First order problems on networks and applications

Dipartimento di Matematica Guido Castelnuovo
January 18-20, 2023

in memory of Maurizio Falcone

Program

Wednesday,   January 18

10:30 - 11:30   Opening

11:30 - 12:15   Fabio Camilli (Sapienza)
A continuous dependence estimate for viscous Hamilton-Jacobi equations on networks with applications

12:15 - 13:00   Paola Mannucci (Università di Padova)
Optimal control problems and deterministic Mean Field Games with control on the acceleration and state constraints. .

Lunch

14:30 – 15:15   Raul Borsche (Technische Universität Kaiserslautern)
Kinetic layers and coupling conditions

15:15 - 16.00   Elisabetta Carlini (Sapienza)
PA numerical scheme for evolutive Hamilton Jacobi equations on Networks

Coffee Break

16:30 – 17:15   Martin Gugat (FAU Erlangen)
On the synchronization of observer systems for isothermal flow in gas networks

17:15 – 18:00   Shi Jin (Shanghai Jiao Tong University)
Quantum Computation of partial differential equations

Thursday,   January 19

09:30 – 10:15   Nicolas Forcadel (University of Rouen) a
Microscopic derivation of traffic flow models on networks

10:15 – 11:00   Adriano Festa (Politecnico di Torino)
Navigation system based routing strategies in traffic flows on networks

Coffee Break

11:30 - 12:15   Simone Cacace (Sapienza)
A numerical solver for Hamilton-Jacobi equations on stratified domains

12:15 - 13:00   Théo Girard (University of Tours)
An abstract existence for generalised Hughes' model

Lunch

14:30 – 15:15:   Fabio Bagagiolo (Università di Trento)
Two origin-destination problems on congested networks

| **15:15 – 16:00** | Marco Pozza (Tor Vergata) |
| | *Large Time Behavior of Solutions to Hamilton-Jacobi Equations on Networks* |

| **16:00 – 17:15** | Claudio Marchi (Università di Padova) |
| | *First order Mean Field Games on networks* |

| **19:00-20.30:** | <u>Afternoon Buffet</u> |

Friday, January 20

| **09:30 – 10:15** | Andrea Tosin (Politecnico di Torino) |
| | *Boltzmann-type kinetic equations on networks* |

| **10:15 – 11:00** | Alfonso Sorrentino (Tor Vergata) |
| | *The Hamilton-Jacobi equation on networks: from Aubry-Mather theory to Homogenization* |

<u>Coffee Break</u>

| **11:30 – 12:15** | Rinaldo Colombo (Università di Brescia) |
| | *Conservation Laws & Hamilton-Jacobi Equations: Connections and Inverse Design* |

| **12:15 – 13:00** | Gabriella Puppo (Sapienza) |
| | *Coupling conditions for shallow water equations at channel junctions* |

<u>Lunch</u>