Fall 11

Colloquium Cukrovarnická

**Ve čtvrtek dne 1. prosince 2011 ve 14:00 hod.
ve Fyzikálním ústavu Cukrovarnická v seminární místnosti (budova A, 1. patro)**

A Dynamical Theory of Heat – Using and Understanding Thermodynamics

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In this presentation I will move from a description of a dynamical theory of heat based on the conceptualization of heat as a non-conserved fluid substance (a latter-day version of the caloric theory) to the question of the nature of human systems of conceptualization. The dynamical theory of heat shows how we can create a conceptually simple approach that yields initial value problems in thermal physics and unifies thermodynamics and heat transfer. This type of presentation of a theory of thermal physics (1) is comprehensive and foundational, (2) leads directly to relevant applications in engineering, medicine, and the natural sciences, and (3) is very simple to teach at an introductory level. The second part on conceptualizations of Forces of Nature demonstrates the existence of a ubiquitous schematic structure of figurative human understanding. The theory is applied to thermodynamics where three conceptualizations of heat are contrasted: Heat as a fluid substance, heat as energy, and heat as the motion of little particles.

J.J. Mareš, ved. sekce 3