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Discussions

Interactive comment on "Characteristics of ground motion and threshold values for colluvium slope displacement induced by heavy rainfall: a case study in northern Taiwan" *by* C.-J. Jeng and D.-Z. Sue

Anonymous Referee #2

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The paper studies the effects of heavy rainfall on the colluvium slopes in northeastern Taiwan. The significance of the settlement and displacement of the slopes recorded by an impressive number of devices (295 monitoring marks for ground motion and over thirty inclinometers) are evaluated. Threshold value curves that consider the displacement of slopes due to typhoon rainfall are established. The text is written clearly and it is properly organized. All figures and tables included in the text are necessary and appropriate. The abstract accurately reflects the contents. The research is original and is interesting because it presents a very good example of analysis of data coming from an high number of long-term monitoring ground devices in a complex topographical

and geological context. I would like to make only one remark. In Fig.15 the test data highlight an high variation of the soil cohesion (from 0 to 40 kPa) of the colluvial soils. Nevertheless, the authors adopted for the cohesion an average value of C = 18.5 kPa. Have the authors done a sensitivity analysis for the parameter C in the stability analysis? Which is the spatial variability of this parameter? Could the authors make some comments about that? Minor comments: Fig.1 please replace "altitudes" with "bed attitudes" Fig.17: I think that there is a mistake because the figure shows the groundwater table for normal condition and not in storm condition.

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