

Interactive comment on “Dynamic risk simulation to assess risk along roads” by J. Voumard et al.

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Received and published: 12 August 2013

Thank you for your comments, an answer to all comments is given below. Questions or remarks are in bold, whereas answers are normal police.

The authors highlight risk from rockfalls in the introduction, but for the Fontanney road section the primary hazard is debris flows, and for the Col du Pillon road section the primary risk is associated with doline formation in the roadway. The authors may want to generally characterize the hazards as “geological hazards” rather than as from rockfalls specifically. If so, the details about rockfall hazard assessment discussed in the second paragraph of the introduction are probably excessive.

Yes, you're right. The paper focus now on natural hazard and not only about rockfall.

C809

The second paragraph of the introduction was deleted.

It is nice to see that actual traffic data (e.g., hourly fluctuations of traffic flux on the roadways investigated) are utilized in the analysis. The authors may want to briefly discuss how their methodology could be adapted to situations where such detailed data are not available.

A paragraph at the end of chapter 3.3 Numerical setups was added to explain how to obtain traffic data and how to do when those are unavailable. When it is difficult or impossible to obtain enough precise traffic data, we try to estimate the unknown values with examples of well-known similar roads sections, in a similar region. But data from the Alps could not be exported directly to Himalayan roads for instance. Usually some kind of information exists for most of important transport corridor in mountain region. Roads quality, traffic and vehicles can be quite different in the Alps, Andes or Himalaya. Nevertheless, we can expect that parameters for the Alps will quite similar to those for other European mountain ranges.

It would be helpful to expand Table 3 to include all parameters used in the analysis (e.g., visibility, distance limits), and to ensure that the parameters listed in the table are labeled consistently with their description in the text. This would increase the reproducibility of the analysis.

Table 3 was expanded with speed, visibility and kinematics parameters

“Vehicles” is often used where “vehicle” would be the more appropriate usage

The 167 times where vehicle is written were analysed. Numerous cases were changed

The Appendix is listed as “Appendix 1” in the text (line 124), but is labeled as “Appendix A” on line 337. Please ensure consistency here.

Now: Appendix A

Change “poucentage” in the y-axis label to “percentage”.

C810

“Pourcentage” replaced by “percentage”

Unless the authors feel strongly that this figure should show the Matlab format, I recommend reformatting to focus on the data, cropping the toolbar and other unnecessary aspects out of the screenshot. The label “Figure 2” at the top of the screenshot is also potentially misleading.

Now figure 8 focuses only on the vehicles speed.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 1285, 2013.