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Interactive comment on "Holocene erosion triggered by climate change on the central Loess Plateau of China" *by* Gang Liu et al.

Anonymous Referee #1

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This paper studies a relevant topic in the Loess Plateau of China: the variability of soil erosion during the last few thousand years, particularly in relation to changes in precipitation. The methods used are novel and the results provide good information on spatial and temporal variability of soil erosion. Nevertheless, there are some problems because the authors consider only two soil profiles as representative of a large study area. The authors do not explain which are the geomorphic factors that caused soil accumulation: Wind? Partially wind and overland flow? Mainly overland flow? Some kind of mass movement? The prevailing sediment transport and deposition process conditions very much the results, and this should be explained by the authors. The authors also need to supply information on the material that has been dated with 14C: have they directly used the soil carbon content? Concentrated pollen? -The authors dominate very well the laboratory techniques used, although some geomorphological

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Discussion paper

perspective would be interesting. -It is not clear the reason why the authors selected a 2 m profile and no other depth. -Why did you consider stationary the relationships between precipitation and erosion rates? - At the beginning of page 6: please, write “implemented”.

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