

AGCO Seminar

Speaker: Laura Vargas Koch, CMM, Universidad de Chile.

Title: Nash Flows over Time: Uniqueness, Continuity and Long-term behavior.

Abstract: In the talk, we consider a dynamic model of traffic that has received a lot of attention in the past few years, Nash Flows over time.

Users control infinitesimal flow particles aiming to travel from a source to destination as quickly as possible.

Flow patterns vary over time, and congestion effects are modeled via queues, which form whenever the inflow into a link exceeds its capacity.

We will see that assuming constant inflow into the network at the source, equilibria always settle down into a "steady state" in which the behavior extends forever in a linear fashion. This extends a result of Cominetti, Correa and Olver, who show a steady-state result in the regime where the input flow rate is smaller than the network capacity.

Surprisingly, the steady state result turns out to be helpful to prove two nice properties:

- Uniqueness of journey times in equilibria
- Continuity of equilibria: small perturbations to the instance or to the traffic situation at some moment cannot lead to wildly different equilibrium evolutions.

This is joint work with Neil Olver and Leon Sering

Wednesday, March 30, 15:00 hrs.

Sala de Seminarios CMM, John Von Neumann, séptimo piso, Torre Norte, Beauchef 851.

