Co-chairs
Nikolas Geroliminis
(EPFL, Switzerland)
Ludovic Leclercq
(Univ. Lyon - IFSTTAR, France)
WELCOME to ISTTT23
Welcome to the 23rd International Symposium on Transportation and Traffic Theory (ISTTT23), and a big welcome to Lausanne. This event is jointly organized by EPFL and IFSTTAR. We are delighted to celebrate the 60th anniversary of ISTTT Series.

Since its launch in 1959, the ISTTT series has remained the primary venue for discussing advances in the theoretical and methodological aspects of the interdisciplinary field of transportation and traffic systems science. The Symposium covers all scientific, fundamental and methodological aspects of transportation systems spanning all modes of transport, while topics related to logistics, optimization, networks and new technologies are also welcome. Like its predecessors, ISTTT23 keeps an open mind about the scope of the conference and what constitutes transportation and traffic theory. Its ambition is to reflect the best work underway anywhere in the world on the science of traffic and transportation.

While transportation research is a growing field in terms of integrated multidisciplinary methodologies, emerging technologies and new shared services, the physics of the phenomena are inspired by many fundamental principles developed over ISTTT Series. New challenges related to large-scale networks modeling and control and the need for real-time decisions under fast-evolving dynamics of systems and travelers advance the field in new directions of research. The ISTTT series reflects some of the highest quality essential work taking place in the world’s leading institutes on the science of traffic and transportation and presents a view of the rich influences in the field.

33 papers have been selected for lectern presentation and 15 for poster presentation following a rigorous multi-stage refereeing process. In the first stage, 250 extended abstracts were reviewed by up to members of the international advisory and local organizing committees, resulting in 110 invitations to submit full papers. The second stage entailed the review of the submitted full papers by at least three internationally recognized scholars. Based on that process, 58 papers were retained for revision and submitted directly at Transportation Research part B and part C with additional rounds of full-paper refereeing. All lectern papers have been accepted for publication and appear online before the conference in two special issues in the aforementioned journals. At the same time, earlier versions of these papers have been included in Procedia and in the traditional Book Proceedings.

We wish you a joyful experience and a pleasant stay in Lausanne. We hope that you enjoy many scientific and networking opportunities and you develop new ideas for research and collaborations.

Nikolas Geroliminis – EPFL
Ludovic Leclercq – IFSTTAR
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Nan Zheng – Beihang University
SCHEDULE & LOCATION
TUESDAY
July 23rd, 2019
11:00 – 12:30  TRB-TFTC Summer Meeting
13:00 – 17:00  IAC Meeting
13:30 – 15:45  PRE-CONFERENCE WORKSHOP – PART I
Distinguished lectures in Transportation
Session Chair: Jack Haddad

*Hedging against Uncertainty in Transportation*
– Elise Miller-Hooks, George Mason University

*Pedestrian Traffic Flow: From Data to Behavioral Insights*
– Winnie Daamen, TU Delft

*AI for Transportation: Trends and Challenges*
– Alexandre Alahi, EPFL

16:00 – 18:15  PRE-CONFERENCE WORKSHOP – PART II
The Future of Mobility. Some breakthroughs from ERC projects in Transportation
Session Chairs: Ludovic Leclercq & Nikolas Geroliminis

**Prof. Jean-Pierre Bourguignon**
– President of the European Research Council (ERC)

**Prof. Markos Papageorgiou, TUC, Greece, ERC advanced**
– TRAMAN21: Traffic Management for the 21st Century
– TrafficFluid: Lane-free Artificial-Fluid Environment for Vehicular Traffic

**Prof. Serge Hoogendoorn, TU Delft, The Netherlands, ERC advanced**
– Allegro: Unravelling slow mode traveling and traffic: with innovative data to a new transportation and traffic theory for pedestrians and bicycles

**Prof. Ludovic Leclercq, IFSTTAR, France, ERC consolidator**
– MAGnUM: Multiscale and Multimodal Traffic Modelling Approach for Sustainable Management of Urban Mobility

**Prof. Nikolas Geroliminis, EPFL, Switzerland, ERC Starting**
– METAFERW: Modeling and controlling traffic congestion and propagation in large-scale urban multimodal networks

18:30 – 20:00  ISTTT23 Registration Open
19:00 – 20:30  Welcome Reception
08:00 – 12:00 ISTTT23 Registration Open

08:30 – 09:00 Opening Remarks

09:00 – 10:30 SESSION 1: Shared Mobility Operations
Session Chair: Prof. Elise Miller

Joint Design of Multimodal Transit Networks and Shared Autonomous Mobility Fleets
– H. Pinto, M. Hyland, H. Mahmassani, I. Verbas

Path-based Dynamic Pricing for Vehicle Allocation in Ridesharing Systems with Fully Compliant Drivers
– C. Lei, Z. Jiang, Y. Ouyang

On the supply curve of ride-hailing systems
– Z. Xu, Y. Yin, J. Ye

10:30 – 11:00 Coffee Break

11:00 – 12:30 SESSION 2: Macroscopic Flow Models
Session Chair: Prof. Serge Hoogendoorn

Static traffic assignment with residual queues and spillback
– M. Bliemer, M. Raadsen

Traffic State Estimation on a Two-Dimensional Network by a State-Space Model
– Y. Kawasaki, Y. Hara, M. Kuwahara

Stochastic stability of dynamic user equilibrium in unidirectional networks: Weakly acyclic game approach
– K. Satsukawa, K. Wada, T. Iryo

12:30 – 14:00 Lunch
14:00 – 16:00 SESSION 3: Dynamic Network Models
Session Chair: Prof. S.C. Wong

Dynamic Trucking Equilibrium through a Freight Exchange
– J. Miller, Y. Nie

A Continuum Model for Cities Based on the Macroscopic Fundamental Diagram: A Semi-Lagrangian Solution Method
– R. Aghamohammadi, J. Laval

Stabilization strategy for unstable transport systems under general evolutionary dynamics
– T. Iryo, M. Smith, D. Watling

Route choice, travel time variability, and rational inattention
– G. Jiang, M. Fosgerau, H. Lo

16:00 – 16:30 Coffee Break

16:30 – 18:00 SESSION 4: Travel Demand and Activity Models
Session Chair: Prof. Kay Axhausen

A data driven method for OD matrix estimation
– P. Krishnakumari, H. van Lint, T. Djukic, O. Cats

Incorporating Trip Chaining within Online Demand Estimation
– G. Cantelmo, M. Qurashi, A. Prakash, C. Antoniou, F. Viti

Day-to-Day Needs-based Activity-Travel Dynamics and Equilibria in Multi-State Supernetworks
– P. Liu, F. Liao, Q. Tian, H.J. Huang, H. Timmermans

19:30 – 22:00 Conference Dinner
THURSDAY
July 25th, 2019
08:00 – 12:00 ISTTT23 Registration Open

08:00 – 10:00 SESSION 5: Transit Planning and Operations
Session Chair: Prof. Jean-Patrick Lebacque

Effect of Transit Signal Priority on Bus Service Reliability
– P. Anderson, C. Daganzo

The danger zone of express services: when increasing frequencies can deteriorate the level of service
– H. Larrain, J.C. Mu oz

Modeling and managing congested transit service with heterogeneous users under monopoly
– J. Zhang, H. Yang, R. Lindsey, X. Li

Operational design for shuttle systems with modular vehicles under oversaturated traffic: Continuous modeling method
– Z. Chen, X. (Shaw) Li, X. Zhou

10:00 – 10:30 Coffee Break

10:30 – 12:30 SESSION 6: Network Macroscopic Fundamental Diagram Models and Control
Session Chair: Prof. Hani Mahmassani

Resilient Perimeter Control of Macroscopic Fundamental Diagram Networks under Cyberattacks
– J. Haddad, B. Mirkin

City-wide traffic control: modeling impacts of cordon queues
– W. Ni, M. Cassidy

Demand management with limited cooperation among travelers: A doubly dynamic approach
– M. Yildirimoglu, M. Ramezani

On the modeling of passenger mobility for stochastic bi-modal urban corridors
– I. Dakic, L. Ambühl, O. Schümperlin, M. Menendez

12:30 – 14:00 Lunch
14:00 – 15:30 POSTER SESSION – SwissTech Convention Center (STCC), Main Court
Session Chair: Prof. Monica Menendez

Continuum car-following model of capacity drop at sag and tunnel bottlenecks
– K. Wada, I. Martínez, W-L. Jin

A stochastic model for bus injection in a public transport service
D. Morales, J.C. Muñoz, P. Gazmuri
– Traffic dynamics under speed disturbance in mixed traffic with automated and non-automated vehicles
– D. Chen, A. Srivastava, S. Ahn, T. Li

Personalized Control for Promoting Sustainable Travel Behaviors
– X. Zhu, F. Wang, C. Chen, D. D. Reed

Modeling Urban Taxi Services with E-Hailings: A Queueing Network Approach
– W. Zhang, H. Honnappa, S. V. Ukkusuri

Reservoir-based surrogate modeling of dynamic user equilibrium
– Q. Gie, D. Fukuda, K. Han, W. Song

Optimal privacy control for transport network data sharing
– B. Y. He, J. Chow

Paired-line hybrid transit design considering spatial heterogeneity
– S. Luo, Y. Nie

Ride-Sourcing Modeling and Pricing in Non-Equilibrium Two-Sided Markets
– M. Nourinejad, M. Ramezani

Customer behavioural modelling of order cancellation in coupled ride-sourcing and taxi markets
– X. Wang, W. Liu, H. Yang, D. Wang, J. Ye

Self-Adaptive Online Trajectory Sampling (SAOTS) Using Spectral Domain Properties
– C. Siddique, J. Ban

Same-Day Delivery with Crowdshipping and Store Fulfillment in Daily operations
– M. Ni, Q. He, X. Liu, A. Hampapur

A general formulation for multi-modal dynamic traffic assignment considering multi-class vehicles, public transit and parking
– X. Pi, W. Ma, Z. Qian

Personalized public transport mobility service: A journey ranking approach for route guidance
– A. Ceder, Y. Jiang

A Continuous Model for Coordinated Pricing of Mixed Access Modes to Transit
– N. Fournier, E. Christofa, E. Gonzales

16:00 – 23:50 Conference Excursion and Gala Dinner
08:00 – 12:00 ISTT23 Registration Open

08:30 – 10:30 SESSION 7: Network Design and Control
Session Chair: Prof. Soyoung Ahn

An entropy maximizing approach to the ferry network design problem
– M. Bell, J.J. Pan, C. Teye, K.F. Cheung, S. Perera

Adaptive Railway Traffic Control using Approximate Dynamic Programming
– T. Ghasempour, B. Heydecker

Centralised and decentralised signal timing optimisation approaches for network traffic control
– A. H.F. Chow, R. Sha, S. Li

An Integrated and Personalized Traveler Information and Incentive Scheme for Energy Efficient Mobility Systems
– C. Xiong, M. Shahabi, J. Zhao, Y. Yin, X. Zhou, L. Zhang

10:30 – 11:00 Coffee Break

11:00 – 12:30 SESSION 8: Connected and Autonomous Vehicles
Session Chair: Prof. Francesco Viti

Cooperative Adaptive Cruise Control for Connected Autonomous Vehicles by Factoring Communication-Related Constraints
– C. Wang, S. Gong, A. Zhou, T. Li, S. Peeta

Stabilizing Mixed Vehicular Platoons with Connected Automated Vehicles: An H-infinity Approach

A Hierarchical Approach For Splitting Truck Platoons Near Network Discontinuities
– A. Duret, M. Wang, A. Ladino

12:30 – 14:00 Lunch
14:00 – 15:30 SESSION 9: Multimodal Network Management
Session Chair: Prof. Michiel Bliemer

*Modeling double time-scale travel time processes with application to assessing the resilience of transportation systems*
- R. Zhong, X. Xie, J. Luo, T. Pan, W. Lam, A. Sumalee

*A Pareto-improving and revenue-neutral scheme to manage mass transit congestion with heterogeneous commuters*
- Y. Tang, H. Yang, B. Wang, J. Huang, Y. Bai

*Responsive bus dispatching strategy in a multi-modal and multi-directional transportation system: a doubly dynamical approach*
- F. Zhang, W. Liu

15:30 – 16:00 Coffee Break

16:00 – 17:00 SESSION 10: Vehicular Traffic Flow
Session Chair: Prof. Yafeng Yin

*On the value of relative flow data*
- P. van Erp, V. Knoop, S. Hoogendoorn

*A Behavioral Microeconomic Foundation for Car-following Models*
- S. Hamdar, V. Dixit, A. Talebpour, M. Treiber

17:00 – 17:45 CLOSING SESSION
Session Chair: Prof. William Lam