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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "A theoretical model for the initiation of debris flow in unconsolidated soil under hydrodynamic conditions" *by* C.-X. Guo et al.

Anonymous Referee #2

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Influence of rainfall on the stability of an unconsolidated landslide deposit slope was investigated experimentally by the authors. Findings from the experiments are of great value to interpret mechanism of the debris flow. However, 3 suggestions for the present revision are given in the following. Firstly, it is a little bit difficult to understand debris gradations tabulated in table 2, debris sized 60∼80mm could not be traced after experiment. It is therefore suggested that the authors explain this in their revised version of the paper. Moreover, depths of the three layers of the debris deposits need to be specified in order that readers may understand the experiment results easily. Secondly, shear strength of the unsaturated debris deposits (in table 3) seems irrelevant.

A detailed description for its usage in the manuscript is necessary. Further, sampling location for the direct shear tests, as well as the gradation of the debris, should be stated since the strength is closely related to the interlock of the debris, particularly after the process of "coarsening" due to rainfall. Finally, it is strongly suggested that the writing is re-examined by the authors (and preferably by an English native speaker). Several errors are found in the manuscript, e.g. the line 323 (details are in section 4.2), the line 351 (F should be f), etc.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 4487, 2014.