

Mathematical Foundations for Equity in Transportation Systems

Monday January 22, 2024

- 8:00–8:55 *Check-In/Breakfast (Hosted by IPAM)*
- 8:55–9:00 *Welcome and Opening Remarks*
- 9:00 *SESSION CHAIR: Samitha Samaranayake*
- 9:00–9:50 **Karel Martens** (Technion - Israel Institute of Technology)
Philosophy before mathematics: on equity principles and transport
- 10:00–10:15 *Break*
- 10:15–11:05 **Hani Mahmassani** (Northwestern University)
Improving Equity through Public Transit Network Redesign with Shared Autonomous Mobility Services
- 11:15–11:30 *Break*
- 11:30–12:20 **John Hooker** (Carnegie Mellon University)
Equity through Social Welfare Optimization
- 12:30–2:30 *Lunch (on your own)*
- 2:30 *SESSION CHAIR: Hani Mahmassani*
- 2:30–3:20 **Anita Schöbel** (Fraunhofer Institute for Industrial Mathematics ITWM)
Mathematical models in public transportation ... and their extension to equity objectives
- 3:30–4:00 *Break*
- 4:00–4:50 **Yafeng Yin** (University of Michigan)
Achieving More Equitable Market-Based Congestion-Mitigating Policies
- 5:00–5:15 *Lightning Poster Session*
- 5:15–6:30 *Poster Session & Reception (Hosted by IPAM)*

Tuesday January 23, 2024

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00 *SESSION CHAIR: Anita Schöbel*
- 9:00–9:50 **Frauke Behrendt** (Technische Universiteit Eindhoven)
Who Counts? Mobility Data Justice
- 10:00–10:15 *Break*

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- 10:15–11:05 **Ralf Borndörfer** (Free University of Berlin and Zuse Institute Berlin)
Three approaches to a fair operation, access, and design of transportation systems
- 11:15–11:30 *Break*
- 11:30–12:20 **Marco Nie** (Northwestern University)
Accessibility-Based Ethics-Aware Transit Design
- 12:30–2:30 *Lunch (on your own)*
- 2:30 *SESSION CHAIR: Benjamin Seibold*
- 2:30–3:20 **Karen Smilowitz** (Northwestern University)
Equitable access to education: transportation and logistics problems related to public schools
- 3:30–4:00 *Break*
- 4:00–4:50 **José Holguín-Veras** (Rensselaer Polytechnic Institute)
The Role of Welfare Economics in Supporting Appropriate Consideration of Equity in Transportation

Wednesday January 24, 2024

- 8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*
- 9:00 *SESSION CHAIR: David Shmoys*
- 9:00–9:50 **Juan Carlos Martinez Mori** (Cornell University)
Modeling Neighborhood Change
- 10:00–10:15 *Break*
- 10:15–11:05 **Amanda Stathopoulos** (Northwestern University)
On the role of subjective equity standards for transportation analysis and planning
- 11:15–11:30 *Break*
- 11:30 *PANEL MODERATOR: Samitha Samaranyake*
- 11:30–12:20 *Panel Discussion*
- 12:30 *Group Photo*
- 12:30–2:30 *Lunch (on your own)*
- 2:30 *SESSION CHAIR: Raphael Stern*
- 2:30–3:20 **Tierra Bills** (University of California, Los Angeles (UCLA))
Toward Equity in Travel Demand Modeling
- 3:30–4:00 *Break*

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4:00–4:50 **Benjamin Seibold** (Temple University)
Swarm-Performance of Heterogeneous Multi-Agent Systems Across Scales

Thursday January 25, 2024

8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*

9:00 *SESSION CHAIR: Juan Carlos Martinez Mori*

9:00–9:50 **Adam Elmachtoub** (Columbia University)
Embedding Fairness into Pricing Algorithms for Vehicle Sharing Systems

10:00–10:15 *Break*

10:15–11:05 **M. Grazia Speranza** (Università di Brescia)
How can we model equity?

11:15–11:30 *Break*

11:30–12:20 **Celeste Chavis** (Morgan State University)
Access to community lifelines: Incorporating equity in research, advocacy, and practice

12:30–2:30 *Lunch (on your own)*

2:30 *SESSION CHAIR: Amanda Stathopoulos*

2:30–3:20 **Nikhil Garg** (Cornell University)
Efficiency and equity in government operations: service allocation and congestion pricing

3:30–4:00 *Break*

4:00–4:50 *Breakout Sessions*

Friday January 26, 2024

8:00–9:00 *Check-In/Breakfast (Hosted by IPAM)*

9:00 *SESSION CHAIR: Chad Topaz*

9:00–9:50 **Irene Lo** (Stanford University)
Improving Diversity and Equity in San Francisco School Choice

10:00–10:15 *Break*

10:15–11:05 **Joseph Chow** (New York University)
Data structures for transportation equity analysis

11:15–11:30 *Break*

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11:30–12:20 **Samitha Samaranayake** (Cornell University)
Multi-modal transit systems: network design and equity considerations

