

A MIS 5e high-altitude speleothem $\delta^{13}\text{C}$ - $\delta^{18}\text{O}$ record from the Romanian Carpathians

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We present here a speleothem $\delta^{13}\text{C}$ - $\delta^{18}\text{O}$ record from the Last Interglacial period that was retrieved from a small cave in the Făgăraș Mountains (2435 m asl). Current monitoring work shows that the average temperature inside the cave is $\sim 3^\circ\text{C}$. Stalagmite M3-R2/1 is only 5 cm long and its growth model was calculated using six U-Th ages. According to this, the stalagmite formed between 125.5 (± 1.3) and 123 (± 1.3) ka, during the warmest stage of the Last Interglacial.

The $\delta^{18}\text{O}$ values show low variability in the first ~ 400 years of growth, followed by a series of rapid fluctuations with relatively higher amplitude. Overall, the values of the whole record show no trend and have an average of -8.4‰ .

The $\delta^{13}\text{C}$ values, too, show low variability during the first ~ 400 years and a weak trend towards lighter values, from -7.8‰ to -8.4‰ . After 125 ka there is a tendency towards more pronounced short-term fluctuations of up to 2.2‰ on a trend towards heavier values (from -8.4‰ to -6.0‰). Between 123.4 and 123.0 ka, one can identify three well-defined centennial-scale cycles with a period of ~ 150 years.

Drip water $\delta^{18}\text{O}$ seems to indicate that the stalagmite oxygen values are reflecting infiltration characteristics of the warm season, allowing us to obtain information about its length during the height of MIS 5e.