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CONFERENCE PROGRAM

Monday, June 26th

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Cesare Pianese, University of Salerno, Italy
Ivan Arsie, University of Salerno, Italy
Saverio Armeni, Magneti Marelli S.p.A., Italy
Walter Nesci, Magneti Marelli S.p.A., Italy
Alessandro Peciarolo, Magneti Marelli S.p.A., Italy
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Gregorio Gecchele, University of Padova, Italy
Massimiliano Gastaldi, University of Padova, Italy
Francesco Biondi, University of Utah, USA
Claudio Mulatti, University of Padova, Italy
- 514 **Estimation of Traversal Speed on Multi-lane Urban Arterial Under Non-recurring Congestion**
Sasan Amini, Technical University of Munich, Germany
Nassim Motamedidehkordi, Technical University of Munich, Germany
Eftychios Papapanagiotou, Technical University of Munich, Germany
Fritz Busch, Technical University of Munich, Germany
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Smart mobility II - Special Session

Room: Aragonese Hall

Chair: *Carlos Lima de Azevedo, Massachusetts Institute of Technology, USA*

- 520 **Eco-Cooperative Adaptive Cruise Control at Multiple Signalized Intersections: Network-Wide Evaluation and Sensitivity Analysis**
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Hao Yang, Lamar University, USA
Hesham Rakha, Virginia Polytechnic Institute and State University, USA
- 526 **Instrumented infrastructures for damage detection and management**
Rosario Fedele, Mediterranea University of Reggio Calabria, Italy
Filippo Giammaria Praticò, Mediterranea University of Reggio Calabria, Italy
Riccardo Carotenuto, Mediterranea University of Reggio Calabria, Italy
Francesco Giuseppe Della Corte, Mediterranea University of Reggio Calabria, Italy
- 532 **The smart city and mobility. The functional polarization of urban flow**
Romano Fistola, University of Sannio, Italy
Marco Raimondo, University of Sannio, Italy
Rosa Anna La Rocca, University of Naples Federico II, Italy
- 538 **How Many Probe Vehicles Do We Need to Collect On-Street Parking Information?**
Fabian Bock, Leibniz Universität, Germany
Sergio Di Martino, University of Naples Federico II, Italy
- 544 **Developing a De-centralized Cycle-free Nash Bargaining Arterial Traffic Signal Controller**
Hossam M. Abdelghaffar, Virginia Polytechnic Institute and State University, USA
Hao Yang, Lamar University, USA
Hesham A. Rakha, Virginia Polytechnic Institute and State University, USA
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Road safety

Room: Catalana Hall

Chair: *Alfonso Montella, University of Naples Federico II, Italy*

- 550 **Reducing Real-time Crash Risk for Congested Expressway Weaving Segments Using Ramp Metering**
Mohamed Abdel-Aty, University of Central Florida, USA
Ling Wang, University of Central Florida, USA
- 556 **Effectiveness of the newly introduced Variable Message Signs in Lebanon on road safety**
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Alain Saroufim, USEK, Lebanon
Elie Otayek, USEK, Lebanon
- 562 **Effectiveness of the newly introduced Variable Message Signs in Lebanon on driver behavior**
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Joelle Aoun, USEK, Lebanon
Elie Otayek, USEK, Lebanon
- 568 **Developing a Rear-End Crash Risk Algorithm under Fog Conditions using Real-Time Data**
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Mohamed Abdel-Aty, University of Central Florida, USA
Juneyoung Park, University of Central Florida, USA
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Rania Wehbe, Holy Spirit University of Kaslik-Usek, Lebanon
Zaher Massaad, Holy Spirit University of Kaslik-Usek, Lebanon
Elie Otayek, Holy Spirit University of Kaslik-Usek, Lebanon
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Big Data for ITS: experiences from the field and academia I - Special Session

Room: Auditorium

Chair: *Constantinos Antoniou, Technical University of Munich, Germany*

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Mohammed Elhenawy, Virginia Polytechnic Institute and State University, USA
Ahmed Ghanem, Virginia Polytechnic Institute and State University, USA
Huthaifa I. Ashqar, Virginia Polytechnic Institute and State University, USA
Hesham A. Rakha, Virginia Polytechnic Institute and State University, USA
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Mohammed Elhenawy, Virginia Polytechnic Institute and State University, USA
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Huthaifa I. Ashqar, Virginia Polytechnic Institute and State University, USA
Hesham A. Rakha, Virginia Polytechnic Institute and State University, USA
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Quentin Estève, École des Ponts ParisTech (ENPC), France
Safia Lij, École des Ponts ParisTech (ENPC), France
Marion Cossic, École des Ponts ParisTech (ENPC), France
Fabien Leurent, École des Ponts, IFSTTAR, UPEM, UPE, France
Bachar Kabalan, École des Ponts, IFSTTAR, UPEM, UPE, France
Xiaoyan Xie, École des Ponts, IFSTTAR, UPEM, UPE, France
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Abdullah Kurkcu, New York University (NYU), USA
Fabio Miranda, New York University (NYU), USA
Kaan Ozbay, New York University (NYU), USA
Claudio T. Silva, New York University (NYU), USA
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Haris N. Koutsopoulos, Northeastern University, USA
Peyman Noursalehi, Northeastern University, USA
Yiwen Zhu, Northeastern University, USA
Nigel H.M. Wilson, Massachusetts Institute of Technology, USA

Sustainable mobility III - Special Session

Room: Sveva Hall

Chair: Chiara Fiori, University of Naples Federico II, Italy

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Alexander Grakovski, Transport and Telecommunication Institute, Latvia
Alexey Pilipovets, Transport and Telecommunication Institute, Latvia
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Laura Khammash, Università di Bologna, Italy
Luca Mantecchini, Università di Bologna, Italy
Vasco Reis, Universidade de Lisboa, Portugal
- 622 **Traffic flow short-term forecasting system design and prototyping: case study of Riga city**
Mihails Savrasovs, Transport and Telecommunication Institute, Latvia
- 627 **Conditional Value-at-Risk Optimization of Traffic Control at Isolated Intersection**
Eleni Papatziou, National Technical University of Athens, Greece
Antony Stathopoulos, National Technical University of Athens, Greece
- 633 **A nonlinear optimal control approach to reduce travel times and to improve safety in freeway traffic systems**
C. Pasquale, University of Genova, Italy
S. Sacone, University of Genova, Italy
S. Siri, University of Genova, Italy
M. Papageorgiou, Technical University of Crete, Greece

Smart mobility III - Special Session

Room: Aragonese Hall

Chair: Carlos Lima de Azevedo, Massachusetts Institute of Technology, USA

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Karim Ismail, Carleton University, Canada
Suzanne Woo, City of Ottawa, Canada
- 645 **A real time multi-objective cyclists route choice model for a bike-sharing mobile application**
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Rosalia Camporeale, Politecnico di Bari, Italy
Michele Ottomanelli, Politecnico di Bari, Italy
- 651 **A vehicle-to-infrastructure communication based algorithm for urban traffic control**
Cyril Nguyen Van Phu, Université Paris Est, COSYS, GRETTIA, IFSTTAR, France
Nadir Farhi, Université Paris Est, COSYS, GRETTIA, IFSTTAR, France
Habib Haj-Salem, Université Paris Est, COSYS, GRETTIA, IFSTTAR, France
Jean-Patrick Lebacque, Université Paris Est, COSYS, GRETTIA, IFSTTAR, France
- 657 **Guidance For Identifying Corridor Conditions That Warrant Deploying Transit Signal Priority And Queue Jump**
MD Sultan Ali, Florida Atlantic University, USA
Evangelos I. Kaisar, Florida Atlantic University, USA
Mohammad Hadi, Florida Atlantic University, USA
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Maximilian Leodolter, AIT Austrian Institute of Technology, Austria
Peter Widhalm, AIT Austrian Institute of Technology, Austria
Claudia Plant, AIT Austrian Institute of Technology, Austria
Norbert Brandle, AIT Austrian Institute of Technology, Austria

Demand analysis and ITS

Room: Catalana Hall

Chair: Armando Carteni, University of Naples Federico II, Italy

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Benedikt Bracher, Munich University of the Federal Armed Forces, Germany
Klaus Bogenberger, Munich University of the Federal Armed Forces, Germany
- 675 **Simulating the effects of real-time crowding information in public transport networks**
Arkadiusz Drabicki, Cracow University of Technology, Poland
Rafal Kucharski, Cracow University of Technology, Poland
Oded Cats, Delft University of Technology, The Netherlands
Achille Fonzone, Edinburgh Napier University, UK
- 681 **Dynamic Scenario Control for VANET Simulations**
Christina Obermaier, Technische Hochschule Ingolstadt, Germany
Raphael Riebl, Technische Hochschule Ingolstadt, Germany
Christian Facchi, Technische Hochschule Ingolstadt, Germany

Wednesday, June 28th

Big Data for ITS: experiences from the field and academia II - Special Session

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Chair: F. Camara Pereira, Technical University of Denmark, Denmark

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K. Friso, DAT.Mobility, The Netherlands
L.J.J. Wismans, DAT.Mobility, The Netherlands
M.B. Tjink, University of Twente, The Netherlands
- 693 **Fusing GPS Probe and Mobile Phone Data for Enhanced Land-use Detection**
Angelo Furno, Univ Lyon, ENTPE, IFSTTAR, LICIT, France
Nour-Eddin El Faouzi, Univ Lyon, ENTPE, IFSTTAR, LICIT, France
Marco Fiore, CNR – IEIIT, Italy
Razvan Stanica, Univ Lyon, INSA-Lyon, INRIA, CITI, France
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Constantinos Antoniou, Technical University of Munich, Germany
Francisco C. Pereira, Technical University of Denmark, Denmark
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Natalia Isaenko, University of Rome La Sapienza, Italy
Chiara Colombaroni, University of Rome La Sapienza, Italy
Gaetano Fusco, University of Rome La Sapienza, Italy
- 710 **Big Data Analytics Architecture for Real-Time Traffic Control**
Sasan Amini, Technical University of Munich, Germany
Ilias Gerostathopoulos, Technical University of Munich, Germany
Christian Prehofer, Technical University of Munich, Germany

Shared economy, new mobility services and travel behaviour I - Special Session

Room: Sveva Hall

Chair: *Maria Kamargianni, University College London, UK*

- 716 **Consumer Preferences of Electric and Automated Vehicles**
Ramin Shabanpour, University of Illinois at Chicago, USA
Seyedeh Niloufar Dousti Mousavi, University of Illinois at Chicago, USA
Nima Golshani, University of Illinois at Chicago, USA
Joshua Auld, Argonne National Laboratory, USA
Abolfazl Mohammadian, University of Illinois at Chicago, USA
- 721 **Real time ridesharing: understanding user behavior and policies impact**
S.Carrese, Roma Tre University, Italy
T.Giacchetti, Roma Tre University, Italy
S.M.Patella, Roma Tre University, Italy
M.Petrelli, Roma Tre University, Italy
- 727 **Impact assessment of dedicated free-floating carsharing parking**
Joschka Bischoff, Technische Universitat Berlin, Germany
Kai Nagel, Technische Universitat Berlin, Germany
- 733 **Perceived socio-economic impacts of Cooperative Intelligent Transportation Systems: A case Study of Greece**
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Eleni I. Vlahogianni, National Technical University of Athens, Greece
Konstantina Gkritza, Purdue University, USA
- 738 **A Stated Preference Experiments for Mobility-as-a-Service Plans**
Melinda Matyas, University College London, UK
Maria Kamargianni, University College London, UK

Simulation and Forecasting for Intelligent Transit Networks I - Special Session

Room: Aragonese Hall

Chair: *Agostino Nuzzolo, University of Rome Tor Vergata, Italy*

744 Analysis of Network-wide Transit Passenger Flows Based on Principal Component Analysis

Ding Luo, Delft University of Technology, The Netherlands
Oded Cats, Delft University of Technology, The Netherlands
Hans van Lint, Delft University of Technology, The Netherlands

750 Modelling Multimodal Transit Networks

Judith Brand, Steer Davies Gleave, UK
Serge Hoogendoorn, Delft University of Technology, The Netherlands
Niels van Oort, Delft University of Technology, The Netherlands
Bart Schalkwijk, Vervoerregio Amsterdam, the Netherlands

756 Measuring Spill-over Effects of Disruptions in Public Transport Networks

Sanmay Shelat, Delft University of Technology, The Netherlands
Oded Cats, Delft University of Technology, The Netherlands

Innovative Approaches I

Room: Catalana Hall

Chair: Vittorio Marzano, University of Naples Federico II, Italy

762 Design, Specification, Implementation and Evaluation of a Freeway Queue Warning System

Zhejun Liu, University of Minnesota, USA
Peter Dirks, University of Minnesota, USA
John Hourdos, University of Minnesota, USA

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Oleg Golovnin, Samara National Research University, Russia
Tatyana Mikheeva, Samara National Research University, Russia

774 Validation of Transport Infrastructure Changes via Microscopic Simulation: A Case Study for the City of Samara, Russia

Oleg Saprykin, Samara National Research University, Russian Federation
Olga Saprykina, Samara National Research University, Russian Federation

780 Machine Learning or Discrete Choice Models for Car Ownership Demand Estimation and Prediction?

Miguel Paredes, Massachusetts Institute of Technology, USA
Erik Hemberg, Massachusetts Institute of Technology, USA
Una-May O'Reilly, Massachusetts Institute of Technology, USA
Chris Zegras, Massachusetts Institute of Technology, USA

Traffic signals and signal control

Room: Auditorium

Chair: Marcello Montanino, University of Naples Federico II, Italy

786 A Modular Intersection Controller with Adaptive Stage Selection and Duration Algorithms

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Giovanni Russo, IBM Research Group, Ireland
Mario Di Bernardo, University of Bristol, UK

792 An Approach to Grouping Traffic Signals for Coordination Using Clustering Methods

Minha Lee, University of Maryland, USA
Hyoseuk Chang, University of Maryland, USA
Carlos Carrion, University of Maryland, USA
Lei Zhang, University of Maryland, USA

798 Combined dynamic traffic assignment and signal control: an application to a zone in Guangzhou

Wang Bei Anny, Guangzhou Municipal Engineering Design & Research Institute, China
Ning Ping Hua, Guangzhou Municipal Engineering Design & Research Institute, China

804 Towards a robust and wide-area traffic signal control for inner-city areas

Theresa Thunig, Technische Universitat Berlin, Germany
Kai Nagel, Technische Universitat Berlin, Germany

810 Real-time Signal Control Accounting for Urban Freight Deliveries

Eric J. Gonzales, University of Massachusetts Amherst, USA

Eleni Christofa, University of Massachusetts Amherst, USA

Shared economy, new mobility services and travel behaviour II - Special Session

Room: Sveva Hall

Chair: *Maria Kamargianni, University College London, UK*

816 System Optimal ATIS as a congestion management instrument - game-based experiment and agent based model

Ido Klein, Ben-Gurion University of the Negev, Israel

Eran Ben-Elia, Ben-Gurion University of the Negev, Israel

821 Development of a Demand Responsive Transport system with improvement analysis on conventional public transport: A Case Study for Schorndorf, Germany

Marta Barrilero, Institute of Transportation Systems, German Aerospace Center, Germany

Anke Sauerlander-Biebl, Institute of Transportation Systems, German Aerospace Center, Germany

Alexander Sohr, Institute of Transportation Systems, German Aerospace Center, Germany

Tobias Hesse, Institute of Transportation Systems, German Aerospace Center, Germany

827 Modelling factors affecting the use of ubiquitous real-time bus passenger information

Faqhrul Islam, Edinburgh Napier University, UK

Achille Fonzone, Edinburgh Napier University, UK

Andrew MacIver, Edinburgh Napier University, UK

Keith Dickinson, Edinburgh Napier University, UK

833 Microsimulation of an Autonomous Taxi-System in Munich

Florian Dandl, Munich University of the Federal Armed Forces, Germany

Benedikt Bracher, Munich University of the Federal Armed Forces, Germany

Klaus Bogenberger, Munich University of the Federal Armed Forces, Germany

839 Connected shared mobility for passengers and freight: investigating the potential of crowdshipping in urban areas

Edoardo Marcucci, University of Roma Tre, Italy and Molde University College, Norway

Michela Le Pira, University of Catania, Italy

Valerio Gatta, University of Roma Tre, Italy

Celine Sacha Carrocci, University of Roma Tre, Italy

Eleonora Peralice, Istituto Superiore di Formazione e Ricerca per i Trasporti, Italy

Simulation and Forecasting for Intelligent Transit Networks II - Special Session

Room: Aragonese Hall

Chair: *Guido Gentile, University of Rome "Sapienza", Italy*

844 Impact of Relocation Strategies For a Fleet Of Shared Automated Vehicles On Service Efficiency, Effectiveness and Externalities

Konstanze Winter, Delft University of Technology, the Netherlands

Oded Cats, Delft University of Technology, the Netherlands

Bart van Arem, Delft University of Technology, the Netherlands

Karel Martens, Technion - Israel Institute of Technology, Israel

850 Transit Travel Strategy as Solution of a Markov Decision Problem: Theory and Applications

Agostino Nuzzolo, University of Rome Tor Vergata, Italy

Antonio Comi, University of Rome Tor Vergata, Italy

856 Bus travel time dispersion versus service punctuality and efficiency

Antonio Comi, University of Rome Tor Vergata, Italy

Agostino Nuzzolo, University of Rome Tor Vergata, Italy

Stefano Brinchi, Mobility Agency of Rome Municipality, Italy

Renata Verghini, Mobility Agency of Rome Municipality, Italy

- 861 **Real-time Short-turning in High Frequency Bus Services Based on Passenger Cost**
David Leffler, KTH Royal Institute of Technology, Sweden
Oded Cats, KTH Royal Institute of Technology, Sweden and Delft University of Technology, The Netherlands
Erik Jenelius, KTH Royal Institute of Technology, Sweden
Wilco Burghout, KTH Royal Institute of Technology, Sweden
- 867 **Evaluation of Bus Dwelling Patterns Using Bus GPS Data**
Ilgin Gokasar, Bogazici University, Turkey
Yigit Cetinel, Bogazici University, Turkey
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Innovative Approaches II

Room: Catalana Hall

Chair: *Stefano de Luca, University of Salerno, Italy*

- 872 **Big Data for public transportation: a DSS framework**
Giuseppe Guido, University of Calabria, Italy
Daniele Rogano, University of Calabria, Italy
Alessandro Vitale, University of Calabria, Italy
Vittorio Astarita, University of Calabria, Italy
Demetrio Festa, University of Calabria, Italy
- 878 **A Hybrid Method for Real-Time Short-Term Predictions of Traffic Flows in Urban Areas**
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Lorenzo Meschini, PTV SISTeMA, Italy
Marco Pezzulla, PTV SISTeMA, Italy
Gaetano Fusco, University of Rome "Sapienza", Italy
Guido Gentile, University of Rome "Sapienza", Italy
Natalia Isaenko, University of Rome "Sapienza", Italy
- 884 **The importance of choosing appropriate random utility models in complex choice contexts**
Fiore Tinessa, University of Naples Federico II, Italy
Andrea Papola, University of Naples Federico II, Italy
Vittorio Marzano, University of Naples Federico II, Italy
- 889 **Training neural networks to approximate traffic simulation outcomes**
Pawel Gora, University of Warsaw, Poland
Marek Bardonski, Nvidia Corporation, Switzerland
- 895 **Quantitative overview of efficiency and effectiveness of Public Transport in Italy: the importance of using ITS**
Andrea Papola, University of Naples Federico II, Italy
Fiore Tinessa, University of Naples Federico II, Italy
Vittorio Marzano, University of Naples Federico II, Italy
Angelo Mautone, Italian Ministry of Infrastructures and Transport, Italy
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Modelling and ITS II

Room: Santa Lucia Hall

Chair: *Mariano Gallo, University of Sannio, Italy*

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Armando Mendez-Villalon, University of Nottingham, UK
David W. P. Thomas, University of Nottingham, UK
Steve Greedy, University of Nottingham, UK
- 907 **Improving Vehicle Speed Prediction Transferability With Network Centrality**
Maximilian Leodolter, Austrian Institute of Technology, Austria
Anita Graser, Austrian Institute of Technology, Austria
- 913 **A Diffusion Model to Explain and Forecast Freeway Breakdown and Delay**
Paul J. Ossenbruggen, University of New Hampshire, USA

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Giuseppina De Luca, University of Sannio, Italy

Mariano Gallo, University of Sannio, Italy

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