

COMPUTATIONAL METHODS FOR STRUCTURAL DYNAMICS

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ABSTRACT

Recent advances in computational mechanics have allowed for efficient, robust and realistic simulation of nonlinear structural dynamic systems involving behaviours covering a range from higher order warping and distortional effects to plasticity and brittle failure. This is mainly contributed to new generation of high-performance computational tools and the development of suitable algorithms capable of handling complex nonlinear phenomena. The study of these phenomena requires cross-disciplinary analysis from the fields of computational mechanics, dynamics of structures, brittle and ductile damage, material science and high performance computing.

The aim of this mini-symposium is to constitute a forum for idea exchange and knowledge dissemination concerning the latest research developments in the fields of *Computational Methods for Structural Dynamics*, with topics including but not limited to:

- Dynamic inelastic analysis of structures
- Multiscale modelling for dynamic brittle and ductile fracture
- Higher order dynamic analysis of structural elements
- Advances in continuous or discrete numerical methods for structural dynamics
- Optimization techniques for structural dynamics
- Reliability assessment of structures

Contributions pertaining to the implementation of such methods on real-life applications, such as on/offshore wind turbine dynamics, masonry, and fracturing are most welcomed.