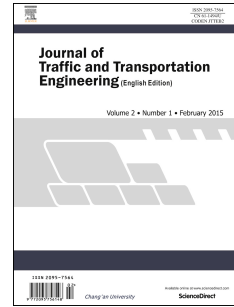


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Dynamic Parameters of Vehicles under Heterogeneous Traffic Stream with No Lane Discipline: An Experimental Study

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1 Original research paper

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10 Highlights

- 11 • The probability distribution of longitudinal A/D and the lateral acceleration are analyzed.
- 12 • The relationship with operating speed of vehicles are studied on roads with the different number of
13 lanes for different vehicle types.
- 14 • A two-term exponential and linear relationship with operating speed are observed for lateral and
15 longitudinal A/D respectively.
- 16 • These A/D values and lateral acceleration can be used in the operating speed prediction models
17 and also establish the bounding values in the case of simulation models.

18 Abstract

19 On the heterogeneous and no lane disciplined traffic, the abreast maneuver of vehicles
20 depends upon the driver behavior, vehicle type and most importantly the traffic parameters
21 such as vehicle speed and acceleration. Hence, the drivers have two basic tasks while
22 driving, first is to control the vehicle's position along longitudinal direction of motion and
23 second is to control the vehicle's position along lateral direction i.e. the width of the
24 roadway. The relation between the dynamic parameters (speed and lateral/longitudinal

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