中華水土保持學報, 37(3): 317-326 (2006)
Journal of Chinese Soil and Water Conservation, 37 (3):*317-326* (2006)

土石流入匯主流形成沖積扇型態之渠槽實驗

陳樹群[1]　安軒霈[2]

摘　　要　本研究以實驗渠道模擬土石流入匯主流形成沖積扇之過程。實驗提供不同之水砂條件，以主支槽交匯角 90°之方式進行實驗模擬。土石流入匯主流之泥砂運動現象可分爲土砂流動擴散與土砂持續停淤、擠壓擴張前後兩階段。第一階段歷時短，處於第一波入匯土砂尚未停淤之階段；第二階段則將形成之沖積扇型態分爲四類：無沖積扇、過渡、輕度與重度溯源淤積沖積扇，並以主槽輸砂量對土石流供砂量比分類。輕、重度溯源淤積沖積扇探討輸砂比對溯源淤積時刻延後、沖積扇體積和長度型態因子影響，提出主、支槽輸砂與水流條件對長寬比之模式，當主槽輸砂能力增加或支槽土石流供砂能力減少時，沖積扇長寬比會增加。

關鍵詞：土石流，沖積扇型態。

Flume Experiment of Debris Flow Confluence Form Alluvial Fan in the Main Channel

Su-Chin Chen[1]　Shiuan-Pei An[2]

ABSTRACT　This study simulated the process of alluvial fans, which were formed by debris flow at confluence, by the experimental flume. The angle between the main and tributary flume was 90 degrees, and different experiment conditions were supplied to this study. According to the result, the process of an alluvial fan which was formed by debris flow can divide into two parts: first, sediments diffusions, and second, sediments deposition and pushing expansion. The process was short in the first part, but it was obvious in the second part. Furthermore, to classify the forms of alluvial fans, the mass ratio between sediment transporting in main channel and supplying by debris flow was presented in this paper, and the forms could be classified into no alluvial fan, transitional alluvial fan, slight and heavy retrogressive deposition alluvial fan. In addition, this study presented the alluvial fan volume and length factors to discuss the delay of retrogressive depositing. This study also offered the formula to explain how river flow in a main and tributary channel influenced the ratio between the length and width of alluvial fan.

Key Words:　Debris flow, Type of alluvial fan.

〔1〕國立中興大學水土保持學系教授
Professor, Department of Soil and Water Conservation, National Chung-Hsing University, Taichung 402, Taiwan, R.O.C.
〔2〕國立中興大學水土保持學系博士班研究生(通訊作者)
Doctoral graduate student, Department of Soil and Water Conservation, National Chung-Hsing University, Taichung 402, Taiwan, R.O.C. (Corresponding Author)
E-mail:d9442003@mail.nchu.edu.tw