



Detection of a Deep-seated Sliding Surface of Lushan Landslide, Taiwan

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The landslide in Lushan area located in central Taiwan have a long record. An investigation plan was drawn to determine the landslide mechanism and location of sliding surface in order to provide information for mitigation. The field investigation was conducted, and the boring holes were with depth ranging from 40m to 109m and were used for instrumentation for field monitoring. Finite difference and limit equilibrium analysis were performed for locating the potential sliding surface and study of the sliding mechanism. Based on the analysis and data from logging, it is suggested that the landslide could be a composite landslide, which consists of several sliding surfaces with the deepest sliding surface situated at about 100m below the ground surface. In September, 2008, Typhoon Sinlaku struck Taiwan dropping rainfall of more than 1000mm. The ground water level rose 10-30m at various monitoring positions along the slope profile. The depth of slipping surface observed was deeper than 100m based on data from slope indicators and Time Domain Reflectometer (TDR) monitoring system. Moreover, the ground-based Lidar and close range photogrammetry surveys both provided evidences of sliding, and the observed field sliding conditions were consistent with those of the previous numerical analysis.