

## Recent Advances in Traffic Flow Theory

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### Abstract

During the last decade, important advances in traffic flow theory and related simulation models have made possible a better understanding of traffic dynamics. This talk will focus on the basic kinematic wave model and its formulation in different coordinate systems, which gives rise to macroscopic, mesoscopic and microscopic models.

**Keywords:** Traffic Flow Theory, Macroscopic Model, Mesoscopic Model, and Microscopic Model.

### Brief Biography



Dr. Laval is an Assistant Professor at the School of Civil and Environmental Engineering at Georgia Institute of Technology.

Dr. Laval obtained his B.S. in Civil and Industrial Engineering from Universidad Catolica de Chile (1995), his M.S. in Civil Engineering from the University of California at Berkeley (2001), and his Ph.D. in Civil Engineering from the University of California at Berkeley (2004).

Prior to joining Georgia Tech, he held two consecutive Postdoc positions at the Institute of Transportation Studies at UC Berkeley, and at the French National Institute for Safety and Transportation Research (INRETS). After obtaining his B.S., he worked as a transportation engineer for five years at the Chilean Ministry of Public Works, where he conducted numerous traffic and revenue studies for urban and inter-urban road concessions. Dr. Laval serves on the editorial board Transportation Research Part B.

His research interests include *traffic flow theory, numerical solution methods and simulation of traffic flow models, and queueing theory in transportation and dynamic congestion pricing*. Dr. Laval maintains a personal web site on traffic flow simulation models at <http://trafficlab.ce.gatech.edu>.