DK Seminar

Jun 07, 2017, 14:15 - 15:45
University of Vienna,
Oskar-Morgenstern-Platz 1, HR 2

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On the passage from nonlinear to linearized viscoelasticity

We formulate a quasistatic nonlinear model for nonsimple viscoelastic materials at a finite-strain setting in the Kelvin's-Voigt's rheology where the viscosity stress tensor complies with the principle of time-continuous frame-indifference. We identify weak solutions in the nonlinear framework as limits of time-incremental problems for vanishing time increment. Moreover, we show that linearization around the identity leads to the standard system for linearized viscoelasticity and that solutions of the nonlinear system converge in a suitable sense to solutions of the linear one. This is joint work with Martin Kruzik (Prague).