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Technical Note

IRAN STRONG GROUND MOTION CATALOG (JULY TO DECEMBER 2004)

F. Sinaiean, H. Mirzaei Alavijeh* and E. Farzanegan
Building and Housing Research Center, Tehran, Iran

ABSTRACT

Iran Strong Motion Network (ISMN) that runs under the authority of Building and Housing Research Center (BHRC) of Iran, start its activity since 1973. At the present day it consists of more than 1000 digital (SSA-2) and 61 analog (SMA-1) accelerographs. The recorded earthquake accelerograms are downloaded, controlled and processed and then added to the accelerograph comprehensive data bank, which is too useful for scientists and engineers. Here in the recorded accelerograms and causal earthquakes are briefly described and more detailed information is presented in Table 1 and also available on the web page of BHRC (http://www.bhrc.ac.ir).

1. IRAN STRONG MOTION NETWORK

Iran Strong Motion Network started its activities since 1973; at the end of 2004 December, the network was consisted of 1013 digital and 61 analog accelerographs (Figure 1). ISMN has been recorded more than 5150 accelerograms up to December 2004, through which the maximum ground acceleration of about 1.0g is recorded due to Zanjiran (June 30, 1994) and Bam (December 26, 2003) earthquakes at Zanjiran and Bam stations respectively.

In the second half of the year 2004, 224 accelerograms were recorded at 125 accelerograph stations that were triggered by 95 different earthquakes. The location of all the triggered stations in the studied time period is presented in Figure 2. The maximum PGA of about 0.224g is occurred in Armardeh station (Kurdistan province) due to the earthquake of October 5, 2004.

2. THE CATALOG OF ACCELEROGRAMS RECORDED BY ISMN FROM JULY TO DECEMBER 2004

In the second half of the year 2004, 224 accelerograms (with PGA greater than the trigger

* Email-address of the corresponding author: mirzaei@bhrc.ac.ir

level of 0.01g), were recorded by 125 accelerographs, which were triggered by 95 different earthquakes (Figure 2). The maximum PGA of about 0.22g is occurred in Armardeh station in the Kurdistan province in the earthquake of October 5, 2004, but the greatest event was the Aqghala earthquake that occurred in Golestan province with the magnitude of M5.8 in the October 7, 2004.

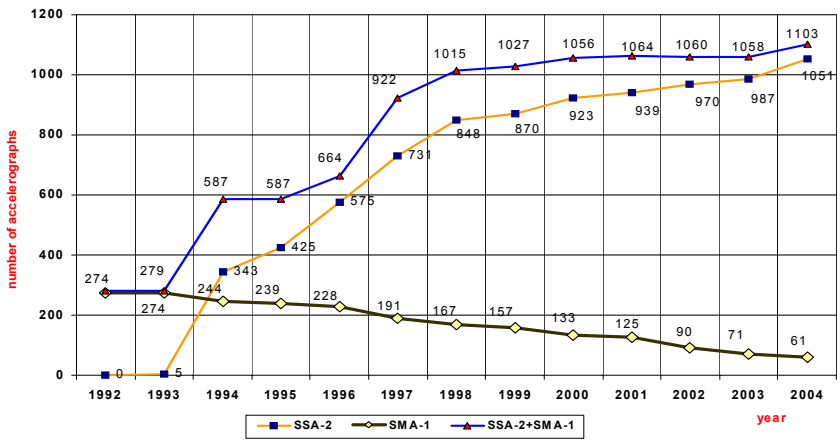

Figure 1. the growth of ISMN installed accelerographs in the period of 1992 to 2004

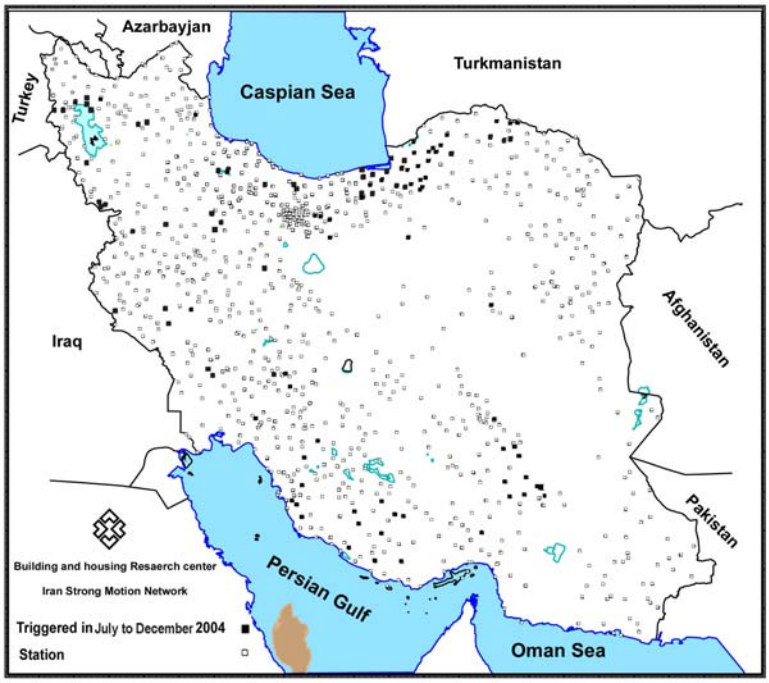

Figure 2. The triggered accelerograph locations in the second half of the year 2004.

The strong motion and the seismological data of the major earthquakes are presented in Table 1. There are more than 50 single accelerograms that were caused due to the earthquakes without any reported or accessible seismological data that are omitted from this table. The most important events are briefly described at the following.

2.1 Boldaji Earthquake (Chaharmahal and Bakhtiari Province)

On July 25, 2004 at 14:45:43 UTC, an earthquake with the magnitude of Ml5.1 (BHRC) struck the Chaharmahal and Bakhtiari province. Accelerograph stations of Mohamadabad, Darmazar and Abaraq recorded the earthquake. The peak ground acceleration of about 0.118g occurred in Mohamadabad station on the horizontal (L) component.

2.2 Robat Earthquake (North Khorasan Province)

On August 21, 2004 at 03:32:42 UTC, an earthquake with the magnitude of mb4.7 (NEIC) in North Khorasan province is happened. Accelerograph stations of Robat, Garmakhan, Ashkhaneh, Raz and Bojnoord (BHRC) recorded the earthquake. This event caused the peak ground acceleration of about 0.244g that is recorded in the Robat station.

2.3 Sharafkhaneh Earthquake (West Azerbaijan Province)

On September 09, 2004 at 17:33:58 (UTC), an earthquake with the magnitude of M3.9 (NEIC) occurred in the East Azerbaijan province. The earthquake was recorded by three SSA-2 accelerographs of Iran strong motion network. The peak ground acceleration at about 0.024g is recorded on the vertical component in the Sharafkhaneh station. The epicenter of this earthquake is reported to be at 38.56N, 45.32E (NEIC).

2.4 Baneh Earthquake (Kurdistan Province)

On October 05, 2004 at 15:34:14 UTC, an earthquake with the magnitude of M4.2 (NEIC) occurred at the west of Kurdistan province. Three SSA-2 accelerographs of Baneh, Namshir and Armardeh stations of Iran strong motion network recorded this earthquake and the peak ground acceleration of about 0.144g is occurred in the Armardeh station.

2.5 Mohamadabad earthquake (Kerman Province)

At 11:14:37 UTC on October 6, 2004, an earthquake happened in Jebalbarez region in the Kerman province. The magnitude of this event is reported to be M5.2 (IGTU). The earthquake was recorded by three SSA-2 accelerographs of Mohamadabad, Darmazar and Abaraq stations. The peak ground acceleration with the maximum of about 0.118g is recorded at the Mohamadabad station on horizontal (L) component. The epicenter of this earthquake is located to be at 28.91N, 57.74E (BHRC), 28.89N, 57.29E (IGTU) and 28.76 N, 58.07 E, (NEIC).

2.6 Aqghala earthquake (Golestan Province)

The greatest earthquake of the studied time period with the magnitude of M5.6 (IGTU) is took place On October 7, 2004 at 21:46:18 UTC at the North of Golestan province. The earthquake was recorded by 29 SSA-2 digital Accelerographs (Figure 3). The peak ground acceleration of about 0.104g was the maximum acceleration that recorded at the Gorgan station.

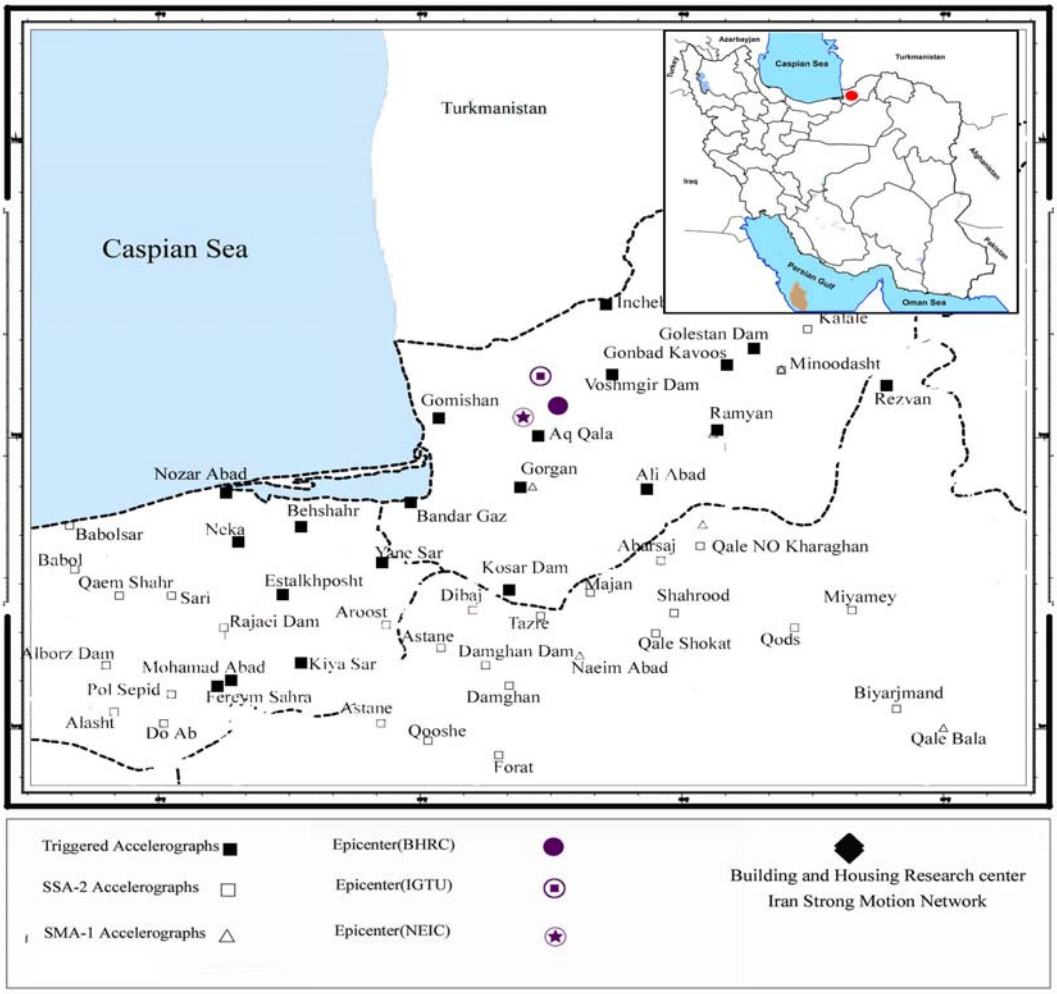

Figure 3. The location of Aqghala earthquake of October 7, 2004 and triggered accelerographs

2.7 Shushtar Earthquakes (Khoozestan Province)

An earthquake swarm started to shake the Shushtar city and its vicinity villages in the Khoozestan province from Friday (19, Nov, 2004), which continued for 20 days and caused a public scare. The first event was happened on 19, November 2004 at 17:23:45 UTC, which followed by 23 events more. Among them the event with the magnitude of 4.9 was the greatest one that occurred on November 19, 2004 at 23:49:35 UTC. There have been 14 accelerograms recorded in Shushtar and Darkhazineh stations in the time duration of this swarm and the maximum acceleration of about 80 cm/sec/sec is recorded on horizontal (T) component in the Shushtar station due to the greatest event. Fortunately there were no human death or hard injuries reported.

The catalogue of events of 2004 (1 July / 30 December)

Strong Motion Data (BHRC)						Seismological Data						
No.	Station	Record No.	Coordinate		U.PGA (cm/s/s)	Origin Time		Epicenter		Magni-tude		Ref.
			N	E		Y-M-D	h:m:s	N	E			
1	Changoureh	3508	35.77	48.96	32.13	2004/07/02	12:56:44	35.57	48.91	mb	4.0	NEIC
2	Barvat	3485/01	29.07	58.40	36.68	2004/07/02	19:49:50	28.93	57.60	Ml	3.3	IIEES
3	Ahmadi	3477	27.94	56.67	20.02	2004/07/03	22:22:32	28.38	56.50	mb	4.2	NEIC
4	Eshkanan	3515	27.22	53.61	26.04	2004/07/07	18:46:04	27.35	53.40	mb	4.5	NEIC
5	Firoz Abad	3464/02	36.36	51.37	26.42	2004/07/11	13:16:48	36.40	51.41	Ml	3.3	IIEES
	Marzan Abad	3481/02	36.45	51.30	31.62							
6	Gomishan	3480	37.07	54.08	17.16	2004/07/12	04:43:54	36.96	54.32	mb	4.0	NEIC
7	Darmazar	3554/01	29.24	57.33	18.62	2004/07/13	05:50:11	28.93	56.92	Ml	3.9	IIEES
								29.23	57.09	mb	4.2	NEIC
8	Mahan	3578/01	30.07	57.29	19.10	2004/07/14	04:42:03	30.13	57.62	Ml	3.7	IIEES
	Joshan	3676/01	30.12	57.61	31.72			30.52	57.53	mb	3.7	NEIC
9	Barvat	3485/02	29.07	58.40	120.80	2004/07/22	07:51:39	29.07	58.50	Ml	4.1	IIEES
10	Gilvan	3537	36.78	49.13	16.78	2004/07/23	12:22:00	36.96	49.32	Ml	3.6	IIEES
	Roodbar	3735/01	36.81	49.41	13.06							
	Sefidrood Dam 1	3736/01	36.76	49.39	70.71							
11	Naqan	3589/01	31.93	50.72	15.03	2004/07/25	14:45:43			Ml	4.0	BHRC
	Boldaji	3573	31.94	51.06	38.46							
	Shalamzar	3757/01	32.05	50.82	33.60							
12	Darmazar	3554/02	29.24	57.33	13.78	2004/08/05	16:25:21	28.23	57.55	Ml	3.2	IIEES
	Jiroft Dam2	3743/01	28.86	57.47	46.81			28.86	57.22	mb	4.1	NEIC
13	Sepidan	3490	30.27	51.98	74.78	2004/08/16	01:23:29	30.30	51.93	mb	4.3	NEIC
14	Bam	3491	29.08	58.35	85.97	2004/08/16	06:31:00	29.16	58.52	Ml	3.8	IIEES
	Posht Rood	3511/03	29.12	58.38	104.75							
	Khaje Asgar	3512/01	29.12	58.26	47.96			29.13	58.42	mb	3.9	NEIC
15	Posht Rood	3511/04	29.12	58.38	51.79	2004/08/16	13:22:06			Ml	2.7	BHRC
	Bam	3509	29.08	58.35	17.02							
	Khaje Asgar	3512/02	29.12	58.26	18.36							
16	Raz	3494	37.94	57.10	14.44	2004/08/21	03:32:42	37.84	57.45	Ml	4.8	BHRC
	Garmkhan	3495	37.51	57.49	13.32							
	Bojnoord	3496	37.48	57.31	11.38							
	Ashkhaneh	3497	37.56	56.92	11.61			37.76	57.62	mb	4.7	NEIC
	Robat	3498	37.90	57.70	24.42							
17	Naqadeh	3646	36.96	45.37	13.18	2004/08/23	09:27:22	36.15	45.08	mb	3.7	NEIC
18	Kaki	3525	28.34	51.52	21.82	2004/08/27	17:46:47	28.45	51.57	mb	3.7	NEIC
19	Mohr	3605	27.55	52.87	28.82	2004/08/30	12:55:18	27.42	52.62	Ml	3.2	IIEES
20	Zahedshahr	3519/01	28.74	53.81	38.59	2004/08/31	04:34:15	28.68	53.57	mb	4.5	NEIC
21	Zahedshahr	3519/02	28.74	53.81	23.62	2004/08/31	04:45:21	28.55	53.39	mb	4.3	NEIC
22	Mahan	3578/02	30.07	57.29	20.52	2004/08/31	07:38:51	29.80	57.48	Ml	3.8	IIEES
23	Zahedshahr	3529	28.74	53.81	54.93	2004/08/31	22:26:41	28.54	53.66	mb	4.4	NEIC
24	Doobaran	3528	28.41	54.18	87.04	2004/09/01	16:31:23	28.14	54.10	mb	4.6	NEIC
25	Sharafkhaneh	3522	38.17	45.49	24.72	2004/09/05	17:33:58	38.56	45.32	mb	3.9	NEIC
	Marand	3538	38.44	45.77	11.77							
	Tasooj	3583/01	38.31	45.36	16.75							
	Seyedtajedin	3828	38.36	45.04	16.33							
	Zanjireh	3830/02	38.46	45.37	27.17							

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No.	Station	Record No.	Coordinate		U.PGA (cm/s/s)	Origin Time		Epicenter		Magni-tude		Ref.
			N	E		Y-M-D	h:m:s	N	E			
26	Dorahan	3840/01	31.62	51.19	76.10	2004/09/08	22:19:37	31.64	50.84	mb	4.7	NEIC
27	Khoram Abad	3527	33.49	48.36	23.46	2004/09/15	08:27:39	33.28	48.45	mb	4.2	NEIC
28	Qir	3523	28.48	53.03	34.14	2004/09/17	23:32:20	28.43	52.81	M	3.7	IGTU
								28.60	52.75	mb	3.8	NEIC
29	Damavand	3530	35.72	52.06	11.82	2004/09/24	01:42:51	35.06	52.65	mb	3.9	NEIC
	Sarbandan	3570	35.64	52.32	43.11							
30	Posht Rood2	3738/01	29.12	58.38	26.68	2004/09/25	17:49:59	29.37	58.49	Ml	3.1	IIEES
	Posht Rood	3745/01	29.12	58.38	26.76							
31	Armordeh	3539	35.93	45.78	144.48	2004/10/05	15:34:14	35.95	45.37	M	4.2	IGTU
	Kani Soor	3540	36.05	45.74	19.47							
	Baneh	3541	35.99	45.89	22.89			35.89	45.72	mb	4.6	NEIC
32	Abaragh	3553	29.35	57.94	17.62	2004/10/06	11:14:37	28.91	57.74			BHRC
	Darmazar	3554/03	29.24	57.33	13.57							
	Mohammad Abad	3555/01	28.91	57.89	118.58			28.89	57.29	M	5.2	IGTU
	Jiroft Dam1	3742	28.86	57.47	18.53							
	Jiroft Dam2	3743/02	28.86	57.47	65.57			28.76	58.07	mb	5.1	NEIC
	Qotb Abad	3783/01	28.88	58.48	15.55							
33	Mohammad Abad	3555/02	28.91	57.89	40.96	2004/10/07	07:17:00	28.88	57.97	Ml	4.3	IIEES
	Qotb Abad	3783/02	28.88	58.48	13.14			28.80	57.84	mb	4.5	NEIC
34	Dibaj	3590	36.43	54.23	27.11	2004/10/07	21:46:15	37.35	54.56	Ml	6.0	IIEES
	Qapan-e-Olya	3636/01	37.62	55.68	16.34							
	Minoodasht	3639/01	37.23	55.37	36.18							
	Abarsej	3641/01	36.58	54.92	18.47							
	Ghalehno Kharaqan	3642/01	36.63	55.07	19.79							
	Shahrood	3643/01	36.41	54.97	13.65							
	*Minoodasht	3654/01	37.23	55.36	78.29			37.12	54.48	mb	5.6	NEIC
	Shahid Rajaei Dam 3	3790/01	36.25	53.23	17.83							
	Shahid Rajaei Dam 5	3792/01	36.25	53.23	14.24							
	Ali Abad	3542	36.90	54.85	61.72							
	Behshahr	3543	36.69	53.54	52.27							
	Gonbad-e-Kavoos	3544	37.24	55.16	26.89							
	Gorgan	3545	36.84	54.38	104.15							
	Gomishan	3546	37.07	54.08	92.14							
	Kia-sar	3547	36.24	53.54	20.17							
	Mohammad Abad	3548	36.17	53.27	16.53							
	Neka	3549	36.63	53.28	22.93							
	Rezvan	3550	37.18	55.79	16.75			37.11	54.53			BHRC
	Ramyan	3551	37.02	55.14	62.21							
	Nozar Abad	3552	36.80	53.25	48.19							
	Agh Gala	3556/01	37.01	54.46	79.96							
	Bandar-e-Gaz	3557/02	36.76	53.95	67.30							
	Golestan Dam	3558	37.32	55.28	30.57							
	Estalkh Posht	3559	36.46	53.48	51.80							
	Incheh Borun	3560/01	37.46	54.72	74.59			37.21	54.46	M	5.8	IGTU
	Kowsar Dam	3561/01	36.81	54.55	96.10							
	Voshmgir Dam	3562/01	37.21	54.74	82.97							
	Fereym Sahra Dam	3563	36.16	53.23	11.51							
	Yaneh Sar	3564	36.57	53.81	42.97							
35	Mojen	3622/01	36.48	54.65	16.60	2004/10/07	21:46:20	37.32	54.37	Ml	5.9	KHSN
	Ghale Shokat	3862	36.35	54.91	21.27			37.12	54.48	mb	5.6	NEIC
	Tazareh	3863/01	36.40	54.47	13.87							

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			N	E		Y-M-D	h:m:s	N	E			
36	Abaragh	3739	29.35	57.94	13.63	2004/10/08	07:15:56	29.27	58.44	Ml	4.2	IIEES
	Bam1	3740	29.09	58.35	16.91							
	Barvat	3741/02	29.07	58.40	48.05							
	Khaje Asgar	3744	29.12	58.26	34.78							
	Posht Rood	3745/02	29.12	58.38	15.76							
	Posht Rood2	3738/02	29.12	58.38	15.50							
	Qotb Abad	3783/03	28.88	58.48	22.49							
37	Agh Gala	3556/02	37.01	54.46	17.98	2004/10/08	13:45:55	37.15	54.35	M	4.9	IGTU
	Bandar-e-Gaz	3557/03	36.76	53.95	14.69							
	Incheh Borun	3560/02	37.46	54.72	37.21							
	Kowsar Dam	3561/02	36.81	54.55	19.33							
	Voshmgir Dam	3562/02	37.21	54.74	14.62							
	Gomishan	3568	37.07	54.08	13.57							
	Gorgan	3572	36.84	54.38	13.09							
	Ramyan	3621/01	37.02	55.14	12.23							
38	Dorahan	3840/03	31.62	51.19	54.33	2004/10/09	14:48:35	31.62	50.95	mb	4.4	NEIC
39	Shirinrood Dam	3596	30.81	57.03	14.66	2004/10/14	01:21:20	30.68	56.81	M	4.2	IGTU
								30.51	56.55	mb	4.2	NEIC
40	Saleh Abad	3569	33.47	46.19	27.10	2004/10/16	10:04:38	33.43	45.92	mb	5.3	NEIC
41	Abarsej	3641/02	36.58	54.92	26.12	2004/10/16	15:59:00	36.61	55.81	Ml	3.7	IIEES
42	Garmsar	3591	35.22	52.33	16.89	2004/10/17	03:25:09	35.19	52.35	Ml	3.3	IIEES
43	Avaj	3576	35.57	49.22	25.38	2004/10/17	21:31:02	35.60	49.16	M	4.7	IGTU
	Changoureh	3567	35.77	48.96	27.02							
	Razan	3592	35.39	49.03	21.47			35.75	48.94	mb	4.5	NEIC
44	Tasooj	3583/03	38.31	45.36	14.54	2004/10/20	14:11:12	38.72	45.45	Ml	3.0	IIEES
	Zanjireh	3830/03	38.46	45.37	21.94							
45	Salafchegan	3597	34.47	50.47	14.90	2004/10/25	22:20:14	34.79	50.55	M	3.8	IGTU
46	Changoureh	3580	35.77	48.96	27.02	2004/10/27	00:49:30	35.75	48.92	M	3.6	IGTU
47	Tashan	3653	30.83	50.20	16.03	2004/10/28	17:32:25	30.50	50.12	Ml	3.7	IIEES
48	Kalaleh	3619/01	37.38	55.50	28.46	2004/11/01	20:20:13	37.66	55.25	Ml	4.1	IIEES
	Minoodasht	3639/02	37.23	55.37	86.72			37.37	55.40	Ml	4.0	KHSN
	Minoodasht	3654/02	37.23	55.36	20.32			37.38	55.78	mb	4.3	NEIC
49	Minoodasht	3639/03	37.23	55.37	22.01	2004/11/01	22:26:43					
	Minoodasht	3654/03	37.23	55.36	6.36							
50	Moalem Kelayeh	3581	36.45	50.47	17.50	2004/11/02	19:13:24	36.40	50.38	M	3.6	IGTU
51	Doobaran	3577	28.41	54.18	61.29	2004/11/06	18:08:54	28.20	54.30	M	4.2	IGTU
								28.35	53.82	mb	4.3	NEIC
52	Khoormoj	3579	28.66	51.37	23.79	2004/11/06	23:19:49	28.84	51.51	M	4.2	IGTU
								28.70	51.38	mb	4.5	NEIC
53	Doobaran	3588/01	28.41	54.18	14.60	2004/11/08	06:34:15	28.04	53.74	Ml	2.9	IIEES
54	Tazeh-Shahr	3656/01	38.17	44.70	18.11	2004/11/08	18:06:42	38.16	44.50	mb	3.4	NEIC
	Koozehrash	3825	38.17	44.44	14.61							
55	Khaje Asgar	3600/01	29.12	58.26	24.49	2004/11/09	18:48:49			Ml	2.50	BHRC
	Posht Rood	3719/01	29.12	58.38	22.00							
	Khaje Asgar	3648/01	29.12	58.26	17.10							

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Strong Motion Data (BHRC)						Seismological Data						
No.	Station	Record No.	Coordinate		U.PGA	Origin Time		Epicenter		Magni-tude		Ref.
			N	E	(cm/s/s)	Y-M-D	h:m:s	N	E			
56	Minoodasht	3639/04	37.23	55.37	29.88	2004/11/11	20:22:24	37.05	55.57	M	3.7	IGTU
	Minoodasht	3654/04	37.23	55.36	32.89							
57	Khosro Abad	3606	35.52	47.63	38.94	2004/11/13	01:46:38	35.43	47.57	Ml	3.5	IIEES
58	Roodehen	3582	35.74	51.91	25.36	2004/11/13	15:05:53	35.71	51.87	M	3.1	IGTU
59	Naqan	3589/02	31.93	50.72	30.15	2004/11/18	01:03:39	31.69	50.87	Ml	3.0	IIEES
60	Roodbar	3735/03	36.81	49.41	61.83	2004/11/19	09:32:25	36.97	49.58	Ml	3.1	IIEES
	Sefidrood Dam 1	3736/02	36.76	49.39	20.65							
61	Shooshtar	3584/01	32.05	48.85	79.55	2004/11/19	17:23:45	32.06	48.88	mb	4.8	NEIC
	Dar khazineh	3585	31.90	48.98	35.24			31.99	48.87	M	4.7	IGTU
62	Shooshtar	3584/02	32.05	48.85	40.74	2004/11/19	17:29:36	31.98	48.84	M	4.4	IGTU
	Dar khazineh	3595/01	31.90	48.98	53.46			32.06	48.89	mb	4.7	NEIC
63	Shooshtar	3584/03	32.05	48.85	80.42	2004/11/19	23:49:35	31.97	48.84	M	4.9	IGTU
	Dar khazineh	3595/02	31.90	48.98	28.56			32.02	48.84	mb	4.8	NEIC
64	Shooshtar	3584/04	32.05	48.85	22.52	2004/11/20	02:10:59	31.99	48.85	M	4.1	IGTU
	Dar khazineh	3595/03	31.90	48.98	30.08			32.10	48.82	mb	4.7	NEIC
65	Shooshtar	3584/06	32.05	48.85	18.03	2004/11/20	02:27:50	31.86	48.77	M	4.0	IGTU
								32.18	48.80	mb	4.6	NEIC
66	Dar khazineh	3595/04	31.90	48.98	13.76	2004/11/20	09:03:30	31.95	48.84	Ml	3.7	IIEES
	Shooshtar	3586/01	32.05	48.85	20.04			31.73	49.07	M	3.8	IGTU
67	Haji Abad	3601	28.36	54.43	23.14	2004/11/20	11:50:02	28.49	54.18	Ml	4.3	IIEES
								28.34	54.07	mb	4.6	NEIC
68	Shooshtar	3586/02	32.05	48.85	43.54	2004/11/20	12:06:14	31.96	48.83	M	4.7	IGTU
	Dar khazineh	3595/05	31.90	48.98	39.39			32.02	48.79	mb	4.8	NEIC
69	Shooshtar	3586/03	32.05	48.85	22.53	2004/11/20	14:24:50	32.03	48.90	M	4.0	IGTU
70	Shooshtar	3586/04	32.05	48.85	25.96	2004/11/20	16:10:20	32.00	48.88	M	4.0	IGTU
								32.08	48.78	mb	4.5	NEIC
71	Doobaran	3588/02	28.41	54.18	103.63	2004/11/20	16:50:02	28.22	54.13	M	4.2	IGTU
								28.34	54.07	mb	4.6	NEIC
72	Shooshtar	3586/05	32.05	48.85	28.13	2004/11/20	17:33:12	32.08	48.89	M	3.9	IGTU
								32.06	48.76	mb	4.3	NEIC
73	Shooshtar	3586/06	32.05	48.85	26.67	2004/11/20	17:45:02	32.09	48.88	M	4.1	IGTU
								32.05	48.82	mb	4.4	NEIC
74	Dar khazineh	3595/06	31.90	48.98	36.87	2004/11/20	20:41:58	32.00	48.74	mb	4.4	NEIC
	Shooshtar	3586/07	32.05	48.85	35.53			32.18	48.91	M	4.1	IGTU
75	Shooshtar	3593	32.05	48.85	15.59	2004/11/21	05:24:26	32.05	48.74	Ml	2.9	IIEES
76	Pol Dokhtar	3594/01	33.15	47.71	22.51	2004/11/21	21:37:24	33.31	47.99	mb	5.0	NEIC
	Kouhdasht	3767/01	33.52	47.61	32.32							
77	Kouhdasht	3767/02	33.52	47.61	12.56	2004/11/22	04:01:30	33.29	47.97	mb	5.0	NEIC
	Pol Dokhtar	3594/02	33.15	47.71	18.51							
78	Ghaemiyeh	3598	29.85	51.59	26.62	2004/11/26	18:48:20	29.95	51.42	mb	3.5	NEIC
79	Kouhdasht	3767/03	33.52	47.61	14.63	2004/11/27	16:12:06	33.43	47.94	mb	4.9	NEIC
	Pol Dokhtar	3594/03	33.15	47.71	13.19							
80	Doobaran	3650/01	28.41	54.18	27.68	2004/12/09	14:44:21	27.92	54.26	Ml	3.3	IIEES
								28.32	54.53	mb	4.0	NEIC
81	Kooreh	3649	27.92	53.80	38.45	2004/12/10	03:31:08	28.04	53.76	mb	3.7	NEIC
82	Golbaf	3599	29.89	57.73	42.38	2004/12/10	19:02:54	29.75	57.64	Ml	3.6	IIEES
83	Hir	3698/02	38.08	48.49	30.23	2004/12/19	21:27:57	38.19	48.61	Ml	3.0	IIEES
84	Doobaran	3650/02	28.41	54.18	48.46	2004/12/28	20:30:15	28.19	54.18	Ml	4.0	IIEES
85	Seyf Abad	3630	28.17	53.15	13.67	2004/12/31	18:07:42	28.43	53.28	M	4.1	IGTU
								28.06	53.39	mb	4.6	NEIC