

板岩地滑區的地質調查與分析－以廬山溫泉滑動邊坡為例

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摘 要 本案例為廬山溫泉附近的一板岩邊坡，數十年來每逢豪雨即有滑動跡象，此滑動現象不僅對邊坡上的道路和房舍產生影響，對其下邊坡的眾多溫泉旅社，也有安全的疑慮，因此瞭解此滑動體的滑動行為和滑動機制是很重要的議題。本研究經由地質調查和數值分析的結果可知，地質構造和風化作用對此滑動體有重要的影響。在長期的風化作用下，上邊坡西側砂質板岩和板岩的界面及上邊坡東側節理面的串聯形成滑動面，並漸漸往下延伸。下邊坡目前尚未有明顯的滑動面，因此監測資料顯示，豪雨造成的滑動，中上邊坡相對於下邊坡有較大的位移。繼續受到變形及風化作用的影響，滑動面將會往下邊坡繼續發展，對下邊坡的監測將有助於掌握滑動面發展的狀況。

關鍵詞：板岩、廬山、地滑、地質調查、數值分析。

Geological Investigations and Analyses of a Landslide in a Slate Area — the Lushan Landslide

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ABSTRACT The studied case is a unstable slope mass in the vicinity of a spring village which slides whenever heavy rainfall occurs. The slide phenomenon leads to safety concerns, not only for the houses and roads on the slope but also for the hotels located beside the bottom stream. Therefore, exploring the slide behavior and mechanism of the slide mass is important. Through extensive site investigations and numerical analysis, we conclude the unstable phenomenon is affected by geological structures and weathering over the long term. Under the weathering effects, the slide surface, which is currently extending to the lower slope was formed by the coalescing of the joints on the upper eastern slope as well as the interface between the sandy slate and the slate on the upper western slope. At present, a significant slide surface has not yet formed in the lower slope. This is consistent with the fact the monitoring data show greater displacements on the middle and upper slopes than those on the lower slope. With further deformation and weathering, the slide surface will develop toward the lower slope and may finally cause catastrophic failure.

Key Words: slate, Lushan, landslide, geological investigation, numerical analysis.

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