Special Issue

Non-Equilibrium Dynamics in Ultra-Cold Quantum Gases

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.

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Deadline for manuscript submissions

20 November 2025

Entropy

an Open Access Journal by MDPI

Impact Factor 2.0
CiteScore 5.2
Indexed in PubMed

mdpi.com/si/212490

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