

This manuscript presents a new data set of fluid inclusion stable isotopes in a speleothems from northeastern Libya. The speleothem grew intermittently from late MIS 4 through late MIS 3 with three major deposition phases (Phases I-III) which are reflecting with humid conditions in the now arid region. While Phases I and III are associated with high northern hemisphere insolation caused by high precession, Phase II humidity is probably caused by obliquity cycles. The stable isotopic compositions of the fluid inclusions and the d-excess parameter related to them suggest a change in the moisture sources associated with the different orbital forcing with Phases I and III having mixed moisture sources in the eastern and western Mediterranean, whereas Phase II mainly received western Mediterranean moisture.

I think that the paper addresses a relevant scientific topic within the scope of CP and it presents important new data for the northern African region with substantial conclusions. I think the scientific methods are valid and sufficiently described. The results do support the conclusions and the authors give proper credit to previous work. I think the title and Abstract are clear and concise and the overall presentation is well-structured. Language is fluent and precise. I don't think that major clarifications or restructuring of the manuscript will be needed. The number and quality of the references is appropriate and so is the Supplementary Material.

Furthermore the authors responded appropriately to previous comments on this manuscript and I only have few technical corrections which will be listed below.

Line 80: "...this primarily affected the northern Mediterranean margin only..." – I think either "primarily" or "only" should be cut here.

Line 213: "Fluid inclusions for Phases I and II..." Should be Phases I and III.

Line 324: "...and why during some periods in Susah Cave show strong correlation..." , delete "during".

Line 364-366: "At Sfax today, this influence causes a prominent bimodal behavior..., which eliminates a simple and quantitative rainfall amount control on precipitation, which can be observed at Tunis." Two relative clauses with which in one sentence, could probably be rephrased.

Line 373: :..., but this is too complicated by independent changes increased ..." delete "changes".

Line 413-414: "...but it not consistent with ..." should be "but is not consistent with"?

Comment on the Supplementary Material:

The word diagenetic occurs several times in the Supplementary text in quotation marks. If the authors do not believe that processes affecting the fluid inclusions could be diagenetic, then I think the word should be removed/replaced (e.g. with alteration). If the processes could be diagenetic, then the quotation marks are not needed.