



## **Hummocky Karren – a new type of karren**

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Karren are small-scale dissolutional features of rock surfaces. A great variety of karren forms has been described and several attempts exist to classify karren according to the presence or absence of soil cover, genetical processes, size, and topography, to mention just some.

During karst morphological mapping an apparently so-far un-described karren form was found. The site is located in a glacial cirque called Oberer Ring at 1650 m a.s.l. which is slightly above the present timberline. It is situated on the northern side of the Hochschwab karst massif (Styria, Austria, Northern Calcareous Alps). The karren described below cover only few spots within some 1000 m<sup>2</sup> of bare rock surfaces. The bedrock lithology is middle Triassic limestone of the Wetterstein Formation in lagoonal facies. The karren consist of an irregular polygonal assemblage of small hummocks, each having a diameter of approximately 6 cm ( $\pm 2$  cm) and a height of around 1 cm. Longitudinal sections are gently sinuous. The hummocks are more or less area wide with small depressions in between and the arrangement is random. Small joints and fractures, that clearly superimpose a mm-scale microstructure on the features, do not govern the arrangement of the hummocks. The general dip of the surfaces is 0 to 25° and the extend of the arrays is only some square meters. The occurrences are delimited by thin soil cover with grassy vegetation. The karst features continue below that vegetation cover. Therefore, it is clear that the karren have formed subcutaneously. Corroded fissures where water could infiltrate into the epikarst are absent.

As there exist no descriptions of comparable features in literature, the name “hummocky karren” is suggested for that type of karren landform. The mechanism governing the irregular array and, in general, the genesis of the hummocks is not yet clear

and topic of further research. Soil compaction similar to mud cracks or accumulation of root balls are a possible explanations. To perform exact measurements the development of a small-scale DEM is planned by means of a laser scan or photogrammetric methods.