

## 《論文獎》

### 巴陵防砂壩潰壩後河床變動過程之研究

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**摘要** 2007 年石門水庫上游的巴陵防砂壩潰壩事件，導致上游河床沖刷約 20 公尺，下游最大淤積約 10 公尺。本文蒐集巴陵防砂壩 1980 至 2011 年潰壩前後 8 次地形測量資料與 2008~2012 年共進行 3 次河床質粒徑調查以分析潰壩對於河床地形變動及河床質粒徑變化的影響。結果顯示，巴陵壩潰壩 3 個月後河床已逐漸趨於動態平衡，河床質粒徑整體有粗化再細化的趨勢。最後，本文以適用於土石流及高含砂水流的數值模式進行潰壩事件模擬，並利用河床測量成果進行比較。

**關鍵詞**：巴陵壩、潰壩、河床變動、數值模擬。

### Study of the River Bed Variation after the Baling Check-Dam Failure

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**ABSTRACT** This study provides longitudinal and cross-sectional analysis of 8 pieces topography data collected from 1980 to 2011 and bed material particle size based on three investigations conducted between 2008 and 2012. The mainstream topography data in December 2007 shows that the head-cutting distance was about 3 kilometers after the dam broke. The topography data since 2008 displays that river the channel is stable as well. The topography data shows that the longitudinal section in the tributary had a head-cutting distance of about 3 kilometers after the dam broke, and the river channel still is showing adjustment behavior. The scour-and-fill analysis result of the mainstream cross-section shows that the transverse adjust changed significantly upstream from the dam location from 2006~2008. The particle size of the bed material has shown a trend from coarsening to fining according to different sampling points. Therefore, the river bed is still adjusting continuously. Finally, this study is based on a debris flow and sediment laden flow numerical model. The simulation result is fit for river-bed changes after dam-break.

**Key Words** : Baling dam, check-dam failure, river-bed variation, numerical simulation.

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