

Special Issue

Mathematical Advances in Combinatorial Optimization: Theory, Methods, and Applications

Message from the Guest Editor

Combinatorial optimization is a fundamental area of applied mathematics, providing powerful mathematical and algorithmic tools for solving complex discrete problems in networks, scheduling, routing, allocation, logistics, telecommunications, healthcare, manufacturing, and data-driven decision making. This Special Issue, “Mathematical Advances in Combinatorial Optimization: Theory, Methods, and Applications”, welcomes original and high-quality research on the theory, methods, and applications of combinatorial optimization. Topics of interest include theoretical analysis, complexity results, exact methods, approximation algorithms, heuristics and metaheuristics, decomposition techniques, polyhedral methods, relaxation approaches, robust and stochastic optimization, and new formulations for classical or emerging problems. We particularly encourage contributions that combine mathematical rigor with computational effectiveness and practical relevance. This Special Issue aims to provide a forum for recent advances, new ideas, and interdisciplinary perspectives in this active and important research field.

Guest Editor

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About the Journal

Message from the Editor-in-Chief

The journal *Mathematics* publishes high-quality, refereed papers that treat both pure and applied mathematics. The journal highlights articles devoted to the mathematical treatment of questions arising in physics, chemistry, biology, statistics, finance, computer science, engineering and sociology, particularly those that stress analytical/algebraic aspects and novel problems and their solutions. One of the missions of the journal is to serve mathematicians and scientists through the prompt publication of significant advances in any branch of science and technology, and to provide a forum for the discussion of new scientific developments.

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