Seismic activity of Zagros mountains, western Iran

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The Zagros fold-thrust belt as a part of the Alpine-Himalayan orogenic belt, is one of the youngest and most active continental collision zones on the earth, which extends for about 1500 km from the Taurus mountains in southeastern Turkey to the Minab fault to the east of the Strait of Hormoz in southern Iran. Two major faults dominate the tectonics of the northeastern boundary of the Zagros; the Main Zagros Reverse Fault and the Main Recent Fault. The Main Zagros Reverse Fault has NW-SE strike from western Iran to north of Bandar Abbas and the Main Recent Fault is a major right-lateral strike-slip seismogenic structure, broadly parallel but younger than the Main Zagros Reverse Fault which transects it in several places. MRF is a major seismogenic structure constituted of several segments (namely: Dorud, Nahavand, Garun, Sahneh, Morvarid and Piranshahr faults) with different levels of seismicity. Although earthquakes are distributed across the entire Zagros, Earthquakes of larger magnitudes are mostly nucleated along different segments of the Main Recent Fault. For example, the Silakhor earthquake of 23 January 1909, MS=7.4, on The Dorud fault segment, is the largest event recorded in the Zagros. A local seismographic station network consisting of five portable analog seismographs was installed on and around the Sahneh fault from August to September 1998. The earthquake data are compiled from the Institute of Geophysics, which is nearly complete over interval 1996-2011 for earthquake greater than MW=2. The number of all earthquakes are 242. Hypocenters of earthquakes recorded by the local seismic network, show that earthquake in this region originate mainly in depths of about 10 km.