

## **Small scale karst features (tube karren) as evidence of a latest Quaternary fossil landslide**

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At least since 1933 numerous small dissolutional holes in the ceilings of overhangs and small caves have been known from a restricted area in the Northern Calcareous Alps in Lower Austria but not investigated yet. These tube-shaped structures are a few centimetres in diameter, more or less vertical, taper upwards, are closed at the top and penetrate some tens of centimetres into the Middle Triassic limestone. Very similar features were described by Simms (2002) from the shores of three lakes in western Ireland and termed Röhrenkarren or tube karren. According to his model they formed by condensation corrosion within air pockets trapped by seasonal floods. The features investigated in the present study occur on both sides of a valley in the north eastern part of the Northern Calcareous Alps south of the city Sankt Pölten. Presently there is no lake and so far no paleo lake is known from this area. Based on airborne laser scanning data and field observations in a narrow section of the valley downstream of the tube karren sites, a previously unknown potential fossil landslide was discovered. The clayey silty sediments upstream of the landslide are interpreted as palaeo-lake sediments. This interpretation is supported by the existence of abundant dragonfly eggs within these deposits. The same fine-grained sediments are partly also found inside the tube karren. These observations are interpreted that a landslide-dammed palaeo-lake formed due to the mass movement that blocked the river and the tube karren were formed by seasonal fluctuations of the lake level. Geochronological dating of calcite crusts covering the karren and of the organic material of the dragonfly eggs are on the way. As the karren features look quite fresh and unweathered and from the diffuse shape of the landslide a late Quaternary age is estimated.

### References

Simms, M.J. 2002. The origin of enigmatic, tubular, lake-shore karren: a mechanism for rapid dissolution of limestone in carbonate-saturated waters. *Physical Geography*, 23(1), 1-20.