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A 16 ka lacustrine 18O record from High Himalaya reflecting the Indian Monsoon variability

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Establishing 18O records using organic matter of lake sediments is so far complicated due to analytical challenges. Based on the results obtained by a novel analytical method, the so-called compound-specific delta18O-analysis of hemicellulose monosaccharides (Zech, M. and Glaser, B., 2009. Rapid Communications in Mass Spectrometry 23, 3522-3532), we here present a first well-dated continuous late glacial lacustrine 18O record from High Himalayan lake sediments.
Our 18O record, which reflects a coupled hydrological and thermal control, reveals the late glacial Indian Summer Monsoon variability depicting the Bölling/Alleröd and the Younger Dryas. Thus, it closely resembles the 18O records of South Asian speleothems and Greenland ice cores. We hence conclude that our novel 18O method enables regional paleoclimate reconstructions and that our 18O record highlights the previously suggested teleconnections between the Indian and the East Asian Monsoon and Greenland temperatures.