



## Non-Equilibrium Dynamics in Ultra-Cold Quantum Gases

Guest Editors:

**Dr. Sayak Ray**

Physikalisches Institut,  
Rheinische Friedrich-Wilhelms-  
Universität Bonn, Nußallee 12,  
53115 Bonn, Germany

**Prof. Dr. Lamberto Rondoni**

Department of Mathematical  
Sciences, Politecnico di Torino,  
10129 Torino, Italy

Deadline for manuscript  
submissions:

**closed (20 November 2025)**

### Message from the Guest Editors

Non-equilibrium dynamics in quantum systems is a subject of great interest, with diverse research areas ranging from atomic and molecular physics to condensed matter systems. A number of emerging phenomena have revived interest in quantum dynamics in recent years, including driven-dissipative quantum dynamics; thermalization; many-body localization in isolated quantum systems; far-from-equilibrium quantum dynamics, particularly quench across the quantum critical point; and several intriguing phenomena exhibited by periodically driven quantum systems. Following the discovery of the Bose-Einstein condensate (BEC) of a dilute atomic vapor in a seminal experiment in 1995, the many-body aspects of coherent matter wave offer a new direction for exploration. Subsequently, ultracold atomic systems have become a natural platform for the study of various dynamical phenomena of interacting quantum systems.

We would like to invite you to contribute to this Special Issue. Our aim is to compile scholarly articles that address a wide range of non-equilibrium physics in quantum many-body systems, from fundamental to applied issues, using theoretical, computational, or experimental methods.





*entropy*



an Open Access Journal by MDPI

## Editor-in-Chief

### **Prof. Dr. Kevin H. Knuth**

Department of Physics, University  
at Albany, 1400 Washington  
Avenue, Albany, NY 12222, USA

## 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.

## 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)

## Contact Us

---

*Entropy* Editorial Office  
MDPI, Grosspeteranlage 5  
4052 Basel, Switzerland

Tel: +41 61 683 77 34  
[www.mdpi.com](http://www.mdpi.com)

[mdpi.com/journal/entropy](http://mdpi.com/journal/entropy)  
[entropy@mdpi.com](mailto:entropy@mdpi.com)  
[X@Entropy\\_MDPI](#)