



**POLITECNICO
DI TORINO**

DISMA Dipartimento di
Scienze Matematiche
G. L. Lagrange
ECCELLENZA 2018 • 2022

Wednesday the 04 July 2018 at 10:00

Politecnico di Torino, DISMA, Aula Buzano (third floor)

Gustav NILSSON

Doctoral student at Lund University

Generalized Proportional Allocation for Traffic Signal Control

Prof. Fabio Fagnani moderates the discussion

Abstract

With the recent sensor development, it is now possible to obtain real-time information about the traffic state in road information. Such information opens up the possibility to utilise feedback control to improve the performance of traffic networks.

In this seminar, dr Nilsson will present a green light allocation policy for traffic lights. This kind of policy can stabilise the queue lengths in a traffic network whenever any control policy can stabilise the queue lengths. Moreover, the proposed controller has the benefits that it requires no information about the network topology, the driver's route choices, or some average arrival rates. These properties make the controller both resilient to perturbations in the network and scalable. Validation results of the controller in the micro simulator SUMO will also be presented.

Biografia

Gustav Nilsson got his Master of Engineering Physics degree from Lund University in 2013. Since then, he has been a PhD student at the Department of Automatic Control, Lund University, working with Prof. Giacomo Co-mo. Between October 2017 and March 2018, he did an internship at Mitsubishi Electric Research Laboratories in Cambridge, Massachusetts U.S.A.

His primary research interest lies in Distributed Control of Dynamical Flow Networks with applications to traffic networks.

Save the date for the next event: Wednesday the 11th of July 2018