

Reviewer 2: Anonymous Referee, 01 May 2025

COMMENT:

Typo on Fig. A2: Cheng et al. 2016

REPLY:

This will be corrected both in the figure and the caption

COMMENT:

The authors may consider moving Fig. A2 to section 2.2, since many of the millennial-scale climate interpretations hinge on the detailed wiggle matching to Cheng et al. 2016

REPLY:

Following the reviewers suggestion, we will move Fig. A2 to section 2.2

COMMENT:

Section 3.2 left me wondering how the globally averaged sea level reconstructions from Bintanja et al. compare to regional sea level reconstructions off the coast of Vietnam, New Guinea, etc. Do small differences in regional vs global sea level at, for example, the LGM yield significant differences in temperature corrections? If so, how can these differences be appropriately accounted for in the T_{corr} uncertainties deeper in time?

REPLY:

In Fig. A6 we compare the global sea level reconstruction of Bintanja et al. (2006) with that of Spratt&Lisiecki (2016). The two records show significant differences of up to 40 metres. In the supplementary Table S1 we provide T_{corr} calculated for both sea level reconstructions and the resulting temperature differences ΔT_{corr} are plotted in Fig. A6. For the investigated time interval ΔT_{corr} values range from +0.13 to -0.24 °C, and thus, are within 2SEM of the reconstructed T_{corr} values. Given this result of our sensitivity test, we can ascertain that small differences in regional vs. global sea level would not have a significant effect on T_{corr} .

COMMENT:

Although not my specialty, the term *Polar Amplification* is typically used to describe the enhanced polar temperature response relative to the tropics. This study presents data from the Western Pacific Warm Pool alone, which may not be representative of the broader tropical average. Clarifying this distinction will help avoid overgeneralization. The authors may also consider using the term *Antarctic Amplification* as opposed to polar.

REPLY:

We will specify more clearly what the term “polar amplification” refers to in this context and we will follow the reviewers suggestion to use either the term “Antarctic amplification” or add the term “Antarctic“ in parentheses, i.e., “polar (Antarctic) amplification.”