



COLLÈGE
DE FRANCE
— 1530 —

Chaire de l'évolution du climat et de l'océan

Aix-en-Provence, June 15th, 2021

Dear Editor, Dear André,

Please find enclosed our revised version of the paper “*On the tuning of plateaus in atmospheric and oceanic ¹⁴C records to derive calendar chronologies of deep-sea cores and records of ¹⁴C marine reservoir age changes*”.

In the previous phase of the review process, we provided detailed answers to the points raised in the RCs and CCs. When revising the manuscript, we took into account your recommendations:

The request by Paula Reimer (Referee #1) led us to perform and provide further statistical calculations to demonstrate the effects of the threshold value of the gradient (¹⁴C yr/cal yr), and of the kernel bandwidth used to detect and define the age plateaus. This led to the inclusion of an additional Figure 6 and additional text (lines 613-648, 697-746, 803-809, 819-836).

We followed the suggestion by the anonymous referee (Referee # 2) and added a final section entitled “conclusion and outlook” (lines 886-959).

The last paragraphs of this final section (lines 924-953) provide conditions and tests that are necessary to allow wiggle matching of ¹⁴C plateaus and other ¹⁴C structures in the data records. The last paragraph (lines 954-959) mentions the usefulness of new ocean modeling combined with wiggle matching.

In addition, additional sentences were included throughout the paper to discuss and clarify relevant points raised in the CCs.

In particular, the technique proposed by Weninger & Edinborough (2020) has been mentioned and briefly discussed (lines 597-603).

For the additions listed above, it was necessary to cite 20 new papers, which were added in the list of references, notably the papers by Arz et al. (1999), Ausin et al. (2021), Lamy et al. (2015), Siani et al. (2013) and Weninger & Edinborough (2020).

All these important changes are highlighted in yellow on the marked copy including brief comments about the link with specific RCs or CCs.

We hope that the changes we have carried out will qualify this manuscript for publication in *Climate of the Past*, and we thank you very much for your attention.

Edouard Bard & Tim Heaton