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Topological Indices and Symmetry in Complex Networks II

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Message from the Guest Editors

Topological graph indices, are numerical parameters of a graph that are invariant under graph isomorphisms. They play a significant role in chemistry, pharmacology, and physics, especially in the quantitative structure–property relationship (QSPR) and the quantitative structure–activity relationship (QSAR) investigations.

Symmetry is a universe phenomenon in complex systems and applies the conservation laws of nature. Many real networks have been found to have a rich degree of symmetry, which is a universal structural property of complex networks, yet have rarely been studied so far. Symmetry finds numerous applications in transportation, in communication network design, in production and inventory planning, in facility location and allocation, and in VLSI design. Many topological graph indices are metric indices for networks, which have extensive applications.



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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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