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Metaheuristic Algorithms for Combinatorial Optimization Problems

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Deadline for manuscript submissions:
31 October 2024

Message from the Guest Editors

Most combinatorial optimisation problems are NP-hard, which means that there are no polynomial time algorithms that can solve them in reasonable time. Large combinatorial optimisation problems may be effectively solved using metaheuristics, but it is often impossible to search the whole problem space, therefore it is not possible to guarantee an optimal solution. Metaheuristics can be classified in several ways. Those that encode problems using real variables that are used for continuous optimisation and those that use discrete variables for combinatorial optimisation. Single-point metaheuristics that use local search heuristics, e.g., Tabu Search, Simulated Annealing and Greedy Randomised Adaptive Search, whilst population-based metaheuristics, such as Genetic Algorithms, Ant Colony Optimization and Particle Swarm Optimization that produce multiple solutions that explore the search space.

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Message from the Editor-in-Chief

Algorithms are the very core of Computer Science. The whole area has been considered from quite different perspectives, having led to the development of many sub-communities: Complexity theory (limitations), approximation or parameterized algorithms (types of problems), geometric algorithms (subject area), metaheuristics, algorithm engineering, medical imaging (applications), indicates the range of perspectives. Our journal welcomes submissions written from any of these perspectives, so that it may become a forum for exchange of ideas between the corresponding scientific subcommunities.

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