EMS Annual Meeting Abstracts,
Vol. 6, EMS2009-186, 2009
9th EMS / 9th ECAM

9th EMS Annual Meeting
9th European Conference on Applications of Meteorology
High resolution meteorology
- applications and services

Anomalies detected in Central European Temperature series reconstructed from documentary evidence and instrumental records for the last 500 years

P. Dobrovolný (1), R. Brázdil (1), A. Moberg (2), and R. Wilson (3)

(1) Department of Geography, Masaryk University, Brno, Czech Republic (dobro@sci.muni.cz), (2) Department of Physical Geography and Quaternary Geology, Stockholm University, Sweden, (3) School of Geography & Geosciences, University of St Andrews, Scotland, U.K.

Various types of documentary evidence from Germany, Switzerland and the Czech Republic have been used to create temperature indices for the period 1500–1854. Homogenized temperature series from 11 Central European stations covering the period 1760–2007 served as target values to reconstruct monthly, seasonal and annual temperatures in Central Europe since AD 1500. Spatial coherency of the compiled Central European Temperature (CEuT) series is presented. The CEuT series is further used to define extremely cold/warm months and seasons and the spatial and temporal distribution of such extremes are presented in context of existing knowledge of climate variability within Europe. The CEuT extremes are compared to corresponding documentary based chronologies from other European countries or regions as well as reconstructions from other proxies (e.g. tree rings).
The most pronounced cold/warm seasons are analyzed with respect to potential causes and also with respect to recent warming trends. We discuss the potential of documentary evidence to study weather and climate extremes and show that such data provide valuable information for studying past human response to climatic extremes.