

連鎖號誌時制下公車優先號誌時制設計邏輯之分析

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摘要

Most bus priority signal control strategies are conducted at a single intersection. Although they can improve the efficiency of buses which are approaching a signal controlled intersection under some conditions, they also might corrupt the coordination of signalized intersections on an arterial road or network. Therefore, it is necessary to analyze the influence of the bus priority signal on the timing design for the continuous proceeding of vehicle platoon and develop appropriate control design logics. This paper integrates a signal design software Synchro and the Microsoft Office Excel to design twelve scenarios for signal control coordination and conducts a simulation to analyze the impacts of bus priority signal strategies. Results show that the difference of average stop delay between bus priority signal control and normal signal control could be as high as 37 seconds per bus. The bus priority signal control will conflict with the normal signal control when the offset length is too high. Finally, this paper develops a logic judgment index based on the ratio of bus arriving time at the first intersection and the cycle length for the optimal bus priority signal control strategy.

關鍵字：Bus Priority Signal, Control Strategy, Coordination, Timing Design, Simulation.