EXAMPLES OF ARBITRARY LAGRANGEAN-EULERIAN ANALYSES OF 3-D FINITE PLASTICITY

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ABSTRACT

To avoid the difficulties found when analyzing elastoplastic problems with finite deformations by means of Updated Lagrangian or Eulerian codes, the Arbitrary Lagrangean-Eulerian strategy has been proposed.

In this work we use the ALE formulation for three-dimensional problems, with contact, a subject that is still not well established. We had some problems with volume change (loss of material) and with contact satisfaction. These problems are tackled in this paper, that describes the basic formulation and the node relocation strategy and shows some successful and unsuccessful examples.