

Novel Computational and Numerical Methods for the Analysis of Solids and Structures

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Message from the Guest Editor

The rapidly increasing computer power has allowed the development of advanced computational and numerical methods for the analysis of complex solids and structures. The aim of this Special Issue is to gather scientific contributions dealing with the development of novel computational and numerical methods for the analysis of modern structural and solid mechanics problems. Innovative and novel computational modeling approaches, simulation techniques, and numerical methods to solve challenging problems are of special interest. The scope of the issue encompasses but is not restricted to the following broad areas:

Finite element method;
Isogeometric analysis;
Structural elements: beams, plates, shells;
Framed structures;
2D and 3D continua;
Linear and non-linear analyses;
Composite materials and structures;
Functionally graded materials;
Smart materials;
Crack propagation;
Statics;
Dynamics;
Structural vibrations.

Contributions making a fundamental contribution focused on these (or related) topics are welcome



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Special Issue

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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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