Earth **Surface**
Dynamics
Discussions

Interactive comment on "Deriving principle channel metrics from bank and long-profile geometry with the R-package cmgo" *by* Antonius Golly and Jens M. Turowski

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This technical paper presents a computational tool (R-package) for estimating channel metrics from elevation models. The paper is well written and concise. In general, the manuscript does a nice job providing overview of several existing methods. Still, there are some major weaknesses to be addressed to put this work on a more appropriate level (even when considering it as a technical note) for publication.

The work would be greatly improved with presentation of an application of the methodology (of the new tool) to a real dataset. A (simple) comparison between model-derived characteristics and field-observed characteristics is warranted to demonstrate the applicability of the methodology. It is not needed to develop some new and novel insight

into the field site selected (since this is a technical note), but the is need to demonstrate the functionality and ability of the new package. Without such an application, it is not clear that the tool "works" in the most basic sense.

In addition, if this example application of the package were to be coupled to a comparison the tool developed in this manuscript with other existing tools, that would be justified. The comparison could highlight the strengths and weaknesses of the new approach relative to what is already "on the market". This would really help to underline the need for this R package to the community at large. One could envision, for example and at the simplest level, a meta-table comparing the strengths and weakness across the different software tools currently available that do similar things (building on the literature review section). Nice to represent this with a "check/no check" table like you would see on a software specification comparison? This could range from the more science-specific (Estimates river width) to the more general (Uses open source platforms). For a more advance approach and to truly strengthen the presentation of this work, it would be good to take an example site where field observations exist and not only apply this new tool (as suggested above) but also apply few other existing tools. A comparison across how well (similar/different) each does and a validation against the observations would justify publication of this note.

Without the above aspects, the study does not do more than present the code. Also, and just to be clear, I think the above effort (or some variation of the above) is needed to have this manuscript consider as a technical note. This effort would not be enough to elevate this study from a technical note to a full science manuscript for the journal – that would require some advancement in understanding (which is well beyond the scope of this study).

Interactive comment on Earth Surf. Dynam. Discuss., https://doi.org/10.5194/esurf-2017-32, 2017.