

عنوان مقاله:

A HYBRID ALGORITHM FOR THE OPEN VEHICLE ROUTING PROBLEM

محل انتشار:

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خلاصه مقاله:

The open vehicle routing problem (OVRP) is a variance of the vehicle routing problem (VRP) that has a unique character which is its open path form. This means that the vehicles are not required to return to the depot after completing service. Because this problem belongs to the NP-hard problems, many metaheuristic approaches like the ant colony optimization (ACO) have been used to solve OVRP in recent years. The versions of ACO have some shortcomings like its slow computing speed and local-convergence. Therefore, in this paper, we present an efficient hybrid elite ant system called EHEAS in which a new state transition rule, tabu search as an effective local search algorithm and a new pheromone updating rule are used for more improving solutions. These modifications avoid the premature convergence and make better solutions. Computational results on sixteen standard benchmark problem instances show that the proposed algorithm finds closely the best known solutions for most of the instances in which ten best known solutions are also found. In addition, EHEAS is comparable in terms of solution quality to the best performing published metaheuristics.

کلمات کلیدی:

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