



## Placing Central European climate archives into a regional tephrochronological framework

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A number of Lateglacial and Early Holocene lacustrine records from Central and Southern Europe have been shown to contain both visible and micro-tephra deposits, which can be correlated to volcanic eruptions from multiple volcanic sources. Detailed environmental proxy records, which outline local and regional responses to the abrupt climatic changes of the Last Glacial to Interglacial transition (LGIT), are thus constrained within a regional tephrochronological framework. Amongst other volcanic markers, the Laacher See Tephra, erupted from the Eifel region of Germany at  $12,880 \pm 120$  varve yrs BP (Brauer et al., 1999), and the Vedde Ash, erupted from Iceland between 12,225 and 11,832 cal. yrs BP (Blockley et al., 2007), are found within some of the same lake cores (e.g., Blockley et al., 2008). These key horizons, which bracket the onset of the Younger Dryas Interstadial, provide precise and absolutely dated tie points around which a detailed picture of the timing of local and regional environmental transitions can be constructed. The presence of the Vedde Ash in the Swiss lake sites allows a direct linkage to the Greenland Ice Core chronology (Mortensen et al., 2005) and highlights the potential for key tephra deposits to be found and correlated across wide geographical areas.

This paper summarises the results of tephrochronological investigations into a suite of Central European records, which includes: Soppensee and Rotsee, in Central Switzerland; Rotmeer, in Southern Germany; and Lavarone, in Northern Italy. Chemical analysis of each tephra deposit has been carried out and the sources of the eruption events have been identified. Where appropriate, tephra ages have been transferred from high-precision annually-resolved chronologies and integrated with Bayesian-based radiocarbon age models for the sites. The environmental archives of the LGIT at each site are then compared on a common timescale, and further comparisons are made with other published European tephra-bearing records.

### References:

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