



Late-Glacial and Holocene-historical glaciated areas in the Turtmanntal, Valais, Suisse.

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This poster presents the reconstruction and relative dating of Late-Glacial paleo glaciers as well as the quantification of area loss since the end of the Little Ice Age around 1850 A.D.

Within the Turtmanntal, an S - N striking tributary of the Rhone valley, there is a dense occurrence of periglacial and glacial landforms. Amongst up to 80 rock glaciers in all stages of activity this inner alpine valley contains a great deal of morainic ridges with ages from the Late-glacial DAUN stage up to most recently deposited moraines.

This poster depicts the results of a detailed geomorphologic field mapping of morainic ridges and the remaining glaciated area in 2005 within the Turtmanntal for the reconstruction and relative dating of paleo glaciers and the quantification of area loss of the glaciers since the last high stand at around 1850 A.D.

Late-Glacial extends of glaciated areas such as DAUN, EGESEN (equivalent to the Younger Dryas event) and BOCKTEN are identified by the determination of equilibrium line altitude depressions using the Accumulation Area Ratio and Balance Ratio methods based on a

HRSC – A DTM with 1 metre resolution. The computational quantification of area loss since 1850 is also based on this DTM, as well as on the comparison of field data with aerial photographs, a historical map and glacier polygons built by MAISCH et al (2000) representing the extend of the year 1850.

We present a geomorphic map of morainic ridges and rock glaciers as convergent landforms together with the modelled extend of former glaciers within the study area.

Based on these analyses the glacial history of the Turtmantal is revealed at least for the Late-Glacial timescale and since 1850 to now. In combination with the 1 metre DTM the widely accepted AAR and BR methods for estimating former equilibrium line altitudes can be used in a more rapid fashion than in the past. As well the measurement of former and recent glaciated areas can be done more rapidly. The use of high resolution DTMs for these kind of glacier reconstruction is of course not restricted to any latitude but the ratios of glacier parameter are not everywhere the same.