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Thermodynamics of scalar-tensor gravity: a new approach

Monday, 5 July 2021 18:00 (20 minutes)

We propose a new approach to the thermodynamics of scalar-tensor gravity and its possible “diffusion” toward general relativity, previously regarded as an equilibrium state in spacetime thermodynamics. The main idea is describing scalar-tensor gravity as an effective dissipative fluid and applying Eckart’s first order thermodynamics to it. This gives explicit effective quantities: heat current density, temperature of gravity”, viscosity coefficients, entropy density, plus an equation describing the “diffusion” to Einstein gravity. These quantities, otherwise missing in spacetime thermodynamics, pop out with minimal assumptions.

Primary author: Prof. FARAONI, Valerio (Bishop’s University)

Presenter: Prof. FARAONI, Valerio (Bishop’s University)

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