Further studies on identification of inelastic parameters for damaged materials

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ABSTRACT

A proper set of material parameters is one of the most important aspects in a successful simulation of metal forming processes. Several issues must be observed when choosing the hardening law and corresponding material parameters, amongst which the most important are: (i) the magnitude of the plastic deformation of the target forming operation must be contemplated by the parameters of the constitutive model, and (ii) the geometrical changes caused by plastic deformation must be accurate.

The present work discusses techniques to obtaining constitutive parameters for Lemaitre and Gurson-type material models [1]. The strategy requires compliance of multiple tensile tests with specimens prepared according to different technical standards. Parameter identification can be regarded as an inverse problem and the present work adopts a scheme based on Particle Swarm Optimization [2].

REFERENCES