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NUMERICAL METHODS FOR PDES IN ENGINEERING: EARLY-CAREER PERSPECTIVES

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ABSTRACT

Mathematical models and computational methods play a fundamental role in the analysis, simulation, and optimization of complex engineering and industrial problems. This invited session aims to bring together early-career researchers working in numerical analysis, scientific computing, and computational engineering to present recent advances, discuss emerging challenges, and promote scientific exchange and interdisciplinary collaborations.
Particular emphasis will be placed on the development of innovative numerical methodologies and their application to real-world problems, promoting connections between academia and industry.

Topics include, but are not limited to:

- advanced numerical methods for partial differential equations (PDEs);
- computational mechanics and fluid dynamics;
- multiscale and multiphysics problems;
- numerical optimization and optimal design;
- reduced-order modeling and scientific machine learning;
- numerical simulations of industrial processes and advanced materials.