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Earth Surface Dynamics Discussions

Interactive comment on "Short communication: The Topographic Analysis Kit (TAK) for TopoToolbox" *by* Adam M. Forte and Kelin X. Whipple

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This short communication, "The Topographic Analysis Kit (TAK) for TopoToolbox" by Forte and Whipple presents a series of streamlined tools and workflows. Building off of the TopoToolbox, these new functions perform a variety of digital topographic data analyses considered essential to many modern tectonic geomorphology studies. As was the case with TopoToolbox and the recent publication of other valuable analysis code such as LSD Topo Tools, the authors provide a big service to the tectonic geomorphology community with this excellent contribution. I expect it will be used heavily by the community.

Because the TAK is designed specifically in the form of workflows to 'finished products' (such as channel steepness maps or topographic swath profiles), and because the authors also released a version of the code to use in the free Matlab Runtime Environment, the toolset holds special promise to break down technologic and economic barriers to quantitative topographic analysis. Beyond its obvious importance as a research tool, I also view the TAK as an important teaching resource, especially because of the detailed Users Guide that accompanies the code and this publication (supplement).

The manuscript is well written, clear and concise, and nicely illustrated. Although I recognize that this is a short communication and is not meant to be a thorough compendium on surface processes, tectonic geomorphology metrics, and fundamentals of landscape analysis, I do think it would benefit from the addition of a few paragraphs before section 3.1. These paragraphs could describe, at least in general, the main value and purpose of the three broad analysis paths (stream network analysis, basin averaged analysis, and swath profiles). The current section 4 (Utility of Basin Averaged Methods) would be bumped up into this section. As is, it seems a little tacked on to the end.

I also suggest a few technical corrections:

Page 1, Line 22: add a comma after accessible and after environments, remove the word and after environments.

Page 2, Line 1: remove the words "perhaps the most" after also

Page 3, Figure 1: Because this toolkit is meant to include even those who are true beginners to digital analysis, you might consider defining some of the terms/abbreviations in this figure in the caption (for example, shp or array).

Page 5, Figure 2: I think panel C should be on the left side and panel D on the right side (swapped as to what it is currently). Usually we read from left to right, so I expected C

to follow B, sitting below A.

Page 5, Line 6: Could add a simple definition of a swath profile at the start of this section.

Page 6, Line 23: Worth noting that beyond academic settings, those without access to Matlab could include local or national government employees and/or consultants who also have a need for this type of topographic analysis tool.

Supplement: TAK Manual v.1.0

Section 3, page 5: "....it is expected that all of the datasets your provide are in the same projection system." "your" should be "you"

Section 8.1, page 22: Update the place holder [Link to Journal Site] after Forte and Whipple (2018) call out.

Section 13, page 56: "....whether submitting and issue" "and" should be "an"

I hope the authors and editors find this review useful. I enjoyed reading the manuscript and working through the TAK code. – Alison Duvall, University of Washington

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