中華水土保持學報, 37(1): 9-22 (2006)
Journal of Chinese Soil and Water Conservation, 37 (1):*9-22* (2006)

土石流支流入匯主河道之泥砂沖淤研究

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摘　　要　本研究透過實驗渠槽，探討土石流入匯主河道之泥砂沖淤特性。由實驗發現土石流支流入匯主河的現象可分爲兩階段，第一階段爲土石流初始進入交匯口流動後停淤之過程，並以因次分析方法，建立支槽溯源淤積前主槽最大淤積泥砂量之估算公式。第二階段爲土石流支流開始發生溯源淤積，伴隨支槽泥砂特性發生變化，在溯源淤積過程中會發生第二次土砂流動進入交匯口，堆積扇二次擴張。由實驗觀測可彙整三種主要分類：(1)Type I 型爲支槽水躍捲砂流入堆積扇造成擴張；(2)Type II 型爲支槽新形成之土石流流入堆積扇造成擴張；(3)Type III 型爲支槽擠壓堆積扇造成擴張。藉由實驗觀察與理論分析證明 Type II 型支槽會維持一穩定坡度溯源淤積，並新形成土石流入匯堆積扇。

關鍵詞：土石流、溯源淤積。

The Fluvial Processes of Main Channel Induced by the Tributary of Debris Flow

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ABSTRACT　The purpose of this study is to describe, based on the flume experiment, the tributary debris flow which flew into the main channel and deposited on the confluence. This study shows that the formation of the alluvial fan included two primary processes, which are separated by the appearance of the retrogressive deposition in the tributary. Dimensional analysis has been used to show the maximum deposition volume before the retrogressive deposition of the tributary.　In the process of the retrogressive depositing, the sediment continues to flow into the confluence in three typical patterns to cause the expansion of the alluvial fan. (1)Type I represents that Sediment is swept to the alluvial fan by hydraulic jump. (2)Type II represents that a new debris flow, which is formed above the mound of the tributary flows into the alluvial fan. (3)Type III represents that the alluvial fan is pushed by the mound of the tributary with stop and go motion due to the excess pressure behind. For Type II, the slope of the tributary, which remains the same is proved by theoretical analysis.

Key Words:　debris flow, retrogressive deposition.

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