Session ID: EVO-3

Title
SEISMIC RISK TARGETED MODELS FOR CIVIL INFRASTRUCTURES

Convenors
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Description
Seismic risk-targeted models have been developed using probabilistic seismic hazard analysis (PSHA) to calculate the probability of exceedance of a particular ground motion level at a given site. The risk-targeting approach involves selecting the ground-motion level for which the structure has a pre-defined probability of achieving a certain performance level, such as non-collapse or limited damage.

This approach is widely used in the United States, where the Federal Emergency Management Agency (FEMA) has developed seismic design maps based on risk-targeting. However, studies have also been conducted in other countries, including France, Romania, Canada, and Indonesia, as well as for the whole of Europe using the European Seismic Hazard Model.

The proposed session will provide a comprehensive review of the current state of the art of this technique, highlighting the ongoing efforts to improve the input parameters. The session will provide a forum for researchers, engineers, and practitioners to discuss the latest advances in the understanding of seismic risk-targeted models for civil infrastructures.

The following topics are of interest to this session, but are not limited to:
- Development of new seismic risk-targeted models for civil infrastructures
- Review of the state of the art of seismic risk targeted models
- Efforts to better constrain input parameters for seismic risk-targeted models
- Challenges in applying seismic risk targeted models in practice
- Empirical methods for estimating upper bounds for acceptable collapse and yield risk
- Code provisions and guidelines

The session will contribute to the advancement of the state-of-the-art in this field and promote the development of code provisions and guidelines for improving the safety and resilience of civil infrastructure.

Invited Speakers
M. Zanini [4], S. Kunnath [5], X. Lu [6], Y. Xu [1]

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