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# Partial Differential Equations and Their Applications in Nonlinear Optics

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Deadline for manuscript submissions:
**closed (30 November 2023)**

## Message from the Guest Editors

Dear Colleagues,

Optical solitons are commonly known in all-optical ultrafast switching systems and the protracted communication after being conceived and validated practically, and it has piqued the interest of a majority of nonlinear optics researchers. In diverse sectors, such as applied sciences, mathematical photonics, nonlinear wave propagation, and plasma physics, PDEs can be employed to quantify a plethora of dynamical systems. The quest for their numerical and analytical solutions provides the most insightful discussion about these equations and the nonlinear physical phenomena they are linked to.

Our primary driving force behind this Special Issue is to look for various wave shapes for the PDEs' achieved solutions. We use different analytical or numerical techniques to identify several analytical (or numerical) solutions, such as solitary, kink-soliton, anti-kink soliton, shock, dark-soliton, bright-soliton, and elliptic wave solutions. Topics of interest include (but are not limited to): nonlinear optics, wave transmission and propagation in homogeneous and inhomogeneous materials, and optical properties of materials.

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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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