

## ***Interactive comment on “Simple rules to minimize exposure to coseismic landslide hazard” by David G. Milledge et al.***

**Milledge**

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Dear Reviewer,

Thank you for your careful, positive and thorough review of our paper. We are in the process of addressing your comments in full but I wanted to provide an initial response first. We will respond to your general comments here and your in-line comments in the attached file. We have found that a number of your suggestions can be directly implemented and some of the queries simply addressed by slight alterations to wording in the text. As a result, we respond here only where there is more to say.

Many thanks,

David Milledge

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GENERAL COMMENT- Thank you for this interesting paper. Using six inventories of coseismic landslides, the authors test the significance of multiple topographical parameters to constrain a set of simple rules in order to minimise exposure to landslide hazard. The paper forms a significant added value to the landslide hazard scientific community as a first attempt in identifying simple rules which is essential for communication about complex hazards to a broad (lay) audience in creating awareness and minimizing landslide exposure. I appreciate the authors' balanced conclusion on the most effective parameters for hazard reduction ["We conclude that decisions on how to reduce landslide hazard most effectively need to be made on a case by case basis, and are best made using hazard area, skyline angle, and the local slope in conjunction with each other."], unfortunately this is not taken in the abstract and conclusion where the authors present without further nuances three simple rules. The discussion is focused on the authors' results with limited reflections with respect to related research (cf. introduction). I believe such a reflection would make the results more convincing. RESPONSE: Thank you for your careful reading of the paper and your many helpful comments and suggestions. We have worked hard to identify this set of simple rules and it is encouraging that this comes through in the manuscript. However, we will take on board your suggestion to temper our presentation of these rules. We will seek to clarify that we are suggesting such rules as a new tool to complement existing approaches rather than replace them, and that these are a first attempt at 'simple rules' with the hope and expectation that others will improve on them in future.

SPECIFIC COMMENTS COMMENT- The first time I read through the paper I found the abstract and introduction confusing while the terms hazard, exposure, risk, hazard response, "anticipating". . . are used without first clearly constraining them. Even though the audience from NHESS should be familiar with these terms I believe that these terms are still easily confused. I would therefore recommend to distinguish these terms in the introduction, or make reference to literature in which this is done. RESPONSE: Thank you for this useful feedback we will seek to clarify this in the revised manuscript.

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COMMENT - The paper is well structured and the figures of high quality presenting very clearly the results, yet I would suggest to shorten the paper to bring forward the main messages even more clearly. Sections that I would suggest to reduce are section 4 (“Earthquake inventories”) by providing a summary of the used inventories with the most important parameters necessary for the analysis; and section 5 (“Methods”) could also be reduced, moreover this would allow the reader to more easily follow the workflow. RESPONSE: We are pleased that you found our presentation of the results clear and will seek to shorten the “Earthquake inventories” section of the manuscript, we see less scope for shortening the methods section but will look for opportunities in that section also.

COMMENT - I wonder how easily the presented rules can be adopted without prior knowledge or skills, which seems to be the main purpose of the study yet lacking from the discussion. This is not easily answered and out of scope of the study to check the applicability of their rules by householders, local government, and NGOs, but I would recommend to be more cautious when claiming to present ‘simple rules’. RESPONSE: We have chosen the term ‘simple rules’ to make the connection to an existing and active field of research around heuristic decision-making. We would strongly argue that the first two rules are simple and do not require prior knowledge or skills: ‘minimize your maximum angle to the skyline’ and ‘avoid steep (>10 degrees) channels with many steep (>39 degrees) areas that are upslope’. Your point here and in detailed comments that the language of the third rule needs to be improved is helpful and we will look for opportunities to do so. Examining the applicability of these rules is, as you suggest, beyond the scope of this study but that doesn’t prevent the development and testing of the rules themselves from being a useful exercise.

Please also note the supplement to this comment:

<https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2018-271/nhess-2018-271-SC4-supplement.pdf>

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Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., <https://doi.org/10.5194/nhess-2018-271>, 2018.

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