

Interactive comment on “Avalanche Impact Pressures on Structures with Upstream Pile-Up/Accumulation Zones of Compacted Snow” by Perry Bartelt et al.

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Dear Thierry. Unfortunately we have very serious problems with the "shockwave" model. We simply cannot get the numbers to work for pile-up. And we certainly do not agree with the momentum balance. The velocity u_n (S_{dot}) cannot appear in the momentum balance because there is simply no mass moving at this speed, at any time. That is, the pile-up speed is associated with a discontinuity and not mass. We have added a long section comparing the pile-up and "shockwave" approaches. Please see the supplement.

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Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2018-154/nhess-2018-154-AC9-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2018-154>, 2018.

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