

**Session ID:** SHR-10

**Title**

TOWARD THE DEFINITION OF TRANS-REGIONAL SEISMIC VULNERABILITY MODELS

**Convenors**

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**Description**

The economic impact of earthquakes remained unchanged in the last twenty years compared to previous decades, although the huge efforts in reducing seismic vulnerability of urban assets (UNDRR, 2020). This is also due to the fact that the exposure of people and assets has increased in all countries faster than vulnerability has decreased (Sendai Framework for Disaster Risk Reduction 2015 2030). In the past two decades, earthquakes were the deadliest form of disasters accounting for 58% of total deaths and cost about the 20% of recorded economic damage among all natural and anthropogenic hazards.

Against this background, it seems necessary to boost the efforts towards the definition of a systemic and systematized approach for vulnerability assessment, applicable across regional borders through the development of a common taxonomy and homogenised damage scale. This target can be achieved through the statistical analysis and processing of damage data collected after recent earthquakes occurred nationwide. The discussion within the technical session will concern the challenges still open on fragility assessment, or on the integrated approaches explicitly considering hazards interaction (i.e. mainshocks and aftershocks) and its effects on vulnerability (i.e. state dependant fragility curves). For example: the effect in using different intensity measures (IM) in fragility assessment facing to the definition of efficiency and sufficiency IM, also handling with post earthquake damage data; the effect of uncertainties propagation in fragility results affected by the methodological approach (empirical, analytical, or hybrid approach); the effect of structure to structure damage correlation or of spatial correlation in the definition of ground motion intensity for seismic application at regional scale.

**Invited Speakers**

I. Ionnou <sup>4</sup>, M. Zucconi <sup>5</sup>, R. Gentile <sup>6</sup>, N. Chieffo <sup>7</sup>

**Affiliations**

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