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Advances in Quantum Field Theory

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Message from the Guest Editors

Quantum field theory (QFT) was formulated to describe physics of elementary particles, and its great successes have been quantum electrodynamics, electro-weak theory, quantum chromodynamics, and the Standard Model of elementary particles. Recently, QFT has been applied successfully to nuclear physics, pure mathematics, and condensed matter physics. However, its formalism has to be further developed in order to establish the existence of mathematically rigorous models of relativistic QFT and to deal with the new challenges, such as quantum gravity and quantization with higher derivatives, strong coupling, and bound states.

This Special Issue is intended to join together contributions analyzing different aspects of quantum field theory and its applications to the different fields of physics.

Dr. Antonio Capolupo
Dr. Salvatore Marco Giampaolo
Guest Editors



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Special Issue



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Message from the Editor-in-Chief

The multidisciplinary *Universe* journal is aiming to follow and, hopefully, to lead to the largest extent as possible the ever-self renovating threads which weave mathematical theories with our understanding of the magnificent natural world. On behalf of all the distinguished members of the editorial board, I extend my welcome to this new journal and look forward to hearing from the interested contributors and learning about their valuable research.

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