

## Prototyping and testing for the 'Ground Vulnerability Judgment System'

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The guideline of investigation of movement calculation in large residential hill area by MLIT is recommending local governments performing to separate residential hill area(primary screening), hazard mapping, field investigation and stability calculation (secondary screening). In the primary screening, they have to separate residential hill area using a subtraction data from new and old Digital Elevation Model (DEM). In order to perform hazard mapping and secondary screening efficiently, it is important to know the ground vulnerability (movement probability) of hill area.

So, we produced the semi-automatic judging system of ground vulnerability from new and old DEM using the judgment method written on the guideline and simple dynamics model. Also, we tested for the judgment system to consider the relationship between actual damages and judgment results by the system in the Asahigaoka, Kashiwazaki City, where was injured by the Niigataken Chuetsu-oki Earthquake in 2007. In result, high movement probability hill area by the judgment system corresponded with injured hill area as to displacement in hill area.