

Interactive comment on “Temperature changes derived from phenological and natural evidences in South Central China from 1850 to 2008” by J. Zheng et al.

Anonymous Referee #4

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Observed meteorological records before the 1950s in China is very scarce, which limits our understanding of climatic change in a long-time scale. In this manuscript, the authors extended the annual temperature record in the South Central China back to 1850, and pointed out the coldest year and the relatively cold and warm periods in decadal scale. The results are essential to enhance our knowledge of climate warming in a long-time scale in South Central China. Therefore, I think this manuscript is suitable for publication in the journal of *Climate of the Past* after a minor revision.

Comments:

- 1) The authors conclude that they improved the accuracy of reconstruction by using

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multiple proxy types compared to using a single type of proxy. However, some obvious differences exist between the different proxies (e.g., resolution and trend). How did the authors treat these differences when performed the reconstructions, especially for the different trend existing in the five tree-ring width chronologies owing to different detrending methods were used by different researchers?

- 2) The locations of proxies used in the study mainly distributed in the southeastern part of the studying region, but less in the northwestern part.

- 3) I agree on the point of the referee #1: comparison of the reconstruction with CRU grid dataset or meteorological record in Shanghai station is necessary to validate further the reliability of the reconstruction.

- 4) The authors present the calibration equations (Table 2), but not present the statistics of the leave-one-out validation of the regression model.

- 5) Except for the earlier extension and the improved accuracy of this reconstruction than the Wang's reconstruction, are there other differences between the two reconstructions? For example, some different cold or warm periods.

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