



Stable carbon and oxygen isotope records from Lake Challa (Kenya/Tanzania), covering the last 25 kyr BP

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The recent decade brought unprecedented long and highly resolved records on tropical climate variability from East African lakes and the declining glaciers. However especially the interpretation of stable oxygen and carbon isotopes in terms of temperature and moisture variability is still very much under debate. Here we present a new, highly resolved isotope record from Lake Challa sediments which will-as part of a multi-proxy study-provide new insights into the changing dynamics of hydrological cycle for the East-African region.

This study is part of the EuroCLIMATE project CHALLACEA which investigates a 22 m long, continuous profile of mostly laminated sediments from Lake Challa, reaching back to the last Glacial (25 kyr BP).

Lake Challa is a 4.5 km² big and 92 m deep crater lake on the eastern slope of Mt. Kilimanjaro. It is a freshwater lake with a permanently stratified water column and a water budget controlled by subsurface in- and outflow.

Three parallel piston cores of 20 to 22 m length were recovered in 2005. Using magnetic susceptibility and visual correlation, they were used to construct a 21.65 m long, continuous composite profile which is up to now dated by 33 AMS ¹⁴C ages.

The present study focuses on highly resolved carbon isotope data done on organic material of the Lake Challa sediments. This record shows a rapid shift to lighter values between 16 and 15 kyr BP which probably reflects a change in the surrounding vegetation to a C3 dominated environment due to more humid conditions.

This record will be complemented by preliminary results on carbon and oxygen iso-

tope measurements on the carbonate fraction of the sediments. These data will help to lead to an integrated knowledge about changes in the hydrological system of the highly sensitive climatic region of the Mt. Kilimanjaro area.

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