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Interactive comment on "Brief Communication: On direct impact probability of landslides on vehicles" *by* P. Nicolet et al.

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Thank you very much for your comments. Please find below an answer to each question or remark (questions or remarks are in italic, whereas answers are in bold).

[p. 754, l. 2] p. 7312, line 24 to p. 7313, line 1: please provide references for the "usual use" of the term "spatio temporal probability" and to "some methods".
You raise a good point since its is actually the term "temporal spatial probability" that is generally prefered (e.g. Fell et al. 2005, Corominas and Mavrouli 2013, Ferlisi et al. 2012, Fell et al. 2008), although Corominas at al. 2013 (doi:10.1002/9781118601532.ch8) refers to the "spatiotemporal probability of the

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element at risk". We will replace "spatio-temporal" by "temporal spatial" and refers to the articles cited here.

p. 7313, line 12: tipos analyses and line 20 rock-fall
Indeed. "Rock falls", will simply be replaced by "rock".

p. 7316, line 16: land-use planning
We think that land planning is the proper term, but we will check with a native English speaker.

p. 7316, line 11ff: Here, the meaning of W_E in eq. (4) and (6) is clear; however, its use is less clear or perhaps wrong in the following equations. In equation (8), W_E would be the diameter of a rock in case of a rock-fall and in case of a slide it would correspond to the (effective) width of the slide. However, in the cited EconoMe-Tool, the length of endangered section is added to the length of the vehicle ($g_j + l(B)$ on page 11 in the cited document Bründl et al.). Therefore, the equation should to be corrected to: $p_{ST} = \frac{f_v \times (L_H + L_V)}{v_V}$ since $W_E \neq g_j$ according to your terminology. Please comment on this and clarify.
In Eq. 9 and 10 of Bründl et al. (2015, page 11) g_j is multiplied by the spatial occurrence probability before being added to the length of the vehicle. If we multiply g_j (= L_H) by Eq. 4, we obtain W_E. Therefore, the length of the endangered area (L_H) has no influence on P_{ST}.

p. 7318, line 14: I suggest to replace "last inspection" with "last clearance"
This is indeed more accurate.

p. 7318, eq. (9): I cannot find this equation in Borter (1999). Number of affected

people is used in Borter (1999) in terms of damage susceptibility on p. 66.
It is the equation of page 77, for trains (β^*)

p. 7320, lines 1 - 4: Here, it should be mentioned or discussed that all people of a train could be affected if the front part of a train (e.g., first or second waggon) is hit and the train derails. Potential damage in case of derailment depends also on topographic conditions, meaning that in case of steep terrain a high number of passengers could be affected.
You probably refer to p. 7319. The fact the all passengers might be affected if some part of the train is affected is what we are trying to say, although we do not discuss of the local topography (which is indeed an important element). Although they have to be mentioned, these other types of consequences are be-yond the scope of this brief communication and the reader is referred to Cloutier (2014) for further discussion.

p. 7320, line 5: around
Indeed.

p. 7320, line 2: ". . . of the neglected . . . taken into account." The "the one" is unclear.
The one taken into account might be the dimension of the vehicle (Eq. 4) or the dimension of the event (Eq. 6).

line 25: "consequence" instead of "consequences"
Indeed.

p. 7321, lines 5 - 10: Check the (long) sentence for clarity and consider rewriting; check also lines 17 - 22, where the sentence could be shortened.

The second part should indeed be clarified. We will also try to shorten the sentence at lines 17–22.

Table 1: What is V [-]?
It is the vulnerability. The explanation is indeed missing and will be added in the legend (for H as well)

Figure 3: please indicate L_H here.
L_H **is indicated in the figure, so we suppose that you would like to see L_H explained in the legend? This could be done.**

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