A modified firefly algorithm for general inverse $p$-Median location problems under different distance norms.

Summary: This paper concerns a general inverse $p$-median location problem on the $k$-dimensional real space where the aim is to change (increase or reduce) the weights and coordinates of the existing customer points at the minimum total cost subject to given modification bounds so that a set of $p$ predetermined facility points becomes an optimal $p$-median location under the new weights and coordinates. A modified firefly algorithm is proposed to solve the problem under the rectilinear, Chebyshev and Euclidean distance norms. By computational experiments, the high efficiency of the algorithm is illustrated.

MSC:
90C59 Approximation methods and heuristics in mathematical programming
90B80 Discrete location and assignment

Keywords:
facility location; inverse optimization; $p$-Median problem; firefly algorithm

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References:

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