# Evaluation of slope stability for the earthquake-induced sediment due to intense rainfall

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On April 16, 2016, the Kumamoto earthquake, the second of the two significant earthquakes has occurred in Japan, and associated aftershocks, appears to have triggered numerous landslides. Though the position of Kumamoto earthquake-induced landslides are published as point data by Geospatial Information Authority of Japan (GSI), in general, it is a big problem to extract the distribution of landslides in a wide area. In addition, high-intensity rainfall caused many shallow landslides, leading to significant damage, and it is possible that the instable sediment which is triggered by earthquake is going to collapse in the future. In a previous study of GIS-based 3D slope stability analysis[1)], it requires not only the geological parameters but also distribution of the collapse sediment.
Therefore, the purpose of this study is to monitor landslides activities for emergency disaster control, and evaluate slope stability of earthquake-induced sediment in a high intense rainfall condition to minimize damage of landslides in the future. The study involves three part: extracting earthquake-induced landslides information, simulating sediment which was triggered by intense rainfall to get soil parameter, and evaluation of slope stability of Kumamoto earthquake-induced sediment.

As a result, SAR is able to provide landslides interpretation using color composition in Aso-Kumamoto and as a real-time system it is a very good way to minimize earthquake damage. It is clear that non-compacted sediment type has the best result as Kuroboku soil. There is high possibility that collapse type is similar with non-compacted sediment collapse if the soil structure of landslides is Kuroboku soil.

Keywords: Kumamoto earthquake, landslide, slope stability

 