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INELASTICITY AT FINITE STRAINS: MODELS, IDENTIFICATION AND NUMERICS

700 - NUMERICAL METHODS AND ALGORITHMS IN SCIENCE AND ENGINEERING

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ABSTRACT

Over the last decade, novel modelling approaches and corresponding computational techniques have substantially contributed to the computer simulation of materials undergoing inelastic deformations. The development has fostered the insight that models and algorithms are intimately related. Beyond that, the non-linear nature of finite strain inelasticity makes robust optimization procedures indispensable for a reliable identification of model parameters.

The main goal of this Minisymposium is to discuss the state-of-the-art, the cutting edges and the future of modelling, parameter identification and numerics of inelasticity at finite strains. In particular, the exchange between researchers studying plasticity/viscoplasticity, creep, and viscoelasticity shall be stimulated. The Minisymposium equally includes purely phenomenological and physics-based models as well as data-driven modelling approaches. Contributions devoted to

- novel modelling approaches,
- advanced or problem-adapted numerical schemes, which ensure and improve accuracy, efficiency and stability of computations,
- new developments concerning parameter identification procedures, and
- combined theoretical, experimental and/or numerical studies applied to specific materials

are highly welcome.