

Interactive comment on “Discharge of landslide-induced debris flows: case studies of Typhoon Morakot in southern Taiwan” by J.-C. Chen and M.-R. Chuang

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Reviewer #4:

1. Field observations were used in the study to calibrate the discharge coefficient. It would seem important for the authors to report when and how field observations were made. Response: The field investigations used in this work aimed to identify the inundation characteristics of debris flow and the landslides area in a watershed. The process used in the field investigations has been added, and is now described in more detail in the revised version in section 2-2, from p. 5, lines 12–23 to p. 6, lines 1–5.

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. 2. Simulation results of SXK and XKD gullies do not fit field observations as well as HSX gully. Why? Response: (1) Because the maximum flow depth (MD) is much more useful for calibrating the FLO-2D model than final depth (FD) (following another reviewer's suggestion). Therefore, the FD data in the original manuscript has been deleted, and MDs in the field have been re-checked and used. (2) Fig. 6 in the revised manuscript was added instead of the original Figs 5, 7, and 8, in order to clearly present the results between simulations and field investigations. With the exception of data point “a”, Fig. 6 shows that MDs from the simulation are almost in agreement with those from field investigations. However, the MD at point “a” in the simulation is higher than that in the field investigation. This is considered to be attributed to the expansion of the cross section at point “a”, which is near the fan apex of the HSX gully, in relation to riverbank erosion during the debris flow. This description has now been added in the revised version on p. 14 (lines 5–12).

Please also note the supplement to this comment:

<http://www.nat-hazards-earth-syst-sci-discuss.net/2/C884/2014/nhessd-2-C884-2014-supplement.pdf>

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