

Modeling Automated Highway System Guideway Operations

by

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(ABSTRACT)

The purpose of this research is to explore the operational characteristics of a Maglev-based Automated Highway System and how it would interact with freeway operations. The extension of traditional traffic flow phenomenon, including weaving, merging, and stopping distance, into the automated system is looked at. These are also extended into platoon operations and their effect on such properties as gap control and ultimately the capacity of such a system. The ability to incorporate an AHS system into the existing Interstate Highway System is investigated. This includes placing the magways in the right-of-way of the highway system and interfacing the AHS with the existing freeways. A model is developed and run to simulate the assignment of traffic between the freeway and the guideway links. Both operational concepts of user equilibrium and system optimal conditions are explored, and equations are found to estimate the amount of traffic which can be found on the links based on the total traffic volume.

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