

Interactive comment on “Topography-based flow-directional roughness: potential and challenges” by S. Trevisani and M. Cavalli

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We thank the Anonymous Referee #1 for the very positive feedback on our work and for the useful suggestions in the annotated pdf. In the spirit of the open discussion, we report below the replies to the main comments of reviewer #1, in order to find possible pathways for improving the paper.

Concerning the reviewer comment on the need to offer also a graphical view of data distributions, our proposal is to add a histogram or a boxplot to the maps of the various indices. For example, in the map of residual DTM we can add the histogram/boxplot of the related distribution. We prefer to maintain also the tables because of the represented data distributions have interesting characteristics in the tails that are very

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difficult to highlight graphically. Moreover, the tables make easier the discussion in the text.

Finally, concerning the statistical representation of errors (including their correlations and RMSE) and looking at the annotated pdf, we see that the reviewer is mainly referring to the residual DTM. In this regard, we did not performed any prediction over which to calculate RMSE. However, we could furnish some statistical indices reporting residual DTM variability (e.g., standard deviation and interquartile range). Differently, in regard the correlation between Riso and Rflow, even if these indices are structurally correlated, we are evaluating to add some graphical (scatterplot) and/or statistical information (coefficient of correlation).

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