

Special Issue

Quantum Dynamics with Non-Hermitian Hamiltonians II

Message from the Guest Editors

Nowadays, non-Hermitian quantum dynamics is a well-established and continuously growing field of research. Either PT-symmetric or non-PT-symmetric Hamiltonians are usually considered. The symmetric ones represent non-equilibrium systems in a steady state, while the non-PT-symmetric describe systems in more general non-equilibrium states. Because of this, the formulation of the quantum statistical mechanics of general non-Hermitian quantum systems is at least as difficult as the theory of general non-equilibrium statistical systems.

True non-Hermitian evolution of quantum systems is inherently a hard problem since quantum systems naturally follow Hermitian dynamics. Promising ways to achieve a genuine non-Hermitian evolution of quantum systems are given by coupling quantum systems to ancillae and the approach of dilation.

The scope of this Special Issue is broad. The goal is to gather contributions dealing with all the above topics and open problems. The hope is to present the state of the art in non-Hermitian dynamics and to identify the stepping stones for further progress.

Guest Editors

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Deadline for manuscript submissions

closed (17 June 2024)



Entropy

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Impact Factor 2.0
CiteScore 5.2
Indexed in PubMed



mdpi.com/si/142640

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