

# **Daily precipitation observations over Emilia-Romagna: mean values and extremes**

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ARPA-SIM

Daily precipitation data from a dense observational network covering Emilia-Romagna, a region located in Northern Italy, are described and analysed. Data are available for all stations for the period 1951-2004 and for a selected group of stations located over the Reno hydrological basin for the period 1920-2004. Indices describing seasonal values of mean precipitation and frequency of extreme events are computed starting from daily data and are used to describe the temporal and spatial variability of precipitation over the region. Data referring to the period 1951-2004 are used to describe trends of relevant precipitation indices over the same period and the relation between the variability of these indices and the major Euro-Atlantic large-scale circulation indices. Data referring to the period 1920-2004 are used to analyse the decadal and long-term variability over the Reno basin and its relation with the river winter daily discharge. This analysis allows to identify the presence of a clear decadal periodicity in river discharge, strongly related with the decadal variability in both total precipitation and frequency of intense events.