

Changes in precipitation frequency and intensity over Europe

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Within the scope of the European projects ECA&D and ENSEMBLES, the number of collected European stations with daily series available for climate research has recently increased to nearly 2000. These stations contain precipitation and temperature series, and sometimes records of air pressure and snow depth. Presently, this dataset offers the highest spatial density of European daily data available, enhancing the examination of changes in climate extremes.

In this presentation, we will focus on precipitation. In addition to traditional studies of changes in precipitation totals and extremes, shifts in the precipitation frequency and intensity for all classes of daily precipitation amounts will be analysed. This allows changes in precipitation to be attributed to variations in for example light, moderate and heavy events. Trends in frequency and intensity will be studied for large regions of Europe and for the four seasons. Since most of the precipitation series cover the time period 1960-2004, this was the period of analysis. Time series that were not complete by 80% were omitted, as well as inhomogeneous series. Although only little attention will be paid to the quality control and homogeneity testing of the series, the sensitivity of the results to inhomogeneous series will be shown.