

Minisymposium Information

Minisymposium Title

Finite Element Technology and Meshfree approaches:
innovative formulation applied to metal forming

Abstract

The numerical simulation of forming applications requires a high level of interest, due in part to the strong demands of industrial partners in highly competitive markets. Nevertheless, numerical results can only be reliable if the numerical formulations (based on Finite Element Method, Meshless Methods, etc.) themselves are able to provide realistic representations of the processes to be simulated.

Several phenomena can affect the accuracy of the results, namely the locking effect and problems related to instabilities such as hourglass patterns. These topics have been tackled in many academic publications, workshops and conferences. It is well-known that the mentioned deficiencies can lead to useless numerical solutions if not conveniently treated. For this reason, reliable and theoretically accurate formulations, along with computational effective numerical techniques, are required.

The Minisymposium within this proposal intends to be a contribution in achieving better solutions for realistic forming problems, and tries to establish a bridge between the academic and industrial worlds. The main goal is to promote the debate between researchers involved in numerical simulations, in order to set the major lines of developments for the near future.

Estimated number of keynotes: 1+1 (*One keynote equals two 30-min. time slots*)

Estimated number of papers: 5+5+5 (*One paper equals one 20-min. time slots*)

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