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Towards Ultimate Quantum Theory (UQT)

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Deadline for manuscript submissions:
closed (10 October 2018)

Message from the Guest Editors

Dear Colleagues,

In spite of its tremendous success, the present quantum theory cannot be considered as *the ultimate theory of micro-phenomena*. It suffers from a variety of fundamental problems. Quantum mechanics is a nonrelativistic theory and its relativistic generalization, quantum field theory, suffers of divergences. However, of course, the biggest black cloud in the quantum sky is the impossibility to unify presently-existing quantum theory with general relativity. This Special Issue will be devoted to searching for new ways to create an ultimate quantum theory. However, since this project can take very long time, it also covers all traditional foundational topics: Interpretations, measurement theory, quantum information, entanglement and Bell-type inequalities, mathematical apparatus, experiment and its statistical analysis, quantum versus classical probability and randomness, quantum versus classical random walk, applications of the quantum formalism outside of physics, and especially applications of the principle of complementarity in cognition and decision making.

Prof. Andrei Khrennikov
Dr. Margarita A. Man'ko
Dr. Yutaka Shikano
Guest Editors

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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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