



Symmetry of Lie Algebras

Guest Editor:

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Message from the Guest Editor

The most powerful methods for solving differential equations are symmetry-based methods. These methods originated from the Lie method, which was created by the prominent Norwegian mathematician, Sophus Lie. His theory and method have continuously been in focus of research of many well-known mathematicians, computer scientists and physicists. Although the technique of the Lie method is well-known, the method still attracts the attention of many researchers, and new results are published on a regular basis. This Special Issue is devoted to recent development of Lie theory and its applications for solving physically and biologically motivated equations and models. In particular, the issue welcomes articles devoted to analysis and classification of Lie algebras, which are invariance algebras of real world models; Lie and conditional symmetry classification problems of nonlinear PDEs; the application of symmetry based methods for finding new exact solutions of nonlinear PDEs arising in applications. Articles and reviews devoted to the theoretical foundations of symmetry based methods and their applications for solving other nonlinear and nonlinear models are also welcome.....





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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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