



Transportation Seminar Series

*Friday, September 25, 2009
4 - 5 p.m. in 212 O'Brien*

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A theory on the formation and propagation of stop-and-go waves in congested freeway traffic

Abstract: This talk will introduce a parsimonious theory for congested freeway traffic that describes the spontaneous appearance of oscillations and their ensuing transformation into stop-and-go waves. This theory is inspired by the analysis of detailed vehicle trajectory data where we find that the freeway's vertical curvature may be responsible for the formation of these oscillations. A mechanism is described to account for the gradual vehicle speed decay along oscillations towards a momentary stop. Analytical and simulation experiments are described.

Bio: Professor Laval is an Assistant Professor at the School of Civil and Environmental Engineering at Georgia Institute of Technology. He obtained his Ph.D. in Civil Engineering from the University of California at Berkeley (2004). Prior to joining Georgia Tech he worked as a postdoctoral researcher at the Institute of Transportation Studies at UC Berkeley, and at the French National Institute for Safety and Transportation Research (INRETS). He also serves on the editorial board of Transportation Research Part B.

Please join us for a TRANSOC-sponsored cookie hour in the ITS library at 3:30 p.m.