

Interactive comment on “Rapid waxing and waning of Beringian ice sheet reconcile glacial climate records from around North Pacific” by Zhongshi Zhang et al.

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Dear Julie,

We fully understand that you disagree with the concept of Beringian ice sheet. Thus, you criticize that we put an ice sheet on the region where there is no ice sheet.

However, we must admit that interpretations of direct evidence still include uncertainties. In Beringia, it is quite difficult to get “high temporal resolution” absolute age controls. This difficulty makes the interpretations highly controversial. In particular, we show that the ice sheet waxes and wanes rapidly there. The ice sheet only exists for a

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few thousand years on Beringia, then disappears. These fast glaciations and deglaciations make it more difficult to distinguish from sediments whether an ice sheet once developed there. It is easier to find sediments during the deglaciation stages (without ice sheet).

Since it is difficult to get a clear answer from the debate of direct evidence, why not jump out to look at evidence from a third side? This is the motivation of our current study.

We test which ice sheet scenarios can well explain the temperature records from around the North Pacific. These temperature records have high-resolution absolute age controls. If the Beringian ice sheet is totally impossible, we should see that the Laurentide-Eurasia-only scenario can well explain these climate records. Unfortunately, this is not the case.

Regards

Zhongshi

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