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## Symmetry and Its Applications in Partial Differential Equations

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### Message from the Guest Editors

Dear Colleagues,

Partial differential equations have become a useful tool to describe the natural phenomena of science and engineering. Nonlinear partial differential equations (NLPDEs) arise in many branches of science such as mathematics, physics, mechanics, water waves, computational fluid dynamics, optics, quantum mechanics, shallow water, and engineering.

NLPDEs are widely used to describe physical phenomena in natural science, such as plasma physics, optical fibers, biology, solid-state physics, fluid dynamics, and play a crucial role in research in many disciplines, including in the concept of symmetry. On the other hand, the symmetric properties of NLPDEs are of great importance for the solution of problems in many areas of mathematics. The role of symmetry has also proven to be fundamental in other different disciplines, such as biology, chemistry, and psychology. In this Special Issue, this correlation will be in the foreground. Solutions of NLPDEs play an important role in understanding the mechanisms of many physical phenomena and processes in various areas of natural science...



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# Special Issue



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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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