The Developments in the National Seismic Observation Network and M≥5 Earthquake Activity of Turkey (1999 – 2008)

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Abstract

Turkey is always in danger of being ruined by an earthquake because it's on the active fault zone, as it was seen in the last ten years.That's why a seismological observation network is needed to research the reasons of earthquakes and reduce their damage.

In order to mitigate disaster losses, it is necessary to establish an effective disaster management and risk system. The first step of the management is constituted by preparedness studies before the earthquake (disaster). In order to determinate disaster and risk information it is necessary to have a seismological observation network.

Due to the monitoring of the earhquakes in the country-wide scale, recording, evaluation, archieving and to inform to the public autority, the project named "Development of the National Seismic Network Project-USAG" has been started. 5 Three Component Short Period, 66 Broad-band, 13 One Component Short Period stations, 70 Local Network- Broad-band, and 262 accelerometers have been operated in the frame of this project. All of the stations transmit continuously their signal to the ERD (Earthquake Research Department) seismic data center in Ankara. Capability of the network is to determine an earthquake which is minimum local magnitude ML= 2.8 generally, in some region local magnitude threshold is ML=1.5 (the places where the stations are concentrated).

Earthquake activity in Turkey and surrounding region has been observed 7 days / 24 hours, in ERD data center in Ankara. After the manuel location of an earthquake, If the magnitude is over 4.0, system sends to SMS message automaticaly to the authorized people and immediately press, public and national-local crisis center, scientific institutions are informed by fax and e-mail. Data exchange has been carried out to EMSC-CSEM and ORFEUS.

During the İnstallation of the broad-band stations, the seismotectonics of the region has been taken into consideration. Earthqauke record stations are concentrated at the most important fault zones in Turkey; North Anatolian Fault System, East Anatolian Fault System, Bitlis Overlap Belt and Aegean Graben (or opening) System.

After 1999 İzmit and Düzce earthquakes, the number of the seismic stations in Turkey have been increased each passing year. In this study, a brief information about the developments of National Seismic Network System of Turkey will be given and in the light of these developments, recent earthquake activity in Turkey with mag. =>5.0 will be presented.