

To the Editor,

Thank you for your comments and close review of the manuscript. I failed to see your last report and apologise for not addressing those comments in the response to reviewers.

We have adjusted the manuscript text as below, but I wanted to take the opportunity to add further explanation here. As stated in our response to reviewers' comment, the lack of a NZESM pre-industrial run was the key reason for using HadISST as a reference. This decision was further validated as we dealt with numerous model and data sources with various means of reporting. Specifically – the PlioMIP dataset is a model ensemble mean, and the LIG proxy data was referenced to another source. However, in acknowledgment of that potential bias, we plotted the absolute temperatures in Fig 5 and 7 when comparing all data and from all data sources.

L. 122-126: This sentence is very convoluted and hard to understand. Please amend it.

Edited from: "The recent IPCC summary of ECS (Forster et al., 2021) does not include model-based estimates, but methods for mPWP paleoclimate ECS based on emergent constraints (Hargreaves and Annan, 2016; Renoult et al., 2020) utilising PlioMIP (Haywood et al., 2020) and proxy temperature and CO₂ reconstructions (Martinez-Boti et al., 2015; Sherwood et al., 2020), range from median values of 2.5–3.7°C."

To: "The recent IPCC summary of ECS ranges from median values of 2.5–3.7°C (Forster et al., 2021). This ECS summary does not include model-based estimates, but does include emergent constraints (Hargreaves and Annan, 2016; Renoult et al., 2020) utilising PlioMIP (Haywood et al., 2020) and proxy temperature and CO₂ reconstructions (Martinez-Boti et al., 2015; Sherwood et al., 2020)."

L. 196: Remove "as" in front of "a CMIP" *Removed*

L. 197: remove "at" in front of higher. *Removed*

L. 209-210: The last part of the sentence does not make much sense. *This is edited as following to also clarify the use of HadISST further and lack of an NZESM pre-industrial run.*

"Best practise of model assessment is to present anomalies with reference to pre-industrial runs from the same model. As a pre-industrial run is unavailable for the NZESM, we have used the single reference of HadISST for all model and proxy anomaly assessment. HadISST was selected as it is the most complete reanalysis product nearest to pre-industrial conditions."