

Utilizing new approaches to address the fuzzy fixed charge transportation problem / Fatemeh Gholian-Jouybari, Ahmad J.Afhari, Mohammad Mahdi Paydar

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Abstrak

ABSTRAK

The Fuzzy Fixed Charge Transportation Problem in which both fixed and transportation cost are fuzzy numbers is considered in this paper. Due to NP-hardness of the problem, we utilize three types of Electromagnetism-like Algorithms (EM), Genetic Algorithm (GA), and Simulated Annealing (SA) which are firstly being proposed and comprised in this research area. Besides, our other novelty approach is the use of new encoding mechanism, namely string representation, for the first time which is employed for the problem and can be used in any extended transportation problems. Also, the last version of EM is being firstly developed and proposed in this paper. The employed operators and parameters are calibrated to ensure the best performance of the algorithms. Besides, different problem sizes are considered at random to study the impacts of the rise in the problem size on the performance of the algorithms.