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Oral presentation:

Late Glacial Environmental Change at Lake Suigetsu, Central Japan: Preliminary Evidence from Bulk and Compound Specific Organic Isotope Geochemistry

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The sediments of Lake Suigetsu, central Japan, represent a globally significant archive of climate and environmental change due to the presence of annual laminae (varves), which span the past 50,000 years to the present day, enabling accurate and precise chronological control and the potential for annual scale analyses. Pollen data for the last glacial to interglacial transition (LGIT; ≈ 16 to 10 ka BP) suggest marked climate changes, which correspond with well documented North Atlantic events, yet which differ with respect to their specific nature and timing ([Nakagawa et al. 2003](#)). In addition, evidence for atmospheric dust deposition in the nearby Japan Sea indicates a strong linkage between Greenland temperature and the atmospheric circulation over Japan. In order to validate and develop these findings, we aim to exploit the evidence for changes in lake primary productivity and nutrient cycling, as an indirect response to climate change. Compound specific carbon and nitrogen isotope analysis of chlorophyll is used to infer nutrient source and uptake over the LGIT, whilst bulk organic matter accumulation rate and C and N isotopes are used to track large scale changes in the lake/catchment environment at a higher resolution for the whole record. Lake productivity is known to respond rapidly to external forcing and therefore provides independent evidence regarding the timing and direction of climate changes. Preliminary data will be presented and discussed in relation to existing data from Lake Suigetsu and the wider region.

Reference:

[Nakagawa T et al. \(2003\)](#) *Science* **299**, 688-691.