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Analysis of drought events occurred in the 20th century based on extreme precipitation indices

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One of the main reasons, why drought events in a particular region occur, is long-term lack of precipitation. In the present analysis climate extreme indices have been defined and compared for the European continent and the Carpathian Basin for the second half of the twentieth century according to the guidelines suggested by the joint WMO-CCl/CLIVAR Working Group (formed at the end of the 1990s) on climate change detection. These extreme precipitation indices include the maximum number of consecutive dry days (CDD); the number of wet days using several threshold values, e.g., 20 mm (RR20), 10 mm (RR10), 5 mm (RR5), 1 mm (RR1), 0.1 mm (RR0.1), the upper quartile and the 95th percentile of the daily precipitation for the baseperiod 1961-90 (R75 and R95); the highest 1-day precipitation amount (Rx1); the greatest 5-day rainfall total (Rx5); the annual fraction due to extreme precipitation events (R95T); simple daily intensity index (SDII); etc. Our results suggest that regional intensity and frequency of extreme precipitation increased during the second half of the twentieth century, while the total precipitation decreased in the Carpathian Basin and the mean climate became drier.