



## **Optically Stimulated Luminescence Dating of the Weichselian Ice Advances in North-Eastern Germany**

**C. Lüthgens** (1), M. Böse (1), M. Krbetschek (2)

(1) Freie Universität Berlin, Dept. of Earth Sciences, Physical Geography, Berlin, Germany (2) Sächsische Akademie der Wissenschaften, Dept. for Applied Physics, TU Bergakademie Freiberg, Freiberg, Germany

Due to the absence of recent geochronological data of the Weichselian ice advances in north-eastern Germany, throughout the last 130 years the classification of the Weichselian Pleniglacial has been based on morphostratigraphic interpretations. The ages of ice marginal positions which are commonly used for that region, are only estimates, a reliable absolute chronology is still absent. International research has shown that the dynamics of the margin of the Weichselian inland ice were highly variable in different regions. Therefore a transfer of data from adjacent countries like Denmark, Poland, the Baltic states, or even Schleswig-Holstein (Germany) is only possible to a very limited extent.

The aim of the project is to work out a chronology of the distinct Weichselian ice marginal positions in NE Germany, an area where the ice margins such as the Brandenburg ( $W_{1B}$ ), Frankfurt ( $W_{1F}$ ) and Pomeranian Stages ( $W_2$ ) are located well apart from each other. Based on radiocarbon datings ( $^{14}\text{C}$ ) the time frame for the formation of these positions ranges from 24 ka BP to 14 ka BP with the LGM at about 20 ka BP (represented by the  $W_{1B}$  Stage). In addition this project intends to contribute to the much-discussed issue of a Mid-Weichselian ice advance in NE Germany.

Outcrops have been chosen on a profile line from the Baruther Urstromtal (ice marginal valley about 50km south of Berlin) to the island of Rügen (Baltic Sea). Samples have been taken from fluvio-glacial sands which have a clear connection to one of the distinct ice margins. Samples from cliff-profiles are taken only from

stratigraphically unambiguous positions. To achieve the geochronological aim of the project Optically Stimulated Luminescence (OSL) dating techniques, primarily based on the single aliquot regeneration dose protocol (SAR) for the dating of quartz, have been applied.

First results of these OSL datings do not show the expected chronology. The young morainic area of north-eastern Germany rather appears to be a patchwork of landforms of different (unexpected) ages.