Geophysical Research Abstracts, Vol. 7, 08331, 2005
SRef-ID: 1607-7962/gra/EGU05-A-08331

Lithology and stratigraphy of the ELSA cores / Eifel, Germany

K. Schaber and F. Sirocko

Institute for Geoscience, Johannes Gutenberg-Universität Mainz, Germany
(Schaber@uni-mainz.de)

15 long sediment cores from Eifel dry maar lakes have been drilled between 2001 and 2004 by the ELSA (***E**ifel **L**aminated **S**ediment **A**rchive*) project. They yielded sediments from MIS2 to MIS5 and 4 of them reach the last interglacial. Stratigraphy of the cores is based on ^{14}C dates and tuning of the colour logging curves to the Greenland ice core North GRIP (δ^{18}O). All 15 cores show repeatedly the same lithological features which have been synthesized into a first general succession of lithological units (Normalprofil). Dansgard-Oeschger events can be clearly identified in lithology and greyscale curves of all cores and have been used for core to core correlation. In addition, lithological marker layers have been used for detail correlation.

However, DOs 2 to 7 are not so clearly visible in lithology and greyscale curves than others. The extremely short DO13 and DO18 seem to be missing in many cores which could be caused by permafrost debris and/or instability of the maar lake slopes. The end of warm periods is often associated by slumps or debris flows. In contrast, the transitions from cold to warm periods are rather abrupt than smooth and without any sedimentological disturbances. Stadials are characterised by loess accumulation, i.e. alternating layers of silt, wind borne sand and clay, micro-turbidites and little organic carbon content. Interstadials are dominated by fine or even annually laminated sediments, sometimes silty but mainly clay, and high organic carbon content. Sedimentation patterns are similar in all cores during distinct time intervals. However, regional anomalies from the general pattern can be found in all cores and depend on the individual geographical, geological, limnological and environmental conditions of the dry maar.