Drilling platform of the DeepCHALLA project on Lake Challa (Kenya-Tanzania), with in the background the double peak of Mount Kilimanjaro peeping between morning clouds. *Photo credit: Dirk Verschuren*.

East African lake sediments reveal a unique archive of climate and landscape history over the past 250,000 years

International earth-science project coordinated by Ghent University recovers a 215-meter long sediment core from the bottom of a crater lake near Mount Kilimanjaro

Sediments on the bottom of Lake Challa, a 90-meter deep crater lake on the border of Kenya and Tanzania near Mt. Kilimanjaro, contain a uniquely long and continuous record of equatorial climate change and environmental history. Analysis of the last 1000 years of this archive coupled with regional climate simulations in the context of the BRAIN-be project '*Patterns and mechanisms of extreme weather in East Africa*' (PAMEXEA) confirm the exceptional scientific value of this archive, which provides great opportunities to study tropical climate variability at both short (inter-annual to decadal) and long (glacial-interglacial) time scales; and the influence of this climate variability on the region's freshwater resources, the functioning of terrestrial ecosystems, and the history of the East African landscape in which modern humans (our species, *Homo sapiens*) have evolved and lived ever since.

An international team of earth scientists coordinated by Prof. Dirk Verschuren from Ghent University and supported by the International Continental Scientific Drilling Program (ICDP) has now recovered a complete core profile of this sediment record down to 215 meter into the lake bottom. Principal objective of the DeepCHALLA project is to extract from these sediments high-quality data on climate change and landscape history over the past 250,000 years. This great time span, combined with the exquisite time resolution of finely laminated sediments, promises to greatly increase our understanding of tropical climate and ecosystem dynamics, and create a long-awaited equatorial counterpart to the high-latitude climate records extracted from the ice sheets of Greenland and Antarctica. Its results will in turn promote the development of better computer models for long-term prediction of global climate change, and improve prognoses of the future occurrence of extreme weather events such as droughts and floods, which impact heavily on East Africa's water resources and economic activity.

The drilling campaign of this project can be followed on Facebook (ICDPDeepCHALLA), Twitter (ICDP_DeepChalla) and the ICDP web page (http://challa.icdp-online.org).