

## MULTIBODY SYSTEM DYNAMICS AND MODAL REDUCTION

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**Key words:** Multibody system dynamics, flexible multibody dynamics, integration methods, modal reduction, component mode synthesis, modal reduction for non-linear systems

### ABSTRACT

This mini-symposium addresses novel contributions related to all areas of multibody system dynamics and modal reduction for nonlinear dynamics systems.

Special focus lies on theoretical development, implementation of computational methods in multibody dynamics simulation, flexible multibody dynamics and modal reduction of possibly nonlinear models.

Of particular interest are

- methods for handling friction and contact
- flexible body simulation
- mechatronics
- co-simulation methods for multi-physics
- parallel computing strategies
- explicit and implicit numerical integration methods
- innovative methods for modal reduction
  - efficient or novel design, generation and computation of modes
  - methods for modal reduction of nonlinear dynamical systems
  - contact with modally reduced bodies
  - efficient numerical simulation of modally reduced mechanical systems
  - global modal parameterization of nonlinear mechanical systems
  - treatment of geometrical or material nonlinearities in the modal reduction

Papers dealing with applications and software implementation/testing/validation issues are welcome in order to maintain a healthy balance between theoretical and applied presentations.