

A Driving Simulation Scenario for Developing a Bus Car-Following Model

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Abstract

Microscopic car-following models developed based on bus driver psycho-physical behavior can be integrated into bus rear-end collision warning systems to increase warning system effectiveness. Threshold equations and parameters of a psycho-physical spacing model can also be developed by bus driving simulation analysis. This study uses a bus driving simulator to plan and design a car-following scenario for bus driving on freeway straight road sections, since a simulation scenario is the key factor for conducting successful driving simulation. Then this work develops a car-following model regarding bus driver psycho-physical behavior. Six perception threshold equations are calibrated in the developed “psycho-physical spacing model”. Results of this study may be helpful in developing car-following models and rear-end collision warning systems for bus driving on freeway systems.

Keyword : Microscopic, Car-Following Model, Psycho-Physical Spacing Model, Bus, Driving Simulation.