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Climate of the Past Discussions

Interactive comment on "Holocene sea level and environmental change at the southern Cape – an 8.5 kyr multi-proxy paleoclimate record from lake Voëlvlei, South Africa" *by* Paul Strobel et al.

Anonymous Referee #3

Received and published: 6 April 2021

Dear Editor, I have now finished the assessment of the manuscript entitled "Holocene sea level and environmental change at the southern Cape – an 8.5âĂĽkyr multi-proxy paleoclimate record from lake Voëlvlei, South Africa", by Strobel et al.

First of all, I would like to remark that I accepted to review this MS only after being assured that the concerns of Reviewer 2 were cleared with the editorial team at Climate of the Past. I thank the journal staff for being vigilant on such practices, and I commend the Copernicus open review system for allowing such discussions to happen.

Abstract. In general, the abstract is clear. I am often in favor for more concise abstracts,

getting to the main conclusions of the study, but I understand this is probably a personal preference. If possible, I would try to shorten the abstract a bit, and make it slightly shorter and more to the point. Minor remarks: Line 17 - "the environmental evoution of..." maybe a part of sentence is missing here. Line 18/19 - Phrasing is odd. It seems that "sea level changes" are archives, which has no meaning. Rephrase and clarify. Line 20 - "it represents an ideal archive". This is referred to the lake, and a lake is not an archive per se, so I would suggest to rephrase.

Introduction. The introduction is generally clear, and presents the state of the art and objectives well. Minor remarks: Line 34 - "future climate projection are even worse". "worse" than what? Line 39 - currents, plural.

Site description. Site description is adequate, giving a good idea of the geographic and geological settings. Minor remarks. Line 86. In Figure 1 you have marked Mossel Bay but not Still Bay. Worth adding?

Material and methods. I am not an expoert on several methods used, but the methodologies closer to my expertise (radiocarbon, OSL, XRD, Grain size) are well described and sound. I would ask the editor to make sure another reviewe can comment on the validity of the other methods employed.

Results. The results are clearly presented and are supported by informative figures. There are some age inversions in the stratigraphy, but the authors present them fairly and give reasonable explanations for their occurrence, also within the discussion.

Discussion. Overall, the discussion is based on the results, and speculation is kept at a minimum. As a side note, my expertise is more focussed on the matters discussed in sections 5.1 and 5.2, but I could follow the discussion in section 5.3 and my opinion is that it is overall sound. One major remark is that I was expecting to see here some discussion of the sites mentioned as "comparison" in Figure 1, but only the GeoB core is described. What about the other records? You should link your text to the sites shown in Figure 1B. Minor remarks: Line 423. In Figure 6, Unit A2 goes to exactly 6ka,

while in the text it is stated that it ends at 6420. Clarify.

Conclusions. The conclusions are short and clear, and adhere to the results and discussions.

Data availability. A data availability statement is missing. I encourage the authors to consult the data availability guidelines of CP and make their data available in an open-access repository. https://www.climate-of-the-past.net/policies/data_policy.html I am also wondering if, given the concerns of Rev.2, it would be good practice to put in the data availability statement the permits / export numbers for the samples that were analysed. Depending on the authority giving the permits, this might also be mandatory.

Figures. Figure 1. Please indicate clearly in the caption that "VOV" is the record you present in this study. Also, are there names associated with the other records? If so, they need to be spelled out in the caption and discussed in the text.

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