

Special Session Title: EARTHQUAKE RISK ASSESSMENT FOR EARTHQUAKE INSURANCE

Conveners:

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Earthquake risk and loss assessment is needed to prioritize risk mitigation actions, and management of related financial commitments. Insurance and reinsurance sector relies on earthquake risk and loss modeling of their portfolio to assess their solvency, to price insurance and to predict the re-insurance cover needs.

Due to the research and development on rigorous risk/loss assessment methodologies and studies conducted in connection with several important International and European projects, today there exists substantial capability to model the risk and losses ensuing from major earthquakes.

For a given earthquake hazard or ground motion intensity distribution and the inventory of assets exposed to this hazard, the risk is determined by the fragility/consequence/vulnerability relationships that provide the probability of damage/loss, conditional on the level of intensity measure. Each step of this process incorporates epistemic and aleatoric uncertainties that need to be considered. The correlation of these uncertainties are also important to obtain the reliable bounds of the expected risks and losses. Compared to general earthquake risk assessment probabilities, different sets of metrics are used for the quantification of risk results in earthquake insurance and reinsurance applications.

The practice of earthquake risk and loss assessment and its use in earthquake insurance and reinsurance applications is now established. This special session looks at the current developments on earthquake risk assessment and its applications associated with earthquake insurance and reinsurance needs, discusses current issues, and provides some illustrative applications.

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