Natural Hazards
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Discussions

Interactive comment on "Quantification of uncertainty in rapid estimation of earthquake fatalities based on scenario analysis" by Xiaoxue Zhang et al.

Xiaoxue Zhang et al.

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Thank you very much for reading the article carefully and putting forward many key points. In response to your questions and opinions, we make the following responses: 1. For the point 2. ' The epicentral intensity' is defined as intensity of earthquake source in earthquake, which refers to the degree of earthquake damage to buildings such as ground and buildings. 'Fortification intensity' is defined as the seismic precautionary intensity, it must be determined according to the size of the city in which the building is located, the type and height of the building and the planning of the local seismic fortification area. 'The initial time ' is defined as the moment of

earthquake is the moment when the source body starts to crack. 2.For the point 4. The information diffusion theory is a domain-specific information distribution theory for small sample problems. It can expand the sample and obtain the probability of occurrence of a particular domain. The specific theory is shown in the formula (1-3) in this paper. 3. For the point 7. We want to express our approach is different from the traditional empirical approach, not based on parameter fitting, not to negate previous studies. 4. For the point 13. 'Victim' means the people affected by the disaster in the specific area. 5. For the point 14. The epicentral intensity is not come from PAGER, the paper sated in line 117, the epicentral intensity is calculated by the empirical formula. 6. For the point 5 and 15. The selected references are long-standing, but the research results are widely circulated, and the research results are affirmed by the industry. 7. For the point 17. The data of typical earthquake cases selected for verification are mainly from the book named "Assessment Compilation of Earthquake Disaster Losses in Mainland China", which compiled by the Earthquake Disaster Emergency Rescue Department of China Earthquake Administration. 8.For the point 18. In this paper, we use the first-time acquired basic seismic parameters to evaluate the earthquake as it occurs before other loss data are obtained, so we selected the parameters, which are easy obtain. Magnitude is the easiest way to get. 9. For point19.20.21. In this paper, we use the first-time acquired basic seismic parameters to evaluate the earthquake as it occurs before other loss data are obtained, so we select the intensity rather than the ground motion. Intensity is more macroscopic. And the relationship between the epicentral intensity and the fortification intensity can indirectly express the building losses. 10.For point 20. There is no correlation between the focal depth and earthquake fatality. The fitting results in this respect will be added to explain in the paper. 11.For the point 22. This is an empirical relationship between the epicenter intensity and magnitude of earthquakes in China, as described in the paper. 12. For the point 23. The term "basic earthquake emergency scenarios" base on scenario analysis and data used in the article, all possible scenarios are combined with parameters. 13.For the point 26. In this paper, the validated assessment results

are good in the same order of magnitude without affecting the start-up of emergency plans in China. 14. For the point 27. In this paper, the validated evaluation results are in the same order of magnitude, and do not affect the proportion of the evaluation results in different regions of China's emergency preparedness initiation. 15. We will modify the errors that you put forward in the manuscript.

Please also note the supplement to this comment:
https://www.nat-hazards-earth-syst-sci-discuss.net/nhess-2018-187/nhess-2018-187-AC1-supplement.pdf