

Recent Advances in the Application of Symmetry Group

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Message from the Guest Editor

Dear Colleagues,

In this Special Issue of *Symmetry*, we want to present research articles and review articles on the recent advances in the application of the symmetry group.

The theory of symmetry groups is one of the most interesting fields of mathematics, but it also plays an important role in different fields of modern science.

The theory of symmetry groups is one of the main mathematical tools in Galois theory, invariant theory, theory of combinatorics, and theory of Lie groups of differential equations.

The symmetric group on a set of size n is the Galois group of the general polynomial of degree n . This group plays an important role in the theory of finding solutions to the equations. In the invariant theory, the symmetric group acts on the variables of multivariable function, but the invariant functions are so-called symmetric functions. In the theory of combinatorics, symmetric groups defined on a permutations set provide a rich source of tasks and interesting solutions, in particular, to study group actions, homogeneous spaces, and the automorphism of graphs...



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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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