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Discussions

Interactive comment on "Evaluating snow weak-layer rupture parameters through inverse Finite Element modeling of shaking-platform experiments" by E. A. Podolskiy et al.

Anonymous Referee #3

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General comments

The authors have obtained the optimized values of the cohesion and friction angle of the Mohr-Coulomb failure criterion through complex procedure using the experimental data. The both parameters would be useful to describe the failure mechanism of weak layers under dynamic stresses.

Specific comments

section 4532 line 19 The authors show us the density of the weak layer, and of the upper snow block in section 4541, line 8, but don't show the density of the bottom

snow block. I think that for "sandwich" snow samples both densities of upper and bottom are important to estimate stiffness parameters of the weak layer within the both boundaries.

section 4532 lines 24-26 Sintering time of snow particles affects the mechanical properties of snow especially for artificial snow blocks, so some readers may want know how long the samples were kept in a cold room after complete sandwich samples.

section 4532 line 29 For inclined samples, there are two ways to shake the samples i.e. parallel or perpendicular against the inclined geometry. Some readers may want to know the shaking direction.

section 4542 line 12 Ooizumi and Huzioka (1982)'s measurements were not "high strain-rate", the strain-rates were 10ˆ-8 - 10ˆ-7 sˆ-1.

Technical corrections

section 4531 line 1 The sentence of "(Podolskiy et al., 2010b)" may be corrected to "Podolskiy et al. (2010b)".

section 4531 line 9 I am not sure, but the sentence of "The paper take into account" may be corrected to "The paper takes into account".

section 4540 line 20 mf and A are identified here, but no a(t) used in eq. (7).

section 4567 Figure 1 It will be clear if the inclined angle, α and shaking direction are shown in (a).

section 4571 Figure 5 In the text, two points of lower and upper may also refer to left and right respectively as shown in the text of Figure 6. It will be clear if three points including middle indicate the locations in Figure 4.

section 4575 Figure 9 In the figure the middle column's test number may be corrected to 15 instead of 17.

section 4577 Figure 11 In the text "red curves" may be corrected to "red lines" as mentioned in section 4551 line 20.

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