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Climate of the Past Discussions

Interactive comment on "DO-like events of the penultimate climate cycle: the loess point of view" *by* Denis-Didier Rousseau et al.

Anonymous Referee #1

Received and published: 12 October 2019

General comments: The Dansgaard-Oeschger (DO) events in Greenland ice-cores for the last glaciation have been well studied on a global scale. Whether such millennial-scale climate variability occurred during the preceding glaciations, however, remains less clear due to the limited length of the ice-cores and the low-resolution and dating uncertainty of terrestrial and marine records. In this study, the authors investigated the alternation of loess deposits and paleosol units of the Harletz loess sequence in Bulgaria formed during the penultimate glaciation and compared this succession with other regional proxy records to examine the occurrence of DO-like events prior to the last glaciation. The data and inferences presented in this study are of great significance and would contribute to understanding spatial coherences of the millennial-scale climate variability in the context of different glaciations. I recommend acceptance of this

manuscript for publication in CP after minor revisions.

Specific comments: 1. Line 115Âň. I suggest that the subtitle "3. Comparison with closest Mediterranean records" would be changed to "3. Proxy records in the Mediterranean region". 2. Lines 130-132Âň. What makes this record remarkable? Position, topography, or something else? The readers would be interested in it. Give a brief explanation, please. 3. Line 195Âň. I suggest that the subtitle "4. Paleoclimatology: DO-like events during MIS6" would be changed to "4. DO-like events during MIS6 in different regions". 4. Lines 222-223. Delete "at the edge of the Chinese Loess Plateau". Between the Loess Plateau and the Sanbao cave there lie two west-east extended mountains. 5. Lines 330-367. As the conclusion, this part appears too long. I suggest that the sentences on lines 359-367 would be removed. 6. Figs. 2 and 3. In these two figures, no proxy data of the Harletz loess sequence are shown. I suggest that one typical proxy of the Harletz loess sequence could be added into Figs. 2 and 3 in order to help the readers to compare the Harletz loess sequence with other records.

Related aspects: 1. Does the paper address relevant scientific questions within the scope of CP? Yes. 2. Does the paper present novel concepts, ideas, tools, or data? Yes. 3. Are substantial conclusions reached? Yes. 4. Are the scientific methods and assumptions valid and clearly outlined? Yes. 5. Are the results sufficient to support the interpretations and conclusions? Yes. 6. Is the description of experiments and calculations sufficiently complete and precise to allow their reproduction by fellow scientists (traceability of results)? Yes. 7. Do the authors give proper credit to related work and clearly indicate their own new/original contribution? Yes. 8. Does the title clearly reflect the contents of the paper? Yes. 9. Does the abstract provide a concise and complete summary? Yes. 10. Is the overall presentation well structured and clear? Yes. 11. Is the language fluent and precise? Yes. 12. Are mathematical formulae, symbols, abbreviations, and units correctly defined and used? Yes. 13. Should any parts of the paper (text, formulae, figures, tables) be clarified, reduced, combined, or eliminated? No. 14. Are the number and quality of references appropriate? Yes. 15. Is the amount

and quality of supplementary material appropriate? Yes.

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