VIENNA DOCTORAL SCHOOL MATHEMATICS

PhD Colloquium

David Melching:

How does steel deform? An Introduction to Elastoplastic Materials and Damage

Degradation and failure of elastoplastic materials like metals, alloys, or certain polymers is of primary concern when predicting deformation processes in industrial applications. These fracture processes originate from microscopic defects which grow through plastic slip to form macroscopic cracks. In this talk, we will start from a toy model for hysteretic processes leading to the rate-independent models used to describe plastic deformation and damage processes. We discuss different variants in view of their rheological models and governing equations and point out the difficulties in finding a suitable notion of solutions and in proving their existence.

19. June,
14:00-14:45

SkyLounge, OMP-1