

Topographical and geological effects on susceptibility of earthquake induced landslides

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Large earthquake centered in mountainous areas induced debris-flow or landslide dam will caused great damage. To clarify the mechanism earthquake induced landslide, it is important to examine the characteristic of both location and distribution where landslide occurs because debris-flow or landslide dam were generated by the landslide. Therefore, it should be considered topography, geological settings and seismic waves. However, to quantify these effects, we have to analyze landslide maps from a variety of earthquakes, geological settings and topography. Using landslide maps from the epicentral areas of two Japanese earthquakes near western Tottori in 2000 and Chuetsu in 2004, we have investigated the roles of slope angle, lithological characteristics and distance from fault over the location and the susceptibility of earthquake induced landslide. At result, it was found that the relation between the slope angle and the ratio of landslide area was not affected by the distance from fault or the lithological characteristics, and was almost the same. The relation between the lithligital characteristics and the ratio of landslide area was affected by slope angle.

Keywords: earthquake, shallow landslide, distance from fault, slope angle, lithological characteristics