

# PRELIMINARY REPORT

June,12, 2017  
Aegean Sea Earthquake  
(Near the Coast of Western Turkey)  
Mw=6.2

[www.deprem.gov.tr](http://www.deprem.gov.tr)  
[www.afad.gov.tr](http://www.afad.gov.tr)



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

## Aegean Sea Earthquake ( $M_w=6.2$ )

An earthquake with magnitude  $M_w=6.2$  occurred at local time 15:28 on June, 12, 2017. Epicentral coordinates of the earthquake was determined as 38.8486 N - 26.3130 E. and 15.96 km depth. After this earthquake, 1311 aftershocks were recorded with magnitude range 0.8- 5.3 in the first week ([www.deprem.gov.tr](http://www.deprem.gov.tr)) (Fig.1, Graph 1).

This earthquake was strongly felt in large area. İzmir, İstanbul, Bursa, Balıkesir, Çanakkale, Eskişehir, Kütahya, Yalova, Edirne, Kırklareli, Tekirdağ, Manisa, Aydın in Turkey and, Mytilini in Greece It caused slightly and moderate damage in some village in Mytilini and 10 injured and 1 dead were reported by press in Mytilini.

Focal Mechanism Solutions performed by considering first motion direction of P wave and moment tensor method of  $M_w=6.2$  earthquake is emerged from normal faulting with little strike slip component (NW-SE direction) (Fig.2). According to Coulomb stress change that is performed with source fault parameter of  $M_w=6.2$  earthquake, it is observed that west part of the fault is loaded with additional stress of approximately 0.8-1 bar and stress is decreasing in North-South direction. (Fig.3).

In the last century, earthquakes that occurred in the region are given as; 1919 Dikili offshore  $M_s=7.0$ , 1949 Aegean Sea  $M_s=6.6$ , 1979 Aegean Sea  $M_w=5.8$ , 1992 Seferihisar, İzmir  $M_w=6.0$ , 1997 Aegean Sea  $M_w=5.8$  (Fig.4).

June 12, 2017 Aegean Sea Earthquake was recorded by accelerometers at 223 different locations within Turkey Strong Ground Motion Observation Network (TR-NSMN) operated by Earthquake Department at Disaster and Emergency Management Presidency of Turkey (<http://kyhdata.deprem.gov.tr>) (Table 1).

Epicentral distances (Repi) range from 29 to 450km. PGA values are uncorrected data and given in the table below. The largest peak ground acceleration (PGA) has been recorded at İzmir-Foça Station called 3534 (59.11gal at EW component). According to 3527 record, SM durations have been calculated as follows; Significant Duration 14.2sec (estimated between 5% and 95% of the IA) Effective Duration 14.0sec, Bracketed Duration 39.4sec. In addition to this, Acceleration, Velocity Waveforms and Fourier and Response spectrum graphs of 3527 and 3534 stations are given in the figure 5 and 9.



## *Aegean Sea Earthquake (Mw=6.2)*

Estimated seismic intensity map generated by AFAD-RED (Rapid Damage and Loss Estimation System), is given in the figure 10. According to AFAD-RED, earthquake intensity has been designated as VI (strong shaking) at Hasseki Village, it is the nearest settlement to the epicenter. After the Mw=6.2 EQ, «did you feel it» survey results that is collected by «AFAD-Deprem Mobil Application» and web page are given in figure 11. After the main shock 634 users provided feedback to the survey and these results are compatible with «estimated seismic intensity map».

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 weak motion and 658 accelerometer total 913 seismic station. Obtained results are shared with public, press and relevant authorized.

For your information.



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

# Aegean Sea Earthquake (Mw=6.2)

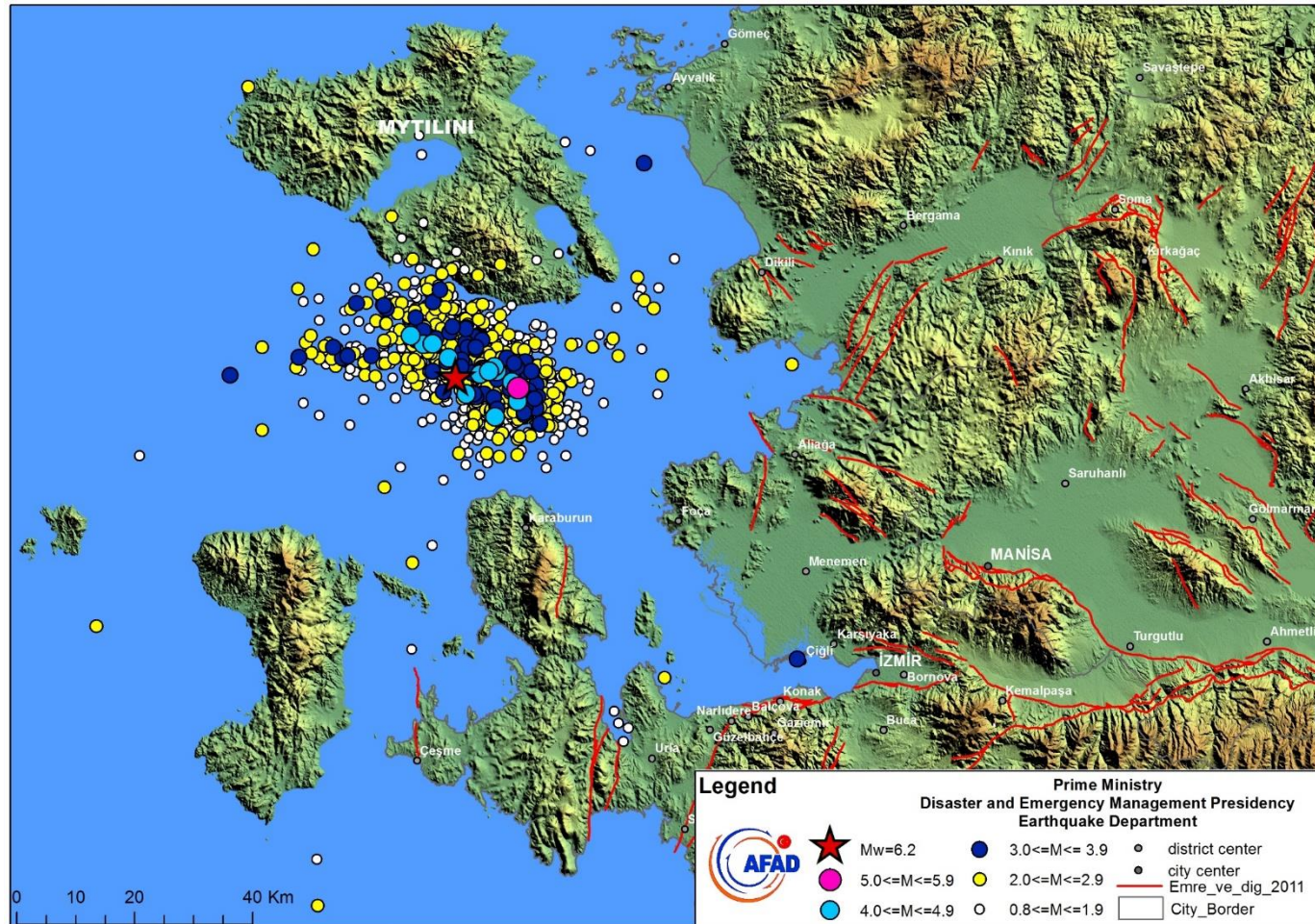
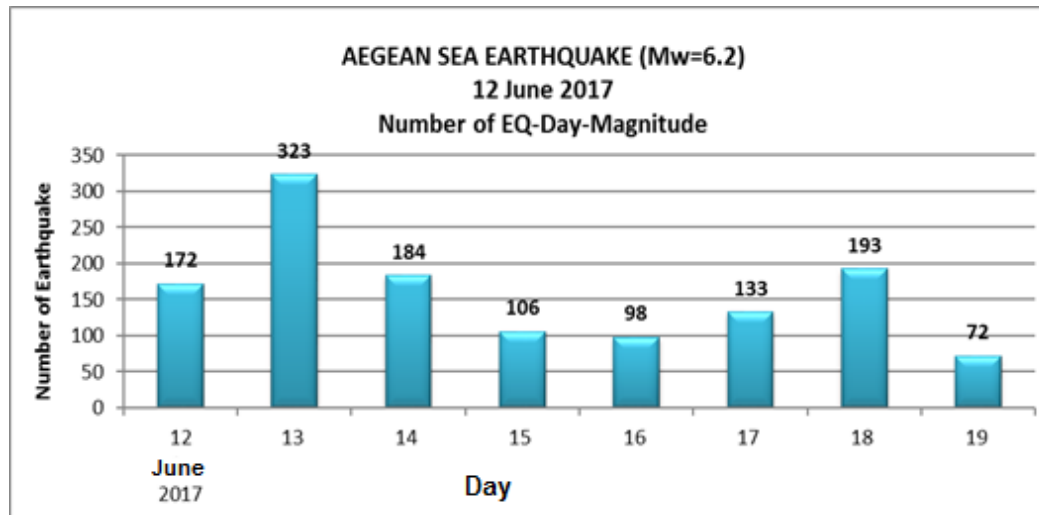
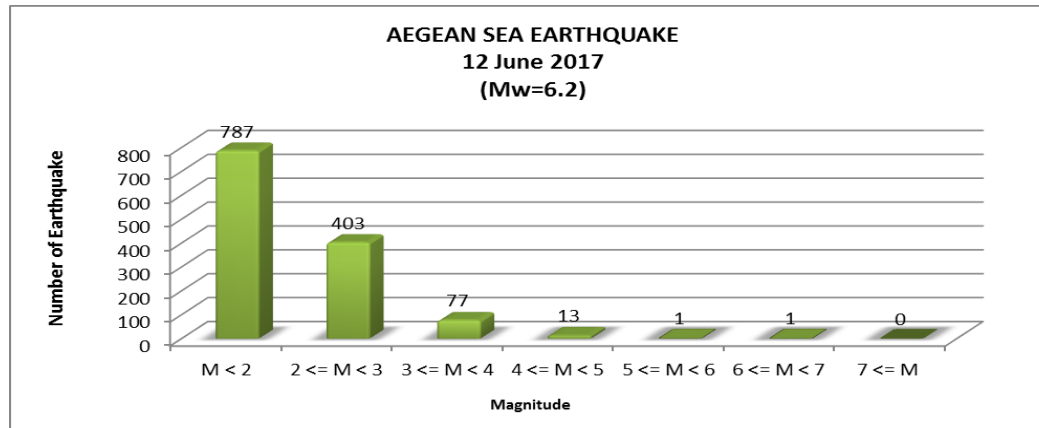


Fig. 1. 12.06.2017 Aegean Sea earthquake and aftershock distribution (Mw=6.2)



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

# Aegean Sea Earthquake (Mw=6.2)



Graph 1. Distribution of aftershocks in the first week





# Aegean Sea Earthquake (Mw=6.2)

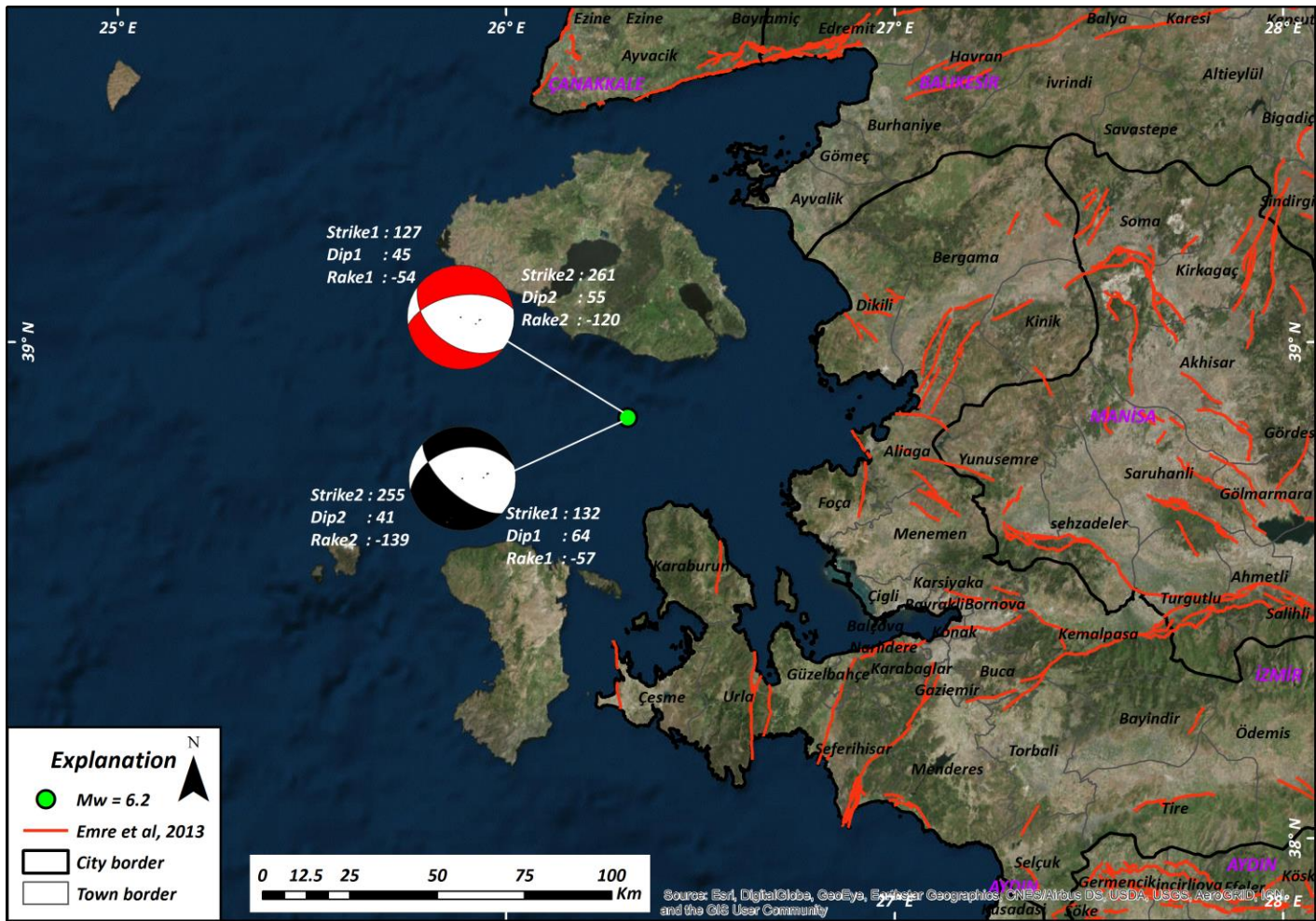


Fig. 2. Focal Mechanism Solutions of Aegean Sea EQ Mw=6.2 (red one indicate p wave first motion, black one indicate moment tensor solution)

# Aegean Sea Earthquake (Mw=6.2)

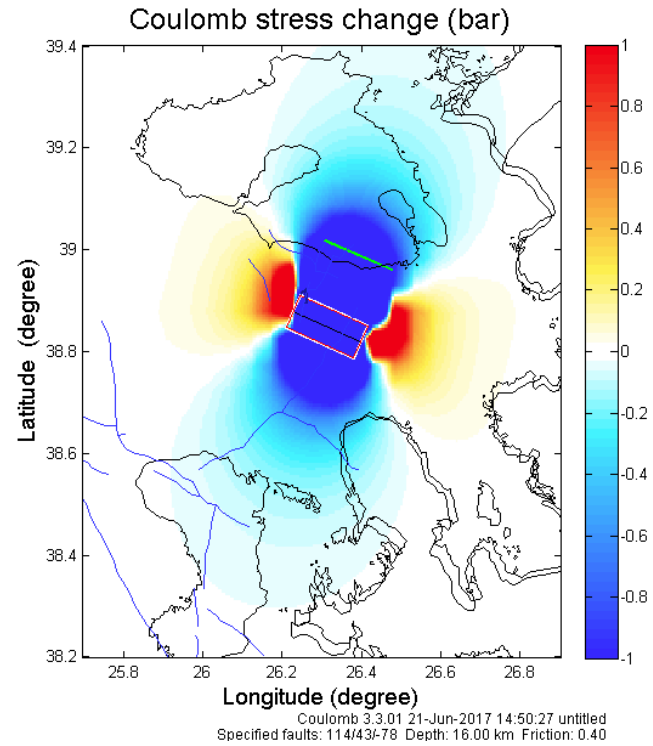
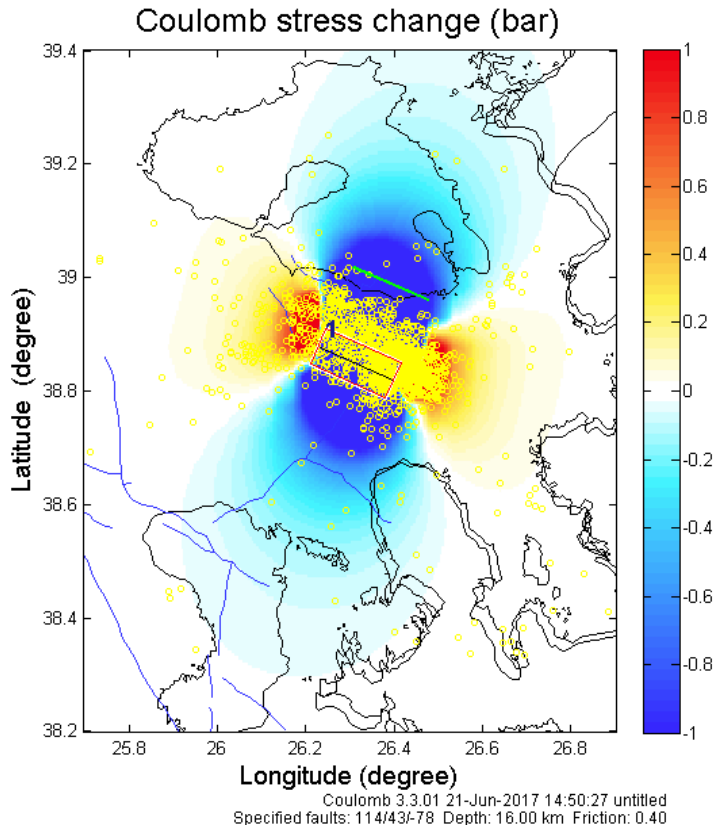


Fig. 3. Coulomb stress change





# Aegean Sea Earthquake (Mw=6.2)

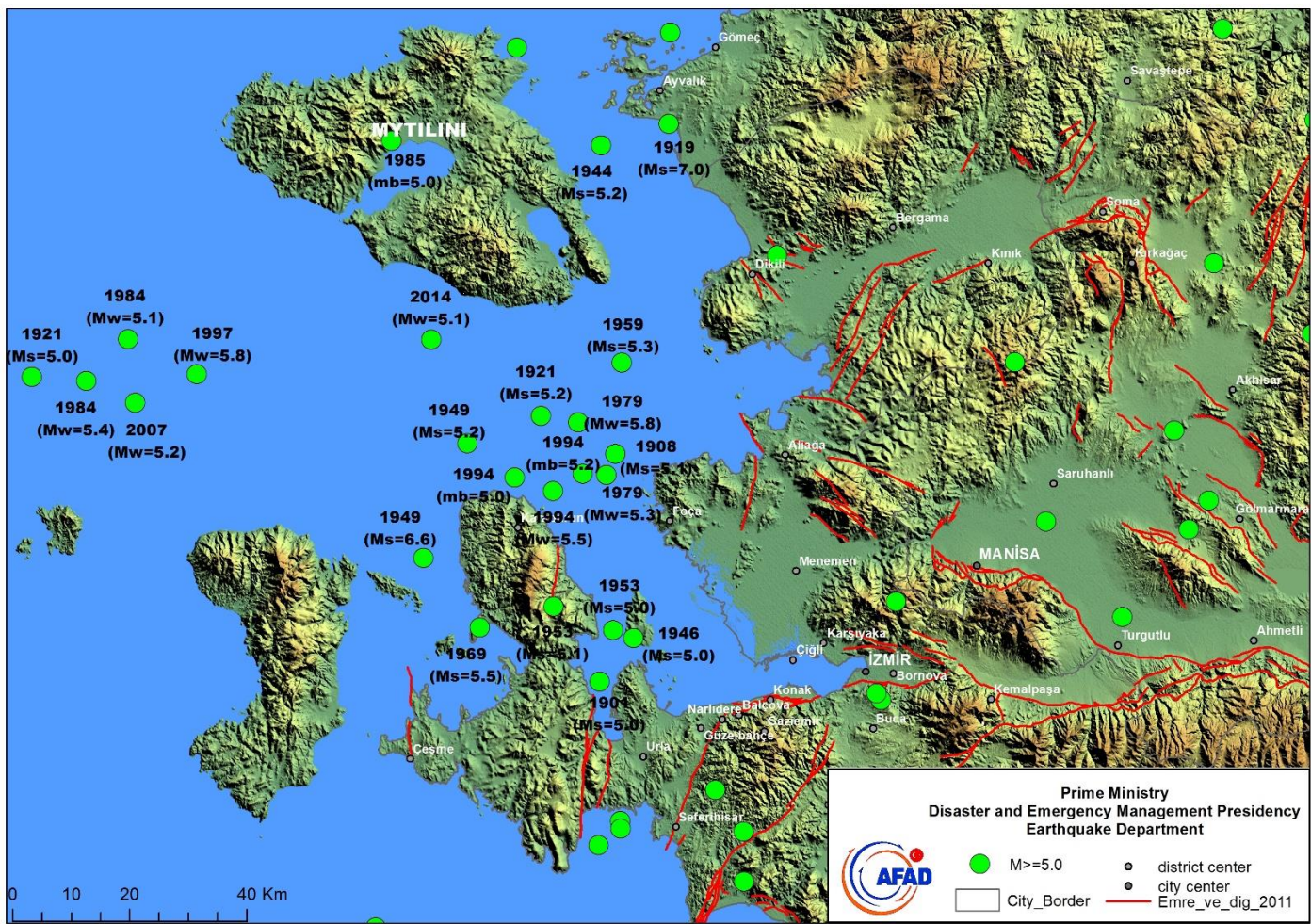


Fig.4. Instrumental period earthquake activity in the region (Kadiroglu,F.T., et al. 2016)



## Aegean Sea Earthquake (Mw=6.2)

N	STATION							PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
	PROVINCE	Country/Town	CODE	Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
1	İzmir	KARABURUN	<a href="#">3527</a>	38.63903	26.51277	60	Guralp cmg5td	50.09	42.11	35.54	29	207
2	İzmir	FOCA	<a href="#">3534</a>	38.66241	26.75856	13	GeoSig gmsplus	39.81	59.11	21.36	44	328
3	İzmir	DIKILI	<a href="#">3503</a>	39.0739	26.88834	3	Guralp cmg5td	53.32	51.21	26.41	56	193
4	İzmir	ALIAGA	<a href="#">3535</a>	38.79629	26.96323	17	GeoSig gmsplus	13.36	11.31	7.46	57	
5	Balıkesir	AYVALIK	<a href="#">1005</a>	39.31134	26.68601	4	Guralp cmg5td	35.5	39	19.18	61	387
6	İzmir	CESME	<a href="#">3528</a>	38.30393	26.37256	17	Guralp cmg5td	38.81	35.52	21.98	61	532
7	İzmir	URLA	<a href="#">3523</a>	38.3282	26.7706	76	Guralp cmg5td	30.85	30.69	12.83	70	414
8	İzmir	GUZELBAHCE	<a href="#">3516</a>	38.3706	26.8907	17	Guralp cmg5td	19.73	25.01	10.48	73	460
9	Çanakkale	AYVACIK_GULPINAR	<a href="#">1720</a>	39.52876	26.12064	160	Sara acebox	25.11	22.02	16.11	77	
10	Çanakkale	AYVACIK_YUKARIKOY	<a href="#">1721</a>	39.54351	26.19045	147	Sara acebox	49.29	45	32.09	78	
11	İzmir	YAMANLAR	<a href="#">3524</a>	38.4969	27.1073	64	Guralp cmg5td	24.97	22.97	14.63	79	459

Table 1. Acceleration values of Aegean Sea earthquake



# Aegean Sea Earthquake (Mw=6.2)

N	STATION							PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
	PROVINCE	Country/Town	CODE	Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
12	İzmir	BALCOVA	<a href="#">3510</a>	38.409	27.043	3	Guralp cmg5td	26.38	29.16	8.78	80	313
13	İzmir	BERGAMA	<a href="#">3537</a>	39.10957	27.17064	52	GeoSig gmsplus	9.17	8.55	8.9	80	
14	İzmir	BOSTANLI	<a href="#">3515</a>	38.4649	27.094	4	Guralp cmg5td	20.25	17.38	10.63	80	171
15	Çanakkale	AYVACIK	<a href="#">1716</a>	39.59965	26.40761	256	GeoSig gmsplus	59.19	47.77	13.02	84	
16	İzmir	BAYRAKLI	<a href="#">3514</a>	38.4762	27.1581	197	Guralp cmg5td	11.1	13.48	8.45	84	836
17	İzmir	KONAK	<a href="#">3518</a>	38.4312	27.1435	7	Guralp cmg5td	18.29	18.38	8.1	86	298
18	İzmir	MERKEZ	<a href="#">3513</a>	38.4584	27.1671	2	Guralp cmg5td	24.9	15.58	9.25	86	196
19	İzmir	SEFERİHISAR	<a href="#">3536</a>	38.19681	26.83839	34	GeoSig gmsplus	19.09	14.4	11.37	86	
20	İzmir	YESİLYURT	<a href="#">3525</a>	38.3723	27.1084	106	Guralp cmg5td	17.21	17.74	9.03	87	745
21	İzmir	BUCA	<a href="#">3512</a>	38.4009	27.1516	79	Guralp cmg5td	12.4	14.38	4.61	88	468
22	İzmir	MANAVKUYU	<a href="#">3520</a>	38.478	27.2111	184	Guralp cmg5td	11.11	9.62	5.93	88	875
23	İzmir	ÇAMDİBİ	<a href="#">3522</a>	38.4357	27.1987	68	Guralp cmg5td	17.15	25.51	9.55	90	249
24	İzmir	BORNOVA	<a href="#">3530</a>	38.45302	27.22444	35	Guralp cmg5td	14.64	20.18	6.26	91	270
25	Balıkesir	BURHANIYE	<a href="#">1019</a>	39.49795	26.97534	55	GeoSig gmsplus	29.08	32.39	18.2	92	
26	İzmir	GAZİEMİR	<a href="#">3538</a>	38.3187	27.12335	168	Sara acebox	20.25	18.11	11.07	92	
27	İzmir	BUCA	<a href="#">3517</a>	38.3756	27.1936	136	Guralp cmg5td	6.47	6.47	5.09	93	
28	İzmir	KINIK	<a href="#">3508</a>	39.0883	27.37472	71	GeoSig gmsplus	16	25.94	7.38	95	558
29	İzmir	PINARBASI	<a href="#">3511</a>	38.4213	27.2563	76	Guralp cmg5td	10.35	9.68	4.78	95	827

Table 1. Acceleration values of Eagean Sea earthquake



# Aegean Sea Earthquake (Mw=6.2)

N	STATION							PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
	PROVINCE	Country/Town	CODE	Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
30	İzmir	MENDERES	<a href="#">3533</a>	38.25717	27.13017	127	GeoSig gmsplus	18.3	19.98	10.3	97	
31	Manisa	MERKEZ	<a href="#">4501</a>	38.61259	27.38138	106	Guralp cmg5td	17.45	18.55	10.39	97	340
32	Çanakkale	EZINE	<a href="#">1704</a>	39.77388	26.34563	68	GeoSig gmsplus	30.39	27.13	19.78	103	403
33	Manisa	SARUHANLI	<a href="#">4508</a>	38.73237	27.55679	38	GeoSig gmsplus	23.89	28.72	7.3	109	
34	Çanakkale	BAYRAMIC	<a href="#">1718</a>	39.81328	26.58622	89	Sara acebox	22.77	13.86	10.72	110	
35	Çanakkale	BOZCAADA	<a href="#">1708</a>	39.8419	26.0528	195	Guralp cmg5td	15.85	20.75	7.67	113	
36	İzmir	TORBALI	<a href="#">3532</a>	38.15911	27.35956	39	GeoSig gmsplus	20.19	22.15	14.18	119	
37	Balıkesir	IVRINDI	<a href="#">1022</a>	39.5817	27.49364	262	Sara acebox	22.29	18.82	10.69	130	
38	Balıkesir	SAVASTEPE	<a href="#">1016</a>	39.38041	27.65438	284	Guralp cmg5td	17.25	14.51	7.89	130	
39	Manisa	AKHISAR	<a href="#">4502</a>	38.91121	27.82326	94	Guralp cmg5td	13.68	14.03	7.29	131	292
40	İzmir	BAYINDIR	<a href="#">3531</a>	38.21929	27.64569	93	GeoSig gmsplus	8.22	10.28	4.22	136	
41	Aydın	KUSADASI	<a href="#">905</a>	37.85997	27.26501	24	Guralp cmg5td	10.04	10.58	7.8	138	369
42	Manisa	GOLMARMARA	<a href="#">4509</a>	38.70745	27.91994	103	Sara acebox	2.71	3.09	1.81	140	
43	Çanakkale	KEPEZ	<a href="#">1714</a>	40.11291	26.42205	128	GeoSig gmsplus	15.86	16.31	12.61	141	
44	Çanakkale	MERKEZ	<a href="#">1701</a>	40.14145	26.39948	1	Guralp cmg5td	27.41	30.07	10.14	144	192

Table 1. Acceleration values of Aegean Sea earthquake



# Aegean Sea Earthquake (Mw=6.2)

N	PROVINCE	Country/Town	CODE	STATION				PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
				Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
45	Çanakkale	YENICE	<a href="#">1707</a>	39.92916	27.25908	275	GeoSig gmsplus	22.26	27.1	13.46	145	324
46	Çanakkale	CAN	<a href="#">1719</a>	40.02934	27.04996	80	Sara acebox	38.66	38.24	13.44	146	
47	Çanakkale	MERKEZ_2	<a href="#">1713</a>	40.16216	26.41166	53	GeoSig gmsplus	16.99	14.94	5.99	146	
48	Balıkesir	BALYA	<a href="#">1021</a>	39.74736	27.57619	248	Sara acebox	10.02	9.73	4.65	147	
49	İzmir	TIRE	<a href="#">3539</a>	38.10229	27.72105	90	Sara acebox	6.53	7.63	6.14	149	
50	Çanakkale	GOKCEADA	<a href="#">1711</a>	40.19082	25.90783	78	GeoSig gmsplus	15.14	15.26	6.04	153	
51	Aydın	SOKE	<a href="#">911</a>	37.76209	27.39092	67	GeoSig gmsplus	9.5	10.26	4.62	154	
52	Aydın	GERMENCİK	<a href="#">921</a>	37.8747	27.59223	66	Sara acebox	14.23	18.3	6.61	156	
53	Balıkesir	MERKEZ_2	<a href="#">1017</a>	39.64966	27.85715	262	Guralp cmg5td	14.01	11.55	7.04	159	662
54	Balıkesir	MERKEZ	<a href="#">1003</a>	39.65499	27.86204	158	Guralp cmg5td	16.16	18.26	5.61	160	460
55	İzmir	ODEMİS	<a href="#">3509</a>	38.21565	27.9645	112	GeoSig gmsplus	14	17.5	5	161	286
56	Manisa	SALİHLİ	<a href="#">4506</a>	38.48311	28.12347	111	Guralp cmg5td	7.04	8.95	4	163	273
57	Aydın	İNCİRLİOVA	<a href="#">922</a>	37.85366	27.70821	34	Sara acebox	15.4	11.14	4.9	165	
58	Balıkesir	SINDIRGI	<a href="#">1015</a>	39.23951	28.1714	234	GeoSig gmsplus	9.02	8.66	2.27	166	238
59	Balıkesir	BIGADIC	<a href="#">1008</a>	39.39786	28.12733	148	GeoSig gmsplus	8.59	8.51	2.41	167	300
60	Aydın	SARIKEMER	<a href="#">920</a>	37.5604	27.3749	58	GeoSig gmsplus	1.82	2.48	1.01	171	

Table 1. Acceleration values of Aegean Sea earthquake





## Aegean Sea Earthquake (Mw=6.2)

N	PROVINCE	Country/Town	STATION					PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
			CODE	Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
61	Çanakkale	LAPSEKI	<a href="#">1715</a>	40.36316	26.69225	24	GeoSig gmsplus	18.63	17.49	10.72	171	
62	Manisa	GORDES	<a href="#">4505</a>	38.93984	28.28364	670	Guralp cmg5td	12.05	9.89	5.91	171	629
63	Aydın	MERKEZ	<a href="#">910</a>	37.84548	27.79956	65	Guralp cmg5td	6.55	7.63	3.69	172	271
64	Çanakkale	BIGA	<a href="#">1703</a>	40.23182	27.26288	24	Guralp cmg5td	10.24	6.34	4.05	174	304
65	Çanakkale	GELIBOLU	<a href="#">1710</a>	40.42334	26.66715	40	Guralp cmg5td	12.54	13.8	5	178	286
66	Balıkesir	GONEN	<a href="#">1014</a>	40.11399	27.64236	33	Guralp cmg5td	4.04	3.83	1.78	180	397
67	Balıkesir	KEPSUT	<a href="#">1023</a>	39.68246	28.16661	117	Sara acebox	8.75	6.74	3.06	184	
68	Aydın	DIDIM	<a href="#">918</a>	37.3697	27.2643	47	GeoSig gmsplus	3.77	4.55	2.71	185	
69	Aydın	KOSK	<a href="#">916</a>	37.85716	28.05025	81	GeoSig gmsplus	3.15	3.26	2.24	188	371
70	Çanakkale	KARABIGA	<a href="#">1712</a>	40.40396	27.30349	6	GeoSig gmsplus	7.15	7.01	2.52	192	683
71	Aydın	SULTANHISAR	<a href="#">915</a>	37.88405	28.15056	74	GeoSig gmsplus	4.35	4.43	2.35	194	355
72	Balıkesir	MANYAS	<a href="#">1024</a>	40.04748	27.97403	25	Sara acebox	14.04	10.59	3.28	194	
73	Aydın	KARPUZLU	<a href="#">919</a>	37.5595	27.8355	108	GeoSig gmsplus	1.54	2.26	1.44	196	
74	Muğla	MILAS_2	<a href="#">4822</a>	37.4417	27.646	128	GeoSig gmsplus	4.44	6.47	3.42	196	
75	Muğla	MILAS_3	<a href="#">4823</a>	37.4418	27.64403	129	GeoSig gmsplus	1.24	1.53	1.57	196	

Table 1. Acceleration values of Aegean Sea earthquake



# Aegean Sea Earthquake (Mw=6.2)

N	PROVINCE	Country/Town	STATION					PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
			CODE	Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
76	Balıkesir	SUSURLUK	<a href="#">1020</a>	39.91714	28.16411	53	GeoSig gmsplus	8.3	14.49	4.2	198	
77	Manisa	ALASEHIR	<a href="#">4503</a>	38.35546	28.51425	200	Guralp cmg5td	3.93	4.34	1.53	200	358
78	Muğla	SELIMIYE	<a href="#">4814</a>	37.3991	27.6567	63	GeoSig gmsplus	0.89	0.9	0.68	200	
79	Manisa	DEMIRCI	<a href="#">4504</a>	39.03503	28.64812	853	Guralp cmg5td	19.65	12.18	4.35	203	336
80	Manisa	KULA	<a href="#">4510</a>	38.54608	28.64312	665	Sara acebox	4.03	3.76	1.96	205	
81	Aydın	NAZILLI	<a href="#">914</a>	37.91333	28.34308	82	GeoSig gmsplus	5.91	5.89	2.9	206	267
82	Aydın	CINE	<a href="#">917</a>	37.6052	28.0584	81	GeoSig gmsplus	2.24	2.31	1.67	207	
83	Tekirdağ	SARKOY	<a href="#">5904</a>	40.61485	27.12256	10	Guralp cmg5td	16.99	16.54	7.82	208	225
84	Tekirdağ	SARKOY	<a href="#">5904</a>	40.61485	27.12256	10	Guralp cmg5td	16.99	16.54	7.82	208	225
85	Edirne	ENEZ	<a href="#">2201</a>	40.72448	26.08731	15	Guralp cmg5td	5.31	9.19	3.3	209	
86	Balıkesir	EDINCIK	<a href="#">1011</a>	40.33601	27.86104	174	GeoSig gmsplus	6.35	6.55	3.21	211	330
87	Muğla	GULLUK	<a href="#">4817</a>	37.2401	27.6031	10	GeoSig gmsplus	1.2	1.63	1.44	212	
88	Balıkesir	ERDEK	<a href="#">1018</a>	40.40929	27.78783	21	GeoSig gmsplus	3.07	3.12	1.63	214	
89	Muğla	MILAS	<a href="#">4806</a>	37.30253	27.78054	52	GeoSig gmsplus	3.59	2.71	1.23	215	323
90	Aydın	KUYUCAK	<a href="#">913</a>	37.91152	28.46544	93	GeoSig gmsplus	4.21	3.31	1.82	216	301

Table 1. Acceleration values of Aegean Sea earthquake



# Aegean Sea Earthquake (Mw=6.2)

N	PROVINCE	Country/Town	STATION					PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
			CODE	Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
91	Balıkesir	BANDIRMA	<a href="#">1006</a>	40.33193	27.99662	61	Guralp cmg5td	8.71	4.69	3.85	218	321
92	Manisa	SARIGOL	<a href="#">4511</a>	38.24003	28.69121	208	Sara acebox	5.28	5.97	2.65	218	
93	Bursa	MUSTAFAKEMALPASA	<a href="#">1614</a>	40.03471	28.39392	41	Guralp cmg5td	5.77	7.52	2.44	221	265
94	Manisa	SELENDI	<a href="#">4512</a>	38.74216	28.86516	440	Sara acebox	2	2.46	1	222	
95	Muğla	BODRUM	<a href="#">4809</a>	37.03304	27.43997	25	Guralp cmg5td	0.83	1.2	0.85	225	747
96	Edirne	KESAN	<a href="#">2203</a>	40.8681	26.6319	55	GeoSig gmsplus	2.78	1.94	1.12	226	
97	Bursa	KARACABEY	<a href="#">1633</a>	40.21481	28.3633	59	GeoSig gmsplus	5.47	4.66	2.05	231	
98	Kütahya	SIMAV	<a href="#">4309</a>	39.09282	28.97848	828	GeoSig gmsplus	5.77	4.13	2.84	232	259
99	Aydın	BUHARKENT	<a href="#">912</a>	37.97385	28.74603	212	GeoSig gmsplus	2.7	3.61	1.58	234	390
100	Uşak	ESME	<a href="#">6402</a>	38.40761	28.97656	822	GeoSig gmsplus	1.29	0.93	0.84	237	
101	Denizli	BULDAN	<a href="#">2013</a>	38.04483	28.83359	621	GeoSig gmsplus	3.93	3.18	1.44	238	345
102	Muğla	KAVAKLIDERE	<a href="#">4818</a>	37.444	28.3575	897	GeoSig gmsplus	1.45	1.08	0.65	239	
103	Muğla	OREN	<a href="#">4819</a>	37.0313	27.9712	10	GeoSig gmsplus	3.55	3.14	1.47	250	
104	Muğla	MERKEZ	<a href="#">4801</a>	37.21446	28.35612	638	Guralp cmg5td	1.18	0.79	0.75	256	466
105	Bursa	ORHANELI	<a href="#">1640</a>	39.91117	28.98677	465	Sara acebox	2.25	2.87	1.47	257	
106	Tekirdağ	MERKEZ_3	<a href="#">5910</a>	40.98109	27.48608	49	GeoSig gmsplus	4.37	4.31	2.01	257	

Table 1. Acceleration values of Aegean Sea earthquake



## Aegean Sea Earthquake (Mw=6.2)

N	PROVINCE	Country/Town	CODE	STATION				PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
				Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
107	Kütahya	EMET	<a href="#">4306</a>	39.33612	29.24905	853	Guralp cmg5td	3.49	3.47	2.23	258	304
108	Muğla	YERKESIK	<a href="#">4808</a>	37.1392	28.28725	661	GeoSig gmsplus	0.99	0.61	0.68	258	
109	Tekirdağ	MERKEZ_2	<a href="#">5908</a>	40.98205	27.54794	64	GeoSig gmsplus	2.91	3.18	1.47	259	
110	Denizli	ASAGISAMLI	<a href="#">2009</a>	37.91337	29.03804	156	Guralp cmg5td	4.68	3.42	2.15	261	
111	Kütahya	GEDIZ	<a href="#">4304</a>	38.99478	29.4004	735	Guralp cmg5td	3.38	2.01	0.92	267	343
112	Muğla	DATCA	<a href="#">4812</a>	36.71225	27.68801	25	GeoSig gmsplus	0.46	0.53	0.87	267	
113	Muğla	ULA	<a href="#">4821</a>	37.1055	28.4139	615	GeoSig gmsplus	3.48	4.17	3.04	269	
114	Uşak	MERKEZ	<a href="#">6401</a>	38.67264	29.404	920	Guralp cmg5td	1.87	1.55	0.63	269	285
115	Denizli	MERKEZ	<a href="#">2012</a>	37.77	29.08	395	GeoSig gmsplus	1.53	1.69	1.51	271	
116	Denizli	MERKEZ	<a href="#">2002</a>	37.81247	29.11113	332	Guralp cmg5td	2.29	2.45	1.33	272	356
117	Bursa	NILUFER	<a href="#">1621</a>	40.22686	28.97558	119	GeoSig gmsplus	2.54	3.59	2.32	273	
118	Denizli	KALE	<a href="#">2019</a>	37.442	28.8438	1055	GeoSig gmsplus	1.14	1.28	0.82	273	
119	Tekirdağ	MARMARA EREGLISI	<a href="#">5906</a>	40.97338	27.93164	64	GeoSig gmsplus	6.1	5.9	1.69	273	
120	Bursa	OSMANGAZI	<a href="#">1626</a>	40.2403	28.98243	162	Guralp cmg5td	5.9	6.26	3.38	274	448

Table 1. Acceleration values of Aegean Sea earthquake





# Aegean Sea Earthquake (Mw=6.2)

N	PROVINCE	Country/Town	STATION					PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
			CODE	Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
121	Edirne	UZUNKOPRU	<a href="#">2204</a>	41.2932	26.6899	51	GeoSig gmsplus	3.3	2.43	1.99	274	
122	Denizli	MERKEZ_KINIKLI	<a href="#">2011</a>	37.73719	29.1006	482	Guralp cmgStd	0.5	0.5	0.3	275	
123	Bursa	KELES	<a href="#">1613</a>	39.91509	29.23167	1060	Guralp cmgStd	3.17	3.18	1.44	276	412
124	Bursa	OSMANGAZI	<a href="#">1624</a>	40.177	29.0567	366	Guralp cmgStd	1.29	1.53	1.27	276	
125	Bursa	OSMANGAZI	<a href="#">1622</a>	40.19595	29.05271	156	Guralp cmgStd	4.15	4.06	1.68	277	448
126	Bursa	MUDANYA	<a href="#">1618</a>	40.35095	28.92815	34	Guralp cmgStd	1.6	2.04	0.89	278	
127	Bursa	OSMANGAZI	<a href="#">1627</a>	40.22566	29.07518	91	GeoSig gmsplus	5.35	5	3.27	280	249
128	Bursa	YILDIRIM	<a href="#">1620</a>	40.1824	29.1296	193	GeoSig gmsplus	2.31	2.6	1.53	282	459
129	Muğla	MARMARIS	<a href="#">4810</a>	36.83942	28.24483	19	Guralp cmgStd	0.77	0.67	0.45	282	393
130	Yalova	ARMUTLU	<a href="#">7706</a>	40.51305	28.82662	6	GeoSig gmsplus	3.35	3.76	0.91	282	
131	Denizli	CAL	<a href="#">2024</a>	38.08684	29.39543	844	Sara acebox	0.48	0.58	0.44	283	
132	Kütahya	TAVSANLI	<a href="#">4310</a>	39.53844	29.49387	833	Guralp cmgStd	2.28	1.57	0.86	283	
133	Bursa	DEMIRTAS	<a href="#">1628</a>	40.27343	29.09589	143	GeoSig gmsplus	2.28	2.71	1.12	284	488
134	Bursa	KURSUNLU	<a href="#">1638</a>	40.36115	29.0333	10	Sara acebox	2.23	1.87	0.94	285	
135	Tekirdağ	CORLU	<a href="#">5907</a>	41.16072	27.79184	172	GeoSig gmsplus	3.31	3.93	1.67	285	
136	Muğla	BOZBURUN	<a href="#">4815</a>	36.6886	28.046	10	GeoSig gmsplus	0.59	0.46	0.45	286	
137	Bursa	GURSU	<a href="#">1636</a>	40.21709	29.19462	118	Sara acebox	3.72	3.12	1.57	288	
138	Kütahya	CAVDARHISAR	<a href="#">4313</a>	39.19604	29.61996	1012	Sara acebox	1.66	1.95	0.94	288	

Table 1. Acceleration values of Aegean Sea earthquake



# Aegean Sea Earthquake (Mw=6.2)

N	PROVINCE	Country/Town	CODE	Latitude	Longitude	Elevation (m)	Type of Instruments	PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
								NS	EW	UD		
139	Denizli	BEYAGAC	<a href="#">2018</a>	37.233	28.8948	705	GeoSig gmsplus	1.27	1.4	0.91	291	
140	Kirklareli	LULEBURGAZ	<a href="#">3902</a>	41.35705	27.32483	47	GeoSig gmsplus	3.03	2.79	1.33	291	
141	Bursa	KURTUL	<a href="#">1630</a>	40.36298	29.12207	74	GeoSig gmsplus	3.29	3.93	1.38	292	301
142	İstanbul	SILIVRI	<a href="#">3408</a>	41.07339	28.25569	31	Guralp cmg5td	1.44	2.15	0.98	296	639
143	Bursa	KUMLA	<a href="#">1637</a>	40.47632	29.09463	11	Sara acebox	3.98	6.99	2.62	297	
144	Muğla	KOYCEGIZ	<a href="#">4811</a>	36.96968	28.68675	17	Guralp cmg5td	1.63	0.91	0.68	297	372
145	Bursa	GEMLIK	<a href="#">1629</a>	40.42539	29.16658	2	GeoSig gmsplus	7.68	5.8	3.32	298	229
146	Bursa	UMURBEY	<a href="#">1632</a>	40.41049	29.17928	194	GeoSig gmsplus	2.65	3.04	1.28	298	366
147	Uşak	BANAZ	<a href="#">6403</a>	38.73605	29.75683	921	Sara acebox	2.06	1.46	0.86	299	
148	Kütahya	DOMANIC	<a href="#">4314</a>	39.80625	29.61741	873	Sara acebox	1.4	1.56	0.95	302	
149	Denizli	CIVRIL	<a href="#">2025</a>	38.29572	29.73659	837	Sara acebox	2.1	1.5	0.94	305	
150	Tekirdağ	CERKEZKOY	<a href="#">5909</a>	41.2898	27.98308	163	GeoSig gmsplus	2.68	3.14	1.68	305	
151	Bursa	GEDELEK	<a href="#">1635</a>	40.44965	29.2587	169	Sara acebox	0.93	1.08	0.92	306	
152	Bursa	ORHANGAZI	<a href="#">1619</a>	40.42236	29.2907	132	GeoSig gmsplus	6.98	4.77	2.65	307	348
153	İstanbul	BUYUKCEKMECE	<a href="#">3412</a>	41.02058	28.57821	13	GeoSig gmsplus	3.75	3.26	1.52	307	
154	Yalova	CINARCIK	<a href="#">7707</a>	40.6381	29.0788	59	GeoSig gmsplus	2.55	3.11	1.73	307	

Table 1. Acceleration values of Aegean Sea earthquake



# Aegean Sea Earthquake (Mw=6.2)

N	PROVINCE	Country/Town	STATION					PGA (cm/su <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/su)
			CODE	Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
155	Denizli	ACIPAYAM	<a href="#">2017</a>	37.4335	29.3502	906	GeoSig gmsplus	1.75	1.92	0.79	311	
156	Bursa	ORHANGAZI	<a href="#">1631</a>	40.48646	29.30805	120	GeoSig gmsplus	1.64	1.84	0.83	312	
157	Edirne	MERKEZ	<a href="#">2202</a>	41.67049	26.58585	67	Guralp cmg5td	1.21	1.83	0.74	315	
158	Yalova	SOGUCAK	<a href="#">7710</a>	40.58997	29.2668	219	GeoSig gmsplus	2.02	2.19	0.8	316	358
159	İstanbul	K.CEKMECE	<a href="#">3415</a>	41.02729	28.75848	67	GeoSig gmsplus	3.57	4.02	1.61	317	283
160	İstanbul	YESILKOY	<a href="#">3416</a>	40.97466	28.83635	30	GeoSig gmsplus	2.11	2.93	1.08	317	
161	Kütahya	DUMLUPINAR	<a href="#">4311</a>	38.85241	29.98118	1237	GeoSig gmsplus	0.95	1.37	0.77	318	
162	Kütahya	DUMLUPINAR	<a href="#">4311</a>	38.85241	29.98118	1237	GeoSig gmsplus	0.96	1.37	0.77	318	
163	Yalova	SUGOREN	<a href="#">7709</a>	40.55932	29.32588	432	GeoSig gmsplus	1.62	2.19	1.33	318	
164	Yalova	MERKEZ	<a href="#">7708</a>	40.65756	29.24725	2	GeoSig gmsplus	4.2	4.77	1.74	319	196
165	Muğla	DALAMAN	<a href="#">4816</a>	36.7718	28.7986	20	GeoSig gmsplus	2.07	1.91	0.48	320	
166	Bursa	MUSKULE	<a href="#">1639</a>	40.3776	29.54177	250	Sara acebox	1.68	3.17	1.27	322	
167	Kütahya	MERKEZ	<a href="#">4301</a>	39.42779	29.99155	932	Guralp cmg5td	3.33	2.34	1.86	322	267
168	Kütahya	MERKEZ_2	<a href="#">4307</a>	39.4053	30.01433	952	GeoSig GMSplus	0.91	1.33	0.75	324	

Table 1. Acceleration values of Aegean Sea earthquake



# Aegean Sea Earthquake (Mw=6.2)

N	PROVINCE	Country/Town	CODE	STATION				PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
				Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
169	Yalova	CIFTLIKKOY	<a href="#">7711</a>	40.65942	29.32709	12	GeoSig gmsplus	4.05	3.41	1.55	324	
170	Bursa	YENISEHIR	<a href="#">1641</a>	40.27685	29.65245	235	Sara acebox	2.57	2.44	1.21	325	
171	İstanbul	FATİH	<a href="#">3411</a>	41.01187	28.97605	34	GeoSig gmsplus	1.24	1.31	0.6	328	
172	Kütahya	ALTINTAS	<a href="#">4312</a>	39.05784	30.10649	1028	Sara acebox	0.29	0.28	0.23	328	
173	Kırklareli	MERKEZ	<a href="#">3901</a>	41.73774	27.21509	218	Guralp cmg5td	0.89	0.87	0.65	330	
174	İstanbul	KARTAL	<a href="#">3405</a>	40.91111	29.15668	17	Guralp cmg5td	0.83	0.77	0.54	331	
175	İstanbul	HASDAL	<a href="#">3413</a>	41.09433	28.94818		GeoSig gmsplus	0.83	0.73	0.56	333	
176	Denizli	CAMELI	<a href="#">2014</a>	37.07411	29.34636	1297	GeoSig gmsplus	0.82	0.69	0.58	334	344
177	İstanbul	BESIKTAS	<a href="#">3407</a>	41.0582	29.00951	130	Guralp cmg5td	0.88	1.06	0.48	334	595
178	Bursa	IZNIK	<a href="#">1611</a>	40.42923	29.71682	95	Guralp cmg5td	4.79	3.83	2.08	338	251
179	Yalova	ALTINOVA	<a href="#">7712</a>	40.69286	29.50883	4	GeoSig gmsplus	1.73	2.12	1	339	
180	İstanbul	UMRANIYE	<a href="#">3406</a>	41.02262	29.15884	148	Guralp cmg5td	1.88	1.88	0.83	340	
181	Afyon	SINANPASA	<a href="#">314</a>	38.74415	30.24646	1117	Sara acebox	0.94	0.99	0.57	341	
182	İstanbul	SULTANBEYLI	<a href="#">3417</a>	40.95471	29.25627	224	GeoSig gmsplus	0.64	0.42	0.45	341	
183	Kocaeli	GEBZE	<a href="#">4106</a>	40.78627	29.45003	198	Guralp cmg5td	0.98	1.06	0.39	341	701
184	Bilecik	MERKEZ	<a href="#">1101</a>	40.14106	29.9774	532	Guralp cmg5td	0.78	0.68	0.43	343	901
185	Kocaeli	KARAMURSEL	<a href="#">4111</a>	40.6844	29.5888	30	Guralp cmg5td	2.09	2.12	1.17	343	300

Table 1. Acceleration values of Aegean Sea earthquake





# Aegean Sea Earthquake (Mw=6.2)

N	PROVINCE	Country/Town	STATION					PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/sn)
			CODE	Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
186	Kocaeli	CAYIROVA	<a href="#">4114</a>	40.86897	29.40776	207	Guralp cmg5td	1.44	1.37	0.52	344	
187	Kocaeli	DILOVASI	<a href="#">4119</a>	40.77286	29.52061	73	Guralp cmg5td	0.64	0.71	0.37	345	
188	Afyon	DINAR	<a href="#">302</a>	38.0599	30.15373	862	Guralp cmg5td	1.8	2.39	1.15	348	198
189	Kocaeli	HEREKE	<a href="#">4124</a>	40.78308	29.60625	65	Guralp cmg5td	0.71	0.82	0.36	351	
190	Bilecik	SOGUT	<a href="#">1105</a>	40.02311	30.179	667	Sara acebox	1.07	0.94	0.49	354	
191	Bilecik	OSMANELI	<a href="#">1104</a>	40.35737	30.01831	113	Sara acebox	1.17	1.13	0.62	356	
192	Kocaeli	KORFEZ	<a href="#">4115</a>	40.74328	29.78015	7	Guralp cmg5td	1.99	1.48	1.07	360	
193	Kocaeli	GOLCUK	<a href="#">4112</a>	40.7245	29.84	10	Guralp cmg5td	4.04	3.87	2.18	363	352
194	Kocaeli	IHSANIYE	<a href="#">4123</a>	40.71515	29.84794	5	Guralp cmg5td	3.39	3.41	1.88	363	
195	Sakarya	MEKECE	<a href="#">5408</a>	40.45431	30.04865	89	Sara acebox	2.91	3.19	1.16	363	
196	Kirklareli	IGNEADA	<a href="#">3903</a>	41.8815	27.9853	16	GeoSig gmsplus	1.13	1.15	0.63	365	
197	Kocaeli	BASISKELE	<a href="#">4116</a>	40.71956	29.86583	3	Guralp cmg5td	3.55	3.42	2.4	365	
198	Muğla	SEYDIKEMER	<a href="#">4820</a>	36.6485	29.3543	139	GeoSig gmsplus	0.31	0.3	0.41	365	
199	Afyon	MERKEZ	<a href="#">301</a>	38.77598	30.53395	1054	Guralp cmg5td	0.8	0.98	0.4	366	226
200	Kocaeli	BASISKELE_YUVACIK	<a href="#">4105</a>	40.67441	29.96935	177	Guralp cmg5td	1.97	1.52	1.06	369	289
201	Kocaeli	BASISKELE_YUVACIK	<a href="#">4104</a>	40.68038	29.96998	109	Guralp cmg5td	0.45	0.42	0.34	370	770
202	Burdur	SOGUT	<a href="#">1508</a>	37.0363	29.8214	1412	GeoSig gmsplus	1.41	1.02	0.55	371	

Table 1. Acceleration values of Aegean Sea earthquake



# Aegean Sea Earthquake (Mw=6.2)

N	STATION							PGA (cm/sn <sup>2</sup> )			Epicentral Distance (R <sub>epi</sub> ) (km)	Shear Wave Velocity VS30 (m/su)
	PROVINCE	Country/Town	CODE	Latitude	Longitude	Elevation (m)	Type of Instruments	NS	EW	UD		
203	Kocaeli	KARABAS	<a href="#">4107</a>	40.76021	29.93244	12	Guralp cmg5td	2.34	2.64	0.99	372	305
204	Kocaeli	KARABAS	<a href="#">4108</a>	40.76023	29.93293	22	Guralp cmg5td	4.59	4.65	0.77	372	
205	Kocaeli	KULLAR	<a href="#">4121</a>	40.72277	29.96985	39	Guralp cmg5td	2.95	2.63	1.6	372	
206	Kocaeli	ARSLANBEY	<a href="#">4117</a>	40.66989	30.02665	100	Guralp cmg5td	1.69	1.74	0.99	373	
207	Sakarya	PAMUKOVA	<a href="#">5409</a>	40.50593	30.15607	95	Sara acebox	0.95	0.65	0.38	374	
208	Bilecik	GOLPAZARI	<a href="#">1103</a>	40.2822	30.30828	538	Sara acebox	1.44	1.46	0.52	375	
209	Kocaeli	KARTEPE	<a href="#">4128</a>	40.7249	30.02435	47	Guralp cmg5td	3.38	2.3	1.88	376	
210	Kocaeli	KOSEKOY	<a href="#">4122</a>	40.74829	30.02633	17	Guralp cmg5td	2.37	2.28	1.51	377	
211	Kocaeli	MERKEZ	<a href="#">4120</a>	40.76761	30.02737	12	Guralp cmg5td	1.63	1.93	0.61	379	
212	Kocaeli	TEPETARLA	<a href="#">4118</a>	40.72163	30.07805	57	Guralp cmg5td	3.31	3.81	1.89	380	
213	Kocaeli	ACISU	<a href="#">4129</a>	40.71745	30.11217	40	Guralp cmg5td	2.49	3.17	1.02	382	
214	Sakarya	GEYVE	<a href="#">5404</a>	40.51912	30.29315	82	GeoSig gmsplus	3.36	3.1	1.75	384	
215	Bilecik	YENIPAZAR	<a href="#">1106</a>	40.17687	30.52085	626	Sara acebox	1.23	1.6	0.41	387	
216	Sakarya	SAPANCA	<a href="#">5403</a>	40.69078	30.26995	45	GeoSig gmsplus	2.96	2.55	0.98	392	
217	Sakarya	ARIFIYE	<a href="#">5407</a>	40.70285	30.35803	57	Sara acebox	1.48	1.6	0.72	398	
218	Sakarya	MERKEZ	<a href="#">5401</a>	40.73619	30.3808	46	Guralp cmg5td	0.62	0.64	0.4	402	412
219	Kocaeli	KANDIRA	<a href="#">4110</a>	41.0691	30.1525	37	Guralp cmg5td	0.4	0.33	0.31	406	380
220	Afyon	BOLVADIN	<a href="#">312</a>	38.71893	31.04011	997	Sara acebox	0.43	0.46	0.25	410	
221	Afyon	SULTANDAGI	<a href="#">309</a>	38.52613	31.2379	1006	Guralp cmg5td	0.29	0.22	0.12	430	388
222	Sakarya	HENDEK	<a href="#">5405</a>	40.79609	30.7352	173	GeoSig gmsplus	1.31	1.26	0.79	431	
223	Düzce	GOLYAKA	<a href="#">8109</a>	40.781	31.01439	123	GeoSig gmsplus	2.57	2.31	1.08	450	

Table 1. Acceleration values of Aegean Sea earthquake



# Aegean Sea Earthquake (Mw=6.2)

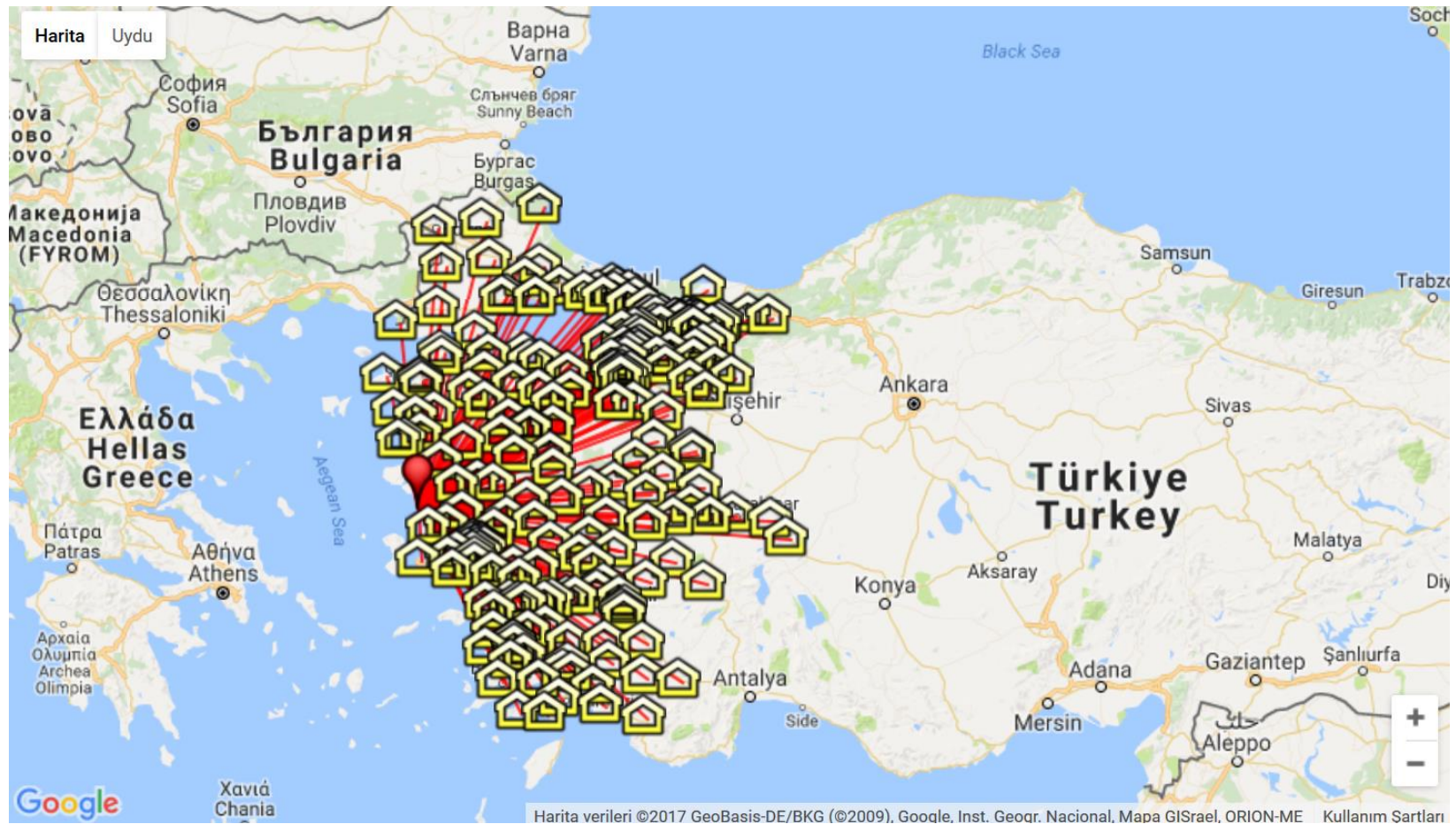


Fig. 5. Distribution of accelerometers recorded during the Aegean Sea EQ (Mw=6.2)



# Aegean Sea Earthquake (Mw=6.2)

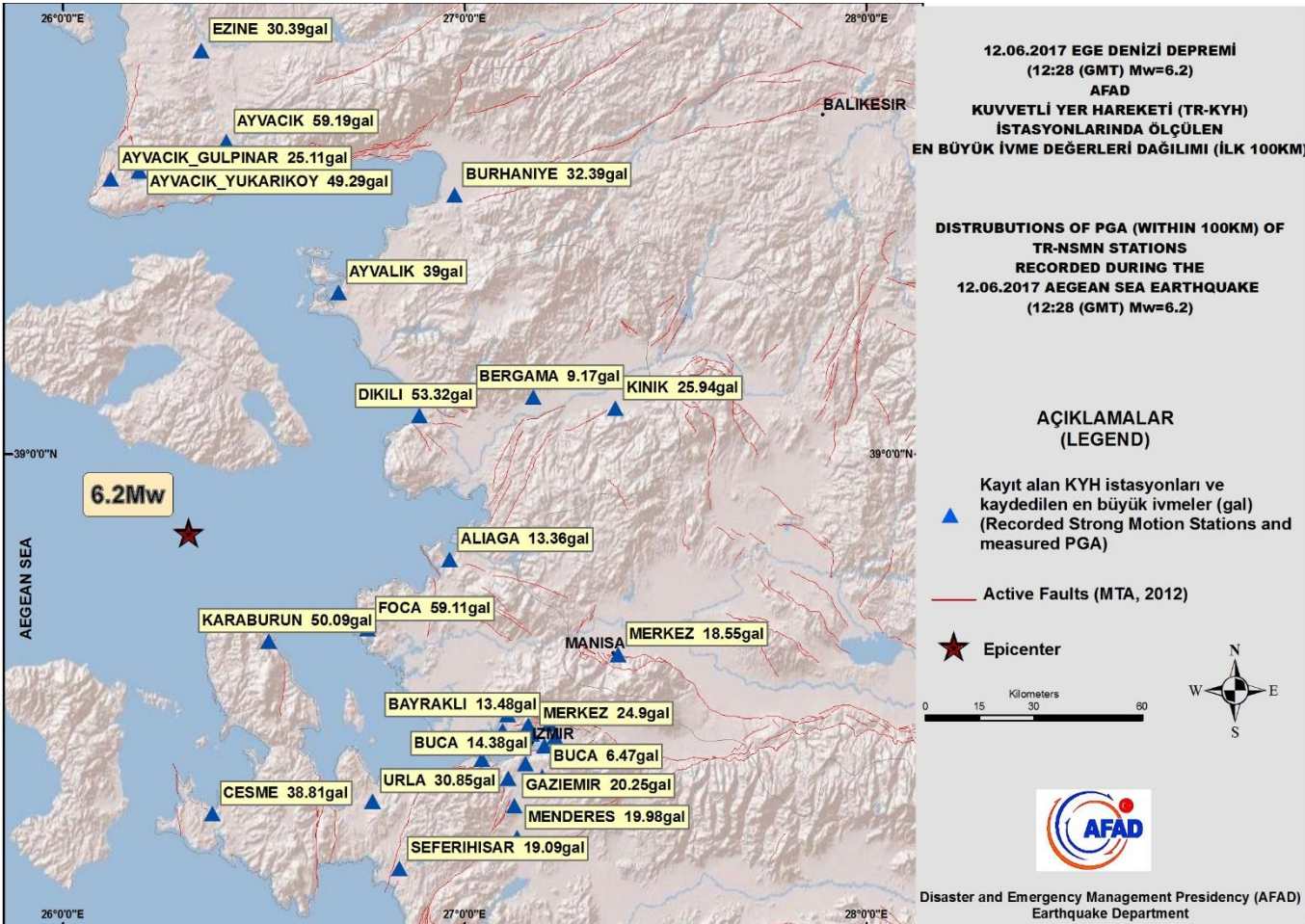


Fig.6. Distribution of accelerometer stations (within Repl ≤ 100km) and PGA values measured during the Aegean Sea EQ (Mw= 6.2).



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

# Aegean Sea Earthquake (Mw=6.2)

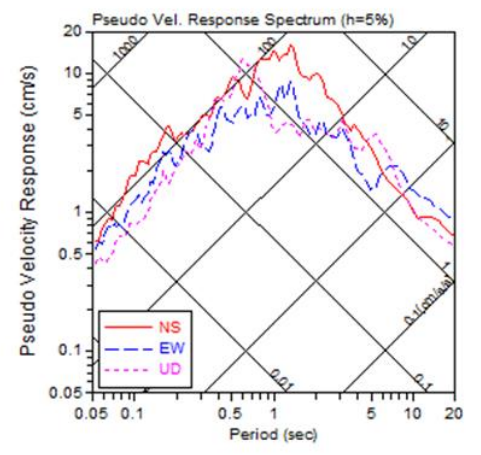
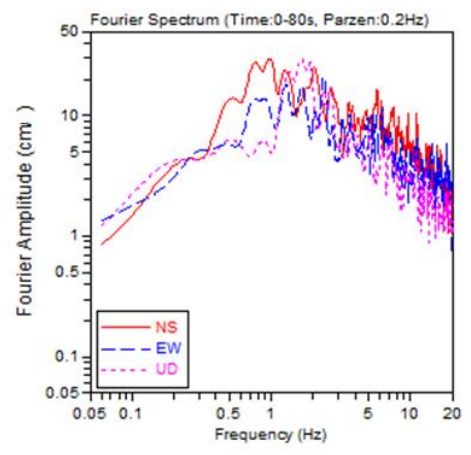
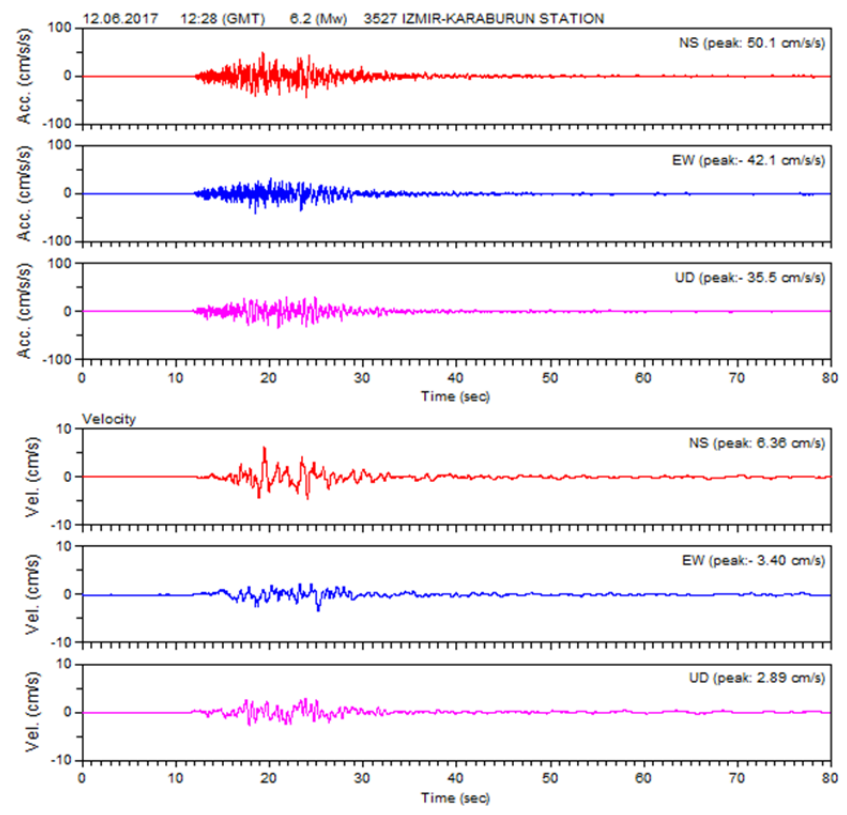


Fig.7. Acc, Velocity, Fourier and Response spectrum graphs of Aegean Sea EQ (6.2Mw). (İzmir-Karaburun Station)



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



# Aegean Sea Earthquake (Mw=6.2)

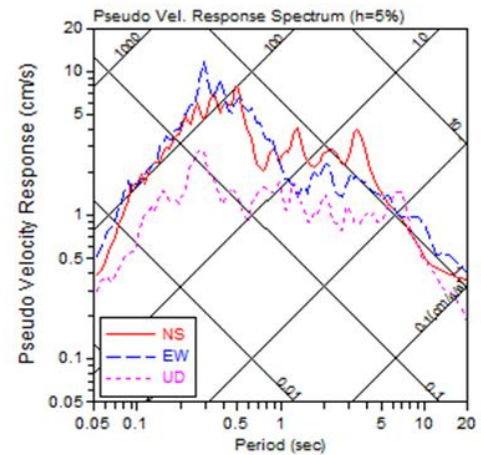
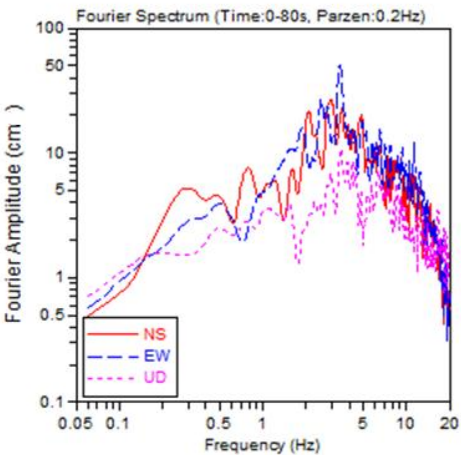
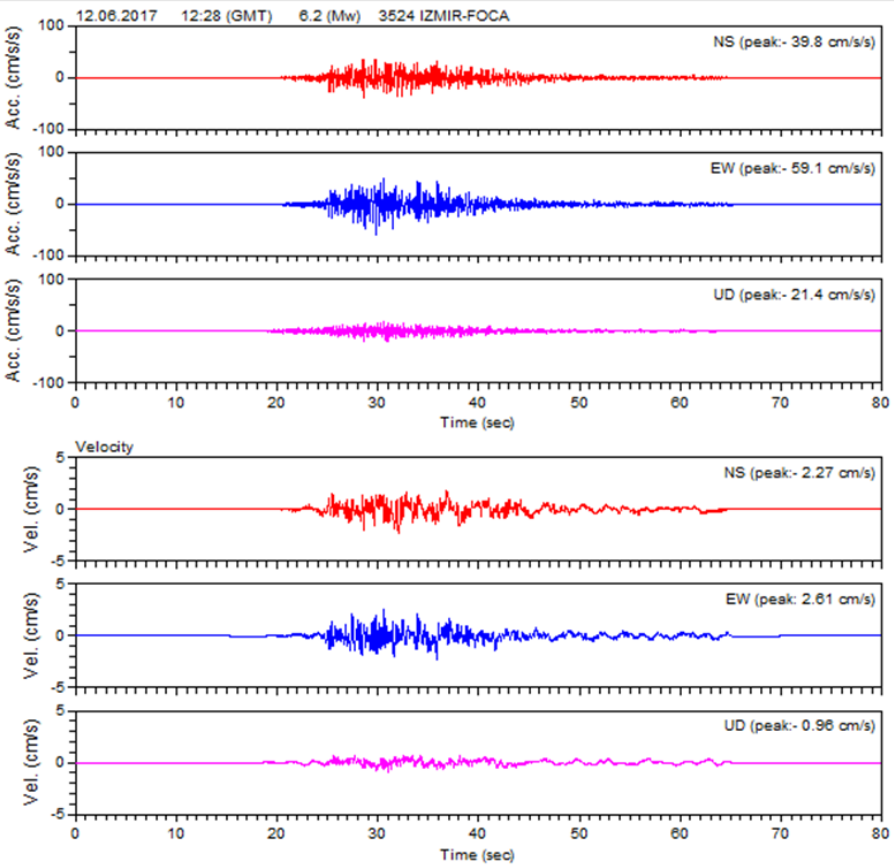


Fig.8. Acc, Velocity, Fourier and Response spectrum graphs of Aegean Sea EQ (6.2Mw) (İzmir-Foça Station)



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

## Aegean Sea Earthquake (Mw=6.2)

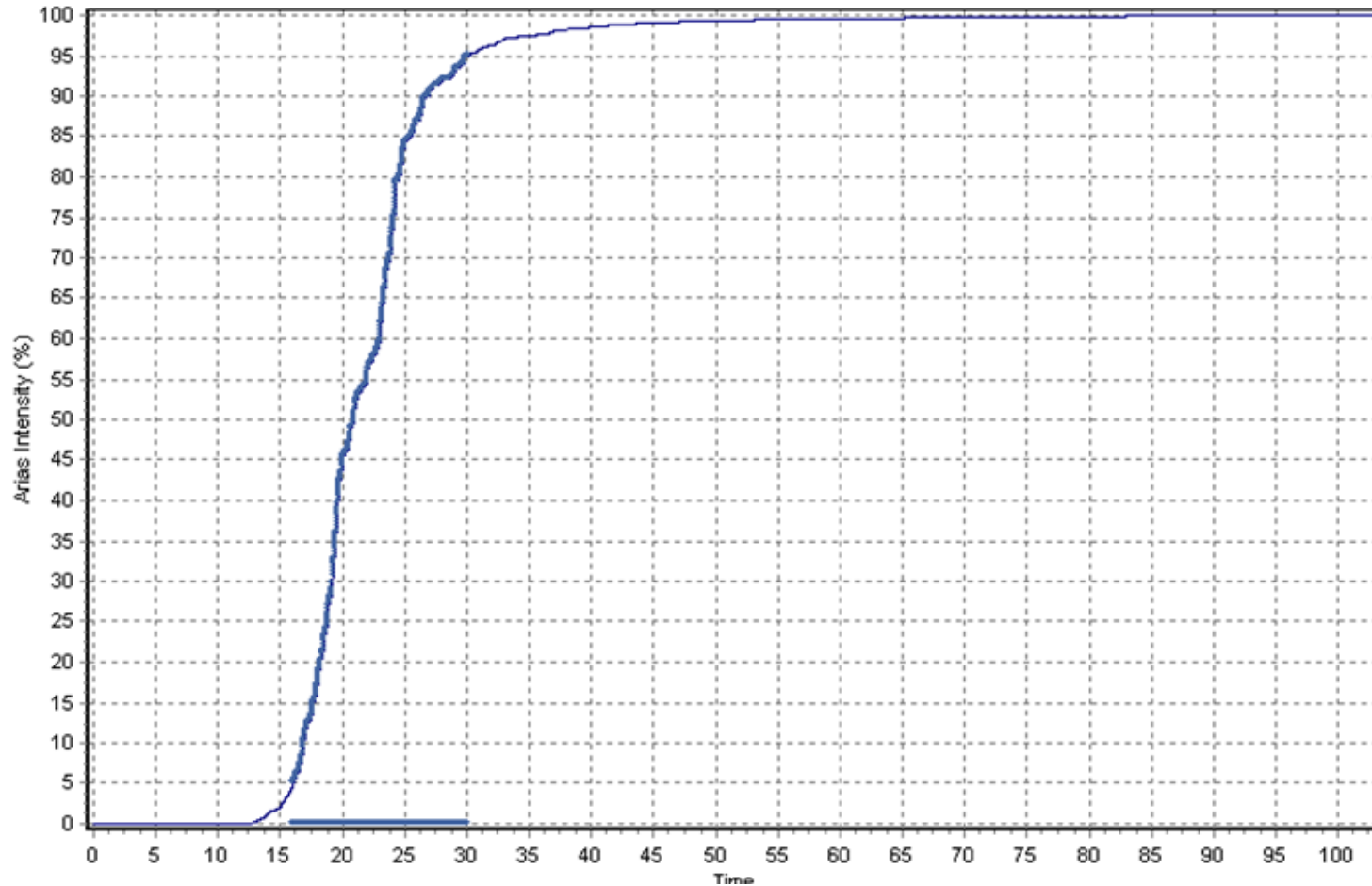


Fig.9. Arias Intensity (IA) Graph of Aegean Sea EQ (6.2Mw) calculated from 3527 (Karaburun) station.



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

# Aegean Sea Earthquake (Mw=6.2)

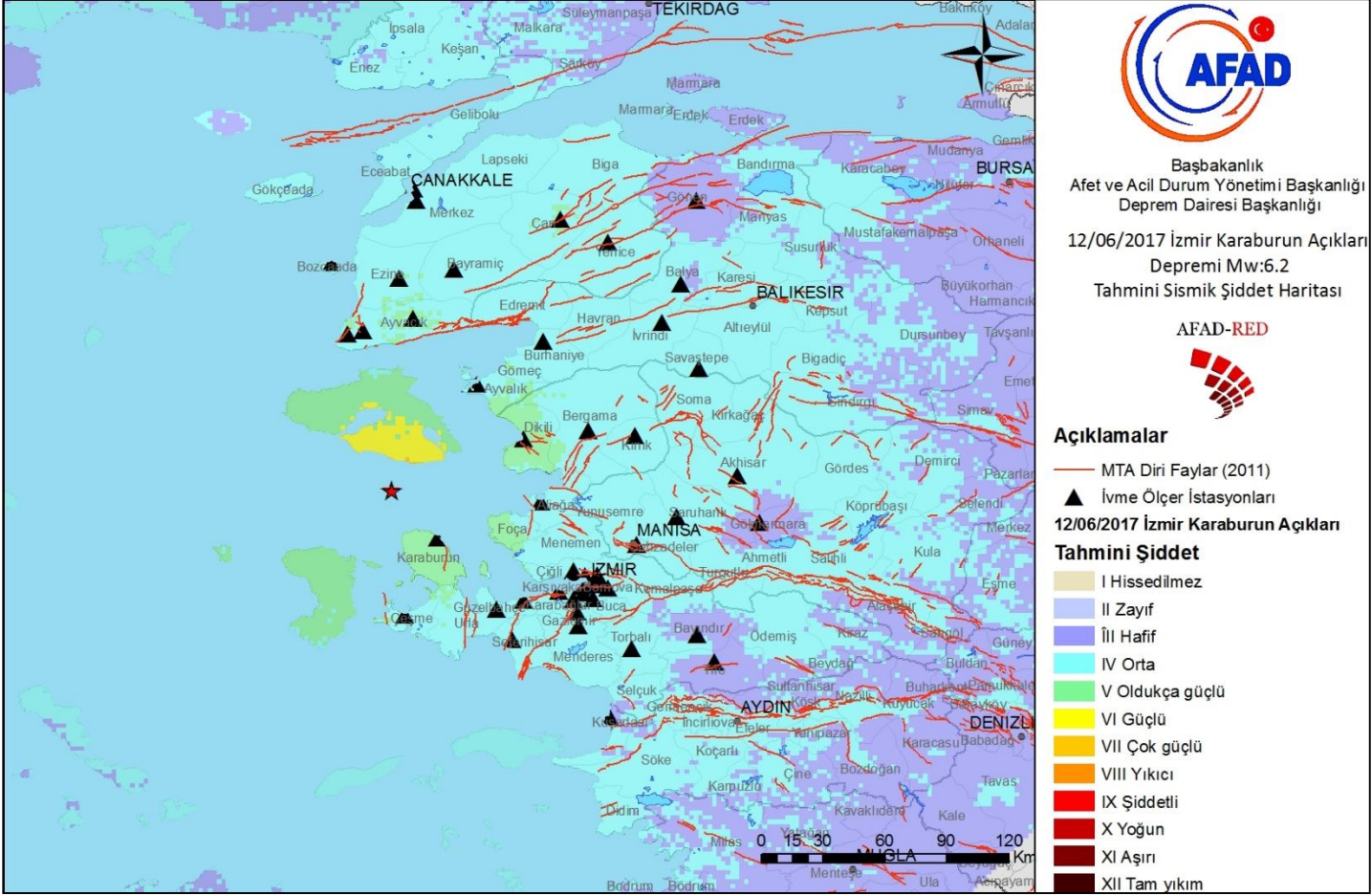


Fig.10. AFAD-RED Estimated Intensity Map generated together with measured accelerations coming from TR-NSMN



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

# Aegean Sea Earthquake (Mw=6.2)

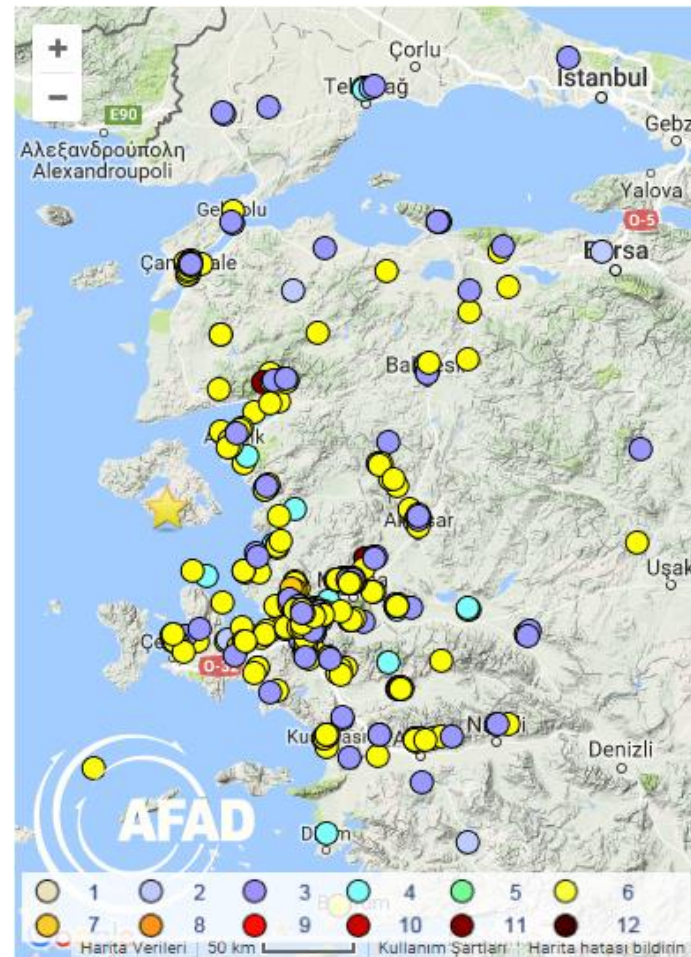


Fig.11. Did you feel it survey results



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

## Aegean Sea Earthquake (Mw=6.2)

### REFERENCES

- AFAD Earthquake catalogue (2007–present), Prime Ministry, Disaster and Emergency Management Presidency, Earthquake Department, On-line Catalogue, <http://www.deprem.gov.tr:1217/tr/ddakatalogu>
- Ambraseys N.N., Simpson K.A. and Bommer J.J., 1996, *Prediction of Horizontal Response Spectra in Europe*, Earthquake Engineering and Structural Dynamics, Vol. 25, 371-400.
- Boore, D.M., Joyner, W.B., Fumal, T.E., (1997) Equations for Estimating Horizontal Response Spectra and Peak Acceleration from Western North American Earthquakes: A summary of Recent Work, Seismological Research Letters, Vol.68(1), 128-153
- Emre Ö , Duman TY, Özalp S, Elmacı H, Olgun Ş , Şaroğlu F (2013) Active Fault Map of Turkey Mineral Research and Exploration General Directorate, Special Issue Series-30, Ankara-Turkey
- Kadirioglu, FT., Kartal, RF., Kılıç, T., Kalafat, D., Duman, TY., Eroğlu Azak, T., Özalp, S., Emre, Ö. (2016). An Improved Earthquake Catalogue ( $M \geq 4.0$ ) for Turkey and Its Near Vicinity (1900-2012). Bulletin of Earthquake Engineering, Published online. DOI 10.1007/s10518-016-0064-8
- Sadigh K., Chang C.-Y., Egan J.A., Makdisi F., and Youngs R.R., 1997, *Attenuation Relationships for Shallow Crustal Earthquakes Based on California Strong Motion Data*, Seismological Research Letters Vol. 68(1), 180-189, January/February

