

Interactive comment on “The response of annual minimum temperature on the eastern central Tibetan Plateau to large volcanic eruptions for the period 1380–2014 AD” by Yajun Wang et al.

Anonymous Referee #2

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General comments: This study reconstructed the annual mean minimum temperature from the previous August to the current July using tree-ring width data collected at one site located in the eastern central Tibetan Plateau and analyzed the cooling effect of volcanic eruptions on the regional annual mean T_{min}. The results of this paper is very interesting and important for further understanding of the dynamic mechanism of temperature variability in the study area. I recommend to publish this paper in Climate of the Past after a minor revision.

specific comments: 1. In this study, the extreme years was defined using the threshold of the mean plus/minus 0.5 SD of the reconstruction series. Under this criterion, it

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seems that there are too many years are identified as extreme events. I hope the authors can give a consideration that whether it is plausible if the extreme years was defined based on the threshold of the mean plus/minus 1 SD/1.5 SD?

2. The statistics of calibration and verification show a relatively good skill for the regression model. However, Rbar values of the tree-ring width indices show a relatively large fluctuation over the whole period of 1380-2014. It is interesting that the highest Rbar values appear in two special intervals (i.e., the cold interval of 1800-1820 and the warmest period of 1980-2014). The cold period of 1800-1820 was driven by both the weak solar activity (Dalton Minimum) and a few very strong tropical eruptions (e.g., the Tambora eruption in 1815 and the other in 1809), while the warmest interval of 1980-2014 is likely a result of human activity. The cold period of 1800-1820 and the warmest interval since the 1980s were also found in the previous studies (both tree-ring-based temperature reconstructions and instrumental temperature data) on the Tibetan Plateau. I hope the authors can give a discussion on these two special periods based on the previous references.

3. The sentences in the paragraph 245 are need to be improved.

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