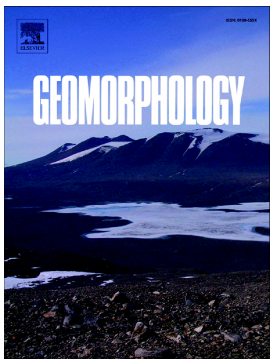

Evaluating metrics of local topographic position for multiscale geomorphometric analysis

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Conflicts of interest: None

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Abstract:

The field of geomorphometry has increasingly moved towards the use of multiscale analytical techniques, due to the availability of fine-resolution digital elevation models (DEMs) and the inherent scale-dependency of many DEM-derived attributes such as local topographic position (LTP). LTP is useful for landform and soils mapping and numerous other environmental applications. Multiple LTP metrics have been proposed and applied in the literature; however, elevation percentile (EP) is notable for its robustness to elevation error and applicability to non-Gaussian local elevation distributions, both of which are common characteristics of DEM data sets. Multiscale LTP analysis involves the estimation of spatial patterns using a range of