

## **SOURCE DYNAMICS OF RECENT EARTHQUAKES IN IRANIAN PLATEAU**

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Since 1997, several strong earthquakes have occurred in Iranian Plateau, causing extensive damages and resulting many human casualties. The observed bodywaves were complex. Long duration of shakings reported by field investigations also suggested that these events were multiple sources. In this study, the long period body waves were inverted to their sources to investigate the source dynamics of these earthquakes. The locally recorded aftershock activities and the results of field investigations were used as additional informations to interpret the the results of waveform inversion. The final results suggested that the February 1997 earthquakes in north-east and north-west Iran were multiple sources consist of at least two subevents with strike-slip mechanisms. The May 1997 earthquake in east-central Iran had associated with three main surface ruptures and the results of this study indicated three major subevents with strike-slip mechanisms. The March 1998 earthquake in south-east Iran was a single event having a strike-slip mechanism with a small normal component. The 1999 earthquake in Zagros seismic zone indicated a multiple source characteristics having two main subevents with strike-slip mechanism. All events had shallow depths indicating that the seismic activity was taking place within the upper crust and the seismogenic layer in this region had a thickness not greater than 20 km. In most cases the earthquakes showed high intensities and high stress drop natures. This was the main reason for the heavy damages and high casualties during the source processes of these earthquakes. Rupture, during the main shock, was generally initiated with a small build-up and the great amount of seismic energy was released during the later stages. The multiple source nature of the activity suggests that the medium in this region is heterogeneous and has an unisotropic property.