عنوان مقاله:

Enhancing Hydrological Resilience: A Robust Approach for Time ofConcentration Estimation in Changing Environments

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خلاصه مقاله:

Accurate estimation of the time of concentration is imperative for effective hydrological analyses,particularly in regions grappling with water scarcity and the challenges of climate change. This studyinvestigates empirical relationships to determine the time of concentration, employing a watershedsubdivision into three distinctive sub-basins. Individual time of concentration values were calculated,considering unique physiographic attributes such as slope, length of the main river, and the slope of themain river. The Giandotti method emerged as the most reliable among the tested empirical approaches,demonstrating superior performance, especially in challenging environmental conditions. The findingsunderscore the critical importance of precise time of concentration estimates for addressing water-relatedchallenges in environments susceptible to climate change. Accurate hydrological modeling becomes crucialfor effective water management and sustainable development, particularly in regions facing environmentaluncertainties. The Giandotti method's superior performance holds promise for improved hydrologicalanalyses, providing valuable insights for researchers and practitioners working in climatically vulnerableareas.

کلمات کلیدی:

Time of Concentration, Hydrological Modeling, Climate Change Resilience, WatershedSubdivision

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