

论文

基于改进托盘共用系统的托盘回收模型

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摘要:

为了提高托盘利用率,在现有托盘共用系统的基础上,提出了改进的托盘共用系统,该系统中的收货方可作为发货方利用收到的托盘发货,能减少至少两次空盘运输. 以托盘回收总成本最低为目标,考虑了库存成本、库存能力、运输成本、运输能力、需求约束和供给约束因素,建立了托盘共用系统托盘回收整数规划模型和供给不确定的托盘共用系统托盘回收随机规划模型. 通过算例验证了模型的有效性.

关键词: 托盘共用系统 托盘回收 供给不确定

Pallet Recovery Model Based on Modified Pallet Pool System

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Abstract:

To improve the utilization rate of pallets, a modification was made to the traditional pallet pool system. In the modified pallet pool system, a consignee could use received pallets to dispatch cargos as a consigner, reducing at least twice times of transportation of empty pallets. Two pallet recovery models, an integer programming model and a stochastic programming model with uncertain pallet supplies, were presented. The objective of the models is the minimum pallet recovery cost, and their constraints include the cost and capacity of inventory and transportation, and demand and supply. The validity of the models was demonstrated by case study.

Keywords: pallet pool system pallet recovery uncertainty of pallet supply

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