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INNOVATIVE AND ADVANCED METHODS FOR COMPUTATIONAL DYNAMICS

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ABSTRACT

This MiniSymposium will provide a forum for presentation and discussion of innovative methods for computer based simulation of dynamical systems in mechanics. Applications may range from solid and structural mechanics (at various levels), fluid mechanics, biomechanics, soil mechanics, thermomechanics and material sciences, up to and including coupled problems, but the focus of the paper should be on the computational dynamics aspect.

Contributions that emphasize conventional techniques such as those described in textbooks, as well as purely theoretical papers, are discouraged. Practical application examples and results are expected.

Relevant topics include

- Developments in time integration methods for computational dynamics; related error estimation and error control techniques.
- Dynamic modeling: parameter identification, model updating, model synthesis, treatment of stochastic and nondeterministic factors, feature extraction and optimization.
- Computational wave propagation; developments in silent and scale-transition boundaries.
- Applications in which computational dynamics plays a major role.

The following subtopics will be given special attention:

- Numerical time integration for simulations with conservation constraints; especially advances in spacetime FE and time-discontinuous Galerkin methods.
- Recent advances in reduction of dynamical models.

For any further request, please contact

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