

## ***Interactive comment on “Characteristics of cold-warm variation in the Hetao region and its surrounding areas in China during the past 5000 yr” by M. Li et al.***

**M.-F. Loutre (Editor)**

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Dear authors

I thank you very much for the detailed answer to the reviewers's comments.

Before you submit a revised version of your paper, I would like to encourage you to elaborate more on the reply to the reviewers. Moreover, I would like to inform you that I will ask the reviewers's advice before any decision about a revised paper you might submit.

The referees asked questions about the data. More precisely, they suggested that they

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may have recorded other climatic features than (or in addition to) temperature. You very briefly answer that question for oxygen isotope but you eluded it for magnetic susceptibility and you even write that organic carbon records temperature AND humidity simultaneously. Moreover, you answer to referee#2 that the series “are not temperature values series”. Referee #2 suggests that you give a full evaluation of the relative contribution of the temperature to each proxy. I do not see your answer on that question. Thus please explain in more detail, with more justification, why your composite series can be considered as a true temperature record.

All the referees are also concerned by the fact that three out of the six series you are using do not include a record of the last 2000 years. In your reply you provide a comparison of your composite record with other temperature records to support the accuracy of your method. However, the plot only covers the last 1000 years. What does it happen over the last 2000 years?

There is no error bar on your final result. Is the error the same over the whole record? How is it affected by the fact that your reconstruction is based on six records between 5000 and 3000, and only on three records for the most recent time? What would be the result if you were applying the method on the three records available for the whole time interval?

Referee #2 suggested that you give a detailed process of calculations. I do not see your answer to that point. You could maybe consider adding an appendix on that point.

Referee # 2 asked : Page 5, lines 2-4, the authors stated that “6 reconstructions from different proxy archives represent temperature changes and explain between 83% and 94% of annual temperature variability in 1951-2007”. Why?

Your Reply: the range from 83% and 94% is each grid data series's variance explanation for the whole region temperature series during 1951-2007.

Could you explain this answer? Indeed, the data series of ZYZ, HQH and DJ don't

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include the interval 1957-2007. How do you compute the explained variance in that case?

I really invite you to take into account these comments while preparing your revised manuscript.

Sincerely yours,

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Interactive comment on Clim. Past Discuss., 6, 1, 2010.

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