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Interactive comment on "Quantification of southwest China rainfall during the 8.2 ka BP event with response to North Atlantic cooling" *by* Y. Liu and C. Hu

Anonymous Referee #1

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This paper reconstructs rainfall variation in southwest China during the 8.2ka BP event by comparing Heshang cave δ18O record with Dongge cave δ18O record. The main method is similar to that in the paper "Hu et al., 2008 (EPSL)". Using this method, one important hypothesis is that Heshang cave and Dongge cave are in the same moisture transport pathway and the precipitation δ18O difference between the two caves is mostly effected by the variation of precipitation amount. In the paper "Hu et al., 2008 (EPSL)", they considered that the two caves are in a uniform moisture transport pathway by using analysis of inter-annual variation in moisture transport during the instrumental record from 1952 to 2001. However, to our knowledge, the factors of stalagmite δ18O at different timescales in monsoon area are very complex. The authors should

demonstrate that the stalagmite δ18O difference between the two caves is influenced by the variation of precipitation amount, by comparing the differences of precipitation amount, precipitation δ18O, and stalagmite δ18O between the two caves. Because this is a critical assumption for this paper. As far as I know, some monitoring studies are going on in Heshang cave and Dongge cave during the past few years. I suggest the authors to verify the relation among the precipitation amount, precipitation δ18O and stalagmite δ18O by using modern monitoring data from the two caves. I think this manuscript should be published after revision.

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