

Guest Editors:

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Call for Papers

Special Collection on Urban Disaster Resilience: A Dialogue Between Engineering and Society



Aims & Scope

Resilience is a concept that has a significant presence in the disaster management research and practice for decades. Used as a heuristic and metaphorical term, it also has implications in both engineering and social science in terms of developing the capacity of urban systems to cope with, recover from, and evolve through disasters. Since cities are intricately intertwined systems, a holistic understanding of the interactions among different subsystems is important. A common appeal has been proposed for interdisciplinary dialogues on resilience research.

As an aspect of engineering, the determination of feasible techniques and time frames for construction of post-disaster recovery has far-reaching influences on a city's capacity to resist frequent or contingent disasters. This requires establishing quantitative and qualitative analysis methods, and labor-intensive efforts across numerous practices for specific scaling systems. Furthermore, siloed communication between the various subsystems also deserves notice. Otherwise, shortcomings in one subsystem will hamper the ideal functioning of other subsystems, and this is clearly not the optimal, economic, or preferred allocation.

Research on the interface between engineering and society is needed. Resilience is not simply a descriptive and undisputed concept in society as it is in engineering. The framing and understanding of urban resilience require investigations across social and cultural groups. In addition, the utility of resilience technologies relies on social determinants, and are also constrained by social barriers.

Topics of Interest

Papers are invited that address, but are not limited to, the following topics :

- Methodologies of design, analysis, and assessment for infrastructure resilience: transportation networks, municipal pipelines, energy supply, etc. (considerations around socioeconomic metrics are encouraged).
- Mechanisms or significant findings illuminating cascading risks of engineering structures and/or social systems under single or compound effects of different natural hazards.
- Innovative techniques enhancing multiscale resilience of technical and social systems during the full life cycle, including construction, operation, maintenance, and decommissioning.

continued on reverse

Natural Hazards Review

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- Social, economic, technical, and ethical considerations in adopting new technologies to build urban resilience, such as BIM, digital twin, edge computing, IoT, AI, and unmanned technology.
- Social enablers and barriers for successful technology or knowledge utilization, including governance regimes, decision-making, stakeholder engagements, and their application practices.
- Other interdisciplinary topics on engineering and society in terms of resilience.