Vehicular Size and Equivalent of Multi-class Traffic Cellular Automata

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Abstract

Understanding driving behavior is a complicated researching topic. To describe accurate speed, flow and density of a multiclass users traffic flow, an adequate model is needed. In this study, we find that using vehicular size as the passenger car equivalent (PCE) in traffic cellular automata simulation is incorrect. Two assumptions are examined. The first one assumes the PCE is a function of the number of trucks. The second one assumes the PCE is a function of the traffic density. According to the simulated results, the PCE is a function of the density and the function can be applied to single and two-lane traffic cellular automata simulation.

Keyword：traffic flow, passenger car equivalent, cellular automata