

Earth Surf. Dynam. Discuss., referee comment RC1
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Comment on esurf-2021-55

Anonymous Referee #1

Referee comment on "Morphodynamic styles: characterising the behaviour of gravel-bed rivers using a novel, quantitative index" by William H. Booker and Brett C. Eaton, Earth Surf. Dynam. Discuss., <https://doi.org/10.5194/esurf-2021-55-RC1>, 2021

I appreciate the opportunity to provide a review and commentary on the manuscript "Morphodynamic styles: characterising the behaviour of gravel-bed rivers using a novel, quantitative index" by Booker and Eaton. This is a very well written manuscript that introduces an index of channel process that I've thought about for a long time - but unlike the authors here, I've been unable to put it into numerical terms so elegantly! Well done in that regard.

I believe that the methods developed in this paper will aid other researchers in linking form and process in river systems and in interpreting their own sediment transport and topographic change data together using the throughput index. This paper should generate wide readership and will be of interest to those who follow ESurfD.

In the attached PDF document, I've asked the reviewers to (a) refine the introductory text slightly to acknowledge links between form and process present in many channel classification schemes, (b) clear up some details in the methodological explanations, (c) make slight figure edits, and (d) more fully incorporate text detailing the potential for errors in either sediment transport or DEM/DOD change detection to influence the throughput index. There are also numerous text edits which are minor in nature. Taken together, I believe these modest edits will make what is already a well-written paper even stronger. Thanks again for the opportunity to review this manuscript!

Please also note the supplement to this comment:
<https://esurf.copernicus.org/preprints/esurf-2021-55/esurf-2021-55-RC1-supplement.pdf>