TEM PSHA to RISK: How to move forward?

Kuo-Fong Ma[1], Ming-Kai Hsu[1], and Chin-Tung Cheng[2]

[1] *Department of Earth Sciences, National Central University, Taiwan*

[2] *Disaster Prevention Technology Research Center, Sinotech Engineering Consultants Inc., Taiwan*

TEM published the first public PSHA map in 2015, and had been widely discussed and adopted in a way toward seismic hazard mitigation. Although the concern on risk management and policy making were not yet firmly addressed, the first attempt on public seismic hazard map had caught some attention in general. As TEM is not an official government agency, and has no official position in enforcing the regulation, the role of TEM requires special effort to advocate the seismic hazard and risk models on the basis of front edge science and technology. The evaluation of seismic risk involves the combination of three main components: probabilistic seismic hazard model, exposure model defining the spatial distribution of elements exposed to the hazard and vulnerability functions capable of describing the distribution of percentage of loss for a set of intensity measure levels. The 500m by 500m Grid-based building data were selected for the evaluation which capable of providing detail information about the location, value and vulnerability classification of the exposed elements. For incompleteness in the exposure data, an attempt will be carried out by using satellite images as a tool. We employed the Openquake engine, the open-source software for seismic risk and hazard assessment developed within the global earthquake model (GEM) initiative, for the 20160206 Meinong earthquake as an exercise to calibrate the existing exposure data and fragility curve. Our intention is to give the first attempt on the modeling the seismic risk from hazard in an open platform for Taiwan. An analysis through disaggregation of hazard components will be also possible to prioritize the risk for each hazard component. The exercise in this stage is still not yet in a solid form, but, hope to bring the hazard to risk in a more presentable way to general public.