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工程与应用

大型货车影响的高速交通流元胞自动机模型

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摘要 高速公路上的车辆到达是随机的，且含有车型大、运行速度低的大型货车，其对交通流影响很大。结合我国高速公路特点，通过重新标定元胞长度、运行车速、随机慢化机制和制定车道转换规则，建立了开放边界条件下大型货车影响的双车道多速混合交通流元胞自动机模型；通过计算机模拟分析了速度、密度、流量三参数之间关系，寻找出了大型货车占有率、随机慢化概率等因素对交通流的影响规律。

关键词 元胞自动机 大型货车 混合交通流 计算机模拟
分类号 TP391.9

Study on cellular automaton model consider freight vehicles

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Abstract
It is random that the vehicle arrives on the highway，because of the large style，low speed of the large-scale freight vehicles，and the impact of the freight vehicles must be considered when the Cellular Automaton（CA） model is created.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 CA model under the impact of the freight vehicles with open boundary condition are constructed.The relationship between the speed，density and traffic volume is analyzed by the computer simulation，getting off some factors such as freight vehicles occupation rate，random slow probability impact on traffic flow.

Key words Cellular Automaton model large-scale freight vehicles mix traffic flow computer simulation

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