



Late Holocene fluvial sediment deposition record on alpine alluvial fan in Interlaken, Switzerland

L. Roten (1), H. Veit (1), L. Schulte (2), R. Julià (2) and R. Zech (1)

(1) Institute of Geography, University of Bern, Switzerland, (2) Department of Physical and Regional Geography, University of Barcelona, Spain, (roten@giub.unibe.ch / Fax: +41 31 631 8511 / Phone: +41 31 631 8890)

Alluvial fans and plains contain valuable information about Holocene fluvial dynamics in response to climate variability. However, only few studies of alluvial fans exist in the Alps so far.

Here we present results of geomorphological, sedimentological and geochemical analysis from the alluvial plain near Interlaken in the Swiss Alps. That plain was created between Lake Brienz and Lake Thun due to deposition of sediments provided by the

Rivers Lütschine and Lombach. The Late Holocene deposition history is recorded in the sediments. We investigated ca. 100 m of outcrop and 4 cores down to 4 m depth. Despite the different catchment characteristics of Lütschine and Lombach, the typical sequence of horizons is as follows: The upper 50 cm are brown, loamy soils, followed by grey loam and then a gradual change to organic-rich silts extending down to a depth of over 220 cm. Three organic-rich paleosols occur at 120, 140 and 165 cm. Additionally, a 20 cm thick peat layer from 170-190 cm is dated to ca. 2300 yr cal BP. This coincides with the Roman Climate Optimum. A well sorted layer of fine sand represents a flooding event during that time (180 cm). In one of the profiles, a 3200 yr cal BP old peat layer can be found at the very bottom, just above the coarse fluvial pebbles.

In summary, we show that the sediments of the alluvial plain near Interlaken document the landscape and climate history, although coarser fan deposits and river channels

contribute to an overall complex geomorphological and sedimentological pattern.