

Seminarreihe im Rahmen des GRK 2078

Referee: **Prof. Dr.-Ing. Stefan Hartmann**
Division of Solid Mechanics, Institute of Applied Mechanics
Clausthal University of Technology, Germany

Dates: Monday, August 30, 2021
Tuesday, August 31, 2021

Time: 09:00-10:30h and 11:00-12:30h

Format: IRTG Online Seminar Series

Title: **From Experiment to Simulation**

Abstract

The course is aimed at young PhD students who are concerned with issues related to the experimental treatment of mechanical experiments, modeling of the material behavior, and the simulation of components using finite elements. In particular, the question of the identification of the occurring material parameters arises. We start with the basics of experimental observations and measurement techniques, and continue on some questions related to constitutive equations of elasticity, viscoelasticity, rate-independent plasticity, and plasticity (small strain formulations). These models are either classical functions, ordinary differential equations or differential-algebraic equations. Moreover, we have to solve the entire boundary-value problem for some tests, where we have a focus on the finite element method. After that, we deal with the identification of the occurring material parameters, which we have to determine based on the experimental observations. For this purpose, we use classical homogeneous deformation, but in particular also full-field strain measurement techniques for inhomogeneous stress/strain states, which are compared with finite element computations.

Alle Interessenten sind herzlich eingeladen.

Prof. Dr.-Ing. Thomas Böhlke
(Sprecher des GRK 2078)