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Probability of the surface rupture associated with earthquake faults in the Zagros mountains, SW of Iran

Ahmad Zamani and Amanj Zandesalimi
Department of Earth Sciences, College of Sciences, Shiraz University, Shiraz, Iran(zandesalimi007@gmail.com)

Zagros is part of the Iranian mountains which are actively deforming due to the shortening between Arabian and Eurasian plates, and one of the seismically active fold-thrust belts on the Earth. Surface faulting associated with earthquakes is extremely rare in the Zagros mountains. The likelihood that a earthquake rupture will break the ground surface can be estimated specifically for a fault based on: relationship between 1)earthquake rupture width 2)hypocenteral depth distribution, 3)earthquake magnitude, 3)fault dimensions, 4)fault geometry, and tectono-stratigraphy in the Zagros fold-thrust belt,. The results obtained in this research are in good agreement with the field observations.