Geophysical Research Abstracts
Vol. 12, EGU2010-10645, 2010
EGU General Assembly 2010

A high resolution continental record of palaeoclimate variability over past 11.5 kyr: A multi proxy study of Lonar impact crater lake core, India

Nathani Basavaiah (1), Sushma Prasad (2), Ambili Anoop (2), Norbert Nowaczyk (2), Birgit Plessen (2), Martin Wiesner (3), Achim Brauer (2), Ursula Röhl (4), Birgit Gaye (3), and Rudolf Namann (2)

(1) Indian Institute of Geomagnetism, Mumbai, India (bas@iigs.iigm.res.in), (2) GeoForschungsZentrum, Climate Variability and Landscape Evolution, Potsdam, Germany (sushma@gfz-potsdam.de), (3) Universität Hamburg, Institut für Biogeochemie und Meereschemie, Hamburg, Germany, (4) University of Bremen, MARUM, Bremen, Germany

The Lonar lake in Central India lies in an impact crater, within the zone of summer monsoon rainfall, and in the climatically sensitive region where the effects of tropical-midlatitude interactions are strongly seen. The 1.8 km diameter impact crater is a near-circular depression with an average depth of around 135 m from the rim crest to the lake level. A 10 m core composite was raised from the deeper waters of the Lonar lake in May-June 2008, together with 8 different cores at 5 locations within the lake. AMS radiocarbon dating indicates that the core encompasses the entire Holocene and is the first such continuous record of palaeoclimate changes from Central India. The core comprises largely of laminated lacustrine clay in the lower part, black clay, and gaylussite crystals in near the upper part. Within the laminated sediment (possibly varved), the darker laminae are composed of organic matter and the lighter laminae of clastics and endogenic calcite. The results of our investigations (geochemical, sedimentological, and magnetic susceptibility) that show evidence of multiple decadal to centennial scale climate variability will be presented.