Institute of Thermomechanics, Czech Academy of Sciences

invites you to a lecture within the lecture series **Institute of Thermomechanics Seminar**

Thermomechanics of the Stefan's solid-liquid phase transformation

given by

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The Stefan problem historically describes melting of ice or freezing (solidification) of water as a mere heat-transfer problem with a latent heat. This solid-liquid phase transition however naturally occurs in a mechanical context: melted liquid can flow while frozen solid exhibits some elasticity or some visco-elasticity and even may undergo some inelastic processes as fracture. This needs also to cope with the fluid-solid (so-called fluid-structure) interaction and calls for a model in Eulerian description. Of course, thermomechanical consistency is an ultimate attribute, too. The concepts of semi-compressible fluids, viscoelastic solids in Jeffreys' rheology, phase-field fracture, and nonsimple materials (known also as multipolar fluids) will be employed. Also superheating/supercooling effects will be involved, as well as a mathematical analysis briefly outlined. Some enhancements of this basic thermomechanical scenario will be mentioned, too.

**The lecture will be held on Friday, June 18th, 2021, at 11:00
via Zoom, using the following link:**

https://zoom.us/j/99185630527?pwd=ZkhRd1lpdUlEKzBKamNhQmNFN2hrUT09

Meeting ID: 991 8563 0527
Passcode: 201091

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