

工程与应用

带时间窗的粮食物流车辆路径问题的研究

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收稿日期 2008-12-23 修回日期 2009-2-27 网络版发布日期 2009-12-16 接受日期

摘要 带时间窗的粮食物流车辆路径问题是一个典型的NP—难问题。针对粮食物流批量大、多点对多点等特点,建立了带时间窗的粮食物流车辆路径问题 (Vehicle Routing Problem with Time Windows, VRPTM) 的数学模型,进一步构造粒子群算法 (Particle Swarm Optimization, PSO) 用于问题求解,并将求解结果与遗传算法进行比较。结果表明,粒子群算法可以快速、有效地求得带时间窗的粮食物流车辆路径问题的优化解,降低配送成本。

关键词 [粮食物流](#) [车辆路径问题](#) [粒子群算法](#) [优化](#)

分类号 [TP182](#) [U492](#)

Study on grain logistics Vehicle Routing Problem with Time Windows

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Abstract

Grain logistics Vehicle Routing Problem with Time Windows (VRPTM) is a typical NP-hard problem. According to the large batch and multi-point to multi-point transportation of grain logistics, a model of grain logistics VRPTM is built, and an algorithm of PSO (Particle Swarm Optimization) is proposed in solving VRPTW. Experiments are made to compare the algorithm with GA on solving this problem. The experimental results show that algorithm of PSO can solve grain logistics VRPTM quickly and efficiently, and reduce the cost of distribution.

Key words [grain logistics](#) [Vehicle Routing Problem \(VRP\)](#) [Particle Swarm Algorithm \(PSA\)](#) [optimization](#)

DOI: 10.3778/j.issn.1002-8331.2009.35.064

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