

Dear Dr. Risebrobakken,

Thank you very much for accepting our manuscript for publication.

In response to your comment regarding lines 307-310, we have rephrased the text to avoid the implication that the ice sheet is a seasonal feature. We have also clarified our discussion on ice dynamics and the ice-albedo effect to align with the points raised in our response letter. Below is the revised version (lines 298-303):

“During the oNHG, despite the absence of large-scale ice sheets, the seasonal presence of thin (sea) ice in the cold season might have been significant (Clotten et al., 2018; Knies et al., 2014). Changes in thin (sea) ice coverage would not have significantly impacted overall ice volume and thus would not have been reflected by the benthic  $\delta^{18}\text{O}$  record, but their impact on the ice-albedo effect would have already been substantial. Furthermore, the reduction or disappearance of the thin (sea) ice during the warm season could explain why this high-latitude feedback did not dominate the Mg/Ca-based summer SST changes.”

Regarding the data availability, the data submitted to PANGAEA has been approved and published. As this process included editorial review, we have retained the PANGAEA link and removed the Zenodo link from the manuscript.

Thank you for your guidance and for the opportunity to publish in *Climate of the Past*.

Best regards,

Xiaolei Pang and co-authors