現地試驗分析雙天然堰塞湖潰決特性

曾馥敏[1]*　陳樹群[2]　安軒霈[3]

摘　要　為探討不同距離對堰塞湖潰決形態及水理特性之影響，本研究於惠蓀林場蘭島溪可調流量試驗站堆置兩座堰塞壩，以固定上游堰塞壩壩體並移動下游壩體的方式改變間距，觀測下游壩體潰決形態及分析其水理特性。本研究主要分為二部份，第一部份利用粒徑分析和 3D 雷射掃瞄地形測量現地土石流經過前後，探討其河床之變化，第二部份為影像觀測、水位變化等方式探討其潰口發展歷程。其結果顯示，縮短壩體間距時，上游潰決的流量會縮短下游堰塞湖的蓄水歷程，易產生溢頂潰決。

關鍵詞：現地試驗、堰塞湖、水文分析、河床演變。

Prototype Field Experimental Analysis of Dual-Dam Failure Behavior

Fu-min Tseng [1]*　Su-Chin Chen [2]　Shuan-Pei AN [3]

ABSTRACT To investigate the dam break morphology and physical properties between two landslide dams with different interval, we constructed two series of landslide dams in Adjusted Discharge Experimental Station, Landao Creek, Huisun forest, Taiwan. We adjusted the dam interval by fixed the upstream dam and changed downstream dam site to observe and analyzed dam failure processes and hydraulic properties of the downstream dam. This research was based on two topics. First, grain size distribution Investigation and 3D Lidar model of the stream bed were executed before and after dams break to discuss the river morphology evolution. Second, dams break process were analyzed by cameras images and water level gauges data. The experiment results showed that the decrement of the dam interval can reduce the flood storage between two dams, and it is easier to induce the overtopping failure at downstream landslide dam.

Key Words : field experiment, landslide-dammed lake, hydrological analysis, river morphology.

〔1〕國立中興大學水土保持學系研究生（* 通訊作者 E-mail: ellen2470@msn.com）
Graduate Student, Dept. of Soil and Water Conservation, National Chung Hsing University, Taichung 402, Taiwan
〔2〕國立中興大學水土保持學系教授
Professor, Dept. of Soil and Water Conservation, National Chung Hsing University, Taichung 402, Taiwan
〔3〕國立中興大學水土保持學系博士後研究員
Post-Doctoral Researcher, Dept. of Soil and Water Conservation, National Chung Hsing University, Taichung 402, Taiwan