

Third Symposium on Activity-Based Models

11 to 13 December 2024 • TUM Science & Study Center Raitenhaslach, Germany



Welcome!

- Carefully selected group of invitees with expertise in activity-based modeling and/or travel behavior analysis
- Definition of symposium: a meeting at which several specialists **deliver short addresses** on a topic or on related topics (Merriam-Webster)
- Presentations
 - Less about reporting of completed projects but presentation of ideas
 - Presentation time 15 min (strictly enforced)
 - More time for interaction than lecture-style presentation

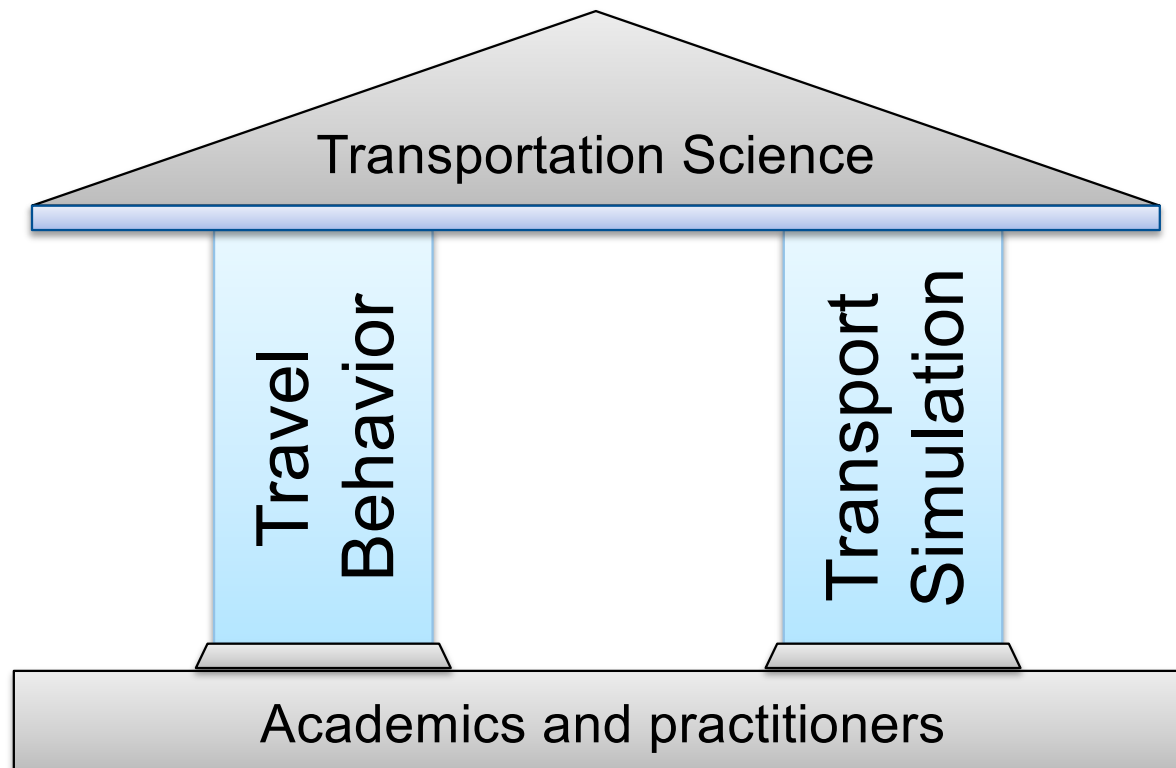


Goal

Advancing theory and applications of activity-based models, with a special emphasis on evolutionary travel behavior.



Rolf's understanding of advancing transportation science



Where we stand right now

Current Modeling Practices:

- Land-use models typically adjust populations incrementally (e.g., aging, marriage).
- Transport models typically regenerate travel behavior from scratch with each simulation run,

Importance of Habits:

- Travel decisions are largely driven by habits and remain stable over time.
- Significant changes (such as new transit lines or shopping malls) that change travel behavior happen only rarely.

Goals

Proposed Approach:

- Transition to incremental adjustments in transport modeling to better reflect habitual behavior.
- Activity-based frameworks are ideal because they focus on individual agents rather than aggregate groups.

Symposium Objectives:

- Address both theoretical foundations of habitual travel choices and more technical modeling issues.
- Explore the impacts of land-use changes, transport system modifications, and life events on travel behavior.

History of Raitenhaslach

- The village of "Raitinhaselach" first mentioned in 788.
- In 1146, Cistercian monks founded the monastery Raitenhaslach
- Monastery burnt down twice: in 1267 and 1485
- Most buildings we see today were built between 1690 and 1764
- A guest room was set up for Pope Pius VI in 1782, but the Pope never showed up.
- Private ownership from 1804 to 2003
- TUM moved in in 2016



*Ink drawing
from 1792.*

Sponsoring



This workshop would not have been possible...

... without a lot of helping hands!

Ana Moreno: Program, name tags

Anirudh Ray: Attendance list

Joanna Ji: Program

Kerstin Kiermaier: Reservations

Matthias Langer: Program and reservations

Wei Huang: Slides and Wundertüte

Yangqian Cai: Photographer

Zihua Jin: Name tags, time enforcement



Scientific committee



- Atiyya Shaw
- Chandra Bhat
- Greg Erhardt
- Greg Macfarlance
- Pat Mokhtarian
- Rolf Moeckel

2016

Symposium for the
Integration of Land-Use
and Transport Models



2022: Seeson Symposium on Activity-Based Modeling



2023: 2nd Symposium on Activity-based Models



Organization of sessions

2-Hour Session Timing		
Speaker 1	20	Presentation + Questions
Speaker 2	20	Presentation + Questions
Speaker 3	20	Presentation + Questions
Discussant	15	Presentation & Framing
Discussion	45	

1.5-Hour Session Timing		
Speaker 1	20	Presentation + Questions
Speaker 2	20	Presentation + Questions
Discussant	15	Presentation & Framing
Discussion	35	

Wednesday

8:45 Meet in Hotel Lobby

9:00 Bus departure from Citadines Apart'hotel Arnulfpark to Raitenhaslach (90 min ride)

10:30 Arrival in Raitenhaslach

11:00 Welcome

Moeckel, Rolf

Welcome and Introductions

11:30 Keynote: From equilibrium to evolution

Jones, Peter

What would an evolutionary model of travel behaviour (instead of an equilibrium model) look like?

12:00 Lunch

13:00 The world has changed!

Polzin, Steven E.

Trends in U.S. Travel Behavior: Insights and Implications

Bhat, Chandra

An Evaluation of the Long-Term Effects of the COVID-19 Pandemic on Public transportation Use

Dong, Ziyue & Miller, Eric J.

Non-work/school activity participation in a flexible work future: A pre/post-pandemic comparative study

Discussant: **Jara-Diaz, Sergio**

Question: Should these recent changes lead us to reconsider core assumptions in how we model and plan a transportation system?

15:00 Coffee break

15:30 Modeling the long-term evolution and stability of travel?

Kagerbauer, Martin

Integration of Longitudinal Data in Agent-Based Travel Demand Models

Moeckel, Rolf

Stability of travel behavior: Longitudinal data analysis

Circella, Giovanni

Evolution of remote/hybrid work adoption and travel choices: Insights from the analysis of the California Mobility Panel (CMP) data

Discussant:

Axhausen, Kay

Question: If we model the evolution of travel behavior, what is the starting point? Would this allow us to estimate our models to replicate the change in behavior, rather than calibrate them to match base-year conditions?

19:00 Dinner in Burghausen at [Restaurant Bichl](#)

Hotel Stay at Hotel Burgblick, Austria

Thursday



9:00	Modeling day-to-day variability and time use	Staves, Corin Kukic, Marija & Bierlaire, Michel Pudane, Baiba Discussant: Ory, Dave	Incorporating day-to-day stability into operational simulations Synthetic populations and activity-based models: a dynamic perspective Time use, increasing time flexibility, multitasking Question: What insights can we gain by incorporating day-to-day variability in our models? How do we effectively distinguish day-to-day variability from meaningful changes when comparing scenarios?
11:00	Coffee Break		
11:30	Data collection to support evolutionary models	Lee, Brian Erhardt, Greg Discussant: Sivakumar, Aruna	Household Travel Survey Data Collection: Meeting the needs of planning practice and research The Potential for Linked Longitudinal Data in Transportation Research Question: If our community could access a \$10m/10m EUR annual data collection budget, what should we prioritize?
13:00	Lunch		
14:00	The stability of attitudes and habits	Choudhury, Charisma F & Bhaduri, Eeshan Mokhtarian, Patricia & Seung Eun Choi Discussant: Clifton, Kelly	Modelling the changes in attitudes towards self driving cars in different parts of the world over time using Twitter (X) data How temporally stable are attitudes? It depends Question: Which aspects of travel behavior should we expect to be most and least stable?
15:30	Group photo		
15:45	Coffee break		
16:30	Bus departure to visit Altötting (20 min ride)		
17:00	Guided city tour and visit of X-Mas market in Altötting		
19:00	Dinner in Altötting at Hotel Zur Post		
21:00	Bus departure to return to hotel (20 min ride)		

Hotel Stay at Hotel Burgblick, Austria

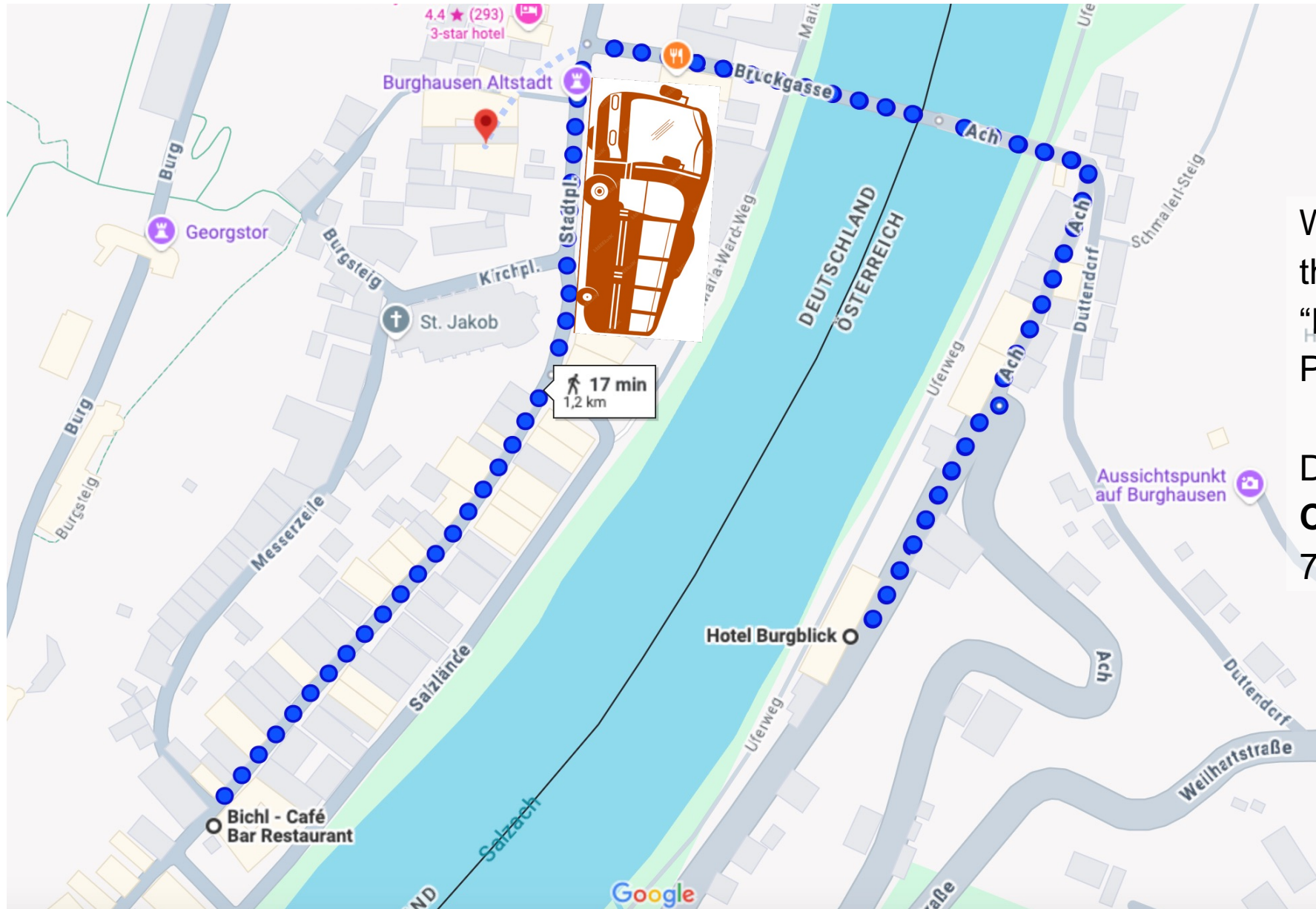
Valuables can be looked up in Raitenhaslach.

Friday

9:00	Disaggregate behavior and aggregate outcomes	Arnz, Marlin Singleton, Patrick Stathopoulos, Amanda Discussant: Mahmassani, Hani	Desire-based activity simulation and aggregated traffic assignment Extracting travel behavioral sensitivities to time-varying influences using aggregate data sources Evolving views of transit service: Inter-temporal analysis of safety interventions and satisfaction Question: Are we reporting the right metrics?
11:00	Coffee break		
11:30	Changing commercial and goods travel	Conway, Alison Stinson, Monique Discussant: John Gliebe	The Effects of Changing Commutes on Home Delivery Activity Assessing the Stability of Company Strategies over Time Question: What are the most important trends we should be monitoring in commercial travel?
13:00	Lunch		
14:00	A toolbox for collaborative development	Walker, Joan Macfarlane, Greg Discussant: Erhardt, Greg	Towards a Benchmarking Sandbox for Advancing Mode Choice and Beyond A multiple modeling sandbox Question: What are the key questions that we as a community should agree on?
15:30	Closing Remarks	Rolf Moeckel & Peter Jones	
16:00	Coffee Break		
	Board bus to return to Munich (90 min ride)		
19:00	Dinner in Munich at Ristorante Il Mulino , meet in hotel lobby 18:30		

Hotel Stay at Citadines Apart'hotel Arnulfpark, Munich





We will leave from the hotel lobby “Burgblick” at 6:45 PM.

Dinner starts at **Café Bichl** at 7:00 PM.