

## **Precipitation variations on different slopes of Tien Shan**

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**Abstract** Based on monthly and annual precipitation of the southern and northern slopes of the Tianger Range in the Tien Shan Mountains of China, the spatial-temporal variations of precipitation and their trends were analysed. The analysed precipitation series from the 1950s to 2002 was collected from nine meteorological and hydrological stations (i.e. hydro-meteorological stations), which scatter over the south and north slopes of the Tianger Range in Tien Shan. The statistical analysis shows an increasing trend of precipitation at the north and south slopes of the Tianger Range. The variable coefficient of precipitation is larger at the southern slope, particularly in winter and spring compared with summer and autumn. A decreasing trend of precipitation was found at the Yingxiongqiao Station in the Urumqi River basin. There is a significant inverse correlation in April–May and June–August at the Daxigou Station at the headwater of the Urumqi River, with correlation coefficients of  $-0.475$  and  $-0.376$ , respectively.

**Key words** climate change; precipitation; Tien Shan

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