Computational Modeling of Material Forming Processes

An Invited Session Organized by

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Dedicated to the memory of Lionel FOURMENT

This Invited Organized Session aims to bring together researchers and scientists to present and discuss the state of the art on mathematical methods, numerical methods, computational techniques and industrial applications on *Computational Modeling of Material Forming Processes*. The goal is to make a step forward in the formulation and solution of both fundamental and real life problems with a multidisciplinary vision accounting for all the complex phenomena involved in their physical description.

Topics of the invited session on *Computational Modeling of Material Forming Processes* in the broad sense will include, but will not be limited, to:

- ✓ Mathematical formulations
- ✓ Numerical methods
- ✓ FEM, PFEM, DEM, SPH, IgA and other discretization methods
- ✓ Solution strategies and numerical implementation issues
- ✓ Multiscale and stabilization techniques
- ✓ Constitutive modeling: macroscale, mesoscale, microscale or multiscale
- ✓ Contact, friction and lubrication.
- ✓ Damage models and crack propagation
- ✓ Coupled thermomechanical and metallurgical models
- ✓ Simulation of chain manufacturing processes
- ✓ Simulation of forming processes, such as additive manufacturing, solidification, forging, rolling, stamping, extrusion, deep-drawing, cold rolling, leveling, superplastic forming, thixoforming, casting, welding, friction stir welding, high speed forming, metal deposition, etc.
- ✓ Large scale simulation and high performance computing.

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