



## **Application of morphometric indices in determination of faults activities (Zagros simply folded belts, Zafar-abad fault)**

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Zafar-abad fault is a member of Sabzpushan fault zone that placed in Zagros simply folded belt. Strike-slip faults in Sabzpushan fault zone are responsible for rotation in trend of anticlines, deviation in trend of drainages, creation of en-echelon folds, and appearance of shutter ridges. Zafar-abad fault has strike-slip movements in southern segment and normal movements in northern segment. This fault now is active and in present seismotectonic regime has movements and potentially will have movements in the future. Quantitative measurements by using from morphometric indices such as Smf, Fmf%, Facet% & Tstf have shown that this area is tectonically active. We captured our data from 1:25000 topographic maps, Landsat TM images, 1:55000 aerial photographs, 1:100000 geological maps and field observations. The results of conjugate fractures measurements and plots of rose diagrams of different stations have shown that there are two directions of shortening at  $N30^{\circ}\pm5^{\circ}E$  and  $N51.5^{\circ}\pm8.5^{\circ}E$  and it seems that Zafar-abad fault activities is in response to the first one. Inter action between compressional and strike-slip regimes has caused the development of different morphological features in the study area .Our researches suggests that Zafar-abad fault is a normal fault with strike slip component.