A modified particle swarm optimization algorithm for general inverse ordered $p$-median location problem on networks. (English) Zbl 07342535

Summary: This paper is concerned with a general inverse ordered $p$-median location problem on network where the task is to change (increase or decrease) the edge lengths and vertex weights at minimum cost subject to given modification bounds such that a given set of $p$ vertices becomes an optimal solution of the location problem, i.e., an ordered $p$-median under the new edge lengths and vertex weights. A modified particle swarm optimization algorithm is designed to solve the problem under the cost functions related to the sum-type Hamming, bottleneck-type Hamming distances and the rectilinear and Chebyshev norms. By computational experiments, the high efficiency of the proposed algorithm is illustrated.

MSC:
90B80 Discrete location and assignment
90C27 Combinatorial optimization

Keywords:
location problem; inverse optimization; ordered $p$-median; particle swarm optimization algorithm

Full Text: DOI

References:

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