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Interactive comment on "Growing topography due to contrasting rock types in a tectonically dead landscape" *by* Daniel Peifer et al.

Daniel Peifer et al.

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Dear Matija Perne,

Thank you for your thoughtful and helpful comments; it is rewarding to receive your feedback that our manuscript is a valuable contribution. We are very grateful that you read our manuscript so carefully and took the time to write such constructive inputs. We will take your comments on board when revising the manuscript.

(i) Your suggestion "Assuming I'm a typical reader, a typical reader would understand this point with less effort if the results from figures 4E and 5C (which directly describe nature and are in agreement with one's expectations) were mentioned first and emphasised more" is excellent and very helpful; we will use it to frame our results better.

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Discussion paper

(ii) The critical point Matija is concerned in his comment of units for K is that we cannot directly compare K values for n=1 and n=2 for our fixed, topographically-informed concavity (theta =0.45), because the units change. This remark is correct, and we should be more cautious in how we report these results. We will revise the sentences addressing this comparison as well as the Y-axis label in Fig. 6. Nevertheless, the statement we make from the comparison is the most important, that changing n does not change the relationships we find between rock type, catchment-averaged denudation rates, and the fluvial erosion efficiency coefficient; we will revise accordingly to make it clear.

(iii) As suggested, we (a) will use "steepness" and "concavity" consistently in the revision; (b) we will make sure every DOI is correct; (c) we will fix the caption of the Figure S2, and (d) we agree with your remarks about ‘persistence’ and will revise its use.

Sincerely,

Daniel Peifer, on behalf of all co-authors

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