عنوان مقاله:

Solving NP hard problems using a new genetic algorithm

محل انتشار:

مجله آنالیز غیر خطی و کاربردها, دوره 14, شماره 1 (سال: 1402)

تعداد صفحات اصل مقاله: 11

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خلاصه مقاله:

Over the past few decades, a lot of meta-heuristics have been developed to solve N-P hard problems. Genetic algorithm, ant colony optimization, simulated annealing, electromagnetism algorithm and tabu search are some examples of meta-heuristics algorithms. These kinds of algorithms have two main classes: population-based and Trajectory. Many of these algorithms are inspired by various phenomena of nature. In this research, the author introduces a new population-based method inspired by the lifestyle of lions and the genetic algorithm's structure called the new genetic algorithm (NGA). The social behaviour of lions and genetic operators like mutation and cross-over is the main structure of NGA. Finally, the NGA is compared with the hybrid genetic and hybrid ant colony optimization as the best existing algorithms in the literature. The experimental results have revealed that the NGA is competitive in terms of solution quality to solve the vehicle routing and scheduling problems as two main categories of .N-P hard problems

کلمات کلیدی:

New genetic algorithm, N-P Hard problem, Scheduling, Vehicle routing problem, Genetic operator, Ant colony optimization