



***Interactive comment on “Short communication:
Runout of rock avalanches limited by basal
friction but controlled by fragmentation” by
Øystein T. Haug et al.***

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Dear Prof. Krautblatter,

Thank you for first of all for making it possible to get the reviews from two distinguished colleagues. We know how difficult it is to find reviewers for this rather specific topic and method, especially in these times. We thoroughly revised the manuscript according to their very valuable comments. In particular, we acknowledged now more explicitly the limitation of our analogue modeling approach also concerning previous studies mentioned by both reviewers. We revised the presentation of the mathematical model

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for clarity and added one figure in the appendix in that framework. Both reviewers stressed implicitly the volume dependency of runout and pointed to previous models explaining it that should be better discussed along with scale-dependent processes dynamically lowering basal friction. However, since we explicitly focus on the scale-independent aspects of variation in runout and keep the volume and basal friction as a fixed parameter, we did not discuss those models in-depth but rather included the respective processes with references in the description of limitations and scope of our models. We hope it is clearer now how our study contributes to that discussion. In that context, we de-emphasized the “universality” of our scaling law. Finally, we let a native speaking colleague proofread the revised version.

Best regards,

Matthias Rosenau on behalf of all co-authors

Interactive comment on Earth Surf. Dynam. Discuss., <https://doi.org/10.5194/esurf-2020-76>, 2020.

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