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Symmetry in Modeling and Analysis of Dynamic Systems II

Guest Editor:

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Message from the Guest Editor

This Special Issue is the continuation of the previous one recently published in Symmetry.

We aim to cover the exchange and dissemination of the concept of symmetry in the modeling and analysis of dynamic features occurring in various branches of science. Since a property of the symmetry of the investigated system implies its conservation quantity like energy, linear/angular momentum, electric charge etc., contributions of research based on the mathematical models of nonlinear partial and ordinary differential equations are especially welcome.

The following topics are also included: (i) discrete vs. continuous symmetry breaking; (ii) solitary waves; (iii) symmetry breaking instability; (iv) symmetry exhibited by MEMS/NEMS; (v) arrays of oscillators subjected to electric/magnetic/thermal fields; (vi) time-symmetry breaking in quantum oscillators; (vii) symmetry breaking of resonances; (viii) symmetry in fluid-structure interaction; (ix) symmetry vs. asymmetry in pattern formation; (x) symmetry in solid-gas phase transition; (xi) continuous vs. discontinuous symmetry; (xii) temporal vs. spatiotemporal symmetry; (xiii) symmetry in transition from regular to chaotic dynamics.

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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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