Session ID: BCI-2

Title

SEISMIC RISK AND RESILIENCE ASSESSMENT OF INTERDEPENDENT URBAN LIFELINES AND SYSTEMS

Convenors

B. Stojadinovic [1], K. Pitilakis [2], V. Silva [3]

Description

The impact of an earthquake can go well beyond the direct economic and human losses in the stricken urban region, due to the globalization of our society and its reliance in complex lifeline and infrastructure systems. The inter- and intra-dependencies among different systems and networks generally increase the impact, as do cascading effects not only from one system to another but also through co-location and sequencing of multiple hazards. Planning, design and implementation of measures to mitigate the seismic risk and increase disaster resilience of urban regions must be informed by systemic inter- and intra-dependencies and consider multiple hazards.

This is challenging, but also an urgent task. The main challenges to systemic consideration urban systems resilience include the multi-hazard effects, such as the spatial correlations in hazard intensity as well as the induced hazards such as liquefaction and landslides, the exposure of components of various infrastructure systems and networks considering their functional dependencies, redundancies and spatial co-locations, such as those found in hospital or school networks, and actionable risk and resilience metrification and quantification, such as those focused on systemic functional recovery. This Technical Session aims to present the state-of-the-art in the area of seismic risk and resilience assessment of urban systems, discuss new approaches, methods and tools, and present the results of case studies from different regions of the world.

Invited Speakers

B. Cassottana [4], M. Koliou [5], M. Ouyang [6], J. Song [7], J.C. de la Llera [8], L. Wortherspoon [9], G.P. Cimellaro [10], S. Argyrodis [11], P. Gardoni [12], J. van de Lindt [13]

Affiliations

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