

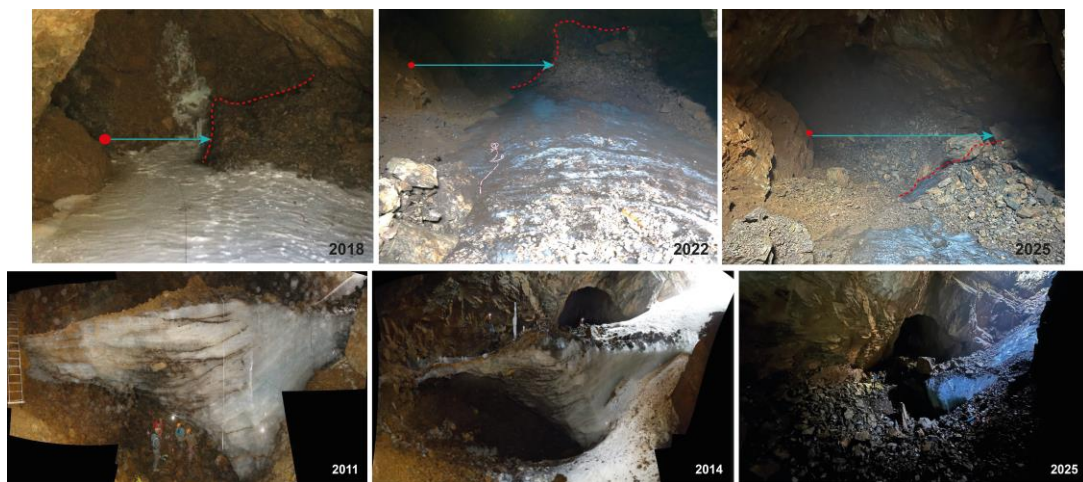
Dear Editor,

Thank you very much for forwarding the review of the new version of the manuscript. We appreciate the feedback and understand the reviewer's concern regarding the section of the unprecedented nature of the current ice melt.

Nonetheless, we maintain that the combination of stratigraphic evidence—characterized by the absence of large-scale angular unconformities and a consistent stratigraphy between the two separate visits—alongside with a consistent radiocarbon chronology and additional regional paleoclimate records, provides a robust basis to propose that the present ice retreat is likely the most significant since the formation of the deposit approximately 6100 cal yr BP. Although our data support the absence of an equivalent melting in the last 6100 yrs, this does not preclude anything to what may have happened in the early Holocene.

Furthermore, during our most recent field visit on September 6th, 2025, we observed that the ice deposit is now nearly gone (Fig 1). If a melting event of similar magnitude had occurred during the last 6100 years, it would have been impossible to sample the oldest ice located at the base, since those layers would have been substantially reduced or buried beneath blocks, as we observe today, preventing access to this ancient ice.

In addition, both local and global paleoclimate records indicate that current temperatures are the highest since, at least, the end of the Holocene Thermal Maximum, as we discuss in the manuscript (e.g. Pla and Catalan, 2005; Tarrats et al., 2018; Kaufman et al., 2020). For these reasons, we believe it would be inappropriate to remove what we consider one of the most scientifically relevant aspects of the manuscript—an interpretation that is well-supported by multiple lines of evidence. Without this section, the manuscript could be perceived as merely another case study of current ice loss without any implications for past climate conditions. The field evidence substantiates our conclusion that the current cave ice melt is unprecedented in the context of the past six millennia.



*Figure 1: Top: sequence of photos (2018, 2022, and 2025) taken from the upper part of the ice deposit, showing the dramatic retreat of the ice (green line). The dashed red line marks the edge of the ice scarp. Bottom: sequence of photos (2011, 2014, and 2025) showing the deposit dramatic melt-down of the ice deposit in these years.*

## References

Kaufman, D., McKay, N., Routson, C., Erb, M., Dätwyler, C., Sommer, P. S., Heiri, O., and Davis, B.: Holocene global mean surface temperature, a multi-method reconstruction approach, *Sci Data*, 7, 201, <https://doi.org/10.1038/s41597-020-0530-7>, 2020.

Pla, S. and Catalan, J.: Chrysophyte cysts from lake sediments reveal the submillennial winter/spring climate variability in the northwestern Mediterranean region throughout the Holocene, *Climate Dynamics*, 24, 263–278, <https://doi.org/10.1007/s00382-004-0482-1>, 2005.

Tarrats, P., Heiri, O., Valero-Garcés, B., Cañedo-Argüelles, M., Prat, N., Rieradevall, M., and González-Sampériz, P.: Chironomid-inferred Holocene temperature reconstruction in Basa de la Mora Lake (Central Pyrenees), *The Holocene*, 0959683618788662, <https://doi.org/10.1177/0959683618788662>, 2018.