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Jing Zhao, Peng Li

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An extended car-following model with consideration of vehicle to vehicle communication of two conflicting streams

Jing Zhao[1] • Peng Li[2 *]

Abstract: In this paper, we propose a car-following model to explore the influences of V2V communication on the driving behavior at un-signalized intersections with two crossing streams and to explore how the speed guidance strategy affects the operation efficiency. The numerical results illustrate that the benefits of the guidance strategy could be enhanced by lengthening the guiding space range and increasing the maximum speed limitation, and that the guidance strategy is more suitable under low to medium traffic density and small safety interval condition.

Keywords: Traffic flow, Car-following model, Vehicle to vehicle communication, Two conflicting streams

1. Introduction

Traffic congestion at intersections is a severe issue and even a major cause of urban traffic and environment problems. To date, the development of vehicle to vehicle (V2V) communication system, also

J. Zhao
Department of Transportation Engineering, University of Shanghai for Science and Technology, Shanghai, P.R.China
P. Li (✉)
Supply Chain Analytics Laboratory, Department of Supply Chain Management
Rutgers University, The State University of New Jersey, Newark, NJ 07102
E-mail: pengli@uwm.edu

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