Workshop I: Mathematical Foundations of Traffic

Monday September 28, 2015

8:00–8:55 *Check-In/Light Breakfast (Hosted by IPAM)*

8:55–9:00 *Welcome and Opening Remarks*

9:00–9:50 **Christian Claudel** (University of Texas at Austin)
Exact and grid-free solutions to the Lighthill–Whitham–Richards traffic flow model with bounded acceleration

10:00–10:15 *Break*

10:15–11:05 **Rinaldo Colombo** (University of Brescia)
Nonlocal Conservation Laws in the Modeling of Vehicular and Pedestrian Traffic

11:15–11:30 *Break*

11:30–12:20 **Paola Goatin** (Institut National de Recherche en Informatique Automatique (INRIA))
Macroscopic traffic flow models with non-local mean velocity

12:30–2:30 *Lunch (on your own)*

2:30–3:20 **Rodolfo Rosales** (Massachusetts Institute of Technology)
Phantom traffic jams, jamitons, and the sub-characteristic condition

3:30–4:00 *Break*

4:00–4:50 **Pierre Degond** (Imperial College)
Pedestrian macroscopic models: a game-theoretical approach

5:00–6:30 *Poster Session & Reception (Hosted by IPAM)*

Tuesday September 29, 2015

8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*

9:00–9:50 **Jean-Patrick Lebacque** (IFSTTAR)
Recent developments of GSOM traffic models

10:00–10:15 *Break*

10:15–11:05 **Benjamin Seibold** (Temple University)
Resurrection of the Payne-Whitham pressure?

11:15–11:30 *Break*

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11:30–12:20 **Michael Herty** (RWTH Aachen)
Data–fitted second order models for traffic flow

12:30–2:30 *Lunch (on your own)*

2:30–3:20 **Thomas Lorenz** (RheinMain University of Applied Sciences)
On a class of nonlocal traffic flow models with multivalued fundamental diagram

3:30–4:00 *Break*

4:00–4:50 **Francesca Marcellini** (University of Milano-Bicocca)
Coupling Di fferent Traffic Models

Wednesday September 30, 2015

8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*

9:00–9:50 **Tong Li** (University of Iowa)
Qualitative Analysis of Some PDE Models of Traffic Flow

10:00–10:15 *Break*

10:15–11:05 **Ingenuin Gasser** (Universität Hamburg)
A model for vehicular traffic with an embedded bus route

11:15–11:30 *Break*

11:30–12:20 **Andrea Tosin** (Consiglio Nazionale delle Ricerche (CNR))
A Boltzmann-type kinetic approach to the modeling of vehicular traffic

12:30–2:30 *Lunch (on your own)*

2:30–3:20 **Jorge Laval** (Georgia Institute of Technology)
A stochastic traffic flow model for the formation of oscillations in car-following models

3:30–4:00 *Break*

4:00–4:50 **Yanfeng Ouyang** (University of Illinois at Urbana-Champaign)
Traffic oscillation under nonlinear car-following laws: measurement, calibration, prediction, and validation

Thursday October 1, 2015

8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*

9:00–9:50 **Wenlong Jin** (University of California, Irvine (UCI))
Existence, stability, and solution of stationary states in general road networks

10:00–10:15 *Break*

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10:15–11:05 **Ludovic Leclercq** (École Nationale des Travaux Publics de l'État)
Capacity drop at freeway merges: Analytical integration of microscopic behaviors

11:15–11:30 *Break*

11:30–12:20 **Guillaume Costeseque** (Institut National de Recherche en Informatique Automatique (INRIA))
Representation formula for traffic flow estimation on a network

12:30–2:30 *Lunch (on your own)*

2:30–3:20 **Alberto Bressan** (Pennsylvania State University)
Intersection models and Nash equilibria for traffic flow on networks

3:30–4:00 *Break*

4:00–4:50 **Maria Laura Delle Monache** (Rutgers University-Camden)
Traffic flow control via variable speed limit

Friday October 2, 2015

8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*

9:00–9:50 **Martin Gugat** (FAU Erlangen)
Exact boundary controllability for free traffic flow with Lipschitz continuous state: road traffic safety and Lipschitz constants

10:00–10:15 *Break*

10:15–11:05 **Armin Seyfried** (Forschungszentrum Jülich)
A review about fundamental diagrams of pedestrian streams

11:15–11:30 *Break*

11:30–12:20 **Rainald Lohner** (George Mason University)
Real-Time Micro-Modelling of a Million Pedestrians

12:30 *Conclusion*