

Spatial Variability of Rainfall-runoff Characteristics in a Large-scale Landslide-prone Area Underlain by Accretionary Sedimentary Rocks

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Understanding spatial variability of rainfall-runoff characteristics is essential for clarifying the mechanism that landslides due to rainfall occur selectively within a watershed. We investigated the relationship between antecedent precipitation conditions and runoff discharges for some tributary watersheds of the upper Ooi River, Shizuoka prefecture, central Japan, in consideration of their geographical conditions and geological structures. The upper Ooi River, underlain by Late Cretaceous accretionary complex, is a large-scale landslide-prone area. In this study, we especially focused on the hydro-geological structures related to the difference between dip and anti-dip slopes. As the results of in-situ measurement, specific discharge as base flow from the anti-dip slope dominated watersheds trended to be relatively high compared to dip slope dominated watersheds. Additionally, there were higher correlations between specific discharge and long-term antecedent precipitation on the anti-dip slope dominated watersheds rather than on dip slope dominated watersheds. These implied relatively long residence time of rainwater and gradual recession of discharge on the anti-dip slope dominated watersheds.

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