Natural Hazards
and Earth System
Sciences

Open Access

Discussions

Interactive comment on "Integrating spatial and temporal probabilities for the annual landslide hazard maps in Shihmen watershed, Taiwan" *by* C. Y. Wu and S. C. Chen

C. Y. Wu and S. C. Chen

cywu@alumni.nchu.edu.tw

Thanks for the comment, the moving window method was not used in this study; the standard deviation of the elevation calculated by the elevations of the entire grids within each slope unit was taken as the terrain roughness. The terrain roughness and slope roughness were preliminarily selected in this study according to the effectiveness in other researches. Both were further selected as effective variables using a success rate curve, landslide ratio plot, frequency distribution of landslide and non-landslide group, and probability-probability plot. In addition, the height differential from the crest to the toe of the slope in each slope unit was taken as the total slope height. The

C532

total slope height may be physically related to the magnitude of the stress and the pore-water pressure in the lower slope. The perennial rivers were extracted from the 1:5,000 scale Orthophoto Base Maps of Taiwan. The faults (as shown in fig. 1) were extracted from the 1:50,000 scale geological maps.

Interactive comment on Nat. Hazards Earth Syst. Sci. Discuss., 1, 471, 2013.
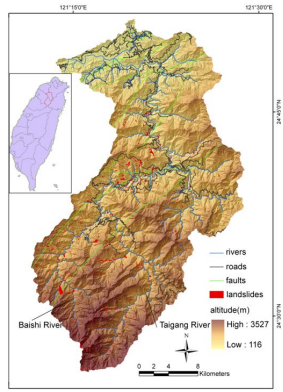
Fig. 1. The river system, roads, and topography of the Shihmen watershed. The landslides were caused by Typhoon Aere in 2004.

Fig. 1.

C534