

Travel Time Estimation on Arterial Streets

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(Abstract)

Estimation of real-time travel times on arterial streets has been a challenging task due to the intersection control delay as well as bottleneck delay from the downstream link. Therefore, few transportation professionals have conducted research at utilizing the dynamic flow methods to estimate travel times on arterial street networks.

This thesis is to develop dynamic flow algorithms that estimates the real-time travel time on an arterial street network by utilizing the traffic information obtained from detectors. A modified method to the one adopted in HCM2000 in computing the intersection control delay is developed and utilized to estimate the real-time travel time for a short-time interval update under non-incident and incident situations. Simulation model is developed in CORSIM in order to validate developed algorithms under different traffic situations.

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