Projections for Changes in Precipitation Extremes of the CORDEX-Central Asia Domain using RegCM4.3.5 under RCP8.5 Scenario

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Climate change has negative impacts on Central Asia's environment, socio-economic and ecological systems. The change in precipitation pattern of the region is a direct consequence of the climate change. In this study, the main purpose is to determine future spatial distributions of extreme precipitation events over the CORDEX-Central Asia domain. For this aim, we used Regional Climate Model (RegCM4.3.5) of the Abdus Salam International Centre for Theoretical Physics (ICTP) to downscale the outputs of MPI-ESM-MR global climate model of the Max Planck Institute for Meteorology to 50 km grid resolution for Central Asia. In order to make future projection over the region for the period of 2041-2070 with respect to baseline period of 1971-2000, the worst case emission pathway RCP8.5 is chosen. This research examines the climate indices of daily precipitation extremes (e.g. consecutive wet days index time period, wet days index per time period, extremely wet days w.r.t. 99th percentile of reference period, etc.) of Central Asia as described by the joint CCI/CLIVAR/JCOMM Expert Team (ET) on Climate Change Detection and Indices (ETCCDI). As a result, the spatial distribution maps showing the changes in precipitation over Central Asia are obtained in order to see the impact of climate change on Central Asia's precipitation extreme events.