

A New Approach for Solving and Analyzing Problems in Elastoplasticity

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Elastoplastic deformation problems can be modelled as the minimization of a convex energy functional with respect to the displacement field. Such functional has a first, but not a second derivative. For minimization a Newton-like method is applied where the missing second derivative is replaced by a slanting function – a concept which was introduced in the year 2000 by X. Chen, Z. Nashed, and L. Qi. In this talk theoretical convergence results and numerical experiments are presented.

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