



ASCE SEI 2019 Structures Congress <http://www.structurescongress.org/>

Call for Abstract

Proposed Session Title: Advances in Multi-Hazard Assessment for On and Offshore Civil Infrastructure Systems

Description

Resilience of critical civil infrastructure systems plays a key role in recovery of communities following disastrous events. These events are generally associated with multiple correlated hazards. The vulnerability of civil infrastructure systems to multiple hazards is often exasperated by other factors such as system deterioration and climate change. Accordingly, extensive research efforts have been devoted to developing tools and methods to advance structural design and assessment for civil infrastructure systems. The proposed session aims to eliminate barriers between different engineering disciplines and to invigorate open discussions about advancement in design, evaluation and probabilistic risk assessment to improve multi-hazard structural integrity for onshore and offshore infrastructure systems. This session encourages active participation of practitioners as well as researchers to discuss technical challenges that the industries have faced to maintain structural integrity for their facilities in practice due to harsher operation environment addressing its relevance to structural engineering and multi-hazard aspects. The recommended topics are (but not limited to):

- 1) Probabilistic Hazard and Risk Modeling for Critical Civil Infrastructure
 - a. Hazard characterization including effects of climate change
 - b. Accidental events due to technological and operational errors
 - c. Design load estimation for natural and man-made hazards
 - d. Correlations among different hazards
 - e. Probabilistic response, damage, and consequence assessment
 - f. Risk-informed decision-making analysis frameworks

- (2) Advances in Performance Evaluation for Complex Infrastructure Systems
 - a. Complex multi-degree freedom systems
 - b. Onshore and offshore infrastructure including fixed, semi-submersible, and floating type structures, refineries, and storage tanks
 - c. Operational/non-structural elements (e.g. piping, high value equipment, risers, vessels, towers, mooring systems, etc.)
 - d. Fluid-structure interaction behavior
 - e. Multiple loading scenarios
 - f. Three-dimensional and dynamic effects

This session is co-sponsored by the following committees:

- Multihazard Mitigation Committee
- Blast Shock and Impact Committee
- Fatigue and Fracture Committee
- Performance-Based Engineering Committee

If you are interested in this session, please feel free to send **the abstract title and your contact information** (affiliation, address, and email) to Dr. YeongAe Heo (yaheo@case.edu) and Dr. Hussam Mahmoud (hussam.mahmoud@colostate.edu) by **May 28, Sunday**.

FYI, your [abstract submission deadline will be June 05 via the Structures Congress website](#). As the full paper submission, due by October 24, is optional, you can give a talk with submitting an abstract for your presentation only by June 05 if it would help to avoid any confidentiality issue.