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Study of the infiltration characteristic of the rain to the slope for slope stability evaluation

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As occurrence factors of slope collapse and a landslide, the surface saturation and corrosion of slope end by rain can be considered. In this study, the transition of the amount of moisture in the slope by rain was investigated by electric exploration and soil moisture meter for the purpose of carrying out risk assessment from evaluation of the slope stability following rain. The geology of the investigation area is the Cretaceous alternating beds of sandstone and shale, and shale is mainly distributed over this slope. Many slopes with the possibility of collapse exist from the result of aerial photos and topographical maps interpretation. From the geological survey of this area, it is thought that the principal factors of slope collapse were colluvial deposits thickly deposited on steep slopes. Also on the investigated slope, moving blocks and collapse sediments overlap on the shale bed, and displacement is identified near boundaries. This study shows the measurement result of the amount of soil moisture within drilling holes and the transition of the resistivity distribution (moisture content) revealed by electric exploration. And, the result of groundwater analysis and stability analysis are reported.

Keywords: slope failure, soil moisture, electric exploration, Seepage analysis