



Changes in the distributional shape of daily precipitation over Europe

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The evolution of intense precipitation under global warming conditions is the subject of much study because of the associated consequences. An ongoing investigation assesses the changes in the shape of the frequency distribution of precipitation over Europe. More particularly, this investigation focusses on the relative contribution of the upper quantile mean (for high quantiles) to the seasonal precipitation total. To this end, daily precipitation series from more than 3000 stations collected within the European Climate Assessment and Dataset (ECA&D) project are analyzed as well as precipitation from the gridded dataset E-OBS. The relative contribution of the upper quantile mean of the wet-day amounts is studied in relation to the shape parameter of fitted distributions and the coefficient of variation. Trends in relative contributions and distributional parameters are identified by means of rank correlation. Such an approach facilitates the comparison of trend evidence and the detection of a change pattern accross the continent.