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Interactive comment on "A 413-year tree-ring based April-July minimum temperature reconstruction and its implications on the extreme climate events, northeast China" *by* S. Lyu et al.

Anonymous Referee #1

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This manuscript presented a temperature reconstruction for the past 413 years in northeast China, where a long-term climatic record still remained a lack. It provides valuable information to understand past changes in temperature. I recommend a major revision by considering several issues.

1. Cambial cell division may end in end August in the study area. It has no meaning to make a correlation analysis between tree growth and climatic records until December of the current year. At most, the analysis can include until September.

2. Taking into possible influence of climatic conditions in the last year, July-December of the previous year may be included for the analysis.

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3. The first paragraph in Introduction is too long. It is reasonable to start another paragraph line 8.

4. Line 25-26, page 2, “it is important to understand the longitudinal impacts of the climate change on forest ecosystems and human production activities in northeastern China.” It is very confusing to read this sentence. This manuscript did not talk about “longitudinal impacts”.

5. A scientific question may be necessary to be presented in the end of Introduction.

6. Line 30: “our new temperature record not only furthers the tree-ring series in north-eastern China”. It has problem in grammar.

7. A map is necessary to show your study areas.

8. In order to show low-frequency signals, the author is better to test RCS detrending.

9. For “Climate-radial growth relationship” in page 4, it is necessary to re-organize the sentences. It will better to explain why the minimum temperature rather than the maximum temperature is crucial to determine the growth, why April-July is important? In your research site, how about the minimum temperature in April-July? It may be estimate by lapse rate along the elevation. It seems to be not very meaning to explain that high mean April-July minimum temperature reduce tree growth by inhibiting tree respiration.

10. Tree may not start growth in April in your study areas.

11. Line 5-7, page 5, it is no meaning to explain a lag effect of climate conditions in Autumn.

12. Fig 2, there is a low EPS period from 1660 to 1730. The sample depth is not enough before 1730.

13. The cold period from 1914-1922 is different with other reconstructions.

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