

Reply to comments

We highly appreciate the comments from the referee and thank the editor for managing our revised manuscript. Our responses and changes to all the comments are listed as follows (the page and line of the modified location correspond to the tracked version):

Comment: P1 L16: “The model features the feasibility of applying flexibly different simulating resolutions for hydrological and slope stability submodules by embedding a soil moisture downscaling method.” Suggest rewording this sentence for clarity.

Response and changes: Thanks for the comment. As suggested, we have changed this sentence to “Through embedding a soil moisture downscaling method, this model is able to model hydrological and slope stability submodules even at different resolutions” for better clarity. (P1 L18)

Comment: P2 L35: Change “Modelling of landslide...” to “Modelling landslide...”

Response and change: The correction has been done. (P2 L36)

Comment: P2 L43: Change “Literatures have shown...” to “Literature has shown...”

Response and change: The correction has been done. (P2 L43)

Comment: P2 L58 to L60: “As a matter of fact, to the best of our knowledge, there are still very few fully coupled hydrological-geotechnical models that are capable of performing in a large scale and producing 3D information of landslide disasters.” Suggest making this more concise.

Response and changes: Thank you for the comment. We have simplified this sentence to “To date, there are still very few fully coupled hydrological-geotechnical models capable of performing at large scales and producing 3D information of landslide disasters.”. (P2 L61)

Comment: There are other sentences in the paper that could also use further editing to

make them more concise. Phrases like “we want to point out” or “as a matter of fact” can be removed.

Response and change: We have removed redundant phrases to make the revised manuscript more concise (see P6 L170, P26 L587, P26 L589, P27 591, P28 L614, P30 L663, and P30 L667).

Comment: P2 L61 to L62: “Another problem that will be involved is the selection of computational spatial resolution.” Suggest making this more concise: “Another problem is the selection of...”.

Response and change: Thank you for the comment. The change has been done. (P2 L64)

Comment: P3 L66: “squared meters” to “square meters” or “meters squared”.

Response and change: The correction has been done. (P3 L69)

Comment: P4 L102 to L103: If URLs are placed in the text, please add date of access.

Response and change: The date of access has been added. The first URL (<http://hydro.ou.edu>) was assessed on 23 December 2014. The second URL (www.servir.net) was assessed on 15 September 2016. (P4 L105)

Comment: P9 L237 to L239: The paragraph mentions that TWI is related to soil moisture through the wetness coefficient, and the reader is directed to another paper. Please briefly explain this relationship to the reader in this section, just enough for them to understand the basics.

Response and change: Thank you for the comment. The relationship between K_w and TWI at the coarse resolution ($K_{w,coarse}$ and TWI_{coarse}) is first detected, and the concave and convex areas are also distinguished. Then this relation is used to calculate K_w and TWI at the fine resolution ($K_{w,fine}$ and TWI_{fine}), which is further used to fix the soil moisture at fine resolution. We have added this explanation in the revised version. (P9 L242)

Comment: P19 L446: Change "... the model behaves sensitive..." to "... the model is sensitive...".

Response and change: The change has been done. (P20 L453)

Comment: P28 L605: Change "... containing two resolutions datasets..." to "... containing two datasets with different resolutions..."

Response and change: The change has been done. (P28 611)

Comment: P28 L605 to L606: "For the purpose that the model is practicably performed in the case of large scale, we parallelized the program for efficiency." Suggest rewording this sentence for clarity, particularly the first part.

Response and change: We have improved it for clarity. (P28 L613)

Comment: P28 L609: Change "literatures" to "literature."

Response and change: The change has been done. (P28 L616)

Comment: P28 L614: Remove "as a matter of fact".

Response and change: We have removed it. (P29 621)

Comment: P28 L616: Remove "we want to point out".

Response and change: We have removed it. (P29 L623)

Comment: P30 L670: There seems to be a strange tab/space here in the manuscript, maybe "In summary..." was supposed to be part of a new paragraph?

Response and change: Thank you for the check. The text starting from the "In summary" is a new paragraph and we have corrected it. (P30 L678)

We finally went through the text again and fixed several typos (tense, grammar, and spelling). See P4 L98, P12 L301, P14 L361, P26 L570, and P26 L572.