

## ***Interactive comment on “Post-glacial flooding of the Beringia Land Bridge dated to 11,000 cal yrs BP based on new geophysical and sediment records” by Martin Jakobsson et al.***

### **Anonymous Referee #2**

Received and published: 1 May 2017

Dear Climate of the Past Editorial Board

I hereby you receive my report on the MS " Post-glacial flooding of the Beringia Land Bridge dated to 11,000 cal yrs BP based on new geophysical and sediment records" by Jakobsson et al.

The authors provided new important information on the Bering Land Bridge, the well-known Arctic and Pacific gateway, which separates the North America and Asia. The authors proposed new important data and interpretation from two cores recovered from Harald Canyon, off the Chikchi shelf, over the last ca. 20ka. These cores are well dated and the authors also provided an important framework concerning the published chronologies of the Bering Strait flooding. In the submitted manuscript, the authors

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suggested an initial opening of Bering Strait at ca. 11 ka in the earliest Holocene. In particular, a shift from a near-shore environment to a Pacific-influenced open marine setting around 11 ka is observed, corresponding to Meltwater Pulse 1b (MWP1b).

The manuscript is properly constructed and it is evident that the data support the interpretation proposed in the manuscript. In addition, all figures are representative and useful for this version of the manuscript. I think that the authors need to stress two main issues, as follows: 1) the correlation between the two cores and a discussion on lithology. This manuscript is basically based on two cores and seismic lines, so that it could be useful to take in account change in lithology and/or in sedimentological parameters of these cores comparing with chirp profiles; 2) the construction of age-depth profiles of these two cores and the evaluation of a possible hiatus in correspondence of the boundary between unit A and B.

Specific comment: Chapter Results 3.1 In this subchapter, the authors discuss figure 4 and 5. However, no discussion has been reported for figure 3 in previous paragraphs. Probably it is necessary to change the sequence of the figures.

3.2 Sediment Stratigraphy In this chapter, the authors discuss figure 3. But this figure need to be mentioned in the manuscript before figure 4. In the present version of the manuscript, we have figure 4 and after figure 3. The authors report a change in bulk density to document the change between B1/B2 subunits. In my opinion this change is well documented in magnetic susceptibility signal, contrarily the bulk density peak is weak.

3.3 Sediment accumulation rate In this chapter is necessary to add a figure with the age-depth profile with the propagation of errors. This figure is important mainly to discuss the main change in sedimentation rate between 400 and 350 cm of long core. One important question is as follows: are there changes in lithology in correspondence of this short interval? Is it possible the occurrence of a hiatus?

Bronk and Ramsey 2009 is not reported in bibliography

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Chapter Discussion This chapter is very clear, but I think that there is an error at page 9, line 14, where the authors report the following text” just below the increase in both density and p-wave velocity”. I think that the word is above and not below. Page 9, line 21, I think that in  $\delta^{13}\text{C}$  and bSi signals the increase is not gradually, but sudden. Page 9, line 31-33, the authors suggest the hypothesis of an hiatus, but I think that they need go in detail on this option.

In Figure 6A, please show the position of R5 in petrophysical parameters. My overall conclusion is that the paper is suitable for the journal but unfortunately, it needs still minor revision concerning the core lithology and age-depth profiles.

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[Interactive comment on Clim. Past Discuss.](#), doi:10.5194/cp-2017-11, 2017.

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