

Interactive comment on “Landslide susceptibility mapping of Cekmece area (Istanbul, Turkey) by conditional probability” by T. Y. Duman et al.

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I am afraid that I have still concerns about the statistical analysis and adding the probabilities.

The cited papers use the conditional probability approach in a slightly, but fundamental, different approach. Clerici et al. (2002), for instance, used Unique Condition Unit (UCU). Each UCU consists of the unique combination of landslide factors and the conditional probabilities are calculated based on the occurrence of landslides within each UCU.

While the UCU are mutually exclusive, the individual factors are not. A location might have a moderate permeability, an altitude of 50-75 m and a slope of 15-20 degree. Therefore the last term in $p(X \text{ or } Y) = p(X) + p(Y) - p(X \text{ and } Y)$ is not zero and, thus, adding the conditional probabilities for the individual factors is not valid. I would strongly

recommend to correct this (e.g., use the approach of Clerici et al.).

Clerici, A., Perego, S., Tellini, C. and Vescovi, P.: A procedure for landslide susceptibility zonation by the conditional analysis method, *Geomorphology*, 48, 349-364, 2002.

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