

APPLICATION OF RADIOCARBON DATING IN CHRONOLOGY
OF MORPHOLOGICAL CHANGES IN KARSTIC CAVES

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Abstract

The slow process of cave formation from the initial fault in limestones up to large underground systems consisting of galleries, syphons and ball-room size caves can be dated by using radiocarbon method. Speleothems in form of stalactites and stalagmites are formed on bedrock, usually limestone or dolomite. The base of speleothems gives the indication of the end of tectonic changes, followed by speleothem formation, whereas different layers give information on the growth rate of the speleothem.

A large cave system was found in the Buško Blato region (Fig. 1) in Hercegovina during construction of the hydroelectric plant. Systematic investigation of underground was required to prevent loss of water in the accumulation. Radiocarbon dating of speleothems gave valuable information on the time-scale of tectonic changes which helped to prevent water drainage by injection of cement. The speleothems found in Buško Blato caves have a time span between 300 and 30,000 years. Some details of the layout and the corresponding ages are shown in Fig. 2.

Another investigated region was the Učka tunnel, W Croatia near Rijeka. A large system of caves was found during tunnel construction. Speleothem samples gave the radiocarbon age from 7 000 to 31 000 year. Another sample from the nearby Rječina spring gave the age $> 40 000$.

A systematic measurement of speleothems age in the Karstic regions would help to establish the geochronology of, as well as climatic changes in the Dinarides.