

Interactive comment on “Centennial-scale monsoon changes since the last deglaciation linked to solar activities and North Atlantic cooling” by Xingxing Liu et al.

Anonymous Referee #1

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The manuscript entitled " Centennial-scale monsoon changes since the last deglaciation linked to solar activities and North Atlantic cooling" illustrates the change of EASM and EAWM in western Chinese Loess Plateau and its centennial determinants, namely solar activity and AMOC over an extended period. The value of this study is to provide a relatively high-resolution paleo-climatic record in western Chinese Loess Plateau spanned 16000 years. Given the originality of this paleo-climate record, I will recommend this paper to be accepted for publication. However, there are a couple of issues should be addressed prior to the acceptance of this manuscript. My comments are detailed below:

1. In your early article (liu et al., 2015, Aeolian Research), From 6 to 13 m, this same section included two fluvio-aeolian layers at 7.2-7.5m and 10.1-10.6m. Moreover, these fluvio-aeolian layers are identified by relatively fine mean grain-size and low magnetic susceptibility during the BA and early Holocene period, according to your age model. Moreover, paleoflood events were found in middle and upper Yellow River basin during the early Holocene and BA period (Guo et al., 2017, Journal of Hydrology; li et al., 2014,QR), 2. As you mention whether Titanium in Huguang Maar Lake is a proxy for local hydrology or EAWM intensity, this record is very controversial. So, in Figure 3, I suggest you find a more reliable EAWM record to compare with your EAWM record. Moreover, I find, on the long-term interval during the Holocene, your EASM record isn't also consistent with the SMI record from Qinghai lake and $\delta^{18}O$ record from Dongge Cave, I suggest you find other high-resolution EASM records to compare with your data, though you mention they share similar centennial-scale climate changes. 3. In your manuscript, you mainly discuss centennial-scale monsoon changes. But I find, after you removed the long-term trend, these remaining sequences obviously show 1 ka and 1.27 ka cycle. I suggest they represent the millennial-scale climate changes rather than the centennial-scale changes.

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Discussion paper

