Sliding Threshold Identification of a Deep-Seated Potential Landslide

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The process for a creep landslide to rapid landslide is quite difficult to solve owing to each landslide is unique. The initiation of landslide probably results from heavy rainfall, seismic force, or even cut off at toe. However, the sliding deformation can be monitored once the sliding is still happening. The index to identify sliding usually uses displacement especially one directional displacement. Thus the design of landslide warning system usually includes displacement across stale part and sliding part, GPS, and rainfall. A deep-seated potential landslide site is selected to develop a relationship between rainfall, groundwater level, 3-D deformation, tilting. Monitored data was documented from 2005 to 2011, including at least three heavy rainfall events. Measured deformation data such as GPS data, slope indicators, scar displacement, in-hole displacement, terrestrial LiDAR, and photogrammetry are summed to discuss sliding process. Threshold indexes such as 3-D deformation and tilting angle under extreme conditions will be proposed in this study.