

PRELIMINARY REPORT

March,02, 2017
Adiyaman-Samsat Earthquake
(Eastern Turkey)
Mw=5.5

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REPUBLIC OF TUKEY
PRIME MINISTRY
DISASTER AND EMERGENCY MANAGEMENT
PRESIDENCY
EARTHQUAKE DEPARTMENT

Adiyaman-Samsat Earthquake (Mw=5.5)

An earthquake with magnitude Mw=5.5 occurred at local time 14:07 on March, 02, 2017. Epicentral coordinates of the earthquake was determined as 37.5955 N - 38.4866 E. and 9.76 km depth. After this earthquake, 195 aftershocks were recorded with magnitude range 1.0- 4.4 in first 24 hours (www.deprem.gov.tr) (Fig.1, Graph 1).

This earthquake was also felt in Adiyaman, Şanlıurfa and Diyarbakır in Turkey and It caused slightly and moderate damage in some village and it didn't cause any loss of life.

Focal Mechanism Solutions performed by considering first motion direction of P wave and moment tensor method of Mw=5.5 earthquake is emerged from right lateral strike slip faulting (Fig.2). The main tectonic structure near the epicenter is known as the Bozova Fault.

In the last century, earthquakes that occurred in the region are given as; 14.06.1964 Ms= 6.0 Sincik-Adiyaman, 20.01.1981 Gerger-Adiyaman mb=5.0 and 17.09.2010 Gerger-Adiyaman mb=4.7

March 02, 2017 Adiyaman-Samsat Earthquake was recorded by accelerometers at 117 different locations within Turkey Strong Ground Motion Observation Network operated by Earthquake Department at Disaster and Emergency Management Presidency of Turkey (<http://kyhdata.deprem.gov.tr>). Peak ground acceleration values recorded at Adiyaman-Merkez station (78.95) gal in NS direction (Table 1, Fig.3,4). Effective duration of the earthquake was measured as 11.3 second according to Adiyaman-Merkez station

Estimated seismic intensity values that can be created by March, 02, 2017 earthquake in the earthquake-hit area and its vicinity are estimated and the maps showing the spatial distribution of these values are prepared (Fig.5).



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Earthquake activity of this region (and all of Turkey) has been observed in Disaster and Emergency Management Presidency, Earthquake Department Data Center Ankara 7 days/24 hours with 255 Seismic station and 658 accelerometer. Obtained results are shared with public, press and relevant authorized.

For your information.



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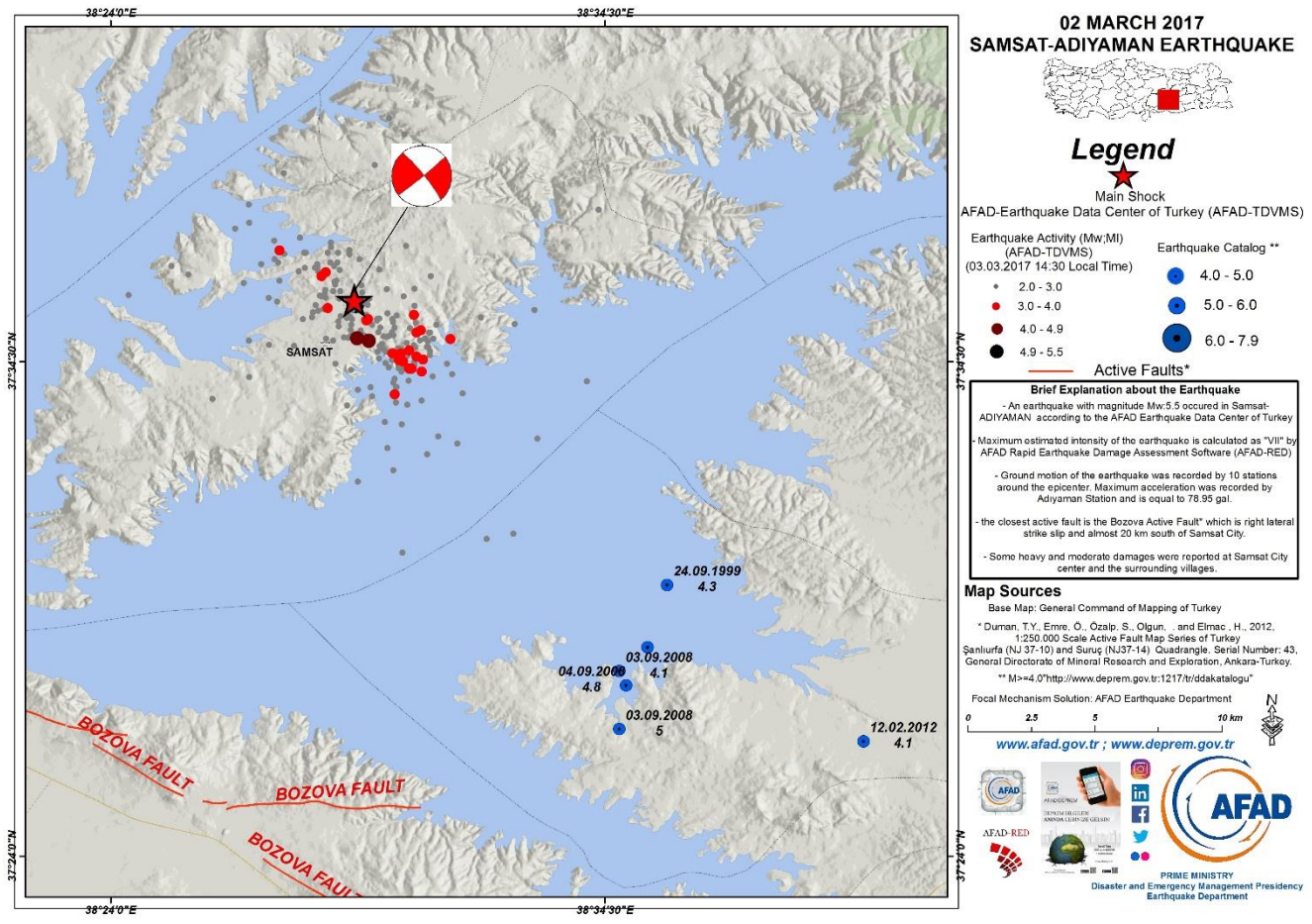
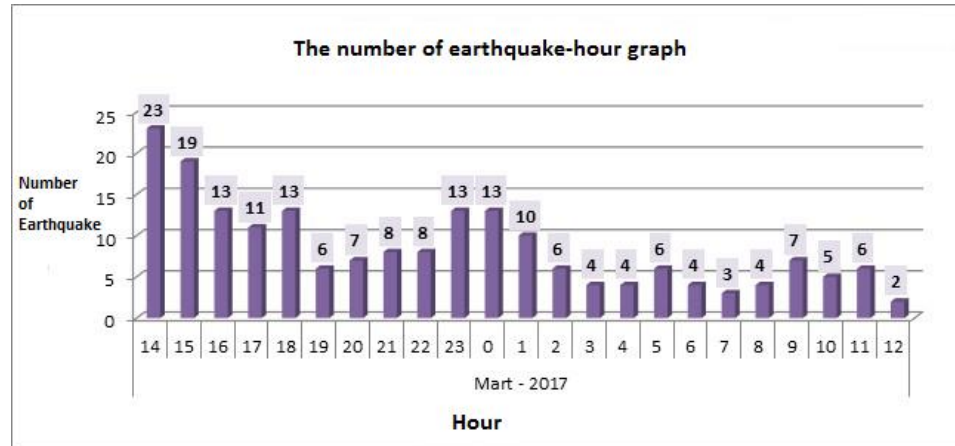
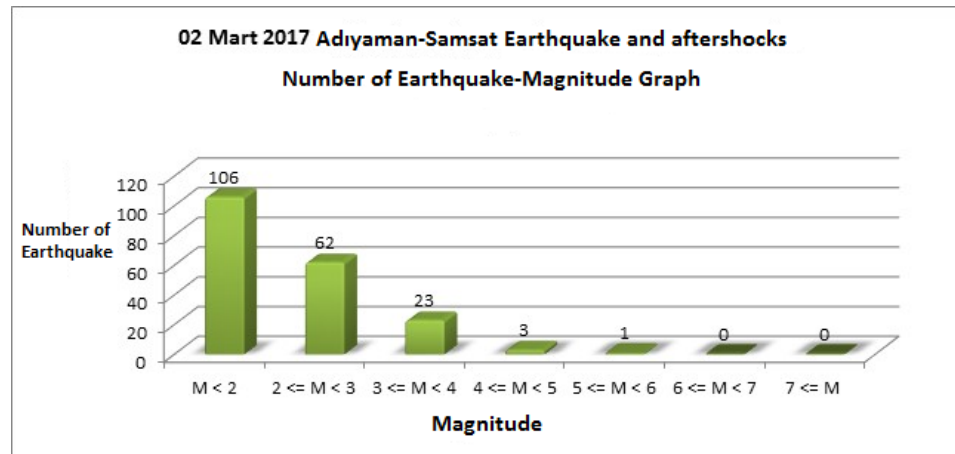


Fig. 1. 02.03.2017 Adiyaman-Samsat earthquake and aftershocks distribution (Mw=5.5)

Adiyaman-Samsat Earthquake (Mw=5.5)



Graph 1. Distribution of aftershocks in first 24 hours



Adiyaman-Samsat Earthquake (Mw=5.5)

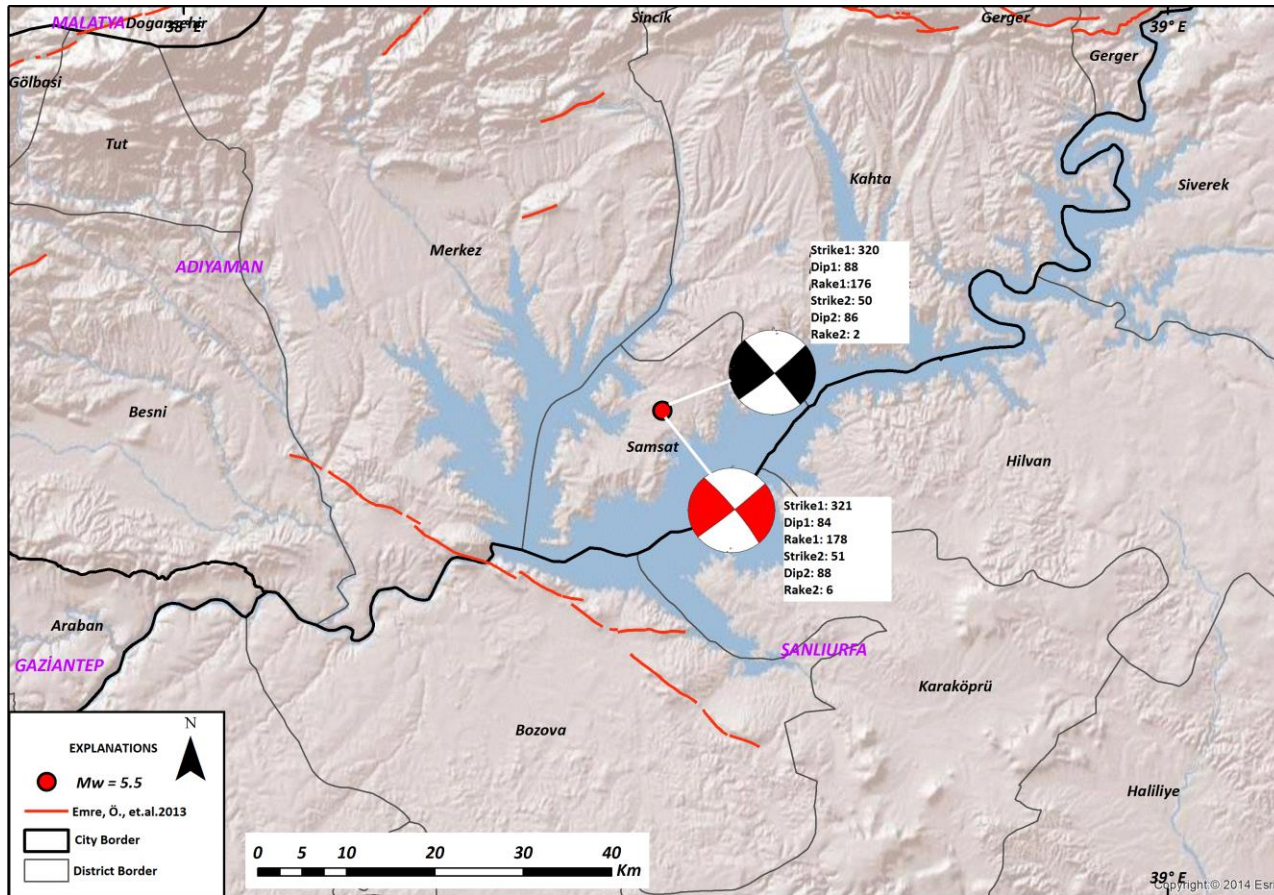


Fig. 2. Focal Mechanism Solutions of Adiyaman-Samsat Earthquake Mw=5.5)(red one indicate p wave first motion, black one indicate moment tensor solution)

Adiyaman-Samsat Earthquake (Mw=5.5)

	RECORD FILE	N-S PGA	E-W PGA	U-D PGA	RECORD INFO.	STATION CODE	Station City	Rjb	Rrup	Repi	Rhyp
1	20170302110725_2304	0.81	0.78	0.53		2304	KOVANCILAR				173
2	20170302110725_2412	0.15	0.13	0.09		2412	CAGLAYAN				245
3	20170302110725_0205	28.92	29.76	20.45		0205	KAHTA				25
4	20170302110725_2302	2.05	2.05	1.88		2302	MADEN				136
5	20170302110725_6304	56.80	56.44	41.36		6304	BOZOVA				26
6	20170302110725_4407	1.63	0.83	0.87		4407	ARGUVAN				133
7	20170302110725_4404	2.37	3.31	1.39		4404	POTURGE				75
8	20170302110725_0201	78.95	58.86	41.13		0201	MERKEZ				27
9	20170302110725_2308	5.92	3.28	2.77		2308	SIVRICE				119
10	20170302110725_2309	1.15	1.05	0.76		2309	KEBAN				135
11	20170302110725_2413	0.28	0.24	0.14		2413	CAYIRLI				279
12	20170302110725_1201	0.86	1.26	0.44		1201	MERKEZ				227
13	20170302110725_6301	17.84	27.17	9.14		6301	MERKEZ				55
14	20170302110725_2301	1.40	1.26	1.27		2301	MERKEZ				134
15	20170302110725_4401	2.10	1.98	1.92		4401	MERKEZ				85
16	20170302110725_0204	8.79	7.79	5.73		0204	GERGER				68
17	20170302110725_0208	5.23	4.66	1.88		0208	GOLBASI				76
18	20170302110725_2306	0.48	0.38	0.27		2306	KARAKOCAN				203
19	20170302110725_4405	0.82	0.73	0.64		4405	HEKIMHAN				143
20	20170302110725_4406	3.24	2.02	1.65		4406	AKCADAG				94
21	20170302110725_2307	1.22	1.43	1.27		2307	PALU				175
22	20170302110725_2409	0.76	0.80	0.32		2409	KEMALIYE				187
23	20170302110725_1210	2.09	1.41	0.88		1210	GENC				221
24	20170302110725_2411	0.12	0.12	0.22		2411	OTLUKBELI				295
25	20170302110725_1211	0.68	0.88	0.40		1211	SOLHAN				269
26	20170302110725_2408	0.45	0.52	0.21		2408	KEMAH				228
27	20170302110725_0207	8.63	6.72	5.66		0207	CELIKHAN				53
28	20170302110725_6303	8.46	5.42	4.27		6303	SIVEREK				76
29	20170302110725_2704	12.68	15.50	7.21		2704	NIZIP				89
30	20170302110725_4631	6.27	4.69	3.31		4631	NURHAK				102
31	20170302110725_4612	2.83	2.55	0.94		4612	GOKSUN				182
32	20170302110725_4632	4.28	3.75	2.24		4632	TURKOGLU_SEKEROBA				156
33	20170302110725_4408	2.18	2.25	1.86		4408	DOGANSEHIR				76
34	20170302110725_4610	4.21	3.84	1.95		4610	ELBISTAN				131
35	20170302110725_4614	11.79	12.62	5.74		4614	PAZARCIK				106
36	20170302110725_4611	4.92	5.42	2.40		4611	CAGLAYANCERIT				107

Table 1. Acceleration values of Adiyaman-Samsat earthquake



Adiyaman-Samsat Earthquake (Mw=5.5)

	RECORD FILE	N-S PGA	E-W PGA	U-D PGA	RECORD INFO.	STATION CODE	Station City	Rjb	Rrup	Repi	Rhyp
37	20170302110725_2516	0.17	0.13	0.12		2516	CAT				310
38	20170302110725_2703	6.83	6.81	4.13		2703	MERKEZ				117
39	20170302110725_4615	3.34	2.81	1.78		4615	NARLI				121
40	20170302110725_4630	2.46	2.47	1.74		4630	TURKOGLU_CECELI				151
41	20170302110725_6008	0.30	0.37	0.12		6008	ALMUS				337
42	20170302110725_2708	3.67	2.58	1.16		2708	ISLAHIYE_FEVZIPASA				172
43	20170302110725_1213	0.45	0.51	0.29		1213	ADAKLI				250
44	20170302110725_3802	1.78	1.89	1.11		3802	SARIZ				199
45	20170302110725_4628	2.25	2.28	1.08		4628	AFSIN				154
46	20170302110725_6201	0.40	0.43	0.31		6201	MERKEZ				188
47	20170302110725_4629	2.39	2.92	1.14		4629	TURKOGLU_BEYOGLU				154
48	20170302110725_3137	1.32	1.34	1.05		3137	HASSA_AKTEPE				204
49	20170302110725_8003	1.86	1.48	1.07		8003	MERKEZ				205
50	20170302110725_2705	1.93	3.05	1.15		2705	ISLAHIYE				178
51	20170302110725_3135	1.31	1.14	0.59		3135	ARSUZ				268
52	20170302110725_3141	1.99	1.56	1.07		3141	SERINYOL				244
53	20170302110725_4624	5.47	4.38	1.99		4624	ADANA YOLU				138
54	20170302110725_2106	1.44	1.85	1.17		2106	LICE				211
55	20170302110725_5811	0.31	0.37	0.17		5811	SARKISLA				265
56	20170302110725_4613	1.45	1.83	0.72		4613	ANDIRIN				188
57	20170302110725_5804	0.52	0.70	0.66		5804	GEMEREK				272
58	20170302110725_5807	0.88	0.75	0.79		5807	GURUN				163
59	20170302110725_3124	1.67	1.68	0.65		3124	GUZELBURC				257
60	20170302110725_3126	1.97	2.29	1.14		3126	AKASYA MAH.				260
61	20170302110725_3127	2.00	1.95	0.84		3127	ESENTEPE MAH.				261
62	20170302110725_3128	1.25	1.84	1.19		3128	ESENLIK MAH:				261
63	20170302110725_3130	1.18	1.21	0.56		3130	DEFNE				263
64	20170302110725_3132	1.10	1.19	0.58		3132	ORHANLI MAH.				259
65	20170302110725_3133	1.52	1.30	0.82		3133	REYHANLI				228
66	20170302110725_3134	1.63	1.62	0.77		3134	DORTYOL				220
67	20170302110725_3136	1.68	1.97	0.91		3136	ALTINOZU				260
68	20170302110725_3138	1.28	1.16	0.68		3138	HASSA				197
69	20170302110725_3139	2.52	2.13	0.79		3139	GUZELCE				217
70	20170302110725_3140	2.27	1.67	0.89		3140	SAMANDAG				283
71	20170302110725_3142	0.79	1.31	0.50		3142	KIRIKHAN				225
72	20170302110725_4617	1.60	1.44	1.56		4617	AFSAR				146
73	20170302110725_4619	3.44	2.11	1.95		4619	HAYDARBEG MAH.				143

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	RECORD FILE	N-S PGA	E-W PGA	U-D PGA	RECORD INFO.	STATION CODE	Station City	Rjb	Rrup	Repi	Rhyp
74	20170302110725_4620	2.64	2.55	1.43		4620	NECIP FAZIL MAH.				140
75	20170302110725_4625	4.47	3.53	2.82		4625	G.ANTEP YOLU				133
76	20170302110725_4626	3.30	3.71	1.96		4626	H.BAYRAM VELI MAH.				139
77	20170302110725_4618	1.62	1.82	1.10		4618	BINEVLER MAH.				142
78	20170302110725_3131	0.51	0.55	0.37		3131	BAGRIYANIK MAH				260
79	20170302110725_1212	0.20	0.17	0.19		1212	YEDISU				270
80	20170302110725_2513	0.31	0.40	0.19		2513	HINIS				339
81	20170302110725_3113	2.09	2.00	1.13		3113	ISKENDERUN				237
82	20170302110725_3115	2.25	2.12	1.25		3115	ISKENDERUN				238
83	20170302110725_3116	1.04	0.92	0.64		3116	ISKENDERUN				231
84	20170302110725_3118	2.74	3.31	1.18		3118	ISKENDERUN				234
85	20170302110725_3119	1.10	0.95	0.50		3119	ISKENDERUN				236
86	20170302110725_3120	1.85	1.14	0.96		3120	ISKENDERUN				232
87	20170302110725_3121	4.28	2.65	1.40		3121	ISKENDERUN				227
88	20170302110725_3143	1.89	1.28	0.85		3143	HASSA_AKBEZ				191
89	20170302110725_3144	2.30	2.26	0.89		3144	HASSA_HACILAR				201
90	20170302110725_3145	1.79	1.68	0.90		3145	KIRIKHAN_BALARMUDU				214
91	20170302110725_3146	1.61	0.96	1.07		3146	BELEN				236
92	20170302110725_5812	0.20	0.25	0.16		5812	AKINCILAR				277
93	20170302110725_7201	2.05	2.31	1.03		7201	MERKEZ				236
94	20170302110725_7301	1.27	0.83	0.46		7301	MERKEZ				350
95	20170302110725_8002	1.78	1.83	1.29		8002	BAHCE				176
96	20170302110725_0120	0.46	0.47	0.25		0120	YUMURTALIK				257
97	20170302110725_0127	0.63	0.63	0.37		0127	FEKE				227
98	20170302110725_2105	1.63	1.87	1.33		2105	DICLE				162
99	20170302110725_4616	3.17	3.07	1.31		4616	TURKOKGLU				148
100	20170302110725_3123	1.46	1.01	0.79		3123	KANATLI MAH.				259
101	20170302110725_3125	1.18	1.15	0.83		3125	AFET KONUTLARI				260
102	20170302110725_4623	2.14	2.47	2.41		4623	BAHCELIEVLER MAH.				137
103	20170302110725_2101	5.46	5.18	2.94		2101	MERKEZ				155
104	20170302110725_6302	16.65	18.84	5.80		6302	VIRANSEHIR				119
105	20170302110725_2102	2.63	2.65	2.61		2102	CERMIK				105
106	20170302110725_4702	2.14	2.70	1.89		4702	MIDYAT				254
107	20170302110725_4701	2.56	2.41	1.78		4701	MERKEZ				200
108	20170302110725_4901	1.20	0.88	0.65		4901	MERKEZ				292
109	20170302110725_4904	0.78	0.89	0.57		4904	KORKUT				312

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	RECORD FILE	N-S PGA	E-W PGA	U-D PGA	RECORD INFO.	STATION CODE	Station City	Rjb	Rrup	Repi	Rhyp
110	20170302110725_4905	0.76	0.79	0.45		4905	VARTO				310
111	20170302110725_5601	0.77	0.83	0.51		5601	MERKEZ				304
112	20170302110725_2903	0.21	0.16	0.10		2903	KOSE				307
113	20170302110725_2401	0.24	0.24	0.14		2401	MERKEZ				254
114	20170302110725_0120	0.46	0.47	0.25		0120	YUMURTALIK				257
115	20170302110725_0122	0.50	0.50	0.30		0122	KOZAN				236
116	20170302110725_2904	0.18	0.15	0.13		2904	SIRAN				293
117	20170302110725_0129	0.60	0.52	0.46		0129	TUFANBEYLI				212

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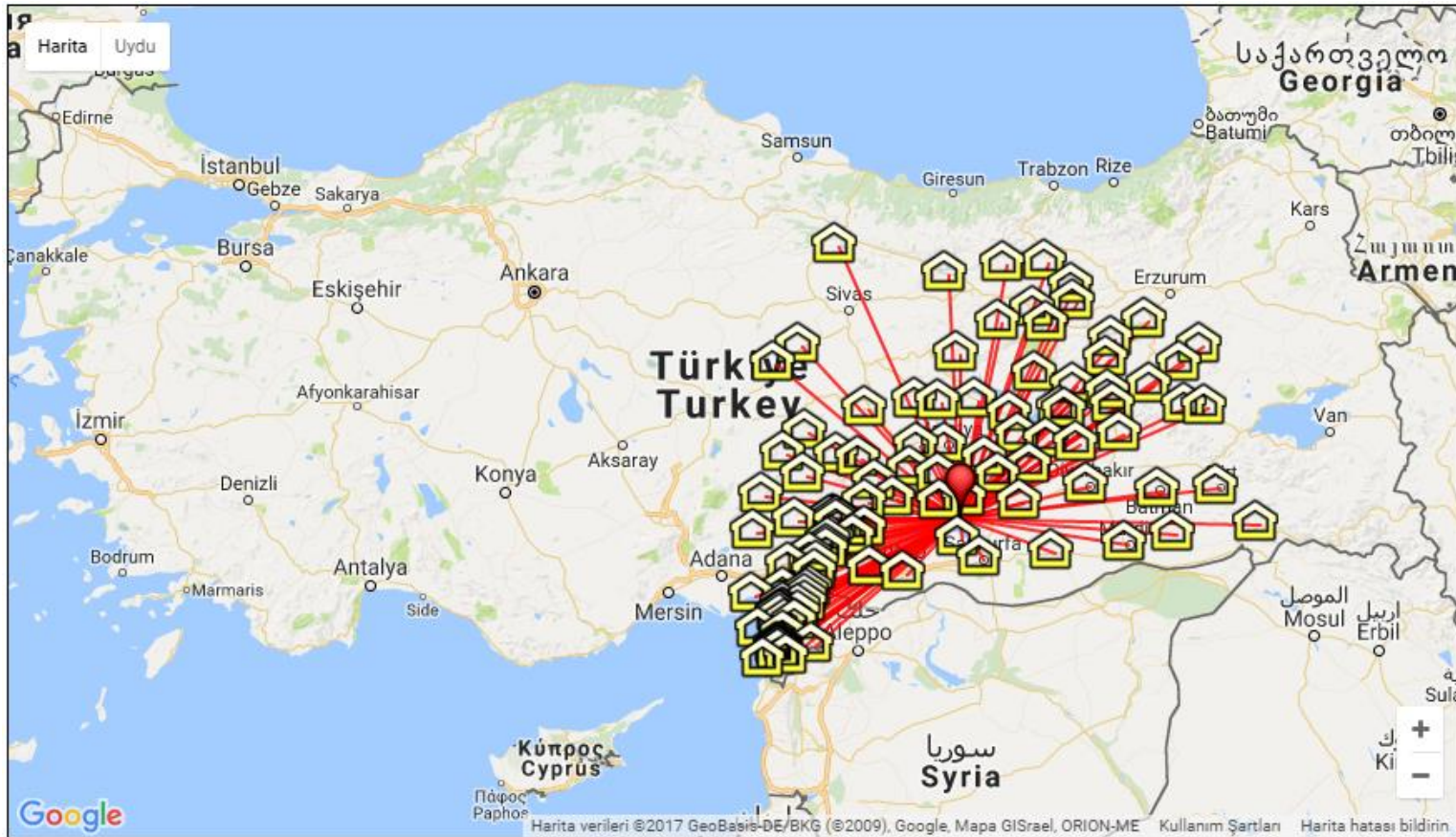


Fig. 3. Distribution of accelerometers recorded during the Adiyaman-Samsat Earthquake



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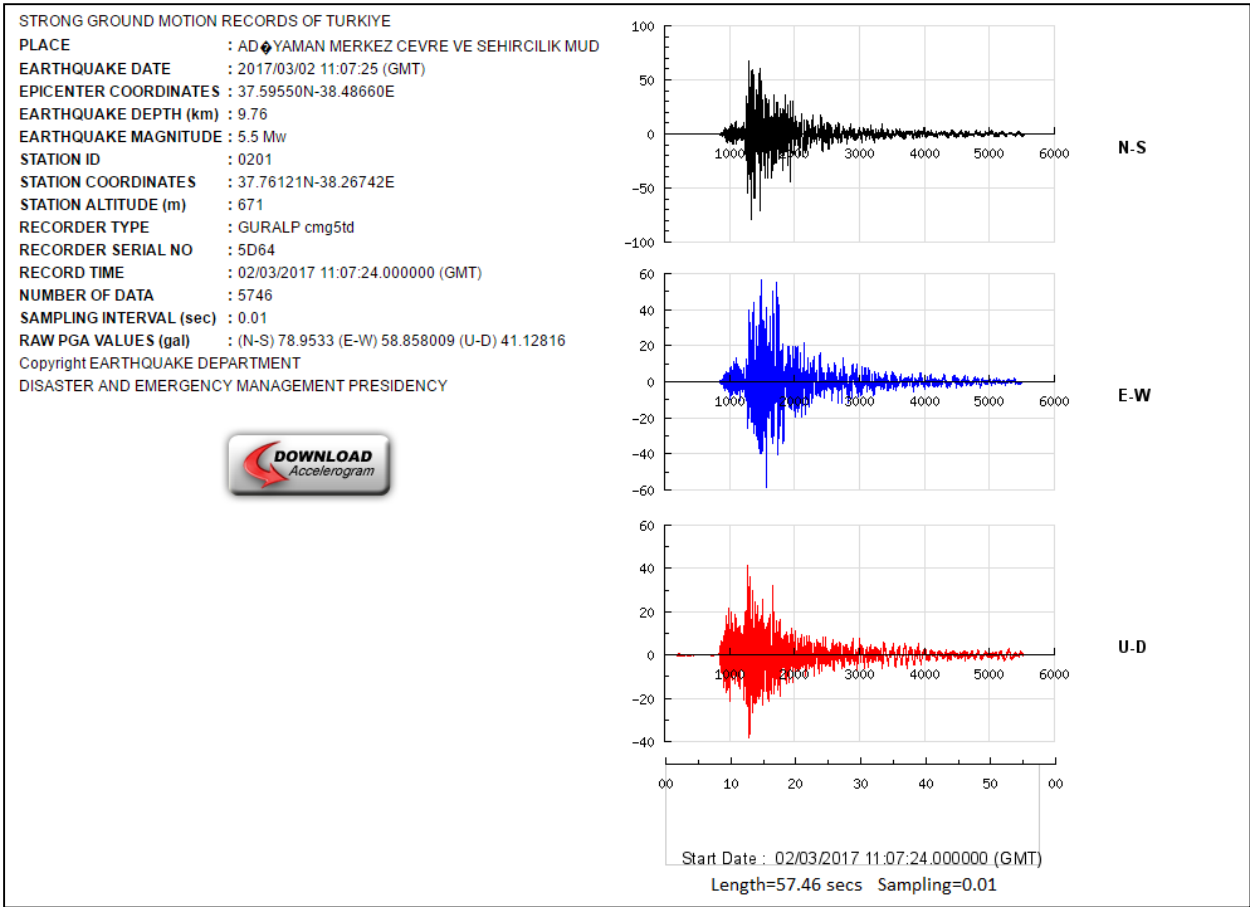


Fig. 4. Maximum acceleration record at Adiyaman-Merkez Station.



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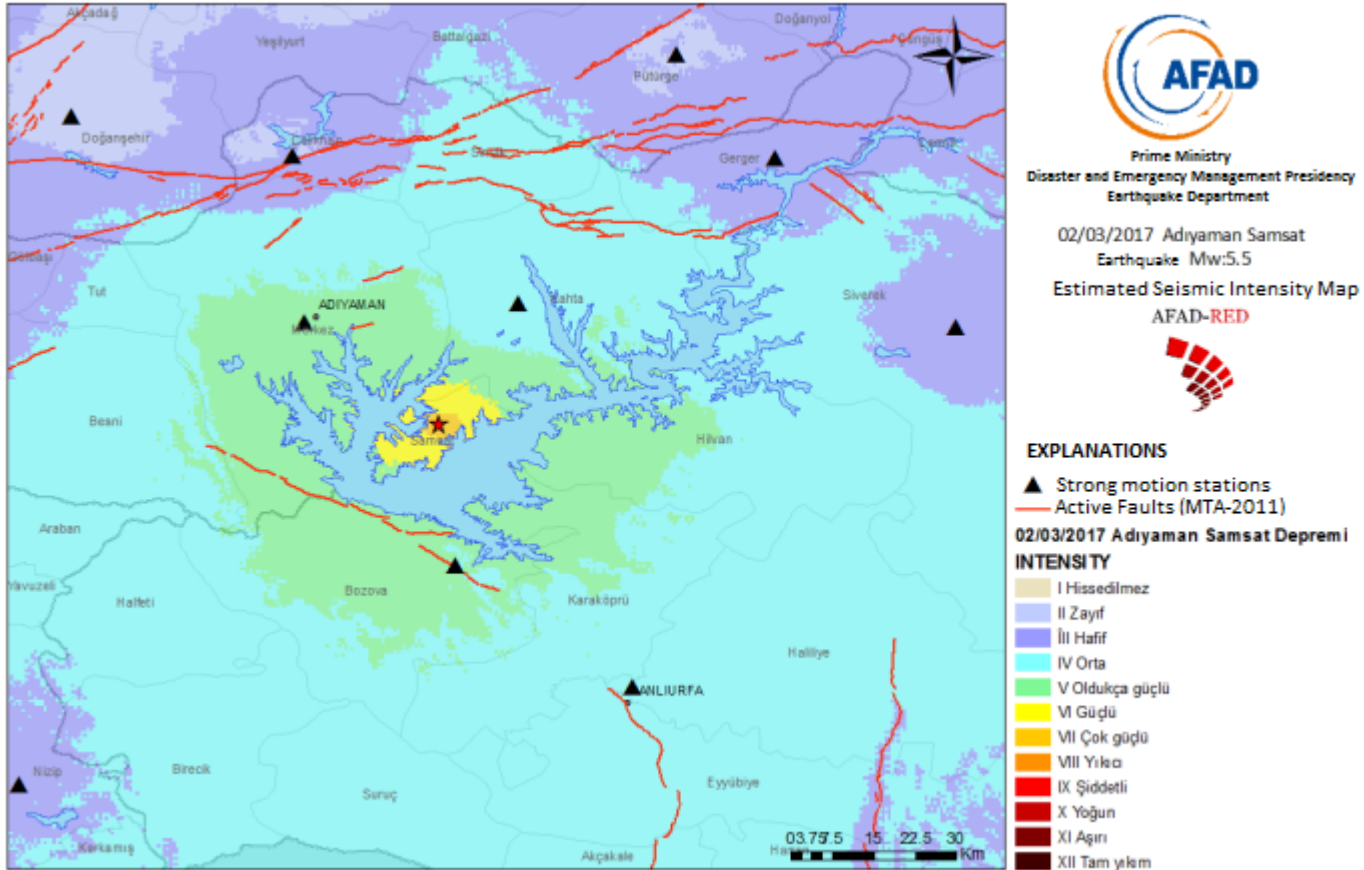


Fig.5. Estimated seismic intensity map of Adiyaman-Samsat Earthquake (Mw=5.5)



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