



## Relationships between ground motion parameters and damaged buildings for 2016 Mw 6.4 Meinong, Taiwan Earthquake

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The relationships between ground motion parameters (including peak ground acceleration, PGA; peak ground velocity, PGV) and building damages are crucial to estimate the possible seismic losses for future destructive earthquakes. One such relationship had been established based on the 1999 Chi-Chi earthquake (Mw=7.6). Since 2010, a new assessment system of seismic damaged buildings had been adopted in Taiwan. Damaged buildings are now classified into two categories, yellow-tagged buildings are amendable and red-tagged buildings may need to rebuild. Our main goal is to renew the relationship to better reflect the current status in Taiwan, both in the buildings and assessment system. 2016 Meinong earthquake (Mw=6.4) caused the most damaging buildings in Taiwan since 1999 Chi-Chi earthquake. It's an opportunity to combine ground motion data with building assessments for the new regression relationship. From the results, we find out that in the Meinong earthquake, the PGA seems to possess a higher correlation to the building damages, contrary to the previous studies. Further investigation suggests that it may be due to the biased sample size to the damaged buildings, that is, most of the damaged buildings tend to be lower.

Keywords: Hazard analysis, Peak ground acceleration, Peak ground velocity, Seismic damage assessment