Freie Universität Berlin

informs TSL
Transportation Science and Logistics Society

2015 TSL Workshop

Recent Advances in Urban Transportation through Optimization and Analytics

Hosted at Freie Universität Berlin, Germany

July 6th – July 8th, 2015

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The 4th INFORMS TSL Workshop is sponsored by initplan GmbH. (www.initplan.de)

init

Foreword

Welcome to the 2015 Transportation Science and Logistics Society Workshop in Berlin!

There has been a significant body of research on making urban transportation more efficient and sustainable. Planning of urban transportation services is challenging due to the crowded traffic infrastructure, increasing customer expectations, and rules set by municipalities. In recent years, a vast amount of urban transportation data has become available, e.g., travel times and customer demand data. The workshop brings together researchers from the often-distinct fields of urban transportation and analytics to discuss recent optimization approaches and how to benefit from the increasing amount of detailed data.

This year's workshop will consist of 38 talks dealing with recent applications of urban transportation such as city logistics, urban traffic, shared mobility, e-mobility, pollution routing and public transport, environmental-friendly deliveries, and city logistics concepts in general. The program will feature a panel on “Challenges of Big Data in Urban Transportation Optimization”, moderated by Bruce Golden and including a set of industry experts from different areas of urban transportation such as city logistics, public transport and shared mobility services. We are also happy that Michael Ball and Arne Strauss will contribute to the program with keynotes discussing challenges arising from detailed data in urban transportation optimization.

Last but not least, we look forward to networking and enjoying Berlin during the social program: We have planned a welcome reception at a rooftop bar overlooking downtown Berlin (Panoramapunkt) to start the event on Sunday evening. On Tuesday, we will limit talks to the first half of the day to explore the city in the afternoon. A city tour by boat followed by a guided walking tour will introduce you to historic sites of Berlin. We will end the day with a conference dinner in the historic heart of the German capital.

We hope that you will enjoy the workshop and look forward to meeting you. We thank you for participating, and give thanks to our sponsor INIT for supporting the workshop so generously.

Ann Melissa Campbell, Catherine Cleophas & Jan Fabian Ehmke

Freie Universität Berlin

Recent Advances in Urban Transportation through Optimization and Analytics – Overview

Sunday, July 5th

17:30 – 19:30	Welcome Reception	"Panoramapunkt" Potsdamer Platz [1]

Monday, July 6th

09:00 – 17:00	**Workshop**	**Harnack House [2]**
09:00 – 10:00	Sessions 1a / 1b	Hahn Hall, Laue Hall
10:00 – 10:30	Coffee Break	Planck Lobby
10:30 – 11:30	Welcome **Keynote** Nudge the Customer – and Deliver Cheaper (Arne Strauss)	Hahn Hall
11:30 – 12:30	Sessions 2a / 2b	Hahn Hall, Laue Hall
12:30 – 13:30	Lunch Break	Planck Lobby
13:30 – 15:30	Sessions 3a / 3b	Hahn Hall, Laue Hall
15:30 – 16:00	Coffee Break	Planck Lobby
16:00 – 17:00	**Industry Panel** Challenges of Big Data in Urban Transportation Optimization	Hahn Hall

Tuesday, July 7th

09:00 – 14:00	**Workshop**	**Harnack House [2]**
09:00 – 10:30	Sessions 4a / 4b	Hahn Hall, Laue Hall
10:30 – 11:00	Coffee Break	Planck Lobby
11:00 – 12:00	Sessions 5a / 5b	Hahn Hall, Laue Hall
12:10 – 13:00	**Keynote** Model Decomposition and Integration: Case Studies from Urban Transit and Airline Planning Problems (Michael Ball)	Hahn Hall
13:00 – 14:00	Lunch Break	Restaurant
14:30 – 18:30	**Boat and City Tour**	**Harnack House [2]**
19:30 – 22:00	**Conference Dinner**	**Restaurant "Altes Zollhaus" [4]**

Wednesday, July 8th

09:00 – 13:00	**Workshop**	**Harnack House [2]**
09:00 – 10:30	Sessions 6a / 6b	Hahn Hall, Laue Hall
10:30 – 11:00	Coffee Break	Laue Hall
11:00 – 12:30	Sessions 7a / 7b	Hahn Hall, Laue Hall
12:30 – 13:00	Farewell	Laue Hall

Scientific Program – Monday, July 6th

Session 1a Network Design

09:00 – 10:00, Hahn Hall

- Robust Transit Network Design Based on Big Unrepresentative Data — Chungmok Lee, Gavin McArdle & Rahul Nair
- Stochastic Service Network Design of Bike Sharing Systems — **Patrick Vogel**, Achim Koberstein & Dirk Mattfeld

Session 1b Urban Infrastructure

09:00 – 10:00, Laue Hall

- Optimizing Charging Station Locations for Urban Taxi Providers — Mario Ruthmair, Johannes Asamer, Martin Reinthaler & Jakob Puchinger
- A Bi-level Programming Model for the Workzone Scheduling Problem — David Rey, **Hillel Bar-Gera**, Vinayak Dixit & Travis Waller

Session 2a E-Mobility I

11:30 – 12:30, Hahn Hall

- Emerging Area in Urban Transportation System Research – Optimization and Analytics on Wireless Charging Electric Bus Systems — Young Jae Jang
- Optimal Deployment of Charging Lanes in Transportation Networks — **Yafeng Yin**, Zhibin Chen & Fang He

Session 2b Pollution Routing

11:30 – 12:30, Laue Hall

- Time-Dependent Pollution-Routing Problems with Path Flexibility in Mega-City Logistics — Yixiao Huang, Lei Zhao, Tom Van Woensel & Jean-Philippe Gross
- The Fleet Size and Mix Pollution-Routing Problem — Cagri Koc, Tolga Bektas, **Ola Jabali** & Gilbert Laporte

Session 3a Shared Mobility

13:30 – 15:30, Hahn Hall

- The Taxi Recourse Problem — Neža Vodopivec & Elise Miller-Hooks
- Optimizing Ridesharing Services – Complexity, Formulation and Solution Methods — Wei Lu & Luca Quadrifoglio
- Relocation and Balancing Strategies for Free-Floating Car Sharing Systems using Real-Time Data and Social Networking — Frederik Schulte & Stefan Voß
- Stochastic and Dynamic Inventory Routing in Bike Sharing Systems — **Dirk Mattfeld**, Viola Ricker & Marlin Ulmer

Session 3b Urban Delivery

13:30 – 15:30, Laue Hall

- Urban Distribution with Mobile Depots — Michael Schneider & Michael Drexl
- Some Recent Results on the Split Delivery Vehicle Routing Problem — Bruce Golden & Xingyin Wang
- Crowdsourced Same Day Delivery — Alp Arslan, Niels Agatz, Leo Kroon & Rob Zuidwijk
- Same-Day Delivery — **Barrett Thomas**, Stacy Voccia & Ann Campbell

Session chairs are shown in **bold**.

Scientific Program – Tuesday, July 7th

Session 4a E-Mobility II

09:00 – 10:30, Hahn Hall

- Applying Floating Car Data to Aid the Transition to Electric Taxi Services — Michal Maciejewski & Joschka Bischoff
- Enabling Urban Parcel Pickup and Delivery Services using All-Electric Trucks — Nan Ding, Rajan Batta, Changhyun Kwon & June Dong
- Adaptive Routing and Recharging Policies for Electric Vehicles — **Irina Dolinskaya**, Timothy M. Sweda & Diego Klabjan

Session 4b Public Transport I

09:00 – 10:30, Laue Hall

- Time Choice Data for Public Transport Optimization — Paul Bouman, Clint Pennings, Jan van Dalen & Leo Kroon
- A Column Generation Approach for Crew Rostering Problems in Public Bus Transit — Lin Xie, Natalia Kliewer & Leena Suhl
- On-Demand Public Transportation — **M. Grazia Speranza**, Claudi Archetti & Dennis Weyland

Session 5a Vehicle Routing

11:00 – 12:00, Hahn Hall

- Value-Function-Approximation-Based Rollout Algorithms for a Vehicle Routing Problem with Stochastic Customer Requests — Marlin W. Ulmer, Justin C. Goodson, Dirk C. Mattfeld & Marco Henning
- A Scenario-Based Planning for the Pickup and Delivery Problem with Scheduled Lines and Stochastic Demands — **Tom Van Woensel**

Session 5b Public Transport II

11:00 – 12:00, Laue Hall

- Robust Efficiency in Public Transport: Minimizing Delay Propagation in Cost-Efficient Resource Schedules — Bastian Amberg, Boris Amberg & Natalia Kliewer
- Tariff Zone Planning for Public Transport Companies — **Sven Müller** & Knut Haase

Session chairs are shown in **bold**.

Scientific Program – Wednesday, July 8th

Session 6a City Logistics I

09:00 – 10:30, Hahn Hall

- Static MILP Solutions and Adaptive Solutions for Hub Decisions in Very Large Scale Logistics Networks — Alexander Richter, Yann Disser, Wiebke Höhn & Sebastian Stiller
- Optimization Approaches for the Truck and Drone Delivery Problem — Niels Agatz, Paul Bouman & Marie Schmidt
- Optimizing Time-Dependent Arrival Rates for Truck Handling Operations — **Axel Franz** & Raik Stolletz

Session 6b Uncertain Travel Times

09:00 – 10:30, Laue Hall

- Disruption Management in Local Public Transport: Service Regularity Issues — Emanuele Tresoldi, Frederico Malucelli, Stefano Gualandi & Samuela Carosi
- Assessing Customer Service Reliability in Route Planning with Self-Imposed Time Windows and Uncertain Travel Times — Panagiotis Repoussis, Anastasios Varias & Christos Tarantilis
- Robust Scheduling of Urban Home Health Care Services Using Time-Dependent Public Transport — **Klaus-Dieter Rest** & Patrick Hirsch

Session 7a City Logistics II

11:00 – 12:30, Hahn Hall

- Handling Travel Time Uncertainly in City Logistics Systems — Utku Kunter, Cem Iyigun & Haldun Sural
- Freight Consolidation in Urban Networks With Transshipments — Wouter van Heeswijk, Martijn Mes & Marco Schutten
- Loading Bay Time Slot Allocation by Core-Selecting Package Auctions — **Paul Karaenke**, Martin Bichler & Stefan Minner

Session 7b Urban Traffic

11:00 – 12:30, Laue Hall

- City Monitoring with Dynamic UAV-Sensor-Based Sweep Coverage as a Stochastic Arc-Inventory Routing Policy — Joseph Chow & Xintao Liu
- A Metamodel Simulation-Based Optimization Approach for the Efficient Calibration Of Stochastic Traffic Simulators — Carolina Osorio, Gunnar Flötteröd & Chao Zhang
- Information and Traffic Incident Management — **Kalyan Talluri**, Dmitrii Tikhonenko & Gregory Fridman

Session chairs are shown in **bold**.

Keynotes Hahn Hall

Keynote 1 Nudge the Customer – and Deliver Cheaper (Arne Strauss)

Many companies deliver goods or services to customers who need to be present to receive the delivery, and therefore can choose when the delivery should take place. Examples of such companies include online grocery retailing, parcel delivery or house visits of telecom engineers to install or repair devices. The delivery operation is often a major cost driver for these companies.

Since the customers' choices of their desired delivery times will impact the overall delivery cost, it makes intuitive sense to nudge the customers towards choosing time slots that are expected to be cheap to serve by using appropriate incentives. The latter can take many forms such as discounts, delivery charges, loyalty points or even non-monetary ones like environmental impact.

However, the identification of a time slot that will be cheaper than others for a given customer request may in itself pose a non-trivial problem since the cost also depends on unknown future orders. Also, prediction of customers' choice behavior and subsequent optimization of incentives to influence their choices may likewise be challenging.

In this presentation, I will outline research opportunities in delivery planning with customer choice behavior along with various examples of business applications against the background of recent developments in industry.

Arne K. Strauss is Associate Professor of Operational Research in the ORMS Group at Warwick Business School (WBS) since 2014. Previously, he held positions as Assistant Professor in the same group (2011-2013) at WBS and as Senior Research Associate (2010-2011) under the LANCS Initiative at Lancaster University´s Department of Management Science where he completed the Ph.D. programme in 2009 under supervision of Prof Joern Meissner. From October 2009 until September 2010, he held an EPSRC PhD Plus fellowship (now called EPSRC Doctoral Prize) at Lancaster.

During his doctoral studies, his main research area was revenue optimisation involving models of customer choice; an interest that he continues to pursue with various on-going projects, including industrial collaborations with Lufthansa Systems. He won several prizes for his doctoral dissertation including the doctoral prize of the Operational Research Society for the best PhD dissertation 2009. A paper resulting from his master thesis in the area of option pricing received the "Most Successful 2008 IMACS Paper Award" in the journal Applied Numerical Mathematics, and he was awarded the OR Society`s Goodeve medal for the best paper published in the Journal of the Operational Research Society in 2012.

Keynote 2 Model Decomposition and Integration: Case Studies from Urban Transit and Airline Planning Problems (Michael Ball)

The scientific study of transportation planning problems very often starts with the definition of a mathematical model that represents a real problem. That mathematical model could lead to extensive research on solution methods. These methods are typically compared on the basis of solution quality and computation speed. Yet even though the mathematical model might very accurately represent reality and the solution methods might produce an optimal solution very quickly, the model could have practical limitations because the problem defined exists in a broader application context.

In the case of urban transit planning, some key problems are vehicle scheduling, crew duty generation and crew rostering. While research exists on each of these three problems, crew duties are constrained by vehicle schedules, and crew rosters are in turn constrained by crew duties. It is also the case that operational disruptions, such as extreme traffic congestion, vehicle breakdowns and crew illnesses, can cause actual operational costs to exceed those calculated based on planned schedules. When one traces research on planning problems for important application systems such as urban transit and scheduled air transportation services, major progress not only involves better solution methods for "core" problems but also better models that consider the broader application context. These better models might integrate multiple problem steps, e.g. combined vehicle and crew scheduling, might employ objective functions or linking constraints that allow features of "downstream" problems to be taken into account when solving an "upstream" problem or might use other techniques to improve the daily performance of the overall application system. In this talk, we review and compare the progress in both transit and airline planning problems from these perspectives.

Michael Ball is the Senior Associate Dean and holds the Dean`s Chair in Management Science at the Robert H. Smith School of Business at the University of Maryland. He also has a joint appointment within the Institute for Systems Research (ISR) in the Clark School of Engineering and is a member of the Decision, Operations and Information Technologies Department within the Smith School.

Dr. Ball has over 100 scholarly publications, covering a range of subjects including air transportation, revenue management and pricing, supply chain management and system reliability. He is co-Director of NEXTOR-II, an 8-university consortium funded by the FAA to carry out research in aviation operations research. Several of his research and consulting projects have led to implementations in industry and government. In the past five years he has been a member of various expert panels that have given advice to the United Nations, the FAA, the National Academy of Engineering and multiple airport authorities on aviation policies.

Throughout his career Dr. Ball has been an active member of INFORMS, the Institute for Operations Research and the Management Sciences. He recently stepped down as area editor for the journals Operations Research and is now associate editor for the journal, Operations Research and Transportation Science. In 2008, he was president of the INFORMS Transportation Science and Logistics Society. In 2004, he was named an INFORMS Fellow.

Dr. Ball received BES and MSE degrees from Johns Hopkins University in 1972 and a PhD in Operations Research from Cornell University in 1977.

Panel Hahn Hall

Challenges of Big Data in Urban Transportation Optimization

The workshop will feature a panel on “Challenges of Big Data in Urban Transportation Optimization”. The panel will be moderated by Bruce Golden and include a set of industry experts from different areas of urban transportation such as city logistics, public transport and shared mobility services.

- **Bruce Golden (Moderator, University of Maryland)**

  Bruce Golden is the France-Merrick Chair in Management Science in the Robert H. Smith School of Business at University of Maryland. He received his undergraduate degree in mathematics from the University of Pennsylvania and his masters and doctoral degrees from the Massachusetts Institute of Technology. His research interests include, but are not limited to, combinatorial optimization, network models, logistics, distribution, vehicle routing, data mining and applied operations research.

  Dr Golden has received numerous awards, including the Thomas L. Saaty Prize (1994 and 2005), the University of Maryland Distinguished Faculty Research Fellowship (1996) and Distinguished Scholar-Teacher Award (2000), the INFORMS Award for the Teaching of OR/MS Practice (2003), the INFORMS Computing Society Prize (2005), and the Harvey J. Greenberg Award for lifetime contributions to the INFORMS Computing Society. He was named an INFORMS Fellow in 2004 and was selected as one of 25 outstanding undergraduate mentors on campus in 2009.

- **Eileen Mandir (Moovel)**

  Eileen Mandir is the head of product at moovel GmbH, a Daimler subsidiary, since 2015. From 2013 to 2014, she worked with Daimler Mobility Services as the head of moovel software development for inter-modal routing. She joined Daimler as mobility innovations specialist in 2012, after receiving a PhD in transport planning and urban mobility from Stuttgart University in 2006. Her interest areas include designing connected multi-modal transport systems, human behaviour and decision making in transportation, the interdependency between urban life style and mobility patterns and disruptive change in mobility services enhanced by technology.

  Moovel GmbH, formerly Daimler Mobility Services GmbH, is a wholly owned subsidiary of Daimler AG and is assigned to Daimler Financial Services AG for organisational purposes. With services like car2go, car2go black, Park2gether, mytaxi and RideScout, moovel is already offering innovative solutions for getting from A to B the smart way.

• **Leendert Kok (ORTEC)**

Leendert Kok is a senior OR engineer at ORTEC and responsible for algorithmic research and development. Leendert received his PhD from the University of Twente in 2010, where he worked on "Congestion avoidance and break scheduling within vehicle routing". During his academic work, he published several articles in peer-reviewed international journals. In a current project in cooperation with Free University Amsterdam, Leendert focuses on "Network planning and contract design for chain management in cash networks". He is a member of the advisory board at the Free University of Amsterdam.

ORTEC is one of the largest providers of advanced planning and optimization solutions and services. ORTEC´s products and services result in optimized fleet routing and dispatch, vehicle and pallet loading, workforce scheduling, delivery forecasting, logistics network planning and warehouse control. The company`s mission mission is to support companies and public institutions in their strategic and operational decision making through the delivery of sophisticated planning and optimization software solutions, professional consulting and mathematical modeling services.

• **Michael Beck (INIT)**

Michael Beck has been working with initplan GmbH as Director of Development since 2008. He is responsible for the development of the planning system MOBILE-PLAN. The main focus is the usability of MOBILE-PLAN as well as the further development and provision of efficient optimization algorithms. Michael graduated in 1993 at University of Karlsruhe. Before changing to INIT AG, he worked at PTV AG, Karlsruhe for more than 20 years as head of department for the INTERPLAN planning system.

INIT is the worldwide leading supplier of integrated ITS, planning, dispatching and ticketing systems for buses and trains. For more than 30 years, INIT has been assisting transport companies in making public transport more attractive, faster and more efficient. More than 400 customers rely on INIT`s integrated solutions to support planning & dispatching, ticketing & fare management, operations control & real-time passenger information, as well as analyzing & optimizing.

Public Transport

Included in the registration fee is a personalized **public transport ticket** for the city of Berlin (zones A&B). It is valid from Sun, 15:00 to Wed, 15:00 in all subways, buses, trams and regional trains within the city of Berlin. **Please have the ticket with you at all times** and show it to the bus driver when entering a bus. The ticket includes 15% discount on 40 tourist highlights.

How to get to…

[1] Welcome Reception at "Panoramapunkt" | Sunday, 17:30 – 19:30

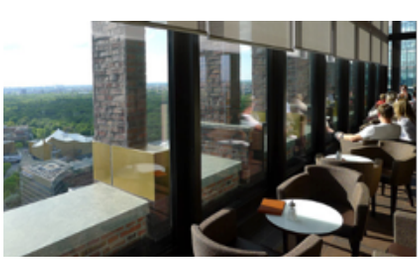
Potsdamer Platz 1, 10785 Berlin — U 2, BUS 200 (and many more), stop **Potsdamer Platz**

See the best views of Berlin, the fastest elevator in Europe, a multimedia open-air exhibition, and have a complementary drink at the Panoramacafé! Don't miss our welcome reception on the evening before the workshop.

We offer to walk you to the welcome reception. We will meet in the lobbies of Lindner hotel and Harnack House at 16:45.

From the Harnack house to the reception:
Take U 3, U 12 and U 2 to Potsdamer Platz via **Wittenbergplatz** and **Gleisdreieck**.

From the Lindner hotel to the reception:
Walk to stop **Bahnhof Zoo** (3 minutes) and take BUS 200 (leaves every 10 minutes).
Get off at **Varian-Fry-Straße** and enter the Panoramapunkt.



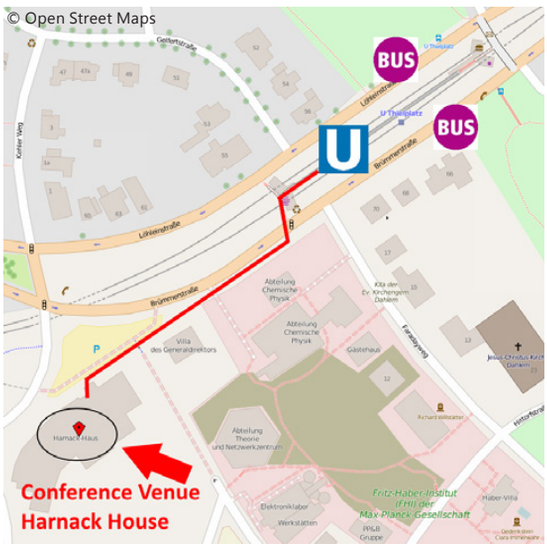
The welcome reception is not included in student tickets.

[2] Harnack House | Conference Venue

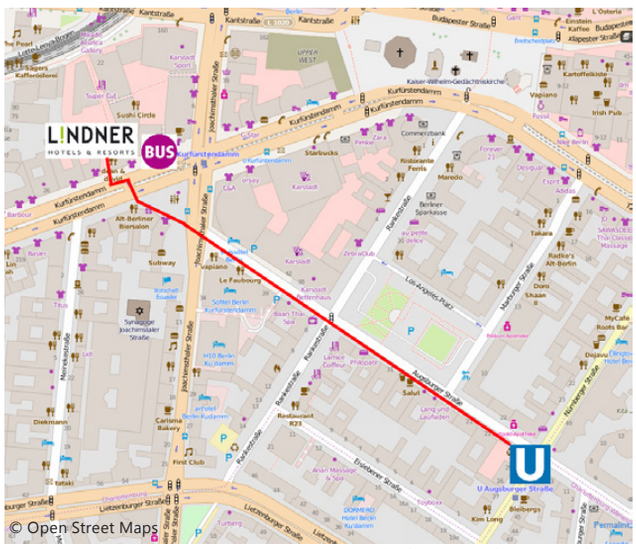
Ihnestraße 16–20, 14195 Berlin

U 3, BUS 110, stop **Thielplatz**

This is our workshop's venue. In the past, Nobel Prize winners and their students met here in social exchange and for academic discussion, holding lectures and colloquia. Today, the Harnack House offers all advantages of a modern workshop venue.



Harnack House surroundings



Lindner Hotel surroundings

From the Lindner hotel to the workshop:

Take BUS 110 leaving at stop **Kurfürstendamm** (in front of the hotel, departure 8:28, direction **Oskar-Helene-Heim**, leaves every 20 min.)

– alternatively –

Walk to subway station **Augsburger Straße**, take subway U 3 (direction **Krumme Lanke**, leaves every 5 minutes).

On Monday, we offer to walk you to the conference venue. We will meet in the lobby of Lindner hotel at 8:15.

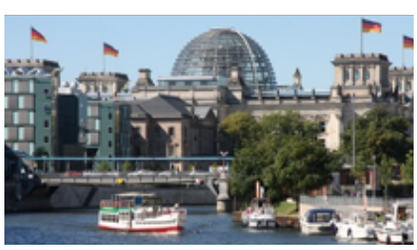
[3] Boat and City Tour | Tuesday, 14:30 – 18:30

Magnus-Hirschfeld-Ufer, 10557 Berlin

BUS 100, stop **Haus der Kulturen der Welt**

Join us for a boat tour through the city and a one-hour walking tour to see Berlin's most famous sights (Brandenburg Gate, Reichstag, Jewish Memorial).

We will walk you to the starting point of the tour. We will meet in front of the Harnack House at 14:30.



Boat & city tours are not included in student tickets.

[4] Conference Dinner Restaurant “Altes Zollhaus” | Tuesday, 19:30

Carl-Herz-Ufer 30, 10961 Berlin — U 12, stop **Prinzenstraße**

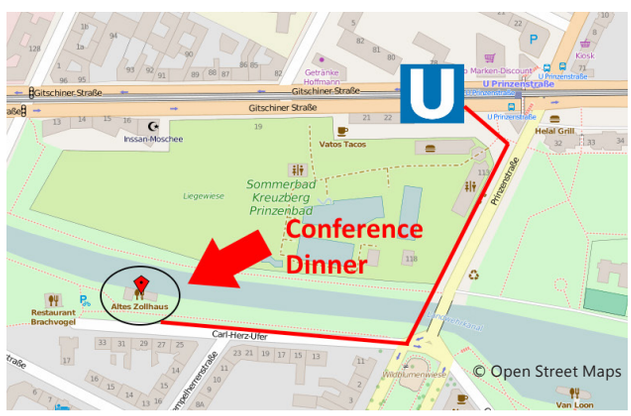
On behalf of our sponsor, we invite you to a reception and a traditional German 4-course dinner in the heart of Berlin, in the restaurant “Altes Zollhaus”.

To the conference dinner:

Take U 12 and leave at stop **Prinzenstraße**. Walk about 6 minutes to the restaurant “Altes Zollhaus“.

Travel back from the conference dinner to the Lindner hotel and Harnack House:

Walk back to subway U 12 (stop **Prinzenstraße**, direction **Olympia-Stadion**).
Leave at **Zoologischer Garten** for Lindner hotel.
For Harnack House, transfer at **Wittenbergplatz** to subway U 3.



Registration and Wireless Internet

Registration is possible at the welcome reception on Sunday evening and in the Harnack house (conference venue) during the workshop.
In case of any questions, call the **registration hotline** at +49 30 5770 4725.
Wifi is available via Eduroam or get an access code at the reception.

For your notes…

Subway Map


Siemens-damm
Halemweg
Rohrdamm
Beusselstr.
TXL
Westhafen
Wedding
Gesundbrunnen
RE6 RB19 RB27
Schönhauser Allee
Prenzlau
Jakob-Kaiser-Platz
X9 109
Jungfernheide
RE4·RE6·RB10
S42 S41
Birkenstr.
Reinicken-dorfer Str.
RE3·RE5·RE6·RB19
Humboldthain
Voltastr.
Bernauer Str.
Eberswalder Str.
Schwartz-kopffstr.
Nordbahnhof
Senefelderplatz
RE3 RE4 RE5 RB10 RB19
Naturkunde-museum
Oranien-burger Str.
Rosenthaler Platz
Rosa-Luxemburg-Platz
RE4·RE6·RB10
RE2·RB14
Mierendorffplatz
Turmstr.
Weinmeisterstr.
S46
Westend
U55 RB10
Hauptbahnhof
Oranien-burger Tor
Hackescher Markt
U5 U5
Alexanderplatz
Richard-Wagner-Platz
RE1·RE2·RE7·RB14
Neu-Westend
Bellevue
Bundestag
Fried-richstr.
RB21 RB22
Sophie-Charlotte-Platz
Bismarckstr.
Tiergarten
Kaiserdamm
Theodor-Heuss-Platz
Messe Nord/ ICC
Deutsche Oper
Ernst-Reuter-Platz
Hansaplatz
1 Welcome Reception
Potsdamer Platz
Branden-burger Tor U55
Französische Str.
Mohrenstr.
Klosterstr.
Märkisches Museum
Jannowitz-brücke
Messe Süd
Messe ZOB ICC
Wilmers-dorfer Str.
Savignyplatz
Mendelssohn-Bartholdy-Park
Stadtmitte
Hausvogtei-platz
Spittel-markt
Heinrich-Heine-Str.
Ostbahnhof
Zoologischer Garten
U1 U1 Witten-bergplatz
Kurfürsten-str.
Anhalter Bhf
Kochstr.
4
Moritzplatz
Prinzenstr.
Westkreuz
S75
Charlotten-burg
RE1·RE2·RE7·RB14·RB21 RB22
U1 U1 Uhlandstr.
RE3·RE4·RE5·RB19
Halensee
Adenauer-platz
Kurfürsten-damm
Lindner Hotel
Gleis-dreieck U2 U2
Bülow-str.
Möckern-brücke
Hallesches Tor
nur U12
Kottbusser Tor
Conference Dinner
Görlitzer Bhf
Schönleinstr.
Nollen-dorfplatz U3 U4 U3
Augsburger Str.
Spichernstr.
Viktoria-Luise-Platz
Konstanzer Str.
Hohenzollern-platz
Mehringdamm
Hermannplatz
Gneisenaustr.
Südstern
Güntzelstr.
Yorckstr. Großgörschenstr.
Yorckstr.
Platz der Luftbrücke
Boddinstr.
Fehrbelliner Platz
Berliner Str.
Kleistpark
Hohenzollerndamm
Blissestr.
Bayerischer Platz
Eisenacher Str.
Paradestr.
Leinestr.
S41 S42
Rathaus Schöneberg
Julius-Leber-Brücke
RE3·RE4·RE5 RB19
Tempelhof
Neukölln
Heidelberger Platz
Rüdesheimer Platz
S45 Bundesplatz
Innsbrucker U4 Platz
Schöneberg
Südkreuz S45 S46
Alt-Tempelhof
Hermannstr. S47 U8 U8
Breitenbachplatz
Friedrich-Wilhelm-Platz
Podbielskiallee
Friedenau
Kaiserin-Augusta-Str.
Dahlem-Dorf
Walther-Schreiber-Platz
Ullsteinstr.
2 Thielplatz
Conference Venue
Feuerbachstr.
Priesterweg
Westphalweg