Inelasticity at Finite Strains: Models, Identification and Numerics

1000 Computational Solid Mechanics

RALF LANDGRAF\*, BERNHARD EIDEL†
and ALEXEY V. SHUTOV‡

**\*** Chair of Solid Mechanics, Chemnitz University of Technology

Reichenhainer Str. 70, 09126 Chemnitz, Germany

ralf.landgraf@mb.tu-chemnitz.de , [www.mytuc.org/srcz](http://www.mytuc.org/srcz)

**†** Heisenberg group, Institute of Mechanics, Universität Siegen

Paul-Bonatz Str. 9-11, 57076 Siegen, Germany

bernhard.eidel@uni-siegen.de , [www.uni-siegen.de/mb/heisenberg/](http://www.uni-siegen.de/mb/heisenberg/)

**‡** Lavrentyev Institute of Hydrodynamics

Pr. Lavrentyeva 15, Novosibirsk, 630090, Russia

alexey.v.shutov@gmail.com , [www.sites.google.com/site/materialmodeling](http://www.sites.google.com/site/materialmodeling)

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ABSTRACT

Over the last decade, novel modelling approaches and related 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, viscoelasticity, and fracture 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,
* qualitative comparison and theoretical analysis of competing approaches, and
* combined theoretical, experimental and/or numerical studies applied to specific materials

are highly welcome.