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Rudolf Mößbauer Assistant Professor
Professor for Modeling Spatial Mobility
Department of Civil, Geo and Environmental Engineering
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Academic Experience

Rudolf Mößbauer Professorship

Institute of Advanced Study, Technische Universität München, Germany
Since September 2015

Post-Doctoral Research

University of Maryland, National Center for Smart Growth
August 2013 - August 2015

Doctorate (Dr.-Ing.)

University of Dortmund, Institute of Spatial Planning, Germany
July 2002 - Sept. 2006, awarded with the 2007 University Dissertation Prize

Diploma (Dipl.-Ing.)

University of Dortmund, Department of Spatial Planning, Germany
Oct. 1998 - Aug. 2000 and Aug. 2001 - June 2002, Grade: 1.1 (1.0 = very good, 5.0 = failed)

Fulbright Scholar (Visiting Graduate Student)

University of Washington, Seattle, Department of Urban Design and Planning
Sept. 2000 - July 2001, Cum. GPA 3.79 out of 4.00

Pre-diploma (cand. ing.)

University of Dortmund, Department of Spatial Planning
Oct. 1996 - July 1998, Grade: 2 (1 = very good, 5 = failed)

Professional Experience

Faculty Research Associate

University of Maryland, National Center for Smart Growth, August 2013 - August 2015

- SESYNC (NSF): Development of sustainable regional planning strategies through integration of transport, land use, environmental impacts, land cover and climate change models. (Co-PI)
- Simple Integrated Land Use Orchestrator (SILO): Analysis of the effects of Transit-Oriented Development with my own land use model SILO (www.silo.zone) on demographic segregation and transit ridership (PI)
- Maryland Statewide Transportation Model (MSTM): Creation of a synthetic population; econometric estimation and implementation of an auto-ownership model; linking Google Transit Feed Data with the MSTM mode choice model. (PI)
- Piedmont Authority for Regional Transportation (PART): Design of a commodity-based freight and tour-based truck model for the TRIAD region in Greensboro, NC. (PI)

Principal Professional Associate

Parsons Brinckerhoff, Systems Analysis Group, Albuquerque, February 2007 - July 2013

- Freight Analysis: Design and implementation of a two-layer freight model for the metropolitan region of Chicago, representing explicitly commodity flows, distribution centers and empty trucks.
- Meta analysis: Compiled a Synthesis Report for the National Cooperative Highway Research Program (NCHRP) of the Transportation Research Board on “Advanced Practices in Travel Forecasting”, published as NCHRP Synthesis 406.
- Land-use modeling: Designed and implemented an aggregate land-use model SEAM for the State of Ohio and a microscopic land-use model SILO for Minneapolis/St. Paul. Calibrated PI/LD (the predecessor of the PECAS model) for the State of Oregon.
- Traffic analysis: Evaluated the impacts of the usage (general purpose, HOV or transit) of the 11th and 12th lane of the Woodrow Wilson Bridge on transportation flows and land use in the Washington D.C. Region.
- Activity-based modeling: Calibrated tour generation, intra-household coordination, scheduling and mode choice for the activity-based MTC travel demand model, San Francisco Bay Area.
- Four-step modeling: Developed and calibrated a four-step travel demand model for Central Panama to analyze traffic volumes on a new toll road under different pricing scenarios.
- Regional analysis: Designed and implemented statewide travel demand models for the States of Arizona, Maryland, North Carolina and Ohio. Designed, implemented and calibrated a long-distance nested mode choice model for the State of North Carolina.

Principal Researcher

University of Dortmund, Institute of Spatial Planning, June 2002 - December 2004

- Developed modules for the microsimulation land-use/transportation/environment model ILUMASS (Integrated Land-Use Modeling And Transportation System Simulation).
- Wrote several applications for external funding (among others, led the successful acquisition of a project on Megacities with a budget of EUR 270,000).
- Internal Service: Served on the department's student examination board.

Research Assistant (Fulbright Scholarship)

University of Washington, Seattle, Urban Ecology Lab, September 2000 - July 2001

- Developed a model simulating water demand in the city of Seattle and estimated model coefficients by multiple regression analysis. Designed and implemented a GIS analysis of CO₂ sequestration by trees in Seattle.

Research Assistant

University of Dortmund, Institute of Spatial Planning, September 1999 - August 2000

- Developed a synthetic population generator for the city of Netanya, Israel.

Scholarships and Awards

Scholarship to participate at the Chan Wui & Yunyin Rising Star Workshop, taking place on the Queen Mary 2 on a transatlantic crossing, July 6-13, 2016.

Doctoral dissertation prize of the University of Dortmund, 2007, top thesis in Spatial Planning

WCTRS Certificate of Honorable Mention 2007: 2nd best paper of young authors under 35 at the 11th World Conference on Transport Research in Berkeley, CA, June 24 - 28, 2007

CUPUM '05 Prize Paper, Best Paper Award at the 9th International Conference on Computers in Urban Planning and Urban Management in London, June 29 - July 1, 2005

Travel Award of the German Research Foundation (DFG) for the workshop on Integrated Land Use - Transport (LU-T) Modeling at University of Toronto, January 14 - 15, 2005

Scholarship of the Westphalia Foundation (Germany) for participation at a Ph.D. Summer School in Aalborg, Denmark, August 21 - 28, 2004

Fulbright Fellowship for study at University of Washington, Seattle, September 2000 - July 2001

Publications

Peer-reviewed papers

- Llorca, Carlos, Molloy, Joseph, Ji, Joanna, Moeckel, Rolf (forthcoming) Estimation of Long-Distance Travel Demand Model Using Trip Surveys, Location Based Big Data and Trip Planning Services. Paper accepted for publication in *Transportation Research Record*. Washington, D.C.
- Molloy, Joseph and Moeckel, Rolf (2017) Improving Destination Choice Modeling Using Location-Based Big Data. In: *International Journal of Geo-Information*, Vol. 6(9), 291.
- Moeckel, Rolf (2017) Working from Home: Modeling the Impact of Telework on Transportation and Land Use. In: *Transportation Research Procedia*, Vol. 26, 2017, Pages 207–214.
- Molloy, Joe und Moeckel, Rolf (2017) Automated Design of Gradual Zone Systems. An iterative algorithm to design optimally sized spatial zones suitable for spatial modeling, while respecting municipal boundaries. In: *Open Geospatial Data, Software and Standards*, Vol. 2:19, Pages 1-10.
- Shahumyan, Harutyun und Moeckel, Rolf (2017) Integration of land use, land cover, transportation, and environmental impact models: Expanding scenario analysis with multiple modules. In: *Environment and Planning B: Urban Analytics and City Science*. Vol. 44, Issue 3, Pages 531 - 552. First online published date: May-10-2016.
- Moeckel, Rolf and Lewis, Rebecca (2017) Two decades of smart growth in Maryland (U.S.A): impact assessment and future directions of a national leader. In: *Urban, Planning and Transport Research*, Vol. 5(1), Pages 22-37.
- Moeckel, Rolf (2017) Modeling the Impact of Communications Technologies on Travel Behavior and Land Use. In: *Transportation Research Record*, Vol. 2658, Pages 8-16.
- Moeckel, Rolf, Huntsinger, Leta and Donnelly, Rick (2017) From Macro to Microscopic Trip Generation: Representing Heterogeneous Travel Behavior. In: *The Open Transportation Journal*, Vol. 11, Pages 31-43.
- Moeckel, Rolf (2017) Constraints in household relocation: Modeling land-use/transport interactions that respect time and monetary budgets. In: *The Journal of Transport and Land Use*, Vol. 10(2), Pages 1–18.
- Moeckel, Rolf and Nagel, Kai (2016) Maintaining Mobility in Substantial Urban Growth Futures. In: *Transportation Research Procedia*. Volume 19, Pages 70–80.
- Moeckel, Rolf and Donnelly, Rick (2016) A model for national freight flows, distribution centers, empty trucks and urban truck movements. In: *Transportation Planning and Technology*, Vol. 39(7), Pages 693-711.
- Moeckel, Rolf and Yang, Di (2016) Car ownership and the impact of built environment, demographics and transport systems. In: *Journal of Civil Engineering and Architecture*. Volume 10(5), May 2016, Pages 587-595.

- Ziemke, Dominik, Nagel, Kai and Moeckel, Rolf (2016) Towards an Agent-based, Integrated Land-use Transport Modeling System. In: *Procedia Computer Science*. Volume 83, Pages 958-963.
- Dawkins, Casey and Moeckel, Rolf (2016) Transit-Induced Gentrification: Who Will Stay, and Who Will Go? In: *Housing Policy Debate*, Volume 26, Issue 4-5, Pages 801-818.
- Moeckel, Rolf, Donnelly, Rick (2015) Gradual rasterization: redefining spatial resolution in transport modeling. In: *Environment and Planning B: Planning and Design*, Vol. 42 (5), Pages 888-903.
- Moeckel, Rolf, Mishra, Sabyasachee, Ducca, Fred and Weidner, Tara (2015) Modeling complex Megaregion systems: Horizontal and Vertical Integration for a Megaregion Model. In: *International Journal of Transportation*, Vol. 3(1), Pages 69-90.
- Moeckel, Rolf, Fussel, Rhett and Donnelly, Rick (2015) Mode choice modeling for long-distance travel. In: *Transportation Letters. The International Journal of Transportation Research*, Vol. 7(1), Pages 35-46.
- Sabyasachee Mishraa, Hiroyuki Iseki, Rolf Moeckel (2014) Multi entity perspective freight demand modeling technique: Varying objectives and outcomes. In: *Transport Policy*, Volume 35, September 2014, Pages 176–185.
- Moeckel, R. (2009) "Simulation of firms as a planning support system to limit urban sprawl of jobs" In: *Environment and Planning B: Planning and Design*, Volume 36, Pages 883 - 905.
- Moeckel, R., Schürmann, C., Spiekermann, K., Wegener, M. (2003) "Microsimulation of Land Use" In: *International Journal of Urban Sciences, Journal on Asian-Pacific Urban Studies and Affairs*, Vol. 7(1), Spring-Summer 2003, Pages 14-31.

Peer-reviewed books

- Moeckel, R. (2007) *Business Location Decisions and Urban Sprawl. A Microsimulation of Business Relocation and Firmography*. Blue Series Volume 126. Dortmund: Institut für Raumplanung.
- Moeckel, R., Osterhage, F. (2003) *Stadt-Umland-Wanderung und Finanzkrise der Städte. Ein Modell zur Simulation der Wohnstandortwahl und der fiskalischen Auswirkungen*. Blue Series Volume 115. Dortmund: Institut für Raumplanung.

Book chapters

- Moeckel, R. (2013) Firm location choice vs. employment location choice in microscopic simulation models. In: Pagliara, F., de Bok, M., Simmonds, D. and Wilson, A. (Eds.): *Employment location in cities and regions: models and applications*. Advances in Spatial Science Series. Springer Verlag. 223-242.
- Moeckel, R., Osterhage, F. (2007) Stadt-Umland-Wanderung und Finanzkrise der Städte: Haushaltssanierung durch Einwohnerwettbewerb? In: Dieterich, Löhr, Tomerius (Eds.): *Jahrbuch für Bodenpolitik 2006/2007. Flächenneuanspruchnahme, demographische Entwicklung und kommunale Finanzen: Auswege aus der Leerkostenfalle?* Berlin: Verlag für Wissenschaft und Forschung. 79-98.
- Strauch, D., Moeckel, R., Wegener, M., Gräfe, J., Mühlhans, H., Rindsfuser, G., Beckmann, KJ. (2005) Linking Transport and Land Use Planning: The Microscopic Dynamic Simulation Model ILLUMASS. In: Atkinson, PM., Foody, GM., Darby, SE., Wu, F. (Eds.): *GeoDynamics*. Boca Raton: CRC Press. 295-311.
- Moeckel, R., Schwarze, B., Spiekermann, K., Wegener, M. (2004) GIS und Stadtsimulationsmodelle. Vorbereitung, Modellierung und Nachbereitung von räumlichen Daten in der Stadtsimulation. In: Strobel, J., Blaschke, T., Griesebner, G. (Eds.): *Angewandte Geoinformatik 2004. Beiträge zum 16. AGIT-Symposium Salzburg*. Heidelberg: H. Wichmann Verlag. 462-467.

Published Reports

- Moeckel, R. (Forthcoming) Integrated Transportation and Land Use Models. NCHRP Synthesis Report 20-05/Topic 48-06. Washington: Transportation Research Board.
- Donnelly, R. and Moeckel, R. (2017) Statewide and Megaregional Travel Forecasting Models: Freight and Passenger. NCHRP SYNTHESIS 514. Washington: Transportation Research Board.
- Donnelly, R., Erhardt, G., Moeckel, R., Davidson, W. (2010) *Advanced Practices in Travel Forecasting*. National Cooperative Highway Research Program Synthesis 406. Washington: Transportation Research Board.
- Salomon, I., Feitelson, E., Cohen, G., Moeckel, R., Spiekermann, K., Wegener, M. (2002) *Sustainable Mobility in Cities: Qualitative and Quantitative Analysis*. Berichte aus dem Institut für Raumplanung, Volume 56. Dortmund: Institut für Raumplanung.

Peer-reviewed conference papers

- Moreno, Ana T., Michalski, Andrzej, Llorca, Carlos, Moeckel, Rolf (2018) Autonomous Taxis Effect on Vehicle-Km Traveled and Average Trip Duration in the Greater Munich Metropolitan Area. Paper presented at the Annual Meeting of the Transportation Research Board. Washington, D.C.
- Okrah, Matthew B., Moreno, Ana T., Llorca, Carlos, Moeckel, Rolf (2018) Modeling Household Car Ownership Level Changes in an Integrated Land-Use/Transport Model. Paper presented at the Annual Meeting of the Transportation Research Board. Washington, D.C.
- Shahumyan, Harutyun, Williams, Brendan, Knaap, Gerrit Knaap, Ustaoglu, Eda Ustaoglu und Moeckel, Rolf (2017) Coupling Distinct Models to Inform Integrated Urban Development Policy Decisions: International Applications. In: Proceedings der Social Simulations Conference in Dublin, 25 to 29 September 2017.
- Llorca, Carlos, Moreno, Ana und Moeckel, Rolf (2017) Effects of Shared Autonomous Vehicles on the Level of Service in the Greater Munich Metropolitan Area. In: Proceedings der mobil.TUM Konferenz in München, 4. bis 6. Juli 2017.
- Moreno, Ana and Moeckel, Rolf (2017) Travel Time Budgets as Constraints for Microscopic Destination Choice Modeling. In: Proceedings of the 96th Annual Meeting of the Transportation Research Board (TRB), Washington, D.C., January 2017.
- Molloy, Joe and Moeckel, Rolf (2016) Automated Gradual Zone System. An iterative algorithm to design optimally sized spatial zones suitable for spatial modeling, while respecting municipal boundaries. Paper presented at ESRI Development SUMMIT in Berlin. 6 - 8 December 2016.
- Rolf Moeckel (2016) Working from home: Modeling the impact of telework on transportation and land use. Proceedings of the European Transport Conference. Barcelona, 5 - 7 October 2016.
- Shahumyan, Harutyun, Moeckel, Rolf, Claggett, Peter, and Ducca Frederick (2016) Integration of Land Use and Land Cover Models: Linking Two Siblings to Improve Simulation of Location Choice. In: Sauvage, Sabine, Sánchez-Pérez, José-Miguel and Rizzoli, Andrea (Eds.) 8th International Congress on Environmental Modelling and Software. Toulouse, France.
- Okrah, Matthew Bediako, Wulfhorst, Gebhard and Moeckel, Rolf (2016) Finding the optimal level of spatial resolution for handling non-motorized travel in macroscopic travel demand models. In: Proceedings of the World Conference on Transport Research (WCTR), Shanghai, July 2016.

- Moreno, Ana Tsui and Moeckel, Rolf (2016) Microscopic Destination Choice: Incorporating Travel Time Budgets as Constraints. In: Proceedings of the World Conference on Transport Research (WCTR), Shanghai, July 2016.
- Yang, Di, Xiong, Chenfeng, Moeckel, Rolf and Zhang, Lei (2016) Car Ownership Analysis in Maryland: A Latent Class Model Approach. In: Proceedings of the 95th Annual Meeting of the Transportation Research Board. Washington D.C., January 10-14, 2016.
- Moeckel, R., Huntsinger, L. and Donnelly, R. (2015) Microscopic trip generation: Adding fidelity to trip-based travel demand models. In: *Proceedings of the 14th Conference on Computers in Urban Planning and Urban Management (CUPUM)*. Cambridge, MA. 7-10 July 2015.
- Shahumyan, H. and Moeckel, R. (2015) Integrating Models for Complex Planning Policy Analysis: Challenges and a Solution in Coupling Dissimilar Models. In: *Proceedings of the 14th Conference on Computers in Urban Planning and Urban Management (CUPUM)*. Cambridge, MA. 7-10 July 2015.
- Moeckel, R. (2015) Modeling constraints versus modeling utility maximization: Improving policy sensitivity for integrated land-use/transportation models. In: *Proceedings of the 94th Annual Meeting of the Transportation Research Board*. Washington D.C., January 11-15, 2015.
- Moeckel, R., Donnelly, R. (2014) Gradual Rasterization: Redefining the spatial resolution in transport modeling. In: *Proceedings of the 93rd Annual Meeting of the Transportation Research Board (TRB)*. Washington, D.C. January 12-16, 2014.
- Moeckel, Rolf, Avin, Uri and Welch, Timothy (2014) Even Smarter Growth? Land Use, Transportation and Greenhouse Gas in Maryland. In: Proceedings of the 54th Annual Conference of the Association of Collegiate Schools of Planning. Philadelphia, PA. November 30 to December 2, 2014.
- Moeckel, R., Fussell, R., Donnelly, R. (2013) Mode Choice Modeling for Long-Distance Travel. In: *Proceedings of the 92nd Annual Meeting of the Transportation Research Board (TRB)*. Washington, D.C. January 13-17, 2013.
- Ducca, F., Weidner, T., Moeckel, R., Mishra, S. (2013) Exercising Mega-Region Analysis Framework in Chesapeake Bay Area. In: *Proceedings of the 92nd Annual Meeting of the Transportation Research Board (TRB)*. Washington, D.C. January 13-17, 2013.
- Mishra, S., Welch, T., Moeckel, R., Mahapatra, R., Tadayon, M. (2013) Development of Maryland Statewide Transportation Model and Its Application in Scenario Planning. In: *Proceedings of the 92nd Annual Meeting of the Transportation Research Board (TRB)*. Washington, D.C. January 13-17, 2013.
- Mishra, S., Iseki, H., Moeckel, R. (2013) Multientity Perspective Freight Demand Modeling Technique: Varying Objectives and Outcomes. In: *Proceedings of the 92nd Annual Meeting of the Transportation Research Board (TRB)*. Washington, D.C. January 13-17, 2013.
- Mishra, S., Wang, Y., Zhu, X., Moeckel, R., Mahapatra, S. (2013) Comparison Between Gravity and Destination Choice Models for Trip Distribution in Maryland. In: *Proceedings of the 92nd Annual Meeting of the Transportation Research Board (TRB)*. Washington, D.C. January 13-17, 2013.
- Ducca, F., Moeckel, R., Mishra, S., Weidner, T. (2012) A Mega-region Approach to Analyzing a High Energy Price Future. In: *Proceedings of the 91st Annual Meeting of the Transportation Research Board (TRB)*. Washington, D.C. January 22-26, 2012.
- Mishra, S., Iseki, H., Moeckel, R. (2011) Multilevel Demand Modeling Techniques for Analyzing Freight Movements in Stochastic Networks and Uncertain Market Conditions. In: *Proceedings of the 4th National Urban Freight Conference*. Long Beach, CA. October 12-14, 2011.
- Moeckel, R. (2011) Simulating household budgets for housing and transport. In: *Proceedings of the 12th International Conference on Computers in Urban Planning and Urban Management*. Lake Louise, Alberta, Canada. 5-8 July 2011.

- Weidner, T., Ducca, F., Moeckel, R., Yoder, S. (2011) A Framework for Mega-regional Analysis. In: *Proceedings of the 12th International Conference on Computers in Urban Planning and Urban Management*. Lake Louise, Alberta, Canada. 5-8 July 2011.
- Erhardt, G., Moeckel, R., Williams, J. (2010) Moving travel models to the next level. In: *Proceedings of the Third International Conference on Innovations in Travel Modeling (ITM) of the Transportation Research Board (TRB)*. Tempe AZ, May 9-12, 2010.
- Moeckel, R., Wardell, E., Weidner, T. (2010) Creating a Statewide Commodity Flow Forecast from National FAF2 Data. In: *Proceedings of the 51st Annual Meeting of the Transportation Research Forum*. Arlington, VA. March 11-13, 2010.
- Moeckel, R., Donnelly, R. (2009) Simulation of intrazonal traffic flows: The end of lost trips. In: *Proceedings of the 11th Conference on Computers in Urban Planning and Urban Management (CUPUM)*. Hong Kong. 16-18 June 2007.
- Curry, R., Moeckel, R. (2009) San Diego Regional Truck Model. In: *Proceedings of the TRB Workshop on Data and Tools for Linking Goods Movement, Air Quality, and Transportation Infrastructure Decisions*. Irvine, CA, June 2-3, 2009.
- Moeckel, R., Costinett, P., Weidner, T. (2008) Interaction of Transportation and Land Use: A Simple Model for Land Use Allocation and Transportation Demand. In: *Proceedings of the 87th Annual Meeting of the Transportation Research Board (TRB)*. Washington, D.C. January 13-17, 2008.
- Moeckel, R. (2007) Simulation of firms to discover planning policies reducing urban sprawl of jobs. In: *Proceedings of the 10th Conference on Computers in Urban Planning and Urban Management (CUPUM)*. Foz do Iguaçu, Brazil. June 24-28, 2007.
- Moeckel, R., Schwarze, B., Spiekermann, K., Wegener, M. (2007) Simulating interactions between land use, transport and environment. In: *Proceedings of the 11th World Conference on Transport Research (WCTR)*. Berkeley, CA: UC Berkeley June 24-28, 2007. (WCTRS Certificate of Honorable Mention 2007).
- Moeckel, R., Schwarze, B., Wegener, M. (2006) Das Projekt ILUMASS - Mikrosimulation der räumlichen, demografischen und wirtschaftlichen Entwicklung. *Stadt Region Land* 81. 53-61.
- Moeckel, R. (2005) Microsimulation of firm location decisions. In: *Proceedings of the 9th International Conference on Computers in Urban Planning and Urban Management (CUPUM)*. London: Centre for Advanced Spatial Analysis. (CUPUM '05 Prize Paper)
- Moeckel, R., Schwarze, B., Spiekermann, K., Wegener, M. (2004) Mikrosimulation verkehrsarmer Siedlungsstrukturen. In: *Proceedings of the 5th Aachen Colloquium "Mobilität und Stadt" (AMUS)*. Institut für Stadtbauwesen und Stadtverkehr: Aachen. 187-196.
- Moeckel, R., Spiekermann, K., Wegener, M. (2003) Creating a Synthetic Population. In: *Proceedings of the 8th International Conference on Computers in Urban Planning and Urban Management (CUPUM)*. Sendai: Center for Northeast Asian Studies.
- Moeckel, R., Schürmann, C., Wegener, M. (2002) Microsimulation of Urban Land Use. In: *Proceedings of the 42nd European Congress of the Regional Science Association (ERSA)*. Dortmund: University of Dortmund.

Teaching

Travel behavior: Choice analysis for transportation studies. This class introduces basic tools for econometric travel behavior analyses. Multiple regression and discrete choice analysis are explored in detail. Theories of travel behavior are explored.

Spatial Modelling: Tools to evaluate planning strategies. Students in this class learn about the concept, theory and application of urban models, including travel demand, land-use and environmental impact modelling. Data necessary to develop such models are reviewed.

Students are assigned to build spreadsheet models and analyse the impact of urban policies or projects.

Research Design. This class introduces Master Degree student to research methods and the foundations of philosophy of science. Students are guided to develop literature reviews, qualitative and quantitative research methods, survey design and case studies.

Urban Transportation Policy and Planning (URSP 688). This course introduces theories and concepts for urban transportation policy making and planning with an emphasis on economics and finance. Co-taught with Hiro Iseki, Fall 2014.

Society Memberships

Co-Chair (since 2016) of the TRB Travel Forecasting Resource Committee (ADB45), Curator for Land use-transport modeling (since 2013)

Chair (since 2016) of SIG F1b: Urbanisation and Land Use - Transport Policy of the World Conference on Transport Research (WCTR), member since May 2003

Member of the TRB Statewide Travel Demand Forecasting Joint Subcommittee of ADA10 and ADB40 (since 2009)

Member of the TRB Integrated Transportation and Land Use Joint Subcommittee ADB40(2) (since 2008)

World Conference on Transport Research Society (WCTRS), since July 2004

Presentations (2002 to 2014)

Sept. 10, 2014: Integrating land use and transportation for analyzing planning policies. Brownbag Lunch Seminar at the National Center for Smart Growth, University of Maryland.

April 28, 2014: Can you afford your traveling? TRB Conference Innovations in Travel Demand Forecasting. Baltimore, MD.

March 28, 2014: SILO: An integrated land-use/transportation model for the Chesapeake Bay Area. Chesapeake Modeling Symposium 2014. Annapolis, MD.

Jan. 14, 2014: Gradual Rasterization: Redefining the spatial resolution in transport modeling. Poster session. 93rd Annual Meeting of the Transportation Research Board (TRB). Washington, D.C.

Jan. 15, 2013: Mode Choice Modeling for Long-Distance Travel. Lectern session. 92nd Annual Meeting of the Transportation Research Board (TRB). Washington, D.C.

Jan. 14, 2013: Multientity Perspective Freight Demand Modeling Technique: Varying Objectives and Outcomes. Lectern session. 92nd Annual Meeting of the Transportation Research Board (TRB). Washington, D.C. (with Sabyasachee Mishra)

Jan. 14, 2013: Development of Maryland Statewide Transportation Model and Its Application in Scenario Planning. Poster session. 92nd Annual Meeting of the Transportation Research Board (TRB). Washington, D.C. (with Subrat Mahapatra and Sabyasachee Mishra)

Jan. 14, 2013: Comparison Between Gravity and Destination Choice Models for Trip Distribution in Maryland. Poster session. 92nd Annual Meeting of the Transportation Research Board (TRB). Washington, D.C. (with Sabyasachee Mishra)

Jan. 14, 2013: Exercising Mega-Region Analysis Framework in Chesapeake Bay Area. Poster session. 92nd Annual Meeting of the Transportation Research Board (TRB). Washington, D.C. (with Fred Duca and Subrat Mahapatra)

- Sept. 12, 2012: Making Connections: Statewide Planning with Regions and Mega-Regions in Mind. AMPO Annual Conference. Saratoga Springs, NY.
- Jan. 23, 2012: A Mega-region Approach to Analyzing a High Energy Price Future. Poster Session. 91st Annual Meeting of the Transportation Research Board (TRB). Washington, D.C.
- Nov. 26, 2011: Integrated Transportation/Land-Use Modeling: Using publicly available data sources for advanced modeling. TRB Conference on Using Census Data for Transportation Applications. University of California Irvine.
- March 10, 2011: Nationwide Estimate of Long-Distance Travel. Generating External Trips for Local Travel Demand Models. 52nd Annual Meeting of the Transportation Research Forum (TRF). Long Beach CA.
- Aug. 21, 2010: Analyzing land use and transportation policies with SILO. AMPO Annual Conference. Saint Louis, Missouri.
- Aug. 20, 2010: Understanding truck traffic: Modeling freight flows at the local and regional scale. AMPO Annual Conference. Saint Louis, Missouri.
- June 17, 2009: Simulation of intrazonal traffic flows: The end of lost trips. 11th Conference on Computers in Urban Planning and Urban Management (CUPUM). Hong Kong.
- Nov. 18, 2008: Integrating land use simulation into transportation modeling: Applications in science and practice. 2nd Border to Border Transportation Conference. McAllen, Texas.
- June 20, 2008 (invited talk): Firmography and its application to integrated modeling. Fifth Oregon Symposium on Integrating Land Use and Transportation Models. Portland, Oregon.
- Jan. 14, 2008: Interaction of transportation and land use: Simple model for land use allocation and transportation demand. Poster Session. 87th Annual Meeting of the Transportation Research Board (TRB). Washington, D.C.
- July 13, 2007: Simulation of firms to discover planning policies reducing urban sprawl of Jobs. 10th Conference on Computers in Urban Planning and Urban Management (CUPUM). Foz do Iguaçu, Brazil.
- July 12, 2007: Microsimulation for integrated urban modeling. 10th Conference on Computers in Urban Planning and Urban Management (CUPUM). Foz do Iguaçu, Brazil.
- June 26, 2007: Simulating interactions between land use, transport and environment. 11th World Conference on Transport Research (WCTR). Berkeley, UC Berkeley. (with M. Wegner)
- Sept. 7, 2006: Das Projekt ILUMASS. Mikrosimulation der räumlichen, demografischen und wirtschaftlichen Entwicklung. 7. Aachener Kolloquium "Mobilität und Stadt". Institut für Stadtbauwesen und Stadtverkehr, Aachen.
- Nov. 17, 2005 (invited talk): Simulating firmography. Fourth Oregon Symposium on Integrating Land Use and Transportation Models. Portland, Oregon.
- July 3, 2005: Behavioural feedback in urban land-use transport models. Workshop of the Special Interest Group Transport and Spatial Development (WCTRS-SIG 1) on "Frontiers in Transportation: Social and Spatial Interactions" at University of Amsterdam. (with M. Wegener)
- July 2, 2005: Microsimulation of businesses in ILUMASS. Workshop of the Land Use Transportation (LUT) Modeling Group on "Microsimulation for modeling businesses and employment" at CASA UCL in London.
- July 1, 2005: Microsimulation of firm location decisions. 9th International Conference on Computers in Urban Planning and Urban Management (CUPUM). London.
- Jan. 14, 2005: ILUMASS: Microsimulation of land use, transport and environment. Workshop on Integrated Land Use - Transport (LU-T) Modeling, University of Toronto. (with M. Wegener)
- July 30, 2004: Mikrosimulation verkehrsarmer Siedlungsstrukturen. 5. Aachener Kolloquium "Mobilität und Stadt". Institut für Stadtbauwesen und Stadtverkehr, Aachen.
- July 8, 2004: Transport and spatial development: Research in Dortmund. Meeting of the Special Interest Group Transport and Spatial Development (WCTRS-SIG 1). Istanbul. (with M. Wegener)

July 7, 2004: Microsimulation of land use, transport and environment. 10th World Conference on Transport Research (WCTR). Istanbul.

Nov. 7, 2003: Mikrosimulation zur Integration qualitativer und quantitativer Erkenntnisse. Workshop der SAGUF, "Was könn(t)en integrative Computer-Modelle für eine nachhaltige Siedlungsentwicklung leisten?" Zurich.

May 29, 2003: Creating a synthetic population. 8th International Conference on Computers in Urban Planning and Urban Management (CUPUM). Sendai, Japan.

May 28, 2003: Microsimulation of land use, transport and environment. 8th International Conference on Computers in Urban Planning and Urban Management (CUPUM). Sendai, Japan. (with M. Wegener)

Aug. 29, 2002: Microsimulation of urban land use. 42nd Congress of the European Regional Science Association (ERSA). Dortmund. (with M. Wegener)

Computer Skills

Software: ArcGIS, Corel, CUBE, Dreamweaver, Photoshop, SPSS and TransCAD
Proficient programming in Java and Fortran, basic knowledge in Python and R

Languages

English fluent in speaking and writing
German native
Spanish proficient

Other Experience

Sept. 2013 - July 2015 Singer (Tenor) of the National Philharmonic Chorale and the National Philharmonic Singers at the Strathmore in Bethesda, MD.

Feb. 2007 - Oct. 2009 Member of the Green Team at Parsons Brinckerhoff in New York City to support environmentally sustainable business practices. Was responsible for the estimation of CO₂ emission of the New York office with 800 employees.

Nov. 2003 - Nov. 2006 Member of the Executive Board of Esperanza, an organization supporting developing countries by construction of school projects.

June 2005 - Nov. 2006 Group leader of the Amnesty International chapter in Dortmund, Germany, group member since 1992.

July 1995 - July 1996 Developmental assistance for small and medium-sized enterprises on-site in the Ixil region in the highlands of Guatemala.

Aug. 1993 - June 1995 Apprenticeship as a draftsman in the architecture firm Meckelholt & Derksen in Bocholt, Germany.

Grants

Year	Title	Sponsor	Amount	Role
2018	Are sustainable development goals within reach? Development of a microsimulation urban model to test policies for a sustainable future	DAAD	€22,864	Principal Investigator
2017	Entwicklung eines Lastenheftes	Münchener Metropolregion e.V.	€1,800	Subcontractor
2016	Implementation and application of a tightly integrated behavioural land use and transport model	German Research Foundation	€299,559	Principal Investigator
2016	NCHRP Synthesis 20-05/Topic 48-06: Integrated Transportation and Land Use Models	U.S. National Academy of Sciences, Transportation Research Board	\$45,000	Principal Investigator
2015	Design and implementation of a transportation model for the Province of Ontario, Canada, including person travel and freight travel	Ministry of Transportation Ontario (MTO)	\$67,000	Subcontractor
	Development of a new National Cooperative Highway Research Program (NCHRP) Synthesis Report on Statewide and Megaregional Modeling	U.S. National Academy of Sciences, Transportation Research Board	\$21,000	Subcontractor

Doctoral Candidates

Graduation	Name	University	Role
Exp. 2020	Qin Zhang	Technical University of Munich	Principal adviser
Exp. 2020	Nico Kühnel	Technical University of Munich	Principal adviser
Exp. 2019	Cat Silva	Technical University of Munich	Principal adviser
Exp. 2017	Milad Ghasrihouzani	University of New South Wales, Sydney, Australia	External examiner
October 2016	Matthew Okrah	Technical University of Munich	3 rd adviser
January 2016	Yuchen Cui	University of Maryland	Principal adviser

Master Degree Students

Graduation	Name	University	Role
Ongoing	Dimas Numan Fadhil	Technical University of Munich	Adviser
Ongoing	Fateme Zolfaghari	Technical University of Munich	Adviser
Ongoing	Thomas Scriba	Technical University of Munich	Adviser
Ongoing	Eeshan Bhaduri	Indian Institute of Technology Kharagpur	Second adviser
9. Feb. 2018	Usman Ahmed	Technical University of Munich	Adviser

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12. Dec. 2017	Ji Yeun (Ruby) Kim	Technical University of Munich	Adviser
19 July 2017	Aashish Pokhrel	Technical University of Munich	Adviser
26 June 2017	Joanna Ji	Technical University of Munich	Adviser
2 Mar 2017	Ludwig Schloder	Technical University of Munich	Adviser
21 Feb 2017	Joe Molloy	Technical University of Munich	Adviser
30 Jan 2017	Hema Sharanya Rayaprolu	Technical University of Munich	Adviser

Bachelor Degree Students

Graduation	Name	University	Role
16 May 2017	Johann Hönes	Technical University of Munich	Adviser