Microscopic traffic simulators -- tools that realistically emulate the flow of individual vehicles in a road network -- provide a reliable means of testing and evaluating the anticipated benefits of large transportation investments. These tools can capture the full dynamics of time-dependent traffic phenomena and account for drivers’ reactions to ITS technologies and strategies. This seminar will introduce the main features of the AIMSUN microscopic traffic simulation system and illustrate its use in two recent projects: the design and testing of an adaptive tunnel traffic management system (the Saint Gothard tunnel in Switzerland) and the ISM advanced network-level traffic management system in Germany’s State of Hessen. These case studies address a new domain for traffic simulation: support of traffic management decisions. The seminar will conclude with a presentation and discussion of enhancements to the AIMSUN system specifically designed to support traffic management decision making.

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