

河岸板岩變形發展與活動性分析-以高屏溪為例

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摘要 本研究以高屏溪流域的板岩邊坡為例，運用分離元素法模擬板岩受到長時間重力作用下產生的潛變行為。配合現地調查之野外潛變產狀，進一步了解其成因及機制。現地弱面傾角平緩岩體，其潛變型態常為拱彎褶皺型，在數值模擬中亦可獲得類似之調查型態，不同的材料和地形條件下，所形成的潛變型態有些微的不同。其次在角度大於 45 以上之高傾角岩體，弱面受到重力作用，所呈現的潛變型態多為表層岩體之傾倒現象。除了模擬岩體傾角外本文亦針對河岸淘刷之作用進行探討。

關鍵詞：板岩、潛變、數值模擬。

Deformation and mobility analysis of the slate in valley side of Kaoping River

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ABSTRACT The slate creep behavior in Kaoping River was performed by the discrete element method. The field observation, the essential boundary, material condition and the mechanism of the creep are studied by UDEC simulation. The bending fold of creep rockmass occurs frequently in the lower angle jointed slope while the numerical simulation obtain the similar result. Furthermore, the creep pattern converted as under the different materials and terrain conditions. The results shows when the joints inclination angle is greater than 45 degrees, the rock mass yields the topple on the surface of slope. this dip angle of topple was usually recog:as greater than 70 degrees this result illustrate that the lower dip angle, 45 degree, also possess the potential to be toppling.

Key Words : slate, creep, numerical simulation.

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