密级:

# 工程随机地震动模型数据库系统(SGMME)

## 软件说明书

文档编号				版本号	V1.0
分册名称	SGM	第1册/共1册			
总页数		正文		附录	0
编制		审批		生效日期	2018-9-11

版本号	变更控制 报告编号	更改条款及内容	更改人	审批人	更改日期
V1.0					2018/9/11

修改记录

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#### 1 安装与启动

工程随机地震动模型数据库系统 V1.o 基于 Windows 操作系统开发而成,用户应确保所使用的操作系统版本为 Windows XP 以上(对于 XP 系统的用户,在使用过程中若遇到动态链接库缺失的问题,请与我们联系pengyongbo@tongji.edu.cn)。

工程随机地震动模型数据库系统 V1.o 不需要安装即可使用, 在获取和解压 我们提供的 SGMME-V1.o.zip 压缩包后, 双击打开 SGMME-V1.0.exe 可执行文件, 即可启动工程随机地震动模型数据库系统 V1.o, 如图 1.1 所示。(友情提醒: 建议 用户不应对压缩后的文件做删除或修改, 若需将本分析系统添加到桌面快捷方 式或开始屏幕, 右键 SGMME-V1.0.exe 进行相应的操作即可。)



图 1.1 工程随机地震动模型数据库系统启动界面

如图 1.1 左侧菜单栏所示,工程随机地震动模型数据库系统 V1.0 主要包含四 个模块,分别为主页(Home)、天然地震动记录(Recorded Ground Motion)、人工随 机地震动(Stochastic Ground Motion)和帮助(Help)。其中天然地震动记录和人工随 机地震动是主要模块,提供 7778 条天然地震动和人工随机地震动样本按聚类分 组的检索以及时程和反应谱信息的可视化和下载。下面演示工程随机地震动模型 数据库系统 V1.0 的操作过程。

### 2 操作与演示

#### 2.1 天然地震动记录模块

切换本分析系统的左侧菜单至天然地震动记录模块Recorded Ground Motion,如图 2.1 所示。

6	Database of Stochastic Ground Motion Models for Engineering	- 0 ×
SGMME Database Syste	m	🥐 🕤
1	Recorded Ground Motion	
Home		Search & List
Recorded Ground Motion		Clustering: •
		Group:
Stochastic Ground Motion		Site-Type:
ee Help		Retrieval
Administrator		
		Select to Plot & Download
		Record:
		Time-History Download
		Spectrum: Damping Ratio(%):
		Acceleration Download
		Velocity Download
		Displacement Download
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图 2.1 天然地震动记录模块

在界面右侧的对话框(如图 2.2 所示), 根据聚类、分组和场地类别选择天然地震动记录。

Search & Li	ist	Search &	List
Clustering:	Ŧ	Clustering:	Energy Distribution +
Group:	Ţ	Group:	G-1 •
Site-Type:	Ŧ	Site-Type:	• I
	Retrieval		Retrieval

图 2.2 天然地震动记录选择对话框

 Retrieval
 按钮,将检索出聚类、分组和场地类别的天然地震动

 记录,如图 2.3 所示。

同济大学李杰教授学术梯队

<b>*</b>	Recorded	Ground M	otion											
Home	Selected	Number(N	<11): 0									Search & I	ist	
	⊿ Selec	t Number 1	ID GMN301	Earthquake Name Oroville-03	Year 1975	Month & Day 0808	Hour & Minute 0700	Station Name DWR Garage	Direction 090	Magnitude 4.7	E 1 ^	Clustering	Energy Distrik	bution
Recorded Ground Motion		2	GMN302	Oroville-03	1975	8080	0700	DWR Garage	180	4.7	1	clustering:	energy bisuit	201011
<u></u>		3	GMN345	Oroville-03	1975	8080	0700	Johnson Ranch	000	4.7	8	Group:	G-1	
		4	GMN346	Oroville-03	1975	0808	0700	Johnson Ranch	090	4.7	8			
Stochastic Ground Motion		5	GMN445	Coyote Lake	1979	0806	1705	Gilroy Array #1	230	5.74	1	Site-Type:	1	
2	님님	6	GMN541	Sierra Madre	1991	0628	-999	Mt Wilson - CIT Seis Sta	000	5.61	6			
<b>9</b> 1	님	7	GMN542	Sierra Madre	1991	0628	-999	Mt Wilson - CIT Seis Sta	090	5.61	6			
Help		8	GMN543	Sierra Madre	1991	0628	-999	Vasquez Rocks Park	000	5.61	3		R	etrieval
<u></u>	- H	10	GMN544 GMN552	Sierra Madre	1991	0117	+999 1222	Vasquez Rocks Park	090	5.01	3			
<u> </u>	1	10	GMINDOD	Northinge-02	1334	VIII	1232	Lake Hughes #12A	090	0.05	•			
Ì												Record: Tim Spectrum: Dampin	e History ng Ratio(%): [ eleration	Downloa
												V. Disp	elocity locement	Downloa Downloa

图 2.3 天然地震动记录的检索

在检索出的天然地震动列表(图 2.4),选择需要可视化的地震动,如图 2.5 所示。

Select	Number	ID	Earthquake Name	Year	Month & Day	Hour & Minute	Station Name	Direction	Magnitude	E
	1	GMN301	Oroville-03	1975	0808	0700	DWR Garage	090	4.7	1
	2	GMN302	Oroville-03	1975	0808	0700	DWR Garage	180	4.7	1
	3	GMN345	Oroville-03	1975	0808	0700	Johnson Ranch	000	4.7	8
	4	GMN346	Oroville-03	1975	0808	0700	Johnson Ranch	090	4.7	8
	5	GMN445	Coyote Lake	1979	0806	1705	Gilroy Array #1	230	5.74	1
	6	GMN541	Sierra Madre	1991	0628	-999	Mt Wilson - CIT Seis Sta	000	5.61	6
	7	GMN542	Sierra Madre	1991	0628	-999	Mt Wilson - CIT Seis Sta	090	5.61	6
	8	GMN543	Sierra Madre	1991	0628	-999	Vasquez Rocks Park	000	5.61	3
	9	GMN544	Sierra Madre	1991	0628	-999	Vasquez Rocks Park	090	5.61	3
	10	GMN553	Northridge-02	1994	0117	1232	Lake Hughes #12A	090	6.05	3

图 2.4 天然地震动记录的选择列表

Select	Number	ID	Earthquake Name	Year	Month & Day	Hour & Minute	Station Name	Direction	Magnitude	E
	1	GMN301	Oroville-03	1975	0808	0700	DWR Garage	090	4.7	1
✓	2	GMN302	Oroville-03	1975	0808	0700	DWR Garage	180	4.7	1
✓	3	GMN345	Oroville-03	1975	0808	0700	Johnson Ranch	000	4.7	8
✓	4	GMN346	Oroville-03	1975	0808	0700	Johnson Ranch	090	4.7	8
✓	5	GMN445	Coyote Lake	1979	0806	1705	Gilroy Array #1	230	5.74	1
	6	GMN541	Sierra Madre	1991	0628	-999	Mt Wilson - CIT Seis Sta	000	5.61	6
	7	GMN542	Sierra Madre	1991	0628	-999	Mt Wilson - CIT Seis Sta	090	5.61	6
	8	GMN543	Sierra Madre	1991	0628	-999	Vasquez Rocks Park	000	5.61	З
	9	GMN544	Sierra Madre	1991	0628	-999	Vasquez Rocks Park	090	5.61	3
	10	GMN553	Northridge-02	1994	0117	1232	Lake Hughes #12A	090	6.05	

图 2.5 天然地震动记录的选择

然后在界面右下侧(图 2.6)的可视化对话框,可以选择时程或反应谱信息的可视

化, 例如点击 Time-	History , 时程显示如图 2.7 所示。	
	Select to Plot & Download	
	Record:	
	Time-History Download	
	Spectrum:	
	Damping Ratio(%):	
	Acceleration Download	
	Velocity Download	
	Displacement Download	

图 2.6 天然地震动记录的可视化

6			Database o	of Sto	chastic Gro	und Motion M	odels for Engineering						- 0	×
SGMME Database Syste	em												?	0
~	Recorded Ground N	Motion												
Home	Selected Number(	N<11): 3									Search &	List		
Recorded Ground Motion	✓ Select Number 1 ✓ 2 ✓ 3 ✓ 4 5 6 7 7 7 7 7 7 7 7 7 7 7 7 7	ID I GMN301 ( GMN302 ( GMN345 ( GMN345 ( GMN345 ( GMN445 (	Carthquake Name Droville-03 Droville-03 Droville-03 Droville-03 Coyote Lake	Year 1975 1975 1975 1975 1975	Month & Day 0808 0808 0808 0808 0808 0806	y Hour & Minute 0700 0700 0700 0700 1705	Station Name DWR Garage DWR Garage Johnson Ranch Johnson Ranch Gilroy Array #1	Direction 090 180 000 090 230	Magnitude 4.7 4.7 4.7 4.7 5.74	E 1 * 1 8 8 1	Clustering: Group: Site-Type:	Energy Distribution	on	¥ ¥
Help	7     8     9     10	GMN543 GMN543 GMN543 GMN553	Sierra Madre Sierra Madre Sierra Madre Northridge-02	1991 1991 1991 1991 1994	0628 0628 0628 0628 0117	-999 -999 -999 -999 1232	Mt Wilson - CIT Seis Sta Mt Wilson - CIT Seis Sta Vasquez Rocks Park Vasquez Rocks Park Lake Hughes #12A	090 090 090 090	5.61 5.61 5.61 6.05	6 8 8 4		Retrie	wal	
	Vccientio	2			Recorded	Ground Mo	tions	•	— GMN300 — GMN349 — GMN349		Select to F Record: Tim Spectrum Dampi Acc	lot & Downlo e-History ng Ratio(%): election electity lacement	Download Download Download Download	
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图 2.7 天然地震动记录时程的可视化

	Acceleration	
	Velocity	1
进一步地,若要查看反应谱信息,输入阻尼比,点击	Displacement	即可, 其结果如
图 2.8 所示。		









若用户需要下载相应的数据,点击相应的 Download 即可。

### 2.2 人工随机地震动模块

切换本分析系统的左侧菜单至人工随机地震动模块Stochastic Ground Motion,如图 2.9 所示。

8		Database of Stochastic Ground Motion Models for Engineering	- 0 ×
S	SMME Database System	m	🐤 🕤
		Stochastic Ground Motion	
	Home		Search & List
	Recorded Ground Motion		Cluster-M: v
			Group:
	Stochastic Ground Motion		Site-Type: •
	Help		Sample-N: •
	Administrator		Retrieval
	Carlos and the second s		
	A CONTRACTOR		Select to Plot & Download All
			Sample Spectrum
	19		Normalization: •
			Time-History Download
			Prb-Download
Copyrig	ht © 2017-2019 Research Group of	Prof. Jie Li @ Tongji University	INS

图 2.9 人工随机地震动模块

在界面右侧的对话框(如图 2.10 所示), 根据聚类、分组和场地类别选择人工随机 地震动样本。

Search & List			Search &	List
Cluster-M:		Ŧ	Cluster-M:	Magnitude-Distance
Group:		Ŧ	Group:	G-1
Site-Type:		Ŧ	Site-Type:	I
Sample-N:		Ŧ	Sample-N:	100
	Retrieval			Retrieval

Retrieval 按钮,将检索出聚类、分组和场地类别的人工随机地

点击

#### 震动样本,如图 2.11 所示。

Stochastic Gri	ound Motion										
Selected Nu	mber: 0								Search &	List	
Select ID	A0 0.51829314	Tao 0.00924462	Xig 0.30470667	Omegag 6.4156516	a 1.4946925	b 0.29843942	c 0.63154615	d 0.514 ~	Cluster-M:	Magnitude-Distance	
2	0.004461142 1.0621306	0.58396823 0.00958172	0.99033284 0.46654755	29.583235 0.55175621	1.1449198 1.4491609	2.5730883 1.384818	0.499638	0.45(	Group:	G-1	
	0.30538056 0.43846263	0.00062135	0.34143242 0.77620628	1.0009927 39.347832	1.152182 1.2066843	0.61550443 0.81573666	0.47363302	0.40:	Site-Type:	I	
6	0.07534494 0.17195731	0.03545796	0.57419473 0.66627828	24.398809 31.634017	0.78220088	1.0607383	0.19560503	0.56:	Sample-N:	100	
Paramete	er A0	Тао	Xig	Omegag	a	b	c	d			
Prob. Dir PramI	st. Log-Normal -1.48722	Log-Normal -2.71413	Gamma 3.1557	Gamma 0.857511	Log-Normal -0.34234	Log-Normal 0.204871	Log-Normal -1.12622	Log- *		Retrieval	
PramII Mean Va	0.863947 lue 0.328236	1.42571 0.183084	0.122321 0.386009	21.1219 18.1123	0.387071 0.765347	0.874423	1.15146 0.629215	0.934			
									Select to F Sample Sp Norm	Plot & Download A bectrum alization:	.11
									Ti	me-History Dow	nloa
	Selected Nu select II 1 2 3 4 4 5 6 6 7 7 * Pram-II Pram-II Mean Va *	Selected Number:         0           I         0.51829314         2         0.004461142           I         1.0621306         4         0.30538056           I         0.51829314         0.91346263         6           I         0.02534464         7         0.12195731           I         I         Parameter         A0         Prob. Dist.         Log-Normal           PramII         1.46722         PramII         0.663047         Mean Value         0.328236	Selected Number:         0           Gelect ID         A0         Tae           1         0.51829314         0.00924462           2         0.00446142         0.3819623           3         1.0621306         0.00958175           4         0.3938058         0.000563173           6         0.75344624         0.03951766           7         0.17195731         0.03315067           #         Parameter         A0           Prob. Dist.         Log-Normal         Lop-Normal           PromII         -1.48722         -2.71413           Maan Value         0.328236         0.183084	Selected Number:         0           -         Selected Number:         0.00924462         0.30470667           1         0.51829314         0.00924462         0.30470667           2         0.004461142         0.53930623         0.090391244           3         1.0621306         0.00905113         0.46564750           4         0.3058056         0.00062135         0.46564750           5         0.438402633         0.00545766         0.574164711           7         0.17159731         0.031515067         0.666627828           *         *         *         *         *           *         *         *         *         *           *         *         *         *         *           *         *         *         *         *           *         *         *         *         *           *         *         *         *         *           *         *         *         *         *           *         *         *         *         *           *         *         *         *         *           *         *         *         * <td>Selected Number         0           Gelectid Number         0           Gelectid Number         0           Gelectid Number         0           Gelectid Number         0           1         0.51829314         0.00924462         0.30470667           6.4156516         2         0.00446142         0.43980622         0.90931264         20.53175621           1         0.51820344         0.00958173         0.43645475         0.55175621         0.00695713         0.0075820628         93.147832           1         6         0.07334444         0.03545796         0.57419471         24.308009           1         7         0.1795731         0.03715067         0.66627828         31.654007           1         7         0.1795731         0.03715067         0.66627828         31.654007           1         7         0.1795731         0.03715147         0.420241         21.420800           Prom-Li         0.467244         0.031457067         0.66527828         31.654007           1         7         0.3195711         0.420241         21.4219         Mean Value         0.328236         0.183084         0.386009         18.1123         1           1         1</td> <td>Selected Number:         0           Gelecti Di         A0         Tee         Xig         Omegag         e           Gelecti Di         A0         0.0095812         0.96013204         20.561235         1.14491609           Gild         4         0.3058056         0.00055917         0.77620628         39.147032         1.0562180           Gild         6         0.07534444         0.03545766         0.57141473         4.308006         0.76220068           Gild         7         0.17159731         0.0371567         0.66627828         31.634017         1.7325544           F         F         F         F         F         F         F         F           Prob. Dist.         Log-Normal         Garma         Garma         Log-Normal         Garma         Log-Normal           PronII         -1.44722         -2.71413         0.12221         21.1219         0.30701           Mean Value         0.</td> <td>Selected Number         0           Gelected Number         0           Gelected Number         0           Gelected Number         0           1         0.51829314         0.00924462         0.30470697         6.4156516         1.4946925         0.29843942           2         0.004461142         0.5038026         0.99033242         25.53235         1.14491900         3.84818           4         0.0358026         0.00998172         0.06654755         0.5575621         1.4491900         3.84818           6         0.0358026         0.00095173         0.77620562         9.9347832         1.2066943         0.81573666           6         0.03544263         0.0361718         0.77620562         9.347832         1.2066043         0.81573666           6         0.07354444         0.035457667         0.66627828         3.634017         1.7325544         1.0072827           *         *         *         *         *         *         *         *           *         *         *         *         *         *         *         *           *         *         *         *         *         *         *         *         *</td> <td>Selected Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           1         0.51829314         0.00924462         0.30470667         6.4156516         1.4946925         0.29843942         0.683154615           2         0.00440142         0.53380623         0.09093124         0.55175621         1.4491909         1.384181         0.88479788           4         0.03580056         0.00005113         0.34145242         1.0007927         1.132182         0.06150564         0.0415651056         1.05050212         0.041502612         0.05150443         0.041505065         1.05050212         0.47053302           6         0.07354444         0.031457067         0.66627828         3.1534017         1.7325544         1.050229         0.47794331           7         0.17195731         0.03715067         0.66627828         3.1534017         1.7325544         1.052229         0.47794331           7         0.17195731         0.03715067         0.66627828         3.1534017         1.7325544         1.0726229         0.47794831           9.         1.93716         0.032824         0.204471         1.12027</td> <td>Selected Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           1         0.51829314         0.00924462         0.30470667         6.4156516         1.4946902         0.29843942         0.683154615         0.511-           2         0.00440142         0.5336623         0.0993812         0.055175621         1.4491909         1.384181         0.88478788         0.281           4         0.03580056         0.00095113         0.34142422         1.0007927         1.153182         0.61550443         0.4785302         0.401           6         0.07534444         0.03545766         0.57419471         2.4300006         0.7222008         1.607108         0.1956203         0.551           7         0.1795731         0.03715067         0.66627828         31.534017         1.7325544         1.0726229         0.47794331         0.855           7         0.1795731         0.03715067         0.66627828         31.534017         1.7325544         1.0726229         0.47794331         0.855           7         0.1795731         0.03751407         0.575714         0.537514         0.2478424</td> <td>Selected Number         0         Selected Number         0</td> <td>Selected Number         O         Scarch &amp; List           Gelectin Di A0         Tao         Nig         Ornegag         a         b         c         d         <t< td=""></t<></td>	Selected Number         0           Gelectid Number         0           Gelectid Number         0           Gelectid Number         0           Gelectid Number         0           1         0.51829314         0.00924462         0.30470667           6.4156516         2         0.00446142         0.43980622         0.90931264         20.53175621           1         0.51820344         0.00958173         0.43645475         0.55175621         0.00695713         0.0075820628         93.147832           1         6         0.07334444         0.03545796         0.57419471         24.308009           1         7         0.1795731         0.03715067         0.66627828         31.654007           1         7         0.1795731         0.03715067         0.66627828         31.654007           1         7         0.1795731         0.03715147         0.420241         21.420800           Prom-Li         0.467244         0.031457067         0.66527828         31.654007           1         7         0.3195711         0.420241         21.4219         Mean Value         0.328236         0.183084         0.386009         18.1123         1           1         1	Selected Number:         0           Gelecti Di         A0         Tee         Xig         Omegag         e           Gelecti Di         A0         0.0095812         0.96013204         20.561235         1.14491609           Gild         4         0.3058056         0.00055917         0.77620628         39.147032         1.0562180           Gild         6         0.07534444         0.03545766         0.57141473         4.308006         0.76220068           Gild         7         0.17159731         0.0371567         0.66627828         31.634017         1.7325544           F         F         F         F         F         F         F         F           Prob. Dist.         Log-Normal         Garma         Garma         Log-Normal         Garma         Log-Normal           PronII         -1.44722         -2.71413         0.12221         21.1219         0.30701           Mean Value         0.	Selected Number         0           Gelected Number         0           Gelected Number         0           Gelected Number         0           1         0.51829314         0.00924462         0.30470697         6.4156516         1.4946925         0.29843942           2         0.004461142         0.5038026         0.99033242         25.53235         1.14491900         3.84818           4         0.0358026         0.00998172         0.06654755         0.5575621         1.4491900         3.84818           6         0.0358026         0.00095173         0.77620562         9.9347832         1.2066943         0.81573666           6         0.03544263         0.0361718         0.77620562         9.347832         1.2066043         0.81573666           6         0.07354444         0.035457667         0.66627828         3.634017         1.7325544         1.0072827           *         *         *         *         *         *         *         *           *         *         *         *         *         *         *         *           *         *         *         *         *         *         *         *         *	Selected Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           1         0.51829314         0.00924462         0.30470667         6.4156516         1.4946925         0.29843942         0.683154615           2         0.00440142         0.53380623         0.09093124         0.55175621         1.4491909         1.384181         0.88479788           4         0.03580056         0.00005113         0.34145242         1.0007927         1.132182         0.06150564         0.0415651056         1.05050212         0.041502612         0.05150443         0.041505065         1.05050212         0.47053302           6         0.07354444         0.031457067         0.66627828         3.1534017         1.7325544         1.050229         0.47794331           7         0.17195731         0.03715067         0.66627828         3.1534017         1.7325544         1.052229         0.47794331           7         0.17195731         0.03715067         0.66627828         3.1534017         1.7325544         1.0726229         0.47794831           9.         1.93716         0.032824         0.204471         1.12027	Selected Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           Gelectid Numberi         0           1         0.51829314         0.00924462         0.30470667         6.4156516         1.4946902         0.29843942         0.683154615         0.511-           2         0.00440142         0.5336623         0.0993812         0.055175621         1.4491909         1.384181         0.88478788         0.281           4         0.03580056         0.00095113         0.34142422         1.0007927         1.153182         0.61550443         0.4785302         0.401           6         0.07534444         0.03545766         0.57419471         2.4300006         0.7222008         1.607108         0.1956203         0.551           7         0.1795731         0.03715067         0.66627828         31.534017         1.7325544         1.0726229         0.47794331         0.855           7         0.1795731         0.03715067         0.66627828         31.534017         1.7325544         1.0726229         0.47794331         0.855           7         0.1795731         0.03751407         0.575714         0.537514         0.2478424	Selected Number         0	Selected Number         O         Scarch & List           Gelectin Di A0         Tao         Nig         Ornegag         a         b         c         d <t< td=""></t<>

图 2.11 人工随机地震动样本的检索

在检索出的人工随机地震动样本列表(图 2.12),选择需要可视化的地震动样本, 如图 2.13 所示。

Select	ID	A0	Тао	Xig	Omegag	a	b	с	d
	1	0.51829314	0.00924462	0.30470667	6.4156516	1.4946925	0.29843942	0.63154615	0.514
	2	0.004461142	0.58396823	0.99033284	29.583235	1.1449198	2.5730883	0.499638	0.456
	3	1.0621306	0.00958172	0.46654755	0.55175621	1.4491609	1.384818	0.88479788	0.232
	4	0.30538056	0.00062135	0.34143242	1.0009927	1.152182	0.61550443	0.47363302	0.407
	5	0.43846263	0.00605713	0.77620628	39.347832	1.2066843	0.81573666	1.0366212	0.183
	6	0.07534494	0.03545796	0.57419473	24.398809	0.78220088	1.0607383	0.19560503	0.567
	7	0.17195731	0.17195731 0.03715067		31.634017	1.7325544	1.0726229	0.47794331	0.855
4									÷.
Param	eter	A0	Тао	Xig	Omegag	а	b	с	d
Prob. I	Dist.	Log-Normal	Log-Normal	Gamma	Gamma	Log-Normal	Log-Normal	Log-Normal	Log-
Pram	I	-1.48722	-2.71413	3.1557	0.857511	-0.34234	0.204871	-1.12622	-1.00
Pram	II	0.863947	1.42571	0.122321	21.1219	0.387071	0.874423	1.15146	0.934
Mean	Value	0.328236	0.183084	0.386009	18.1123	0.765347	1.79891	0.629215	0.56

图 2.12 人工随机地震动样本的选择列表

Select ID	A0	Тао	Xig	Omegag	a	b	с	d
✓ 1	0.51829314	0.00924462	0.30470667	6.4156516	1.4946925	0.29843942	0.63154615	0.514
✓ 2	0.004461142	0.58396823	0.99033284	29.583235	1.1449198	2.5730883	0.499638	0.45
✓ 3	1.0621306	0.00958172	0.46654755	0.55175621	1.4491609	1.384818	0.88479788	0.23
✓ 4	0.30538056	0.00062135	0.34143242	1.0009927	1.152182	0.61550443	0.47363302	0.40
5	0.43846263	0.00605713	0.77620628	39.347832	1.2066843	0.81573666	1.0366212	0.18
6	0.07534494	0.03545796	0.57419473	24.398809	0.78220088	1.0607383	0.19560503	0.56
7	0.17195731	0.03715067	0.66627828	31.634017	1.7325544	1.0726229	0.47794331	0.85

图 2.13 人工随机地震动样本的选择

然后在界面右下侧(图 2.14)的可视化对话框,点击 Time-History (提供峰值均值

归一和峰值归一两种标准化方式),如峰值均值归一化的时程显示如图 2.15 所示。

Select	to Plot & Dow	nload All
Sample	Spectrum	
N	ormalization:	Ŧ
	Time-History	Download
	Prb-Do	wnload

#### 图 2.14 人工随机地震动样本的可视化

6			Database	of Stochastic	Ground Moti	ion Models fo	r Engineering	)			-	<b>0</b> ×
SGMME Database Syste	em											و ج
	Stochastic Groun	d Motion										
Home	Selected Numb	er: 4								Search &	List	
Recorded Ground Motion Stochastic Ground Motion	✓ Select ID ✓ 1 ✓ 2 ✓ 3 ✓ 4 5 6 7 + Prob. Dist. PramII	A0 0.51829314 0.004461142 1.0621306 0.30538056 0.43846263 0.07534494 0.07534056 0.075300 0.07534056 0.075300 0.075300 0.075300 0.075300 0.075000 0.075000 0.075000 0.075000 0.075000 0.075000 0.075000 0.0750000000000000000000000000000000000	Tao 0.00924462 0.58396823 0.00958172 0.00062135 0.00605713 0.03545796 0.03715067 Tao Log-Normal -2.71413 1.42571	Xig 0.30470667 0.99033284 0.46654755 0.34143242 0.77620628 0.57419473 0.66627828 Xig Gamma 3.1557 0.122321	Omegag 6.4156516 29.583235 0.55175621 1.0009927 39.347832 24.398809 31.634017 Omegag Gamma 0.857511 21.1219	a 1.4946925 1.149198 1.4491609 1.152182 1.2066843 0.78220088 1.7325544 a Log-Normal -0.34234 0.387071	b 0.29843942 2.5730883 1.384818 0.61550443 0.81573666 1.0607383 1.0726229 b Log-Normal 0.204871 0.874423	c 0.63154615 0.499638 0.88479788 0.47363302 1.0366212 0.19560503 0.47794331 c Log-Normal -1.12622 1.15146	d 0.514 * 0.454 0.23; 0.40; 0.18; 0.56; 0.85; * * * d Log* -1.00; *	Cluster-M: Group: Site-Type: Sample-N:	Magnitude-Distance G-1 I 100 Retrieval	* * *
	R an Value	0.328236	0.183084	5tocha:	211,213 18,1123 stic Ground	d Motions	0.079423	0.629215	- 1 - 2 - 3 - 4	Select to I	Plot & Download . ectrum alization: Peak Mean mei-History Do Ptb-Download	A.[] Value • miload
Copyright © 2017-2019 Research Group o	of Prof. Jie Li @ Ton	gji University										INS

图 2.15 人工随机地震动样本时程的可视化

Acceleration Velocity 进一步地,若要查看反应谱信息,输入阻尼比,点击<sup>Displacement</sup>即可,其结果如 图 2.16 所示。







图 2.16 人工随机地震动样本反应谱信息的可视化

若用户需要下载相应的数据,点击相应的 Download 即可。

### 2.3 帮助模块





图 2.17 帮助模块

#### 3 关于软件的其它说明

- (1) 本系统不对采用该数据库数据获得的分析结果负责。
- (2) 若有问题或建议,欢迎随时反馈(<u>pengyongbo@tongji.edu.cn</u>)以利于进一步 改进。

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