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Symmetry in Algorithmic Graph Theory and Interconnection Networks

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Deadline for manuscript submissions:
closed (31 July 2024)

Message from the Guest Editors

Dear Colleagues,

Graph theory is an ancient but very active mathematical discipline that deals with the study of graphs, which are mathematical structures used to model relationships between objects. Graph theory provides a powerful framework for analyzing and solving problems involving networks, such as interconnection networks, social networks, complex networks, transportation systems, and computer networks. It offers a rich collection of algorithms and concepts for understanding connectivity, paths, cycles, and other properties of graphs. Also, graph theory plays a vital role in analyzing the properties and performance of interconnection networks.

Symmetry is a fundamental concept found in various scientific disciplines. Many interconnection networks have symmetrical structures and possess high symmetry due to their recursive construction and their vertex-transitive and edge-transitive properties, and thus are used in parallel systems. Symmetry plays a crucial role in understanding and exploiting the inherent regularity and structure of networks.

Contributions pursuing solutions to graph theory problems with algorithms as well as for interconnection networks are welcome.

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Special Issue

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Editor-in-Chief

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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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