

工程与应用

大型客车影响的双车道多速混合交通流CA模型研究

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摘要 在对现有经典交通流元胞自动机模型进行总体分析的基础上, 结合我国高速公路特点, 通过重新标定元胞长度、运行车速、随机慢化机制, 制定车道转换规则, 构建了周期边界条件下考虑大型客车影响的双车道多速混合交通流元胞自动机模型, 并通过计算机模拟分析了速度、密度、流量三参数之间关系, 寻找出了大型客车占有率、大型客车随机慢化概率、变换车道车辆数等因素对交通流的影响规律, 为合理的组织高速公路交通管理提供了理论依据。

关键词 [元胞自动机](#) [大型客车](#) [混合交通流](#) [计算机仿真](#)

分类号

Research impact of passenger car of a two-lane highway based on cellular automaton model

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Abstract

Because of the large cube, low speed of the large-scale passenger cars, the impact of the passenger cars must be considered when the cellular automaton model is created. Based on the overall analysis of the existing classical cellular automaton model of the traffic flow, combined the characters of the freeway in our country, the length of the cellular, running speed, random slow mechanism and lane change are demarcated, and mixed multi-speed vehicles on two-lane cellular automaton model under the impact of the passenger car with period boundary condition is constructed. And the relationship between the speed, density and traffic capacity is analyzed by the computer simulation. The influence rules of the factors of the traffic flow of the method are found out, such as the proportion of large-scale passenger cars, random slow rate, the number of the lane change and so on. The theoretical foundation for reasonable to organize the freeway traffic administration is offered.

Key words [cellular automaton model](#) [large-scale passenger car](#) [mix traffic flow](#) [computer simulation](#)

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