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Hydrological Variability and its Response to Climate Change in Turpan basin

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The Turpan basin is one of the most arid and water insecure regions in China. The mountain snowmelt is the primary source of water. To assess the impact of climate change on stream flow, this study examined the long-term trends and change points of hydro-meteorological variables and explored the possible correlation between them at annual and seasonal scales. A set of non-parametric statistical tests including Mann-Kendall, Kendall's tau, Sen's slope estimator, and Pettitt test was applied, and change point of the hydro-meteorological variables. This study provided valuable information in understanding the changing properties of the stream flow in the basin and insights for a better integrated water resources management planning.