

Landslide Sites Controlled by the Denudation Front and Weathering Intensity: Shallow Landslides by Izumi Group

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Many landslides were induced by the heavy rainfall of Typhoons 0415 and 0421 in Niihama city, east Ehime prefecture. Detailed geomorphic analysis by using airborne laser scanner and geologic investigation revealed the geomorphic and geologic features of landslide sites. The affected area is underlain by the Cretaceous Izumi Group consisting of alternating beds of sandstone, mudstone, and granule conglomerate; the Izumi Group had been supposed to be not susceptible to shallow landslides by rainstorms. Landslide sites were not controlled by lithology but were controlled by the intensity of weathering; the most common landslides were shallow slides of a soil layer derived from heavily weathered rocks. Airborne laser scanner detected landslides of 2004 and of previous years and convex slope breaks. Landslide crowns are aligned laterally to form convex slope breaks, which are "denudation front": Slopes just above these denudation fronts and on heavily weathered rocks are the most susceptible slopes to rainstorms.

Keywords: shallow landslide, denudation front, Izumi Group, airborne laser scanner