



*REPUBLIC OF TURKEY
Prime Ministry
Disaster And Emergency Management Presidency,
Earthquake Department, Ankara - TURKEY*

*PRELIMINARY REPORT ON
ISKENDERUN BAY EARTHQUAKE
(TURKEY-SYRIA BORDER REGION)
MI= 5.1*

An earthquake with magnitude $M_L=5.1$ occurred at local time 01:08 on November, 15, 2010. Epicentral coordinates of the earthquake is determined as 36.6053 N- 35.9870 E with focal depth 24.17 km. (Fig. 1) The earthquake also was felt in the neighboring provinces of Hatay, Gaziantep

According to the data were determined in DDA Ankara Center: After the main shock two aftershock occurred in the same day. Aftershocks were determined with magnitude range 2.7–3.0

Moment Tensor Solutions of the main shock is shown in (Fig.2). Mechanism solutions show a strike slip faulting (include normal component).

The fault systems which are near the earthquake location are Hellenic-Cyprus Arc, Karataş-Osmaniye Fault Zone, Dead Sea Fault Zone.

Historical and Instrumental Period earthquakes for this region are given in Table 1, 2

Maximum acceleration values, acceleration – time records, peak ground acceleration and seismic intensity map are given in Fig.3-10

Earthquake activity of this region (and all of Turkey) has been observed in Earthquake Department Data Center Ankara 7 day/24 hours with 178 seismic station and 300 accelerometer. Obtained results are shared with public, press and relevant authorized

For your information.

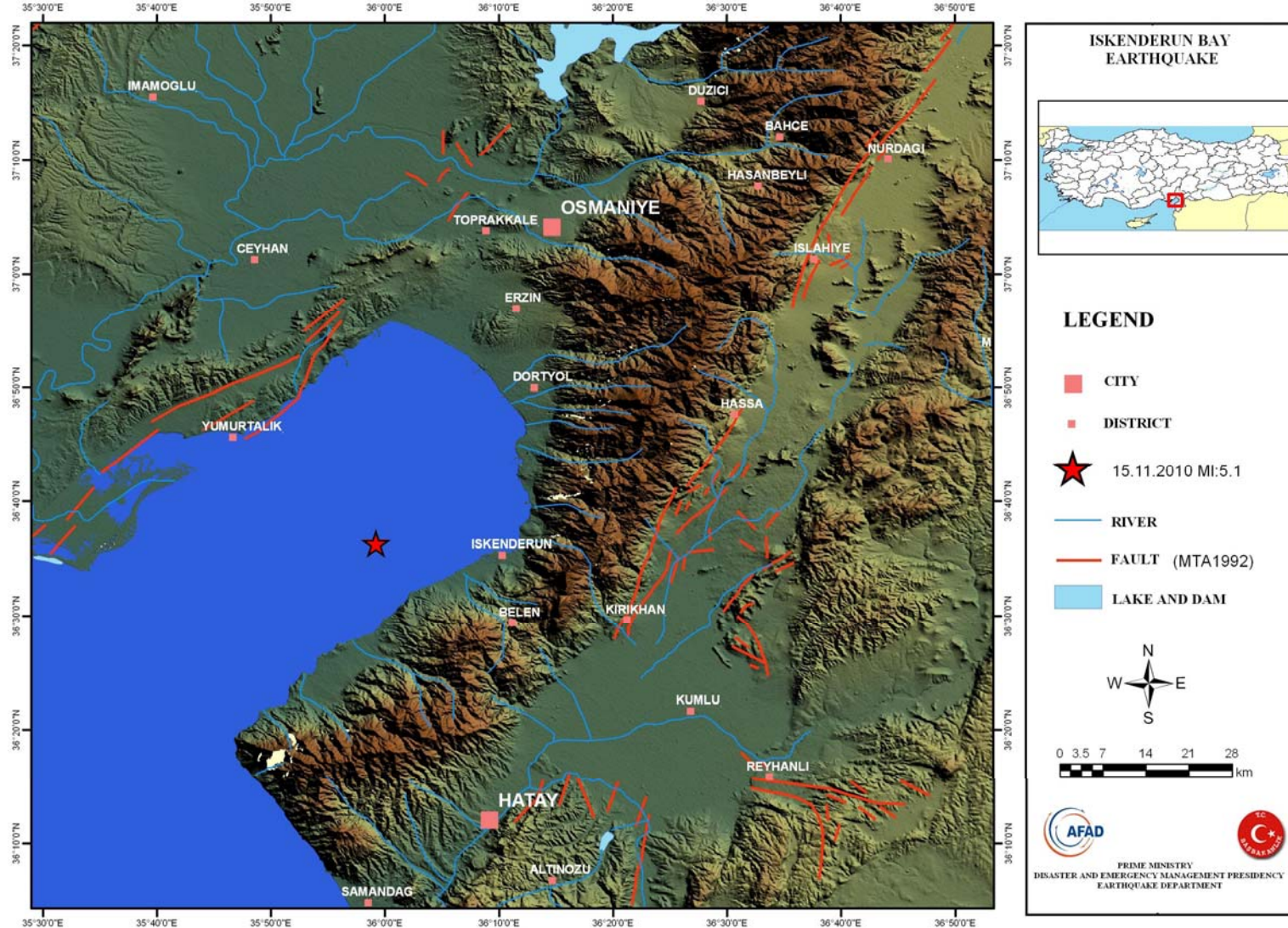


Figure 1: Main shock of İskenderun Bay Earthquake

For more information please click to www.deprem.gov.tr

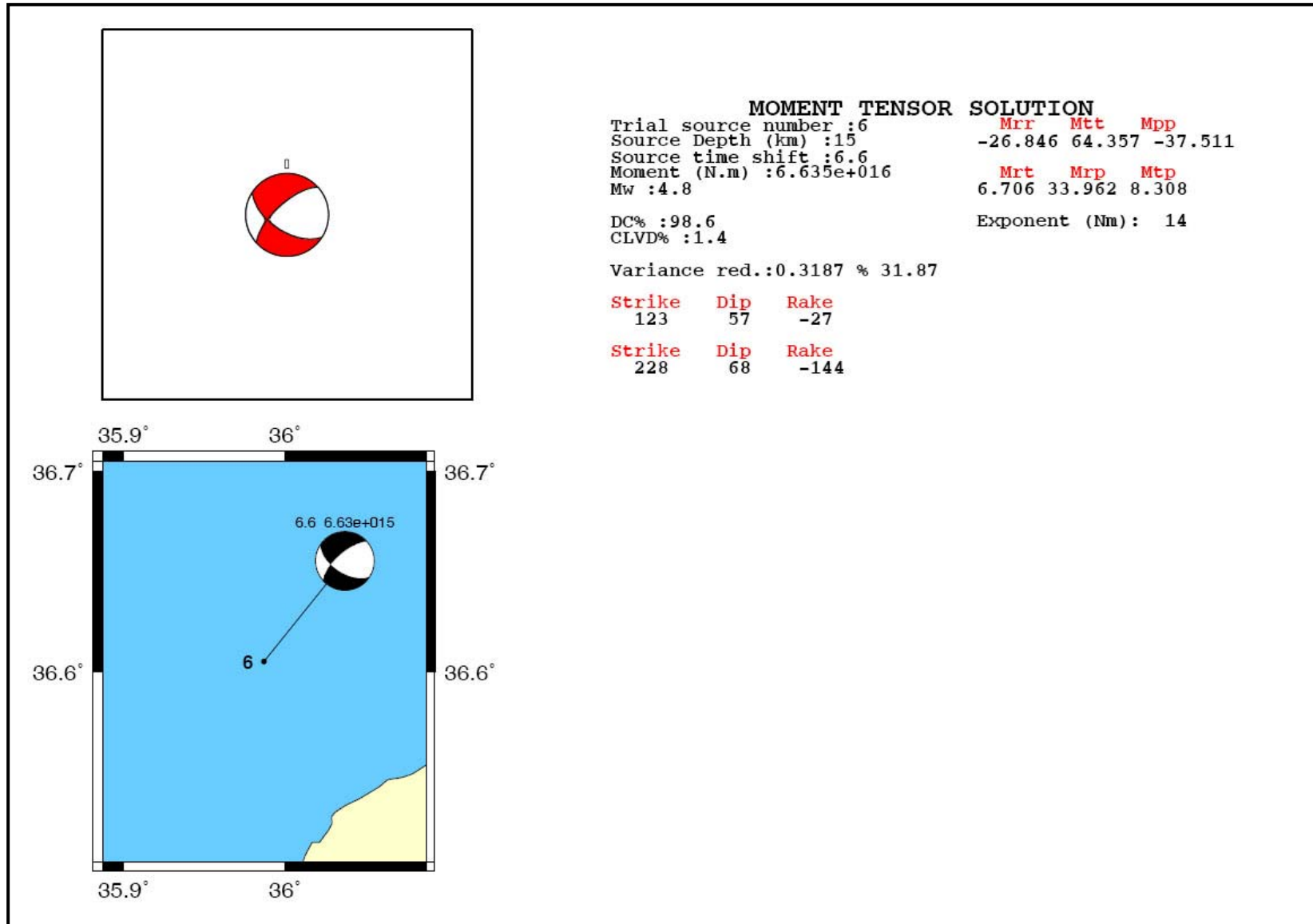


Figure 2: Moment Tensor Solutions of İskenderun Bay Earthquake

HISTORICAL AND INSTRUMENTAL SEISMICITY OF ISKENDERUN BAY REGION

Historical Period

milad	Year	Month	Day	Latitude	Longitude	Location
M.S	1896			37	35	Adana ve Mersin Region
M.S	1894			36	36	Antakya Region
M.S	1875			36	36	Antakya Region
M.S	1872			36	36	Antakya,Samandağ
M.S	1872			36	36	Antakya
M.S	1847			36.58	36.16	İskenderun
M.S	1822			36	36	Antakya,İskenderun,Kilis,Halep
M.S	1737			36	36	Antakya
M.S	1726			36	36	İskenderun Region
M.S	1212			36	36	Antakya
M.S	1190			36	36	Antakya Region
M.S	1114			36	36	Antakya
M.S	1091			36	36	Antakya and Urfa
M.S	1072			36	36	Antakya
M.S	1053			36	36	Antakya
M.S	972			36	36	Antakya
M.S	867			36	36	Antakya
M.S	859	4		36	36	Antakya,Lazkiye,Şam,Hama
M.S	835			36	36	Antakya
M.S	775			36	36	Antakya, Halep
M.S	716			36	36	Antakya
M.S	587	9	30	36	36	Antakya
M.S	583			36	36	Antakya
M.S	581			36	36	Antakya
M.S	579			36	36	Antakya Region
M.S	557			36	36	Antakya
M.S	553			36	36	Antakya
M.S	529	11	29	36	36	Antakya Region
M.S	527	3		36	36	Antakya
M.S	526	10	4	36	36	Antakya
M.S	526	5	29	36	36	Antakya, Samandağ
M.S	506	9	10	36	36	Antakya,Samandağ
M.S	458	9	14	36	36	Antakya and North Syria
M.S	396			36	36	Antakya
M.S	387			36	36	Antakya
M.S	363			36	36	Antakya
M.S	345			36	36	Antakya
M.S	341			36	36	Antakya
M.S	334			36	36	Antakya,Beyrut,Magosa
M.S	272			36	36	Antakya
M.S	245			36	36	Antakya
M.S	220			36	36	Antakya
M.S	117			36	36	Antakya

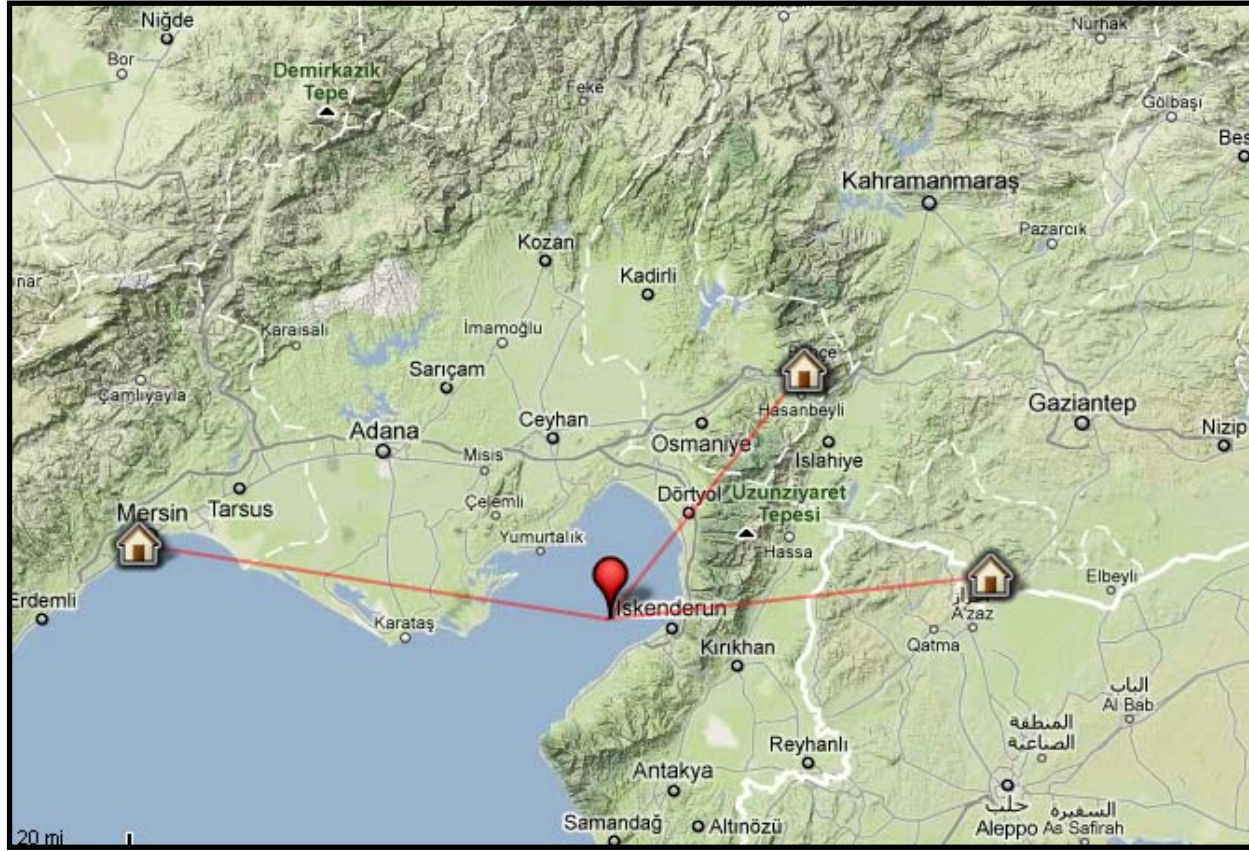
M.S	115	12	13	36	36	Antakya Region
M.S	110			36	36	Antakya, Samandağ
M.S	79			36	36	Antakya
M.S	37			36	36	Antakya
M.Ö	37			36	36	Antakya
M.Ö	69			36	36	Antakya
M.Ö	148			36	36	Antakya

Table 1: Historical time earthquakes for Iskenderun Bay Region

Instrumental Period

agency	network	Day	Month	Year	Hour	Minute	Second	Latitude	Longitude	N/S	E/W	Depth (km)	M	Mtype	City	Town
GS	-	17	6	2009	0	0	0	36.05	36.02	N	E	10	5	mb	HATAY	YAYLADAĞI
GII	-	31	10	2001	19	26	24	37.25	36.14	N	E	10	5.2	ML	OSMANIYE	OSMANIYE
DDA	ERD	31	10	2001	12	33	55.43	37.16	36.15	N	E	11.3	5	Md	OSMANIYE	OSMANIYE
DDA	ERD	25	6	2001	13	28	49.12	37.14	36.4	N	E	10.9	5.1	Md	OSMANIYE	OSMANIYE
HRV	-	25	6	2001	12	14	24	37.24	36.21	N	E	5	5.5	Mw	OSMANIYE	KADIRLI
HRV	-	4	7	1998	21	50	24	36.87	35.32	N	E	33	5.4	Mw	ADANA	YUREGIR
DDA	ERD	27	6	1998	13	56	52.97	36.87	35.58	N	E	23	5.9	Md	ADANA	YUREGIR
ISC	-	22	1	1997	17	57	22.98	36.1852	35.9419	N	E	45.4	5.5	Ms	HATAY	SAMANDAĞI
GS	-	22	1	1997	16	48	0	36.25	35.95	N	E	10	5.7	Mw	HATAY	SAMANDAĞI
JER	-	22	1	1997	15	50	24	36.28	36	N	E	10	5.3	ML	HATAY	HATAY
JER	-	22	1	1997	4	48	0	36.24	35.92	N	E	10	5.2	ML	HATAY	SAMANDAĞI
DDA	ERD	13	4	1995	20	23	20	37	36	N	E	30	5	Md	HATAY	ERZIN
CSS	-	3	1	1994	9	7	12	37	35.84	N	E	25	5.3	ML	ADANA	CEYHAN
HRV	-	10	4	1991	14	38	24	37.36	36.22	N	E	10	5.4	Mw	OSMANIYE	KADIRLI
NEI	-	7	4	1967	18	33	31	37.345	36.175	N	E	33	5	Mb	OSMANIYE	KADIRLI
NGDC	-	22	10	1952	17	0	0	36.5	35.5	N	E	0	5	MS	ISKENDERU N.K.	
-	-	22	10	1952	17	0		37.25	35.65	N	E	70	5.6	Ms	ADANA	CEYHAN
-	-	8	4	1951	21	38		36.58	35.85	N	E	50	5.8	Ms	ISKENDERU N.K.	
-	-	20	3	1945	7	58		37.11	35.7	N	E	60	6	Ms	ADANA	CEYHAN
-	-	17	2	1908	3	0		37.4	35.8	N	E	0	6	Ms	ADANA	KOZAN

Table 2: Instrumental time earthquakes for Iskenderun Bay Region



No	Station		Equipment Type	NS (gal)	EW (gal)	Vertical (gal)	Distance of station to epicenter (km)
	City	District					
1	OSMANIYE	BAHÇE	CMG-5TD	1.76	1.56	1.20	83
2	KİLİS	MERKEZ	CMG-5TD	3.85	4.74	1.26	100
3	MERSİN	MERKEZ	CMG-5TD	1.77	2.08	0.35	125

Figure 3: Maximum Acceleration Values of Iskenderun Bay Earthquake

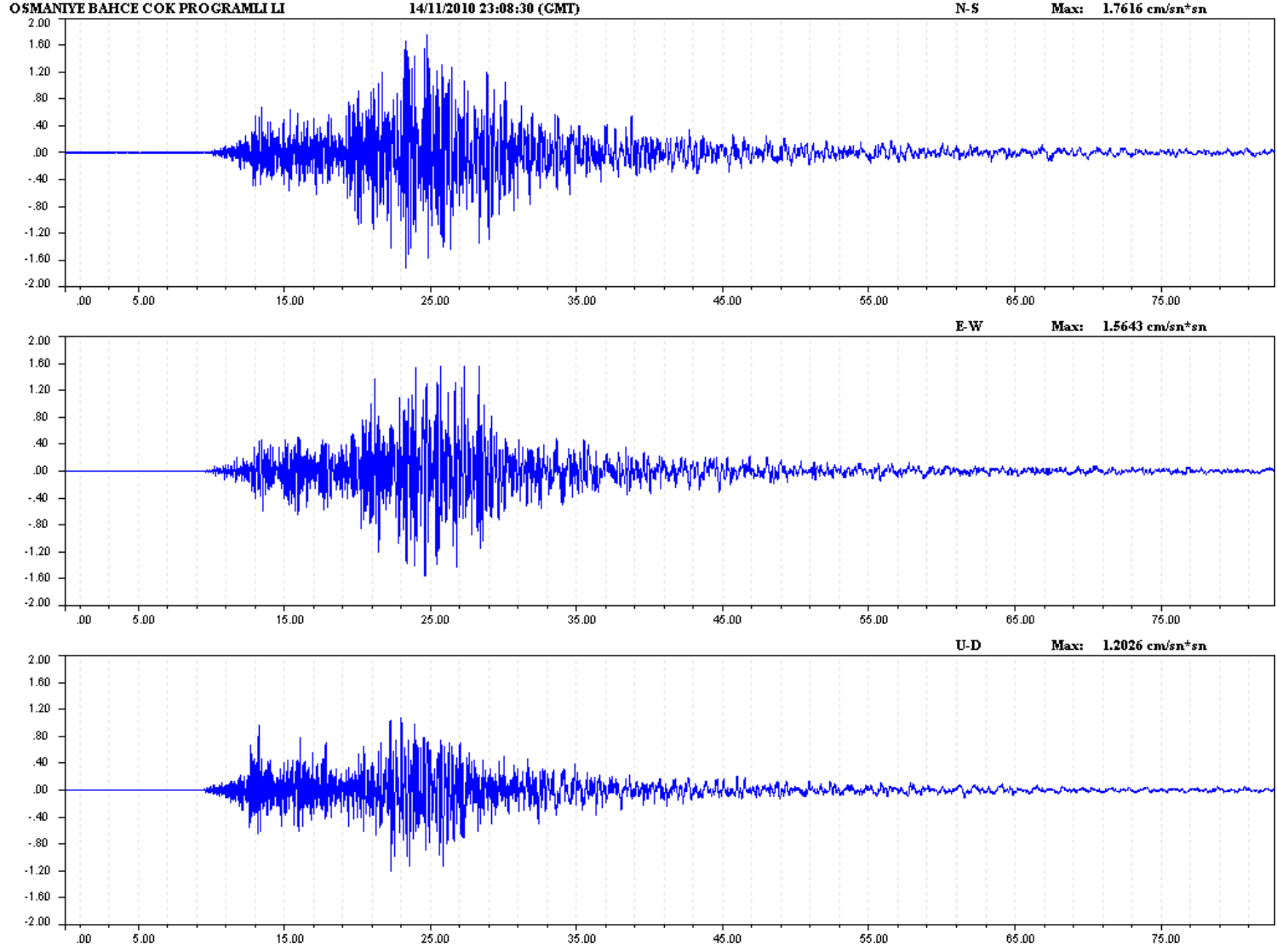


Figure 4: acceleration-time record according to Osmaniye station

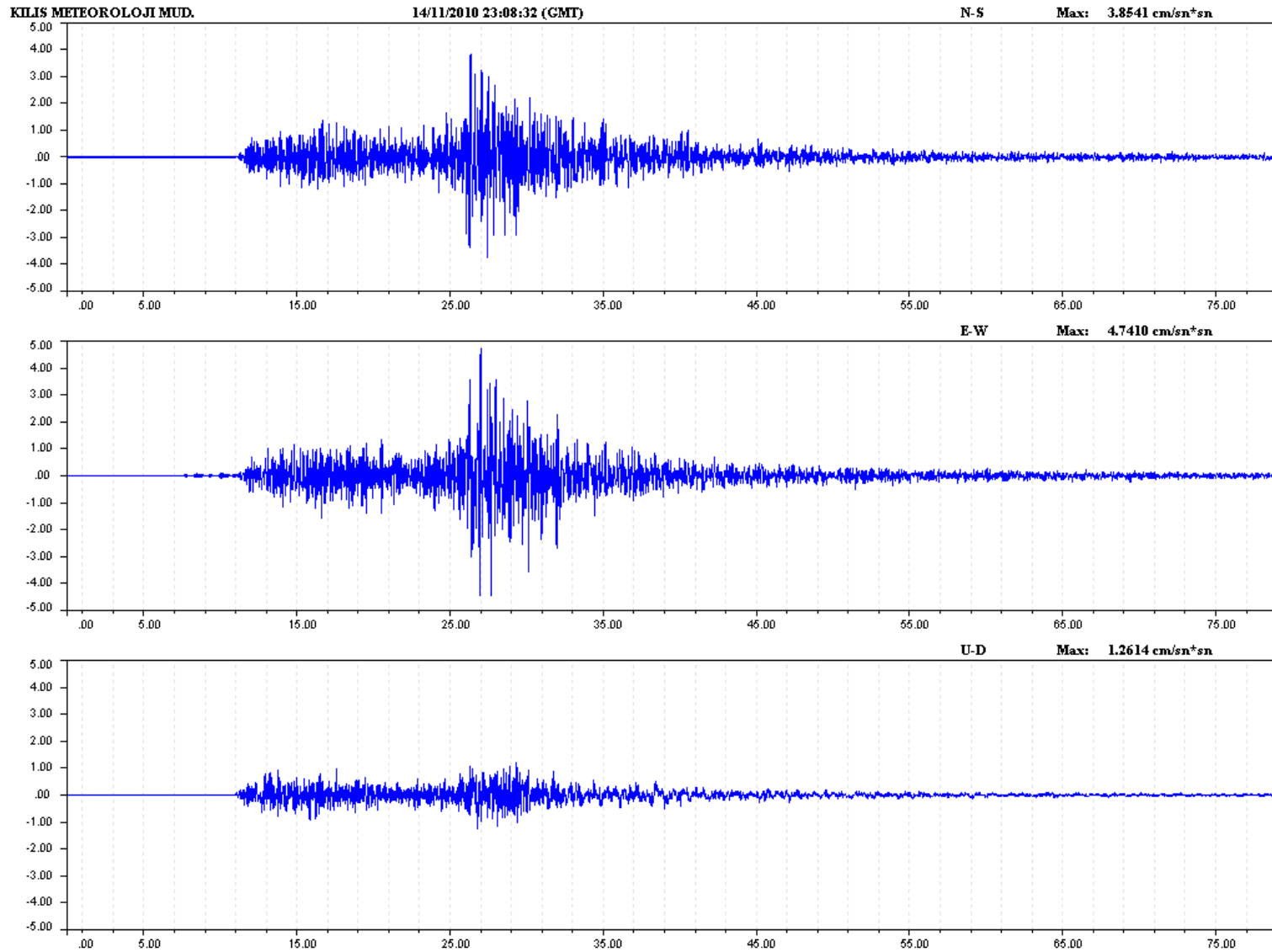


Figure 5: acceleration-time record according to Kilis station

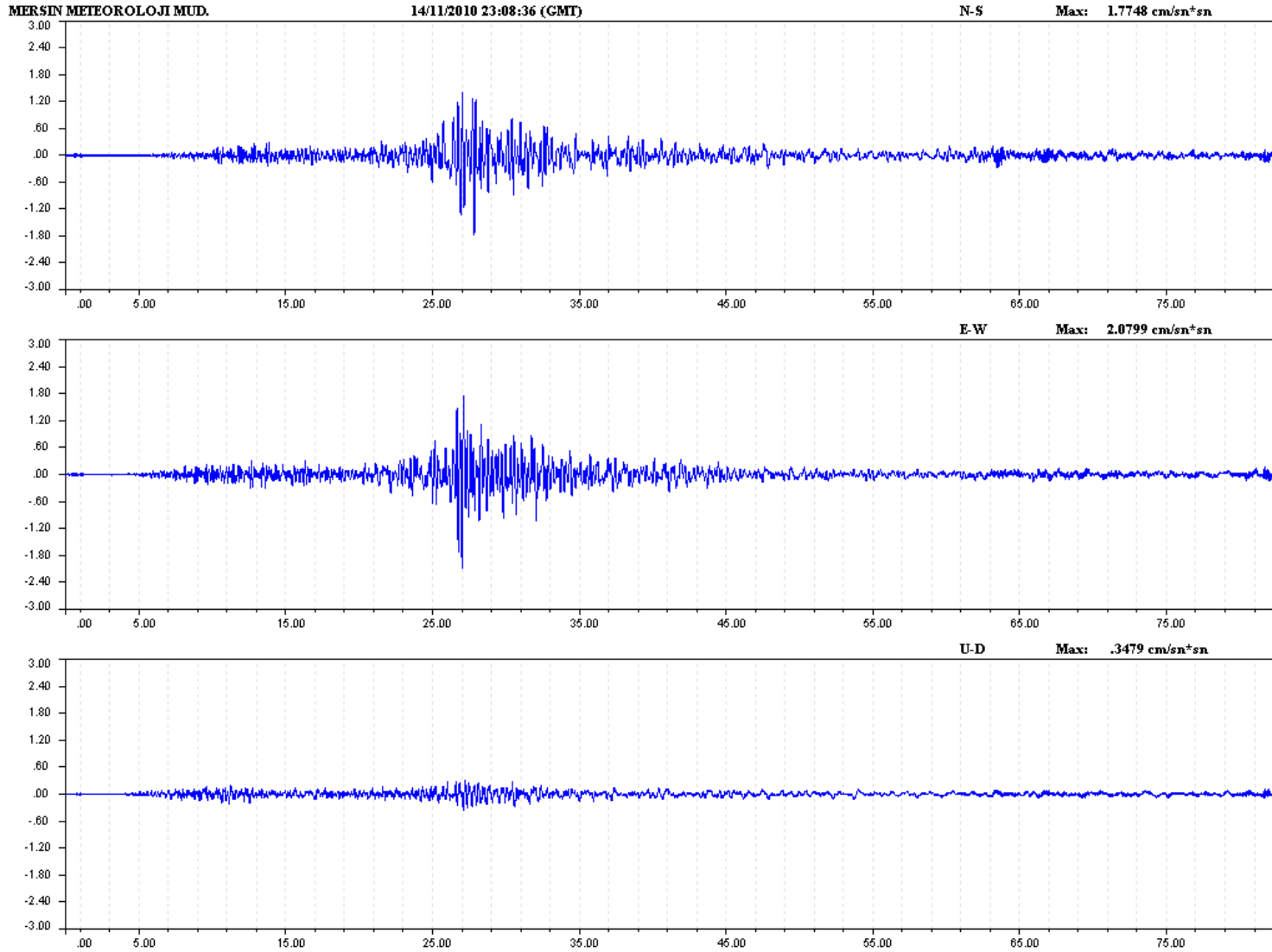


Figure 6: acceleration-time record according to Mersin station

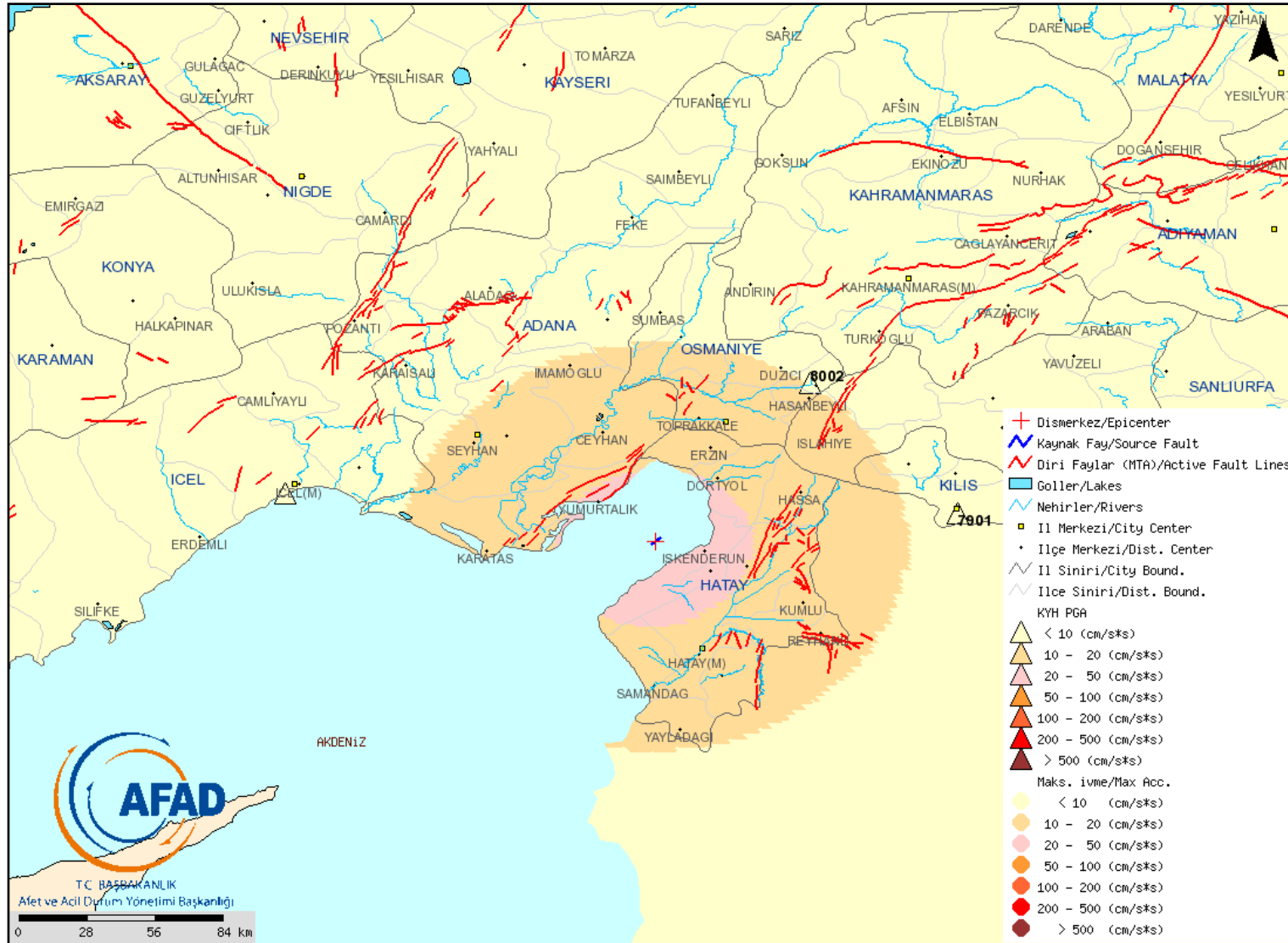


Figure 7: Peak Ground Acceleration Distribution Map of Iskenderun Bay Earthquake (MI=5.1) (according to Çeken U., Beyhan G. ve Gülkan P. 2008.)

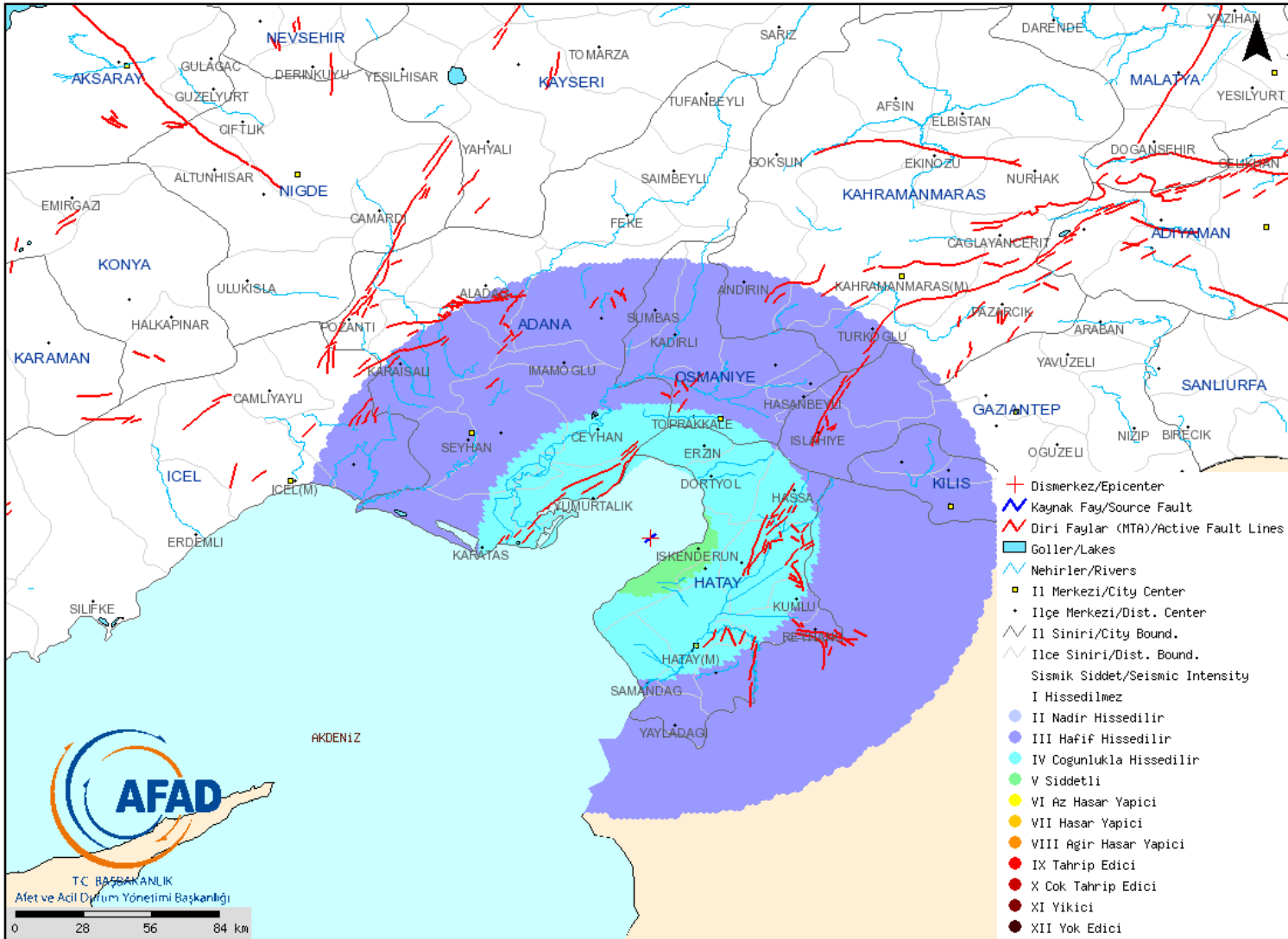


Figure 8: Seismic Intensity Map of Iskenderun Bay Earthquake (MI=5.1) (according to Çeken U., Beyhan G. ve Gülkan P. 2008.) (Arioğlu E., Arioğlu B. M., Girgin C. (2001)

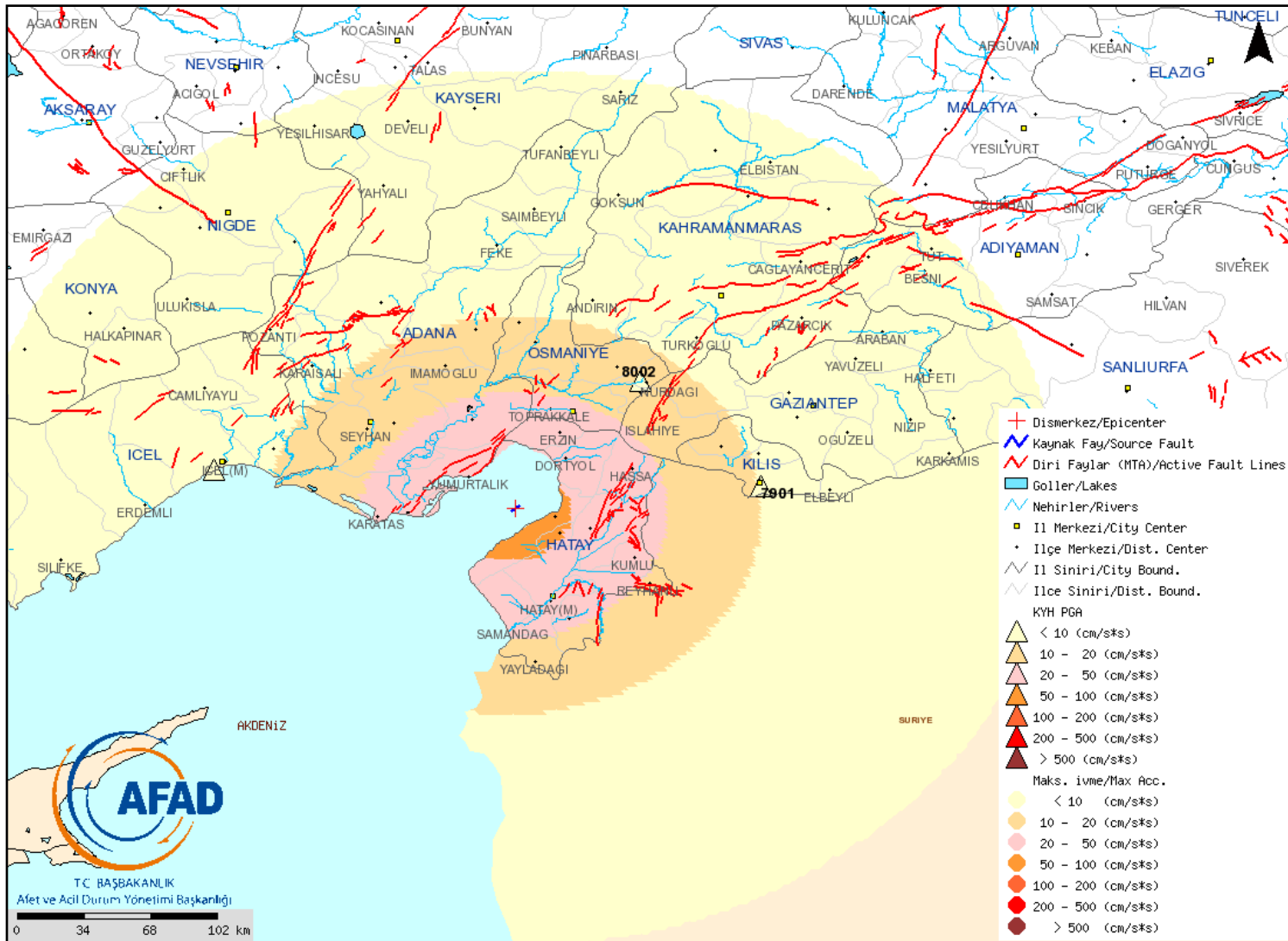


Figure 9: Peak Ground Acceleration Distribution Map of Iskenderun Bay Earthquake (MI=5.1) (according to Yoshimitsu Fukushima and Teiji Tanaka, 1992)

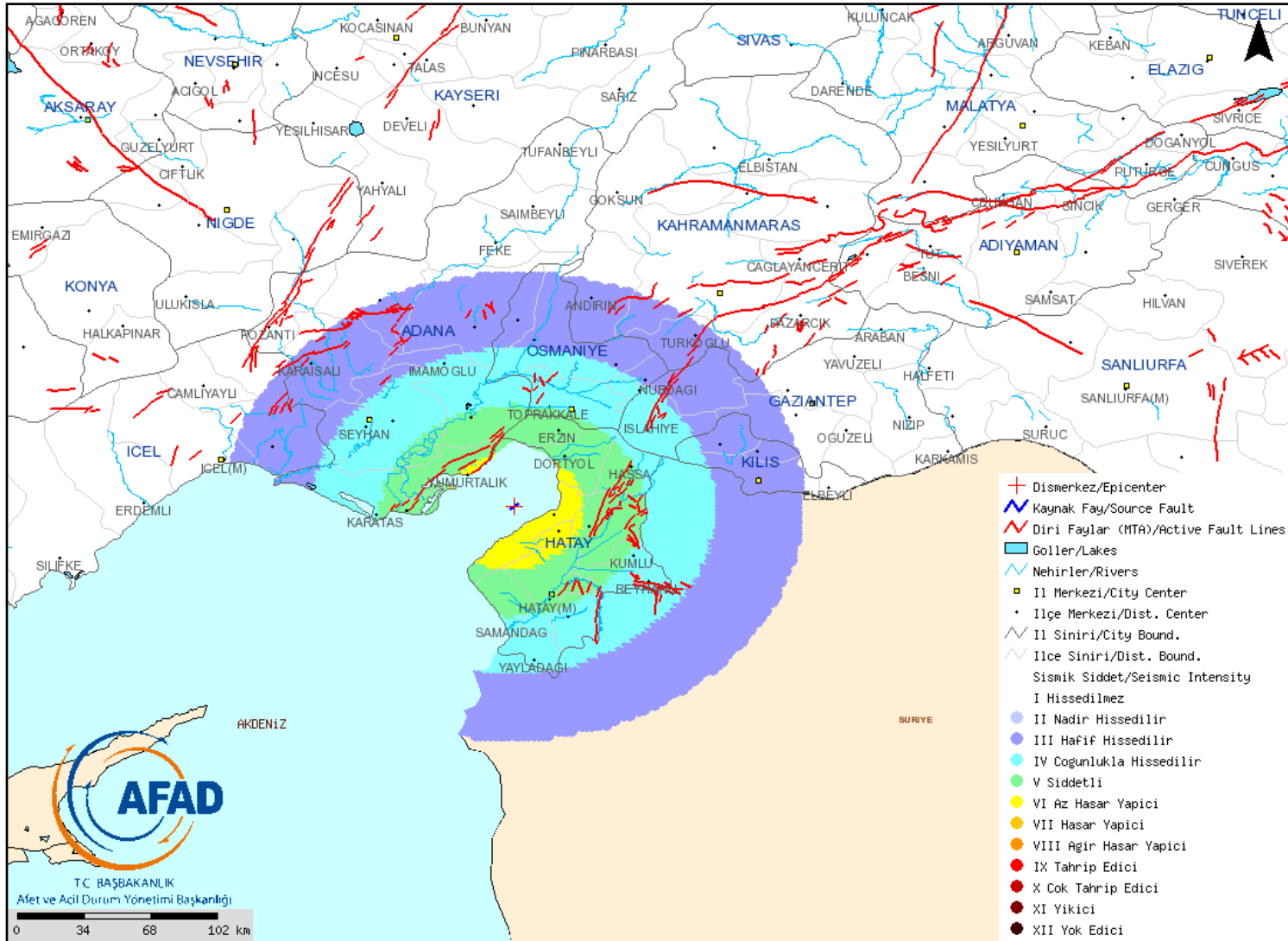


Figure 10: Seismic Intensity Map of Iskenderun Bay Earthquake (MI=5.1) (according to Yoshimitsu Fukushima and Teiji Tanaka, 1992) (Arioğlu E., Arioğlu B. M., Girgin C. (2001))

References

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Yoshimitsu Fukushima and Teiji Tanaka, 1990, A New Attenuation Relation for Peak Horizontal Acceleration of Strong Earthquake Ground Motion in Japan, *Bull. Seism. Soc. Am.*, Vol. 80, No. 4, 757-783.

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