

ESTIMATION OF SEISMIC HAZARD FOR STRONG EARTHQUAKES IN TAIWAN

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Two main factors that affect the result of ground motion prediction analysis are the existence of the event and site effect. A hybrid procedure, which combines site-dependent ground motion prediction and the limited real time observations, was set up to provide a high-resolution shakemap in a near-real-time manner after damaging earthquakes in Taiwan. The purpose of this paper is to develop the prediction model and procedure considering the characteristic of the damaging earthquake and local site effect, in order to provide an early estimation of potential hazard. In the site-dependent ground motion prediction model, the site effects of each strong motion stations are discussed in terms of a bias function that is site and intensity-level dependent function. Instead of such model, an empirical procedure is supplied to correct the discrepancy of the ground shaking estimated from the attenuation relation and applied to precisely estimate the shakemap of damaging earthquakes for emergency response.

Keywords: shakemap, site effect, ground motion prediction