

Interactive comment on “Size distribution law of earthquake-triggered landslides in different seismic intensity zones” by Yidan Huang and Lingkan Yao

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We very much appreciate the careful reading of our manuscript and valuable suggestions of the reviewer. Overall the comments have been fair, encouraging and constructive. We have learned much from it. Responds to the reviewer's comments: Comment 1: The author considered that the scale frequency relationship of landslides developed in intensity VII-IX conforms to one law, that of landslides in intensity x conforms to another law, and that in intensity XI conforms to another law. First of all, there are very few landslides in VII and VIII, and there will be a great deal of uncertainty in the law obtained from such a small sample. Response: Landslide data were accessed through

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by field investigation and interpretation of high-resolution remote sensing images. We got 108 landslides by field investigation and 706 by remote sensing interpretation in VII zone, 108 landslides by field investigation and 477 by remote sensing interpretation in VIII zone. The field survey data is small because we can only measure the landslides visible along the highway. Furthermore, this study divides the landslide data into seismic intensity zones for statistics, so the samples in each zone are not large. In the study of frequency-magnitude distribution of landslides, the sample number of different landslides databases are quite different. For example, Brunetti (2009) examined 19 landslide datasets. Individual datasets include from 17 to 1019 landslides of different types. Each landslide dataset exhibits heavy tailed (self-similar) behaviour for their frequency-size distributions. (References: Brunetti M., Guzzetti F., and Rossi M.: Probability distributions of landslide volumes. *Nonlinear Processes in Geophysics*, 16(2):179-188. <https://doi.org/10.5194/npg-16-179-2009>, 2009.)

Comment 2: The ground motion accelerations used in the sand pile experiments carried out by the authors are 0.075-0.125g and 0.15-0.25g, although the phenomena claimed by the author are consistent with those obtained from the spatial distribution of landslides. However, 0.075-0.125g does not correspond to VII-IX intensity area. In fact, in general, 0.2g corresponds to the VIII degree region. Obviously, the boundary conditions of spatial analysis are completely different from those obtained by physical experiments, and it seems that there is no comparability. Response: In the shaking table experiments, the one-side slope sand pile was built by dried sand gravel reaching its natural angle. The strength of the loose slope is less than the natural slope. In

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