

Nat. Hazards Earth Syst. Sci. Discuss., referee comment RC2
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Comment on nhess-2021-266

Eric Barefoot (Referee)

Referee comment on "A modeling methodology to study the tributary-junction alluvial fan connectivity during a debris flow event" by Alex Garcés et al., Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2021-266-RC2>, 2021

I enjoyed reading this manuscript from Garcés and coauthors. Overall I found this manuscript to be reasonably clear, well-structured, and sound in its methods. I am not a frequent reader of NHESS, but from checking a few recently-published articles, this manuscript appears to be a very good fit for the mission of the journal, and describes a clever approach to predicting impacts of debris flows in mountainous settings. The modeling approach the authors outline requires substantial tuning, user input, local knowledge, and has a limited ability to extrapolate beyond the location being evaluated. As a result, quite a bit of data would be required to use this modeling approach for hazard mapping or analyzing a proposed mitigation approach. That said, the authors have done a good job of describing and clearly outlining when their model is applicable and when it is not, which I think is an especially strong aspect of this paper. I came away with a good sense of where and when an approach like theirs would be applicable, and what data I would need to collect in advance to use their methods.

I see no major obstacles to publication, and have enumerated a few minor comments in the attached document that I think would improve the manuscript's clarity.

Please also note the supplement to this comment:

<https://nhess.copernicus.org/preprints/nhess-2021-266/nhess-2021-266-RC2-supplement.pdf>