



New Trends in Stone Masonry Mechanics, Simulation and Mechanical Characterization

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Message from the Guest Editors

Dear Colleagues,

Stone masonry has been used across civilizations and time to build a wide range of structures, from impressive castles, theatres and bridges to modest residential buildings in city centres and rural areas. The restoration and conservation of these structures are key for preserving their heritage value for the future generations, while their reuse contributes to the current efforts to reduce the material and energy consumption of the construction industry.

This Special Issue aims to collect recent research efforts related to the mechanical characterization, structural analysis and simulation of stone masonry from material to building scale. Topics of particular interest include, but are not restricted to:

- Destructive and non-destructive techniques for mechanical/structural characterization
- Experimental tests on stone masonry elements and structures
- Empirical and mechanical models
- Numerical simulation approaches (micromechanical, homogenization, macromechanical)
- Existing damage identification/characterization techniques
- Digitalization of geometry and damage



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Message from the Editor-in-Chief

Current urban environments are home to multi-modal transit systems, extensive energy grids, a building stock, and integrated services. Sprawling neighborhoods are composed of buildings that accommodate living and working quarters. However, it is expected that the cities and communities of the future will face complex and enormous challenges, including maintenance, interconnectivity, resilience, energy efficiency, and sustainability issues, to name but a few. A smart city uses advanced technologies and a digital infrastructure to improve the outcomes in every aspect of a city's operations. A smart building optimizes the experience of occupants, staff, and management by using a modern and connected environment. Innovations in technology that can bring dramatic improvements to design, planning, and policy are critical in developing the cities and buildings of the future.

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