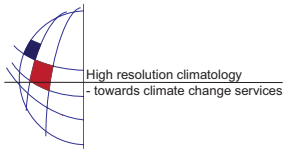
EMS Annual Meeting Abstracts
Vol. 7, EMS2010-148, 2010
10th EMS / 8th ECAC



Five centuries of Czech May–June precipitation and drought variability inferred from instrumental measurements, tree rings and documentary archives

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Precipitation is one of the most important meteorological elements for different natural processes as well as for human society. Its long term fluctuations in the Czech Lands (recent Czech Republic) can be studied using long instrumental series (Brno since January 1803, Prague-Klementinum since May 1804), a tree-ring chronology from southern Moravian fir Abies alba Mill. developed from living and historical trees (since A.D. 1376), and monthly precipitation indices derived from documentary evidence (from A.D. 1500). The analysis focuses on May–June precipitation and drought patterns represented by the Z-index for the past 500 years showing the highest response of the tree-ring chronology to the mentioned months in the calibration/verification period between 1803 and 1932. Tree-ring and documentary-based May–June Z-index reconstructions explaining ca 30–40% of its variability are compared with existing reconstructions of hydroclimatic patterns of the Central European region. Uncertainties of tree-ring and documentary datasets and corresponding reconstructions are discussed.