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Editorial

Theory and numerics of anisotropic materials at finite strains (EUROMECH Colloquium 394)

The EUROMECH Colloquium 394 on “Theory and Numerics of Anisotropic Materials at Finite Strains” took place on March 29–31st 1999 at the Technical University of Graz. There were 43 participants from nine countries who presented 28 contributions. Following the colloquium the participants were invited to submit full-length papers to be published in the *International Journal of Solids and Structures*. This special issue contains eleven papers all of which were peer reviewed.

The purpose of the colloquium and of this special issue is to provide an overview over the recent progress made in the field considered as well as to present new and significant results. The papers are, in general, concerned with the development of constitutive laws and numerical algorithms for large-strain anisotropy as well as the simulation of the behavior of various materials. Specific topics covered are the mathematical, physical and thermodynamical foundations for different anisotropic material laws such as hyperelasticity, plasticity and viscoplasticity or damage. Phenomena considered include localization, texture development, phase transitions and shape memory effects. Many contributions introduce new numerical algorithms and models for problems like crystal plasticity, damage mechanics or anisotropic plates and shells. Finally there are contributions dealing with the relation between microscopic and macroscopic properties of materials.

The editorial committee would like to thank all the authors for their contributions and the reviewers for helping to guarantee high scientific standard of the published papers. Also we would like to extend our gratitude to Professor Charles Steele, the Editor-in-Chief of the *International Journal of Solids and Structures*, who agreed to publish this special issue.

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