



The role of variability in the change of temperature extremes

S. Parey
EDF, R&D, CHATOU, France (sylvie.parey@edf.fr)

The important role of the evolution of mean temperature in the changes of extremes has been recently documented in the literature. However, variability is also known to play a role in the occurrence of extremes, and this study aims at further investigating its relevance and explanatory role. Analyses have been conducted on temperature series as homogenous as possible for Europe and the United States, concerning absolute minima in winter and maxima in summer of daily minimum and maximum temperature. A test is applied to check whether the changes in extremes can be reasonably considered as due to the change in mean and variance of the central distribution. This hypothesis is globally true for all extremes, seasons and locations. However for winter temperature in Europe and summer daily minimum temperature in the United States, the role of interannual variability is important, together with the trends in mean and variance of the central field. This will be illustrated using one or two series taken as examples.