Technical Note

IRAN STRONG MOTION CATALOG

(January to July 2006)

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ABSTRACT

In the first half of the year 2006, 327 accelerograms (with PGA greater than the trigger level of 0.01g) were recorded by 108 accelerographs, which were triggered by 200 earthquakes with different magnitude. The Silakhor earthquake of 3/31/2006 in Lorestan province was the strongest earthquake in the studied period that triggered 29 accelerographs and the maximum PGA of about 0.524g was occurred in ChalanChoolan station. In this article the most important earthquakes and those with more than three or more accelerograms in the studied time period are discussed in brief and the detailed information is presented in the finale table.

1. INTRUDUCTION

The Iran Strong Motion Network (ISMN) started its activities in 1973. The network was consisted of 274 accelerographs until 1992. At the date of this study, the network was consisted of 1094 accelerographic stations (Figure 1) that are equipped with digital SSA-2 or analog SMA-1 accelerographs. The trigger level of all the instruments were set at 0.01g and more than 6200 accelelograms have been recorded from January 1973 to July 2006. The accelerograms of different earthquakes are downloaded, controlled, processed and then added to the comprehensive data bank, which is very useful for the experts, who works in the field of engineering seismology and earthquake engineering. In this catalog the most important earthquakes are briefly described. More information is presented in Table 1 and also available on the web page of BHRC http://www.bhrc.ac.ir.

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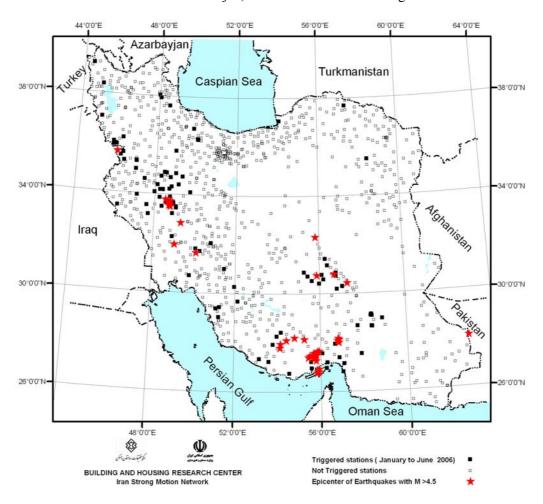


Figure 1. Accelerographs triggered and epicenter of important earthquakes

2. THE CATALOG OF ACCELEROGRAMS RECORDED BY ISMN

In the first half of the year 2006, 327 accelerograms (with PGA greater than the trigger level of 0.01g) were recorded by 108 accelerographs, which were triggered by 200 different earthquakes (Figure 2). The maximum PGA of about 0.524g was occurred in ChalanChoolan station (Lorestan province) due to the Silakhor earthquake of March 31th, 2006. The strong motion (With PGA more than 0.05g) and the seismological data of the major earthquakes are presented in Table 1. The most important events are described at the following briefly.

The catalog of events of 2006 (1 Jan / 30 June.)													
Stro	Strong Motion Data (BHRC)						Seismological Data						
	Record	Coordinate		U.P.G.A	Origin Time		Epicenter						
Station	No.	N	E	(cm/s/s)	Y-M-D	h:m:s	N	E	M	Ref			
Kani Soor	3972/02	36.061	45.795	89	2006/01/03	11:29:12	36.06	46.25	M3.0	IGTU			
Kani Soor	3972/03	36.061	45.795	76	2006/01/03	21:30:53	36.23	46.14	M2.5	IGTU			
Suza	3977	26.782	56.070	18	2006/01/12	21.22.22	26.84	55.89	M4.0	IGTU			
Tomban	4009/04	26.766	55.863	61	2006/01/12	21:32:32	26.89	55.90	Ml4.1	IIEES			
Tomban	4009/06	26.766	55.863	85	2006/01/24	16:07:35	26.68 26.97	55.79 55.75	M3.5 Ml3.4	IGTU IIEES			
Tomban	4009/09	26.766	55.863	95	2006/02/01	12:17:54	26.81 26.76	55.79 55.86	M3.9 Ml4.0	IGTU IIEES			
Bam	4080/02	29.079	58.353	55			29.01	58.60	M4.4	IGTU			
Barvat	4081	29.071	58.402	17	2006/02/06	23:31:57	27.01	36.00	1717.7	1010			
Posht Rood	4093/11	29.071	58.381	32	2006/02/06	23.31.37	29.34	58.45	Ml4.2	IIEES			
Rezvan	3982/01	27.560	56.078	84		23:00:37	27.51	55.55	M3.6	IGTU			
Fin	3983/01	27.630	55.895	12	2006/02/16	23:00:37	27.64	56.03	M13.6	HEES			
Kashkooyeh	3984	30.525	55.638	95		23.00.37	27.04	30.03	14113.0	IILLS			
Davaran	3985	30.523	56.189	24	2006/02/18	11:03:36	30.72	55.86	M15.5	BHRC			
Anar	3986	30.866	55.271	13									
Rafsanjan	3987	30.411	55.993	64			30.74	55.84	ML5.0	IIEES			
Bayaz	3988	30.701	55.446	35									
Baghin	4040	30.191	56.815	11			30.80	55.67	M5.3	IGTU			
Hosn	4085	30.769	56.119	24			50.00	00.07	1110.0	1010			
Rezvan	3993/01	27.560	56.078	366			27.35	55.67	M4.1	IGTU			
Siyahoo	3994	27.759	56.335	11	2006/02/21	05:37:30	27.48	55.83	M14.1	HEES			
Oazvin 1	3992	36.281	50.011	34			36.11	50.41	M4.1	IGTU			
Zibashahr	3995	36.221	50.182	81	2006/02/22	23:19:26							
Qazvin 2	4008	36.249	50.036	20			35.98	50.45	M13.9	IIEES			
Ahmadi	3996/02	27.938	56.665	139									
Kuhestak	3997	26.802	57.023	19			28.22	56.98	Ml6.3	BHRC			
Soghan	3998	28.346	56.877	80									
Ziyarat Ali	3999	27.745	57.229	22									
Siyahoo	4000	27.759	56.335	24			28.27	56.81	Mw5.9	NEIC			
Minab	4001	27.138	57.072	14									
Jiroft	4002	28.671	57.736	11	2006/02/28	07:31:03							
Hasan Langi	4003	27.386	56.862	32			28.18	56.76	Ms5.9	IIEES			
Nakhl Nakhoda	4004	27.191	56.340	14									
Fahraj	4082	28.948	58.885	21									
Ghale Ganj	4083	27.523	57.881	12			20.10	5651		TOTAL 1			
Nesa Dam 1	4091	28.634	58.411	12			28.18	56.54	M5.8	IGTU			
Nesa Dam 2	4092/02	28.650	58.389	16									
Abad	4057	29.022	51.256	113	2006/02/28	18:06:10	28.86 28.80	51.24 51.00	M4.1 M13.9	IGTU IIEES			

The catalog of events of 2006 (1 Jan / 30 June.)										
Stro	Seismological Data									
G	Record	Coore	Coordinate		Origin	Origin Time		Epicenter		_
Station	No.	N	E	(cm/s/s)	Y-M-D	h:m:s	N	E	M	Ref
Saed Abad	4049	29.379	51.116	235	2006/03/18	13:19:29	29.54	51.40	Ml3.3	IIEES
Kahoorestan	4010	27.216	55.564	31			27.73	55.78	Ml6.0	BHRC
Siyahoo	4011	27.759	56.335	15	2006/03/25	07:28:54	27.56	55.81	M6.0	IGTU
Rezvan	4012/01	27.560	56.078	121	2000/03/23	07.28.34	27.52	55.77	M15.4	IIEES
Fin	4013/01	27.630	55.895	194			27.73	55.78	Ml6.0	BHRC
Rezvan	4014/02	27.560	56.078	380	2006/03/25	09:55:16	27.49	55.70	M5.3	IGTU
							27.54	56.01	Ml5.1	IIEES
Fin	4013/06	27.630	55.895	249	2006/03/25	10:00:41	27.70	55.79	M5.3	IGTU
Rezvan	4014/03	27.560	56.078	117			27.47	55.80	M15	HEES
C1 1	4110	25.624	46.204	111	2006/02/25	10 10 57	35.56	46.19	M4.2	IGTU
Chenareh	4112	35.634	46.304	111	2006/03/25	10:12:57	35.70	46.44	Ml4.2	IIEES NEIC
Rezvan	4014/10	27.560	56.078	25			35.70 27.51	46.44 55.53	mb4.5 M4.6	IGTU
Fin	4014/10	27.630	55.895	71	2006/03/25	12:13:48	27.67	56.02	M14.6	IIEES
Rezvan	4013/03	27.560	56.078	39			27.41	55.82	M4.0	IGTU
Fin	4015/05	27.630	55.895	85	2006/03/25	12:55:40	27.41	56.18	M14.0 M14.1	IIEES
Rezvan	4013/03	27.560	56.078	134			27.67	55.54	M4.1	IGTU
Fin	4015/08	27.630	55.895	82	2006/03/25	14:58:13	27.46	55.80	Ml4.4	IIEES
Rezvan	4014/14	27.560	56.078	54			27.52	55.80	M3.9	IGTU
Fin	4015/12	27.630	55.895	61	2006/03/25	16:08:30	27.60	56.35	Ml4.0	IIEES
Rezvan	4016	27.560	56.078	19	2006/03/26	07:21:34	27.52	55.59	M4.0	IGTU
Fin	4017/01	27.630	55.895	46	2006/02/26	00 17 20	27.55	55.91	M13.9	HEES
Kavaneh	4115/03	34.973	46.983	185	2006/03/26	08:17:20	35.06	46.97	M3.7	IGTU
Fin	4017/02	27.630	55.895	82	2006/03/26	09:38:01	27.51 27.46	55.75 55.91	M4.3 Ml4.2	IGTU IIEES
Chaghalvandi	4018/01	33.664	48.553	13			33.55	48.85	M4.6	IGTU
Boroojerd	4023/01	33.891	48.754	29	2006/03/30	16:17:06	33.75	48.90	Ml4.6	IIEES
Chalan Choolan	4027/02	33.659	48.913	169			33.52	48.73	M4.7	NEIC
Chaghalvandi	4018/02	33.664	48.553	32						
Khoram Abad	4019/01	33.491	48.359	19	2006/03/30		33.66	48.91	Mw5.3	BHRC
Boroojerd	4023/02	33.891	48.754	13						
Chalan Choolan	4027/05	33.659	48.913	320			33.48	48.81	M5.1	IGTU
Darreh-Asbar	4052/02	33.450	49.060	31		19:36:16				
Darren-Asbar Dorood	4032/02	33.491	49.060	11						
Shool Abad	4022/01	33.491	49.039	12			33.70	48.86	M15.1	IIEES
							33.70	10.00	1,113.1	111.115
Tooshkabsard	4035/02	33.773	48.569	15						

The catalog of events of 2006 (1 Jan / 30 June.)

Stro	Seismological Data									
~ · · •	Record	Coore	dinate	U.P.G.A	Origin	Time	Epicenter			
Station	No.	N	E	(cm/s/s)	Y-M-D	h:m:s	N	E	M	Ref
Chaghalvandi	4018/03	33.664	48.553	172						
Khoram Abad	4019/02	33.491	48.359	61						
Saaman	4020	34.210	48.708	58			22.60	40.04	MIC 2	DUDG
Toyserkan	4021	34.552	48.442	13			33.69	49.04	Ml6.2	BHRC
Dorood	4022/02	33.491	49.059	37						
Aleshtar	4025	33.856	48.246	154						
Arak	4039	34.101	49.731	11						
Bahar	4064	34.889	48.442	12						
Chalan Choolan	4027/08	33.659	48.913	524						
Darreh-Asbar	4052/03	33.450	49.060	123						
Dinevar	4107	34.583	47.446	11			33.62	48.91	Ml6.1	IIEES
Firoozan	4026	34.360	48.115	24						
Giyan	4033	34.172	48.241	59						
Gonbad	4066	34.682	48.746	25						
Hamedan5	4056	34.869	48.534	25	2006/03/31	01:17:02				
Kaboodar Ahang	4051	35.205	48.721	12	2000/03/31	01.17.02				
Khondab	4028/01	34.401	49.154	52						
Kohnoosh	4050	34.718	48.278	14						
Komijan	4185	34.725	49.329	22			22.40	40.06	145.0	ICTL
Kouhestak	4045	33.524	47.612	12			33.48	48.86	M5.9	IGTU
Malayer	4029	34.309	48.801	51						
Nahavand	4038	34.186	48.378	28						
Noor Abad	4024	34.072	47.972	49						
Pol Dokhtar	4137	33.153	47.707	18						
Qahavand	4065	34.857	49.002	20						
Sepid Dasht	4053	33.218	48.891	22			33.58	48.80	M5.7	NEIC
Shazand	4054/01	33.931	49.406	27			33.36	40.00	1013.7	NEIC
Shool Abad	4055/03	33.184	49.192	41						
Tooshkabsard	4035/03	33.773	48.569	394						
Chaghalvandi	4018/04	33.664	48.553	31			33.71	48.75	M5.0	IGTU
Khoram Abad	4019/03	33.491	48.359	12			33.85	48.79	Ml4.9	IIEES
Boroojerd	4023/03	33.891	48.754	55	2006/03/31	01:31:33	33.63	40.79	10114.9	HEES
Chalan Choolan	4027/10	33.659	48.913	21			33.71	48.58	M4.7	NEIC
Tooshkabsard	4035/04	33.773	48.569	26						
Boroojerd Chaghalvandi	4034 4044	33.891 33.664	48.754 48.553	27 35	2006/03/31	11:54:02	33.65	48.75	M5.3	IGTU

The catalog of events of 2006 (1 Jan / 30 June.)											
Stro	Seismological Data										
Station	Record	Coordinate		U.P.G.A	Origin Time		Epicenter		M	D 4	
	No.	N	E	(cm/s/s)	Y-M-D	h:m:s	N	E	M	Ref	
Chalan Choolan	4027/17	33.659	48.913	206							
Darreh-Asbar	4052/04	33.450	49.060	34							
Dorood	4032	33.491	49.059	14			33.89	48.79	M15.3	IIEES	
Khondab	4028/02	34.401	49.154	11							
Khoram Abad	4136	33.491	48.359	13							
Shazand	4054/02	33.931	49.406	38							
Shool Abad	4055/04	33.184	49.192	17			33.78	48.80	Ml5.5	BHRC	
Tooshk-e-Ab-e- Sard	4035/06	33.773	48.569	52							
Kavaneh	4115/05	34.973	46.983	52	2006/03/31	18:15:42	35.13	47.00	M2.9	IGTU	
Chalan Choolan	4031/07	33.659	48.913	81	2006/04/02	19:26:00	33.55 33.78	48.85 48.88	M3.9 M14.1	IGTU IIEES	
Tooshkabsard	4138/02	33.773	48.569	102	2006/04/06	15:36:36	33.79	48.55	mb4.6	NEIC	
Chalan Choolan	4058/02	33.659	48.913	98	2006/04/09	21:57:07	33.64 33.69	48.91 49.07	M3.1 M13.0	IGTU IIEES	
Zaram	4104	33.804	48.824	81			33.70	48.62	M4.7	IGTU	
Chalan Choolan	4060	33.659	48.913	60	2006/04/12	11.47.41	33.70	48.02	IVI4./	1010	
Darbastaneh	4061	33.701	48.817	17	2006/04/12	11:47:41					
Deh Azna	4132/02	33.611	48.929	31			33.80	48.90	Ml4.6	IIEES	
Tomban	4147/02	26.766	55.863	74			27.08	55.68	M4.7	IGTU	
	40.65				2006/04/16	15:48:36	26.81	55.90	Ml4.8	IIEES	
Suza	4067	26.782	56.070	20			26.81	55.90	mb4.8	NEIC	
							26.58	55.75	M4.3	IGTU	
Tomban	4147/03	26.766	55.863	71	2006/04/19	16:41:44	26.92	55.86	Ml4.1	IIEES	
							26.92	55.86	mb4.3	NEIC	
Deh Azna	4132/09	33.611	48.929	51	2006/04/24	00:28:06	33.62	48.84	M3.9	IGTU	
		-					33.77	48.89	M13.9	IIEES	
Chalan Choolan	4076/03	33.659	48.913	58	2006/04/27	13:08:04	33.38	48.54	M3.2	IGTU	
	-						33.73 31.03	48.87 51.38	M13.0 M3.1	IIEES IGTU	
Khafr	4129	30.995	51.481	51	2006/04/28	15:23:21	30.87	51.38	M13.1 M13.0	IIEES	
							31.60	50.15	M4.1	IGTU	
Dah-dez	4139/01	1 31.708	50.289	81	2006/05/04	00:50:07	31.61	50.13	M14.1	IIEES	
Dan-ucz	7137/01	21.700	20.207	31	2000,00,01	00.20.07	31.60	50.29	mb4.4	NEIC	

The catalog of events of 2006 (1 Jan / 30 June.)

Stro	Seismological Data									
~ .	Record	Coore	dinate	U.P.G.A	Origin Time		Epicenter			
Station	No.	N	E	(cm/s/s)	Y-M-D	h:m:s	N	E	M	Ref
Khanook	4070	30.717	56.776	21	2006/05/07	06:20:56	30.81	56.70	Ml4.8	IIEES
Hotkan	4140/01	30.848	56.788	50	2000/03/07	00.20.30	30.81	56.67	M5.2	IGTU
Dah-dez	4139/08	31.708	50.289	55	2006/05/12	12:14:44	31.67	50.10	M4.2	IGTU
Dall-ucz	4139/00	31.700	30.269	33	2000/03/12	12.14.44	31.61	50.20	Ml4.1	HEES
Fin	4122	27.630	55.895	65	2006/05/12	16:05:32	27.42	55.66	M4.3	IGTU
							27.45	55.86	M14.2	IIEES
D.1. 1.	4120/00	21.700	50.200	106	2006/05/12	22 10 57	31.59	50.13	M4.4	IGTU
Dah-dez	4139/09	31.708	50.289	186	2006/05/12	23:18:57	31.58 31.64	50.11 50.12	Ml4.3 mb4.6	IIEES NEIC
Chalan Choolan	4105	33.659	48.913	73			33.36	48.65	M3.7	IGTU
Deh Azna	4132/15	33.611	48.929	82	2006/05/13	03:20:18	33.66	48.96	M13.4	IIEES
Tomban	4147/05	26.766	55.863	118			26.93	55.72	M5.2	IGTU
Qeshm	4095	26.962	56.275	21	2006/06/03	07:15:35	26.87	55.87	MI5.1	IIEES
Suza	4096/01	26.782	56.070	182	2000/00/03	07.13.33	27.19	55.79	mb5.2	KHSN
Armordeh	4097	35.930	45.796	12						
Baneh	4098/02	35.972	45.888	24			35.74	46.18	M15.3	BHRC
Boein Sofla	4101/02	35.954	45.942	20						
Marivan	4100/02	35.521	46.182	19	2006/06/06	17:03:02	35.64	46.05	M4.9	NEIC
Saqez	4102	36.224	46.261	42						
Shoeisheh	4099	35.359	46.676	13			35.59	45.85	Ml4.8	IIEES
							31.21	56.25	M4.0	IGTU
Koohbanan	4125	31.421	56.276	98	2006/06/07	21:31:52	31.39	56.27	M13.7	IIEES
							31.40	56.28	Ml4.1	KHSN
							35.89	49.12	M4.0	IGTU
Changoureh	4169/03	35.777	48.963	65	2006/06/28	14:11:11	35.71	48.99	M13.9	HEES
T. 1	41.47/10	26766	55.062	510			35.89	49.12	mb4.0	NEIC
Tomban	4147/13	26.766	55.863	518			26.68	55.72	M5.6	IGTU
Bandar-e-	4152	26.952	55.582	12	2006/06/28	21:02:09	26.82	55.90	M15.6	IIEES
Khamir	4128	26.962	56.275	27	2006/06/28	21:02:09	27.05	55.50	M5 4	KHSN
Qeshm Bandar Abas 2	4128	26.962		27 38			27.05 26.82	55.56 55.90	Mw5.4 mb5.8	NEIC
	4144		56.298				26.82	55.89	M3.8	IGTU
Tomban	4147/19	26.766	55.863	90	2006/06/28	23:40:45	26.72	55.77	M13.5	IIEES
	41.45/05	26.566	77.066		2006/06/53	16.41.42	26.79	55.74	M4.6	IGTU
Tomban	4147/22	26.766	55.863	63	2006/06/29	16:41:49	26.86	55.91	Ml4.4	HEES

2.1 Koshkuyeh Earthquake of 18th February, 2006

On Feb18, 2006 at 11:03:36 (UTC) an earthquake with M5.3 (IGTU), M15 (IIEES), mb4.8 (EMSC) occurred in the west of Rafsanjan city in Kerman Province, South-East of Iran (Figure 2). This earthquake was recorded by Iran Strong Motion Network of BHRC, in 5 accelerographic stations of Rafsanjan, Koshkooyeh, Davaran, Bayaz, and Anar. The maximum PGA as much as 94 gals were recorded at the Koshkooyeh station. The focal distance of Koshkooyeh was estimated to be 30 kilometer. The epicenter of the earthquake has been located at 30.72N, 55.86E (BHRC), 30.80N, 55.67E (IGTU) and 30.74N, 55.84E (IIEES), 30.84N, 55.75 (EMSC).

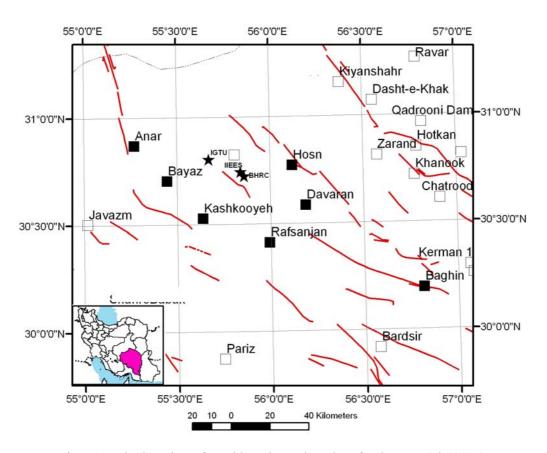


Figure 2. The location of Koshkuyeh Earthquake of February 18th, 2006

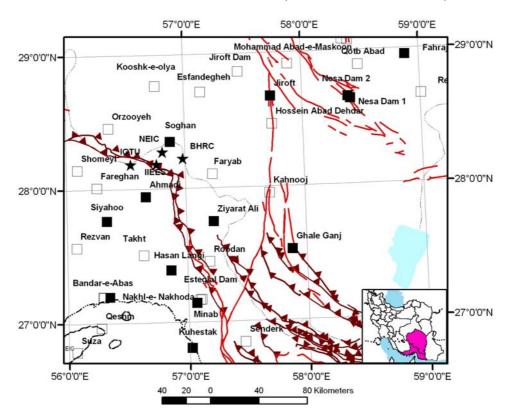


Figure 3. The location of Ahmadi Earthquake of February 28th, 2006

■ Triggered accelerographs □ Not Triggered accelerographs ★ Epicenter —— Fault

2.2 Ahmadi Earthquake of February 28th, 2006

On Tuesday, February 28, 2006 at 7:31:03(UTC), an earthquake with M5.9 (NEIC), 5.7 (IGTU), Ms5.9 (IIEES) Occurred in the south of Iran in Hormozgan and Kerman provinces (Figure 3). This event was recorded by 7 sets of digital accelerographs of Iran Strong Ground Motion Network (Figure 3). The maximum peak acceleration as much as 139 cm/s/s was recorded in Ahmadi station. The epicenter of this event has been located at 28.265 N, 56.812E (NEIC), 28.18 N, 56.76 E (IIEEES), 28.18 N, 56.54 E (IGTU) and 28.22 N, 56.98 E (BHRC).

2.3 Fin Earthquake of March 25th, 2006

On Saturday, March 25, 2006 at 07:28:54 (UTC), an earthquake with the magnitude of M5.9 (NEIC), M6.0 (IGTU), and M15.4 (IIEES) occurred in Hormozgan province, south of Iran

(Figure 4). This event was recorded by 4 units of digital accelerograph of Iran Strong Motion Network (ISMN). The maximum acceleration is recorded in Fin station with the peak value of about 194 cm/s/s. The epicenter of this event has been located at 27.597 N, 55.669 E (NEIC), 27.52 N, 55.77 E (IIEES), 27.56 N, 55.81 E (IGTU) and 27.73 N, 55.78 E (BHRC).

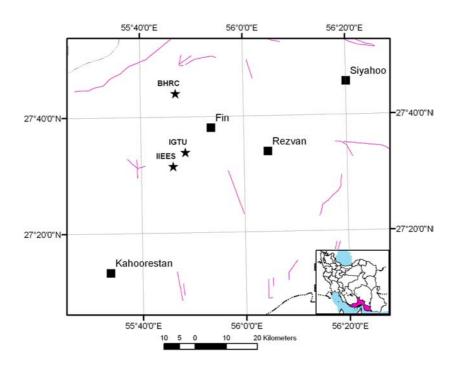


Figure 4. The location of Ahmadi Earthquake of March 25th, 2006

■ Triggered accelerographs □ Not Triggered accelerographs ★ Epicenter ──Fault

2.4 The greatest foreshock of Silakhor earthquake (March 31st, 2006), of March 30th This event was the greatest foreshock of Silakhor earthquake of March 31st, 2006 that occurred less than 7 hours, on Tuesday, March 30th, 2006 at 19:36:16 (UTC). This foreshock with the peak acceleration of about 320 cm/s/s in ChalanChoolan station is recorded by 8 accelerograph stations (Figure 5).

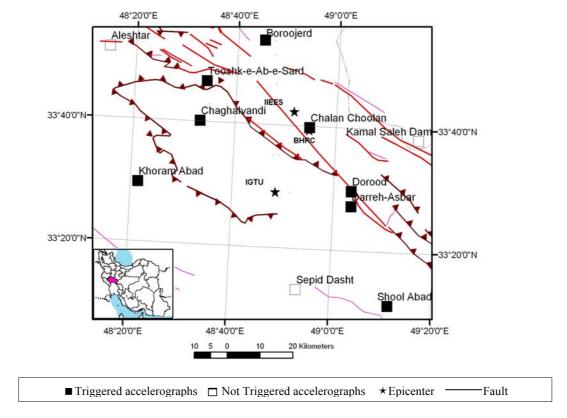


Figure 5. The location of foreshock Silakhor earthquake (March 31th, 2006), That occurred on March 30th, 2006.

2.5 Silakhor earthquake of March 31st, 2006

On Friday early morning of March 31, 2006 at 01:17:02(UTC), an earthquake with the magnitude of Mw6.1 (HRV), M6.0 (IGTU), and Ml6.1 (IIEES) occurred in Lorestan province, west of Iran (Figure 6). This earthquake caused heavy structural damages in the region (Figure 7.a). Due to this earthquake 66 people killed and 1,280 more injured at least and many buildings in 330 villages surrounding the epicenter destroyed or damaged. It is likely the death toll would have been much more if the residents had not been warned by a series of weaker foreshocks.

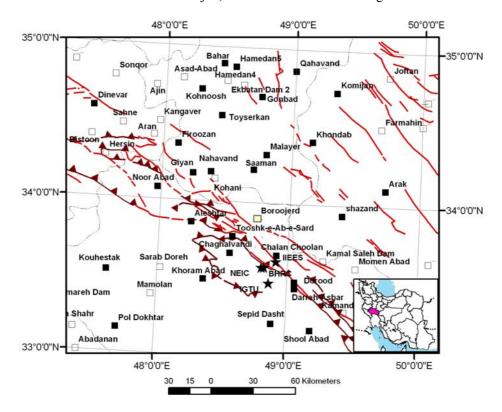
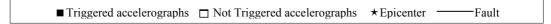


Figure 6. The location of Silakhor earthquake of March 31st 2006 and the triggered stations



The strong ground motions of this event were recorded by 29 set of SSA-2 digital accelerographs. The recorded accelerogram in the ChalanChoolan station (figure 7.b), with a Ts-Tp of about 1.71 seconds is the closest obtained accelerogram, which suggests a focal distance of about 12 km. The maximum acceleration was recorded in ChalanChoolan station with the peak value of about 432 and 524 cm/s/s on horizontal and vertical components respectively. The epicenter of this event has been located at 33.583N, 48.800E (NEIC), 33.62N, 48.91E (IIEES).

This earthquake had Seven foreshocks that are recorded by ISMN. The strongest foreshock was that happened on Tuesday of March 30, 2006, at 19:36:16 (UTC) and described in detail before. It was followed by many aftershocks, and ISMN has recorded about 300 accelerograms in the go after 3 months as well.



Figure 7a. Structural heavy damage

Building and Housing Research Center (BHRC) Iran Strong Motion Network (ISMN)

Station: Chalan Choolan Rec. No: 4027/08 0.80 0,30 0.00 -0.30 -0,60 Acceleration (g) 0.30 0,00 -0.30 -0,60 0.80 0,30 0.00 -0,30 -0,60 40.0 Time (seconds)

Figure 7b. recorded accelerogram in ChalanChoolan station

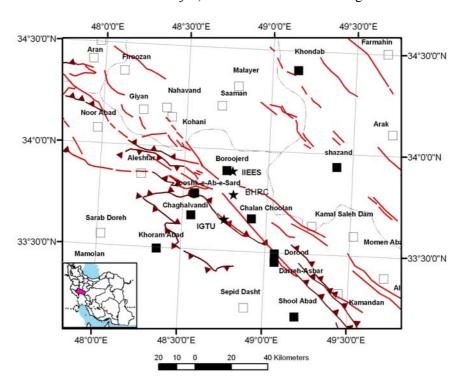


Figure 8. The location map of aftershock of March 31st, 2006 of Silakhor earthquake of March 31st, 2006

2.6 Aftershock of Silakhor earthquake (March 31st, 2006), of March31th, 2006

The Silakhor earthquake of March 31st, 2006 was followed by hundreds of aftershocks, among them the event of Friday morning of March 31, 2006 at 11:54:02 (UTC), with the magnitude of M5.3 (IGTU) was the strongest one that occurred about 11 hour later. This earthquake recorded by 10 accelerograph stations (Figure 8) and the maximum PGA of about 206 gals obtained in ChalanChoolan station.

2.7 Sagez earthquake of June 6th, 2006

On Tuesday, June 6th, 2006 at 17:03:02 (UTC), an earthquake with Ml5.3 (BHRC), M4.9(NEIC), Ml4.8 (IIEES) occurred in west of Iran in the Kurdistan province. This event was recorded by 6 sets of digital accelerographs (Figure 9) of Iran Strong Ground Motion Network (ISMN). The maximum peak acceleration as much as 42 cm/s/s was recorded in Saqez station. The epicenter of this event has been located at 35.74 N, 46.18E (BHRC), 35.641 N, 46.045E

(NEIC), 35.59 N, 45.85 E (IIEES). About 9 seconds before, a foreshock occurred in this area. This foreshock with Ml4.2 was recorded by Marivan, Baneh and Boein sofla accelerograph stations. The Epicenter of this foreshock has been located at 46.24E, 35.78N (BHRC).

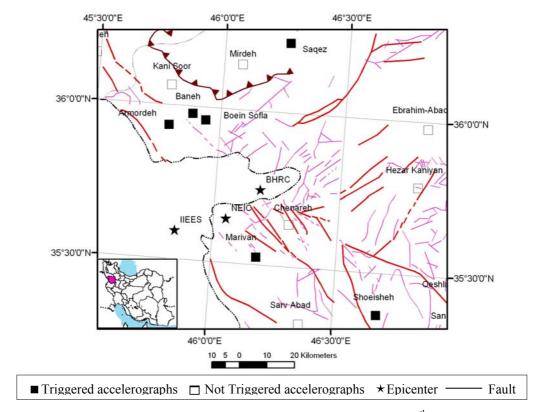


Figure 9. The location map of Saqez earthquake of June 6th, 2006