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COMMENTS to Review #1

by Michael Sarnthein and Pieter M. Grootes (authors)

The format and discussion of this document better resembles a comment than a scientific manuscript, making this very difficult to understand / review. I can only guess that the authors intended for this text to be submitted as a comment instead of a stand-alone manuscript. It is therefore simplest to reject this submission and allow the authors to correct their mistake or ask them to submit a manuscript that at least partially follows the standard formatting of a scientific publication.

A brief listing of the problems with this document.

The title of this document suggests the reader will be provided with an expert review of the Plateau tuning technique for identifying the calendar age. However, the Introduction does little to introduce the reader to the relevant argument, instead directing the reader to first fully understand the discussions of several earlier publications. This is a missed opportunity.

Indeed, our text in part may have been misled by following too excessively the concept to keep the text as short as possible by referring to the comprehensive review of Plateau Tuning (PT) technique already given in our synthesis paper of December 2020. We see no problem now to insert a proper summary on PT into the Introduction of this manuscript.

The reviewer is correct in his guess that the manuscript in part is a comment in the ongoing discussion regarding the potential of Plateau Tuning. As such the title may be modified to "*¹⁴C plateau tuning – A tool for marine paleoclimate studies?*", which might be more appropriate as the paper presents new evidence for the applicability of PT as summarized in the abstract. For the sake of brevity, we largely refer to the extensive discussion of the arguments Pro and Contra PT of Sarnthein et al, 2020, and Bard&Heaton, 2021.

If the rebuttal to this comment is that the review was already published, then I see no reason why the text provided here should be a stand-alone manuscript. Submit it as a comment to the already peer-reviewed manuscripts.

Crucial is that transfer of the Suigetsu atmospheric ¹⁴C data to the new Bronk Ramsey et al. 2020-time scale provides a new, revised pattern of atmospheric ¹⁴C 'plateaus' and 'jumps'. The present manuscript, however, is centered on four distinct targets beyond a rebuttal of allegations, that are (1) to display the authenticity of the atmospheric ¹⁴C plateau pattern on the basis of a close match between results of a Bayesian spline of Suigetsu $\Delta^{14}\text{C}/\text{age}$ data (provided by Bard & Heaton, 2021, but similarity not mentioned) and those deduced by means of both visual inspection and 1st derivative method in PT, (2) to document the global significance of the Suigetsu atmospheric ¹⁴C record by its coherence with the tree ring record 10 to ~15 cal. ka, (3) to adjust the detailed cal.-age chronology to the age control recently published by Bronk Ramsey et al., a correction crucial for all global high-resolution age correlations of ocean sediment cores, and (4) to provide detailed arguments showing that sediment distortions by differential bioturbational mixing do not form any major origin of "fake" ¹⁴C plateaus.

