Jaskinia Miecharska cave (Beskid Śląski Mts., Polish Outer Carpathians): case study of a crevice-type cave developed on a sliding surface

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Abstract

Pseudokarst, crevice-type caves are extensional cracks usually connected with the phenomenon of dilation (dilatation) and genetically related to preparation of rock massifs to gravitational movements. Jaskinia Miecharska cave in the Beskid Śląski Mts. represents a specific type of crevice-type cave, since it was formed along the plane of the sliding surface of the landslide (on the boundary of the rock basement and landslide body), during the main gravitational movement. It is connected with the phenomenon of fissure dilatancy preceding destruction of the rock massif. It is ca 1800 m long and 55 m deep. Unique tectonic structures (gravitational folds) as well as water pools, waterfalls and speleothems occur in this cave. Analysis of the tectonic discontinuities within the cave suggests, that individual rock packets of the landslide body are characterised by different types of movements, e.g. translation, rotation and toppling. Therefore, the landslide represents the complex type of gravitational mass movements.

Key words

Mass movements, pseudokarst, crevice-type cave, dilatancy, Outer Carpathians, Poland.