



## **Geomorphic Indices and Neotectonics in the vicinity of Kalabagh Fault, Sub Himalayas, Pakistan.**

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Different mountain ranges including the Salt Ranges and Trans-Indus Salt Ranges mark the southernmost part of the active Himalayan orogeny. The Main Frontal Thrust (MFT) delimits the southern margin of the Himalayas in Pakistan. Left-lateral Jhelum Transform Fault in the east and right-lateral Kalabagh Transform Fault in the west cause offsets on east and west of the MFT. A lateral offset of almost 100 km caused by Kalabagh Fault along with a left lateral fault in SW give rise to the evolution of Mianwali Reentrant and Bannu Basin. The available data record does not show major seismic activity for the study area within the past hundred years, except for a  $M_w = 6.1$  earthquake in 1992 in the north of Mianwali Reentrant. GIS based standard geomorphic analyses were performed on SRTM data to evaluate active tectonics of blocks on both sides of Kalabagh strike slip fault: Mountain Front Sinuosity, Transverse Topographic Symmetry, Hypsometric Integral, Drainage Basin Shape and Basin Elongation Ratio suggest young stages of tectonic uplift in the basin, as substantiated by (i) straight individual mountain front segments, (ii) shift of rivers away from basin centers, (iii) Hypsometric Integral values slightly exceeding 0.5 and (iv) elongated shapes of drainage basins. Altogether, the overall results reveal slow rates of uplift that outpace erosion.