Clim. Past Discuss.,
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Climate of the Past Discussions
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# *Interactive comment on* "A 368-year maximum temperature reconstruction based on tree ring data in northwest Sichuan Plateau (NWSP), China" *by* Liangjun Zhu et al.

**Liangjun Zhu et al.**

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Response to Anonymous Referee 1:

Thank you for your constructive comments on our manuscript, especially for correcting those grammatical mistakes. All comments are very valuable and helpful for revising and improving our MS, as well as the important guiding significance to our researches. We have studied your comments carefully and have made correction.

Major comments: 1. In the past 368 years, you identified seven short cold periods and three long warm periods (two long and one short). Could you explain why it appeared like this?



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Response: Comment accepted. Thanks, we have explained this phenomenon. Those cold or warm periods identified from our reconstructions might be driven by solar and volcanic forcing. The occurrence of the cold or warm periods were nearly consistent with the solar and volcanic forcing. For the detailed information, please look up the lines 23-33, page 9.

2. You detected different significant periodicities of temperature variations in the past 368 years. Only for this, you thought the temperature variations could be driven by ENSO, PDO, AMO and solar activity, which may not accurate. Please give more evidences if possible.

Response: Comment accepted. Thanks, in addition to the MTM analysis, correlation analysis between our reconstruction and those large-scale atmospheric circulations indices also revealed the significantly correlations between our reconstruction and the ENSO, PDO, AMO and solar activity (see Table 3). On this basis, we added the teleconnection analysis between our reconstruction and SSTs. The RLST variables significantly correlated with the SSTs changes, especially the west and equatorial Pacific as well as the north Atlantic Oceans (Fig. 1), which further verified the driving of large scale climate (e.g. ENSO, PDO and AMO) on regional temperature from another angle (for details, please see the lines 11-15, page 11). In addition, we also added the superposed epoch analysis of volcanic eruption and discussed the influence of volcanic forcing on temperature variations (Fig. 2; for details, please see the lines 24-34, pages 11)

3. References in text of the manuscript should be listed in chronological order.

Response: Comment accepted. Thanks, we have listed references in text of our manuscript in chronological order.

4. It would be better if this manuscript is fluent by a native speaker again.

Response: Comment accepted. Thanks, we have invited a specialist (native-English

speaker) made a job of language revision, in order to improve the ability of English expression.

Other detailed comments: Line 11, Page 1: replace “for” with “in” Line 12, Page 1. . . . . Line 4, page 21: replace “for NWSP” with “in NWSP”, “C” with “(C)”, and “for Kathmandu” with “in Kathmandu”.

Response: Comment accepted. Thanks, we have corrected those mistakes in our MS according to your comments. For the detailed information, please look up the new manuscript.

Once again, thank you very much for your comments and suggestions.

Best Regards, Liangjun Zhu, on behalf of all co-authors

Please also note the supplement to this comment:
http://www.clim-past-discuss.net/cp-2016-6/cp-2016-6-AC1-supplement.pdf

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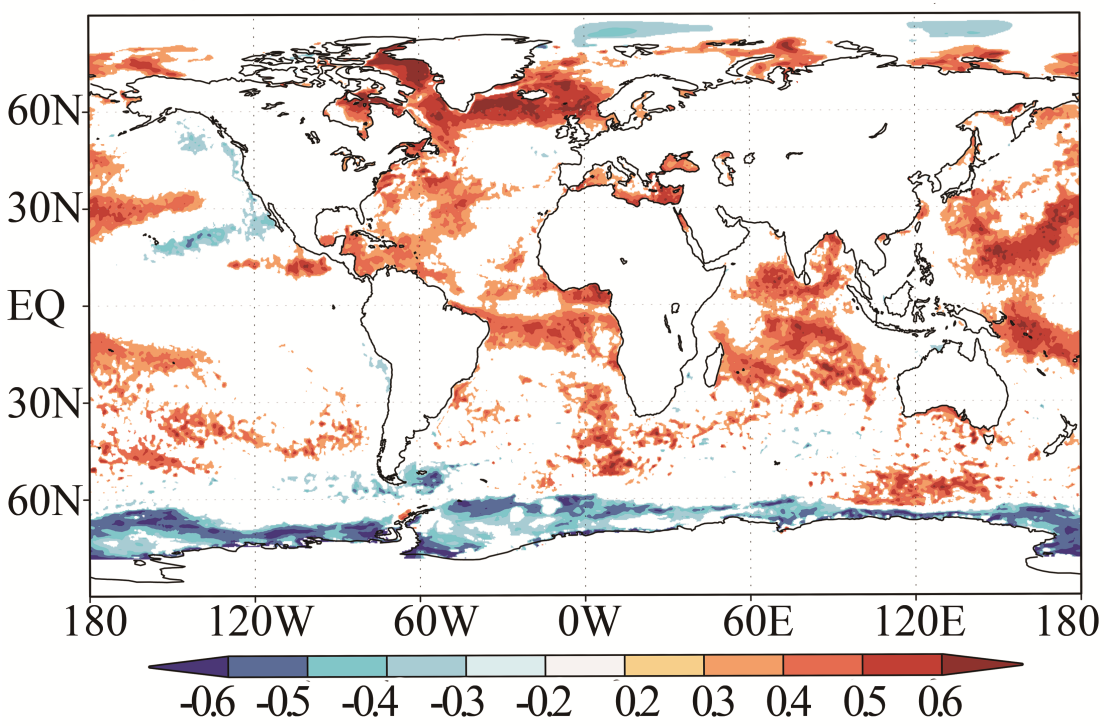


**Fig. 1.** Spatial correlations between estimated temperatures and monthly OISSTs at the global scale. The spatial correlation was carried out for months (July-August) covering a time span from 1982 to 2012.



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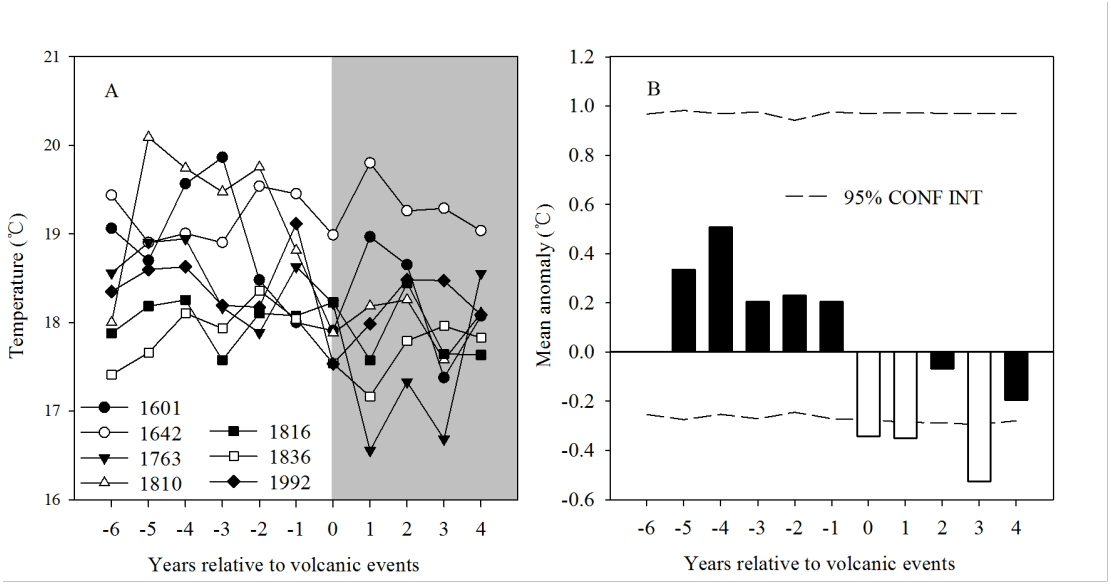


**Fig. 2.** The influence of volcanic forcing on temperature variations. Temperature change around the volcanic eruptions (A) and results of the superposed epoch analysis (SEA) for volcanic cooling (B).



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