



European climate variability and extremes over the past centuries

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Regional climate variations are often greater in amplitude than climate variations at the hemispheric scale, necessitating reconstruction of the past climate also on smaller temporal and spatial scales. Furthermore, it is important to know more about the dynamical and statistical behaviour of extreme events such as the 2003 heat wave in the context of the past, as they have a strong impact on the local to regional environment, society and economy. The warming of the twentieth century still needs to be placed in a larger temporal context. For all these reasons, high-resolved seasonal European past climate reconstructions are extended as far back in time as possible.

This contribution presents a preliminary analysis on how to consider systematic and random errors of both instrumental and proxy data in the twentieth century calibration period. The aim is to statistically describe past climate variability in a multiproxy reconstruction, i.e. to interconnect instrumental data with different climate signals from documentary evidence and natural archives (tree rings, speleotherms, ice cores, varves, etc.). Moreover, we present first working hypotheses on how to improve our reconstruction method and adapt it to a sparser spatial distribution of proxy data, which consists mainly of documentary evidence, combined with temporally high-resolved natural proxies over the past centuries.