Geophysical Research Abstracts
Vol. 14, EGU2012-10499, 2012
EGU General Assembly 2012

Application of Logistic Regression for Landslide Susceptibility Mapping in the Alishan Area, Southern Taiwan

H. C. Chan, C. C. Chang, and P. Y. Laio
Department of Soil and Water Conservation, National Chung Hsing University,Taiwan R.O.C. (hcchan@nchu.edu.tw)

Landslide susceptibility analysis usually combines several factors, including the terrain, geology, and hydrology. The analysis tries to find a suitable combination of these factors in order to establish a landslide susceptibility model and calculate the susceptibility value. A potential landslide map can be established by using the calculated the susceptibility value of landslide. This study took Alishan area as an example and aimed to assess landslide susceptibility analysis by Logistic regression, a multivariate analysis method. In order to select the factors efficiently, the calibration and selection procedure were performed. The results were verified by a previous typhoon event. The classification error matrix was used to evaluate the accuracy of landslide predicted by the present model. Finally, this study applied 10-, 25-, 50-, and 100-year return periods precipitation to estimate the susceptibility values for the study area. The landslide susceptibilities were separated into four levels, including high, medium-high, medium, and low, to delineate the map of potential landslide.