Solid Earth Discuss.,
https://doi.org/10.5194/se-2018-43-AC1, 2018

Solid Earth Discussions

Interactive comment on "Soil erodibility estimation by using five methods of estimating *K* value: A case study in Ansai watershed of Loess Plateau, China" *by* Wenwu Zhao et al.

Wenwu Zhao et al.

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Received and published: 2 August 2018

Dear reviewer #1, We greatly appreciate the work that you have put into our manuscript and the support to our work. The comments inspired us to pay more attention to the accuracy of our language and the details of explanation in our manuscript. The following is a point-by-point response to all of the comments. We hope that the response will meet your approval. Once again, thank you very much for your comments and suggestions. Best regards,

Wenwu Zhao Email: zhaoww@bnu.edu.cn

Point-by-point responses: 1. It is better to polish the language further. Reply: The language of our manuscript will be polished by a native English speaker. 2. Line 30-31, Please delete the detail soil properties in bracket "(e.g., soil texture, permeability and structural stability)". Reply: The detail soil properties in bracket will be deleted. 3. Line 34 Change "research" to "researches" Reply: The "research" will be changed to "researches". 4. Line 40 Abbreviations should be added in the following of "the nomogram model and the modified nomogram model" Reply: The abbreviations will be added behind the following phrases "the nomogram model and the modified nomogram model". 5. Line 86-87 references about the classification of soil particles should be added. Reply: The relevant references on classification of soil particles will be added. 6. Line 91-92 what is the meaning of "Soil erodibility thus has indirect relationship with the environmental factors." ? Please rewrite it. Reply: The meaning of this sentence is that the environmental factors may not have direct influence on soil erodibility but they can affect soil erodibility by changing the soil particle and soil organic matter content. This sentence will be rewritten to make it easier to read. 7. Line 106 "rainfall erosion" or "rainfall erosivity"? Reply: The "rainfall erosion" will be changed to "rainfall erosivity". 8. Line 154 Please change "P value >0.05" into "P > 0.05". Reply: The "P value >0.05" will be changed to "P > 0.05". 9. Part 3.2 Significant negative or positive correlations are in P < 0.05 or P < 0.01? Need be labelled in the following. Reply: The "P < 0.05" or "P < 0.01" will be added in the following of each correlation analysis. 10. Line 202-203 One PC each for apple orchards, native grasslands, sea buckthorn, Caragana korshinskii and pasture grasslands. Why there is only 4 data of percentage in the following sentence. Please check it. Reply: The analysis of pasture grasslands did not come out a result, so there are only 4 data of percentage. The explanation of this analysis will be revised in this and the following sentence to make it more accurate and clearer. 11. Line 264 Soil erodibility has significant correlations with elevation? Please check it. If so, explain why. Reply: The soil erodibility showed significant correlations with elevation in this paper. According to existing studies, for a limited area, the elevation might have relationship with factors such as soil type, vegetation type which have significant

correlations with soil erodibility. Relevant discussion will be added in the manuscript to explain the reason of this result. 12. Line 267 What “soil surface conditions” refer to? Please give some examples. Reply: Soil surface condition is a collection of many factors such as surface roughness and vegetation coverage, relevant explanation will be added in the manuscript. 13. Line 277-278 What is the meaning of “Because all these vegetation types are more or less affected by human activities, soil erodibility can also indirectly be affected by vegetation recovery and land cover change.”? Please rewrite it to make it easy to be understand. Reply: We are sorry for causing this confusion. This sentence indicated that human activities affect the vegetation recovery and land cover change, then change the vegetation types and these changes may influence the soil erodibility. This sentence will be rewritten to make it easier to read.

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