Special Issue

Quantum Information and Foundations

Message from the Guest Editors

Quantum information has dramatically changed information science and technology, looking at the quantum nature of the information carrier as a resource for building new information protocols, designing radically new communication and computation algorithms, and ultra-sensitive measurements in metrology, with a wealth of applications. On the fundamental side, the new discipline has led us to regard quantum theory itself as a special theory of information, and has opened routes for exploring solutions to the tension with general relativity, based for example on the holographic principle, on non-causal variations of the theory, or else on the powerful algorithm of the quantum cellular automaton which has revealed new routes for exploring quantum fields theory both as a new microscopic mechanism on the fundamental side, and as a tool for efficient physical quantum simulations on the practical side. In this golden age of foundations, an astonishing number of new ideas, frameworks and results, spawned by the quantum information theory experience, have revolutionized the way we think about the subject, with a new research community emerging worldwide.

Guest Editors

Prof. Dr. Giacomo Mauro D'Ariano
QUit Group, Department of Physics, University of Pavia, I-27100 Pavia, Italy

Dr. Paolo Perinotti
QUit Group, Department of Physics, University of Pavia, Pavia, Italy

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Entropy
Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
entropy@mdpi.com

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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.

Entropy is an online open access journal providing an advanced forum for the development and/or application of entropic and information-theoretic studies in a wide variety of applications. *Entropy* is inviting innovative and insightful contributions. Please consider *Entropy* as an exceptional home for your manuscript.

Editor-in-Chief

Prof. Dr. Kevin H. Knuth
Department of Physics, University at Albany, 1400 Washington Avenue, Albany, NY 12222, USA

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