Geophysical Research Abstracts,
Vol. 11, EGU2009-1917, 2009
EGU General Assembly 2009


# An analysis of active tectonics in Rudbar- Manjil area after the earthquake of 1990 in the area

N. Poroohan and K. Teimoornegad

Islamic Azad University Lahijan Branch, Lahijan, IRAN (Neda_poroohan @ yahoo.com /+98-141-2226671)

Rudbar- Manjil area is located in western Alborz mountains, structural trend of which is southeastern- northwestern. Given the huge earthquake happening in the area in 1990, it is now considered to be an active seismic area. An analysis of recorded earthquakes of this area as well as surrounding area and determination of value of parameter b ( based on Gotenberg- Richter equation log N= a- bm) before and after seismic events demonstrated that the value of parameter b has increased in the area after the main seismic events( log N= 6.176-1. 05M, log N= 4.932 – 0.77M after and before the main earthquake respectively).

An increase of b does not necessarily mean that the area is safe in terms of seismic. Considering the field studies conducted in the area and the directions of main stresses, it is derived that maximum trend of main stress is generally northeastern. This trend is consistent with convergence direction of Iran plate- N20E- N35E. On the other hand, lateral components on some strike-slip faults and sinstral movement along main Rudbar fault show a movement of southern Caspian basement toward south and the division of this convergence stress into two components of pressure ( on reverse faults) and sinstral strike- slip. Besides, high tectonic activity in Rudbar-Manjil after main earthquake is confirmed by the measurement of some morphotectonics indices such as mountain – front sinuosity ( Smf = 95%), v-ratio ( Vfw = 4.2) and sinuosity ( S= 1.3) of the important river of Sepidrood.