



Analysis Seminar

A variational approach to stress-rate type strain-limiting viscoelasticity

By

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Abstract: In this work, we investigate the existence of solutions for a stress-rate type model of viscoelastic material response in the context of strain-limiting theory. First, we use a stress-rate type constitutive relation and the equation of motion to derive a partial differential equation where unlike classical equations in elasticity the unknown is the stress rather than the deformation. Secondly, we introduce a variational framework to prove the existence of solutions to this equation by considering it as the Euler-Lagrange equation corresponding to a suitably chosen functional. We use the method of minimization of this functional in a time-discretized setting in order to solve the problem. This is joint work with Anja Schlömerkemper and Luisa Bachmann, both from the University of Würzburg.

Date: Wednesday, May 31, 2023

Time: 16:00 – 17:00, GMT+3

Place: SA-Z20