



Symmetry in Ordinary and Partial Differential Equations and Applications

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Message from the Guest Editor

Dear Colleagues,

Ordinary and partial differential equations are universally recognized as powerful tools to model and solve practical problems involving nonlinear phenomena. In particular, we mention physical processes as problems in elasticity theory, where we deal with composites made of two different materials with different hardening exponents.

Therefore, the theory of differential equations has been successfully applied to establish the existence and multiplicity of solutions of boundary value problems via direct methods, minimax theorems, variational methods, and topological methods. If possible, one looks to solutions in special forms by using the symmetries of the driving equation. This also leads to the study of the difference counterparts of such equations to provide exact or approximate solutions. We mention the reduction methods for establishing exact solutions as solutions of lower-dimensional equations...





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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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