

## **Abstract**

Features typical for karst, such as fast groundwater flow and existence of open conduits were observed in various parts of Bohemian Cretaceous Basin (BCB). So far, vertical and areal extent of karst rocks is not known. In case of concerning conduits in quartz sandstones the observation of their evolution in profiles perpendicular to flow is missing. The thesis deals with above mentioned issues. Concerning potential to karstification it is limited to Jizera facial area of BCB. For this purpose, leaching of samples in hydrochloric acid were carried out. The hydrochloric acid was used as an accelerated simulation of natural processes of dissolution of rock by acidic solutions. The reaction of samples on leaching in acid, disintegration and content of the  $\text{CaCO}_3$  component were evaluated.  $\text{CaCO}_3$  content was determined also by calcimetry. Rocks which disintegrated can be a suitable for the evolution of karst conduits. According to the lithostratigraphic sections, the examined profiles belong to the TUR5 and TUR6 units – thus these units contain rocks suitable for the evolution of karst conduits. In Předměřice site about 23 % of samples disintegrated, in Kosmonosy site 8 % and in Turnov site 36 % disintegrated. Thus about 1/10 to 1/3 of tested profiles is prone to karstification and evolution of karst conduits. The possibility of rock karstification is not defined just by the carbonate content, but it is also affected by the particle size; in finer rocks higher  $\text{CaCO}_3$  content is necessary for rock disintegration. Conduits in quartz sandstones were created by artificial erosion on fracture systems that divides the sandstone body into several different blocks in Strelec quarry. The evolution of conduits is a combination of two erosion mechanisms – while the less thick blocks are eroded mainly by rapid water flow, thicker blocks are eroded by tension failures (gravity driven wasting).