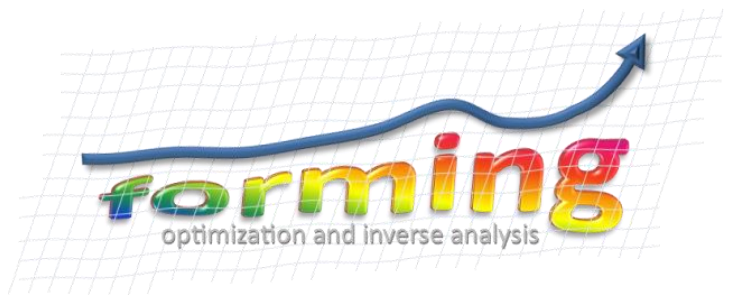


A mini-symposium (MS11) on:

Optimization and inverse analysis in forming

Results for the simplest material tests and the most complex materials forming processes often depend on complex and unknown physical models and on inherent variability of design variables. The sensitivity of results to material and process variables can be used to determine unknown variables from known results (inverse analysis and parameter estimation) as well as to determine variable settings to achieve optimal results. Numerical methods for process optimization and for solving inverse problems are being intensely and continuously developed, as the reliability and the computational efficiency of simulation software is reaching unprecedented frontiers. Innovation in this field of research, applied to all materials forming engineering disciplines, is of utmost importance for ESAFORM conference. In this mini-symposium academic as well as engineering contributions are welcome. Items from both numerical and experimental standpoints that fall within the scope of this mini-symposium are listed as follows. Contributions on the following subjects are welcomed:



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METHODS FOR METAMODELING, CONTROL AND OPTIMIZATION OF FORMING PROCESSES:

- shape and topological optimization;
- optimization of manufacturing processes and machines;
- process control;
- new metamodeling techniques

INVERSE ANALYSIS:

- identification of constitutive, friction, heat transfer or damage parameters;
- identification of boundary conditions or unknown process conditions;
- design of experimental procedures and measurement techniques for inverse analysis;
- numerical methods and algorithms for inverse analysis.

STOCHASTIC APPROACHES:

- reliability assessment;
- robust design;
- optimisation under uncertainty.

Coordinator

Matteo Strano, Politecnico di Milano (matteo.strano@polimi.it)

Co-organizers

A. Gil Andrade-Campos, University of Aveiro (gilac@ua.pt)

Sam Coppieters, KU Leuven (sam.coppieters@kuleuven.be)