

Recent Advances and Challenges in Structural Mechanics and Engineering

Organizers:

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The purpose of the mini-symposium is to foster the cooperation between researchers and designers by bringing together academics and analysts in order to share recent achievements and latest innovations in the fields of Structural Mechanics and Structural Engineering.

Specifically, the main purpose of the mini-symposium is to allow for an exchange of ideas regarding structural modeling and design, with particular emphasis to the development, application and interpretation of the results of novel analytical, computational, and experimental techniques.

Fundamental developments and advances related to four main core areas, namely *Experimental Studies*, *Structural Modeling*, *Structural Design* and *Structural Retrofitting* will be addressed in order to present and discuss innovative ways of modeling, analyzing, designing, constructing, assembling, monitoring, repairing and retrofitting engineering structures and systems.

Within this general realm, contributions and presentations are encouraged on the following issues:

- *Experimental Studies*: understand the behavior of novel and existing structural materials, systems, and devices; verify the accuracy of mathematical methods and models exploited to perform structural analyses; calibrate models parameters.
- *Structural Modeling*: solution strategies and mathematical methods to perform refined structural analyses; mathematical models devoted to simulate the dynamic behavior of structural materials, systems, and devices; model parameters identification procedures.
- *Structural Design*: optimal design methods for conventional and advanced engineering structures (steel, high-strength and high-performance reinforced concrete, masonry, glass and timber structures); structures with seismic protection systems (active, passive, semi-active and hybrid control systems); fire resistance.
- *Structural Retrofitting*: techniques and methodologies devoted to prolong the service life of existing structures and infrastructures through careful monitoring, regular maintenance and effective repair strategies; latest developments in structural health monitoring, damage detection, structural assessment, failure analysis, repair, strengthening and retrofitting of structures.