

SEISMOTECTONICS OF WEST ALBORZ USING IRAN-CHINA SEISMIC PROFILE

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Alborz mountains are considered as doubly wedge mountain range. The Khazar fault lies in the northern hills of the Alborz and dip towards south (e.g., Jackson et al., 2002). Routine seismic bulletins do not show any significant activity along Khazar fault or they lack sufficient epicentral accuracy to be attributed to the fault. Lahijan fault in the west Alborz is also considered as an active fault which runs partly along the Sefidrud river. West Alborz shows a strong discontinuity along Lahijan fault. In order to evaluate possible roles of these critical faults in the formation of Alborz mountain range, we have conducted a combined seismological and neo-tectonic work in the West Alborz.

Geological Survey of Iran, Institute for Advanced Studies (IASBS) and Chinese Academy of Sciences have jointly installed Iran-China network in NW of Iran. We use data from the temporary network to locate all events recorded during 2013/09 to 2014/09 period. The network is consisted of 63 broadband stations extending from Caspian Sea to Iran-Iraq border region. The study area is covered with 16 stations which provides a very good azimuthal coverage for a region in the West Alborz with width of about 150 km extending from south of Talesh region to East of Lahijan-Zanjan region (Figure 1). The seismic network fully covers the area affected by 7.7 Ms Tarom-Rudbar 1990 event, the largest instrumental recorded earthquake in the Alborz mountain belt. The network also covers the coastal regions of the Iran and for the first time provide the opportunity to study Khazar and Lahijan faults (Figure 1).

We have located more than 300 well located events in the study area. Most of the located events lies along Tarom valley region and it seems that they are related to the rupture zone of 1990 Rudbar-Tarom event. We have also found a lineament of events south of Khazar fault and also along Lahijan fault. To relate other events not falling on the known active faults, we are going to revise the active fault map of the region using morphological and neotectonic methods.

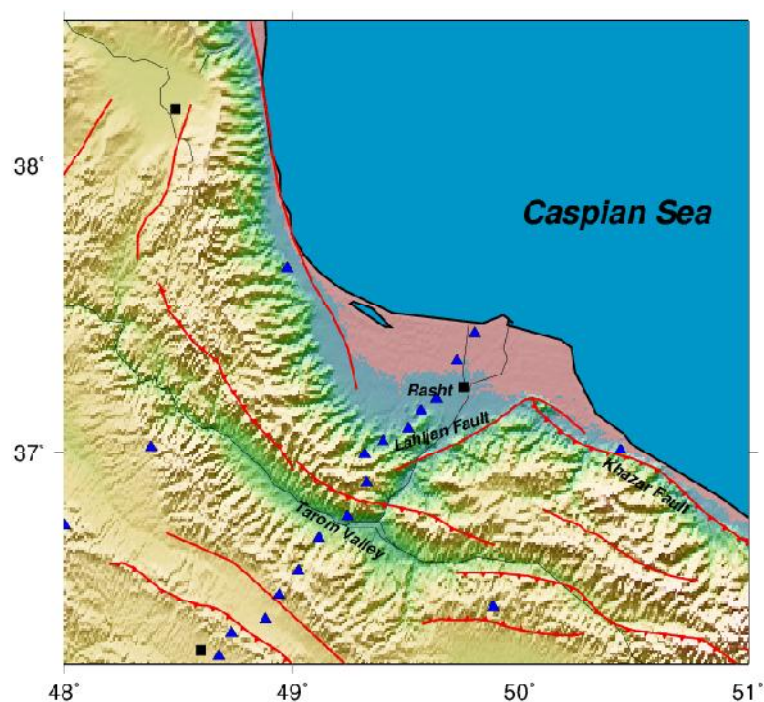


Figure 1. Location of seismic stations of Iran-China temporary network (the blue triangles) in the study area. The red line shows the active fault of the region (Hessami et al., 2002)

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