

IVT - Seminar

“Macroscopic Fundamental Diagrams: Applications to Multimodal traffic”

by Prof. Nicolas Chiabaut

Wednesday, April 29th, 2015, 15:45-16:30hr
HIL F36.1; ETH Hönggerberg, Zürich

Abstract:

This presentation is about an extension of the concept of macroscopic fundamental diagram (MFD) to combine different transportation modes. Especially, we propose a unified relationship that accounts for cars and buses because the classical MFD is not sufficient to capture the traffic flow interactions of a multimodal traffic. The concept of passenger macroscopic fundamental diagram (p-MFD) is introduced. With this new relationship, the efficiency of the global transport system, i.e. behaviors of cars and buses, can be assessed. Intuitively, the p-MFD shape strongly depends on the mode ratio. Thus, user equilibrium and system optimum are studied and compared. Finally, this relationship is used to design bus system characteristics and to identify the optimal domains of applications for different transit strategies.

Presenter's bio:

Nicolas Chiabaut is an assistant professor at the LICIT where he received his PhD in Civil Engineering in 2009. His current research interests involve creating and using multi-modal urban transportation systems models to design control strategies that can help make urban networks more efficient and environmentally sustainable. One question of particular interest is how to account for transit system and city logistics in dynamics traffic flow models. More precisely, he concentrates his efforts on developing parsimonious models to describe the aggregate behavior of urban transportation systems. More information: nicolaschiabaut.weebly.com

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No reservation is required.



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