Clim. Past Discuss.,
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Climate of the Past Discussions

Interactive comment on "The penultimate deglaciation: protocol for PMIP4 transient numerical simulations between 140 and 127 ka" *by* Laurie Menviel et al.

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My comments concern section 5 (sea level) and Figure 7. First, an important edit would be to plot the 'maximum probability' Red Sea RSL record with its 68% +/or 95% probability intervals (all Red Sea RSL data are available online). As it is, the Red Sea RSL record is plotted in Fig.7 as raw datapoints with the authors' own smoothing. This is a far less accurate representation of the original work, and rather misleading as the datapoints are from a stack of different cores and this accounts for much of the scatter. By plotting the uncertainty intervals we would be able to see where there is larger uncertainty in the Red Sea RSL record (there is indeed a large bulge at ∼136-142 ka),

hence where there is room for movement in the chronology. Outside of this bulge, the Red Sea chronology is well constrained over TII thanks to good signal agreement between the Soreq, Mediterranean, and Red Sea records (used for tuning). The authors do not note this and instead assume that there is an issue with the chronology ("Such a mismatch is likely to be related to dating uncertainties associated with the current Red Sea RSL age scale"; pg 13 ln 5). Interestingly, if the probabilistic Red Sea RSL records were plotted, then it looks like the coral data would overlap within uncertainties, with the Tahiti data overlying the first rise in RSL rather than the fall; the start of the main TII rise would also overlap within uncertainties (see attached figure, Tahiti data in orange). In other words, the timing of MWP-2A is ambiguous - either chronology (ie, the original Red Sea or the coral-adjusted Red Sea) is justifiable. This is not acknowledged by the authors. This ambiguity then begs the question of why adjust the Red Sea chronology over the MWP-2A interval. . .? I don't yet see how it is important for the remainder of the manuscript. I fully support chronological improvements if they are substantial and/or well-justified.

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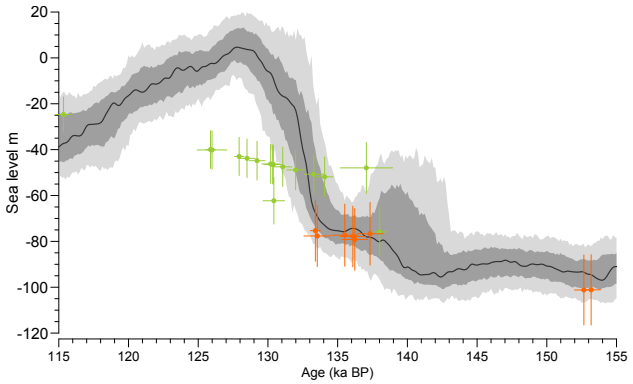

Fig. 1. Sea level over TII