

Observed Abnormality of Soil Moisture Index at Youcheliao Landslide, Taiwan.

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Lots of landslides were triggered in southern Taiwan after typhoon Morakot (2009), including the study area of this paper, the Youcheliao catchment. The antecedent precipitation and potential infiltration of soil moisture may have influence on these rainfall-induced landslides. Due to infiltration or water recharge, the pore water pressure is increased and, in turn, causes effective stress reduced and landslide disaster triggered. Thus, abnormality of soil moisture (ASM) may serve as a valuable indicator for geo-hazard's prevention. In this study, time series of Landsat imageries were used to derive the signatures of ASM, based on correlation between NDVI and LST through scatter plot. Results show that there are two areas of ASM in the north-east and south-west regions to the Youcheliao landslide as verified by in-situ resistivity image profiling (RIP) investigation. Therefore, for the residents' safety and disasters' mitigation, it is suggested to remove excess water in these two vulnerable areas.

Keywords: landslide, soil moisture, NDVI, LST