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Interactive comment on "Multi-scale analysis of the Asian Monsoon change in the last millennium" *by* T. Jiang et al.

Anonymous Referee #1

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This paper used the EEMD method to analysis the AM variations in the last 1000 years. It gave a visual results of different cycles of AM in the last 1000 years, as well as their relationship with solar activity and NHT. It is an extent work of Tan et al. (2011a, b). Before it could be accepted, some major revisions are needed. 1. First of all, the authors concluded that the NHT can influence the AM more directly than solar activity, based on their statistics analysis results. The climate system is complicated. When discussing the driving forces, they need to discuss it from the aspect of climate dynamics, but not just from correlation coefficient aspect. Many factors may influence the correlation coefficient, such as age uncertainties. Even if two variances are significantly correlated, it doesnot mean one drive the other. They might be no connects. Tan et al. (2011 CP) have given a detailed discussion among solar activity, temperature, AM and precipitation changes. The author may want to refer. 2. The authors concluded that "we

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predict the Asian monsoon is strengthening gradually and the Asian monsoon rainfall is increasing gradually in the next several decades or even the next 200 years, in $\sim$ AD 2180$\pm$30 the local climate will reach to the next wettest period". This is one of the main conclusion of the paper. However, neither it was shown in Figure 4, nor it was detailed discussed in the paper. 3. In page 6, the drought periods deduced from EEMD result are quite similar with Tan et al.' result (Tan et al., 2011a). For example, the drought occurred in $\sim$1350 AD and 1610-1650 AD were clearly shown in the abstract of Tan et al. (2011a). It is understandable, because they use the data of Tan et al. (2011a). 4. They can't deduce 718yr and 818yr cycles from a 1000-years long record. 5. I think the English of the paper need to be polished further. In addition, I also have some special comments: 1. Page4, line27-29: the speleothem d18O cant reflect rainfall amount in northern China(Zhang et al., 2008; Tan et al., 2011a; Tan et al., 2011b).), but not in the region of Dongge Cave (Wang et al., 2005; Dykoski et al., 2005). Wang et al. and Dykoski et al. didn't claim that. 2. Page9, line 17: "Ansian monsoon" should be "Asian monsoon".

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