



The post-LGM deglaciation in Central and Southeast Switzerland: New insights from surface exposure dating

Max Boxleitner (1), Max Maisch (1), Dagmar Brandova (1), Markus Egli (1), Susan Ivy Ochs (2), and Marcus Christl (2)

(1) Department of Geography, University of Zurich, Zurich, Switzerland (max.boxleitner@geo.uzh.ch), (2) Laboratory of Ion Beam Physics, ETH Zurich, Zurich, Switzerland

The deglaciation of the Alps after the Last Glacial Maximum was not a linear process. Moraines as traces of glacier re-advances show that the climate within the general Late-Pleistocene-warming is characterized by repeated cold intervals. While moraine series resulting from these cold spells have been already described for many Alpine valleys at the beginning of the 20th century, absolute chronologies of the Lateglacial climate and glacier development are still fragmentary.

The advent of surface exposure dating as a new absolute dating method some 30 years ago made it possible to directly target the deposition-age of moraines. But still many questions regarding the local-to-regional glacier development and its coupling to the overall climate change remain open.

In the framework of my PhD-project we study key sites in Central (Uri) and Southeast (Engadine) Switzerland with the aim to develop an absolute post-LGM chronology.

More than 50 rock-samples from boulders of different moraine complexes from both regions have been analyzed using ^{10}Be -surface-exposure-dating.

Our results show that especially the Younger Dryas plays not unexpected an important role as a very pronounced cold interval.

With our results we will refine the understanding of the glacier development in the Swiss Alps during the Lateglacial and the Holocene and improve estimates of equilibrium lines of altitude (ELA) of glaciers from the LGM to the beginning of the Holocene.