

Kettler, Christoph¹; Reitner, Jürgen¹; Le Heron, Daniel²

Unravelling the maximum extent of Middle Pleistocene Glaciation in the Ybbstal Alps, Austria

¹*GeoSphere Austria, Department of Geological Mapping, Austria;*

²*University of Vienna, Department of Geology, Austria;*

christoph.kettler@geosphere.at

Unlike deposits from the LGM in Austria (Würm Pleniglacial; MIS 2) the sedimentary record from the Middle Pleistocene glaciations like Riß Glaciation (MIS 6) and older are usually fragmentary, concealed and significantly overprinted by post-depositional processes (e.g. erosion, weathering) and by the Late Pleistocene landscape evolution. This specifically applies to deposits associated with terminal positions of the ice tongues.

Contrary to parts in Western Austria, where extent, terminal positions and size compared to the LGM extent from the Mindel- (MIS 12) and Riß glaciations are well constrained, our study area shows gaps in this regard.

The Ybbstal Alps however, with peaks of 1800 m and valleys of around 500 m in elevation, shows an unique sedimentological archive which is preserved in a way that allows the reconstruction of glacier dynamics at the terminal positions of the Enns and Ybbs glaciers. Our reconstructions are based on sedimentological data and mapping results of several gravel pits and additional sediments from valley flanks. Deposits generally show at least four major facies assemblages, starting with fluvial to distal glaciofluvial deposits (1) from the phase before the Riß climax. Followed by glacial diamictons (2) which are overlain by rhythmites (3) that are associated with a glaciolacustrine environment. Finally, the successions generally end with several metres of deltaic conglomerates (4) indicating a rapid and quick aggradation due to high sediment influx associated with glacial retreat. The record from the pre-Riß includes glaciogenic and deltaic sediments that point to a much larger glaciation. Our preliminary results indicate a much larger glaciation during the Middle Pleistocene in the Eastern Alps than previously thought.

Session: *Pangeo workshop: Glacial erosion and deposition*

Keywords: *Mapping, Quaternary Glaciation, Glacial Sedimentology*