

杂草-蚁群算法在应急管理中的应用

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摘 要: 将杂草-蚁群算法应用于应急车辆配置. 用二段编码方式对杂草个体编码, 使之对应于唯一应急方案. 用蚁群算法优化车辆子路径, 并通过杂草蚁群信息交互机制将优良信息回传给杂草群体. 针对某区域内易于发生的两疫情分布及出现概率情况, 运用混合算法优化灾区车辆配置, 既满足救援需要又节约成本. 针对不同应急车辆问题, 此算法表现较优. 可以看出, 该算法对于此类问题的求解是有效的.

关键词: 杂草算法; 蚁群算法; 应急管理; 车辆配置

The Application of Hybrid Algorithm of Invasive

Weed Optimization and Ant Colony Algorithm in

Emergency Management

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Abstract: Hybrid algorithm of invasive weed optimization and ant colony algorithm is applied to solve emergency vehicle configuration problem. A double-section weed can be decoded into one emergency plan. Sub route is optimized by ants, and good local information is got by weed population. Hybrid algorithm is used to optimize an emergency problem of one area with two objectives (time and cost). The results show algorithm has an advantage in terms of different numbers of vehicles, and it's an effective tool to solve this kind of problem.

Key words: IWO; ACO; emergency scheduling; vehicle configuration

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