

Effective quasistatic evolution models for perfectly plastic plates with periodic microstructure

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In this talk, we will consider a lower dimensional homogenized thin plate model within the framework of linearized elasto-plasticity. Starting from the energetic formulation of the quasistatic evolution, we analyse the behavior of the elastic energies and dissipation potentials, as well as the displacements and strain tensors, when the period of oscillation of the heterogeneous material ε and the thickness of the thin body h simultaneously tend to zero. In order to derive convergence results for energy functionals and the associated energy minimizers, we base our approach on Γ -convergence techniques and the two-scale convergence method adapted to dimension reduction.

This is a joint work with E. Davoli and I. Velčić.