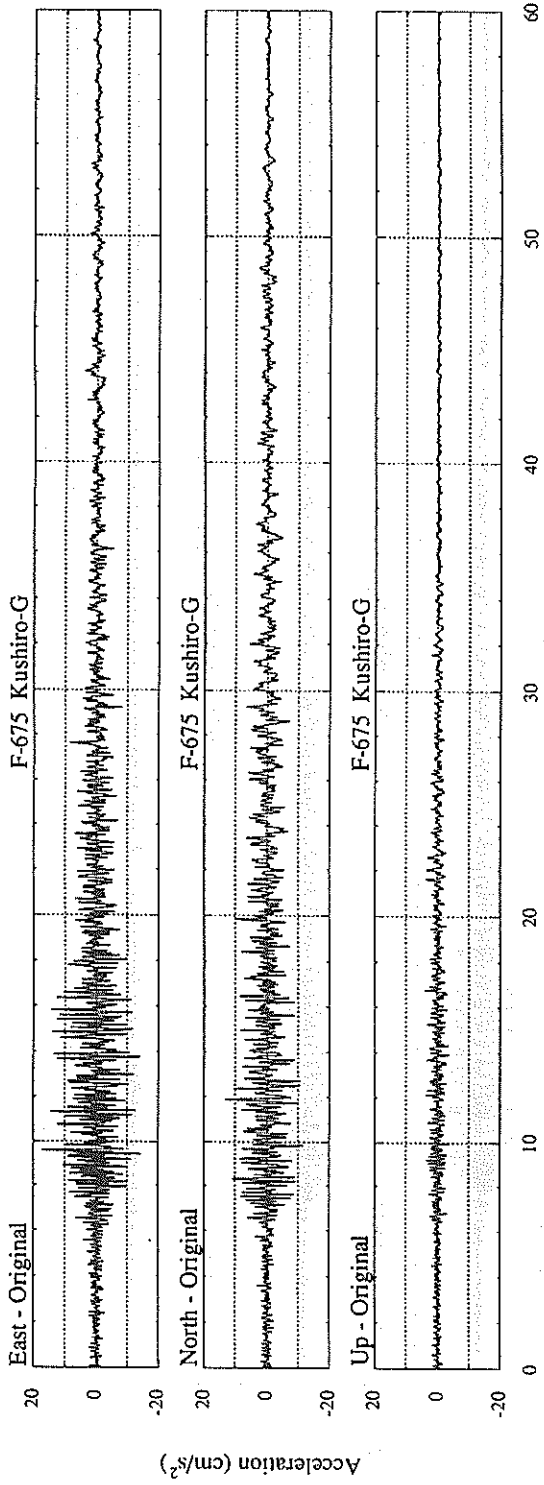
 DATE AND TIME 5:39 OCT. 6, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 40.9' N
 LONGITUDE 147° 10.2' E
 DEPTH 30.0KM
 JMA MAGNITUDE 6.2

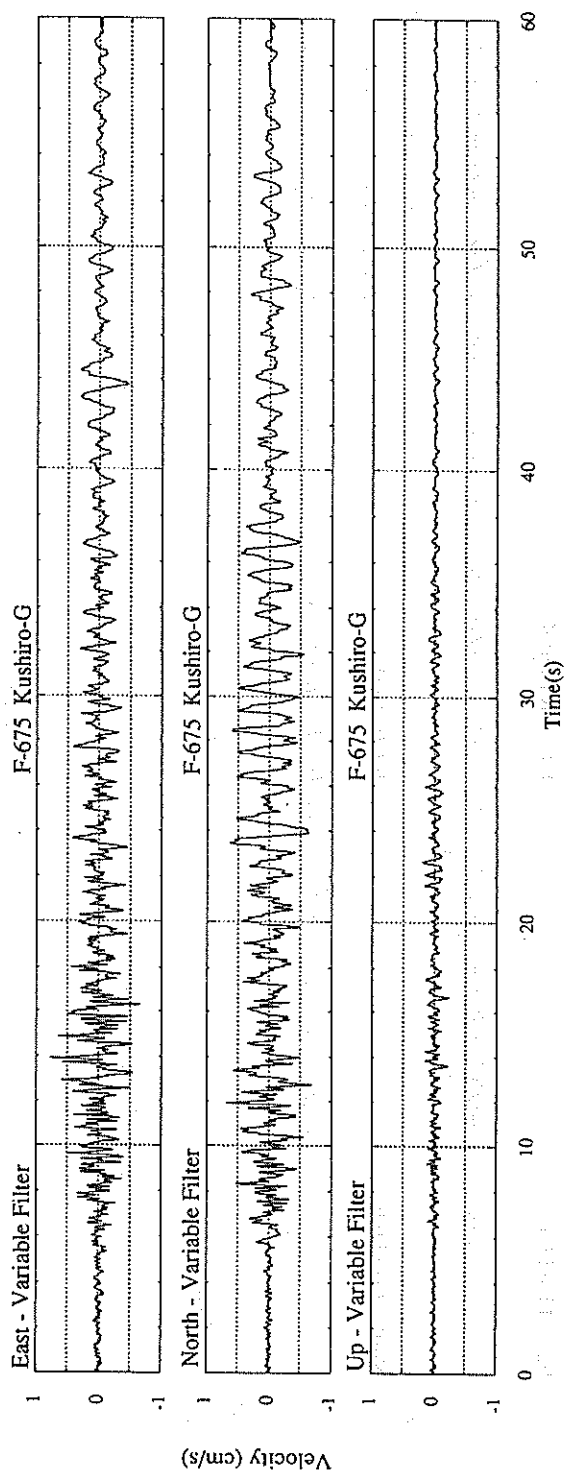
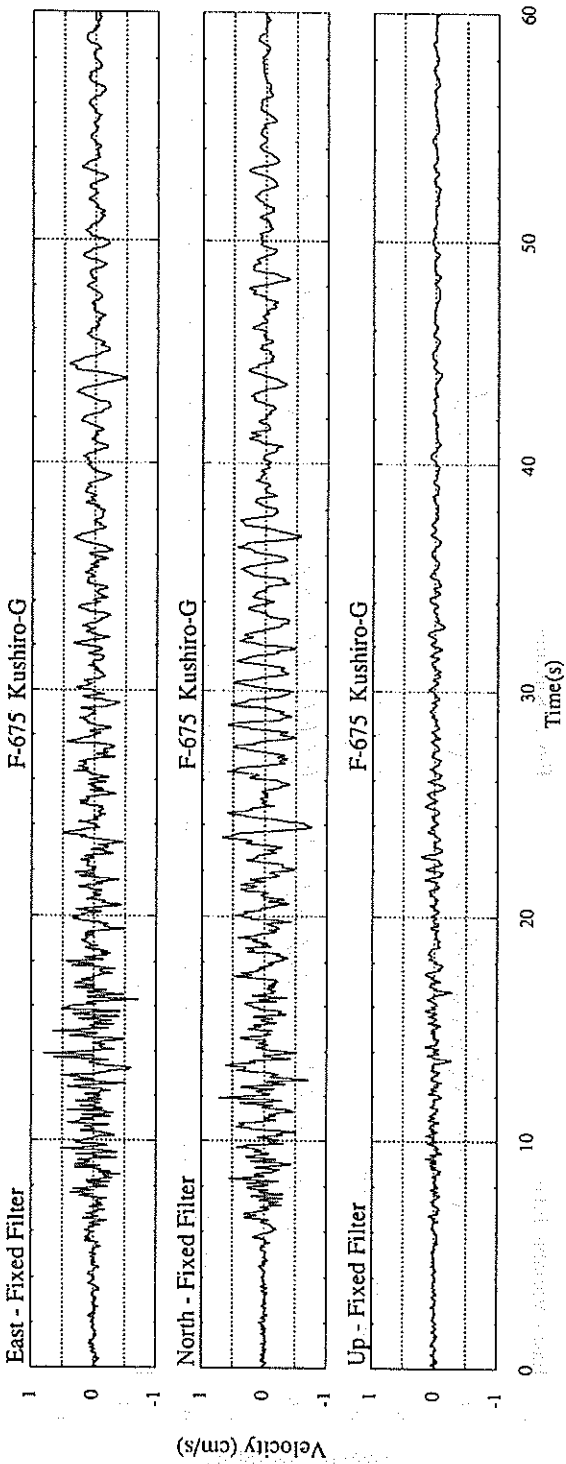
PEAK VALUES OF COMPONENTS

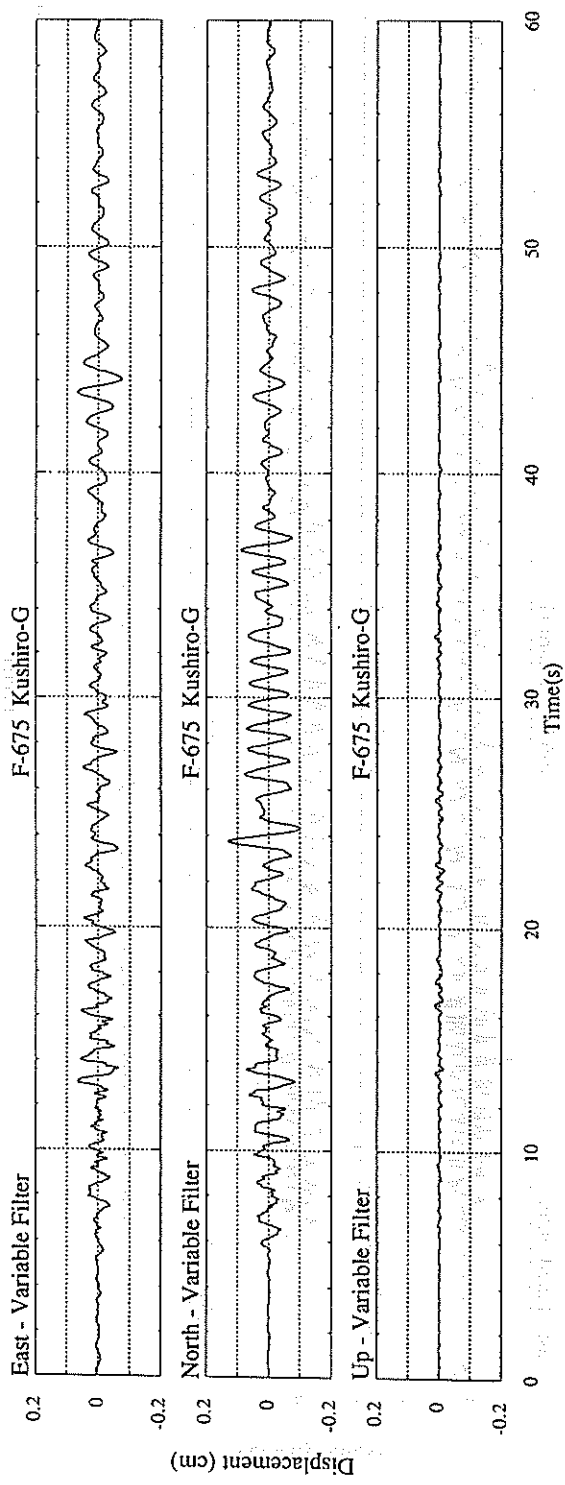
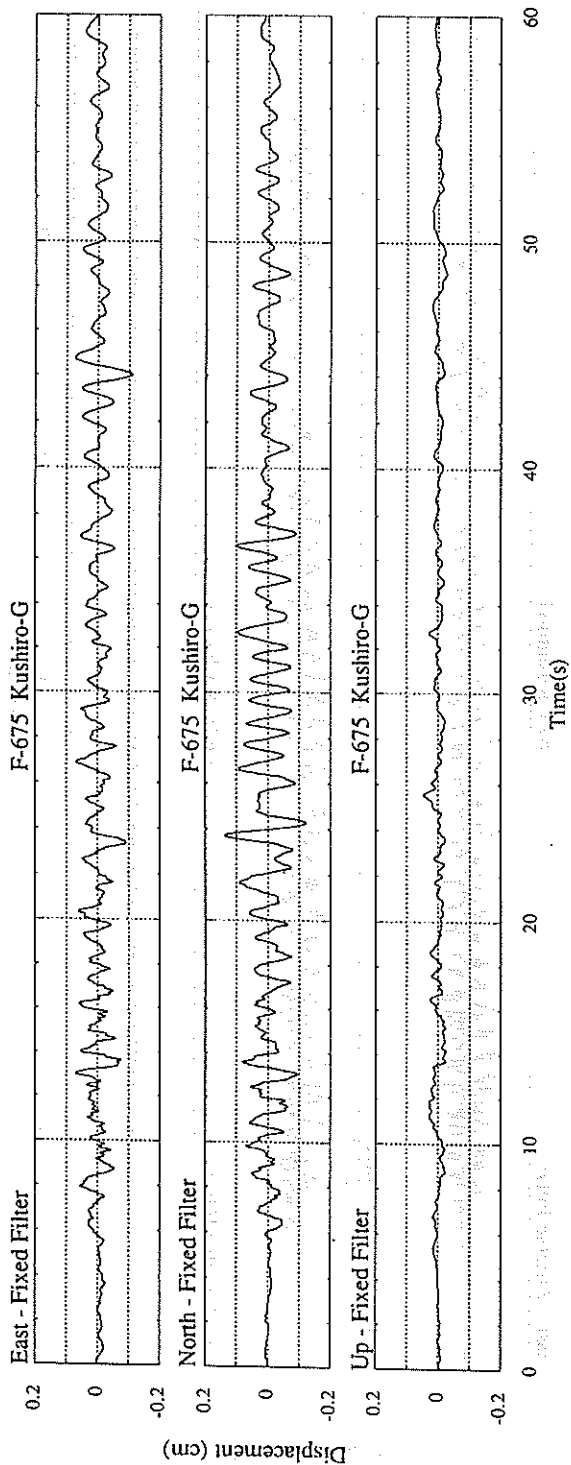
	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.420	0.445	0.787	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	10.3	10.2	2.6	10.6
ORIGINAL	13.2	17.4	4.0	17.4
CORRECTED	13.2	17.5	4.0	17.6
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	0.76	0.80	0.28	0.86
VARIABLE FILTER	0.69	0.78	0.23	0.84
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.14	0.11	0.05	0.14
VARIABLE FILTER	0.13	0.08	0.02	0.13

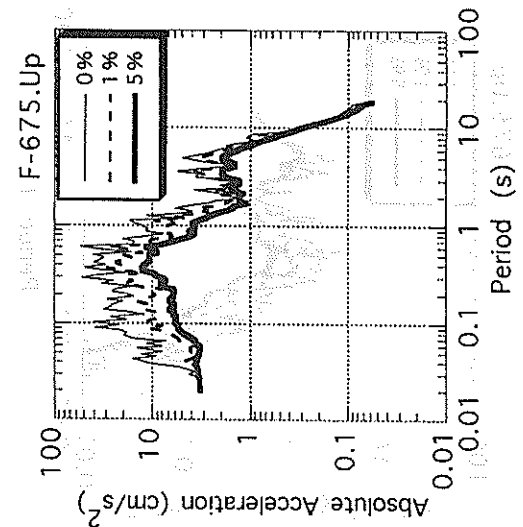
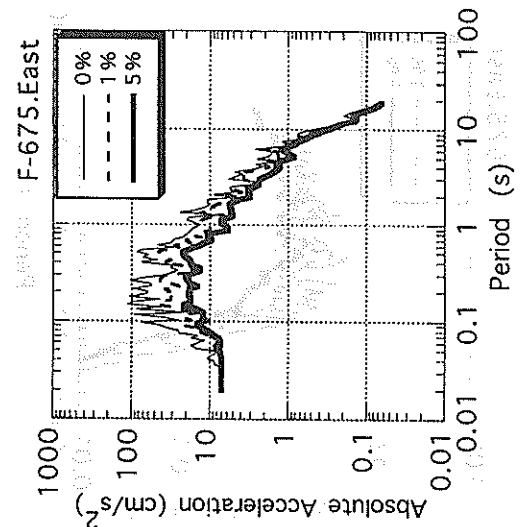
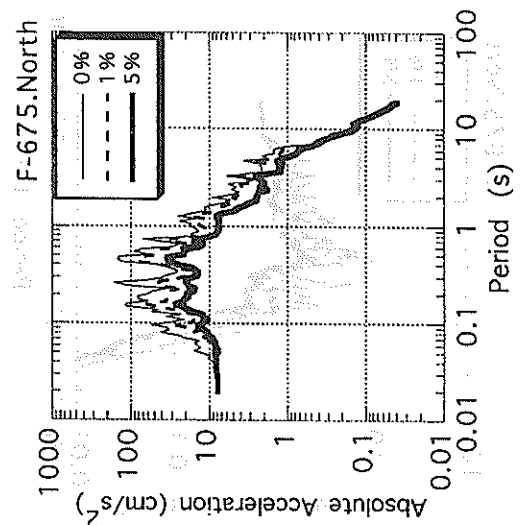
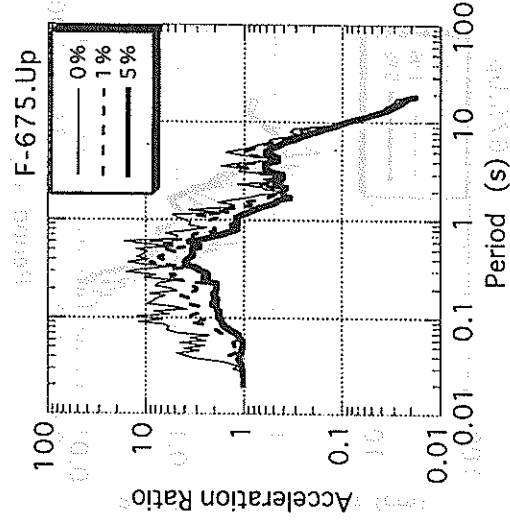
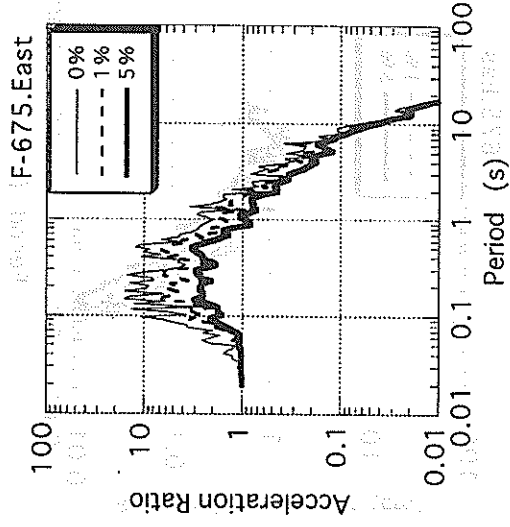
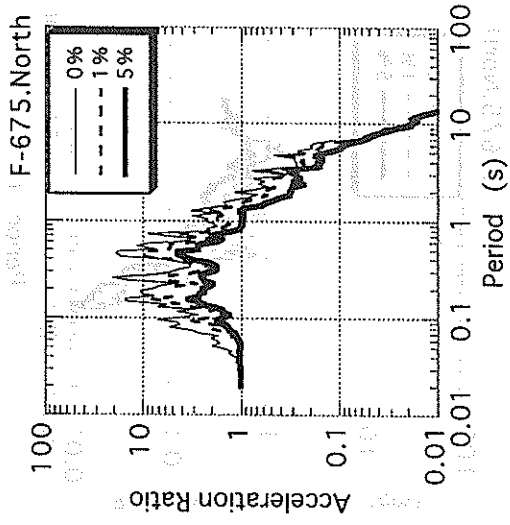
* RESULTANT OF HORIZONTAL COMPONENTS

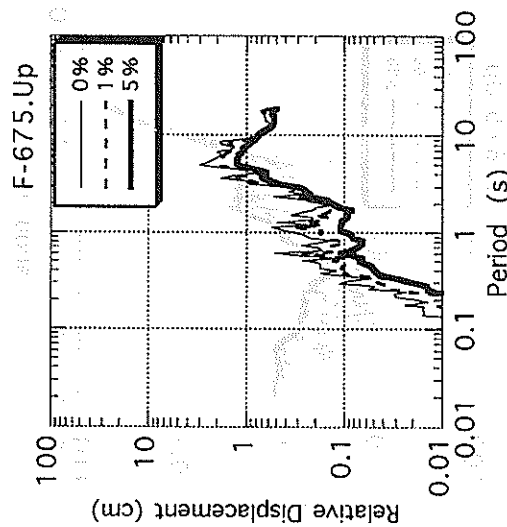
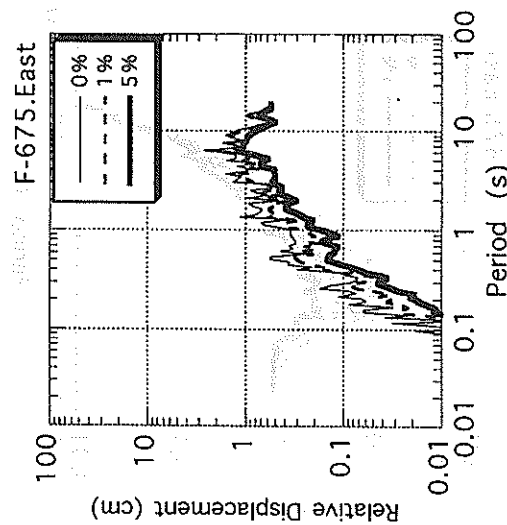
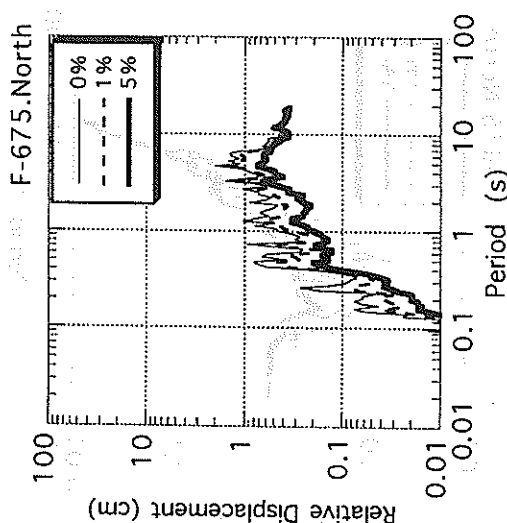
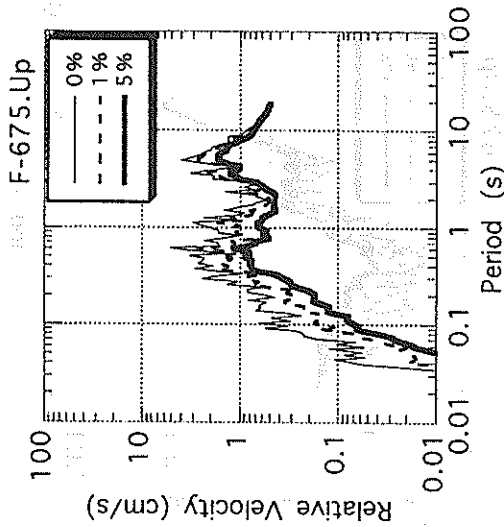
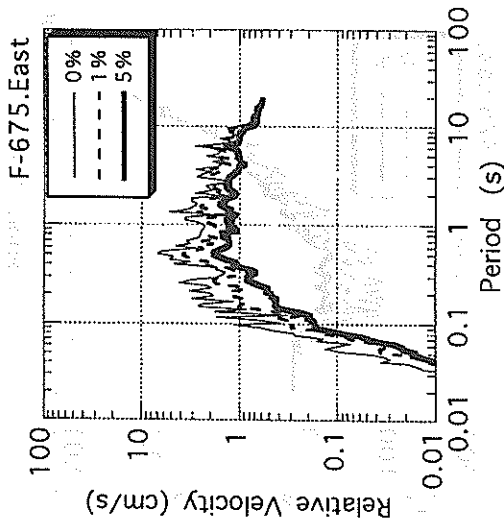
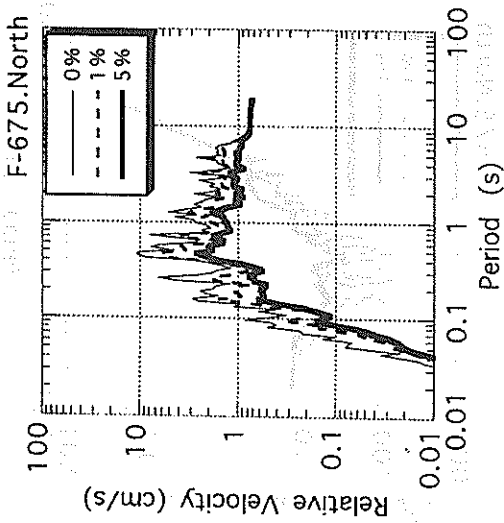


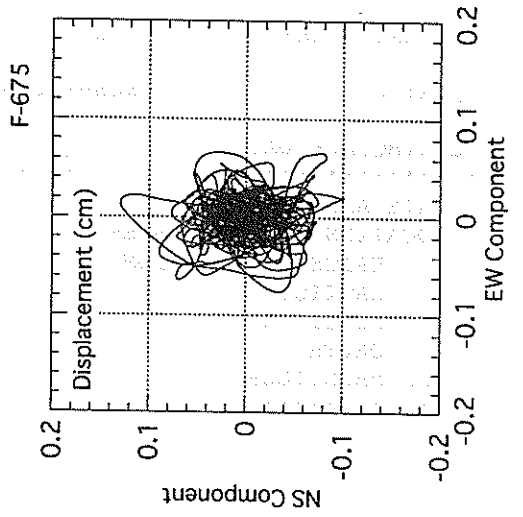
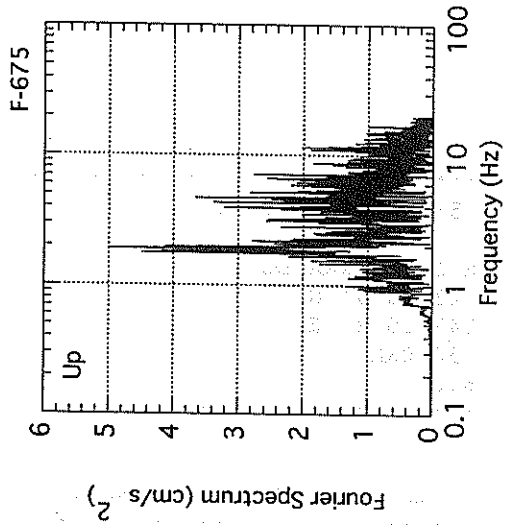
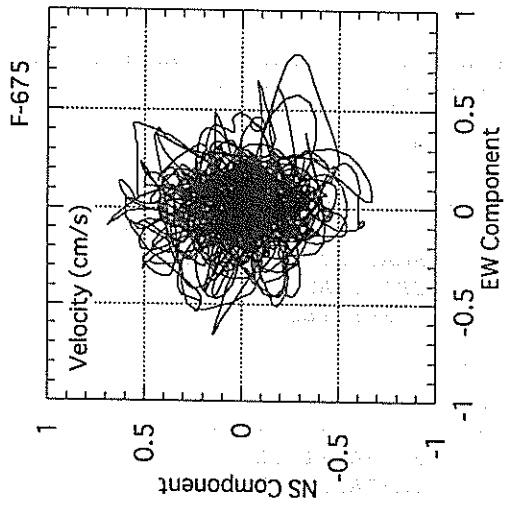
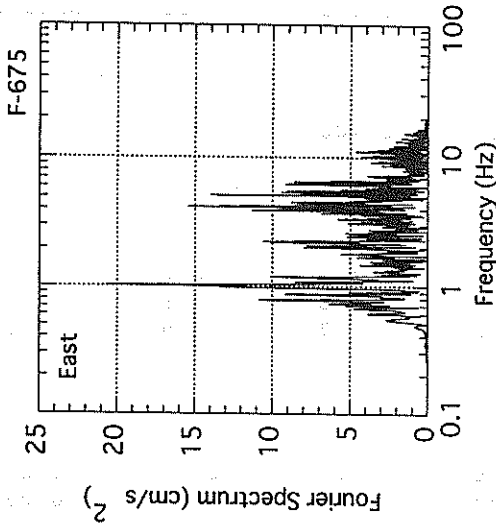
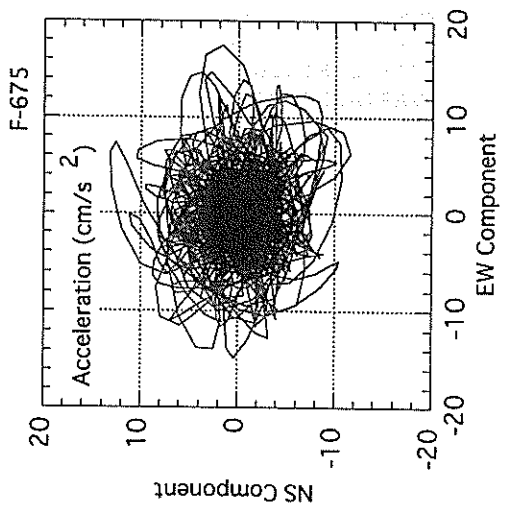
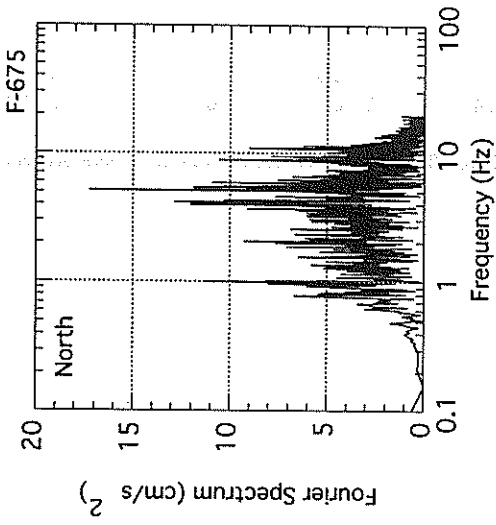












RECORD NUMBER : F-674
 STATION : KUSHIRO-GB

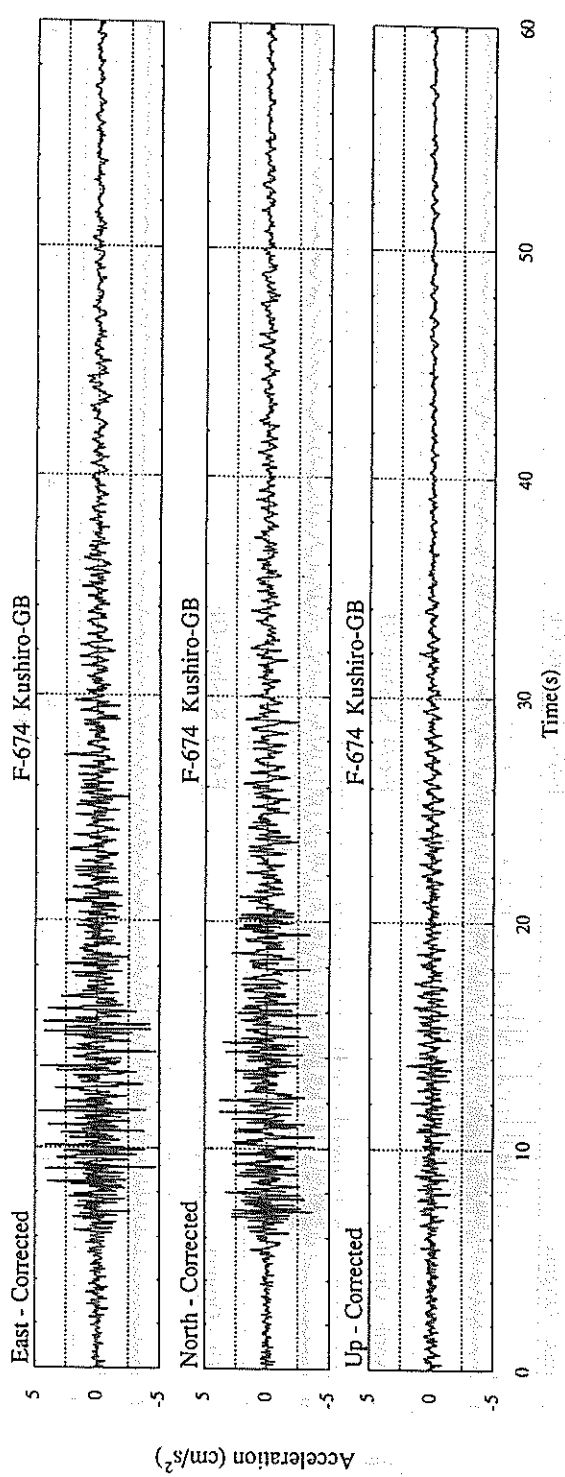
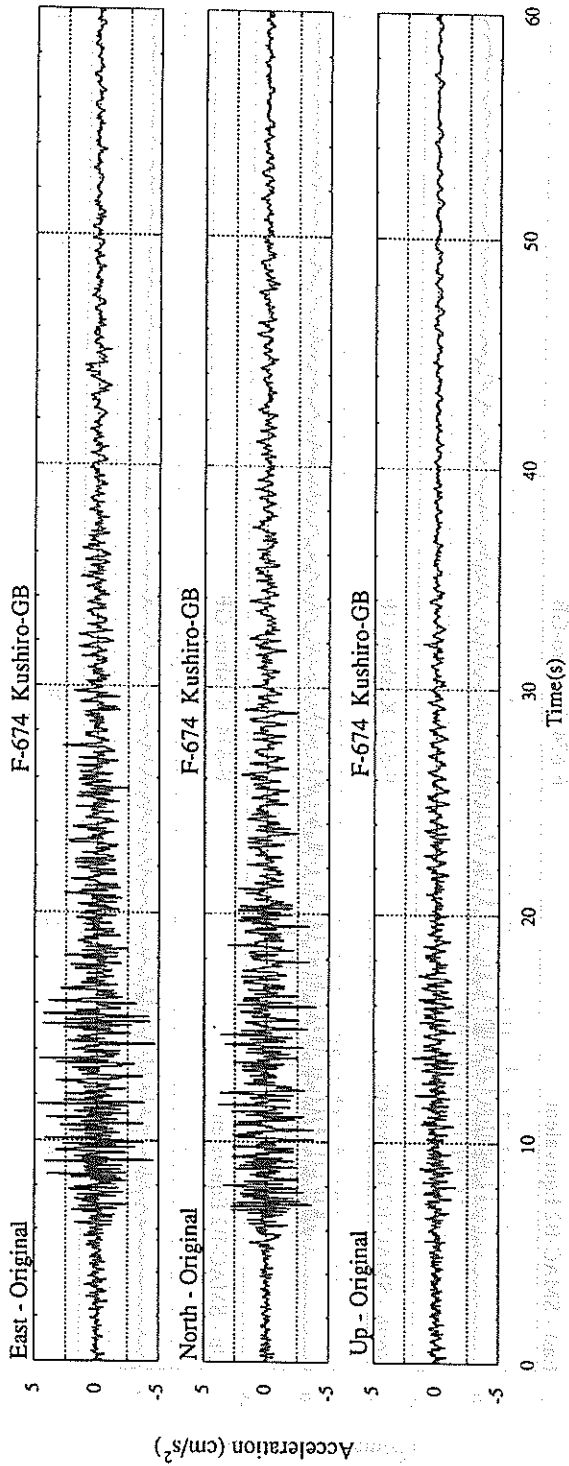
EARTHQUAKE DATA

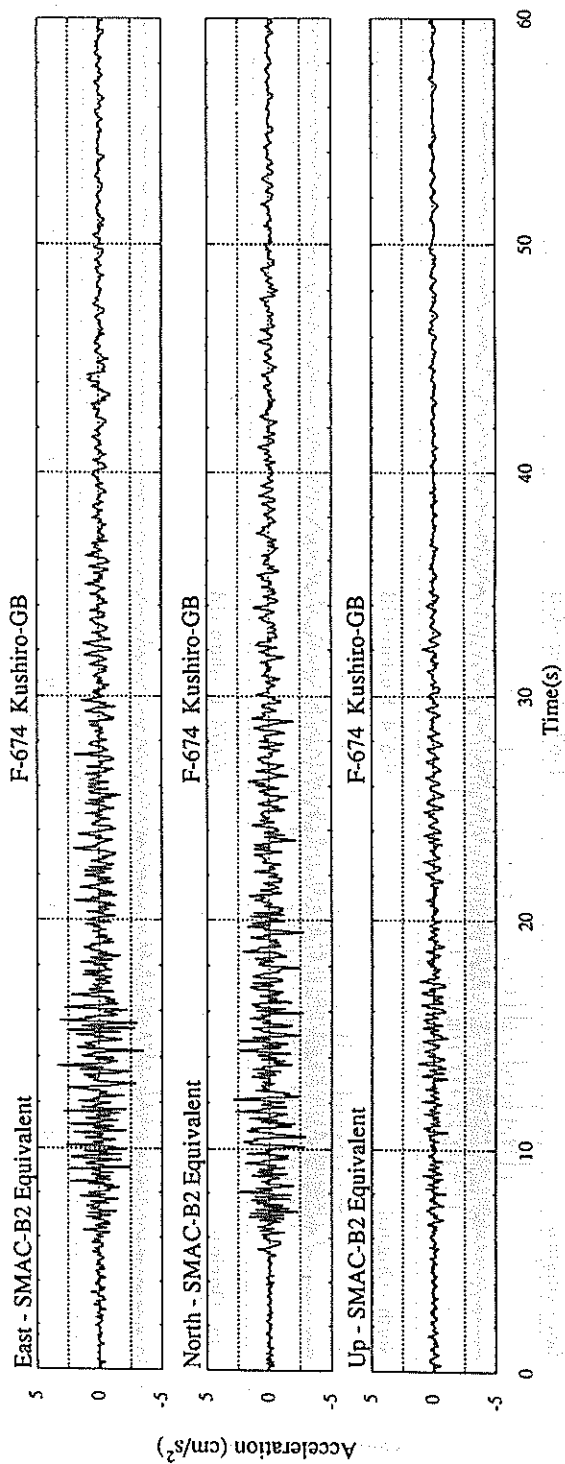
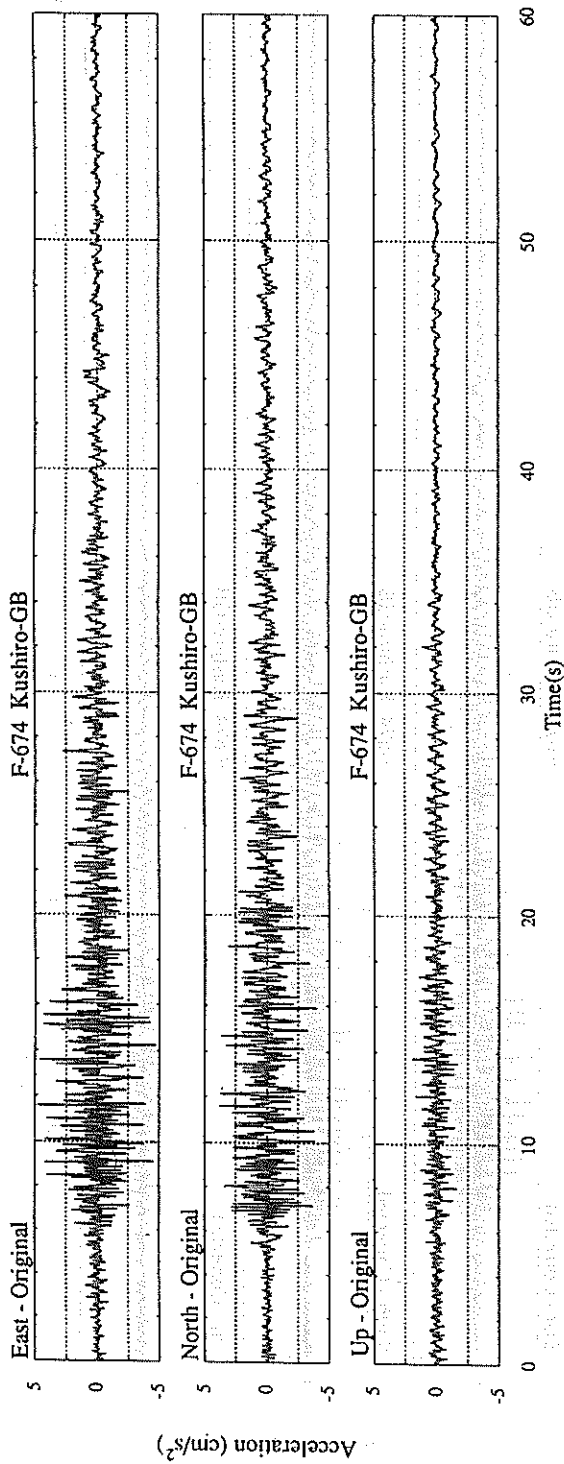
 DATE AND TIME 5:39 OCT. 6, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 40.9' N
 LONGITUDE 147° 10.2' E
 DEPTH 30.0KM
 JMA MAGNITUDE 6.2

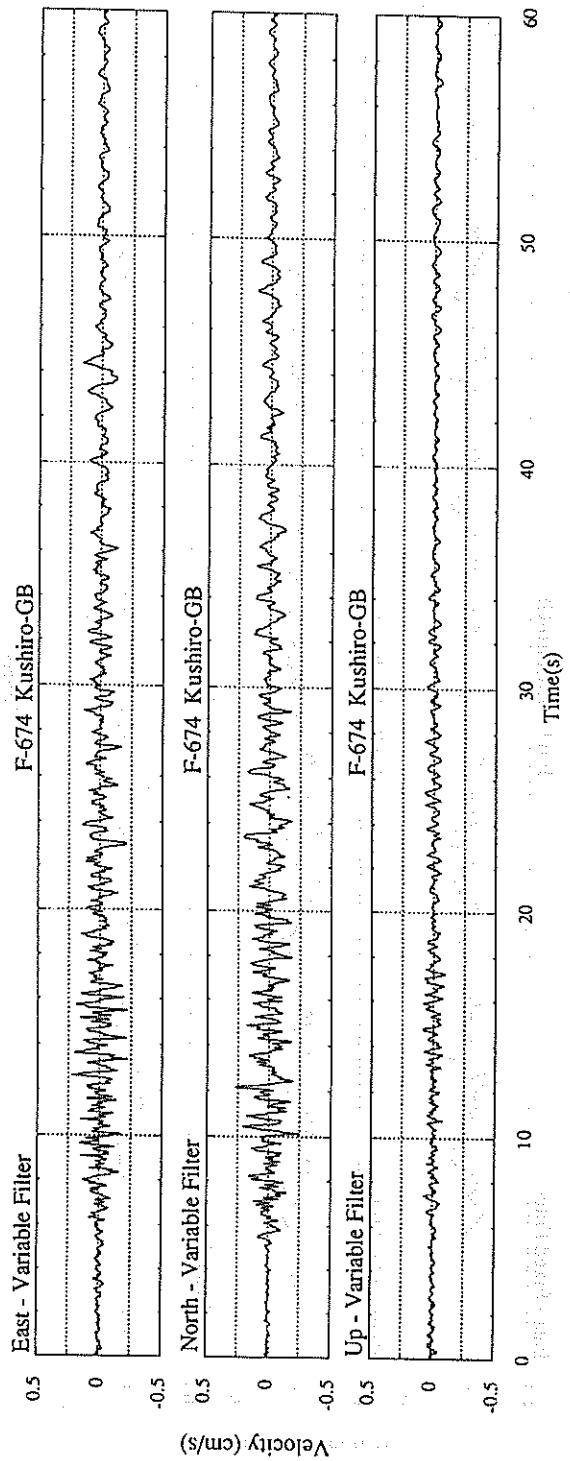
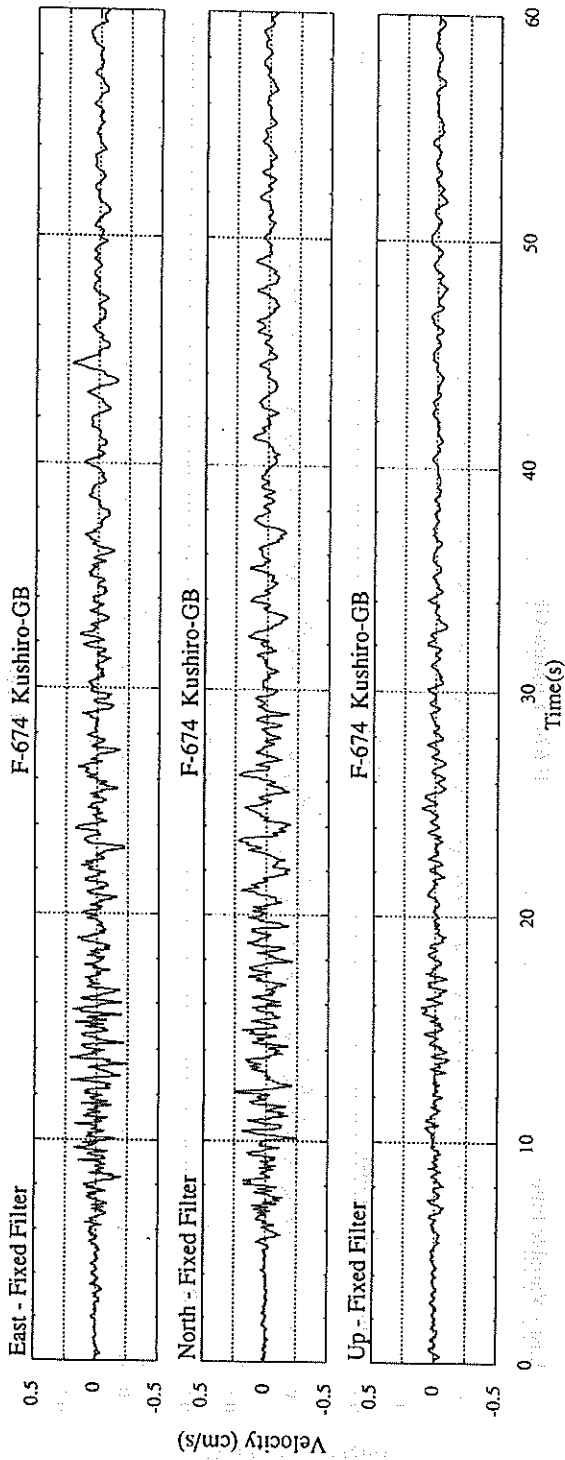
PEAK VALUES OF COMPONENTS

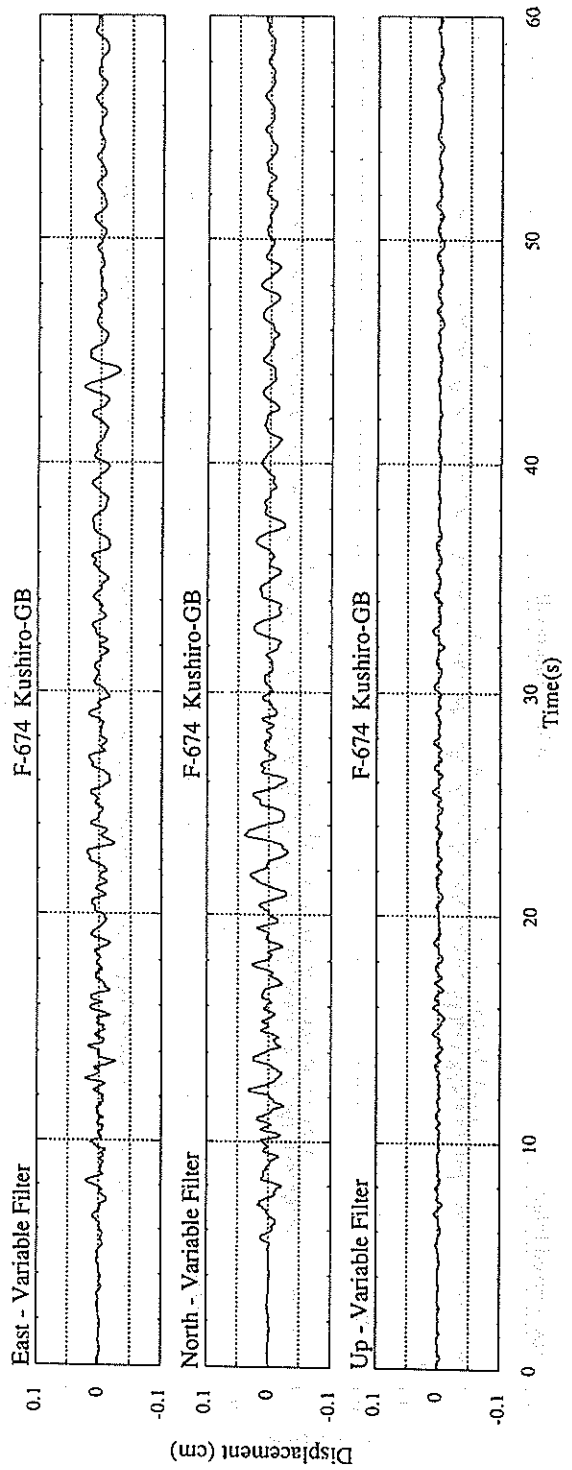
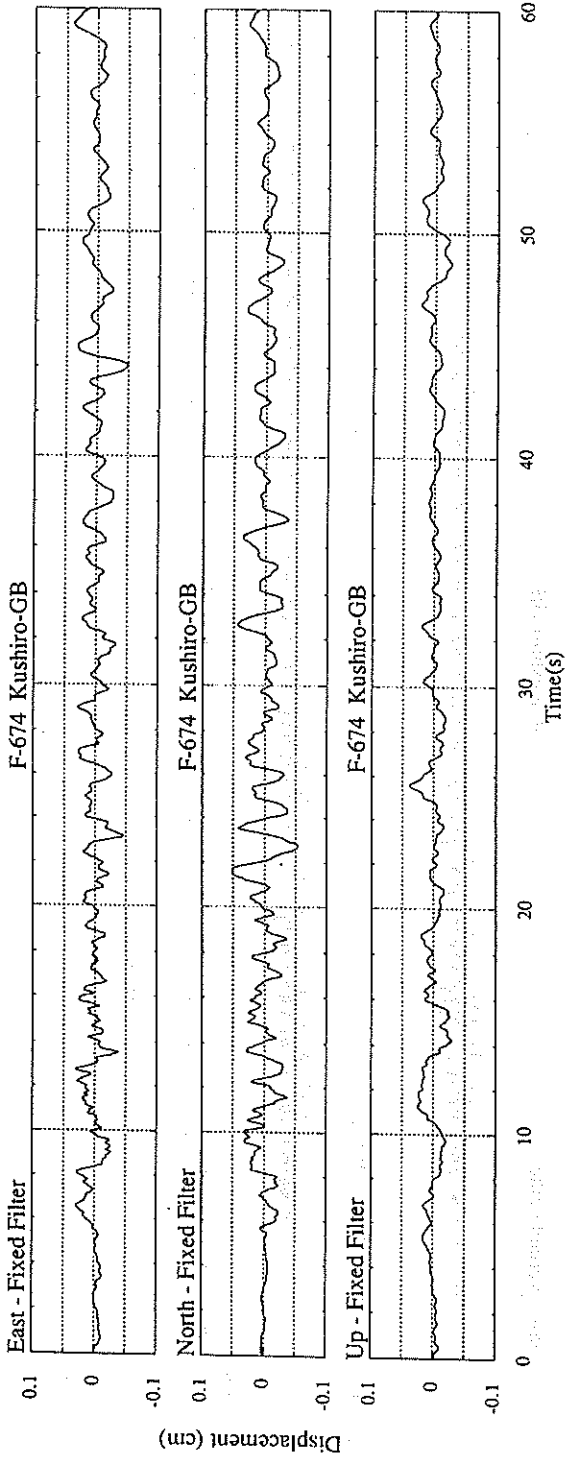
	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.384	0.408	0.573	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	2.9	3.5	1.2	4.0
ORIGINAL	4.0	4.8	1.9	5.5
CORRECTED	4.0	4.7	1.9	5.5
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	0.26	0.24	0.12	0.27
VARIABLE FILTER	0.27	0.23	0.09	0.29
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.05	0.05	0.04	0.05
VARIABLE FILTER	0.04	0.03	0.01	0.04

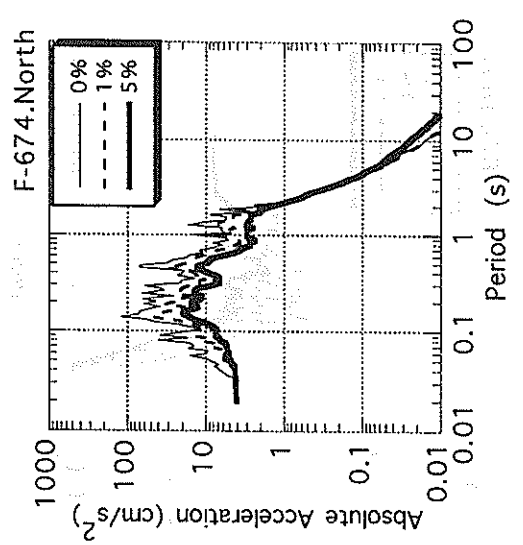
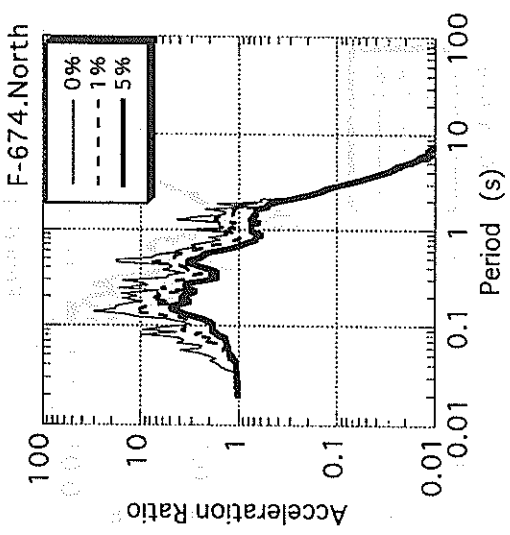
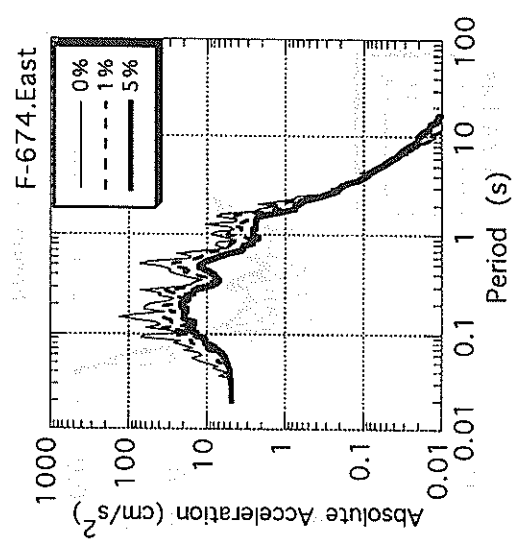
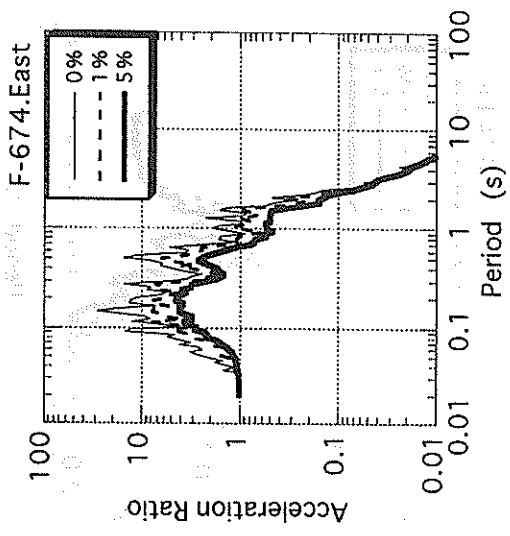
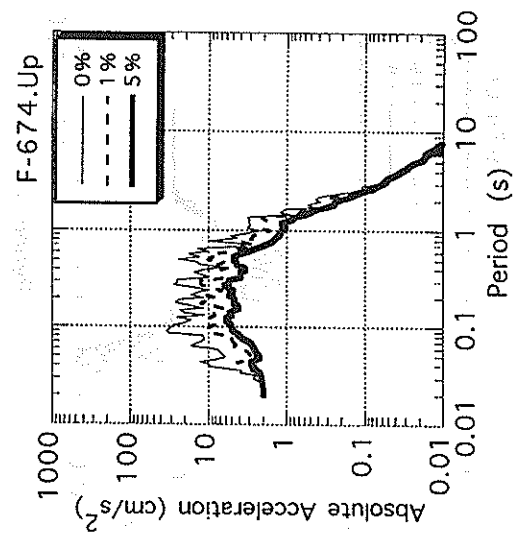
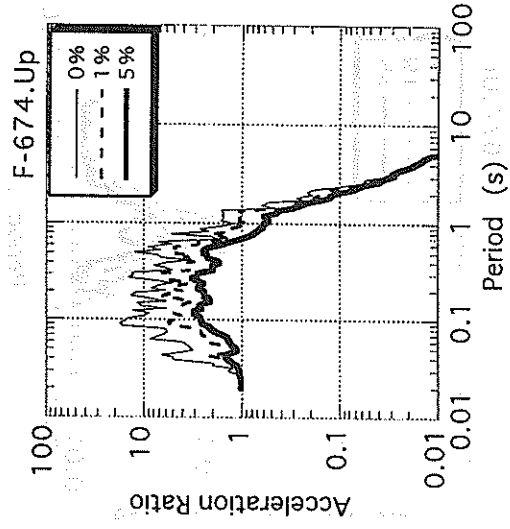
* RESULTANT OF HORIZONTAL COMPONENTS

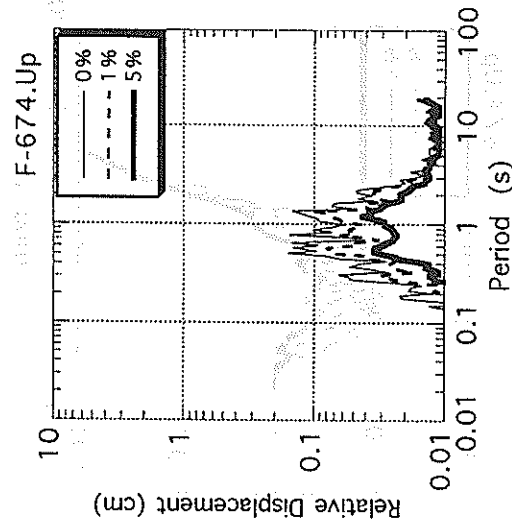
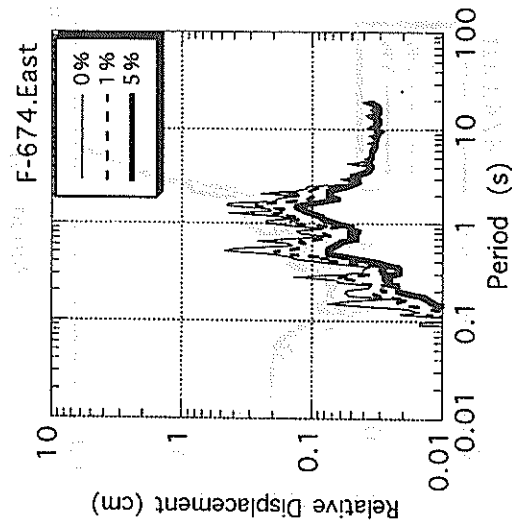
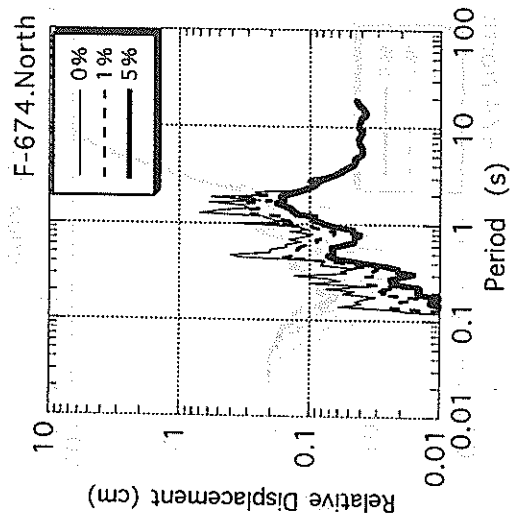
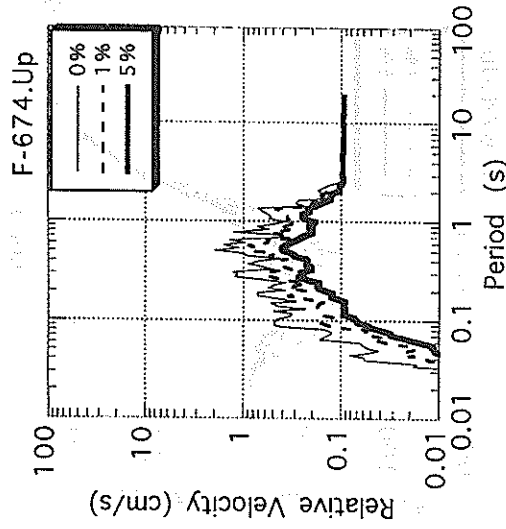
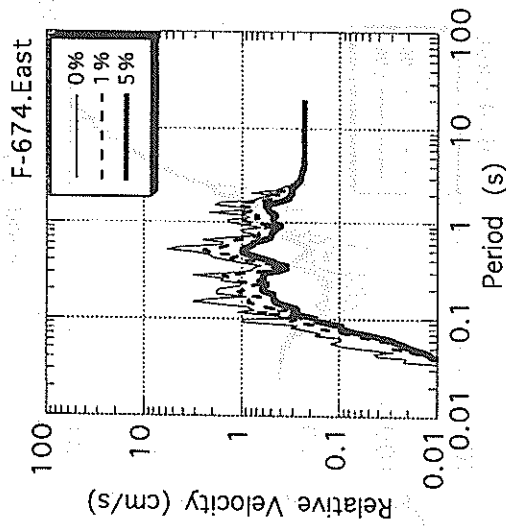
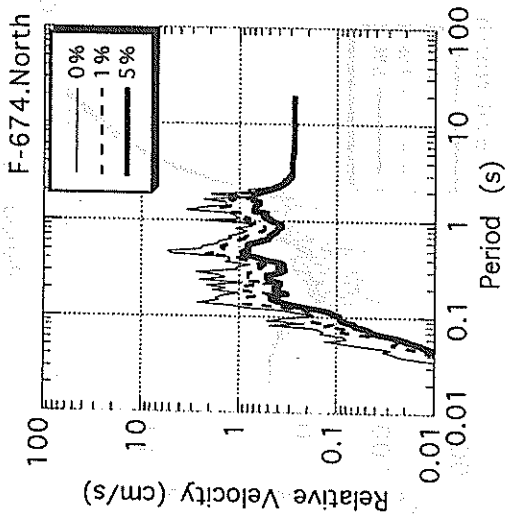


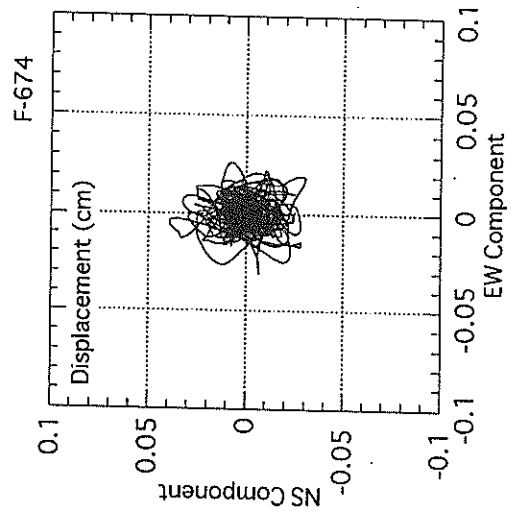
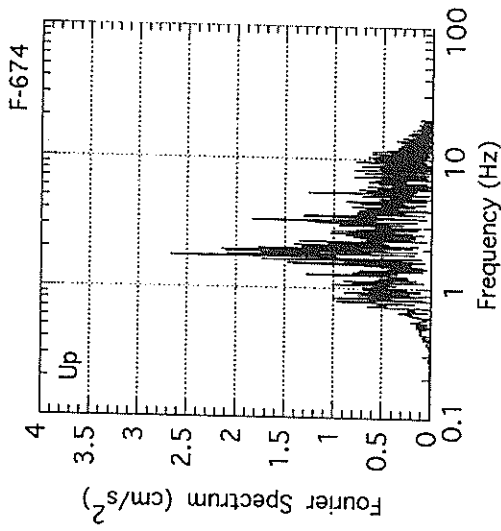
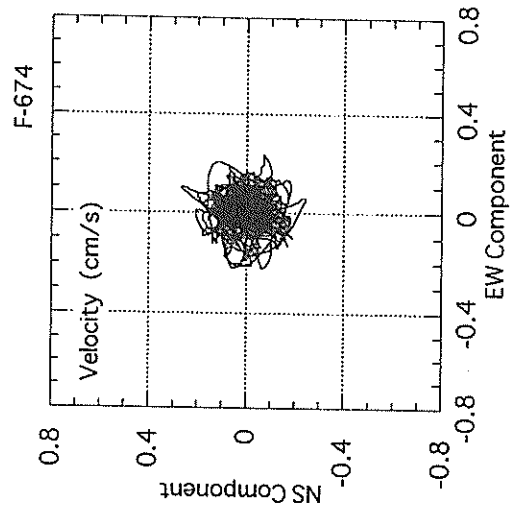
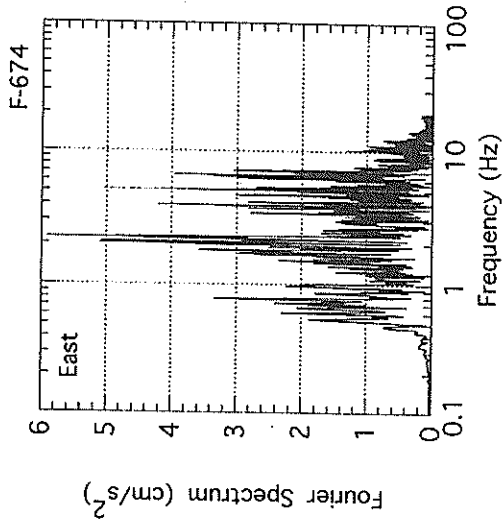
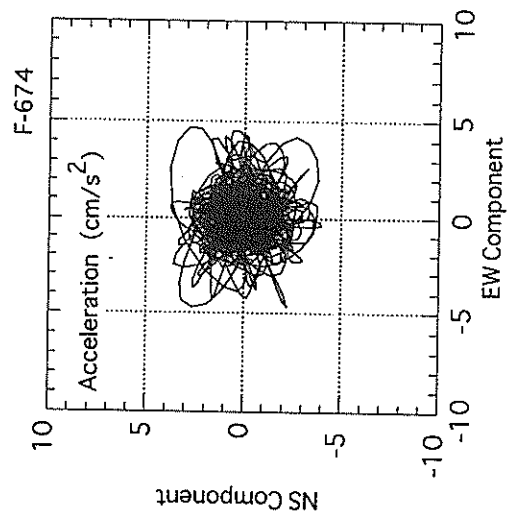
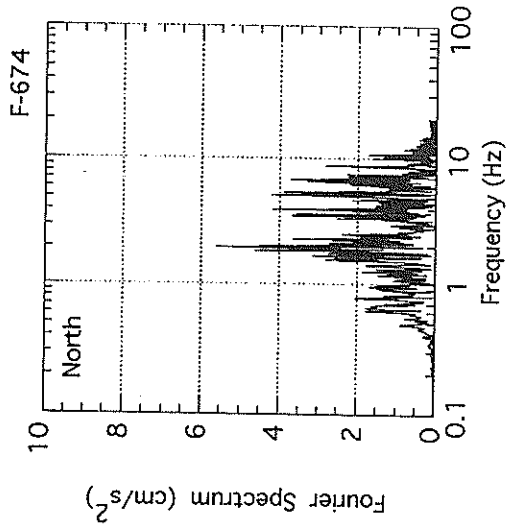












Strong-Motion Earthquake Observation Results of the After Shock at 16:55:39, October 9, 1994

Station	Latitude	Longitude	Depth	Distance	Direction	Component	Amplitude
101	37.25	-122.45	10	17.5	135	EW	0.001
102	37.25	-122.45	10	17.5	135	NS	0.001
103	37.25	-122.45	10	17.5	135	UD	0.001
104	37.25	-122.45	10	17.5	135	EW	0.001
105	37.25	-122.45	10	17.5	135	NS	0.001
106	37.25	-122.45	10	17.5	135	UD	0.001

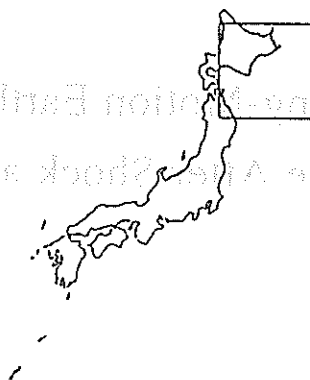
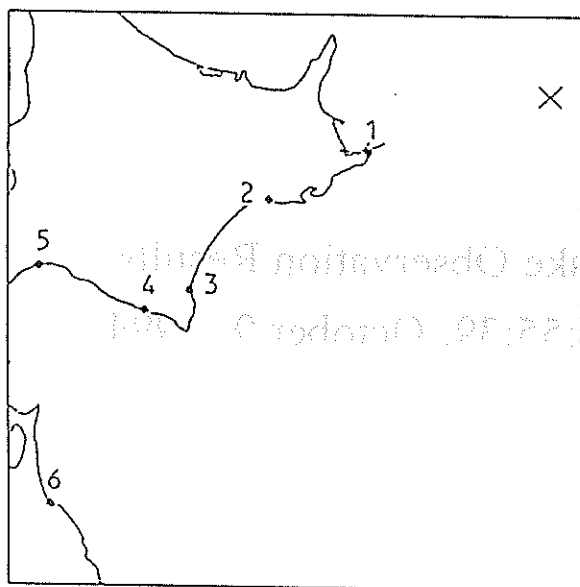
STRONG-MOTION EARTHQUAKE OBSERVATION RESULTS

16:55 OCT. 9, 1994

E OFF HOKKAIDO

EPICENTER : 43°33.3'N 147°48.4'E

DEPTH : 0.0KM MAGNITUDE : 7.0



STATION	CONDITION	RECORD NUMBER	MAX. ACC. (GAL)			DIST. (KM)
			(NS)	(EW)	(UD)	
1 HANASAKI-F	ON GROUND	F- 777	20	23	11	181
2 KUSHIRO-G	ON GROUND	F- 696	19	20	6	285
2 KUSHIRO-GB	IN GROUND	F- 695	8	7	3	285
3 TOKACHI-M	ON GROUND	M-1528	11	11	4	391
4 URAKAWA-S	ON GROUND	S-2593	7	6	5	438
5 TOMAKOMAI-S	ON GROUND	S-2592	4	6	1	512
6 HACHINOHE-JI-S	ON GROUND	S-2591	3	3	1	618

DATE: 10/10/94

LOCATION: ...

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RECEIVED

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Results of Preliminary Analyses of the After Shock at 16:55:39, October 9, 1994

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RECORD NUMBER : F-777
 STATION : HANASAKI-F

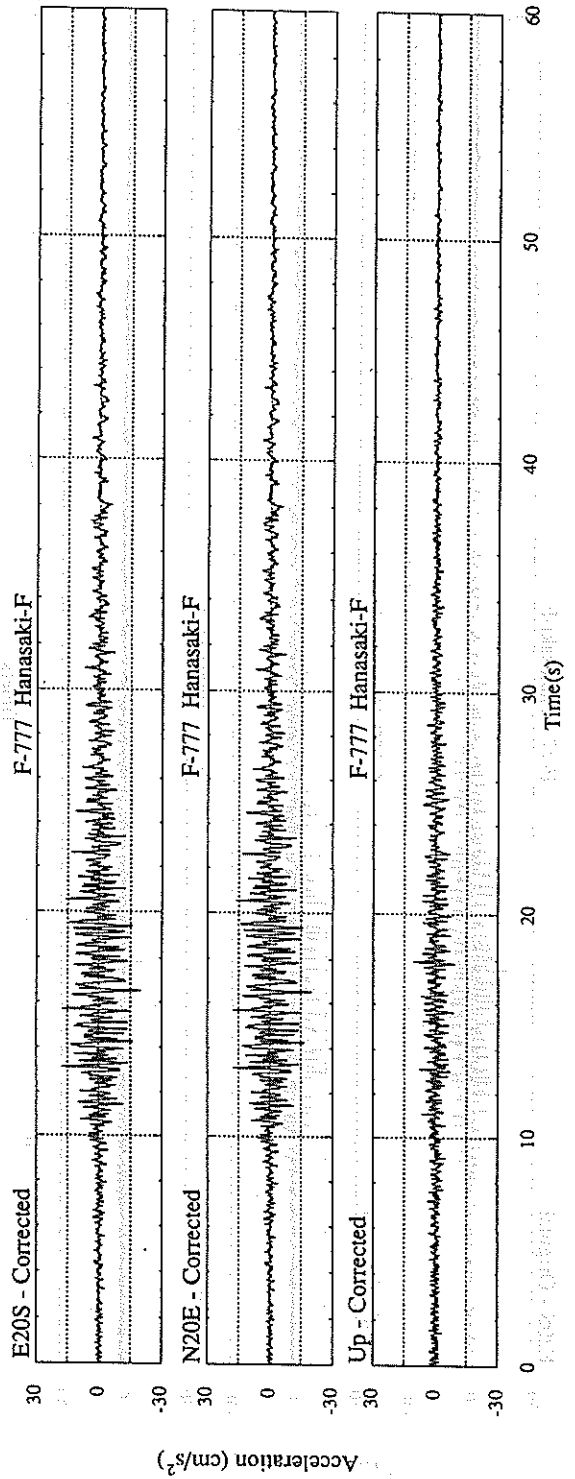
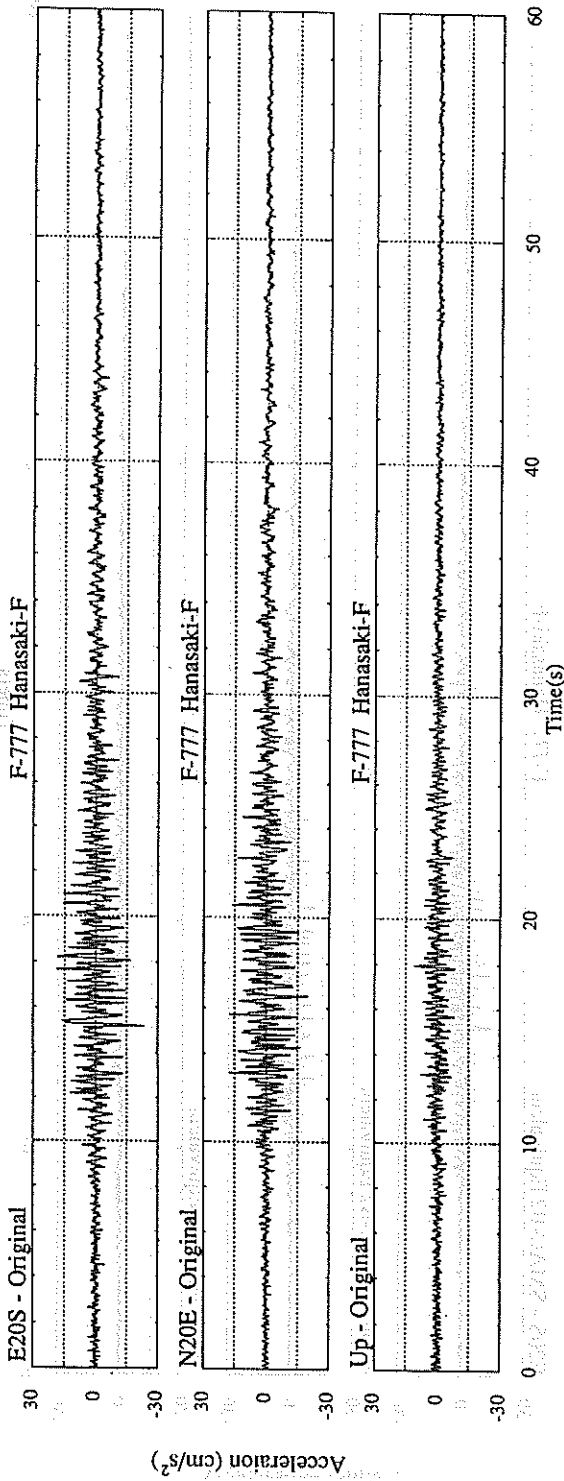
EARTHQUAKE DATA

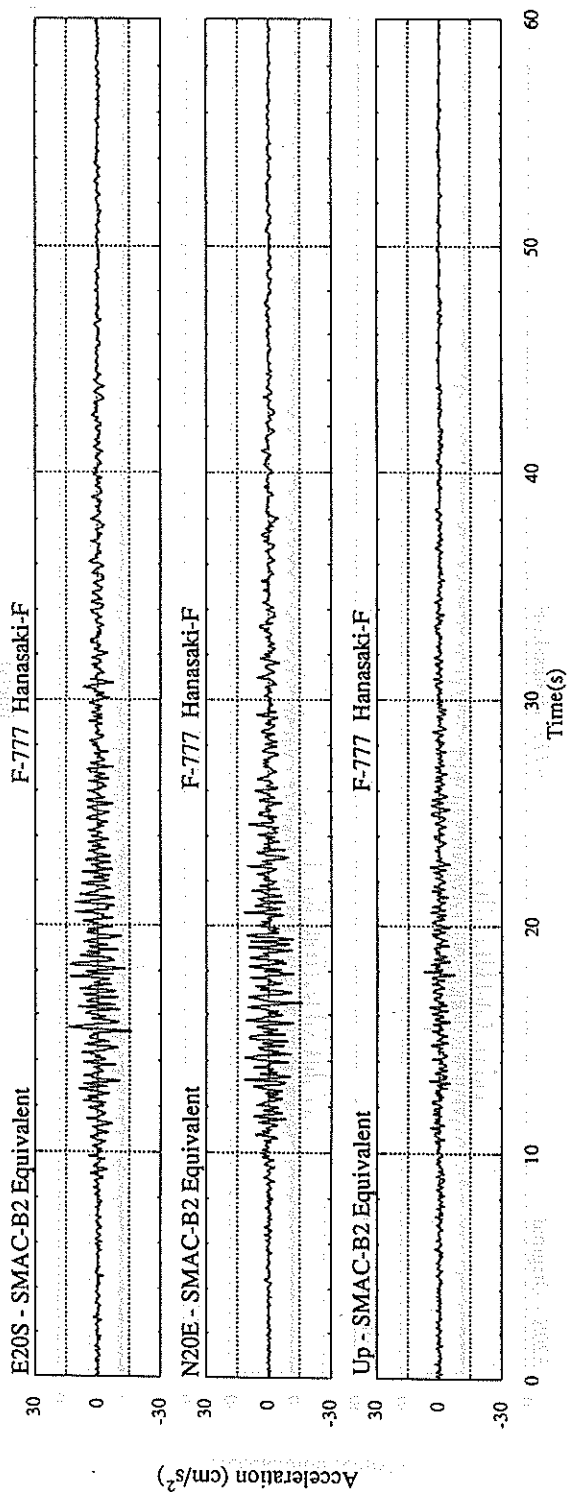
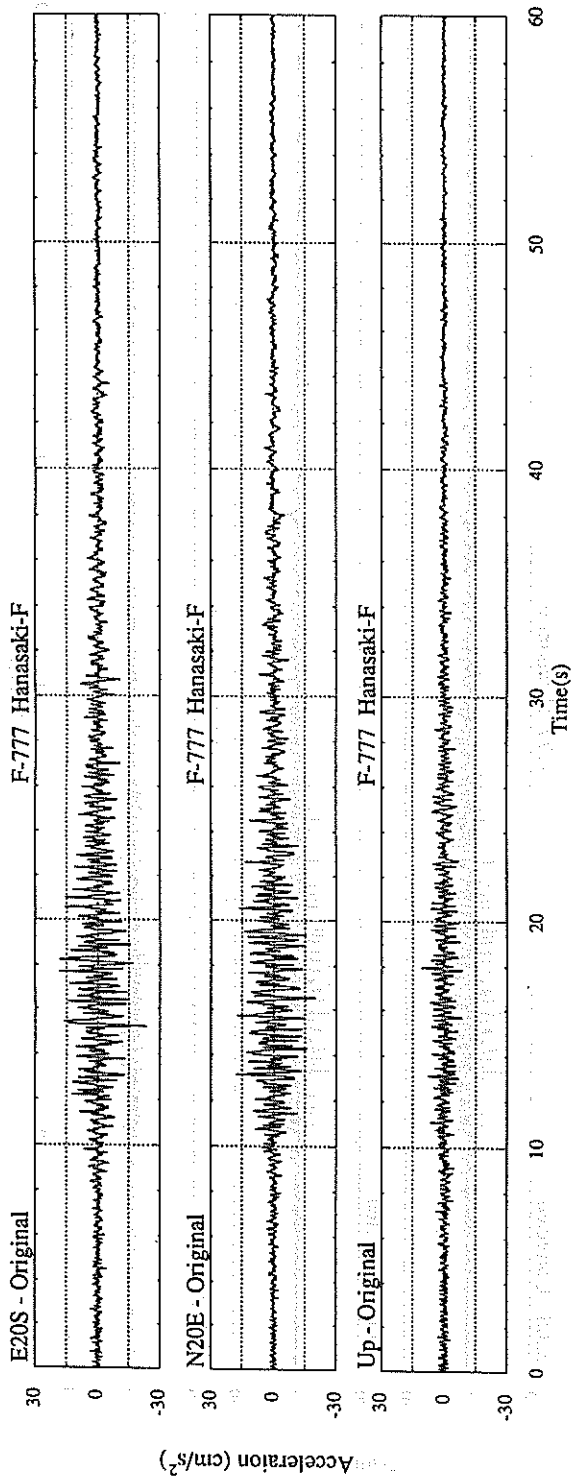
 DATE AND TIME 16:55 OCT. 9, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 33.3' N
 LONGITUDE 147° 48.4' E
 DEPTH 0.0KM
 JMA MAGNITUDE 7.0

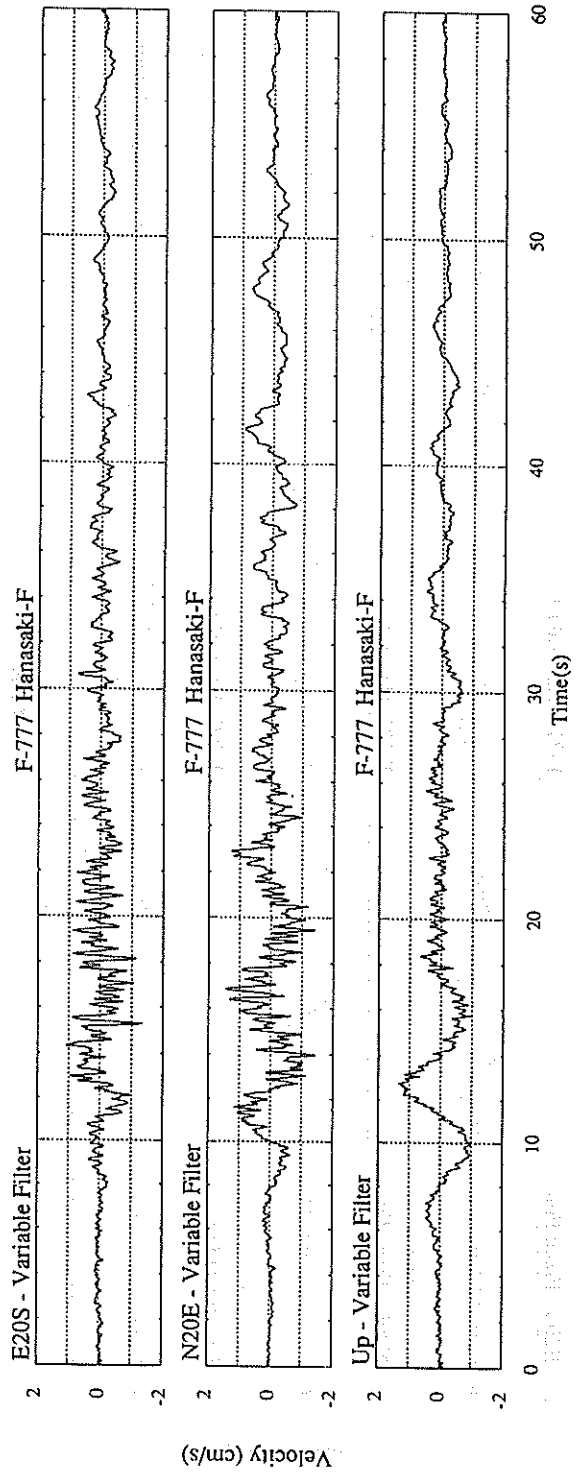
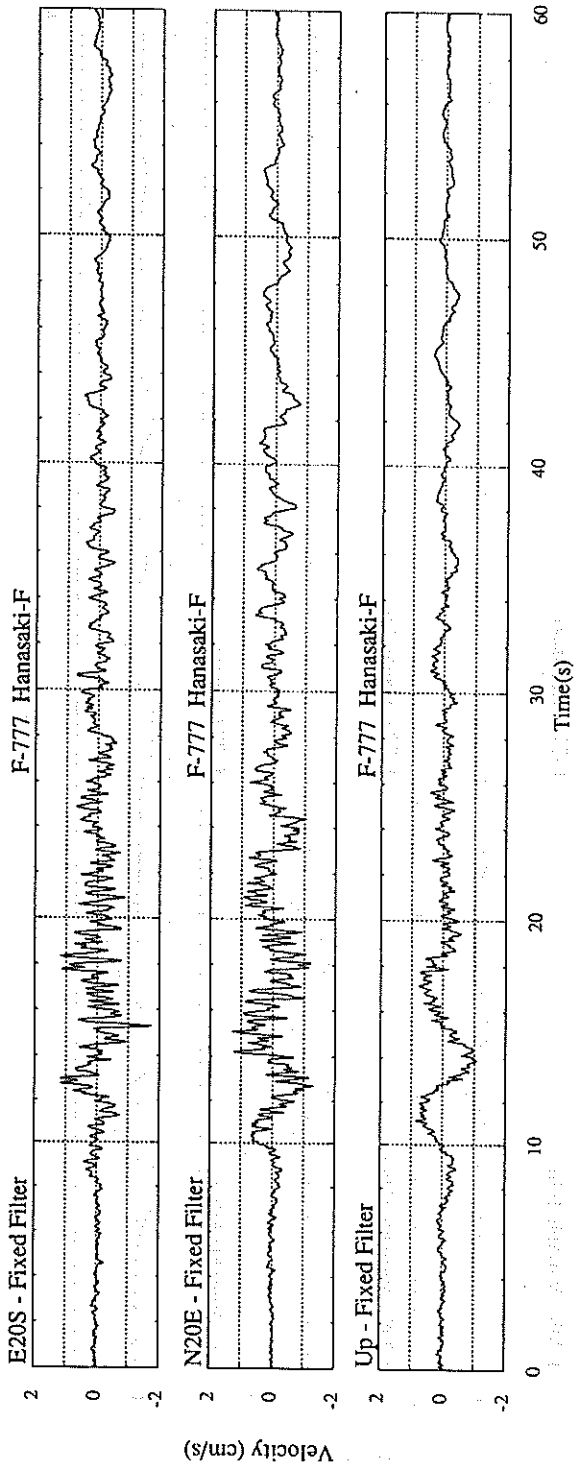
PEAK VALUES OF COMPONENTS

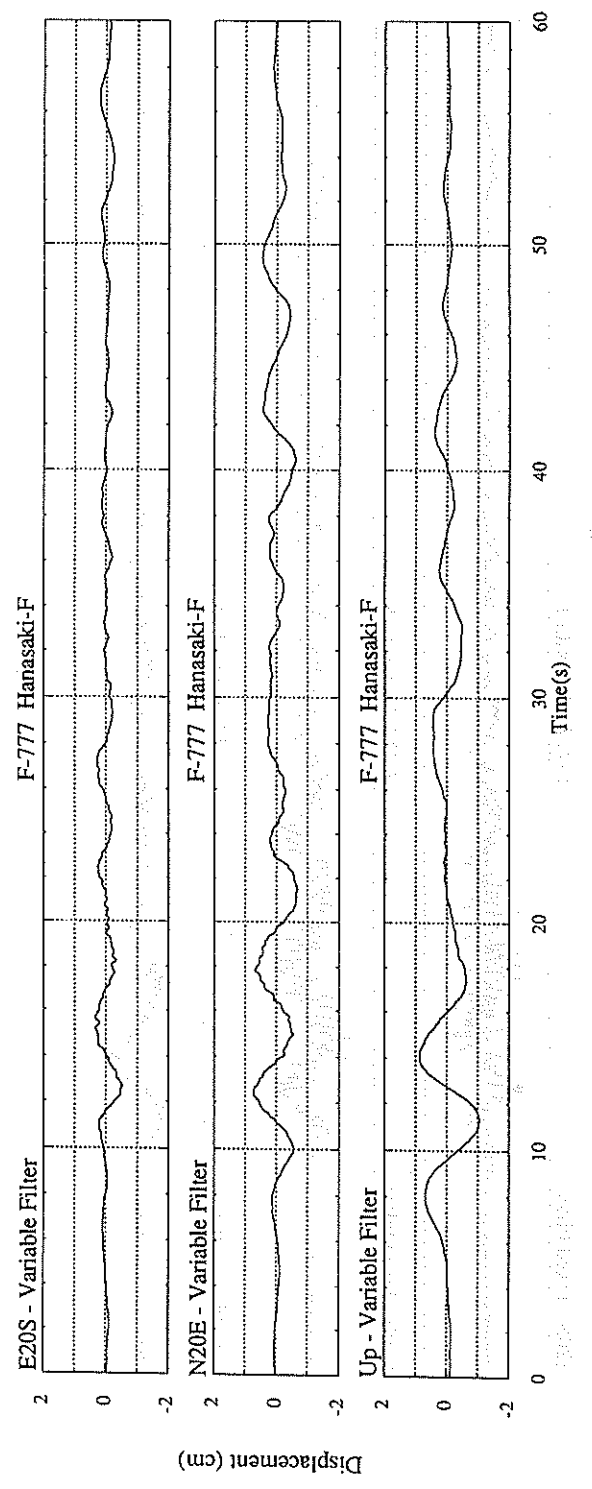
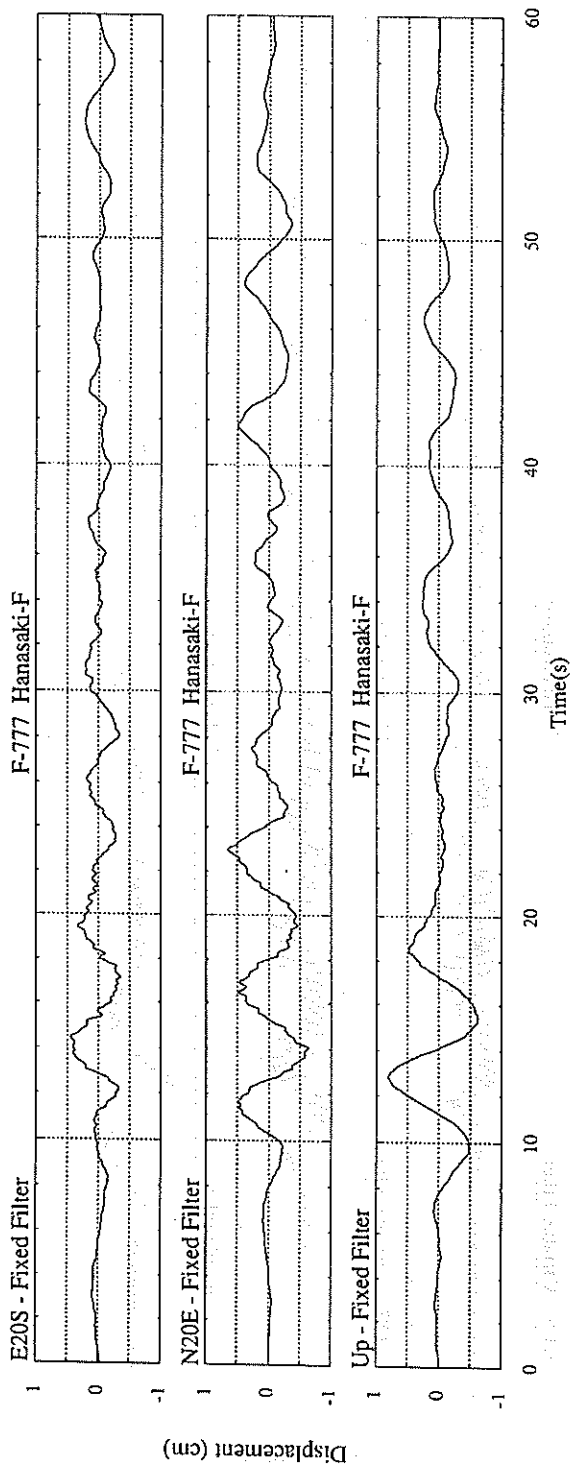
	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.085	0.115	0.079	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	15.8	16.0	7.8	16.3
ORIGINAL	19.7	23.4	11.0	23.4
CORRECTED	19.7	22.8	10.7	22.9
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	1.31	1.72	1.08	1.83
VARIABLE FILTER	1.44	1.34	1.34	1.51
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.65	0.45	0.81	0.75
VARIABLE FILTER	0.74	0.52	1.04	0.87

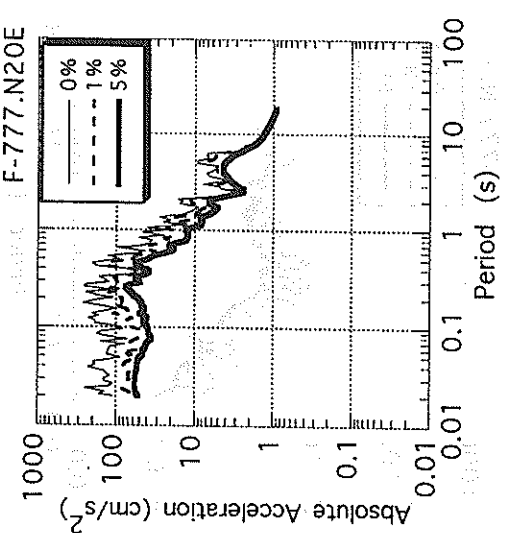
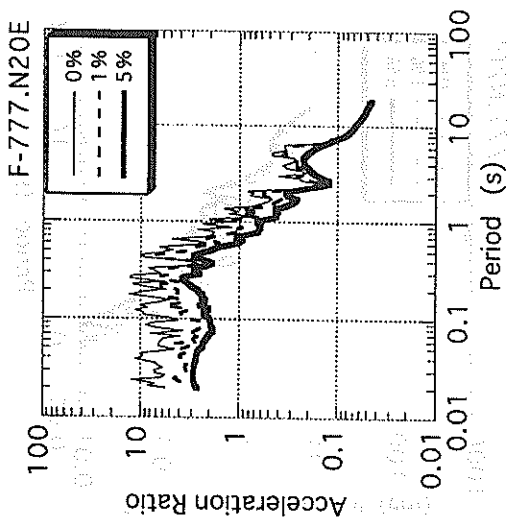
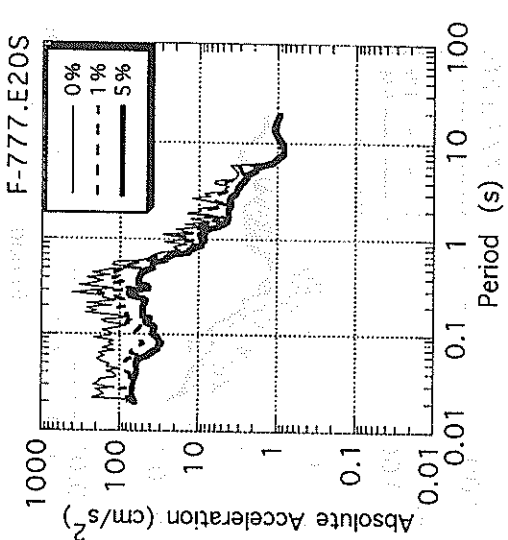
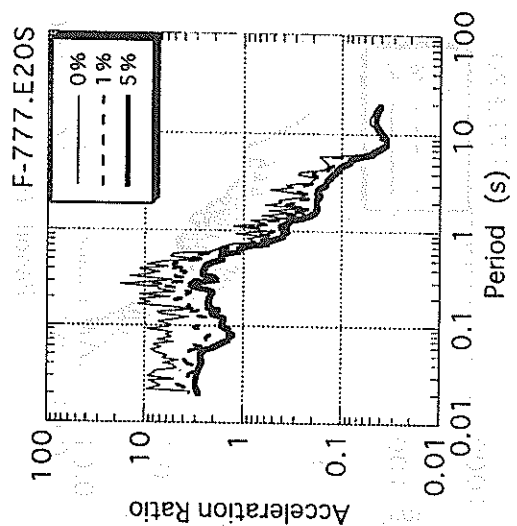
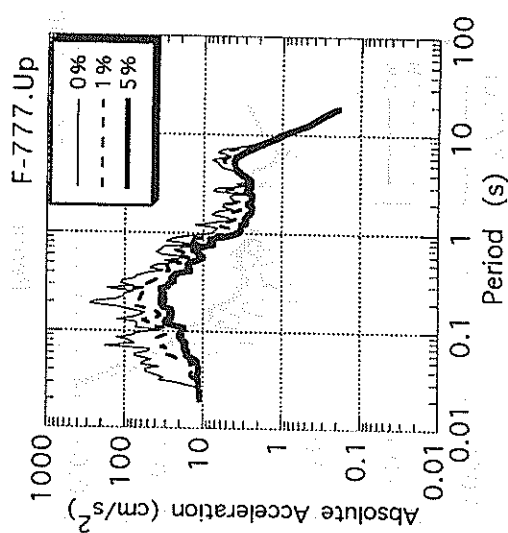
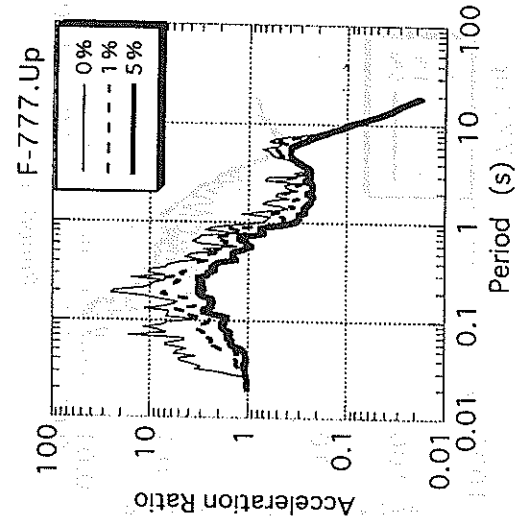
* RESULTANT OF HORIZONTAL COMPONENTS

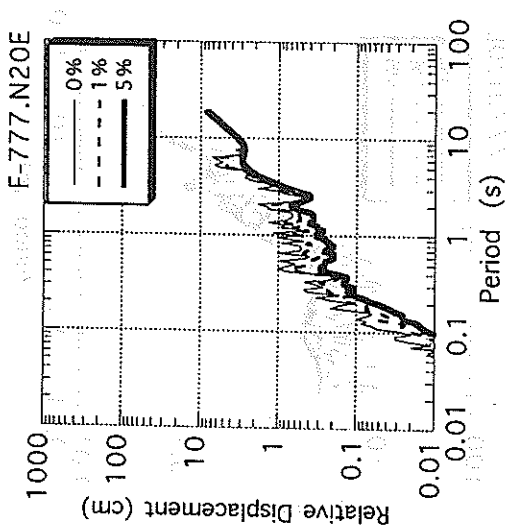
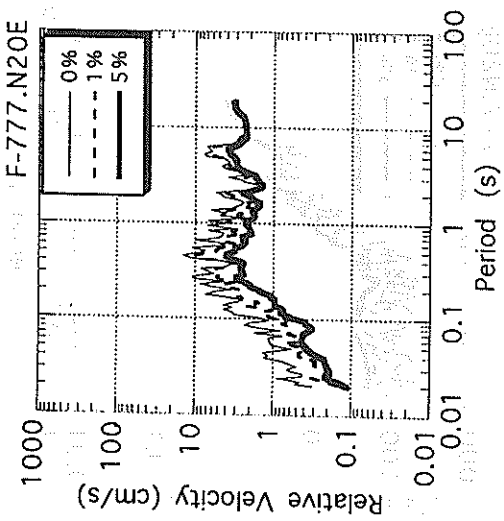
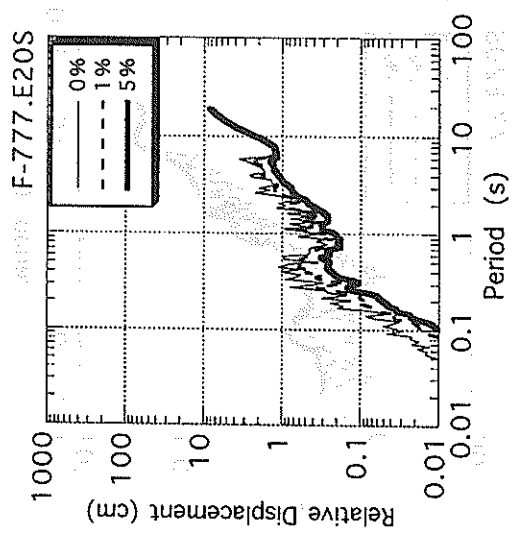
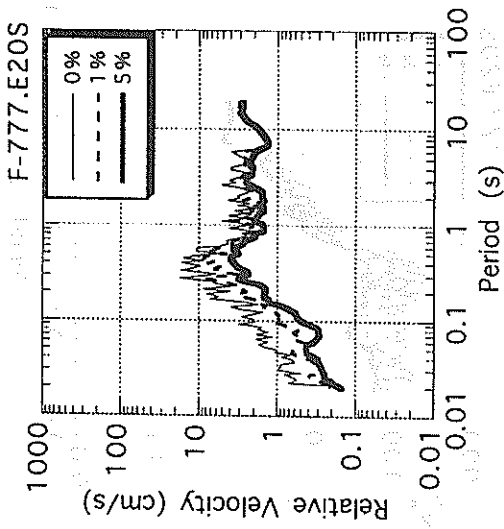
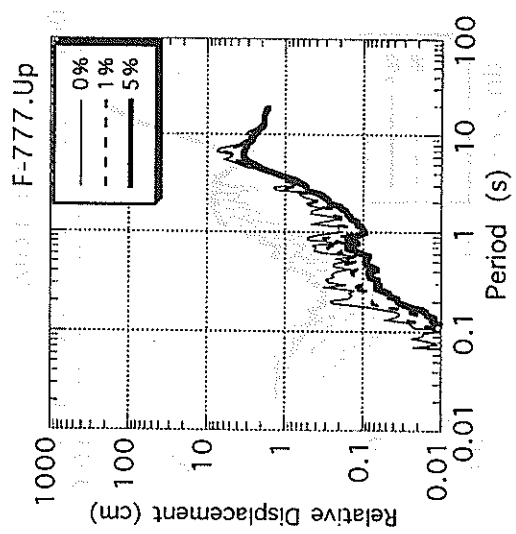
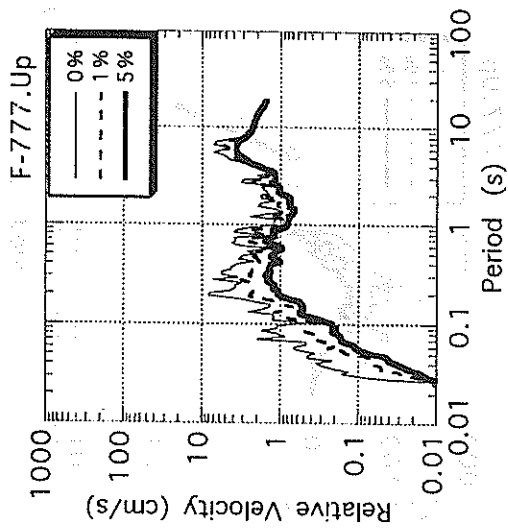


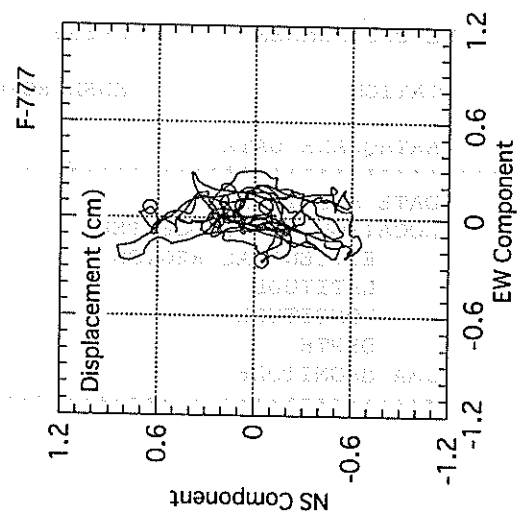
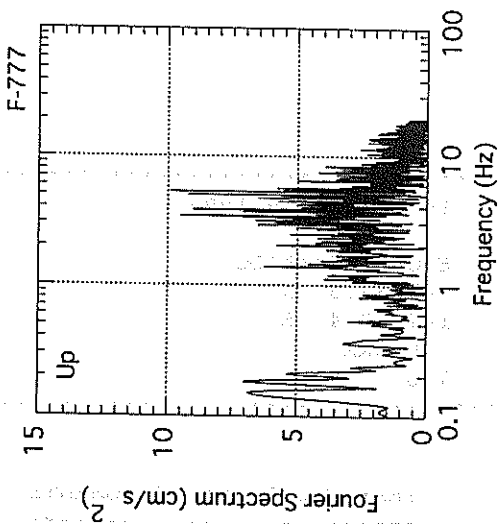
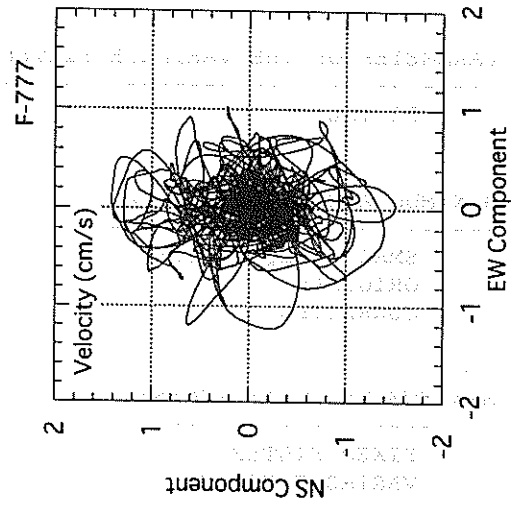
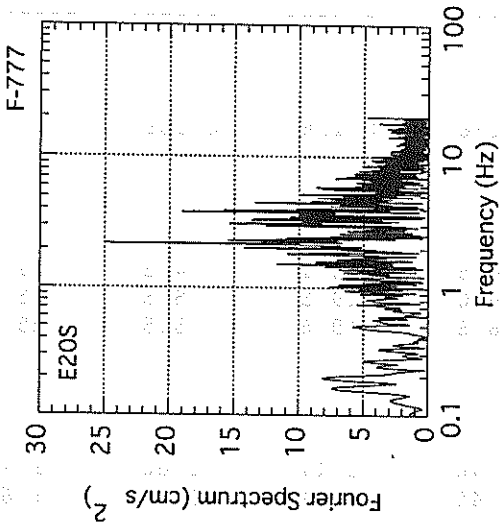
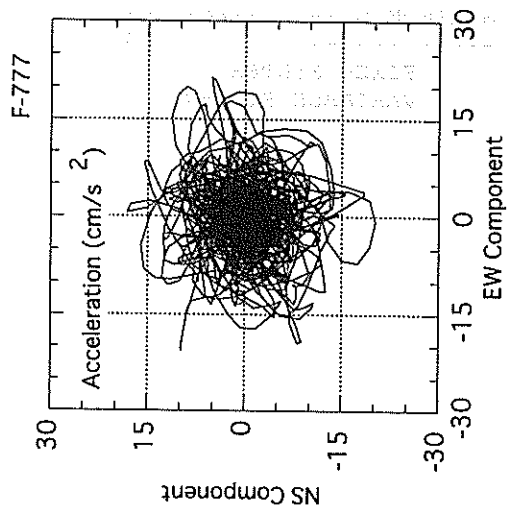
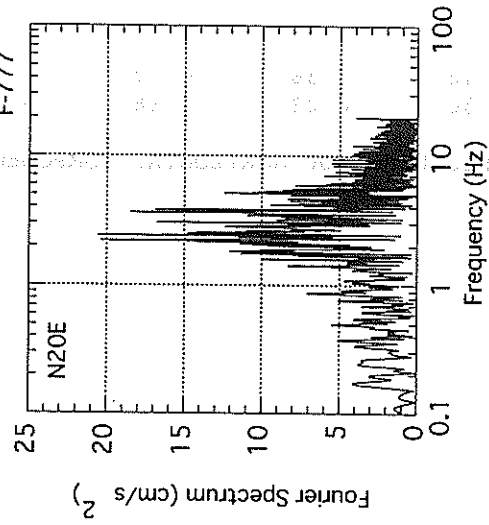












RECORD NUMBER : F-696
 STATION : KUSHIRO-G

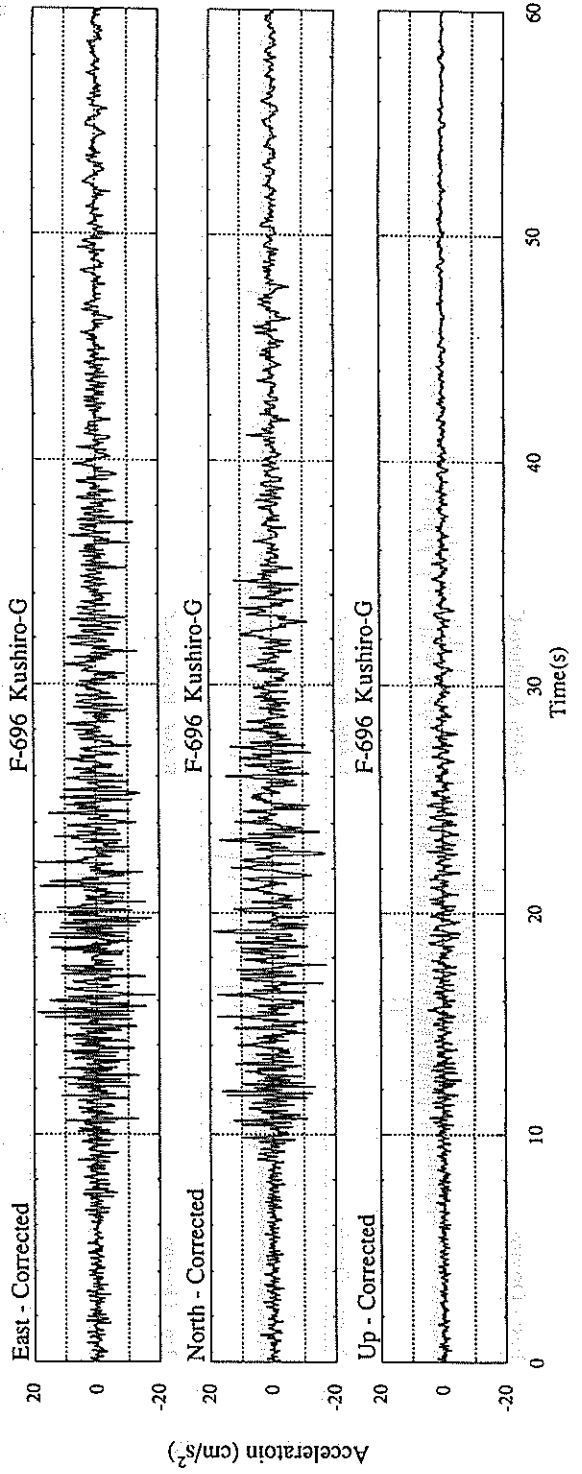
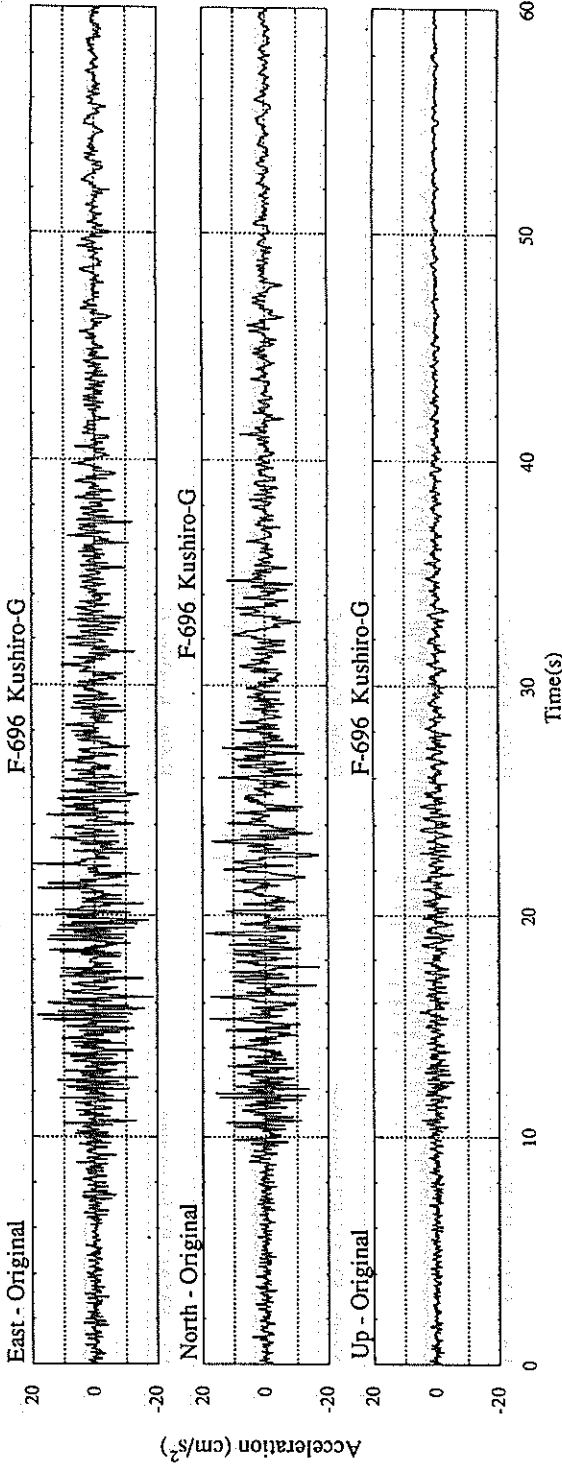
EARTHQUAKE DATA

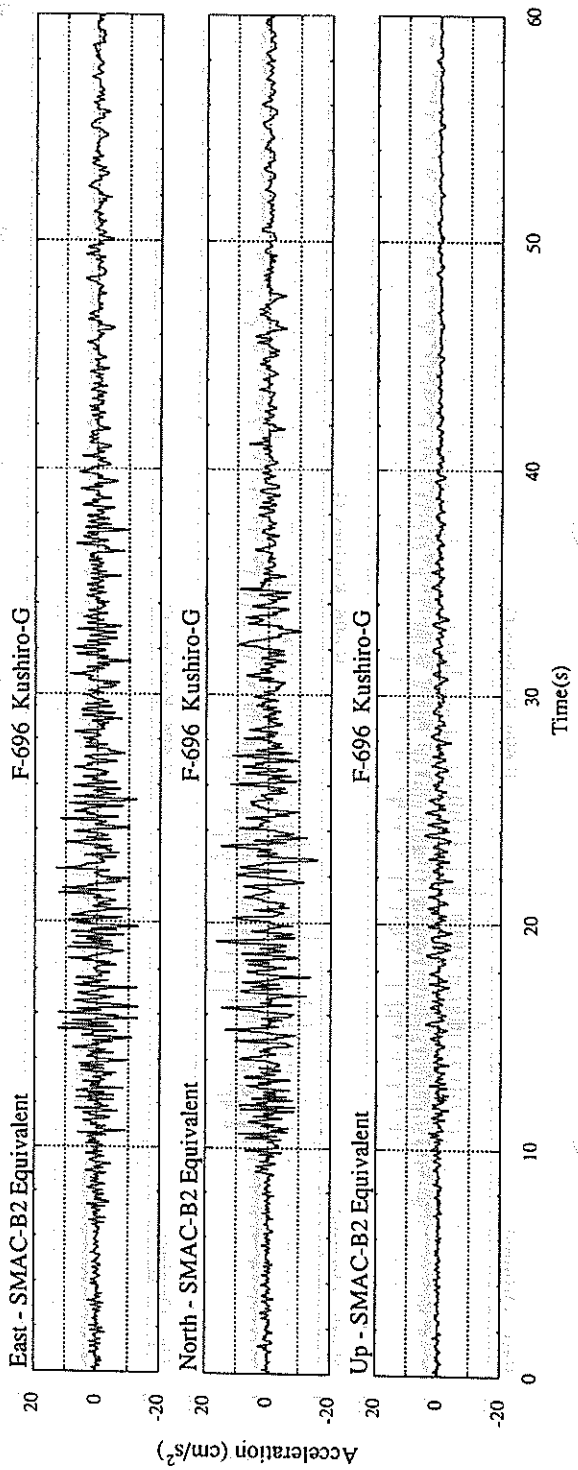
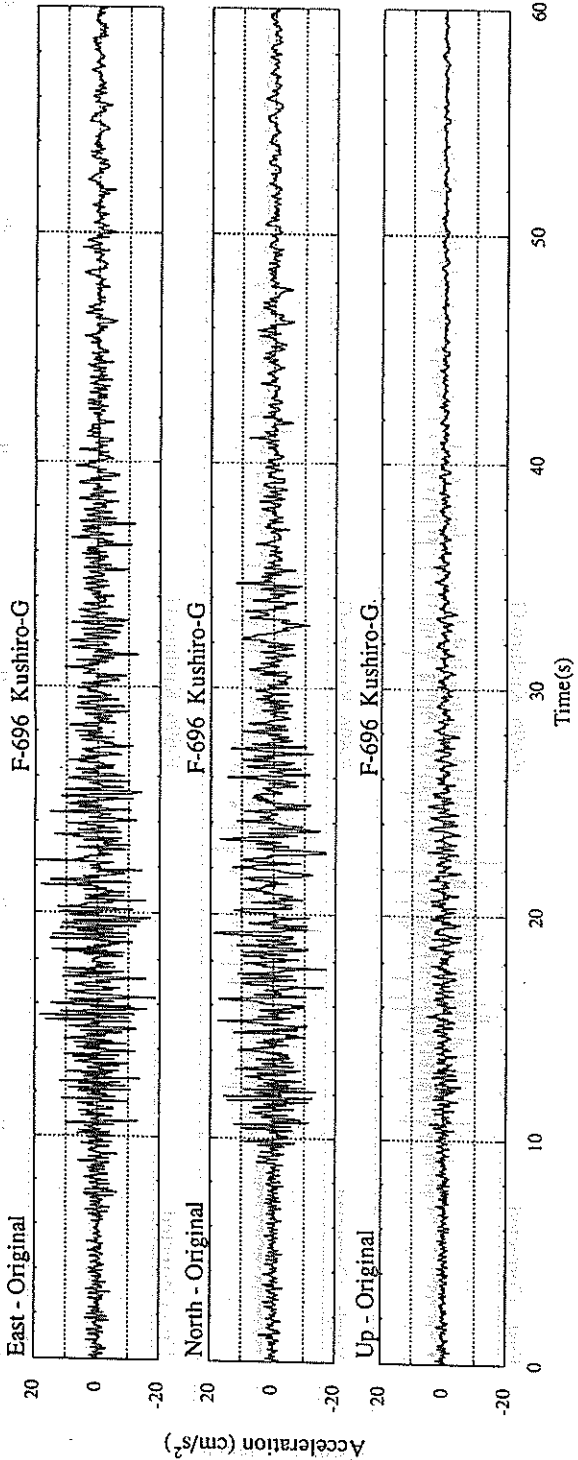
 DATE AND TIME 16:55 OCT. 9, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 33.3' N
 LONGITUDE 147° 48.4' E
 DEPTH 0.0KM
 JMA MAGNITUDE 7.0

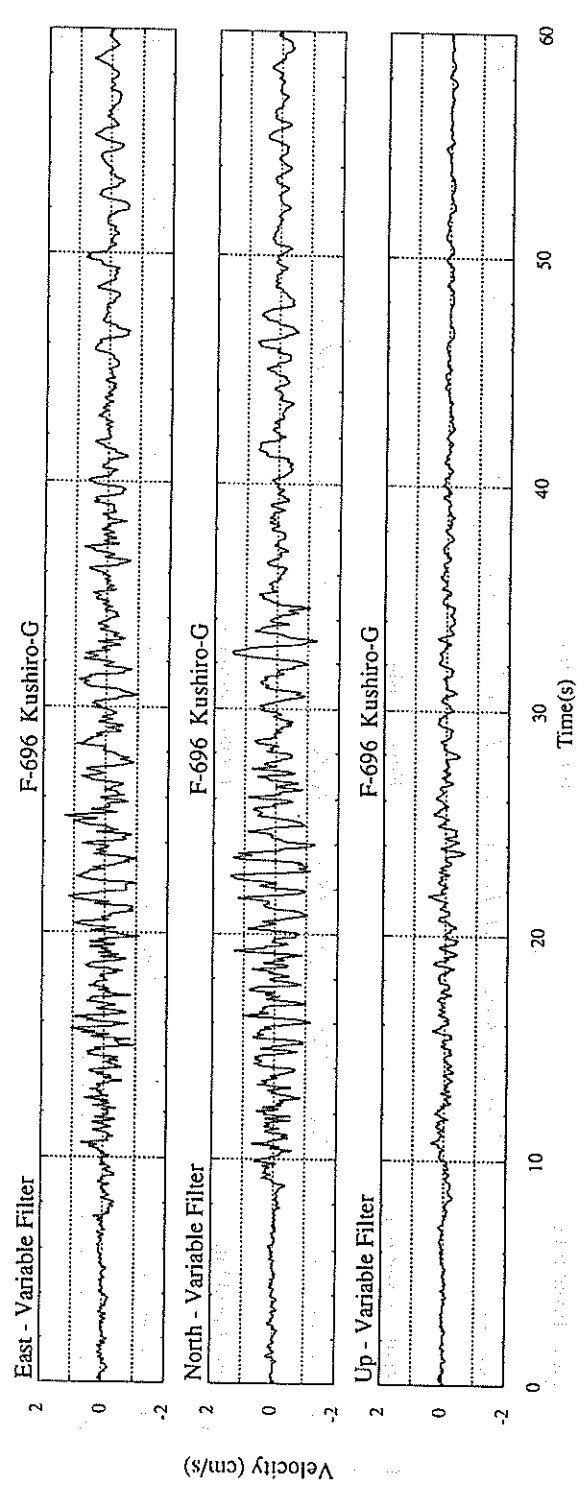
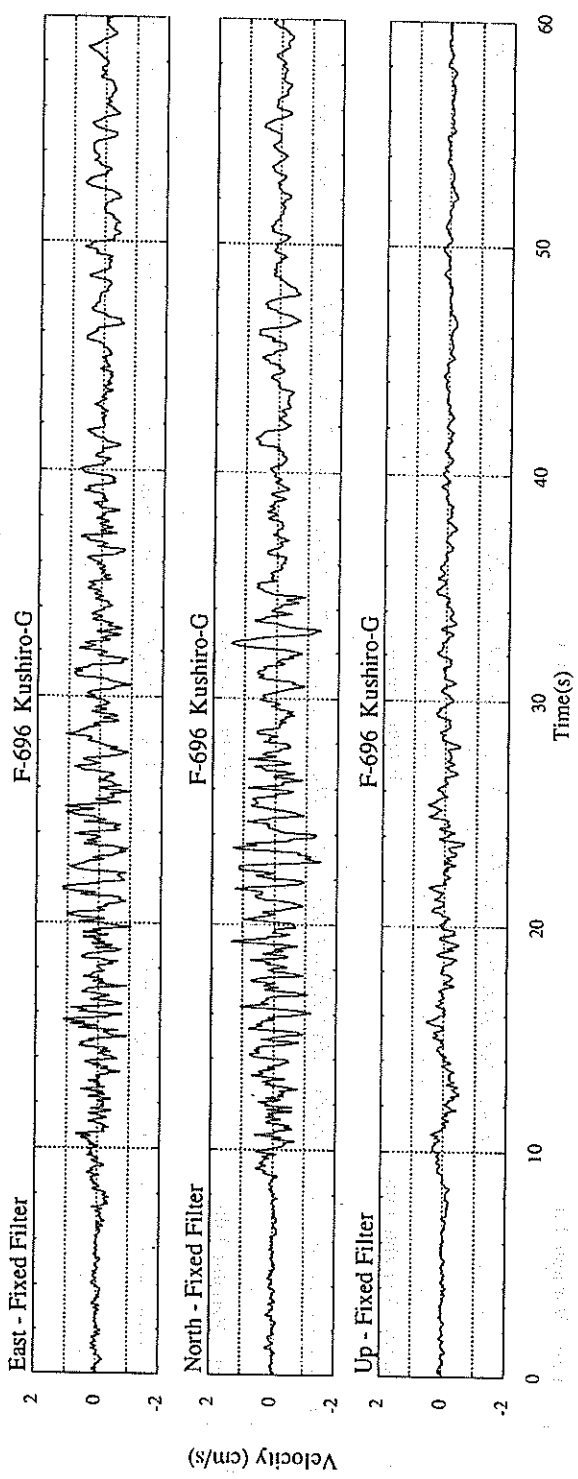
PEAK VALUES OF COMPONENTS

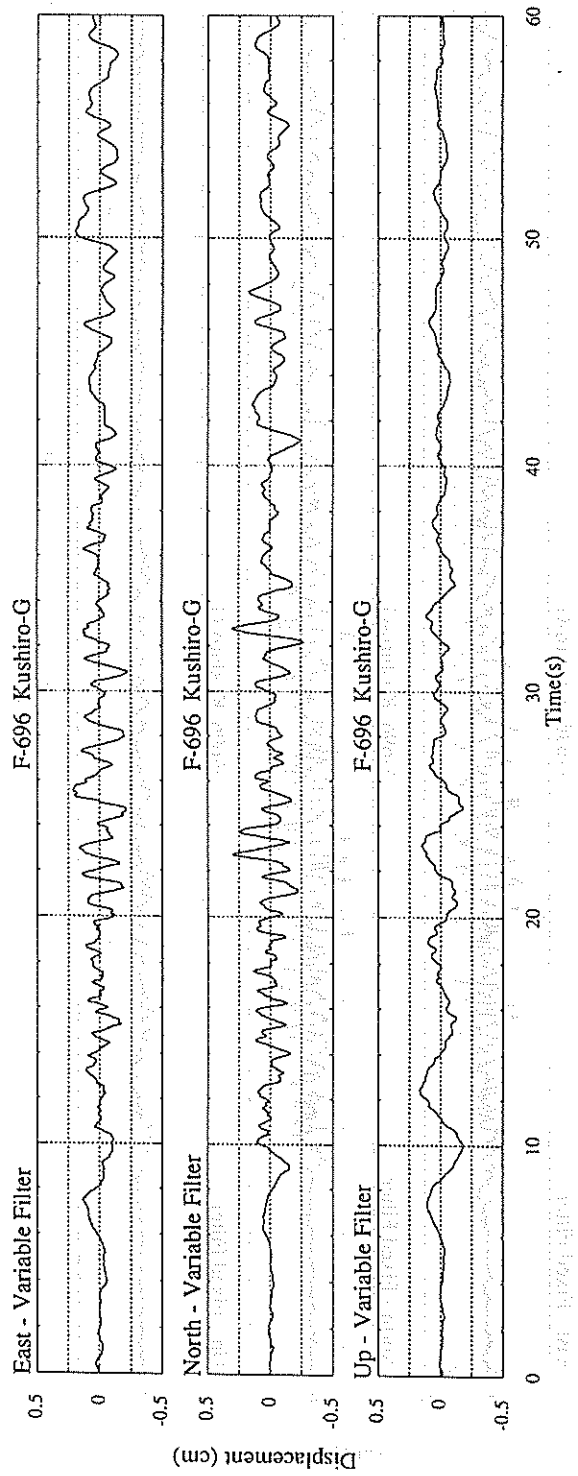
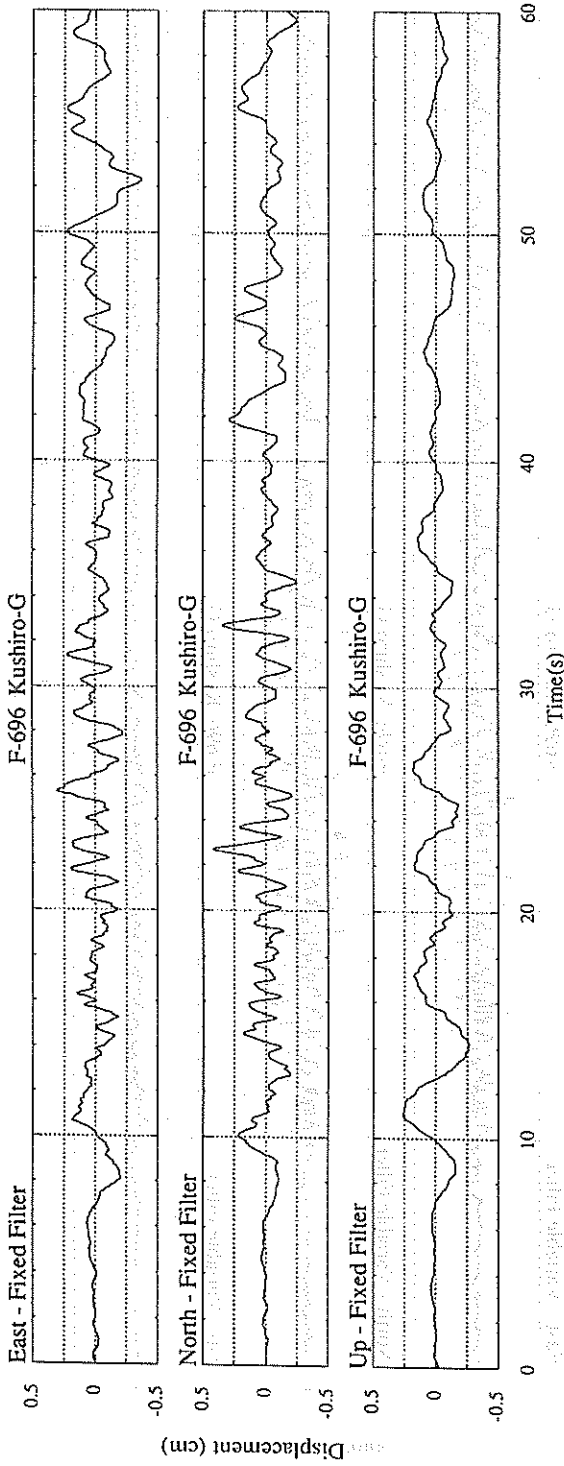
	N S	E W	U D	HORIZONTAL*
PARAMETER OF THE VARIABLE FILTER				
FC (HZ)	0.176	0.158	0.158	
MAXIMUM ACCELERATION (GAL)				
SMAC-B2 EQUIVALENT	16.5	13.1	4.5	19.7
ORIGINAL	19.0	19.5	5.5	25.3
CORRECTED	18.8	19.6	5.5	25.2
MAXIMUM VELOCITY (CM/SEC)				
FIXED FILTER	1.46	1.17	0.60	1.71
VARIABLE FILTER	1.45	1.31	0.58	1.68
MAXIMUM DISPLACEMENT (CM)				
FIXED FILTER	0.42	0.36	0.27	0.44
VARIABLE FILTER	0.30	0.22	0.18	0.32

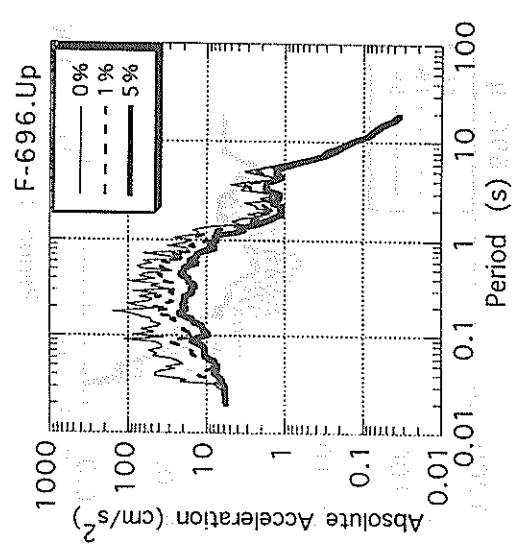
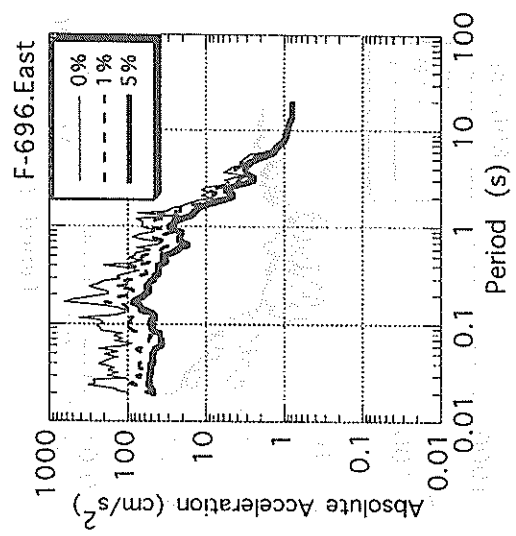
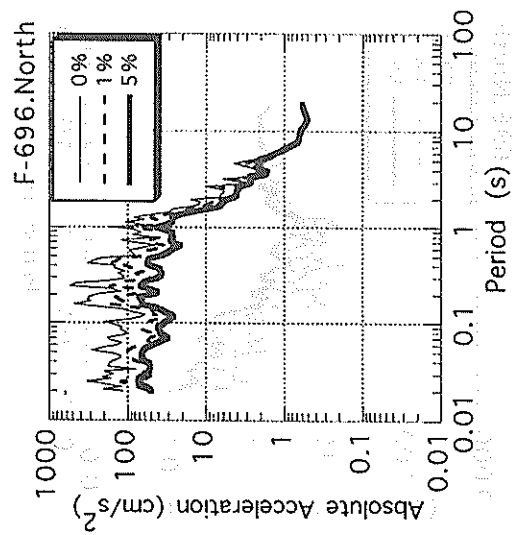
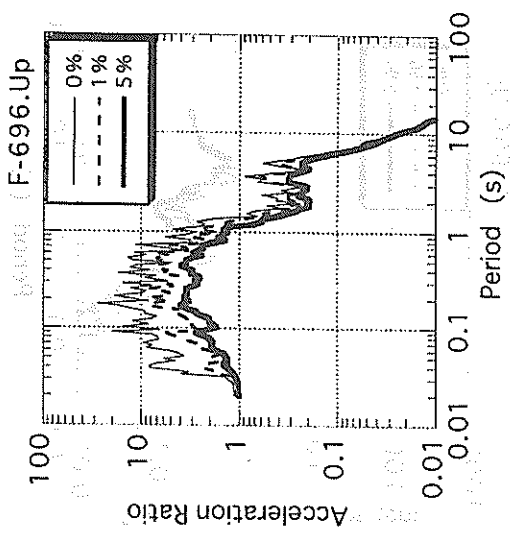
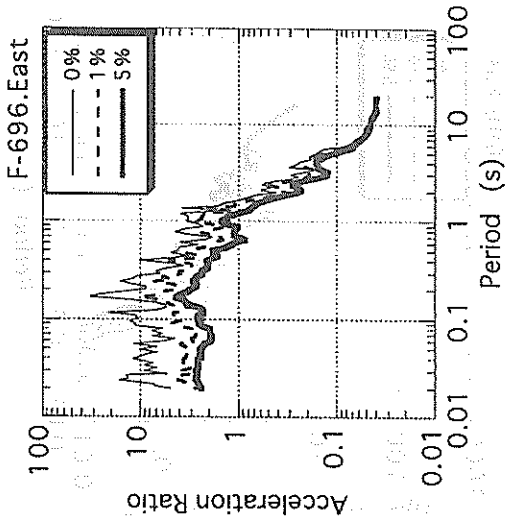
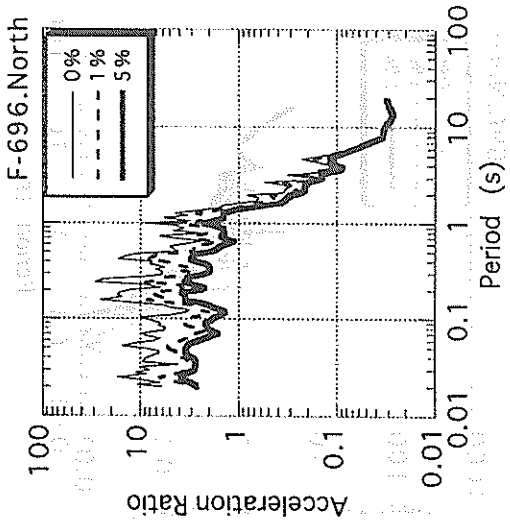
* RESULTANT OF HORIZONTAL COMPONENTS

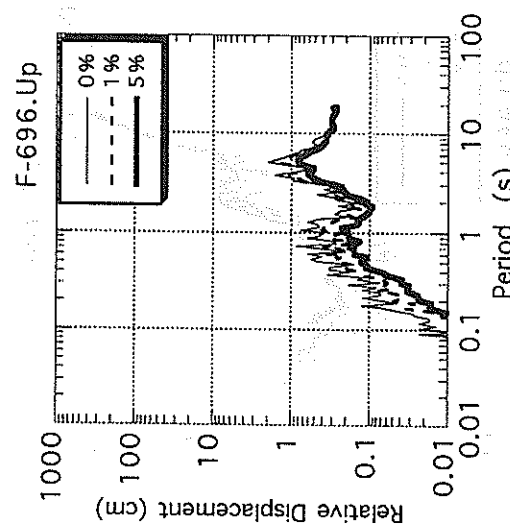
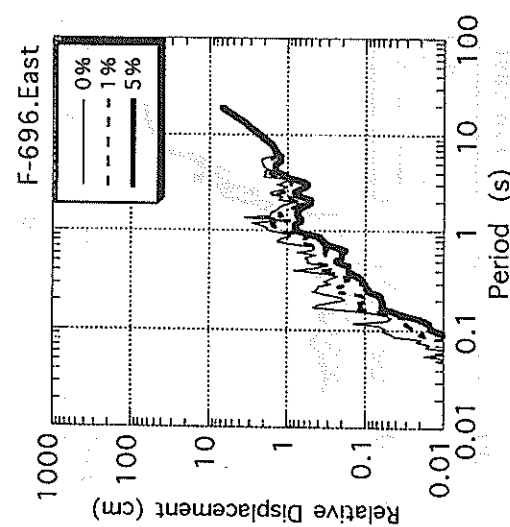
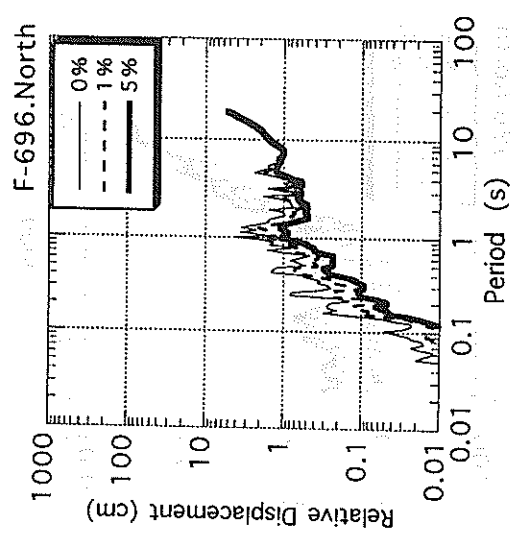
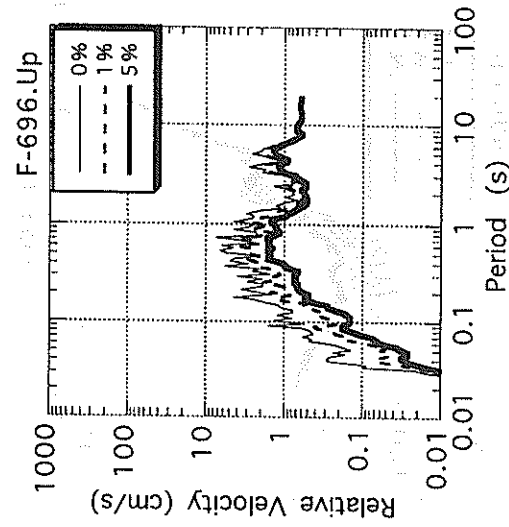
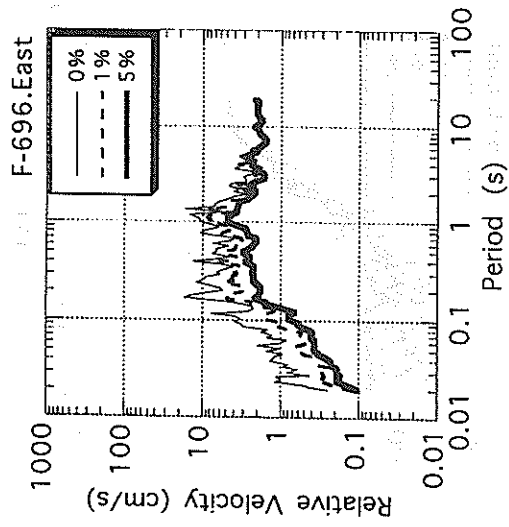
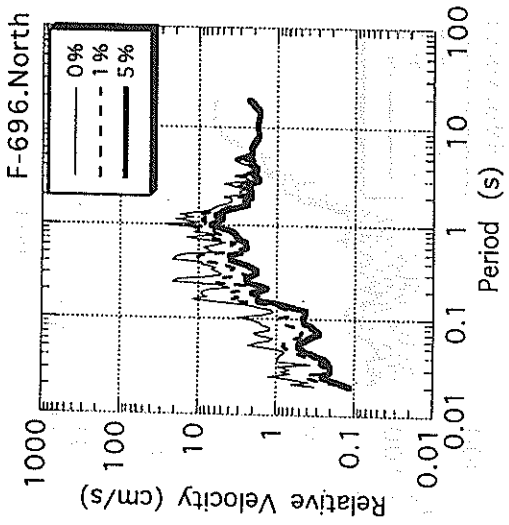


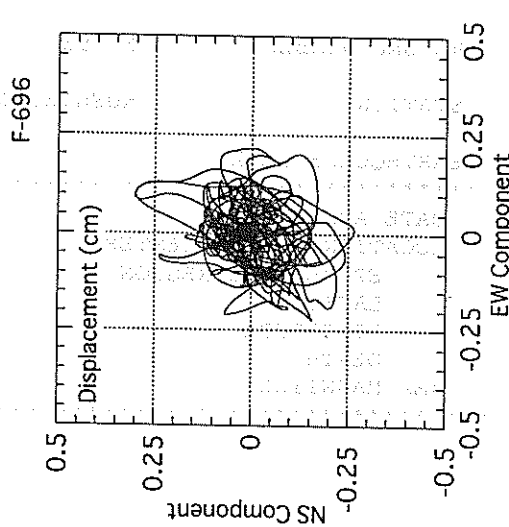
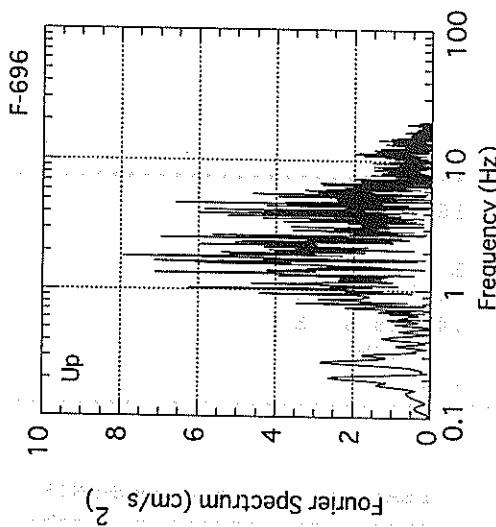
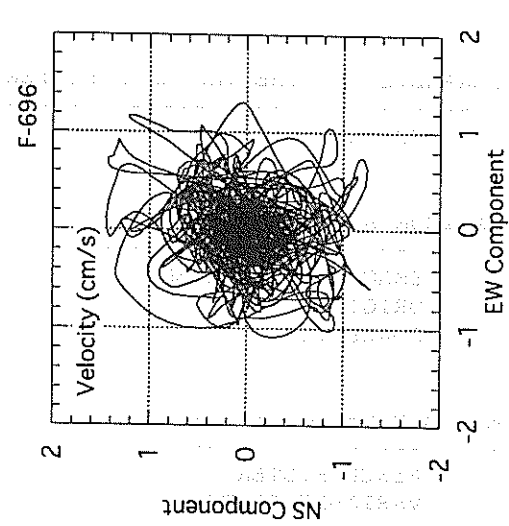
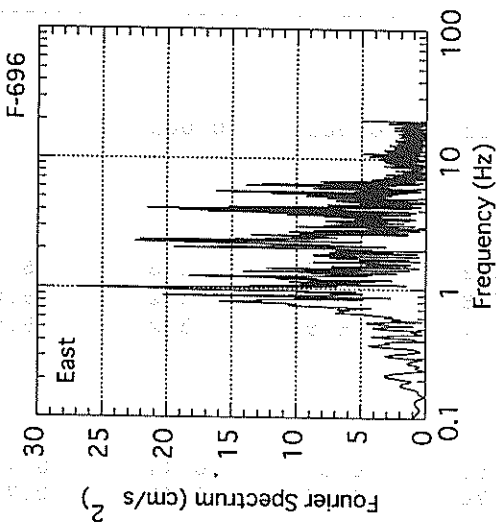
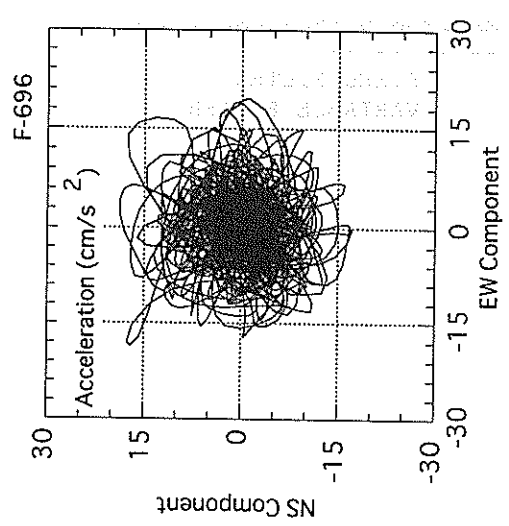
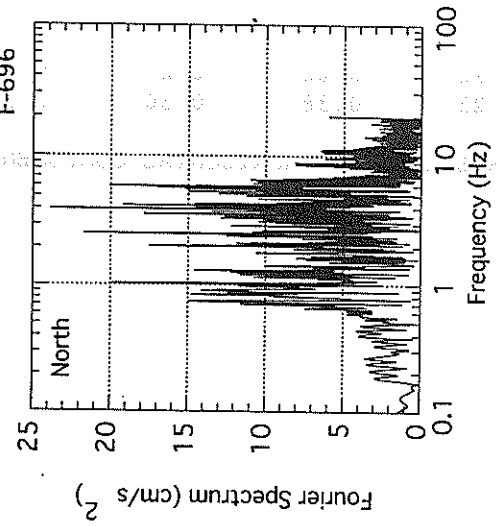












RECORD NUMBER : F-695
 STATION : KUSHIRO-GB

EARTHQUAKE DATA

 DATE AND TIME 16:55 OCT. 9, 1994
 LOCATION OF HYPOCENTER
 EPICENTRAL REGION E OFF HOKKAIDO
 LATITUDE 43° 33.3' N
 LONGITUDE 147° 48.4' E
 DEPTH 0.0KM
 JMA MAGNITUDE 7.0

PEAK VALUES OF COMPONENTS

 N S E W U D HORIZONTAL*

PARAMETER OF THE VARIABLE FILTER

 FC (HZ) 0.103 0.085 0.085

MAXIMUM ACCELERATION (GAL)

 SMAC-B2 EQUIVALENT 6.2 6.0 2.6 6.7
 ORIGINAL 7.8 6.9 3.2 9.0
 CORRECTED 7.7 6.9 3.2 9.0

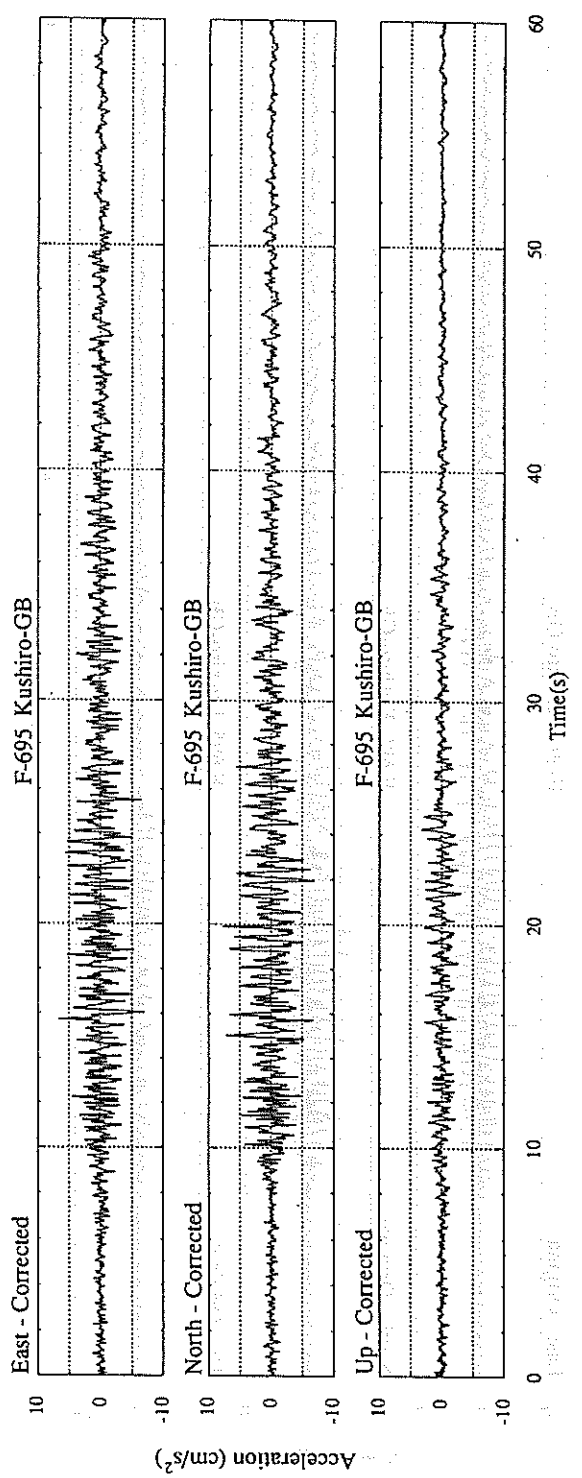
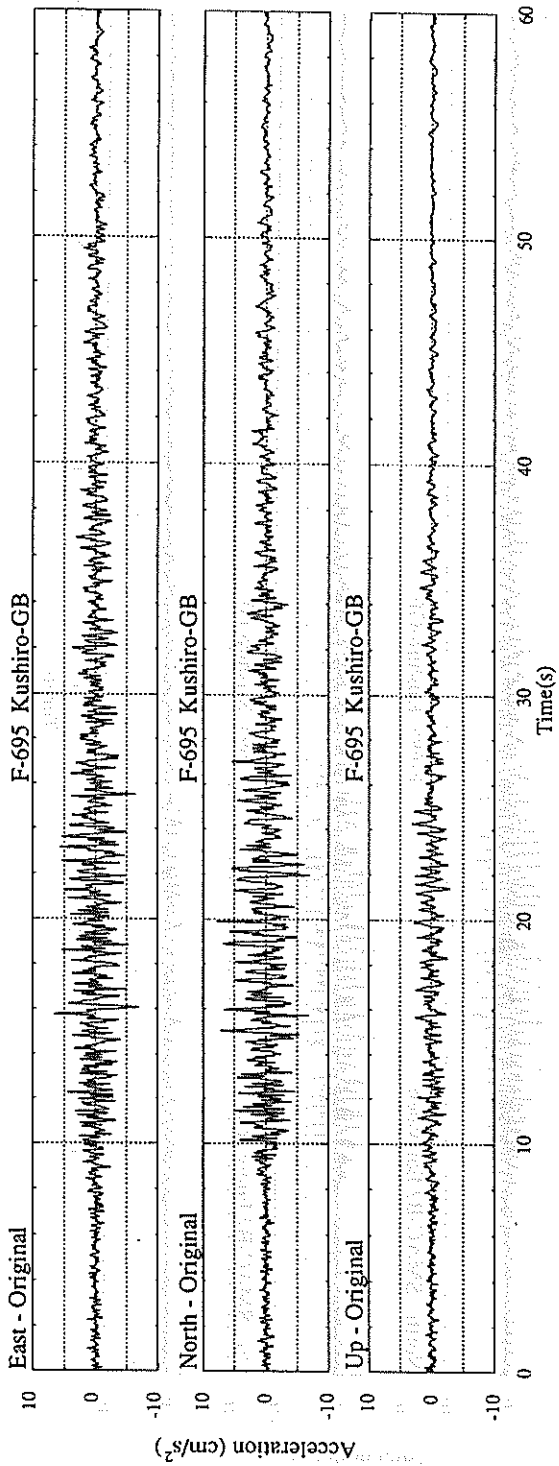
MAXIMUM VELOCITY (CM/SEC)

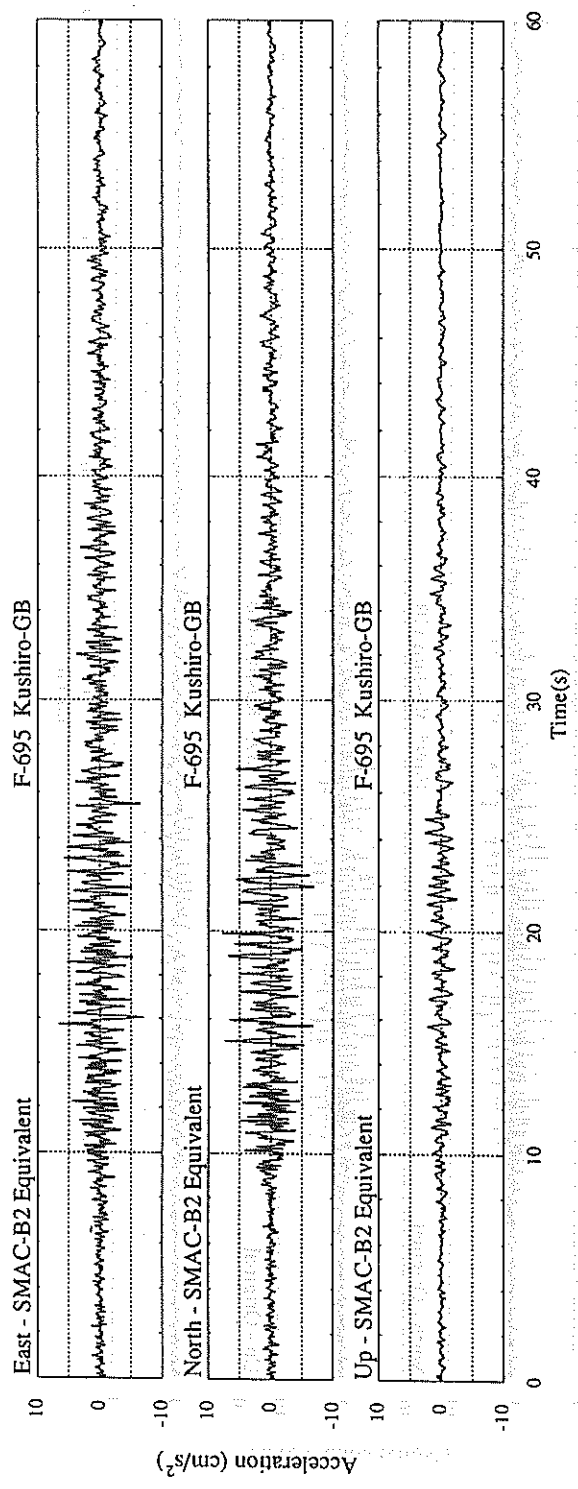
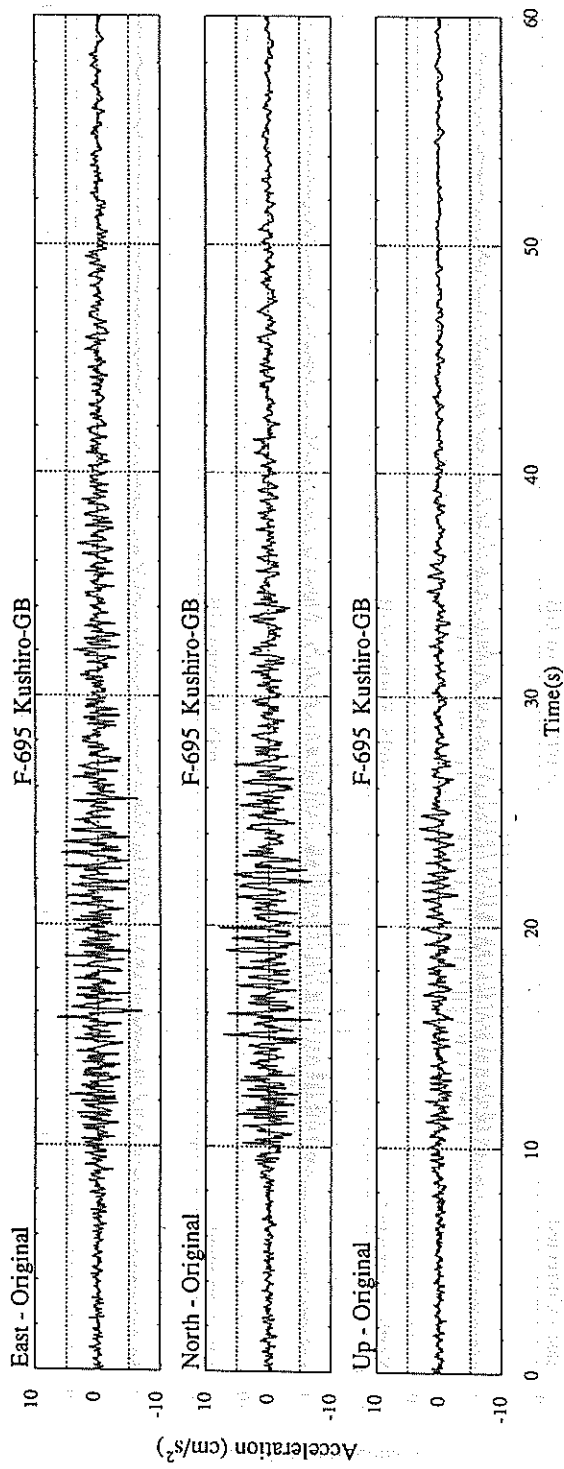
 FIXED FILTER 0.58 0.51 0.44 0.71
 VARIABLE FILTER 0.70 0.56 0.48 0.71

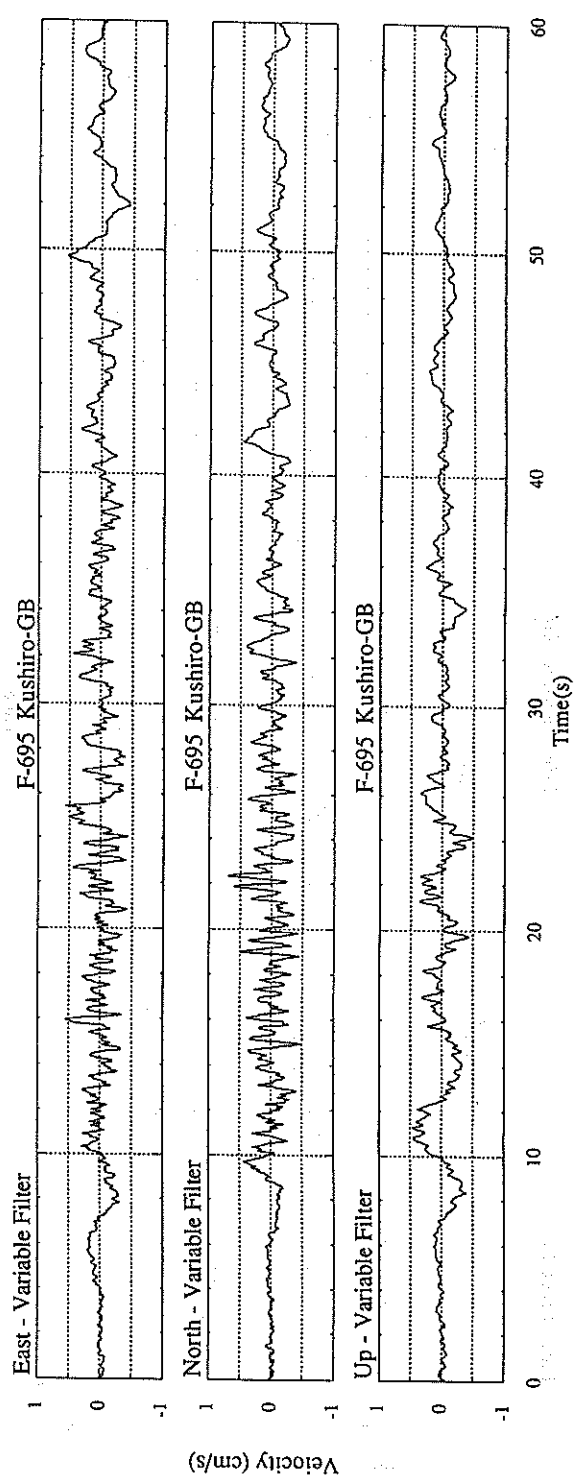
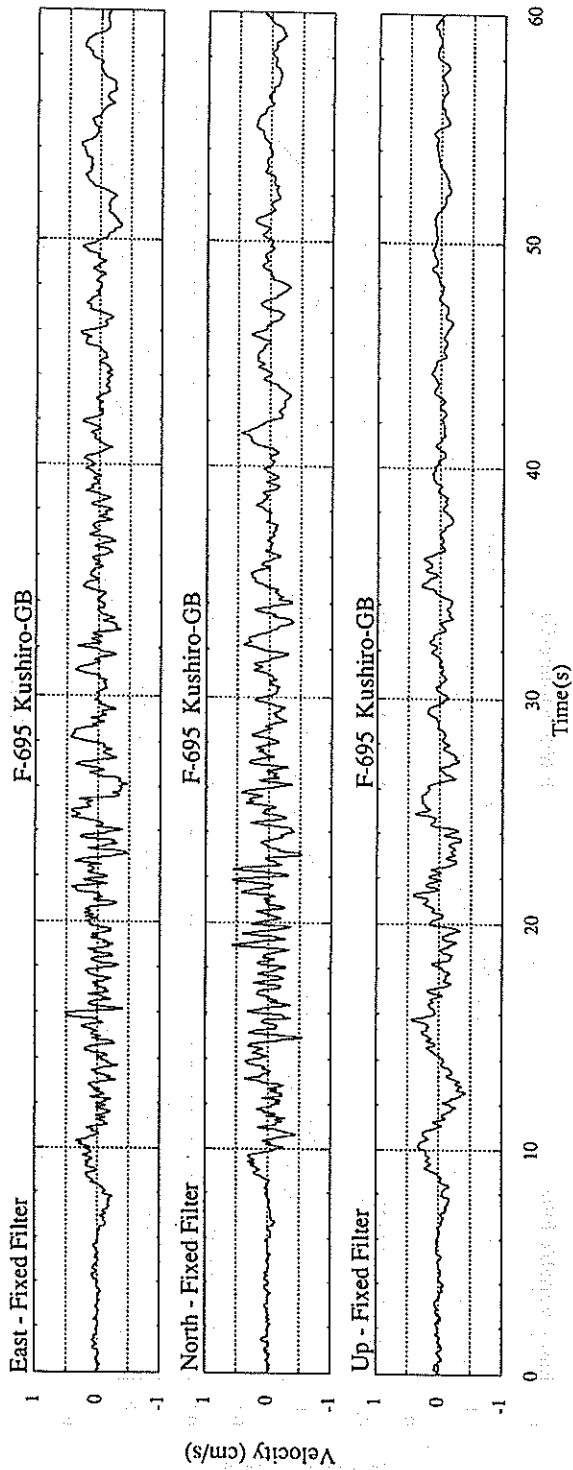
MAXIMUM DISPLACEMENT (CM)

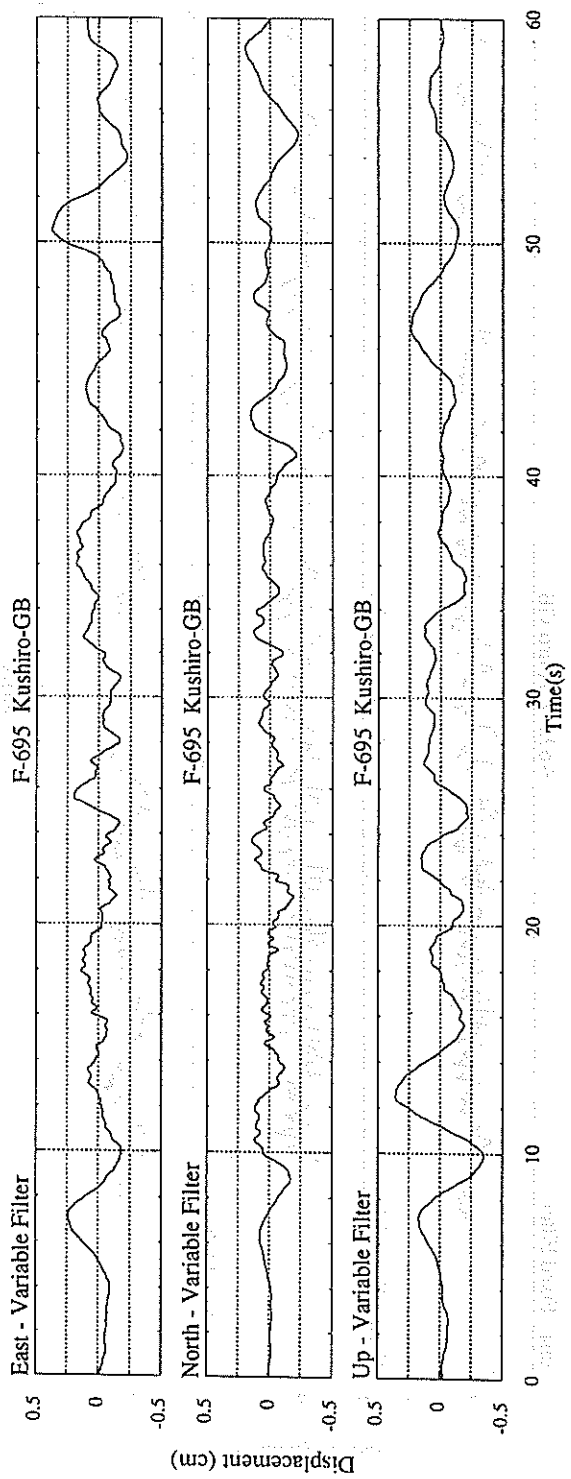
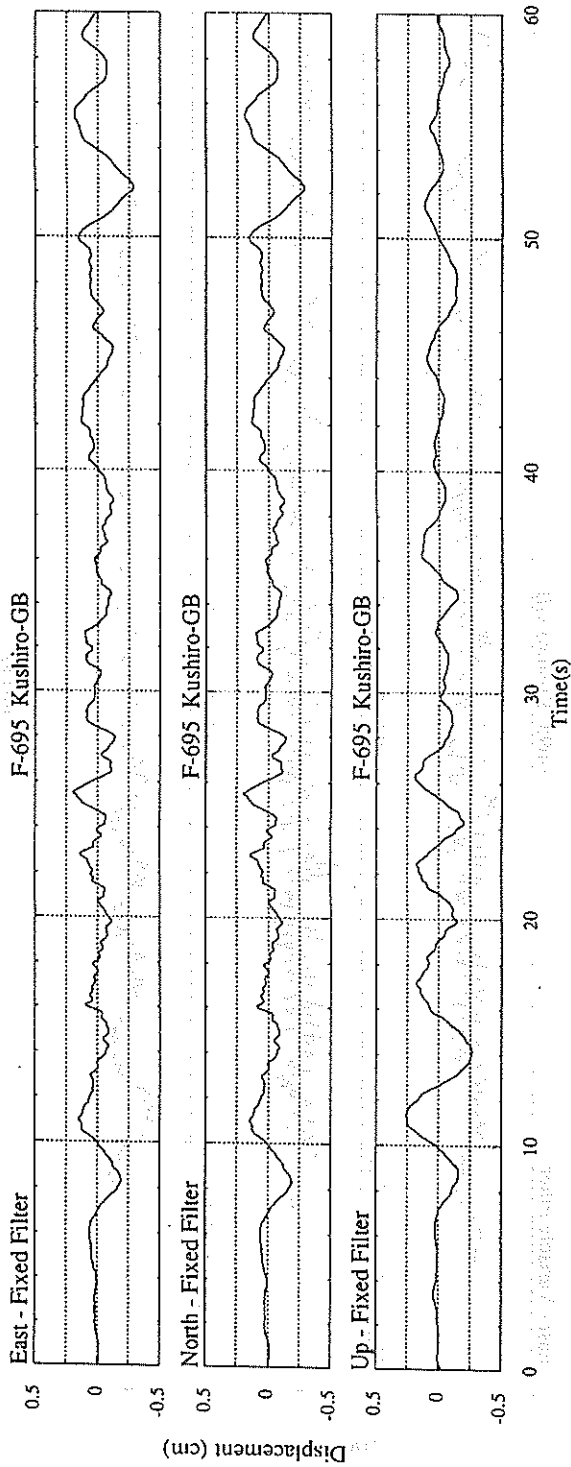
 FIXED FILTER 0.22 0.28 0.27 0.28
 VARIABLE FILTER 0.23 0.38 0.36 0.38

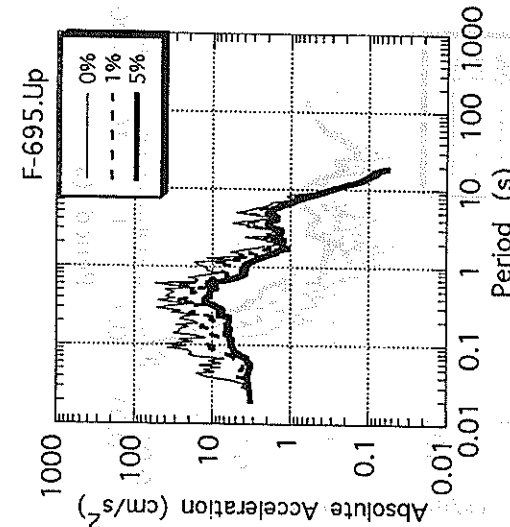
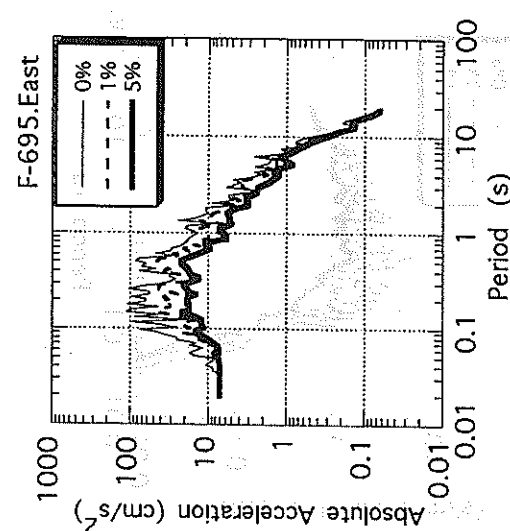
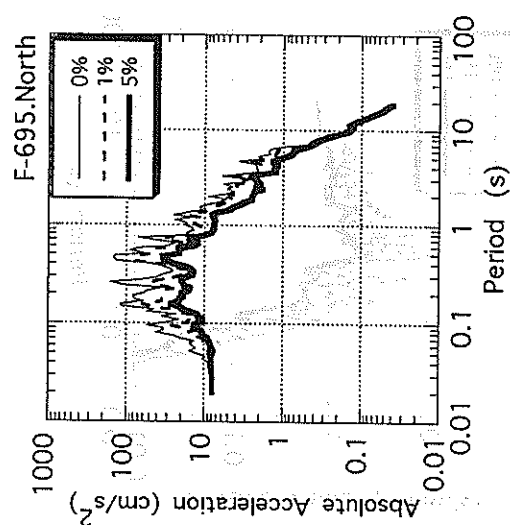
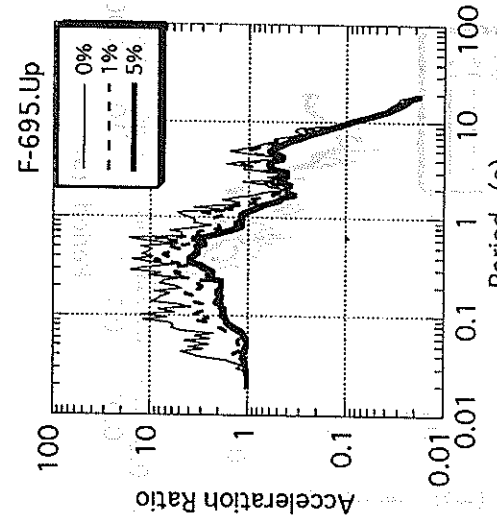
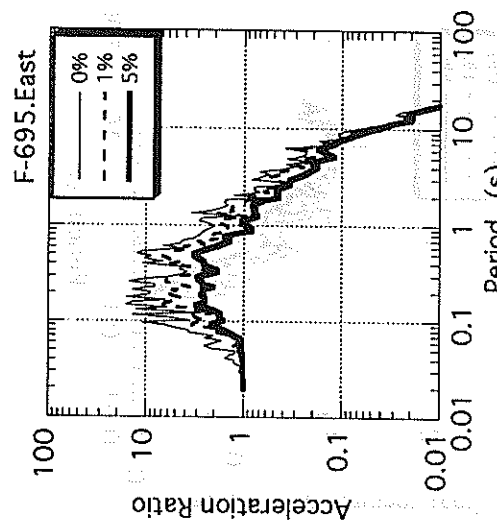
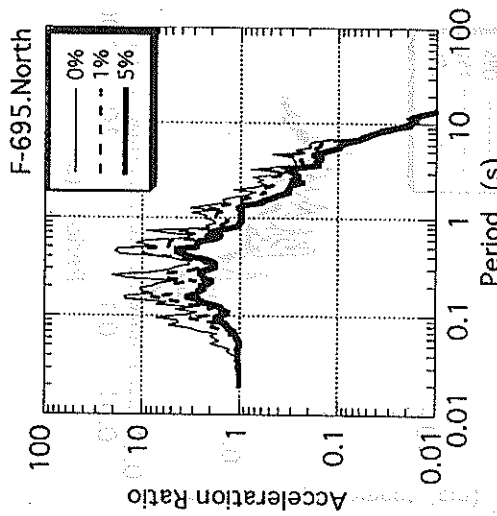
* RESULTANT OF HORIZONTAL COMPONENTS

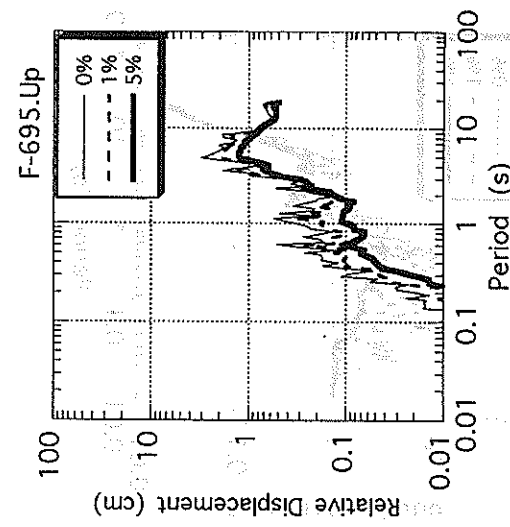
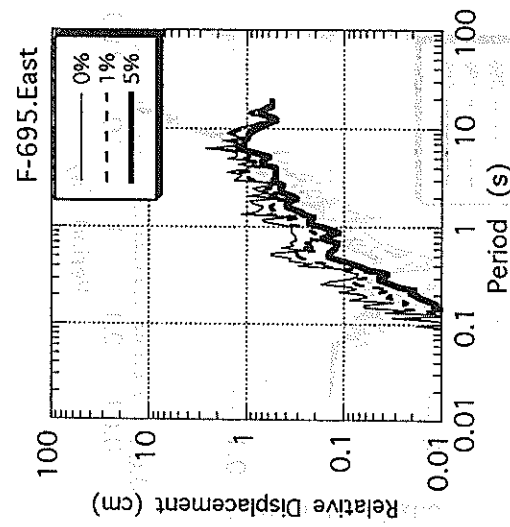
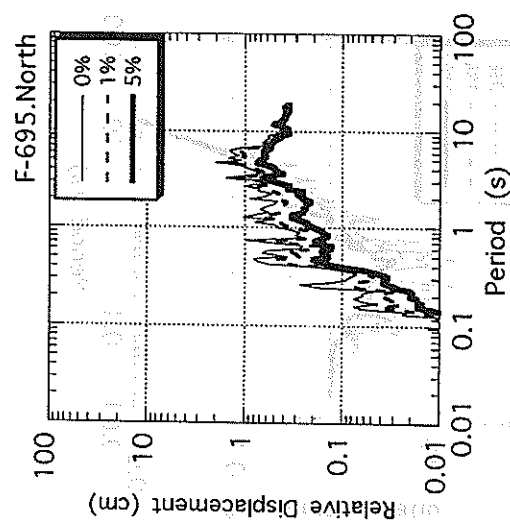
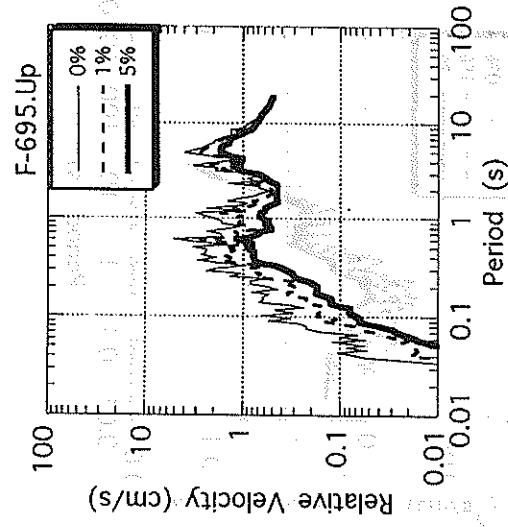
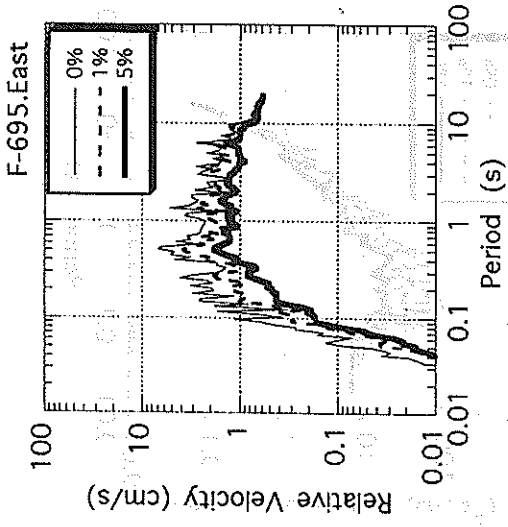
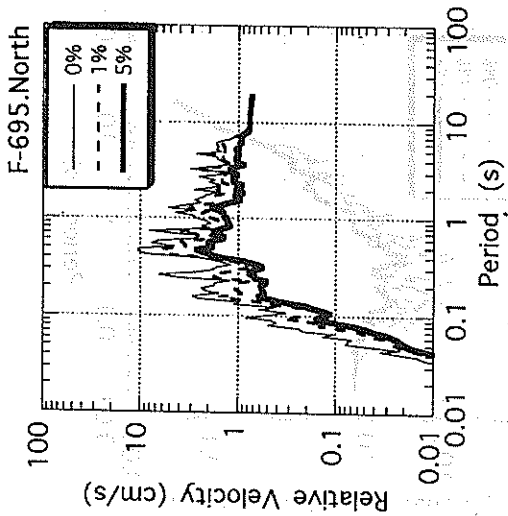


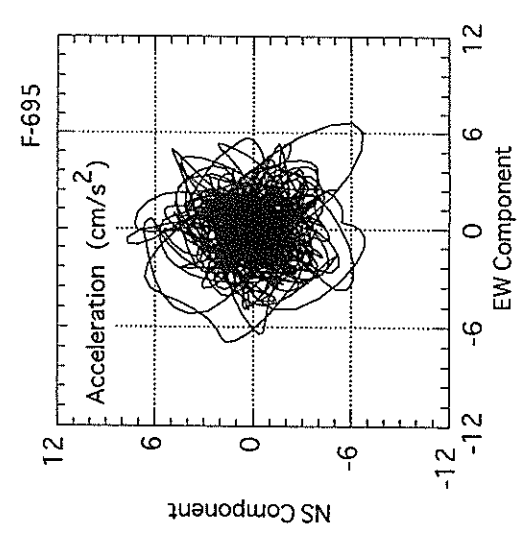
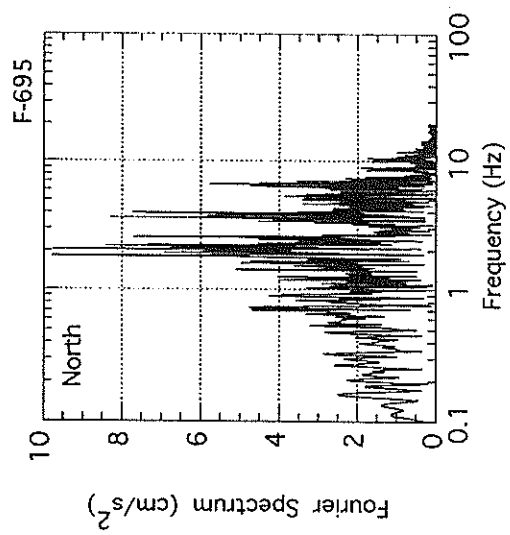
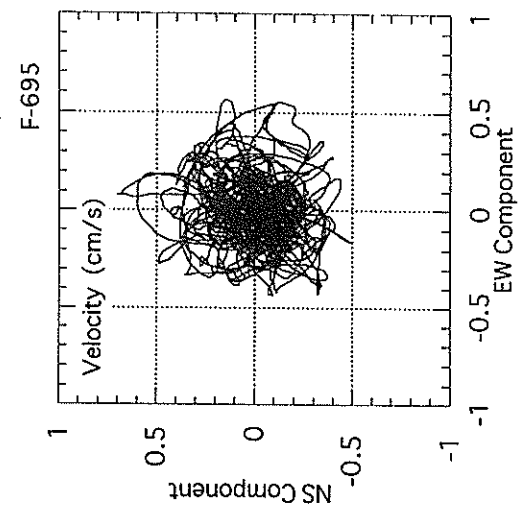
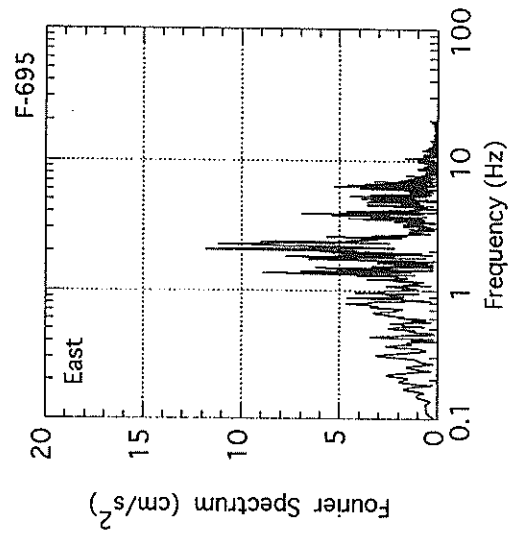
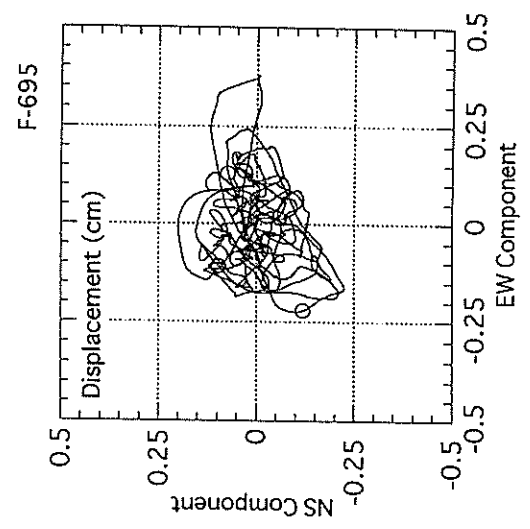
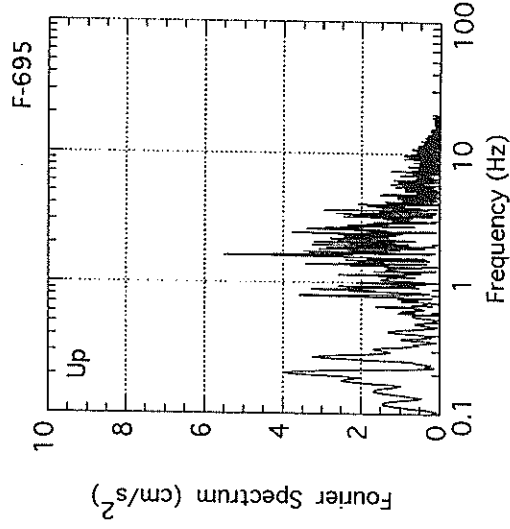












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