Hindawi

Special Issue on
Graph Theory and Algebraic Structures

CALL FOR PAPERS

The study of graph representations of algebraic structures has been a popular topic of research in recent years. Graphs associated with groups and other algebraic structures have been actively investigated in the literature due to their valuable applications, such as Cayley graphs as classifiers for data mining. Moreover, they are also related to automata theory.

Connections between algebraic structure theory and graph theory have been established to solve open problems in one theory with the help of the tools existing in the other, emphasizing the remarkable properties of one theory with techniques involving the second and providing new methods for solving these problems. There are many ways to define an algebraic structure starting from a graph, for example, as a group, ring, hypergroup, or lattice, among others. An example of an algebraic structure group is the Cayley graph of a group, while other well-known graph representations of groups include power graphs and commuting graphs. An example of an algebraic structure ring is the zero-divisor graph of a ring. Graphs of algebraic structures are considered a flourishing discipline with many areas of interest for both pure and applied mathematics, and a wide range of applications across a variety of scientific and technical disciplines.

This Special Issue accepts original and high-level contributions, where a connection between algebraic structures and graph theory is clearly presented. New theoretical aspects as well as practical applications representing current research directions on this topic are welcome. We welcome both original research and review articles.

Potential topics include but are not limited to the following:

- ▶ The power graph of a groups and its applications
- ▶ The commuting graph of a group and its applications
- ▶ New properties for graphs from algebraic structures
- ▶ The strong metric dimension of graphs and groups
- ▶ Perfect codes in graphs of groups
- ▶ Full automorphism groups of graphs and groups
- ▶ Forbidden subgraphs in power graphs of finite groups
- ▶ Genus of graphs and groups
- ▶ Symmetric graphs and groups
- ▶ Divisor labeling for power graphs
- ▶ Divisor labeling for commuting graphs

Authors can submit their manuscripts through the Manuscript Tracking System at https://review.wiley.com/submit?specialIssue=213838.

Papers are published upon acceptance, regardless of the Special Issue publication date.

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