

Genetic Algorithm for Bi-Objective Hub Covering Problem

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Abstract : A hub covering problem is a type of hub location problem that tries to maximize the coverage area with the least amount of installed hubs. There have not been many studies in the literature about multi-objective hubs covering location problems. Thus, in this paper, a bi-objective model for the hub covering problem is presented. The two objectives that are considered in this paper are the minimization of total transportation costs and the maximization of coverage of origin-destination nodes. A genetic algorithm is presented to solve the model when the number of nodes is increased. The genetic algorithm is capable of solving the model when the number of nodes increases by more than 20. Moreover, the genetic algorithm solves the model in less amount of time.

Keywords : facility location, hub covering, multi-objective optimization, genetic algorithm

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