

Dear reviewer,

Thank you for your letter and for the comments concerning our manuscript entitled “Simultaneous seasonal dry/wet signals in Eastern and Central Asia since the Last Glacial Maximum”. Thanks very much for giving us such a precious chance. Those comments and suggestions are all valuable and very helpful for revising and improving our paper, as well as the important guiding significance to our research. We have studied all of the comments and suggestions carefully and made corresponding corrections in the manuscript with colored text. A detailed list of revisions against each point of editor that is being raised is below.

## **Reviewer 2**

This version of the title reads easier, but it is your choice.

**Response:** We agree with this simplification, thank you.

Which monsoon system are you referring to? Please specify.

**Response:** Thanks very much for your kind suggestion. We have specified the monsoon system.

What is meant here...opposing changes???

**Response:** Yes. Thanks very much for your kind suggestion.

Acronym needs to be explained. Acronyms not introduced.

**Response:** Thanks very much for your carefulness. We have added the detailed introduction of acronym.

This does not read well - please reword.

**Response:** Thanks very much for your suggestion. We have reworded the sentence.

Which oceans - please be specific.

**Response:** Thanks very much for your suggestion. We have specified the ocean.

Please use dry/wet etc consistently as dry/wet or dry-wet

**Response:** Thanks very much for your suggestion. Done.

Please use this phrase instead of “multi-time scales” throughout the manuscript.

**Response:** Thanks very much for your suggestion. Done.

Be specific - which time scales.

**Response:** Thanks very much for your suggestion. Done.

It would need a specific geographical region here.

**Response:** Thanks very much for suggestion. Done.

Reviewed?

**Response:** This sentence was not expressed clearly enough and we have rewritten it.

Unclear - please reword.

**Response:** Thanks very much for your suggestion. In fact, this sentence should be deleted. It was an oversight on our part to forget to delete this caption after updating the figure.

Please check the formatting of the S1 table. Also, you would need to say something about comparability of studies, uncertainties of age models and how these data were used in the study.

**Response:** Thanks very much for your suggestions. We have checked the Table S1 and added detailed introduction for paleoclimate records.

Please check if this acronym has been introduced before. If not, please introduce it here.

**Response:** Thanks very much for your carefulness. This acronym has been introduced in section 2.4.

Not sure what you want to say here.

**Response:** Thanks very much for your suggestion. We have amended this description.

At some point in the manuscript, there would need to be a definition of the time slices/windows you have selected from sediment records.

**Response:** Thanks very much for your suggestion. We have added the detailed definition of four time points (LGM, EH, MH, and LH) in section 2.4.

Reference is missing here.

**Response:** Thanks very much for your carefulness. Reference has been added.

The sentence was not clear. Not sure if it now reflects what you wanted to say.

**Response:** Thanks very much for your appropriate modification.

Do you mean to say is controlled by a summer precipitation regime?

**Response:** Yes, we have modified the sentence based on your suggestion.

Could this be illustrated better. It is not entirely clear from figure 7.

**Response:** Thanks very much for your suggestion. We have added more detailed illustrations here.

Not sure what is meant here. Is the following what you want to say? "Abundant moisture is brought to CA from polar airmass whereas the North Atlantic and the eastern Mediterranean Sea influence continues to diffuse eastward to the arid region of northwest China ?"

**Response:** Thanks very much for your suggestion. We have modified the sentence to make it clear. The updated sentence is "Abundant moisture is carried brought to CA from the polar airmass, North Atlantic and the eastern Mediterranean Sea to CA, and continues to diffuse eastward to reach the arid region of northwest China".

This statement would need to be better explained. Figure 9c on its own does not reveal the complex controls of the summer monsoon strength.

**Response:** Thanks very much for your suggestion. We have rewritten the sentence to make it clearer.

This should be specified. Figure 8d shows some patchiness. It would therefore be useful to specify which region you are referring to.

**Response:** Thanks very much for your suggestion. We have added detailed explanation.

See previous comment on patchiness. The same applies to some degree to this statement.

**Response:** Thanks very much for your suggestion. We have added detailed explanation.

Please add figure reference.

**Response:** Thanks very much for your carefulness. Done.

This sentence is unclear.

**Response:** Thanks very much for your suggestion. We have modified the sentence.