



entropy



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## Quantum Probability and Randomness

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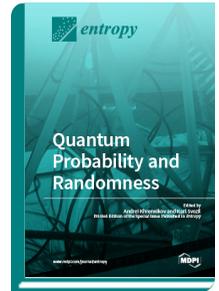
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The last few years have been characterized by a tremendous development of quantum information and probability and their applications, including quantum computing, quantum cryptography, and quantum random generators. In spite of the successful development of quantum technology, its foundational basis is still not concrete and contains a few sandy and shaky slices. Quantum random generators are one of the most promising outputs of the recent quantum information revolution. Therefore, it is very important to reconsider the foundational basis of this project, starting with the notion of irreducible quantum randomness. Quantum probabilities present a powerful tool to model uncertainty. Interpretations of quantum probability and foundational meaning of its basic tools, starting with the Born rule, are among the topics which will be covered by this issue. Recently, quantum probability has started to play an important role in a few areas of research outside quantum physics—in particular, quantum probabilistic treatment of problems of theory of decision making under uncertainty. Such studies are also among the topics of this issue.



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