



Paleoclimate record from Zidită Cave (Romania) using guano-derived $\delta^{13}\text{C}$ isotopic data

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In this study, we measured the carbon isotopic composition of a core taken from a bat guano deposit in Zidită Cave (Metaliferi Mountains, Romania). The cave develops in Late Jurassic limestones, has a total length of 547 m, and its entrance was fortified during the XIV – XVIII centuries. The cave is a fossil maze with a filling represented by limestone blocks, clay sediments, and scarce calcite speleothems. The guano accumulation, 1.5 m thick, is located in a small room towards the end of the cave, under a *Rhinolophus euryale* roost site. The core was recovered with a Russian peat corer. ^{14}C dating performed on the guano indicates a continuous deposition since ca. 500 years BP, but however, the upper first meter of the core has a modern age and high radiocarbon activity acquired from atmospheric radiocarbon bomb pulse. The core was sampled at $2\text{ cm} \pm 2\text{ mm}$ intervals for $\delta^{13}\text{C}$ analyses (76 samples) and at 5 cm for pollen. The investigations were carried out using a Picarro G2121-i $\delta^{13}\text{C}$ analyzer (Combustion Module coupled with a Cavity Ring Down Spectroscopy technique) at the Stable Isotope Laboratory of the Department of Geology, Babeș-Bolyai University (Cluj-Napoca, Romania). The result shows that guano $\delta^{13}\text{C}$ range from -24.07 to -27.61 ‰. The carbon isotopic profile indicates two major wet periods and 2 to 3 shorter periods characterized by drier climate.