Dear Authors, Dear Editor,

The manuscript explores tritium activities from a cave ice deposit of Mt. Olympos. Based on the $^3$H activities measured along a 2m high profile the Authors conclude that accumulated firn is younger than fifty years before 2017. The data can be interesting however some more details should be provided both about the studied deposit and about the analytical steps. I think the study needs major revision to reach publication.

General comments:

- As a basic requirement site photos and/or sketched stratigraphic profile should be mandatory to understand the sampling strategy and see the visual occurrence of the deposit and the sampling spots. In lack of such evidence a statement like "indistinguishable ice layers and thus it was impossible to make a direct estimation of the age of the ice in the column." is unsubstantiated.
- Methodological description needs some more details. E.g., Did you applied electrolytic enrichment? If yes please give some details, if no please mention that. What was the critical limit and/or detection limit?
- The caption of Fig 2 says that the annual mean tritium values of various Greek stations are used as reference. It is not a bad approach however I think it would be necessary to show the location of the considered stations in a map. (By the way, Fig 1 should be completed with an additional panel showing the location of the cave, so the nearest GNIP stations can be marked in this map.) However, I suggest considering the
prediction from the recently released study (Terzer-Wassmuth et al., 2022) as a reference or as a continuous interpolated product covering the 1950 to 2010 period (Jasechko&Taylor 2015) could be used.

- The authors explain why the studied ice samples could not represent accumulation from the so-called bomb-peak period. However, I think, it should be also explained in a sentence or in a brief section how they can exclude pre-1950 origin.

Although I list few typos among the specific comments below, I note that I cannot provide a detailed linguistic review since I’m not a native English speaker.

**specific comments:**

line 13: I think “indicating” would be a more suitable word here instead of “because”. In addition, the range of the measured \(^3\)H activities could be mentioned in the abstract.


line23: I think a supporting reference for this statement is needed.


lines31-32: I think the end of this sentence seems to be a fragment which can be deleted.
line 42-43: Why these info (e.g., total thickness of limestone sequence, dolomitic composition) is useful for this study?

I suggest replacing “gas” with “air”.

Please give numerical expression for “high average snowfall”.

Unclear sentence. Did you mean that ice layers (or any stratigraphic units) were indistinguishable in the sampled ice column?

I suggest replacing “0.9-11” with “0.9 to 11”.

I think $^{210}$Pb should be written instead of “radon”. In addition, please, capitalize Croatia in the same line.

Finally, I think a recent TC paper (https://doi.org/10.5194/tc-15-2383-2021) should be considered in an extended discussion since similar deposits were considered also in that study.

In an ultimate comment I’d like to refer to the other review. I completely agree with the comments and suggestions of Dr Tanguy Racine. A related suggestion is that beside 2011 paper about Mammuthöhle ice cave I suggest that a more recent one (DOI:10.1017/RDC.2018.96) could be a more useful reference for the revision.