

Interactive comment on “Possible expression of the 4.2 kyr event in Madagascar and the south-east African monsoon” by Nick Scroxton et al.

Anonymous Referee #1

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Climate of the Past Submission cp-2020-137, “Possible expression of the 4.2 kyr event in Madagascar and the southeast African monsoon” by Scroxton et al., presents evidence from stalagmite AK1 from Anjohikely cave, northwest Madagascar and makes inferences about climate from 5000 to 2000 years BP. The most profound inference is of a “period of drought that lasted continuously from \sim 4.32 and 3.83 ka BP”. The authors have highlighted the hiatus recorded in the stalagmite AK1 between 4.32 and 3.83 kyr BP, replicating a hiatus in another stalagmite from nearby Anjohibe, and therefore indicating a significant drought around the time of the 4.2 kyr event in the region. The fundamentals of this research project are entirely based on the hiatus recorded in the stalagmites.

The study draws on a stalagmite, AK-1, from Anjohikely cave, northwest Madagascar.

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I infer that the manuscript draws its scientific conclusions about the 4.2 ka event is from the hiatus recorded in the stalagmite AK-1, and comparisons with the previously published studies.

Suggestion 1. I think it should be, hence, provide the explicit petrographic studies of the hiatus. The layer bounding studies as discussed by Railsback et al., 2013 is important for this project because it will provide robust evidence demonstrating if the periods of non-deposition, either because of exceptionally wet or dry conditions.

Reference : Railsback, L.B., Akers, P.D., Wang, L., Holdridge, G.A., Voarintsoa, N., 2013. Layer-bounding surfaces in stalagmites as keys to better paleoclimatological histories and chronologies. *Int. J. Speleol.* 42, 167–180.

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