

Homogenization in Magnetoelasticity Under Small Elastic Response

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Abstract

In this talk, we perform a simultaneous homogenization and linearization analysis for a magnetoelastic energy functional featuring a mixed Eulerian-Lagrangian structure. Neglecting Zeeman and anisotropic contributions, we characterize the asymptotic behavior in the sense of Γ -convergence for the sum of a nonlinear magnetoelastic energy, a symmetric exchange term defined on the actual configuration, and for the associated magnetostatic self-energy.

This is a joint work with M. Cherdantsev (Cardiff University), E. Davoli (TU Wien) and S. Riccò (TU Wien).