

Palaeoenvironmental information recorded in speleothems from North-Western Romania

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Caves commonly provide suitable sites for the accumulation of chemical, detrital and organic deposits, while in their environments the effects of sub-aerial weathering are much reduced, with enhanced chances of long term preservation of the deposits. Thus, cave deposits, such as speleothems, contain interesting palaeoenvironmental informations, closely related to their growth periods^{1,2}. The geographical position of Romania, south of the extension of the Pleistocene ice sheet, makes speleothem dating and stable isotope analyses interesting for palaeoenvironmental reconstitutions. Up to now, a few data are available for Romania and correlations with european or global climatic events are not well established for the last 150 ka³⁻⁵.

Our present work was focused on the geochemical study of a 34 cm stalagmite, located in a remote fossil passage of *VII Cave* (Bihor Mountains, NW Romania). Several distinct superposed growth levels have been sampled, each sample being 4 to 5 mm thick and weighing 1 gram approximately. Each of them consists of pure, white to yellowish-white calcite, suitable for U-Th dating by means of thermal ionisation mass spectrometry. Uranium contents as well as ²³⁴U/²³⁸U activity ratios (AR) are relatively similar along the growth axis. ²³⁰Th/²³²Th activity

ratios are generally greater than 200.

A calcite level from the lower part of the succession has given an age of 82.40 kyr (± 1.12 as 2σ), with ²³⁴U/²³⁸U and ²³⁰Th/²³⁴U activity ratios respectively equal to 1.006 (± 0.007), and 0.532 (± 0.006). The top level of the stalagmite has given an age around 5844 years (± 125), with ²³⁴U/²³⁸U and ²³⁰Th/²³⁴U AR of 0.948 (± 0.020) and 0.052 (± 0.002).

The results of thermal ionisation mass spectrometric U-Th dating, stable isotope analyses and ongoing measurements are presented, as well as palaeoenvironmental considerations.

References

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