Conference Program

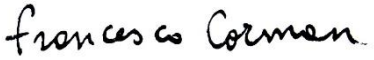
STRC | **22nd Swiss Transport Research Conference**
Monte Verità / Ascona, May 18 – 20, 2022

It is my pleasure to welcome you to the 22nd 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, 65 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:

- **Guido Gentile**, Sapienza University Roma, Italy
- **Armin Seyfried**, Forschungszentrum Jülich GmbH, Germany
- **Erwin Wieland**, Swiss Federal Office of Roads ASTRA, Switzerland

On behalf of the STRC organizing committee, welcome!

Francesco Corman, Institute for Transport Planning and Systems, ETH Zürich



General Information

Location

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

The venue is near Ascona and Locarno.

Arrival / Departure Shuttle bus

We recommend travelling by train as there are only a limited number of parking spots. On Wednesday 18th there will be a shuttle service from Locarno train station to Monte Verità. The first bus departs at 11:00h from Locarno station. We recommend attendants plan their arrival at Locarno station before 13.00h. On Friday 20th there will be also shuttle services from Monte Verità to Locarno starting at 12:30h.

Obs.: for those staying outside of Monte Verità, the small bus (14 seats) will make additional stops based on demand on Wednesday. The bus driver must be informed in advance.

Shuttle Service Schedule							
Wednesday 18th				Friday 20th			
From:	To:	Time:	Seats:	From:	To:	Time:	Seats:
Locarno Station	Monte Verità	11:00	14	Monte Verità	Locarno Station	12:30	50
Locarno Station	Monte Verità	11:30	50	Monte Verità	Locarno Station	13:10	50
Locarno Station	Monte Verità	12:00	14				
Locarno Station	Monte Verità	12:30	50				
Locarno Station	Monte Verità	13:00	14				

Check-in

Check-in is at the reception of the conference center. There you will find your name badge. For those staying outside of Monte Verità (La Perla and Luna Hotel), please check in ***before*** 20:00hrs.

Presentation

The presentation time this year is 12 minutes with 8 minutes for questions.

Dinner (Wednesday 18th) and Gala Dinner (Thursday 19th)

Dinner on Wednesday is at Monte Verità, starting at 19:00h. On Thursday 19th, our Gala Dinner is at Ristorante Grotto Broggini (Via S. Materno 18, 6616 Losone), starting at 19:30h. There will be a shuttle service departing from Monte Verità from 18:50h and back from Grotto Broggini from 21:40h, according to the schedule below.

Shuttle Service Schedule			
Thursday 19th			
From:	**To:**	**Time:**	**Seats:**
Monte Verità	Restaurant Grotto Broggini	18:50	50
Monte Verità	Restaurant Grotto Broggini	19:20	50
Restaurant Grotto Broggini	Monte Verità*	21:40	50
Restaurant Grotto Broggini	Monte Verità	22:00	50
** includes stop in Locarno (city center)*			

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: strc2022@ethz.ch.

For emergency cases please call :

Mariana Costa: +41 79 472 87 46

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Keynote Speakers

Guido Gentile

Guido Gentile is Professor of Transportation Engineering at DICEA - Sapienza University of Rome, where he teaches Transport Modeling and Planning. He is also director of Research & Innovation in SISTeMA srl. His main fields of scientific and professional interest are static and dynamic traffic assignment to road networks, simulation and management of public transport systems, travel demand and route choice models, city-logistics and network design, info mobility and intelligent transport systems, smart cities and mobility management, data analytics and machine learning in transportation. Among his algorithm which have been used in different fields: LUCE and TRE included in the platform VISUM; Optima and HyperPath, running as backbones of the many Traffic Control Rooms built by PTV and SISTeMA all over the world, and the suite Mobility Manager.

Armin Seyfried

Armin Seyfried studied theoretical physics at the Bergische Universität Wuppertal. For his diploma and doctoral thesis, he focused on many-particle systems, high-energy physics and parallel computing. After his doctorate, he was responsible for the modelling and simulation of building evacuation in an engineering office. From 2004 to 2018 he worked at the Jülich Supercomputing Centre, Forschungszentrum Jülich, developing models and simulations for application in civil security and traffic planning. He established a new research group for pedestrian and fire dynamics, which became the Institute for Advanced Simulation-7 in 2018. In addition, he has been a professor for computer simulations for fire protection and pedestrian traffic at the University of Wuppertal since 2010.

Erwin Wieland

Erwin Wieland is the head of the road networks division, deputy director and member of the management board of the Federal Roads Office FEDRO since 2006. He is responsible for future road networks in Switzerland, development of strategy, standardization, research regarding road aspects, traffic management for motorways, and all topics concerning intelligent transport technologies.

Schedule overview

	Wednesday 18th	Thursday 19th	Friday 20th
9:00		Breakfast *9:00*	
		9:00 Sessions 3A, 3B, 3C	Breakfast *9:40*
10:00			9:40 Sessions 7A, 7B
		10:20	*10:40*
		10:20 Break 10:40	10:40 Break 11:00
11:00		10:40 Sessions 4A, 4B, 4C	11:00 Keynote 3
		12:00	*12:00*
12:00	12:00 Registration and Brunch	12:00 Lunch	*12:00 Closing of the Conference*
			12:30
13:00			
	14:00	*14:00*	
14:00	14:00 Keynote 1	14:00 Keynote 2	
	15:00	*15:00*	
15:00	15:00 Break 15:20	15:00 Break 15:20	
	15:20 Sessions 1A, 1B, 1C	15:20 Sessions 5A, 5B, 5C	
16:00			
	16:40	*16:40*	
	16:40 Break 17:00	16:40 Break 17:00	
17:00	17:00 Sessions 2A, 2B, 2C	17:00 Sessions 6A, 6B, 6C	
		17:40	
	18:00		
18:00	*18:00 Committee meeting*	18:00 Photo	
		18:30	
	19:00		
19:00	19:00 Dinner		
		19:30 Gala Dinner	

Sessions : May 18th 2022

Keynote 1

Chair: Francesco Corman **Room:** **Auditorium**

Start	End	Speaker	Title
14:00	15:00	Guido Gentile	Challenges and opportunities in the simulation of transport networks.

Session 1A

Chair: Kay W. Axhausen **Room:** **Auditorium**

Start	End	Speaker	Title
15:20	15:40	Basil Schmid	The value of travel time (VTT) in Switzerland: A comparison between short- and long-term choice experiments
15:40	16:00	Florian Lichtin	Road pricing policy preferences in Switzerland
16:00	16:20	Lukáš Ballo	The E-bike city as a radical shift towards zero-emission transport: Sustainable? Equitable? Desirable?
16:20	16:40	Konstantin Krauss	Faster, greener, scooter? An assessment of shared e-scooter usage based on real-world driving data

Session 1B

Chair: Matej Jusup **Room:** **Balint**

Start	End	Speaker	Title
15:20	15:40	Taylor Mordan	Simple yet effective action recognition for autonomous driving
15:40	16:00	Thomas Spanninger	Train delay predictions based on Bayesian networks including inter-train conflict dependencies
16:00	16:20	Matej Jusup	Real-time railway (re-)scheduling without human-expert knowledge

Session 1C

Chair: Gustav Nilsson **Room:** **Eranos**

Start	End	Speaker	Title
15:20	15:40	Yu Du	Adaptive control with moving actuators at motorway bottlenecks with connected and automated vehicles
~~15:40~~	~~16:00~~	~~Yunping Huang~~	~~A bi-level approach for vehicle relocating in mobility on-demand systems~~
15:40	16:00	Jacob Trepat	Studying complexity of decomposition in railway traffic planning
16:00	16:20	Shima Sadat Mousavi	Controller Design for a Mixed Traffic System Travelling at Different Desired Speeds
~~16:20~~	~~16:40~~	~~Georg Anagnostopoulos~~	~~A four-dimensional microscopic model for heterogeneous urban traffic~~
16:20	16:40	Michael Nold	The role of dynamic component losses for energy-efficient train control

Session 2A				
Chair:		Milos Balac	**Room:**	**Auditorium**
Start	**End**	**Speaker**	Title	
17:00	17:20	Ihab Kaddoura	An agent-based simulation approach to investigate the shift of Switzerland's inland freight transport from road to rail	
17:20	17:40	Antonin Danalet	Attitudes towards transportation policy in Switzerland: a new choice experiment	

Session 2B				
Chair:		Matteo Felder	**Room:**	**Balint**
Start	**End**	**Speaker**	Title	
17:00	17:20	Raphael Mesaric	Filling gaps in GPS tracking data	
17:20	17:40	Mariana de Almeida Costa	Understanding public transport commuting trips from GPS tracking data	
17:40	18:00	Caroline Winkler	Imputing work from home activities in GPS tracking data	

Session 2C				
Chair:		Taylor Mordan	**Room:**	**Eranos**
Start	**End**	**Speaker**	Title	
17:00	17:20	Kimia Chavoshi	Application of flocking control method on lane-free and direction-free movement of connected and automated vehicles	
17:20	17:40	Dimitrios Tsitsokas	Two-layer traffic signal control framework for congested large-scale urban networks	
17:40	18:00	Shiteng Zheng	Is calibration of car-following model on spacing enough for autonomous vehicles?	

Sessions : May 19th 2022

Session 3A				
Chair:		Francesco Corman	**Room:**	**Auditorium**
Start	**End**	**Speaker**	Title	
9:00	9:20	Raphaël Ancel	Developing a Swiss model for light commercial vehicles	
9:20	9:40	Aurore Sallard	Travel demand generation using Bayesian networks: an application to Switzerland	
9:40	10:00	Marija Kukić	One-step simulator for synthetic households generation	
10:00	10:20	Negar Rezvany	Integrated in- and out-of-home scheduling framework: A utility optimization-based approach	

Session 3B				
Chair:		Michail Makridis	**Room:**	**Balint**
Start	**End**	**Speaker**	Title	
9:00	9:20	Tom Haering	A Benders decomposition for maximum simulated likelihood estimation of advanced discrete choice models	
~~9:20~~	~~9:40~~	~~Jacob Trepat~~	~~Studying complexity of decomposition in railway traffic planning~~	
9:20	9:40	Yunping Huang	A bi-level approach for vehicle relocating in mobility on-demand systems	
9:40	10:00	Stefano Gioia	Generating timetables for a multi-linetype public transport offer based on a service intention including travel chains of customers	
~~10:00~~	~~10:20~~	~~Michael Nold~~	~~The role of dynamic component losses for energy-efficient train control~~	
10:00	10:20	Georg Anagnostopoulos	A four-dimensional microscopic model for heterogeneous urban traffic	

Session 3C				
Chair:		Ping Huang	**Room:**	**Eranos**
Start	**End**	**Speaker**	Title	
9:00	9:20	Sohyeong Kim	Urban parking lot occupancy monitoring with drone flights	
9:20	9:40	George Adaimi	Composite relationship fields with transformers for scene graph generation	

Session 4A				
Chair:		Michel Bierlaire	**Room:**	**Auditorium**
Start	**End**	**Speaker**	Title	
10:40	11:00	Nicola Ortelli	Dataset reduction for discrete choice models	
11:00	11:20	Clarissa V. Livingston	J-TAP: A new open-source framework for long-distance travel demand modelling	
11:20	11:40	Nicolas Salvade	Representing location choice within activity-based models	
11:40	12:00	Cloe Cortes Balcells	A disaggregate epidemiological model predicting the spread of COVID-19 in Switzerland	

Session 4B				
Chair:		Alessio Daniele Marra	**Room:**	**Balint**
Start	**End**	**Speaker**	Title	
10:40	11:00	Gustav Nilsson	Dynamical macroscopic re-balancing of ride-hailing vehicles	
11:00	11:20	Janody Pougala	Parameter estimation for activity-based models	
11:20	11:40	Yue Hu	Economic impact on urban mobility of autonomous vehicles in Shanghai using Eqasim pipeline on mobile signaling data	
11:40	12:00	Lory Michelle Bresciani Miristice	Extension of the hyper run assignment model to real-time passenger forecasting for decision support in transit networks	

Session 4C				
Chair:		Mariana de Almeida Costa	**Room:**	**Eranos**
Start	**End**	**Speaker**	Title	
10:40	11:00	Marko Maljkovic	Learning how to price for rebalancing the electric ride hailing fleets	
11:00	11:20	Grace O. Kagho	Sensitivity analyses for ride-hailing and ridesharing modelling strategies	
11:20	11:40	Lynn Fayed	On the pricing of ride-splitting services under privileged network usage strategies	
11:40	12:00	Minru Wang	Ride-sourcing fleet rebalancing with proactive and targeted pooling incentives and surge pricing	

Keynote 2				
Chair:		Michel Bierlaire	**Room:**	**Auditorium**
Start	**End**	**Speaker**	Title	
14:00	15:00	Armin Seyfried	Congestion and pushing at pedestrian bottlenecks	

Session 5A				
Chair:		Matthieu De Lapparent	**Room:**	**Auditorium**
Start	**End**	**Speaker**	Title	
15:20	15:40	Lucas Meyer de Freitas	The cycling potential toolkit: A framework combining individual attributes, bike modes and accessibility	
15:40	16:00	Adrian Meister	Route choice modelling of cyclists on large-scale networks	
16:00	16:20	Matteo Felder	Choice set generation for large-scale cycling networks	
16:20	16:40	Daniel Heimgartner	Home office preferences during the pandemic and beyond	

Session 5B				
Chair:		Basil Schmid	**Room:**	**Balint**
Start	**End**	**Speaker**	Title	
15:20	15:40	Alexander Genser	Real-time traffic state estimation with the application of deep learning techniques	
15:40	16:00	Can Chen	Learning the heterogeneity in large-scale urban networks for perimeter control and route guidance via integral reinforcement learning	
16:00	16:20	Yazan Safadi	Traffic flow modeling and control of macroscopic fundamental diagrams for low-altitude air city transport	
16:20	16:40	Federico Gallo	Real-time occupancy predictions of public transport vehicles	

Session 5C				
Chair:		Shima Sadat Mousavi	**Room:**	**Eranos**
Start	**End**	**Speaker**	Title	
15:20	15:40	Felix Zwick	Review on ride-pooling research and practice	
15:40	16:00	Thomas Schatzmann	Modelling mobility tool ownership and usage in Switzerland	
16:00	16:20	Pengbo Zhu	Empty vehicle repositioning and fleet management in ridehailing systems	
16:20	16:40	Selin Atac	Evaluating different methods to solve rebalancing operations in carsharing systems	

Session 6A				
Chair:		Nour Dougui	**Room:**	**Auditorium**
Start	**End**	**Speaker**	Title	
17:00	17:20	Matthias Balmer	Geodata-cleaning of the Swiss Mobility and Transport Microcensus 2021	
17:20	17:40	Milos Balac	Discrete choice modeling with anonymized data	

Session 6B				
Chair:		Kenan Zhang	**Room:**	**Balint**
Start	**End**	**Speaker**	Title	
17:00	17:20	Benjamin Gramsch	Social networks, location choice and urban diversity field report: Survey methods and preliminary results	
17:20	17:40	Patrick Manser	Integrating teleworking predictions into SBBs' agent-based model	

Session 6C				
Chair:		Mariana de Almeida Costa	**Room:**	**Eranos**
Start	**End**	**Speaker**	Title	
17:00	17:20	Alessio Daniele Marra	Observing the effects of different disturbances on route choice in public transport	
17:20	17:40	Christopher Tchervenkov	Searching for parking: The case of Zurich	

Sessions : May 20th 2022

Session 7A				
Chair:		Nikolas Geroliminis	**Room:**	**Auditorium**
Start	**End**	**Speaker**	Title	
9:40	10:00	Parth Kothari	Social GANv2: improved socially acceptable trajectories with safety-compliant generative adversarial networks	
10:00	10:20	Tzu-Hao Yan	The development of a status prediction model for railway tracks from on-board monitoring data	
10:20	10:40	Ping Huang	A graph attention network model discerning the importance of train events for train delay propagation	

Session 7B				
Chair:		Virginie Lurkin	**Room:**	**Balint**
Start	**End**	**Speaker**	Title	
9:40	10:00	Kenan Zhang	RIde-hail VEhilce Routing (RIVER) as a congestion game	
10:00	10:20	Hui Bi	Uncovering built environment influences on the integration of bike-sharing and the metro: Insights from topic modeling	
10:20	10:40	Saeed Saadatnejad	Pedestrian 3D Bounding Box Prediction	

Keynote 3				
Chair:		Kay W. Axhausen	**Room:**	**Auditorium**
Start	**End**	**Speaker**	Title	
11:00	12:00	Erwin Wieland	Effects of automated driving – a framework for action	

Acknowledgments

Many thanks to the following sponsors

Schweizerische Eidgenossenschaft
Confédération suisse
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Repubblica e Cantone Ticino

STRC 2022 organizing committee

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