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### DEVELOPMENT OF AN INTEGRATED, GENERIC APPROACH FOR MODELLING THE OPERATIONAL AND TACTICAL BEHAVIOR OF BICYCLISTS

**Abstract:** Due to their small size and high maneuverability, bicyclists are one of the most flexible road user groups. However, microscopic simulation tools that are often used to evaluate road design and traffic control measures are limited in their capacity to realistically simulate the complex and flexible behavior of bicyclists. In this presentation, an integrated approach for modelling the operational and tactical behavior of bicycles will be introduced. Operational behavior is defined here as the subconscious actions that take place on a time scale of milliseconds to seconds and includes stabilization, acceleration, deceleration and spacing from other road users and objects. Tactical behavior on the other hand takes place on a time scale of seconds to minutes and includes deliberate maneuvers carried out to achieve a goal state. Tactical decisions made by a bicyclist include the choice between riding on the road, sidewalk or bicycle lane, path finding across the intersection and the reaction to traffic signals. The approaches used to model these behaviors within the context of a signalized intersection will be presented. Ideas for the integration, implementation and evaluation of the models in the next phase of the PhD research will be presented and discussed.

**Note:** Heather Twaddle is a Ph.D. student at Technische Universität München. She will be doing an internship with Nicolas Saunier at Polytechnique Montréal from November 23<sup>rd</sup> until December 18<sup>th</sup>. They will be working on problems related to modelling behaviors of bicyclists.

MARDI / TUESDAY

24 novembre 2015 /  
November 24th, 2015  
14h

Salle / Room 5441  
Pavillon André-Aisenstadt  
Université de Montréal

Ouvert à tous / Open to all

Organisateur / Organizer  
Nicolas Saunier