

Dear editors,

Thank you for the positive evaluation of our manuscript. We applied almost all of the corrections listed below. In some cases we also provided the sentence that we added or changed, if it was not just a comma issue or something like that, or a response if no changes were needed – in our opinion.

If there are still remaining issues, we can hopefully handle it in the proofs stage.

Thank you for your help!

The two authors.

Dear authors,

I am pleased to confirm acceptance of your work for publication in *esurf*, now in the form of a 2-part series of papers. I appreciate your careful and thoughtful attention to the comments from the reviewers and AE. Like the AE, I think splitting the manuscript into two parts was a good outcome of this process.

As noted by the AEs and reviewers, this work adds a great deal to our toolkit for analyzing topography, and to our general understanding of divides and divide migration -- a topic of great interest in recent literature. Thank you for choosing *esurf* as venue (and I am sorry the final decision has been slightly delayed, while I was clarifying how it would work to have your single original submission published as two separate papers -- that should be fine from here).

I have a number of very small editing suggestions below, including a few grammatical corrections. You might consider making these corrections prior to submitting your final files for typesetting; alternatively, most could be addressed during copy editing if you do not want to delay further.

Thank you again!

Part 1

Line 17: no comma after junctions

Line 20: "a stream and hillslope relief," (remove the and add comma)

Line 22: in addition to divide instability, could such differences relate to structural controls (e.g., for tilted sedimentary layers)? if so, perhaps worth qualifying slightly here

RESPONSE: no, the rocks in this area of the San Gabriel Mountains are dominated by crystalline rocks without strong foliation or bedding that could induce such asymmetry.

Line 37: I think "eastern Tibetan Plateau" (small e)

Line 55: comma after directions

Line 92: no comma after one

Line 108-109: I think it would be useful to add a parenthetical comment after this sentence to define what you mean by "cycles" (I assume that this refers to divides that form complete closed loop, or something similar, but a formal definition would help readers, I think)

RESPONSE: hmm, the manuscript version we submitted actually contains exactly that: "Analogous to streams, drainage divides are typically organized into tree-like networks (Figure 1), although cycles that correspond to internally-drained basins may exist."

Line 131: no comma after network

Line 140: odd wording; perhaps better as "the more detailed the stream and divide networks will be"

Line 168: comma not semicolon after segments

Line 170: no comma after Rb

Line 184:

Line 186: comma not semicolon after the citation

Line 208: "As a consequence"

Line 228: "increases linearly as 0.36 x divide order" (as not with seems more appropriate)

Line 238: check for missing superscript 2 on 1 km²

RESPONSE: is there a conversion issue? In the manuscript we submitted (pdf), the superscript exists.

Line 239: I don't think this is a good use of cf. (generally this abbreviations means "compare to"; you have used it in contexts that seem like you are asking readers to refer to a reference or figure, not compare to it, so I am encouraging you to rethink its use)

Lines 246-247: "averages... are" or "average... is" (perhaps the former)

Line 258: see note about regarding use of cf.

Line 261: "enquire" doesn't seem right here; perhaps "query"?

Line 277: see note about regarding use of cf.

Line 278: "its", not "it's"

Line 288: you say "or" here, but I would have thought this could be "and"?

Line 299: no comma after scheme

Line 335: "lends itself to topological analysis"

Figure 1 caption: specify which type of divide order is shown here? (Topo, I think?)

Figure 1: consider adding a north arrow?

Figure 3 caption: specify what the black lines are; also maybe note where this topography is from?

Figure 4 caption: no comma after remaining

Figure 9 caption: no comma after order

Figure 10 caption: check for missing superscript 2 on 1 km²

RESPONSE: is there a conversion issue? In the manuscript we submitted (pdf), the superscript exists.

Figure 12: maybe consider labeling Chilao Flats on the map and/or images, since it receives particular attention in the Discussion?

Part 2

Lines 13-14: I found this confusing; you might consider rewording, perhaps along the lines of, "when considering divide segments with divide end points that are a minimum distance of ~5km from river confluences." Or something like that...

RESPONSE: sentence changed to: "Results show that divide segments that are a minimum distance of ~5 km from river confluences strive to attain constant values of hillslope relief as well as flow distance to the nearest stream."

Line 31: argued, not argue (to keep tense the same in this paragraph)

Line 34: argued, not argue (as above)

Line 39: holds, not hold (shape is singular)

Line 44: no comma after mobility

Line 49: I wonder if you could add a short sentence here to point out the features of your new analysis tool that allows you to do more than has been done before? You allude to this later in the paragraph, but could perhaps be explicit about how what you is enabled by your new capabilities.

RESPONSE: yes, good idea. We added the following: "... which removes the necessity to manually select drainage divides for comparison."

Line 60: and, not as well as

Line 75: see note about regarding use of cf.

Line 79: I am unclear about the meaning of the "-" in "50-%"; is this supposed to refer to the fact that you reduced the quantity by 50%? In this case I think it is clear just to say "50% reduced"

Line 80: "representative of"

Line 81: no comma after landscape

Line 83: "resulted in the resistant layers regularly sweeping from"

Line 84: see note above about "-" in "75-%"

Line 92: see note about regarding use of cf.

Line 111: see note about regarding use of cf.

Line 116: no comma after distance

Line 153: I find the meaning of "factor on divide order" slightly unclear

RESPONSE: changed to "The 430 m corresponds to the mean length of the divide segments."

Line 157: no comma after parameters

Line 165: are, not is

Line 177: this wording is awkward; perhaps "attains temporally-averaged values in the perturbed models that are quite similar to the constant values"

Line 192: add a comma after notable

Lines 209-201: "occupy the centre [OF WHAT?] as well as the centers of the four quadrants" (specify of what)

Line 212: see note about regarding use of cf.

Line 224: "recording similar" is a bit unclear; consider rewording?

RESPONSE: changed to "recording similar tectonic forcing".

Line 228: see note about regarding use of cf.

Line 232: "has become a popular tool" may be a bit better wording?

Line 234: remove "eventually"

Line 236: "and", not "as well as"

Line 246: see note about regarding use of cf.

Line 248: comma after bins

Line 255: perhaps "these values and their variability"?

Line 259: demands, not demand (scatter is singular)

Lines 266-267: it struck me that stochastic divide migration (e.g., mass wasting events) adds another complexity in natural systems that is not captured in this version of the numerical model (I think?)

RESPONSE: yes, good point, we included mass wasting events.

Line 275: "and long divide distances"?

Line 279: comma, not semicolon

Line 192: no comma after (Cj)

Line 293: consistent, not consistence

Line 303: remove "thus"?

Figure 1: add north arrow, and specify UTM zone in caption?

RESPONSE: we added the north direction and UTM zone to the caption.

Figure 2 caption: see note above regarding "50-%" and "75-%"