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# AN OPTIMAL ADAPTIVE FINITE ELEMENT METHOD FOR ELASTOPLASTICITY

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In this talk, an adaptive finite element method (AFEM) is discussed for problems in elastoplasticity with hardening. Its optimal convergence is proven with respect to the notion of approximation classes. In particular, the methodology of [2] is used where the overlay of the triangulation generated by the AFEM algorithm is considered. The convergence analysis relies on the equivalence of the errors of the stresses and energies [1]. To show this equivalence, Jensen's inequality is applied to the convex dissipation functional. Numerical experiments study the influence of the hardening and bulk parameters to the convergence behavior of the AFEM algorithm.

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