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内容

公交网络多路径选择启发式算法研究 点击数: 575

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摘要: 公交乘客出行路径选择算法是公交乘客信息系统的核心技术。建立了公交网络出行路径选择的数学模型, 在Dijkstra算法和迭代惩罚法的基础上, 设计了公交网络多路径选择的启发式算法, 并结合实际公交网络进行了算法的验证。算法合理考虑了换乘因素和距离因素对公交出行者路径选择行为的共同影响, 能够生成多条备选路径供出行者选择。对于公交乘客信息系统相关技术的研究开发具有参考价值。

关键词: 公交网络; 多路径; 迭代惩罚; 启发式算法

Study on Heuristic Algorithm for Public Transport Network Multi-Path Selection

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Abstract: Optimal path algorithm of public transport networks is a key technique in public transport passenger information system. This paper describes the path choice model of the public transport networks, designs a heuristic algorithm for the public transport network multi-path selection based on the Dijkstra's algorithm and the Iterative Penalty Method, and tests the algorithm with a real public transport network. It is found that the proposed algorithm can efficiently consider both the transfer factor and the distance factor of the path choice of public transport passengers, and can select multiple paths for public transport passengers. The conclusion can be the reference for research and development of public transport passenger information system.

Keywords: public transport networks; multi-path; iterative penalty; heuristic algorithm