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土石流堆積長度研究

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摘　　要　921 地震之後，台灣山坡地土石鬆動情形嚴重，使得土石流發生之臨界降雨強度與臨界累積雨量大幅下降，加上近年來全球氣候變遷，颱風過境挾帶特大豪雨極易造成土石流災害。爲了降低災害規模，土石流危險區域之預測便成爲研究課題之一。其中，土石流堆積長度爲關鍵參數之一。

本研究在台大安康試驗場搭設試驗渠道，模擬土石流之堆積機制，得到土石流堆積長度簡化模式如下：

$$L = 73.085 \times \theta_u^{\,0.217} \times C_{du}^{\,-0.665}$$

並且，利用溪頭三號坑和松鶴一溪、二溪資料驗證發現，本研究模式所得之土石流堆積長度誤差較常用之池谷浩者小。

關鍵詞：土石流、堆積長度、土砂體積濃度。

Deposition Length of Debris Flow

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ABSTRACT　After the 921 Earthquake (Sep.21, 1999), the hillside soil structure of Taiwan was severely loosened. The earthquake greatly abated the threshold of rainfall intensity and the accumulated precipitation of debris flow occurrence. Besides, the global climate change also made typhoons more destructive than ever. In order to mitigate the disasters, debris flow forecast has become an important topic. The deposition length of debris flow is one of the crucial parameters.

The study set an experimental flume at An Kang and simulated the mechanism of debris flow deposition. The model of deposition length is as follows:

$$L = 73.085 \times \theta_u^{\,0.217} \times C_{du}^{\,-0.665}$$

In addition, the study used field data of Sung Ho 1st and 2nd creeks (Hsi Tou) to test and verify the model. The model of this study is proven to have more validity than the commonly used model of Ikeya.

Key Words:　debris flow, deposition length, sediment concentration.

一、前　　言

台灣島位於歐亞板塊和菲律賓海板塊之交界，構造運動顯著、地形陡峻、地質脆弱、地震頻繁，加上地處西太平洋颱風帶，以及 921 地震和近年來全球氣候變遷，土石流發生機率越來越大，災害規模也較往

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