Equilibrium for Multiphase Solids with Eulerian Interfaces

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We describe a general phase-field model for hyperelastic multiphase materials. We can consider shape memory alloys as an example of such materials. The model features an elastic energy functional that depends on the phase-field variable and a surface energy term that depends in turn on the elastic deformation, as it measures inter- faces in the deformed configuration. We prove existence of energy minimizing equilibrium states and Γ-convergence of diffuse-interface approximations to the sharp-interface limit.
It is a joint work with D. Grandi (Ferrara), E. Mainini (Genoa), and U. Stefanelli (Vienna).