Geophysical Research Abstracts
Vol. 14, EGU2012-3565, 2012
EGU General Assembly 2012

Using Ground Penetrating Radar to Investigate Cavities below Spillway

Y.-F. Lin (1), H.-H. Hsu (1), K.-T. Hsu (2), and J.-Y. Wang (1)

(1) Chienkuo Technology University, Department of Civil Engineering, Changhua, Taiwan (geolab.hsu@msa.hinet.net, 886 -4-7111165), (2) National Chung Hsing University, Department of Civil Engineering, Taichung, Taiwan (lyf@ctu.edu.tw)

The Pai-Ho Reservoir, which is located in the south of Taiwan, was completed in 1965 and operated for over 45 years. It is an embankment dam with 112.5 meters high, and the crest width is 12 meters. To evaluate the safety of reservoir, it is necessary to inspect the hydraulic structures through non-destructive testing methods. The scour at spillway causes cavities below its surface. These cavities are hard to be detected their locations under the spillway. This study intended to detect the distribution of cavities below spillway by ground penetrating radar (GPR). The output images were identified and compiled to estimate the damage of spillway. Research results show clear images of cavities distributed below spillway. These cavities locate at the shallow layer near its surface, repair positions of concrete, and ground water line of dam crest. This paper demonstrates the operation method of GPR at testing site, displays output images, and evaluates performance of spillway.