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Nonlinear Processes in Geophysics
Discussions

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

**Anonymous Referee #1**

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The scale frequency distribution of earthquake-triggered landslides is an important issue. This manuscript analyzes the scale frequency relationship of landslides based on the spatial distribution of landslides and physical experiments. Through the comparison and comprehensive analysis of the revealed laws of spatial distribution and the phenomena of physical experiments, some useful conclusions are addressed. The special comments include: (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. (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. (3) The landslide data of different intensities used in this paper come from two earthquake events. Wenchuan earthquake is mainly high intensity area, while Lushan earthquake is mainly medium intensity area. Undoubtedly, the difference of different seismic characteristics and the nature of earthquake affected area, such as geological and topographical conditions, may greatly affect the results, so that they are not comparable. (4) The data quality of landslides triggered by the two earthquakes does not seem to be perfect. Compared with the existing work, either the whole earthquake area is not covered, or many landslides seem to be missed. There is no doubt that the law revealed by such data may deviate from the actual situation. In conclusion, a major revision is recommended.

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