**Climate
of the Past
Discussions**

Interactive comment on "Tree ring-based February–April temperature reconstruction for Changbai Mountain in Northeast China and its implication for East Asian Winter Monsoon" *by* H. F. Zhu et al.

Anonymous Referee #2

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article

Review for MS CPD–5–1215–2009

1   General comments

The paper is an important addition to the currently sparse network of tree-ring records in the eastern part of East Asia. The comparative study with other proxies strengthens the credibility of the results. This paper should be published after some revision. Please see my comments below.

1. Although long climate records are hardly available in China, I am worried that the calibration span is very short. It is highly informative if the same analysis could be performed using the CRU gridded temperature dataset (5x5), which includes a temperature record from 1909 (Oct. '43 to Dec. '48 missing).

2. The manuscript can be shortened by deleting the biological explanation (p. 1219, l. 17–28) for the correlation function. Such implication is not relevant to the purpose of the study. If the authors think the information is useful for readers of CP, this should be discussed also using response function analysis (PCA).

3. Leave-one-out cross-validation (LOOCV) does not provide any useful information when a single calibration model is presented. Nothing will be different even if the result is given using ordinary least square regression. See Hughes et al. (TRR, 2005, pp. 59–72) for example. They used LOOCV to heuristically choose explanatory variables.

4. I am concerned that the correlation coefficients are used for smoothed time series (e.g., p. 1220, l. 25–26; p. 1221, l. 16) to infer the association between the reconstruction and other proxies without significance testing. The degrees of freedom should be adjusted to account for the first order autocorrelation in the smoothed series.

5. I do not see clear shifts in the reconstruction shown in Fig. 4(a). The variation seems rather continuous. It would be highly informative to insert horizontal lines

showing mean states of the temperature variation. In addition, what about if the same calculation is performed for the EAWMI. Do those two show the similar epoch?

2 Specific comments (incl. typos)

P. 1219, l. 7: Change 'event' to 'period'.

P. 1219, l. 14: It is not wise to use the term 'regime shift' for the local temperature reconstruction. Regime shift is usually used to describe changes in mean state of a large-scale climate system (PDO, EAWMI, etc). Please reword.

P. 1220, l. 15: Change '*jezoen*' to '*jezoensis*'.

Fig. 1: I agree with the comment by Referee #1. It is more informative if the grid for the EAWMI and a map scale could be presented.

Fig. 4: The current figure is not appealing. The panels should be enlarged. The warm/cold periods (W1, C1, $\cdots$) should be presented more explicitly. With respect to the shifts, see the abobe comment.