Special Issue

Fluctuation Relations and Nonequilibrium Thermodynamics in Classical and Quantum Systems

Message from the Guest Editor

The recent advances in the control of microscopic systems down to the atomic level have triggered a renewed interest in the study of the thermodynamic processes of small systems. As these are characterised by strong fluctuations of thermal and quantum origins, thermodynamic quantities like heat, work, and entropy become stochastic variables. Fluctuation theorems, including the most celebrated Jarzynski relation, connect exponential averages of these quantities, even for out-of-equilibrium processes, with equilibrium observables like free energy differences. The areas covered in this Special Issue include but are not restricted to: *) Fluctuation relations in classical stochastic thermodynamics *) Definitions of work, heat, and entropy and related fluctuation theorems in quantum systems *) Quantum engines and refrigerators *) Resource theory of quantum thermodynamics *) Role of quantum correlations and coherence in quantum thermodynamics

Guest Editor

Dr. Gabriele De Chiara

Centre for Theoretical Atomic, Molecular and Optical Physics, Queen's University Belfast, Belfast, BT7 1NN, UK

Deadline for manuscript submissions

closed (31 December 2019)

Entropy

an Open Access Journal by MDPI

Impact Factor 2.0
CiteScore 5.2
Indexed in PubMed

mdpi.com/si/20827

Entropy
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
entropy@mdpi.com

mdpi.com/journal/entropy

Entropy

an Open Access Journal by MDPI

Impact Factor 2.0
CiteScore 5.2
Indexed in PubMed

mdpi.com/journal/entropy

About the Journal

Message from the Editor-in-Chief

The concept of entropy is traditionally a quantity in physics that has to do with temperature. However, it is now clear that entropy is deeply related to information theory and the process of inference. As such, entropic techniques have found broad application in the sciences.

Entropy is an online open access journal providing an advanced forum for the development and/or application of entropic and information-theoretic studies in a wide variety of applications. *Entropy* is inviting innovative and insightful contributions. Please consider *Entropy* as an exceptional home for your manuscript.

Editor-in-Chief

Prof. Dr. Kevin H. Knuth
Department of Physics, University at Albany, 1400 Washington Avenue, Albany, NY 12222, USA

Author Benefits

Open Access:

free for readers, with article processing charges (APC) paid by authors or their institutions.

High Visibility:

indexed within Scopus, SCIE (Web of Science), Inspec, PubMed, PMC, Astrophysics Data System, and other databases.

Journal Rank:

JCR - Q2 (Physics, Multidisciplinary) / CiteScore - Q1 (Mathematical Physics)

MDPI