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Rigidity, Flexibility and Scaling for Models of Shape-Memory Alloys

Tuesday, June 25, 2024 2:00 PM (1 hour)

The modelling of shape-memory alloys displays a striking dichotomy between rigidity and flexibility. On the one hand, without any additional regularity solutions can be highly irregular and non-unique, they are very flexible. On the other hand, often, at higher regularity, which physically can be viewed as augmenting the model by an interfacial energy, the solutions become very rigid and obey strong kinematic constraints. In this talk I explore scaling as a mechanism distinguishing between these regimes and study scaling properties for selected model systems. If time permits, I relate these to nonlocal anisotropic isoperimetric problems. This is based on joint work with P. Cesana, J. Ginster, J. Taylor, A. Tribuzio, Ch. Zillinger and B. Zwicknagl.

Presenter: RÜLAND, Angkana (Universität Bonn)