

Seismic intensity scale based on the natural environmental effects

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We provided ESI seismic intensity scale mesh map for recent earthquakes in Japan and Taiwan. ESI scale was proposed by the sub-commission on paleoseismology of INQUA (International Union for Quaternary Research) in 2003. This scale is useful for evaluation seismic intensity for the areas where no seismograph is installed or no construction for the assessment of seismic intensity.

We selected five recent earthquakes, 1995 Kobe, 1999 Chichi, 2004 Chuetsu, 2007 Noto-hanto and 2007 Chuetsu-oki, for experimental study for this project. We provided mesh maps with grids of ca. 1km square on 1/25,000 topographical map for these earthquakes, and evaluated ESI scale for each mesh based on the size and density of ground effects such as landslide, surface rupture and liquefaction. These maps show the detailed distribution of local intensity, which showing the difference of ground condition at each site and the effect of the hanging wall of the earthquake on the reverse fault, such as 2004 Chuetsu earthquake.