Geophysical Research Abstracts, Vol. 9, 09825, 2007
SRef-ID: 1607-7962/gra/EGU2007-A-09825

High resolution Holocene climate variability preserved in laminated lake sediments from southern and northern Germany

U. Berner (1), H. Freund (2), M. Hiete (2), R. Pott (3), A. Kleinmann (3)

(1) Fed. Inst. Geosciences and Nat. Resources Hannover, (2) University Oldenburg, (3) University Braunschweig, (3) University Hannover

Holocene sediments retrieved from two lakes of southern and northern Germany (Lake Schleinsee, Lake Belau) have been investigated using different inorganic and organic parameters to describe environmental changes. The sediments show a distinct lamination related to seasonal variations. Our multiproxy approach provides evidence of cyclic environmental variations at both sites during the Holocene optimum (Atlantic) between 9220 - 5660 cal BP. These environmental changes show cycles that vary between 2 to 3 years as well as 7 to 14 years and also indicate a longer cycle of about 90 years all of which may be tentatively attributed to changes of solar activity. Carbon isotope ratios of organic matter in combination with further geochemical proxies are presented and have been used to evaluate the hydrological variability at both sites. These proxies suggest that different hydrological regimes have existed over more than 3500 years in the two areas of investigation. Palynological indicators suggest that humans had settled in the vicinity of the South German lake. However, their presumed activities had no major influence on the sedimentary history of Lake Schleinsee.