Nat. Hazards Earth Syst. Sci. Discuss., 2, C1271–C1272, 2014
www.nat-hazards-earth-syst-sci-discuss.net/2/C1271/2014/
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Natural Hazards and Earth System Sciences
Discussions

Interactive comment on "A two-phase model for numerical simulation of debris flows" *by* S. He et al.

S. He et al.

lixinpo@imde.ac.cn

Received and published: 2 July 2014

The authors would like to express deep appreciation again to the editors and the reviewer for your useful comments on our manuscript entitled "A two-phase model for numerical simulation of debris flows". 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: (1) The content in page 2153 will be revised. (2) The reference by Kowalski (2012) will be cited. (3) In momentum equation (3), only buoyancy and drag force are considered for the purpose of simplicity. Actually, the effect of the other interaction forces is still an question need further study. (4) In the fourth section, assumption of a flat bed is used. (5) The flow depth

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(H) of normal debris flow is comparatively small to the span or spread (L) of the flow, that is, the aspect ratio . Assumption of depth averaging is a widely used simplicity in debris flow modeling (see Savage & Hutter.1989ïijŇIverson. 1997ïijŇPudasaini & Hutter.2005ïijŇPudasaini,2012ïijŇGray et al.1998). (6) Some other changed will be given in future revisions.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 2, 2151, 2014.