

Information Thermodynamics

Masahito Ueda

Department of Physics, University of Tokyo, Hongo 7-3-1, Bunkyo-ku, Tokyo 113-0033,
Japan

email: ueda@phys.s.u-tokyo.ac.jp

Abstract:

The second law of thermodynamics presupposes a clear-cut distinction between the controllable and uncontrollable degrees of freedom by means of macroscopic operations. The cutting-edge technologies in quantum information and nano-science seem to force us to abandon such a notion in favor of the distinction between the accessible and inaccessible degrees of freedom. In this talk, I will discuss the implications of this paradigm shift by focusing on how the second law of thermodynamics can be generalized in the presence of a feedback control.

References:

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2. T. Sagawa and M. Ueda, Phys. Rev. Lett. **100**, 080403 (2008).