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Supersymmetric Field Theory 2018

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Deadline for manuscript
submissions:

closed (31 January 2019)

Message from the Guest Editor

This Special Issue, “Supersymmetric Field Theory 2018”, will be devoted to current problems of classical and quantum supersymmetric field theory. At present, studies of the various aspects supersymmetry in physics and mathematics are actively developing research areas. Supersymmetry as an extension of the space–time symmetries is very broadly used in higher energy physics to describe the possible phenomena beyond the standard model of elementary particles. Use of supersymmetry in gravity allows us to construct new gravitational models with remarkable properties that, in turn, lead to possible interesting cosmological applications. Supersymmetry in quantum field theory provides a cancellation of some of the possible ultraviolet divergences and permits to formulate completely finite quantum filled models like the $N=4$ super Yang–Mills theory. In addition, supersymmetry is an element of superstring theory. Additionally, we point out that specific BRST supersymmetry underlies the modern approaches to quantization of gauge theories. This Special Issue will focus on selected active research directions of modern supersymmetric field theory.



mdpi.com/si/16165

Special Issue



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Message from the Editor-in-Chief

Symmetry is ultimately the most important concept in natural sciences. It is not surprising then that very basic and fundamental research achievements are related to symmetry. For instance, the Nobel Prize in Physics 1979 (Glashow, Salam, Weinberg) was received for a unified symmetry description of electromagnetic and weak interactions, while the Nobel Prize in Physics 2008 (Nambu, Kobayashi, Maskawa) was received for the discovery of the mechanism of spontaneous breaking of symmetry, including CP symmetry. Our journal is named *Symmetry* and it manifests its fundamental role in nature.

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