



Exploring Information and Complexity Measures in Quantum Systems by Exactly Solvable Models

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Deadline for manuscript submissions:

closed (29 February 2024)

Message from the Guest Editors

The study of quantum systems has been enriched in recent years with the incorporation of new mathematical tools inspired by information theory. In particular, information measures and complexity measures have been successfully applied to elucidate various aspects of the physics of atoms, molecules, etc.

Unfortunately, quantum systems rarely admit exact treatment and most studies must rest heavily on the numerical solution of the equations describing the system.

Therefore, exactly soluble models play an essential role when exploring and testing the above-mentioned new statistical techniques. The aim of the present Special Issue is to apply information techniques to investigate the properties of exactly soluble quantum systems, including discrete systems like the celebrated Lipkin model and continuous systems based on exactly solvable quantum potentials.





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Message from the Editor-in-Chief

We get more and more evidence that quantum theory is the correct description of nature. It was born a century ago by explaining a few paradoxical results that could not be understood in the framework of classical physics. Today, quantum physics leads technological revolution in metrology, communication, computation, and the design of novel materials. Still it needs more solid foundations, and we need to develop a deeper understanding of how it can be used for new applications.

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