

Special Issue

Symmetries and Applications of ODE's and PDE's in Natural Sciences

Message from the Guest Editor

Earth is full of waves, and equations have been a key element for their understanding. The sovereign role of Ordinary and Partial Equations in exploring wave phenomena around us is essential for the common welfare, and thus is of paramount importance. Both analytical and numerical results have been extremely important in advancing the fundamental knowledge of nonlinear waves within the natural sciences. Differential equations have been proven to be essential in characterizing and analyzing wave dynamics. They have served as successful tools in understanding the rules that govern the dynamics that arise in physical, chemical, and biological systems. Thus, the study of their propagation is key for the advancement of applied mathematics in the natural sciences. Topics for this Special Issue cover a broad range not limited to the following: Symmetry/Asymmetry of Wave Propagation; Dynamics of Wave Phenomena; Conservation Laws; Qualitative Analysis of Wave Phenomena; Stability and Instability of Nonlinear Waves; Asymptotic Properties; Symmetry Properties of ODEs and PDEs in Natural Sciences.

Guest Editor

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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.

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