

Paper Number: 4697

Residual pore pressure analysis of Shuping landslide in Three Gorges Reservoir, China

Li WN¹, Xu GL¹, Yu Z¹, Ma XH²

¹China University of Geosciences, Wuhan, China, Email: Vinnalee@hotmail.com

²Department of Land and Resources of Hubei Province, Wuhan, China, Email, smxh2004@126.com

Shuping landslide is one of the most active landslides located in the Three Gorges Reservoir after the first impoundment in June 2003[1]. Since then continuous deformation has been occurring in the landslide. It is important and very difficult to reasonably calculate the stability of Shuping landslide because dam reservoir impoundment changes the geological environment. Currently, there is no effective groundwater phreatic line determination method. A simple and applicable calculation method worked out by the residual pore pressure[2-4], used in Japan, is adopted to calculate the safety factor of the Shuping landslide. We demonstrated that the field measurements of groundwater phreatic line are in good agreement with the calculated results.

References:

[1] WANG Fawu, ZHANG Yeming, WANG Gonghui etc, 2007. Deformation features of shuping

landslide caused by water level changes in three gorges reservoir area, china. Chinese Journal of Rock Mechanics and Engineering. 26(3):499-517

[2]National Land R & D Center(eds.).2009. Landslides survey peripherally of reservoirs and their countermeasures. Kokon Press. (in Japanese)

[3] Koda, A., Suzuki, M., Fujisawa, K., Danjo, Y. & Ishii, Y. 2007. Factor analysis of residual ratio of pore pressure on landslide along reservoir. J. of the Japan Landslide Soc., 43(5):20-32. (in Japanese)

[4] Sadahiro, T., Hirano, I., Koike, J. & Uehara, Y.. 2001.The seepage flow analysis for the behavior of residual pore pressure on dam reservoir limb landslide. Engineering for Dams, 11(1):5-13. (in Japanese)

