Safe following distance analysis for traffic cellular automata modelling

ABSTRACT

Following another vehicle too close is known as tailgating. Tailgater may not have enough space and time to avoid a collision. Thus there is a need for a fundamental understanding on factors affecting safe distance between vehicles. This paper aims to study such factors and to adopt certain rules and principles into the proposed traffic cellular automata model. Rule of seconds is applied and some deductions are made to attain a realistic traffic model. The simulation also entail human reaction time in perceiving safe distance with the leading vehicle and the simulation results are as expected. However there is a trade off between reaction time and an optimum safe following distance. Hence ideal reaction time of 0.75s is selected to emulate real life traffic flow without deteriorating traffic stability.