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基于随机模拟之上的交通环岛的设计方法

Trrfic Circle Design Based on Simulation

发布时间: 2009-10-19 浏览量: 322 收藏数: 0 评论数: 0

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摘要: 本文主要通过建立模型设计一种通过调节交通环岛处设立交通灯或是交通牌, 以及交通灯的时长, 达到使得一定时间内交通流量达到最大的方案。

关键词: 通行能力; 车头时距; 间接接受理论; 交通环岛设计

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Abstract: The paper establishes a model to determine how best to control the traffic flow in, around, and out a circle. A criteria for judging the controlling method of the traffic flow on traffic circle is given. The paper analysis the main factors which affect the traffic flow and focus on the basic model for the small traffic circles. In the basic model, an ideal situation is introduced and be regarded as the busiest condition. Based on the ideal model, the Gap-acceptable theory and the concept of headway and entry capacity, Cowan's M3 distribution is assigned to the cumulative probability of headway. And it could give the expectation of the number of inserting vehicles and the entry capacity of the intersection. Further, the criteria for judgment is set up by making use of the expectation of the number of inserting vehicles and the relation between the incoming flow and the out flow under the uncontrolled status. Further more, the paper give a method to determine the best time of green light for every traffic light. Finally, for the large traffic circle, the paper also gives a rough description based on the basic model.

Keywords: Entry capacity; Headway; Gap-acceptable; Traffic circle design

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中国科技论文在线: 俞黎曦, 张昕, 张淑清. 基于随机模拟之上的交通环岛的设计方法[OL]. [2009-10-19]. 中国科技论文在线, <http://www.paper.edu.cn/index.php/default/releasepaper/content/200910-292>
发表期刊: 暂无

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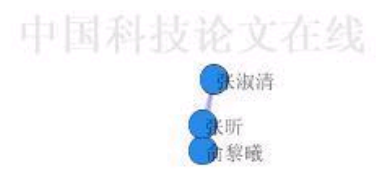
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