



Assessment of relative active tectonics, south central Alborz (north Iran)

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The paper present a method for evaluating relative active tectonics based on geomorphic indices useful in evaluating morphology and topography. Indices used include: stream length-gradient index (SL), drainage basin asymmetry (Af), hypsometric integral (Hi), ratio of valley-floor width to valley height (Vf), index of drainage basin shape (Bs), and index of mountain front sinuosity (Smf). Results from the analysis are accumulated and expressed as an index of relative active tectonics (Iat), which we divide into four classes from relatively low to highest tectonic activity. The study area along the south flank of the central Alborz mountain range in north Iran is an ideal location to test the concept of an index to predict relative tectonic activity on a basis of area rather than a single valley or mountain front. The recent investigations show that neotectonism has played a key role in the geomorphic evolution of this part of the Alborz mountain range. Geomorphic indices indicate the presence of differential uplifting in the geological past. The area surrounding the Amirkabir lake shows very high relative tectonic activity.