Institut für
Angewandte Mathematik

Leibniz
Universität
Hannover

Institut für Angewandte Mathematik
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Oberseminar
Analysis und Theoretische Physik

Dr. Angkana Rüland
(Universität Oxford)

Microstructures in Shape-Memory Alloys – Rigidity and Flexibility

In this talk, I discuss a dichotomy between rigidity and flexibility which arises in the modelling of shape-memory materials. Shape-memory materials undergo a first order, diffusionless phase transformation, in which symmetry is lost. Mathematically, they are often modeled by non-convex, multi-well energies within the framework of the calculus of variations. In analyzing minimizers of these energies, a fascinating dichotomy arises: While solutions with high regularity are often quite rigid, solutions with low regularity are in many cases very flexible. I will discuss this in the context of the cubic-to-orthorhombic phase transformation, where this dichotomy already arises for the geometrically linearized theory of elasticity. Further, I will present first results which quantify this dichotomy.
This is based on joint work with C. Zillinger and B. Zwicknagl.

Dienstag, 09. Mai 2017, 15:00 Uhr, Raum c311
Hauptgebäude der Universität

Über Ihren Besuch würden sich freuen:

Prof. Dr. Wolfram Bauer
Prof. Dr. Joachim Escher
Prof. Dr. Olaf Lechtenfeld
Prof. Dr. Elmar Schrohe
Prof. Dr. Christoph Walker
Prof. Dr. E. Wiedemann