Morphoelastic Growth at Large Strains

We present a model for stress dependent tissue growth in the context of second gradient viscoelastic materials subject to the

Kelvin-Voigt rheological model. Our model features a multiplicative decomposition of the deformation gradient into an elastic

contribution and a growth tensor. While the growth process is governed by an ordinary differential equation for the growth tensor,

which depends on the elastic stresses, the mechanical deformation is determined by a quasi static momentum balance equation.