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Journal of Structural Engineering

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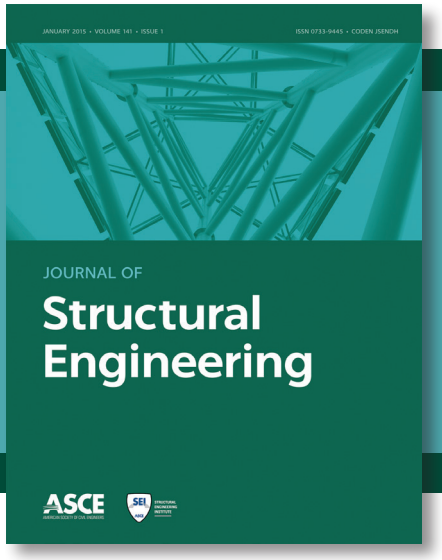
Call for Papers

Special Collection on Risk-Informed and Life-Cycle Analyses of Structures and Infrastructures



Aims & Scope

Traditional design approaches are being replaced by risk-informed and life-cycle analyses of structures and infrastructures, which permit the consideration of a broader set of performance metrics throughout a system's lifetime. Furthermore, these approaches can account for uncertainties involved in the design, consider the effects of multiple concurrent or interacting hazards, and address potential deterioration and progressive damage. This Special Collection is therefore motivated by the increasing interest within the structural engineering community in the development of techniques and approaches for the design of modern structures and infrastructures, and for the retrofitting of aging ones. Relevant topics of this Special Collection include, but are not limited to: (1) latest advances in risk-based analysis of structures subjected to multiple hazards;)2) Performance-Based Engineering for design or optimization application; (3) new methods for fragility-based analysis under complex loading conditions; (4) life-cycle-based optimal design of structures, control and monitoring systems; (5) structural and infrastructure-life-cycle resilience.

Main Topics

The Special Collection will contribute to the general mission of the Journal by focusing on fundamental knowledge that advances the state-of-the-art and state-of-the-practice in structural engineering. In general, manuscripts published in the Special Collection will reflect original research and technological advances on topics that include, but are not limited to the behavior, analysis, testing, design, construction, and regulations of new structures as well as the repair, retrofit, and rehabilitation of existing structures using:

- Risk-based analysis of structures subjected to multiple hazards
- Performance-based multi-hazard engineering
- Seismic fragility-based assessment of bridges
- Wind load fragility, structural analysis due to hurricane, thunderstorm and tornado wind fields
- Risk-informed optimal design
- Assessment of life-cycle structural performance considering uncertainties

continued on reverse

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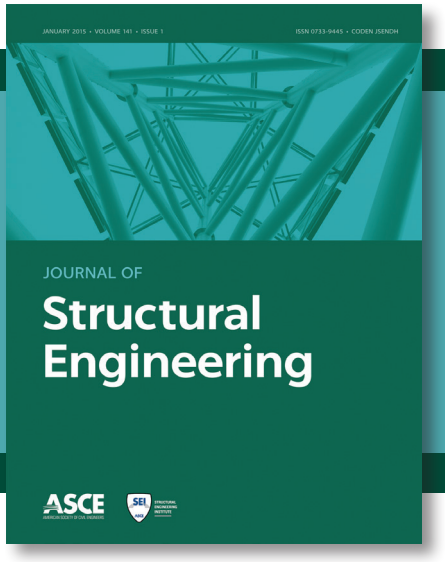

- LCCA-based optimal design of structures, control and monitoring systems
- Operations and management of aging infrastructures based on LCCA
- Assessment of the Value of Information in Structural Health Monitoring (SHM) systems
- Life-cycle sustainability of smart structures and infrastructure systems
- Structural and community resilience under extreme events

Important Dates

Abstract submission: April 20, 2021 (please send abstracts to sc.jse.asce@gmail.com)
Abstract acceptance: May 1, 2021
(For accepted abstracts) full paper submission deadline through ASCE portal: July 31, 2021
First review deadline: September 30, 2021
Revision deadline: October 31, 2021
Second review deadline: November 30, 2021

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