

Robust and flexible hydroinformatics to account for rainfall space–time variability in a data-sparse region

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Abstract Rainfall is a major meteorological factor in water assessment in semi-arid basins. For mesoscale basins, the rainfall space–time variability is high and has a major influence on hydrological dynamics. A geomorphology-based rainfall–runoff approach is developed to account for rainfall space–time variability in a robust and flexible manner, according to changing available raingauging configurations. The approach is based on a two-step hydroinformatics protocol, firstly to analyse geomorphometry, and secondly to account for and benefit from available rainfall data.

Key words rainfall–runoff; geomorphology-based transfer function; rainfall space–time variability; isochrone