

## ***Interactive comment on “Exposure-based risk assessment and emergency management associated with the fallout of large clasts” by Sara Osman et al.***

**Sara Osman et al.**

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We thank the reviewer for positive and constructive comments. As also mentioned in the response to reviewer 1, unfortunately the Rossi et al. paper is not online yet as we had hoped. As a result, we let the editor decide whether it would be possible to provide the reviewers with a copy of the paper (given that it is close to its final form) or whether we can postpone the NHESS deadline beyond September 15 in order to wait until the Rossi et al. paper is officially accepted in EPSL. All minor comments raised are well taken and will be addressed together with the final reviews from both reviewers. Briefly:

1. the title: I'd suggest to specify in the paper that the study is an application to Mt.

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Etna ok

2. Par 10: fCioni, please correct it ok

3. the authors report an estimate of tourists from 2010, there is not a more recent number to include in this paper? After 2013 the number of tourists is increased of about 50%' (<http://ilvulcanico.it/mount-etna-dopo-il-riconoscimento-unesco-del-2013-cinquanta-per-cento-di-turisti-in-piu/>). We will include that

4. when the authors talk about kinetic energy: is the kinetic energy calculated by Rossi'd model? Explain Yes, it is the kinetic energy just before the impact on the ground (which it is supposed to be completely lost in the impact, so the final condition of the clast velocity is zero). We will explain this better in the text

5. In the pedestrian evacuation analysis: could the authors please comment more on the reason why they choose the thresholds of 1% to define the hazard area? In the hazard assessment, we excluded areas with probability of impact  $< 1\%$  because, at very low probabilities, the hazard area was very sensitive to the number of simulations (as we show in Figures S8 and S9). We then used the hazard area identified in the hazard assessment as a starting point for the pedestrian evacuation analysis ie. as the area from which people should evacuate. We will explain this better in the text.

6. in the emergency management section it would be interesting to know if any exercise has been practiced so far to evaluate the evacuation plan/time... no exercise has been practiced for this topic.

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