

# Seismic Observations of Turkey

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## 1. Weak Motion Observations

The purpose of the seismological observations is to determine some parameters of earthquakes and produce some projects against the earthquake disaster. TURKNET project was established for carrying out these studies as a section of the General Directorate of Disaster Affairs, Earthquake Research Department in 1989. 12 seismological observation stations were set up along between Sivas and Adapazari on middle part of the North Anatolian Fault Zone in the beginning of the project, and later, 31 stations were spreaded out along the active fault lines in Turkey. The locations of the remote stations were not only selected by taking into consideration structural geology and seismicity data but also depend on signal-transmitting conditions. The monitoring of the earthquakes in the contry-wide scale recording, evaluation to archive and to inform the public have to be carried out under a developed National Earthquake Observation Network. The National Brodband Earthquake Monitoring Network of Turkey with 19 stations was integrated with the 31 stations of the National Telemetric Observation and Recording Network of Turkey (TURKNET) and the number of station has been increased to about 200 in 2011 (Fig. 1).

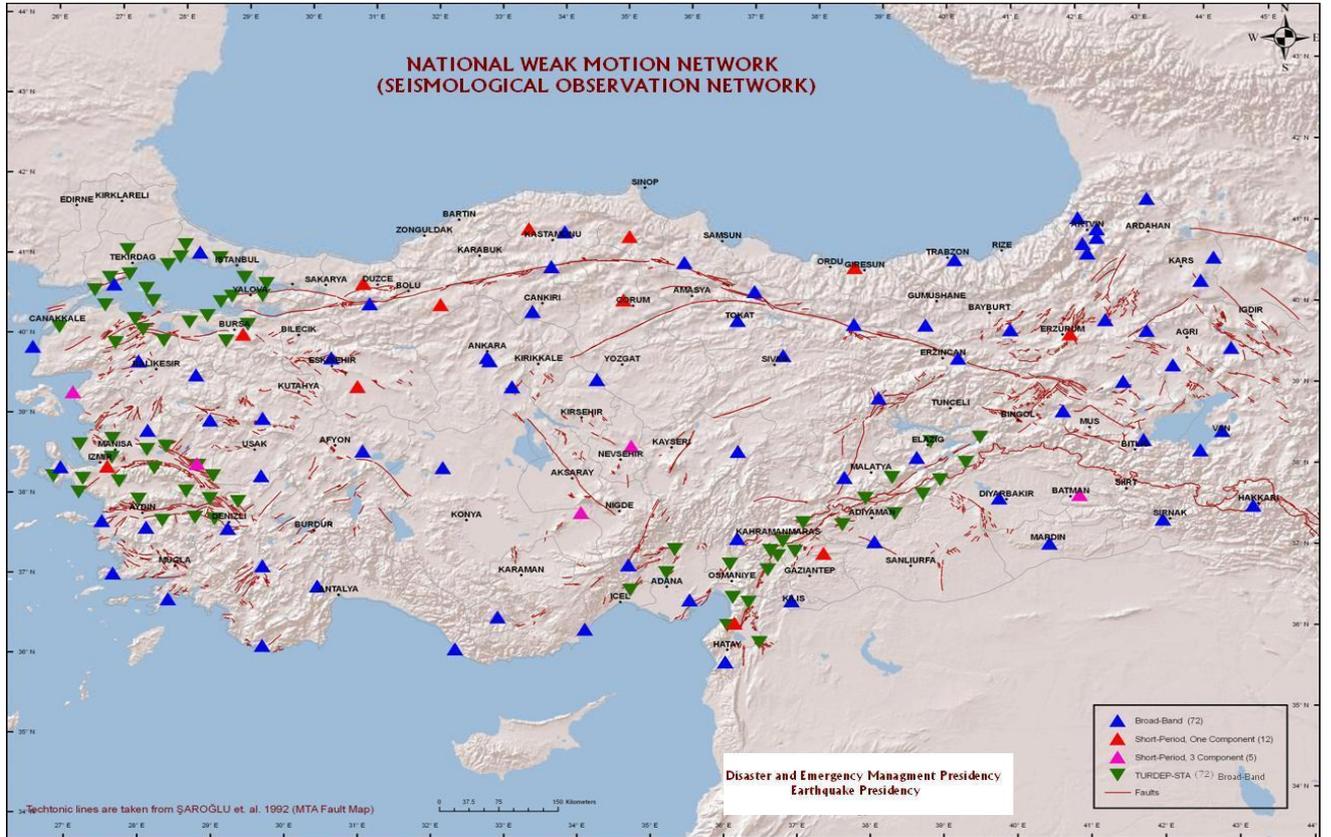


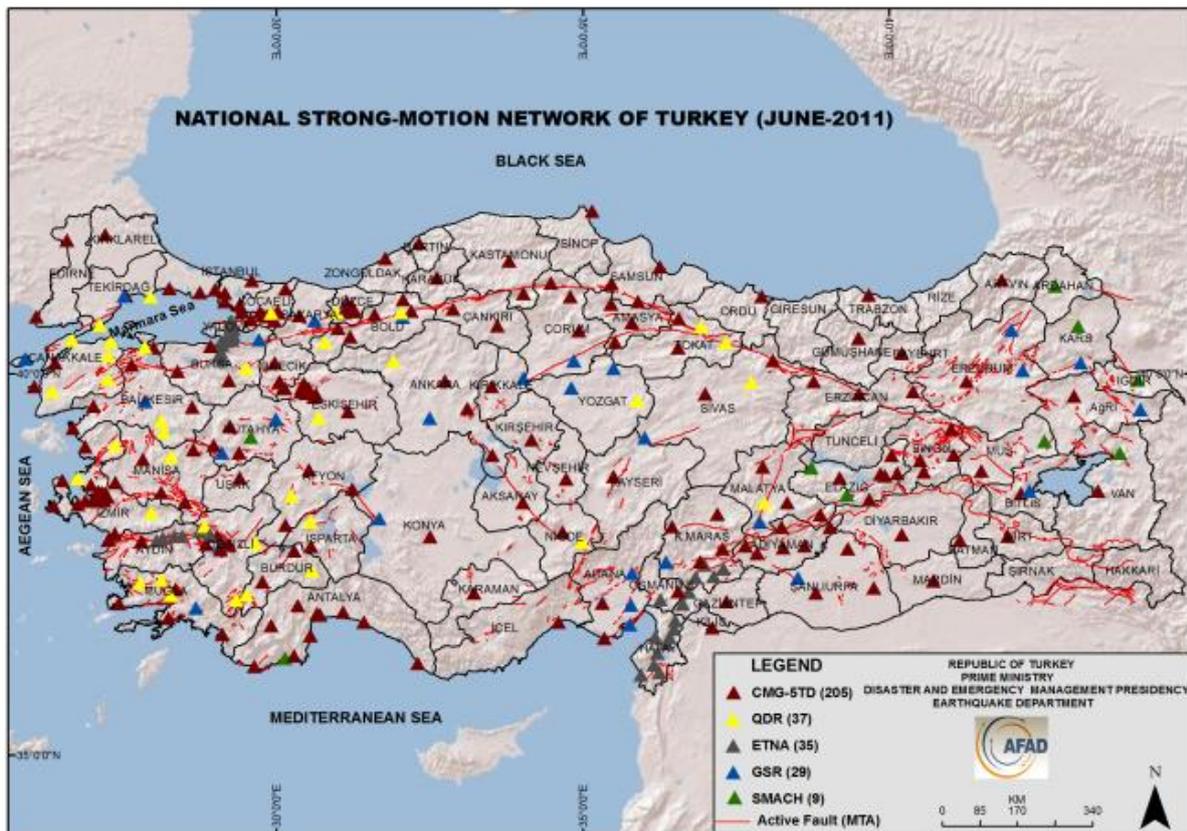
Figure 1. National Weak Motion Network

## 2. Strong Motion Observations

Strong Motion Network of Turkey was established in 1973 at Earthquake Research Department under the Ministry of Public Works and Settlement General Directorate of Disaster Affairs. The aim of the Network is not only to develop the methods of constructing earthquake resistant structures by measuring the forces that causes damage to the buildings, but also to collect the recorded data under catalogues for database that could be useful for engineering applications and scientific studies.

According to the aim of the project and distribution of the instruments with limited number of accelometer, they are installed on the North Anatolian Fault Zone (NAFZ), East Anatolian Fault Zone (EAFZ) and Aegean Graben System where the big earthquakes occurred or the expected active areas with a distance about 50-80 km. These instruments are mostly installed inside the public buildings or at free fields.

Firstly, the Network was operated with analog accelometers. But after 1993, digital accelometers were added to the Network. Up to 2001, the total number of the instruments which were operated in this project was 120 where 67 instruments were analog and 53 of them were digital. But since 2001, with the financial support of NATO, 20 digital accelometer instruments were bought and so the local Network of Bursa-Yalova (BYTNet) and Aydın-Denizli (DATNet) were established to bring the number of total instruments to 140. In addition to this, with the support of the Scientific and Technical Research Council of Turkey (TUBITAK), 18 digital instruments were bought and the local Network of Hatay-K.Maraş (MATNet) will be established. So, as of June 2011, the total station number is 360 as shown in Fig.2.



**Figure 2.** National Strong Ground Motion Network