

Stress-Modulated Growth at Small Strains

Julian Blawid (University of Regensburg)

We present a model for stress-modulated growth of a body driven by the presence of nutrients and prove existence of solutions for small strains. The growth process is governed by an ODE on a Banach space and the total deformation is determined by the solution of the formal Euler-Lagrange equations of a hyperelastic variational problem. Moreover, the nutrient concentration is given by the solution of a linear elliptic reaction-diffusion equation.