

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

### **Anonymous Referee #2**

Received and published: 26 June 2018

This paper presents a database with a very large collection of speleothem oxygen and carbon isotope records. Its goal is to create transparency and enable scientists to assess the quality of the data, and place it into context of the specific cave and drip site characteristics. Especially, the details concerning the age-model are important. These aspects distinguish the SISAL database from databases from NOAA or Pangea. In addition, the speleothem oxygen isotope data will be readily available for comparison with isotope enabled climate models. It is an impressive effort that needs to be published, and in my opinion only with minor revisions.

I have only one concern, and that is the accessibility of the database. It might be that

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I misunderstood something, but I have tried the link to the SISAL database provided in the abstract (<http://dx.doi.org/10.17864/1947.139>) and came to the website of the University of Reading. I saw that access to the database is only provided to those who are a member of the University, and that scientists can fill in a data request. To facilitate researchers with fast access, the database should be accessible to all scientists. Is it necessary, and possible, to become a member of the University of Reading?

Minor comments:

Lines 103-106: Lapse rate is visible in  $\delta^{18}\text{O}$  in meteoric rainfall. The rain falls on the land surface above the cave, and then (ideally) is not subjected to further changes while flowing through the host rock towards the cave. So I do not understand why the elevation of the cave is preferred above the elevation of the land surface. Unless the authors refer to altitude dependent temperature changes and the related isotope fractionation between water and  $\text{CaCO}_3$ , but then this needs to be specified.

Line 120: “has been carried out for at least multiple measurements that cover one or multiple entire seasons.”

Lines 152-155: Please rewrite this sentence. providing a range of data that is available facilitates researchers with what exactly? I believe the authors mean: will facilitate researchers to undertake analyses..... "wishing to undertake" implies a description of the "type" of researchers but not what it facilitates.

Lines 181-182 “larger samples can also increase detrital material”: I don’t agree with this statement. Smaller samples taken from dirty layers can also increase detrital material. Please specify. It all depends on the skills of the person who drills the samples and on how clean the sample is.

Line 207: Is  $>300$  with respect to an atomic ratio or activity ratio? Please indicate to prevent confusion.

Typos:

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Line 57-58: “a useful addition”

Line 83: “, the quality of the data”

Line 88: “from publications.”

Line 109: “fracture flow increases as rocks age”

Line 288: “provided”

Line 304: “special” not “especially”

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Interactive comment on Earth Syst. Sci. Data Discuss., <https://doi.org/10.5194/essd-2018-17>, 2018.

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