

Nat. Hazards Earth Syst. Sci. Discuss., community comment CC1  
<https://doi.org/10.5194/nhess-2021-127-CC1>, 2021  
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## **Comment on nhess-2021-127**

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Community comment on "Multiscale effects caused by the fracturing and fragmentation of rock blocks during rock mass movement: implications for rock avalanche propagation" by Qiwen Lin et al., Nat. Hazards Earth Syst. Sci. Discuss.,  
<https://doi.org/10.5194/nhess-2021-127-CC1>, 2021

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This paper attempted to study the fragmentation processes of rock block in rock avalanches via DEM simulations. Although the numerical model is extremely simplified, the research has produced some meaningful outcomes into the mechanisms of these processes. The quality of the work is generally good and logical reasonings are sound. Several comments and suggestions are presented hereafter:

Introduction: Haug et al. (2020) have some new comments on rock fragmentation in rock avalanche.

Haug Ø T, Rosenau M, Rudolf M, Leever K, and Oncken O. 2020. Short communication: Runout of rock avalanches limited by basal friction but controlled by fragmentation, Earth Surf. Dynam. Discuss. [preprint], <https://doi.org/10.5194/esurf-2020-76>.

Fig. 5 It would be unreliable to fit only three points to obtain the general relationship between velocity/energy increments & block strength.

Fig. 7 The symbols of the fragmentation stage should be revised.