Special Session
Cargo bikes for sustainable mobility and logistics

Description:
Urban mobility and logistics need to rapidly decarbonize in order to meet global goals to fight climate change. Cargo bike sales are growing strongly and they are increasingly integrated in private and commercial mobility patterns. Although the new vehicle has undergone massive improvements and is a standard vehicle in some urban conglomerations nowadays, the potential to substitute conventional traffic by novel approaches and technologies is still huge.
This session will investigate possibilities and recent trends which can help to propel up cycle logistics and cargo bike usage. It will:

- shed a light on the current state of the art of cargo bikes and cycle logistics and recent market developments
- investigate novel applications and business models for cargo bikes and cycle logistics
- discuss new technologies as autonomous cargo bikes or charging technologies
- show procedures for determining necessary transport infrastructures in the context of city logistics approaches
- be part of the dissemination of the research projects Autonomes Rad, Paket-KV-MD², Loop.

Session Moderator:

- Dr.-Ing. Tom Assmann, Research Group Lead, Institute of Logistics and Material Handling Systems, Otto-von-Guericke-University Magdeburg
- Prof. Dr.-Ing. Christian Rudolph, Professor, Stiftungsprofessur Radverkehr in intermodalen Verkehrsnetzen; TH Wildau
- Prof. Dennis Knese, Professor for Sustainable Mobility and Cycling, ReLUT – Research Lab for Urban Transport, Frankfurt University of Applied Science

Topics and Presenters:
The first mentioned person will be the presenter

Optimizing the route and location planning for cargo bikes and mobile parcel stations

- Benjamin Rolf, M.Sc., Research Assistant, Institute of Logistics and Material Handling Systems, Otto-von-Guericke-University Magdeburg
- Gianna Kurtz, M.Sc., Research Assistant, Institute of Logistics and Material Handling Systems, Otto-von-Guericke-University Magdeburg
- Kai Hempel, M.Sc., Research Assistant, Institute of Logistics and Material Handling Systems, Otto-von-Guericke-University Magdeburg
- Hartmut Zadek, Professor, Institute of Logistics and Material Handling Systems, Otto-von-Guericke-University Magdeburg

Evaluation of station distribution strategies for next-generation bike-sharing system

- Vasu Dev Mukku, M.Sc., Institute of Logistics and Material Handling Systems, Otto-von-Guericke-University Magdeburg
- Imen Haj Salah, M.Sc., Institute of Logistics and Material Handling Systems, Otto-von-Guericke-University Magdeburg

Demand scenarios for next generation bike sharing with cargo bikes

- Malte Kania, M.Sc., Institute of Logistics and Material Handling Systems, Otto-von-Guericke-University Magdeburg

- Tom Assmann, Dr.-Ing., Institute of Logistics and Material Handling Systems, Otto-von-Guericke-University Magdeburg

Determining the demand for loading / unloading zones in urban areas

- Patrick Mayregger, M.Sc., Bergische University Wuppertal

Diversification of the bicycle market and consequences for urban infrastructure

- Dennis Knese, Professor for Sustainable Mobility and Cycling, ReLUT – Research Lab for Urban Transport, Frankfurt University of Applied Science
- Lukas Fassnacht, M.Sc., ReLUT – Research Lab for Urban Transport, Frankfurt University of Applied Sciences

Collaborative distribution solutions in last mile logistics

- Anna Buerklen, M.Sc., Bicycle Transport in Intermodal Networks, Technical University of Applied Science Wildau
- Nicolas Schuete, M.Sc., Bicycle Transport in Intermodal Networks, Technical University of Applied Science Wildau
- Christian Rudolph, Professor for Cycling Transport, Bicycle Transport in Intermodal Networks, Technical University of Applied Science Wildau

Moderator……..

Tom Assmann,
Dr. Tom Assmann is a research group leader at the Institute of Logistics and Material Flow Engineering at Otto von Guericke University Magdeburg. He and his team conduct research on sustainable logistics, cycle logistics, autonomous vehicles and urban planning. The industrial engineer with a degree in logistics did his doctorate on the integration of logistics planning and urban planning and was awarded the research prize of the Magdeburg Chamber of Industry and Commerce. e is the honorary chairman of the Radlogistik Verband Deutschland e.V. (German Cycle Logistics Association).

Christian Rudolph
Prof. Dr.-Ing. Christian Rudolph has been Professor for Bicycle Transport at the Technical University of Applied Sciences Wildau since April 2021. Previously, he headed the research group Last Mile Logistics and Freight at the Institute of Transport Research at the German Aerospace Center (DLR) in Berlin. Before he worked as research associate at Hamburg University of Technology. The topic of his PhD is how governmental incentives can foster market penetration of electric vehicles against the background of the mobility behaviour of the buyers.

Optimizing the route and location planning for cargo bikes and mobile parcel stations……

Benjamin Rolf.
Benjamin Rolf is a research associate at the Institute of Logistics and Material Handling Systems at Otto von Guericke University Magdeburg. He holds a masters's degree in Industrial Engineering with specialization in Logistics from Otto von Guericke University Magdeburg. His research interests include modeling, simulation, optimization and applying methods of artificial intelligence for systems in production and logistics.

Gianna Kurtz.

Gianna Lina Kurtz is a research associate at the Institute of Logistics and Material handling Systems at Otto von Guericke University Magdeburg. She studied at the ostfalia University of Applied Sciences in Salzgitter and graduated with a master's degree in transportation and logistics. Her research interests include mobility and logistics in urban as well as suburban environments, sustainability in the field of mobility and logistics, optimization of logistic processes and systems, electromobility, application of artificial intelligence methods for specific topics.

Kai Hempel

Kai Hempel is a research associate at the Institute of Logistics and Material Handling Systems at Otto von Guericke University Magdeburg. He holds a masters's degree in Industrial Engineering with specialization in Logistics from Otto von Guericke University Magdeburg. His research interests include sustainable mobility and logistics, optimization and automation of logistic processes and systems, city logistics and mobility transformation.

Evaluation of station distribution strategies for next-generation bike-sharing system

Vasu Dev Mukku.

Vasu Dev Mukku is a research assistant at the Institute of Logistics and Material Handling Systems at Otto von Guericke University Magdeburg. He completed his master's degree in Digital Engineering. He is currently working on research project known as "Autonomes Rad" (AuRa) as a Simulation modeler. His research interests include autonomous cargo bikes, simulation modelling, autonomous transport agents, applying industry 4.0 principles in learning laboratories.

Demand scenarios for next generation bike sharing with cargo bikes……

Malte Kania.

Malte Kania is a research associate at the Institute of Logistics and Material Handling Systems at Otto von Guericke University Magdeburg. He completed his master's degree on Urban modular components for cycle logistics and livable cities and has since been working on several projects related to cargo bike logistics and sustainable urban mobility. He is currently working on a research project on the development of components for the autonomization of urban delivery processes with cargo bikes.

Determining the demand for loading / unloading zones in urban areas

Patrick Mayregger.

Patrick Mayregger studied mathematics and economics at the University of Bielefeld and the University Pierre et Marie Curie in Paris, as well as transportation engineering and economics at the University of Wuppertal. He is a research assistant at the chair for freight transport planning and transport logistics at the University of Wuppertal. His research interests are the design, implementation and adjustment of urban cycling networks and the infrastructural requirements for the use of cargo bikes in urban freight transport.

Diversification of the bicycle market and consequences for urban infrastructure……

Dennis Knese.

Prof. Dr.-Ing. Dennis Knese has been Professor for Sustainable Mobility and Cycling at the Frankfurt University of Applied Sciences since the beginning of 2021. Previously, he worked as an Advisor on Sustainable Mobility at the German Agency for International Cooperation (GIZ), as a research associate at Frankfurt University and the Vancouver Economic Development Commission in Canada. He completed his PhD on the integration of electromobility in urban planning and road design at the University of Kassel in 2018.

Lukas Fassnacht.
Lukas Fassnacht is a scientific researcher at the Research Lab for Urban Transport at Frankfurt University of Applied Sciences, where he has gained his experience in cargo bike logistics and planning within the last two years. Recent activities include developing a dimensioning vehicle for cargo bikes, examining the requirements of cargo bikes to the infrastructure and designing an optimal logistical and charging infrastructure for electric vehicles.

Collaborative distribution solutions in last mile logistics…….

Anna Buerklen
Anna Buerklen is a researcher and academic program coordinator for Bicycle Transport at Technical University of Applied Sciences Wildau since July 2021. Previously, she worked at the Institute of Transport Research at the German Aerospace Center (DLR) in Berlin, where she joined the research group “Last Mile Logistics and Freight”. Anna has graduated in Transport Planning and Operation at Technische Universität Berlin in 2018, where she teaches multiple subjects with a strong focus on urban freight transport planning. Her main research focus is on sustainable urban logistics, particularly on collaborative delivery concepts in last mile logistics.

Nicolas Schuete
Nicolas Schuete is a student assistant at the Technical University of Applied Sciences Wildau, where he supports the research and teaching staff and gains experience in bicycle planning. He holds a master’s degree in Industrial Engineering with specialization in Transport Engineering from Technische Universität Berlin. His main research interests are sustainable mobility and logistics.

Christian Rudolph
Prof. Dr.-Ing. Christian Rudolph has been Professor for Bicycle Transport at the Technical University of Applied Sciences Wildau since April 2021. Previously, he headed the research group Last Mile Logistics and Freight at the Institute of Transport Research at the German Aerospace Center (DLR) in Berlin. Before he worked as research associate at Hamburg University of Technology. The topic of his PhD is how governmental incentives can foster market penetration of electric vehicles against the background of the mobility behaviour of the buyers.