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Projected Changes of Extreme Events of Temperature and Precipitation in Central Asia CORDEX Region 8 by Using RegCM4.3.5

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In this study, projected future changes in daily extreme events of temperature and precipitation for the period 2070-2100 over the Central Asia CORDEX Region 8 with respect to present climate (from 1970 to 2000) were simulated based on the RCP4.5 and RCP8.5 emission scenarios. Regional Climate Model (RegCM4.3.5) of the International Centre for Theoretical Physics (ICTP) was used as a regional model for projections. HadGEM2 global climate model of the Met Office Hadley Centre and MPI-ESM-MR global climate model of the Max Planck Institute for Meteorology were downscaled to 50 km for the region. Changes in indices of climate extremes were investigated on daily basis for temperature and precipitation. The frequency and intensity distributions of daily data were analysed. Increases in future change of the annual number of hot days and warm nights, and decreases in cool days and cold nights were projected. Therefore, resultant more frequent and severe extreme weather events very likely adversely affect the ecological and socio-economic systems of Central Asia.