



Conference Program

STRC

21st Swiss Transport Research Conference
Monte Verità / Ascona, September 12 – 14, 2021

It is my pleasure to welcome you to the 21th edition of the Swiss Transport Research Conference (STRC). Over the years, STRC has become an excellent opportunity to exchange knowledge and ideas among researchers in Switzerland, covering a variety of aspects regarding transport and land use. This year, 54 presentations will cover a multiplicity of topics, including: traffic monitoring, modeling and control, automated and connected transport systems, demand modeling, logistics, land use data, public transport operations and infrastructure, big data for transport and mobility, pedestrian modeling, among others. The following Keynote speakers have confirmed their attendance:

- **Constantinos Antoniou**, Department of Civil, Geo and Environmental Engineering, TU Munich
- **Ludovic Leclercq**, Gustave Eiffel University

On behalf of the STRC organizing committee, welcome!

Matthieu de Lapparent, School of Management and Engineering Vaud, HES-SO



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General Information

Location

Fondazione Monte Verità, Strada Collina 84, CH-6612 Ascona.

The venue is near Ascona and Locarno.

Arrival / Shuttle bus

We recommend to travel by train as there are only a limited number of parking spots. On Sunday 12th there will be a shuttle service from Locarno train station to Monte Verità. Please let us know if you have not been assigned to a specific departure time. We recommend attendants to plan their arrival to the Locarno station before 13.00h.

On Tuesday 14th there will be also shuttle services from Monte Verità to Locarno starting at 12:35.

Check-in

Check-in is at the reception of the conference center. There you will find your name badge.

Presentation

The presentation time this year is 15 minutes with 10 minutes for questions.

Information

The program as well as the papers of the conference can be accessed through the conference webpage: <http://www.strc.ch/>. Details regarding the venue can be found: <http://www.monteverita.org>. Finally, information concerning travel times by train can be checked at: <http://www.sbb.ch/>

Questions

For other questions regarding the conference, please send us an e-mail: strc2021@heig-vd.ch

For emergency cases please call :

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Keynote Speakers

Ludovic Leclercq

Dr. Ludovic Leclercq is a Research Director (eq. Full Professor) at Univ. Gustave Eiffel. He received his engineering and master's degrees in Civil Engineering in 1998, his Ph.D. in 2002, and his habilitation thesis (HDR) in 2009. He is the current head of the LICIT laboratory. His research interests correspond to multiscale and multimodal dynamic traffic modeling and the related environmental externalities. Smart cities, mobility as a service, sustainable and reliable transportation systems are some of the applications his researches are targeting. In 2015, he was awarded the most prestigious research grant in Europe, i.e. an ERC consolidator grant in Social Science and Humanities. In 2019, he is the recipient of the "Grand Prix de l'Université de Lyon", a career award for his research in Transportation engineering.



Constantinos Antoniou

Constantinos Antoniou is a Full Professor in the Chair of Transportation Systems Engineering at the Technical University of Munich (TUM), Germany. He holds a Diploma in Civil Engineering from NTUA (1995), a MS in Transportation (1997) and a PhD in Transportation Systems (2004), both from MIT. His research focuses on modelling and optimization of transportation systems, data analytics and machine learning for transportation systems, and human factors for future mobility systems. He is/has been PI of several research projects (e.g. H2020 iDREAMS, MOMENTUM, Drive2thefuture, DFG DVanPool and TRAMPA).



He has authored more than 400 scientific publications, including more than 125 papers in international, peer-reviewed journals, 250 in international conference proceedings, 3 books and 20 book chapters. He is a member of several professional and scientific organizations, editorial boards (Associate Editor of Transportation Research – Part A: Policy and Practice, Editorial Member of Transportation Research – Part C, Accident Analysis and Prevention, Journal of Intelligent Transportation Systems, Smart Cities; Deputy Editor in Chief of IET Intelligent Transportation Systems; Associate Editor of Transportation Letters; Editor of EURO Journal on Transportation and Logistics), committees (such as TRB committees AHB45 – Traffic Flow Theory and Characteristics and ABJ70 - Artificial Intelligence and Advanced Computing Applications, Steering Committee of hEART – The European Association for Research in Transportation, and FGSV Committee 3.10 “Theoretical fundamentals of road traffic”), and a frequent reviewer for a large number of scientific journals, scientific conferences, research proposals and scholarships.

Schedule overview

	Sunday 12	Monday 13	Tuesday 14
09:00		Breakfast 09:00 09:00 Sessions 3A, 3B	Breakfast 09:00 09:00 Sessions 7A, 7B
10:00		10:15 10:15 Break 10:30 10:30 Sessions 4A, 4B	10:15 10:15 Break 10:30 10:30 Sessions 8A, 8B
11:00		11:45	11:20 11:30 Closing of the conference 11:45
12:00	12:00 Registration and brunch	12:00 Lunch	
13:00			
14:00	13:45 Keynote 1 13:45	13:45 Keynote 2 13:45	
15:00	14:45 Break 15:00 15:00 Sessions 1A, 1B	14:45 Break 15:00 15:00 Sessions 5A, 5B	
16:00			
17:00	16:40 Break 16:55 16:55 Sessions 2A, 2B	16:40 Break 16:55 16:55 Sessions 6A, 6B	
18:00			
19:00	18:35 Committee meeting 19:35	18:55 Photo 19:10	
20:00	19:45 Dinner	19:45 Gala dinner (at Monte Verità)	

Sessions : September 12th 2021

Keynote				
Chair :			Room :	Auditorium
Start	End	Speaker	Title	
13:45	14:45	Ludovic Leclercq	Recent advances in multimodal MFD urban models	
Session 1A				
Chair :			Room :	Auditorium
Start	End	Speaker	Title	
15:00	15:25	Georgios Anagnostopoulos	Identifying lateral deviations in congested urban arterials with aerial footage	
15:25	15:50	Caroline Winkler	Mind the gap! How tragic are interruptions in GPS traces for time use and mobility studies?	
15:50	16:15	Zahra Ghandeharioun	Link travel time estimation with spatial correlations based on OD data	
16:15	16:40	Taylor Mordan	Pedestrian stop and go forecasting with hybrid feature fusion	
Session 1B				
Chair :			Room :	Balint
Start	End	Speaker	Title	
15:00	15:25	Kimia Chavoshi	Distributed control for laneless and directionless movement of connected and automated vehicles	
15:25	15:50	Clarissa V. Livingston	Digging Deeper into the Potential Effects of Automated Vehicles on Switzerland's Transportation System	
15:50	16:15	Lynn Fayed	Space allocation for mutli-modal urban networks with ridesplitting services and public transportation	
16:15	16:40	Johannes Brunner	An empirical response time analysis for automated vehicles systems	

Session 2A

Chair :			Room :	Auditorium
Start	End	Speaker	Title	
16:55	17:20	George Adaimi	Composite association fields with supervised deformable convolutions for scene graph generation	
17:20	17:45	Sohyeong Kim	Traffic monitoring and queue identification with UAV footage in the congested urban networks	
17:45	18:10	Mohammadhossein Bahari	Injecting knowledge in data-driven vehicle trajectory predictors	
18:10	18:35			

Session 2B

Chair :			Room :	Balint
Start	End	Speaker	Title	
16:55	17:20	Alessio Marra	A deep learning model for predicting route choice in public transport	
17:20	17:45	Tim Hillel	New perspectives on the performance of machine learning classifiers for mode choice prediction: An experimental review	
17:45	18:10	Brian Sifringer	Concept-NN: substituting complex functions in decision models with constrained representation learning	
18:10	18:35	Melvin Wong	A Unimodal Ordered Logit model for ranked choices	

Sessions : September 13th 2021

Session 3A				
Chair :		Marko Maljkovic	Room :	Auditorium
Start	End	Speaker	Title	
09:00	09:25	Alexander Erath	Long-term impact of COVID-19 on commuting patterns of employees and students	
09:25	09:50	Antonin Danalet	Working from home in Switzerland, 2015-2050	
09:50	10:15	Daniel Reck	Mode choice, substitution patterns and environmental impacts of shared and personal micro-mobility	
Session 3B				
Chair :		Claudia Bongiovanni	Room :	Balint
Start	End	Speaker	Title	
09:00	09:25	Adrian Meister	Descriptive route choice analysis of cyclists in Zurich	
09:25	09:50	Jasso Espadaler Clapés	Turn prediction utilizing naturalistic data from a swarm of drones	
09:50	10:15	Yuejiang Liu	Social NCE: Contrastive Learning of Socially-aware Motion Representations	
Session 4A				
Chair :		Joe Molloy	Room :	Auditorium
Start	End	Speaker	Title	
10:30	10:55	Janody Pougala	Choice set generation for activity-based models	
10:55	11:20	Thomas Schatzmann	Towards web-based mode choice experiments in transportation A two-phase revealed preference approach	
11:20	11:45	Simon Kuster	Option value of passenger transport - Examining the perceived value of transport options	
Session 4B				
Chair :		Milos Balac	Room :	Balint
Start	End	Speaker	Title	
10:30	10:55	Nicola Ortelli	Can we infer on behavioral impacts of public policy on accident severity outcomes?	
10:55	11:20	Michael van Eggermond	Using backcasting to support corporate mobility management	
11:20	11:45	Christopher Tchervenkov	The impact of employer fringe benefits on commuting to work by car in switzerland	

Keynote

Chair :			Room :	Auditorium
Start	End	Speaker	Title	
13:45	14:45	Constantinos Antoniou	Modeling Emerging Mobility Services	

Session 5A

Chair :			Room :	Auditorium
Start	End	Speaker	Title	
15:00	15:25	Basil Schmid	A two-stage travel survey approach to estimate the value of travel time in Switzerland	
15:25	15:50	Zheng Chang	High-speed rail and the spatial pattern of new firm births: Evidence from China	
15:50	16:15	Antonin Danalet	Trip generation in Switzerland, 2015-2030	
16:15	16:40	Marc-Edouard Schultheiss	Exploring causalities between modal habits, activity scheduling, and multi-day locational practices	

Session 5B

Chair :			Room :	Balint
Start	End	Speaker	Title	
15:00	15:25	Caio Vitor Beojone	Repositioning idle vehicles in ridesplitting operations using pricing	
15:25	15:50	Konstantin Krauss	How does transport supply and mobility behaviour impact preferences for MaaS bundles? A multi-city approach	
15:50	16:15	Minru Wang	Investigating the impact of ride-splitting revenue optimization on service and traffic operation	
16:15	16:40	Felix Zwick	Spatial ride-pooling demand and its transferability to new cities	

Session 6A				
Chair :			Room :	Auditorium
Start	End	Speaker	Title	
16:55	17:20	Patrick Manser & Tom Haering	Resolving time conflicts in activity-based scheduling: A case study of Lausanne	
17:20	17:45	Raphael Mesaric	Calibration of a regional agent-based travel demand model to simulate the spread of COVID-19	
17:45	18:10	Cloe Cortes Balcells	Activity-based modeling and simulation of epidemics	
18:10	18:35	Grace Kagho	Foundations of Agent Based Models in Transport Planning - Definition, Applications, Tools and Progress	

Session 6B				
Chair :			Room :	Balint
Start	End	Speaker	Title	
16:55	17:20	Matej Jusup	A review of real-time railway and metro rescheduling models using learning algorithms	
17:20	17:45	Alexander Genser	An urban case study with various data sources and a model for traffic estimation	
17:45	18:10	Saeed Saadatnejad	Learning decoupled representations for human pose forecasting	
18:10	18:35	Dimitrios Tsitsokas	Efficient max-pressure traffic signal control for large-scale congested urban networks	

Sessions : September 14th 2021

Session 7A				
Chair :			Room :	Auditorium
Start	End	Speaker	Title	
09:00	09:25	Gael Lederrey	DATGAN: Integrating expert knowledge into deeplearning for population synthesis	
09:25	09:50	Marija Kukic	The case of population synthesis at the level of the households	
09:50	10:15	Milos Balac	Reconstructing activity locations from zone-based trip data for discrete choice modeling	
Session 7B				
Chair :			Room :	Balint
Start	End	Speaker	Title	
09:00	09:25	Claudia Bongiovanni	Optimization algorithms for disaggregate behavioral demand models	
09:25	09:50	Stefano Bortolomiol	Benders decomposition for choice-based optimization problems with discrete upper-level variables	
09:50	10:15	Patrick Stokkink	A continuum approximation approach to the hub location problem in a crowd-shipping system	
Session 8A				
Chair :			Room :	Auditorium
Start	End	Speaker	Title	
10:30	10:55	Sandro Luh	First steps towards incorporating E-charging infrastructures for heterogeneous consumer segments in an energy systems optimization	
10:55	11:20	Negar Rezvany	Integrated models of transport and energy demand: A literature review and framework	
Session 8B				
Chair :			Room :	Balint
Start	End	Speaker	Title	
10:30	10:55	Selin Ataç	A multi-objective approach for station clustering in bike sharing systems	
10:55	11:20	Pengbo Zhu	Rebalancing Idle vehicles via distributed Coverage control in mobility-on-demand systems	

Acknowledgments

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Schweizerische Eidgenossenschaft
Confédération suisse
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