Geoscientific Model Development Discussions

Geosci. Model Dev. Discuss., author comment AC3
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Reply on RC3

Qianjiao Wu et al.

Author comment on "An Improved Algorithm for Simulating Surface Flow Dynamics based on the Flow-Path Network Model" by Qianjiao Wu et al., Geosci. Model Dev. Discuss., https://doi.org/10.5194/gmd-2022-92-AC3, 2022

Dear Researcher,
Thanks for all of the comments and suggestions for our submission GMD-2022-92. For your worry about the problem (For a target cell, the points with the maximum or the minimum value of the parameters in the basin may not be located at the upstream area of this cell). From Figure 7 “The slope length factor, topographic wetness index and flow path curvature obtained from the 10 m DEM.”, we can see that the points with the maximum value of the parameters in the basin are located at the upstream area of a target cell along the flow path.

In addition, we regard the large basin as the study region and simulate the flow dynamics for the region based on all of the flow paths from the flow source points resampled from the DEMs with different resolutions. Thus, the minimum and the maximum values of three terrain parameters will be changed when the study region is changed from the large basin. And it is worth discussing the influence of this change on the final simulation results further. Thank you for your comments again.