

## ***Interactive comment on “Climate variability in subarctic area for the last two millennia” by Marie Nicolle et al.***

### **Anonymous Referee #1**

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In this manuscript cp-2017-33, the authors analyzed the proxy data from Arctic 2k database for the last 2000 years. They grouped the data into three regions, the Atlantic, Alaska, and Siberia. they showed a longterm cooling till 19th century. Although they did not find a consistent pan-Arctic signal of the little ice age. They further connected the Pacific decadal Oscillation and Atlantic multi-decadal oscillation for the recent two centuries. I found this manuscript is written reasonably well. However, if the authors can follow the suggestions listed below, the manuscript can be significantly improved.

Comments:

1. It is not clear why the authors want to group the data into three groups. 2. Since the data resolution is annual, it will not be difficult to do an EOF analysis to find the major patterns of the surface temperature. By doing so, it will give the authors a better way

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on how to group the data for different region mean. 3. In many places, the authors mentioned that the climate signal is very clear. Part of the reason might be that the grouping the authors used is not well studied earlier. 4. For the internal climate variability, the authors may be able to use the recent observations to get the patterns of the influence of the PDO and AMO. Then the authors can relate the recent observed impact of PDO and AMO on pan-Arctic climate to the proxy data.

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