



**Czech Society for Mechanics  
and Institute of Thermomechanics, CAS**

invite you to a lecture and discussion within  
the lecture series **Institute of Thermomechanics Seminar**

## **Micromechanics of Martensitic Laminates**

given by

**Doc. Ing. Hanuš SEINER, Ph.D.**

Institute of Thermomechanics, Czech Academy of Sciences  
Visiting Fulbright Scholar at the University of Minnesota, Minneapolis, USA

The talk will summarize the main theoretical aspects of mechanics of geometrically ordered microstructures appearing in single crystals of shape memory alloys, called martensitic laminates. It will be shown that the formation of the laminates can be explained based on the concept of non-linear elasticity and energy-minimizing sequences.

The applicability of this theoretical framework will be illustrated on two technologically important examples: i) branched laminates at the phase interfaces; ii) highly mobile laminate-laminate interfaces in the ferromagnetic shape memory alloys. For both cases, explicit constructions of energy upper-bounds will be shown, and the implications of the theoretical findings for designing of new alloys with advanced functionalities will be discussed. The development of these upper-bounds and the exploration of their properties are the main subjects of the current speaker's research at the University of Minnesota, done in collaboration with prof. R.D. James and his research group.

**The lecture will be held on Wednesday, March 28, 2018 at 10:00 in the building  
of the Institute of Thermodynamics (lecture room B), Dolejškova 5, 182 00 Prague 8**