



LANE CHANGING DECISION AND EXECUTION ON ARTERIAL ROADS

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Abstract

This study investigates the lane changing behaviour of passenger cars and heavy vehicle drivers on arterial roads. Lane changing has an important influence on traffic flow through its impact on the surrounding drivers. The impact of heavy vehicle lane changes can be even more serious compare to those of passenger vehicles due to the different characteristics of the vehicle and the consequent driver behaviour. Many models of the behaviour of heavy vehicles are limited to freeways. This is an unfortunate because the heavy vehicle impacts are more considerable on arterial roads since the level of interaction between vehicles is increased at intersections. It is exacerbated because the number of heavy vehicles and their proportion in traffic steam are increasing in many countries, in particularly Australia.

This paper applies a detailed vehicle trajectory data to explore the interactions between vehicles leading to the drivers' behaviour analysis. The findings of this research highlight the differences between heavy vehicle and passenger car drivers' behaviour in terms of decision making and execution of lane changing manoeuvres. A comparison between these findings and the outcomes of a former research reveals that the behaviour of drivers on arterial road differs from that of freeways.

Keywords: Lane changing; Driver behaviour; Traffic analysis; Traffic congestion.