

# ***Interactive comment on “The SISAL database: a global resource to document oxygen and carbon isotope records from speleothems” by Kamolphat Atsawawaranunt et al.***

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We thank the reviewer for their comments.

Response to comments regarding accessibility:

1) In response to requests from the editor, we created a new version of the database and csv files of the individual tables to allow users to regenerate the database with their own software. This deposit also includes a collection of example codes (in R and Python) to provide users with model queries which can be used with the database. It was necessary to create a new DOI for this, which superseded the old DOI. This is the

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reason that the old DOI now gives only restricted access. We sent a new version of the paper to the editor, with the new DOI, and we apologise that this was not made clear to the reviewer.

Response to minor comments:

1) Lines 103-106:

We agree that there is a lapse rate effect in the  $\delta^{18}\text{O}$  signal. The elevation of the land surface is not necessarily recorded by people sampling speleothems. It can however be obtained from a DEM provided the location is known. We give the elevation of the cave in the database because this is the information that cannot be obtained from other sources, and it can be used to estimate both the additional impact on the  $\delta^{18}\text{O}$  signal and the thickness of bedrock above the cave (by subtraction from the DEM-obtained elevation) and therefore to estimate the water transit time into the cave. Cave elevation, or at least the elevation of the cave mouth, is a commonly recorded variable. We agree that the sentence in the text only emphasizes the lapse rate effect and we will expand this to read:

The elevation is that of the cave itself, not the elevation of the land surface above the cave. Since the elevation of the land surface can be obtained from other sources, we include the cave elevation to facilitate making additional lapse rate corrections for oxygen isotopes for high elevation sites (Bowen and Wilkinson, 2002). This also allows an estimation of the depth of the overburden above the speleothem site, and hence an estimate of the time taken for water to reach the cave.

2) Lines 120: We have rephrased this to;

"has been carried out periodically for at least one entire season (as opposed to one-off measurements of in-cave conditions when the speleothem was collected)"

3) Lines 152-155: We have rephrased this sentence to:

"Listing the range of data available from any speleothem will facilitate future updates of

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the database to include other types of measurements apart from stable isotopes (i.e. trace elements) and will help researchers in locating speleothems where multiple types of measurements have been done."

4) Lines 181-182: We agree that smaller samples taken from dirty layers can also increase detrital material and be problematic. We have removed this sentence entirely.

5) Lines 207: We will clarify that this is the  $^{230}\text{Th}/^{232}\text{Th}$  activity ratio in the revised MS to prevent confusion.

Response to typos: We thank the reviewer for pointing out these typos and will correct them in the revised ms.

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