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A swarm intelligence approach for the p-median problem

by B. Jayalakshmi; Alok Singh

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Abstract: p-median problem is a well-known facility location problem which aims at locating p number of facilities over n demand points in such a way that the sum of distances from all the demand points to their respective closest facilities is minimised. In this paper, we have proposed an artificial bee colony (ABC) algorithm-based approach for solving this NP-hard problem. The ABC algorithm is a recently proposed metaheuristic technique that has been used successfully for solving numerous NP-hard combinatorial optimisation problems. We have tested the proposed algorithm on the OR-Library and Galvao p-median benchmark test instances, and the results are compared with those obtained with some other approaches available in the literature. The computational results show that the proposed algorithm outperforms other methods.

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