

地下水位上升導致邊坡滲流破壞之關係研究

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摘 要 地下水位上升會使土壤中含水量過高而降低土壤凝聚力造成崩塌之危險，為了瞭解地下水位上升與邊坡滲流破壞之關係，本研究發一系列造成邊坡滲流破壞之危險地下水位試驗，試驗粒徑採用黃信富等(2012)於九份二山堰塞湖分析之粒徑 $D_{50}=0.195\text{mm}$ ，以均勻細砂建立各種坡度下之砂質邊坡，以不同地下水位，推求造成滲流破壞之地下水位高度。試驗過程中透過水壓計量測邊坡內水位高度，並以影像記錄崩塌發生時土石滑動過程，最後整合不同水位之破壞點分析出臨界破壞水位。

關鍵詞：砂箱、滲流破壞、地下水位。

The Relationship between Seepage Flow Damage of Hillslope and the Rising of Groundwater Level

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ABSTRACT The rising of groundwater level will reduce the soil concentration and rise the damage of landslide. For the understanding the seepage flow damage of hillslope due to the rising of groundwater level, this study developed a series of experiment in the sand box to estimate the dangerous groundwater level of seepage flow damage in Hillslope. The particle size $D_{50}=0.195\text{mm}$ in the dammed lake of Jiu-Fen-Er-Shan obtained by Huang et. al. (2012) was used to the experimental size. The experimental conditions includes the uniform particle size, the variety of slope and groundwater to find the dangerous groundwater level for various slope. Several Piezometers and were installed in the sand box to measure the groundwater level variation during the experimental process. Two Cameras were also installed to record the damage process of hillslope. Finally, the critical groundwater level can be estimated after the combination of several groundwater levels.

Key Words : Sandbox, seepage flow damage, groundwater level.

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