

A binary cuckoo search algorithm for solving the set covering problem

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The non-unicost set covering problem is a classical optimization benchmark that belongs to the Karp's 21 NP-complete problems. In this paper, we present a new approach based on cuckoo search for solving such problem. Cuckoo search is a modern nature-inspired metaheuristic that has attracted much attention due to its rapid convergence and easy implementation. We illustrate interesting experimental results where the proposed cuckoo search algorithm reaches several global optimums for the non-unicost instances from the OR-Library. © Springer International Publishing

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Cuckoo Search

Metaheuristics

Set Covering Problem

Algorithms

Computational complexity

Learning algorithms

Optimization

Binary cuckoo searches

Classical optimization

Cuckoo search algorithms

Cuckoo searches

Global optimum

Meta heuristics

Rapid convergence

Set covering problem

Problem solving