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Overview of Taiwan Earthquake Loss Estimation System

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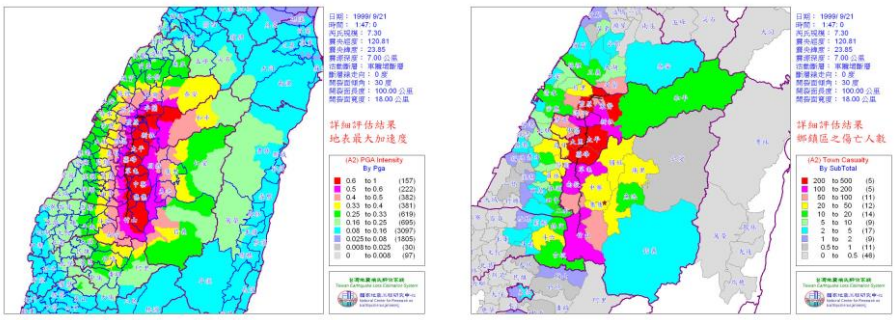
The National Science Council of Taiwan started HAZ-Taiwan project in 1998 to promote researches on seismic hazard analysis, structural damage assessment, and socio-economic loss estimation. The associated application software, "Taiwan Earthquake Loss Estimation System (TELES)", integrates various inventory data and analysis modules to fulfill three objectives. First, it helps to obtain reliable estimates of seismic hazards and losses soon after occurrence of large earthquakes. Second, it helps to simulate earthquake scenarios and to provide useful estimates for local governments or public services to propose their seismic disaster mitigation plans. Third, it helps to provide catastrophic risk management tools, such as proposing the seismic insurance policy for residential buildings. This paper focuses on the development and application of analysis modules used in early loss estimation system. These modules include assessments of ground motion intensity, soil liquefaction potential, building damage and casualty.

As examples, Figures 1(a) and 1(b) show the estimations of PGA and casualty in Chi-Chi Taiwan Earthquake. These figures are only part of the raster maps that are automatically generated by TELES after occurrence of strong earthquakes.



(a) (b)

Figure 1. Distribution of estimated distribution of peak ground acceleration and casualty in Chi-Chi Taiwan earthquake.

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