

RECENT FAULTS IN THE EASTERN SWISS ALPS

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The present tectonic activity of the Alps is expressed by recent (post-glacial) faulting, seismic activity and recent uplift. The study area in eastern Switzerland is a tectonically active region with relatively high seismic activity and high uplift rates (1.5 mm/a). Neotectonic studies in the Swiss Alps are rendered difficult by the dense vegetation cover. The soil hinders direct observation of faults and possibly acts like a rubber carpet masking displacements within the underlying bedrock. Recent faults have been mapped using aerial photos. This data set was then completed by studying the lineaments on SPOT scenes in combination with a high resolution (25m) digital elevation model. In the field, many faults could only be verified as small offsets of a few tens of centimetres or metres or as slight differences in the micromorphology. The micromorphological features include aligned sink-holes, variations in slope angles, incisions within otherwise flat surfaces, mountain ridges or slight irregularities of the soil surface. To prove that these micromorphological features are really faults, some examples have been studied with ground penetrating radar, and will be looked at through trenching and gas anomalies in profiles perpendicular to the faults. Offsets in an active scree and in post-glacial rock-falls show that some of the faults are recent. The fault map shows two prominent fault systems, a more or less north-south striking system and an east west striking one. These lineaments crosscut Alpine structures and the regional and local drainage pattern.