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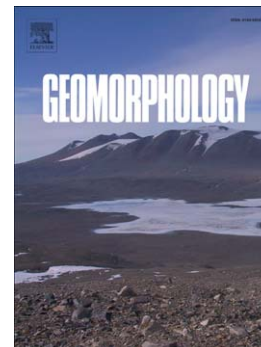
Interaction between active tectonics, erosion and diapirism, a case study from Hable-Rud in Southern Central Alborz (Northern Iran)

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**Interaction between active tectonics, erosion and diapirism,
A case study from Hable-Rud in Southern Central Alborz
(Northern Iran)**

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Abstract

The Alborz mountain chain is a region of active deformation within the Arabia–Eurasia continental collision zone. The southern part of central Alborz Mountains, in the north of Iran, represents complex tectonics because it is located at the border of two developing continental sedimentary basins between southern central Alborz and Central Iran. An arid and semi-arid climate, a large extent of Quaternary sediments, rugged topography, salt domes and faults with historical seismicity influence the Hable-Rud River catchment. In the present research, a number of tectonic geomorphologic indices were extracted from satellite imagery and 10 m DEM (Digital Elevation Model) data in order to identify relative tectonic activity within the basin. The indices include: stream length-gradient index (Sl), drainage basin asymmetry (Af), index of mountain front sinuosity (Smf), hypsometric integral (Hi), index of drainage basin shape (Bs), ratio of valley-floor width to valley height (Vf), and fault density

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