

## ***Interactive comment on “Ejection mechanism of the Donghekou landslide triggered by the 2008 Wenchuan Earthquake revealed by discrete element modeling” by R.-M. Yuan et al.***

**R.-M. Yuan et al.**

jchu@ntu.edu.tw

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The authors would like to express deep appreciation again to the editors and the reviewer for your useful comments on our manuscript entitled “Ejection mechanism of the Donghekou landslide triggered by the 2008 Wenchuan Earthquake revealed by discrete element modeling”. The authors thus revised the manuscript carefully and explained the questions presented by the reviewer.

The following are the necessarily responses for the comments in detail:

Comment 1: Dear editor, I read this manuscript that can be considered of very high

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quality. I have just a very few annotations: 7669L17 : not ‘rock slope susceptibility to earthquakes’ but ... ‘rock slope failure due to seismic shaking’. 7669L19 : ... and to define trigger mechanisms 7670L19 : .. towards

Ans 1: Thanks for your suggestion, we have revised the typo and suggested sentences in the revised manuscript. ... Comment 2: Fig 9. The site before the earthquake is hidden by clouds. Therefore, figure 9b could be dropped and fig 9a could be enlarged.

Ans 2: Thanks for this suggestion of dropping Fig. 9b. We thus revised Fig .9 based on the suggestion presented by the reviewer. The corresponding caption of Figure 9 has been revised as following: Fig. 9 Picture of the landslide after the earthquake (View looking to the southwest).

Comment 3: However, I have a comment on the title ...and the systematic use of the word ‘ejection’: Actually, I think that the word ‘ejection’ could be misleading. The reader could expect that the seismic shaking ejected the rocks – but this is not the case (and physically not possible): the seismic shaking initiated sliding in the upper part. And then, rather than being ejected, the rock mass jumped over some distance due to the specific imposed geometry of the sliding surface (a strong change between slope angle and dip of the sliding surface) – that acts as a spring board for the sliding mass. So, maybe a word like ‘jumping’ would better characterize the sliding mechanism:

Ans 3: Thanks for the suggestion about the idea of “ejection”. Actually we agree your idea that seismic shaking initiated the sliding in the upper part and rock mass jumped over some distance in the condition of specific geometry and sliding surface predicted in our numerical simulation. The word “ejection” used in Donghekou landslide was based on field investigation, consequently we use discrete element method to simulate the sliding process of the landslide and make the so-called “ejection phenomena” clear. We will revise it in our title with a quotation to mark ejection and emphasize the jumping effect in the introduction and conclusion.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 7667, 2013.

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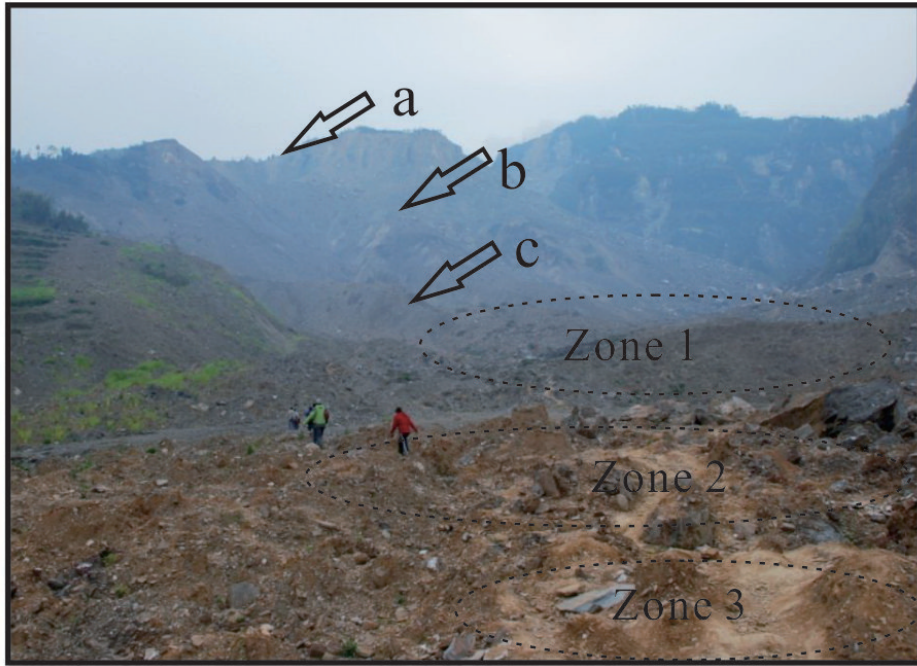


Fig. 1. New Figure 9

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