entropy

IMPACT FACTOR 1.821

Special Issue

Thermalization in Isolated Quantum Systems

Guest Editors:

Prof. Dr. Vladimir Zelevinsky
Department of Physics and Astronomy and National Superconducting Cyclotron Laboratory, Michigan State University, East Lansing, MI 48824-1321, USA

Zelevins@nscl.msu.edu

Prof. Dr. Felix Izrailev
Instituto de Fisica, Benemérita Universidad Autónoma de Puebla, Puebla 72570, Pue, Mexico
Department of Physics and Astronomy, Michigan State University, East Lansing, MI 48824-1321, USA

felix.izrailev@gmail.com

Deadline for manuscript submissions:
31 May 2018

Message from the Guest Editors

Dear Colleagues,

The field of mesoscopic physics is going through rapid development with contributions from many subfields of science including atomic, molecular and nuclear physics, condensed matter physics on the micro- and nano-scale, biophysics and quantum information. In all cases, we have to deal with relatively small systems of interacting constituents where statistical features are clearly emerging being described in terms of temperature, entropy, etc., while at the same time one still can study, theoretically and experimentally, individual quantum states.

If traditional statistical physics usually considered statistical ensembles in the limit of infinitely large volume and particle number, and the equilibrium thermalization was reached due to the interaction with a thermostat, in a small system with a finite number of particles thermal equilibrium is established as a result of interparticle interactions which, at high level density, leads to chaotic mixing of simple many-body configurations. Historically this follows the line from Boltzmann to Landau and Lifshitz who stressed in their Statistical Physics that statistical properties can be observed and studied on the level of individual quantum states. This direction of science addresses the emergence of thermodynamic phenomena from quantum mechanics and quantum chaos creating in a sense a new paradigm of statistical mechanics.

This emerging field encompasses different bright ideas and very wide practical applications; its interdisciplinary character leads to different viewpoints and illuminating discussions. We, therefore, solicit contribution to this Special Issue on a new branch of quantum physics and its applications.

Prof. Dr. Vladimir Zelevinsky
Prof. Dr. Felix Izrailev
Guest Editors

Author Benefits

Open Access: free for readers, with article processing charges (APC) paid by authors or their institutions.
High visibility: indexed by the Science Citation Index Expanded (Web of Science), MathSciNet (AMS), Inspec (IET), Scopus and other databases.
Rapid publication: manuscripts are peer-reviewed and a first decision provided to authors approximately 26 days after submission; acceptance to publication is undertaken in 4 days (median values for papers published in this journal in first half of 2017).

MDPI
www.mdpi.com

Entropy Editorial Office, entropy@mdpi.com
St. Alban-Anlage 66, 4052 Basel, Switzerland
Tel. +41 61 683 77 34, Fax: +41 61 302 89 18

mdpi.com/si/11514