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Object-based Classification for Detecting Landslides and Stochastic Procedure to landslide susceptibility maps — A Case at Baolai Village, SW Taiwan

Ying-Tong Lin (1), Kuo-Chen Chang (1), and Ci-Jian Yang (2)
(1) Department of Geography, National Taiwan Normal University , (2) Department of Geography, National Taiwan University

As the result of global warming in the past decades, Taiwan has experienced more and more extreme typhoons with hazardous massive landslides. In this study, we use object-oriented analysis method to classify landslide area at Baolai village by using Formosat-2 satellite images. We used for multiresolution segmented to generate the blocks, and used hierarchical logic to classified 5 different kinds of features. After that, classification the landslide into different type of landslide. Beside, we use stochastic procedure to integrate landslide susceptibility maps. This study assumed that in the extreme event, 2009 Typhoon Morakot, which precipitation goes to 1991.5mm in 5 days, and the highest landslide susceptible area.
The results show that study area's landslide area was greatly changes, most of landslide was erosion by gully and made dip slope slide, or erosion by the stream, especially at undercut bank. From the landslide susceptibility maps, we know that the old landslide area have high potential to occur landslides in the extreme event. This study demonstrates the changing of landslide area and the landslide susceptible area.

Keywords:
Formosat-2, object-oriented, segmentation, classification, landslide, Baolai Village, SW Taiwan, FS