

Special Issue

Numerical Analysis and Boundary Value Problems in Symmetry

Message from the Guest Editors

For nonlinear ordinary and partial differential equations, the general solution usually cannot be given explicitly. It is desirable to have an approach by which it can be determined whether a given nonlinear differential equation is Integrable. One of the powerful methods is the Lie symmetries which was created during the end of the 19th century by the prominent Norwegian mathematician Sophus Lie (1842–1899) who developed the method of their applications, his interesting theory and method have been continuously been in the focus of research of many well-known mathematicians, physicists and engineers. This Special Issue of the journal *Symmetry* is devoted to recent development of Lie theory for solving boundary value problems as well as it is required to draw the attention to the mathematical methods used in numerical analysis, such as special functions, orthogonal polynomials and their theoretical tools, such as Lie algebra, to study the concepts and properties of some special and advanced methods, which are useful in the description of solutions of linear and nonlinear differential equations.

Guest Editors

Prof. Dr. Mina Abdel Malek

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Dr. Rita Tracinà

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About the Journal

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.

Editor-in-Chief

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