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Climate of the Past Discussions

Interactive comment on "Autumn – winter minimum temperature changes in the southern Sikhote-Alin mountain range of northeast Asia since 1509 AD" *by* Olga N. Ukhvatkina et al.

Anonymous Referee #2

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General Comments: The authors reconstructed minimum temperature using Pinus koraiensis in the Russian Far East. The paper is structured well. The merit of the manuscript is the longevity of the trees that were sampled, although the fidelity through time drops. I have a few concerns about this paper before I think it can be published. I worry that the reconstruction should cut at 1600, where there is more sample depth and a higher EPS value. Generally, the rule is 0.85 and I've seen others use 0.80 but not 0.75 as the authors do. Further, the sample depth during the period prior to 1600 is very small, less than 5 cores. I also wonder why the authors are comparing their reconstruction with other reconstructions from different seasons. I think there is merit to this paper and think some of my comments could be issues of clarity but would like the

authors to consider them to determine if these are methodological concerns or clarity issues. Specific comments: Line 219: Why do the authors use Aug-Dec when not all the months are significantly correlated? Line 244: The explanation of KNMI needs to be in the methods. Lines 251: This is a bigger point, why are the authors comparing the Aug-Dec min temperature reconstruction to different seasonal reconstructions? This in itself is not wrong but there needs to be some explanation as to why the signals are different in these reconstructions. I'd be more comfortable with different seasonal comparison with the overall NH reconstructions but wonder why the two reconstructions that are 500km and 430km away are from April to July and Feb. to April. This is especially strange when the authors state that others have found this same Aug-Dec signal but do not compare their reconstruction to those. There could be different reasons for seasonal shifts in climate. Thus, I think this needs to be handled carefully. Figure 5: The relationship between tree growth and instrumental temperature looks a little weak. I would like the authors to discuss what the tree-rings are not getting (i.e., peaks or troughs). I also worry that the higher r-value is more of an artifact of both timeseries trending upward rather than a true correlation. Figure 7: I'm not sure why this figure is in here. Are the authors trying to show that region has a strong consistent climate signal? If so, then again why are the other regional reconstructions based off of different seasons? Perhaps I'm missing something due to clarity?

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