

Change in extreme precipitation over China from 20th to 21st century

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Study on change of weather and climate extremes has become an important aspect in modern climate change research. Based on the daily precipitation data from 756 stations during the 20th century and the eight CMIP5 models simulations for the 21st century, the spatial and temporal characteristics of change of climate extremes over China were studied. The EDCDF method was used for bias-corrected the n the Coupled Model Intercomparison Project Phase 5 (CMIP 5) models simulation. Meanwhile, R1 (maximum one-day precipitation), R10 (maximum 10-day precipitation), R20 (maximum 20-day precipitation), Rx5 (maximum consecutive five-day precipitation), SDII (annual total precipitation divided by the number of wet days in the year), and PTOT (total wet-day precipitation) were used for analysis the characteristics of the extreme precipitation over China. The results show that the extreme intense precipitation events and the number of heavy rain days obviously increased in most parts of Southeast over China but decreased in the Northwest part of China. On the other hand, the intensity and frequency of heavy precipitation of Northwest is smaller than that of Southeast in China. Especially, the intensity and frequency of extreme precipitation of Southeast will increase during the 21st century.