

Interactive comment on “An evaluation of influential factors on landslide mobility during the 2008 Wenchuan earthquake” by D. P. Guo et al.

D. P. Guo et al.

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Dear editor and reviewer:

Thank you very much for your kind comments on our paper, I will reply your comments one by one, as follows:

[1]I think the topic of the manuscript is very valuable and urgent. In addition, I noticed that the topic is not only have few concerns in the Wenchuan earthquake, but also other earthquake events (such as the 1999 Chi-chi earthquake, the 2010 Yushu earthquake, the 2013 Lushan earthquake, 2010 Haiti earthquake etc.). Therefore, I suggest the author to read several more papers of these earthquake events, and supplement the knowledge in the section introduction, which can strengthen the meaningful and

C1501

valuable of the manuscript. Reply: added following text in the Line 5 of page 3 of NHESD version of this paper: From the global viewpoint, there are many publications to research the relationship between earthquake-triggered landslide distribution and its influential factors, such as, Keefer (1984) firstly introduced empirical upper bound lines for the relation between earthquake magnitude and total area affected by landslides, maximum distance from epicenter or from fault rupture zone. Khazai and Sitar (2003) and Meunier et al. (2007) analyzed the relation between landslide distribution and seismic ground motion during 1994 Northridge earthquake and 1999 Chi-chi earthquake. Recently, Xu et al. (2014a, 2014b, 2014c) statistically analyzed landslide distribution and numerous influential factors during 2010 Yushu earthquake, 2013 Lushan earthquake and 2010 Haiti earthquake. Although, there are great number of landslides triggered by these earthquakes, landslide mobility and its influential factors have not been discussed among previous studies.

[2] As the authors cited previous studies, tens of thousands of landslides were triggered by the earthquake. However, only 46 landslide cases were selected in the study, only occupied 0.02-0.03 % of the total landslides triggered landslides. Could the 46 landslides represent the characteristic of the total landslides triggered by the Wenchuan earthquake? Therefore, I suggest the authors point this limitation in the section of “discussions”. In addition, I suggest the author can carry out a new study contain more landslide cases with a more in-depth research in future. Reply: adding one sentence to state one limitation of this paper, it is as follows in Line 3 of paper 14: As a result of these strict criteria, the dataset includes limited amount of landslide, which may cause these 46 landslides can't represent all of the characteristics of the total landslides during the 2008 Wenchuan earthquake.

[3] In section 4.2, four predictive models include Scheidegger, Legros, Corominas, Hunter and Fell should be represented in the main text, similar as the formula (2), which can be easily understand by readers. Reply: All of the four empirical formula were listed in Table 5 in page 23.

C1502

[4] There are many language errors throughout the main text, I suggest the paper need a careful language proofreading by a native English speaker. For example, the following points can be seen throughout the main text: Should the title more appropriate changed to “An evaluation of influential factors on landslide mobility related to the 2008 Wenchuan earthquake” Page 2: Line 5: travel path to traveling path? Line 18: occurs to be occurred. Line 24: authors to be researchers. Page 3: Line 13: to explore correlations between influence factors and landslide mobilization. Line 14: which factors, have effect to be have effected Page 6: Line 2: based on landslide boundaries? Reply: Thank you very much for kindly pointing out our non-native English expression, all expression has been refined. We wish it will satisfy the request of publication.

Details of revision are expressed in the attached PDF by comment tags.

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/2/C1501/2014/nhessd-2-C1501-2014-supplement.pdf>

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 613, 2014.