

## Special Issue on **Modeling and Quantification of Resilience in Complex Engineering Systems**

WILEY



# CALL FOR PAPERS

Resilience modeling and evaluation of systems have become challenging due to factors such as complex dependency, operational interactions among electrical, mechanical, software, and control subsystems. Planning for resilience requires consideration of two main dimensions of resilience: reducing vulnerability, or the ability of a system to withstand disruption and enhancing recoverability, or the ability of a system to recover timely to a desired state.

The aim of this special issue is to assemble papers that deepen and enhance the understanding on how to model, analyze, and measure the resilience of systems. This special issue seeks to explore how the resilience can be modeled and quantified in different systems such as power grids, water distribution systems, cyber security systems, ports, complex engineering systems, healthcare, energy, supply chain, sociotechnical, and digital manufacturing, among others. The methodologies comprise two categories: qualitative (e.g., case study) and quantitative (e.g., optimization, agent-based and Monte Carlo simulation, Bayesian network, structural equations modeling, game theory, cellular automata, control theory, data-driven analytics, network complexity, uncertainty quantification methods, and reliability theory research).

Potential topics include but are not limited to the following:

- ▶ Achieving resilience in complex/interdependent systems
- ▶ Behavioral modeling of systems in the face of disruption
- ▶ The impact of complexity and uncertainty on achieving system resilience
- ▶ Vulnerability and recovery modeling of systems against disruptions
- ▶ Qualitative and quantitative models of resilience
- ▶ Case studies of successful resilient systems
- ▶ Impact of digitalization and data analytics on system resilience
- ▶ Economic impact of resilience

Authors can submit their manuscripts through the Manuscript Tracking System at <https://mts.hindawi.com/submit/journals/complexity/rmce/>.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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### **Submission Deadline**

Friday, 25 January 2019

### **Publication Date**

June 2019