工程与应用

基于改进遗传算法的物流中心选址优化

陶 羿[1]，朱建青[1]，李 明[2]

1.解放军信息工程大学 理学院，郑州 450002
2.信号盲处理国防科技重点实验室，成都 610041

摘要　　根据物流中心选址问题的特点和要求，在运输成本和运输时间最优的基础上，构造了选址问题的数学模型。给出了一种改进遗传算法的求解方法，其中由于适应度函数与各物流中心对应的需求分配情况密切相关，用拉格朗日松弛法来解决对于特定位置的物流中心服务需求分配的子问题。遗传算子采用线性凸组合的杂交方式、强弱两种变异方式以及进化（?滋+λ）选择方式，从而有效地避免算法的早熟现象，可防止其很快收敛到局部最优解。实例求解表明，该算法可以有效、快速地求得物流中心选址问题的全局最优解。

关键词　　物流中心选址　遗传算法　需求分配　拉格朗日松弛法

分类号

扩展功能

本文信息

▸ Supporting info
▸ PDF(1241KB)
▸ [HTML全文](0KB)
▸ 参考文献

服务与反馈

▸ 把本文推荐给朋友
▸ 加入我的书架
▸ 加入引用管理器
▸ 复制索引
▸ Email Alert
▸ 文章反馈
▸ 浏览反馈信息

相关信息

▸ 本刊中 包含"物流中心选址"的相关文章
▸ 本文作者相关文章
· 　陶 羿
· 　朱建青
· 　李 明

Optimization of locations of logistics centers based on improved Genetic Algorithm

TAO Yi[1]，ZHU Jian-qing[1]，LI Ming[2]

1.Institute of Sciences，Information Engineering University，Zhengzhou 450002，China
2.National Defence Key Laboratory of Blind Processing of Signals，Chengdu 610041，China

Abstract

　With the characteristics and demands of locations of logistics centers，a mathematics model has been made on logistics locations problems on the basis of the optimization of the total transport costs and time among customers and their serving centers.An improved Genetic Algorithm of global optimization solution has been given.In view of the tight relation between the fitness function and each service demands of locations of logistics centers，the subproblem of allocations of service demands has been sovled by Lagrangian relaxation method.The linear convex combination，subtle mutation and violent mutation，and ES-（?滋+λ）selection have been adopted to avoid premature convergence and prevent fast local optimal solution.The instance demonstrates that the improved algorithm can effectively get the global optimal solution.

Key words　locations of logistics centers　Genetic Algorithm　allocations of service demands　Lagrangian relaxation method

DOI:

通讯作者　陶 羿 E-mail：taoyi@sohu.com