

Interactive comment on “The 4.2 ka event: multi-proxy records from a closed lake in the northern margin of the East Asian summer monsoon” by Jule Xiao et al.

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Response to the Referees of cp-2018-66

We first wish to express our gratitude to anonymous Referee #2 for the review of our manuscript. We think that all the comments are helpful to improve the original manuscript. We respond to these comments as follows.

Comments In the paper, Xiao et al. present new paleoclimate records from Hulun Lake to show the dry event at the interval of 4230–3820 cal. yr BP. The paper is well written. I only have two suggestions for minor revisions. 1. Page 6 line 149–151. The

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sentences are misleading. It is surprise to see that annual evaporation is 6 times the annual precipitation. If it is true, there is no lake in the region. The region should be desert. Please check if the annual evaporation 1400–1900 mm is the total amount of the lake catchment.

Response Of course, the annual evaporation is in respect of the lake catchment rather than the lake surface. To obviate misunderstanding, the expression “which is ~6 times the annual precipitation” was deleted. See lines 128–129.

Comments 2. Page 13 line 363. Changes in the precipitation of the lake region in the summer half-year totally follow the northward migration of the EASM rainbelt (Fig. 4). To some extent, this sentence is misleading. It is true that Fig 4 could show the northward migration of summer precipitation. However, the figure does not really show the linkage between this northward migration and the precipitation in Hulun Lake region. I suggest adding a figure of summer precipitation in the Hulun Lake region, and then it will be easy to understand the precipitation increases in JJA, following the northward migration of the EASM rainbelt.

Response Yes. We totally agree. An inset showing monthly changes of annual precipitation in the Hulun Lake region has been added in Fig. 4a; and a brief note added to the caption of Fig. 4. See the revised Fig. 4 and its caption on lines 503–504.

Please also note the supplement to this comment:

<https://www.clim-past-discuss.net/cp-2018-66/cp-2018-66-AC2-supplement.pdf>

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