



## **Expressway in Breccia and Flysch below Mount Nanos in the Vipava Valley (Slovenia)**

Martin Knez and Tadej Slabe

Karst Research Institute, Scientific Research Center of Slovene Academy of Sciences and Arts, Postojna, Slovenia

The surface of the slopes on the southwestern part of Mount Nanos was formed by the mass movement and mechanical weathering of rock. Water that flowed above the flysch has also dissected the slopes. More or less vertical fissures developed in breccia that indicate tensions in the slopes. During expressway construction when the right of way cut deeply into the slope, the contact between scree material and breccia and the flysch bedrock showed an extremely fragile balance. After abundant precipitation numerous smaller streams appeared along the contact between flysch and breccias, revealed by the cuts.

Characteristic but for Slovenia relatively rare karst phenomena were discovered for this type of karst in breccia that lie on a sloping foundation of impermeable flysch. We distinguished characteristic types of caves and initial stages in the development of sinkholes. The largest and most frequent are caves that developed in breccia above the contact with flysch, smaller and most often filled with fine-grained sediment are caves that occur in the middle of breccia, and of special origin are fissure caves across the slopes. Traces of continuous vertical percolation of water are less distinct. Caves also form in the flysch.