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Quantum Dynamics with Non-hermitian Hamiltonians II

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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.



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Special Issue



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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.

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