



Conservation Laws and Symmetries of Differential Equations

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Message from the Guest Editors

Conservation laws play a vital role in the reduction and solution process of the differential equations. It is well known that the integrability of the differential equations is strongly related to the existence of conservation laws. Conservation laws are used for existence, uniqueness and stability analysis and for the development of numerical methods. Recently, they have been applied to find exact solutions of certain partial differential equations.

Symmetry analysis for differential equations was developed by Sophus Lie in the latter half of the nineteenth century. It systematically unifies and extends the well-known ad hoc methods to construct closed form solutions for differential equations, in particular for nonlinear differential 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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