Special Issue

Relativistic Quantum Information

Message from the Guest Editors

Relativistic quantum information (RQI) is a multidisciplinary research field that involves concepts and techniques from quantum information with special and general relativity. General relativity and quantum physics are two estabilished domains of physics that have until now been mutually incompatible. Hawking radiation, the black hole information paradox including soft photons and gravitons, the equivalence between the Einstein–Rosen bridge from general relativity and the Einstein–Podolski–Rosen paradox from quantum mechanics are examples of the new phenomena that arise when the two theories are put together. RQI uses information as a tool to investigate spacetime structure. On the other hand, RQI helps to identify the applicability of quantum information techniques when relativistic effects become important. The aim of this Special Issue is to take stock of state-of-the-art perspectives on RQI, with particular attention to the concept of quantum information and the repercussions of RQI on the foundations of physics.

Guest Editors

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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.

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