

## **Stratigraphy and Geomorphology in a Pleistocene Endmoraine Setting of the Alpine Foreland**

Reinhard Starnberger<sup>1</sup>, Joachim Götz<sup>2</sup>, Bernhard Salcher<sup>2</sup>

<sup>1</sup> University of Innsbruck, Institute for Geology, reinhard.starnberger@uibk.ac.at, University of Salzburg, Dept. of Geography and Geology, joachim.goetz@sbg.ac.at, bernhard.salcher@sbg.ac.at

The Alpine Foreland was repeatedly under the influence of large Piedmont glaciers during Quaternary high-glacial periods. Today, glacial and glacier-associated morphologies are still well preserved in some alpine foreland regions such as the area of the former Salzach Piedmont glacier north of the city of Salzburg (Austria). The geomorphological footprints of at least four glacial cycles are particularly well preserved here due to topographic characteristics and minor human disturbance. The region thus provides a unique opportunity to study glacial and glaciofluvial sediment/landform associations developed during several glacial-interglacial cycles. In order to reconstruct typical processes and environments associated with an alpine foreland lobus around peak glacial conditions, we present data from a local setting where deposits from the last (“Würm”, MIS2) as well as from the penultimate (“Riß”, MIS6) glacial maximum are closely interconnected. Investigations of the transition zone between the end moraine system and the glaciofluvial outwash plain allow statements on the internal built-up and the subsequent degradation of the ice associated with glaciofluvial reorganisation during deglaciation. We used outcrop information, drillcore logs, near-surface geophysics and optically stimulated luminescence dating of selected sand-sized samples for our investigations. The geometry and lateral extension of remnants of a thick interglacial paleosol were investigated using core log information and terrestrial laserscan data. Additional high resolution airborne laserscan data facilitated the topographic and morphologic interpretation of the wider area.

Our first results lead to the identification of two main LGM-depositional systems: (i) sheet flow dominated landforms broadly attached to the end moraine system, and (ii) braided river deposits from meltwater streams rooted in some distinct meltwater outlets. The period of active deposition seems to have been relatively short. With the onset of deglaciation and ice-meltdown back into the tongue basin partial degradation of deposits and the formation of multi-level terraces along the meltwater pathways began. Where LGM ice sheet flow dominated, its sediments overly MIS6-deposits almost without any unconformities, with a well preserved, thick and laterally extensive last interglacial palaeosol. We present the first absolute ages from sediments related to the LGM and penultimate peak glaciations of the German and Austrian Alpine Foreland.