



Comprehensive reconstruction of Alpine summer temperatures for the last Millennium: a multi-proxy perspective

Mathias Trachsel (1), Martin Grosjean (1,2), Christian Kamenik (1), and the Millennium (Southern Sites) Team
(1) U Bern, Oeschger Centre & Institute of Geography, Bern, Switzerland , (2) (grosjean@giub.unibe.ch)

A comprehensive reconstruction of Alpine summer JJA temperatures for the past 1000 years will be presented. This Community effort is based on a set of new proxy data sets that emerged from a variety of archives (tree rings, varved lake sediments, ice cores, peat bogs and documentary data), a mixture of physiological, biotic and abiotic proxy series with heterogenous temporal resolution from a multitude of sites across the Alps.

Methodological emphasis is placed on the calibration of the individual proxies with long instrumental records, on the assessment of different calibration methods and their effects on the reconstructed amplitudes, frequency decomposition of the time series according to strengths and weaknesses of every individual proxy series by expert judgement and objective criteria (calibration statistics), and on the recombination of the skilful individual time series to a comprehensive climate reconstruction for the Alps.

This combined time-series is designed (i) to exhibit skill in the inter-annual, decadal and centennial frequency domains of variability, (ii) to evaluate amplitudes of variability and uncertainty, (iii) to serve as a robust millennial-long test bed of European climate for data-model comparison and investigation of forcings.