**Climate
of the Past
Discussions**

Interactive comment on "Climate field reconstruction of East Asian spring temperature" *by* M. Ohyama et al.

Anonymous Referee #1

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Comments on the manuscript "Climate field reconstruction on East Asian spring temperature" by Ohyama et al.

The manuscript based on five tree-ring chronologies by Ohyama et al., is a valuable contribution to understand the temperature variations for East Asia during 1794-1990. Although the majority of materials were not original, it was an interesting attempt to reconstruct regional climate. However, there are still many major problems need to be considered to improve the quality of the manuscript, and the expression of the paper need to be improved, too.

1. In the abstract, "Mean March–May temperature derived from a gridded land air temperature dataset (CRUTEM3) between 35–40oE and 125–140oN was reconstructed for the period of 1784–1990 AD", the units of Latitude and Longitude should change;

2. In the abstract, "A fairly good agreement was found with cold periods as estimated from documentary records in China and Japan", China has a large geographical area, the authors should point out which part of China, for example, southeast China; 3. For figure 1, the author should clearly explain the meaning of each symbols in the legend, such as black dots, triangle......, and the author should give exact positions of the grids from CRUTEMS or HadCRUT2 in figure 1, rather than solid lines or dotted lines; 4. Actually, this manuscript only used five ring-width chronologies to reconstruct the regional spring temperature, the other two chronologies (JAPA01 and 007) mentioned in the manuscript was not included in the final reconstruction for "unsubstantial coherency with the other records", so we suggest to delete this two chronologies and corresponding description in this paper; 5. The author should give some detail information of the new chronology in north-eastern Japan, for example, the number of cores, the parameters, to what extent it was sensitive to the spring temperature, et al., to help readers to understand the quality of the new chronology; 6. The explained variance of the reconstruction was only 19.4%, and it was strange it can pass the statistical tests. It was too low to be used to reflect regional temperature; 7. Before combine the five chronologies together, the author should give a figure of comparison of these five chronologies, to show how good they cohere with each other. And this may partly explain why the explained variance of the reconstruction was so low (19.4%); 8. In Line 10-14 of page 3538, what is the correlation coefficient between the PCs and March-May mean temperature? And in the following sentences (Line 15-18 in the same page), "Since some divergence was observed between the actual and estimated CRUTEM3 data during the calibration trials, a frequency range higher than approximately 60 yr was removed by subtracting a high-pass filtered curve from the original data to remove the upward bias in the actual data series". The temperature record from CRUTEMS was the basis for analysis and reconstruction, the upward trend in the actual data series was a true record of temperature, why make such change? 9. The authors should give the regression model for the temperature reconstruction; 10. In Line 3 of page 3540, we can't get "Higher interannual fluctuation can be observed in period I (1792–1806)", contrar-

ily, higher interannual fluctuation seemingly can be observed in the 1820-1830s (not exactly); 11. The origin (references) of the figures d-f in figure 3 should be given in the legend.

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