INVITED SESSION TITLE: INVERSE PROBLEMS, OPTIMISATION FRAMEWORK AND INVERSE ANALYSIS ON MATERIALS PLASTICITY

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ABSTRACT

The conference session will be focused on materials plasticity studies regarding solution of continuum media flow defined as inverse and optimisation problems, as well as applications using the inverse analysis principle based on hybrid analytical-numerical modelling. Both theoretical and numerical aspects can be treated together with possible experimental validation. Thermo-Plasticity of all class of materials, with respect to the influence of physically based constitutive equations and their corresponding parameters, may be taking into account to describe manufacturing processes under conventional, severe or extreme loadings. The main objectives must be to present applications on formulation and identification of reliable constitutive models using thermodynamics and plasticity theory principles, to describe and solve robust non-linear coupling between mechanical, thermal and microstructure phenomena regarding the influence on optimal design and predictions concerning material processing performances.

Topics: Inverse problems in Plasticity; Material Plastic Flow; Non-Linear Thermo-Plastic Constitutive Models identification; Optimisation Techniques; Numerical Modelling and Inverse Analysis.

REFERENCES

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