

以地形分析及數值模擬探討野溪堰塞湖潰決之影響

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摘 要 山區野溪於颱風豪雨時常因集水區內崩塌引致土石流等土砂災害，本研究擬於室內透過地形法判釋土石流之源頭、通道及堆積區(扇狀地)區位；另一方面再利用數值模擬極端事件發生時可能影響之範圍。研究區域以嘉義縣阿里山鄉茶山村頓阿巴娜溪為例，於室內依數值地形及遙測影像判釋其河道各段區位；另再假設情境其集水區內發生極端降雨且引致大規模崩塌，形成堰塞湖及潰壩之情境，以二維水理模式(SEC-HY21)模擬前述情境，計算當堰塞湖潰壩時可能之堆積範圍及深度，以了解鄰近溪流地區可能遭受影響之程度與範圍。最後再將室內分析之其地形分析及極端事件下之災害情境模擬結果，與現地調查結果相互比對其是否吻合。

關鍵詞：土石流、地形分析、堰塞湖、SEC-HY21。

Landslide Dam Breach Flood Assessment by Topographic Analysis and Numerical Simulation in A Mountainous Torrent

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ABSTRACT This study aims to analysis the initiation, transportation, deposition sectors of a mountainous torrent with landslide dam potential, using topographic analysis and numerical simulation to identify the possible inundation area. The study area was located in Chashan village, Chiayi, digital elevation model and remote sensing images were gathered for interpretation and simulation. Scenario with extreme precipitation and deep-seated landslide and landslide dam was assumed, and simulated the runoff with SEC-HY21 two-dimensional model. The inundation area and deposition depth of the simulation result was mapped out and compare with field investigation for verification.

Key Words: topographic analysis, debris flow, landslide dam, SEC-HY21.

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