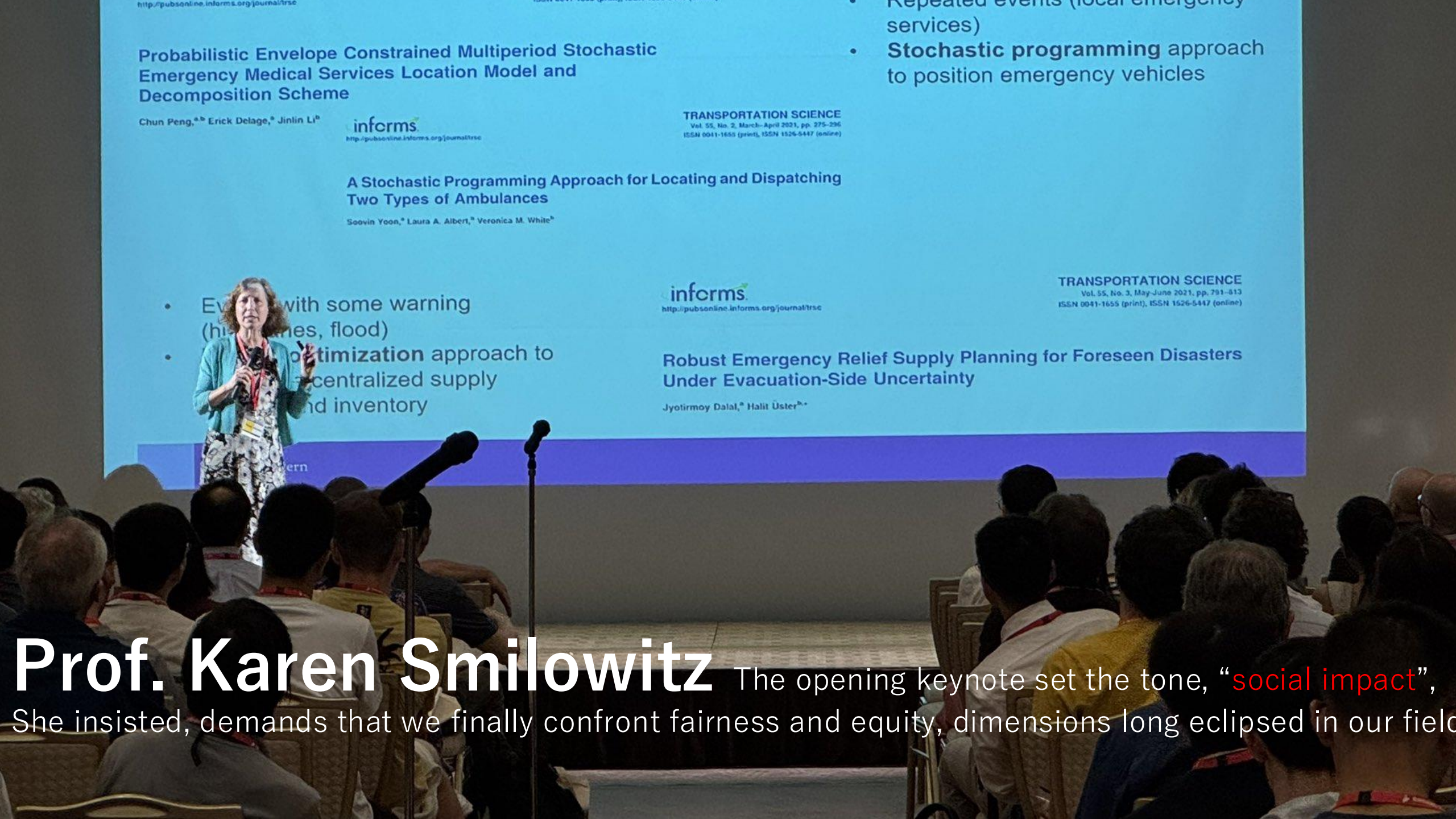
TRISTANXII OKINAWA 2025


Reception
TRISTAN XII
OKINAWA JAPAN 22 – 27 June 2025
Ordered by
FIRST Name
Z ← A
RECEPTION DESK
H-A
H-A

Where did all 317 of us come from?

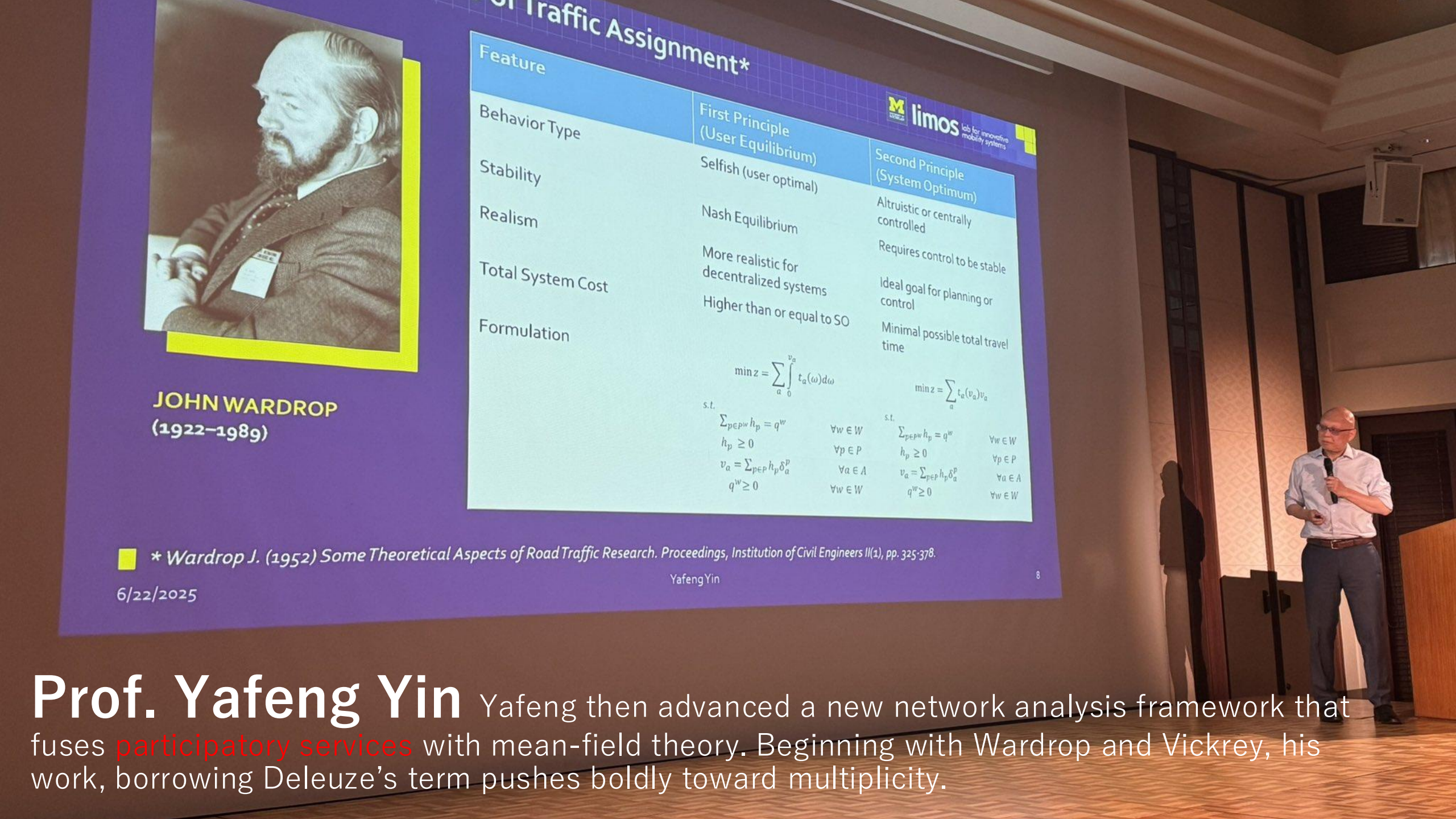
Participation questionnaire TRISTAN XII
Failure to respond may result in a financial loss!



Prof. Karen Smilowitz

The opening keynote set the tone, “social impact”,

She insisted, demands that we finally confront fairness and equity, dimensions long eclipsed in our fiel



Prof. Yafeng Yin Yafeng then advanced a new network analysis framework that fuses participatory services with mean-field theory. Beginning with Wardrop and Vickrey, his work, borrowing Deleuze's term pushes boldly toward multiplicity.

Prof. Michel Bierlaire

For his part, sought to transcend the singularity of classical behavior models. By tracing the chained constraints each individual faces, he introduced a combinatorial optimization paradigm capable of representing true plurality, an astonishing leap forward.

Autonomous, humanitarian, AI-enabled research, open science, coalesced through dialogue. We sparked a motivation to re-examine topics from the perspective of plurality and initiated a deeper discussion on more rigorous mathematical approaches.


XII
Triennial Symposium on
Transportation
Analysis
Hiroe Ando
Brazil
Germany

Monday-1

June 23 is a memorial day established to honor those who died in the Battle of Okinawa and other related conflicts. It is known as the “Cornerstone of Peace”

- **Humanitarian Logistics**(Riki Kawase)
- **Shared and Autonomous Vehicles**(Abdel Lisser)
- **Travel Behavior Analysis**(Makoto Okumura)
- **Integrated Freight and Passenger Transport**(Maximilian Schiffer)
- **Mechanism Design**(Mike Hewitt)
- **Discrete Choice Model 1**(Yu Gu)

Cai & Sun(2025) *Aiming to optimize the operation of customized bus (CB) services during epidemic outbreaks, the study developed a joint optimization model for route design and seat occupancy rate, incorporating infection risk into passengers’ travel costs to ensure computational tractability.*

Li & Zhang(2025) *This study formulates crowdshipping as a mechanism design problem based on auction theory, combining VCG and dual relaxation to ensure both strategic rationality and computational feasibility.*

Monday-2

- **Consolidation-Based Freight Services**(Teodor Gabriel Crainic)
- **Reinforcement Learning based VRP**(Joseph Chow)
- **Network Design 1**(Zhou Xu)
- **Timetabling 1**(Konstantinos G. Zografos)
- **Stochastic Programming**(Kenetsu Uchida)
- **Graph Neural Network**(Tingting Zhao)

Namdarpour & Chow(2025)*This study is one of the first attempts to apply a non-myopic reinforcement learning approach to real-time matching and rebalancing in large-scale ride-pooling systems.*

Tuesday

Tuesday-1

- **Last-Mile Delivery 1**(Emanuele Manni)
- **Column Generation 1** (Vikrant Vaze)
- **Urban Planning and Science** (Jean-François Cordeau)
- **Drone and Air Mobility Control 1**(Guglielmo Lulli)
- **Vehicle Routing Problem 1** (Song Gao)
- **Survey and Sensing**(Makoto Chikaraishi)

Wang, Zhang, Beech, Majumdar, Ochieng and Escribano(2025): *The simulation results in London are quite interesting. In disaster scenarios, the choice between trucks and drones becomes critical while drones are generally preferable, densely populated areas may still require road clearance and truck-based delivery.*

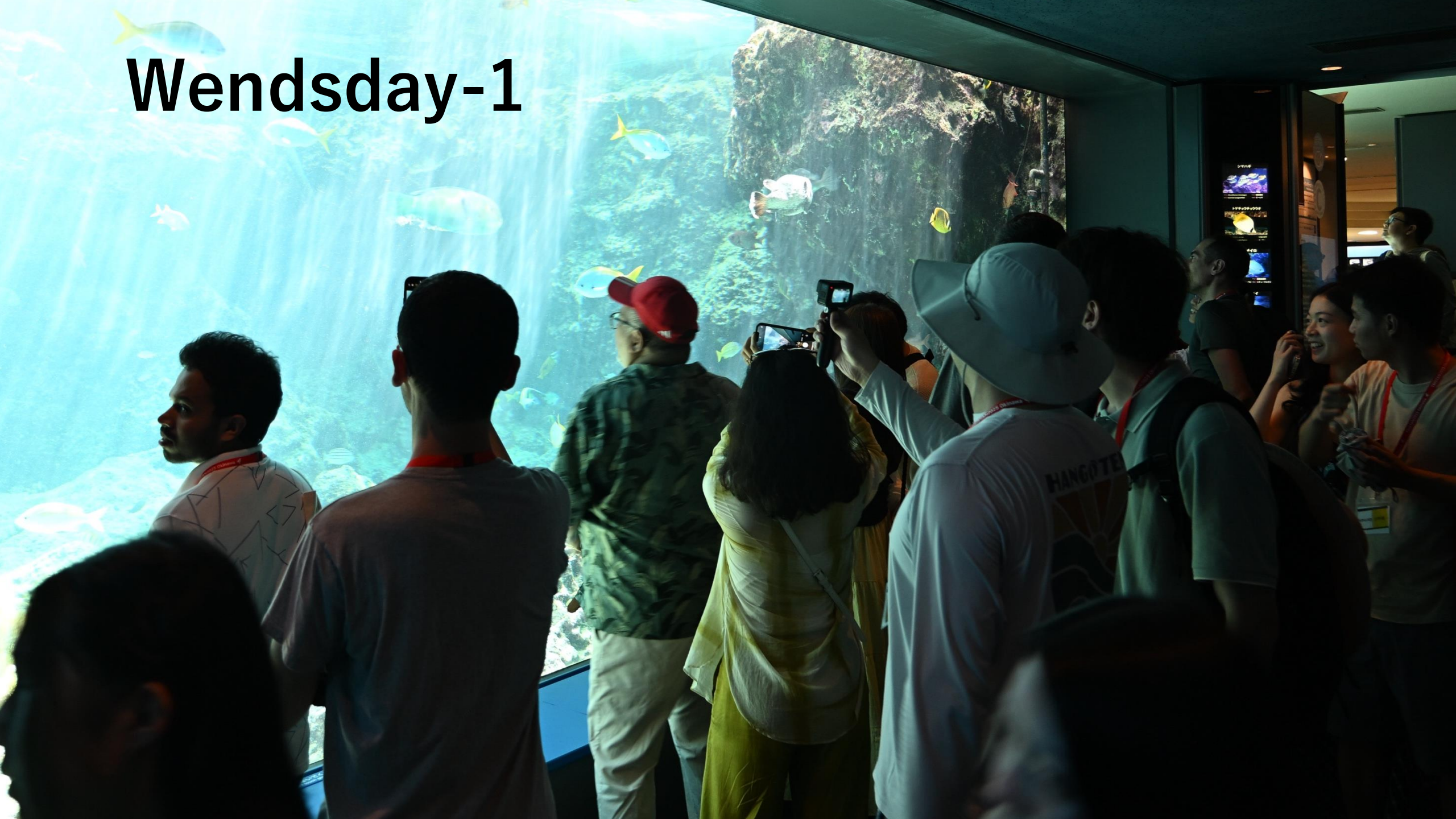
The next TRISTAN host city bid: Germany vs. Brazil.


Katholische Universität
Eichstätt-Ingolstadt
Organizing Committee
Pirmin Fontaine
KU Eichstätt-Ingolstadt
Alexander Baur
Technical University Ingolstadt
Stefan Voigt
KU Eichstätt-Ingolstadt
Teodor Gabriel Crainic
Université du Québec à Montréal
Alexander Rave
KU Eichstätt-Ingolstadt
Yusuke Hara
Tohoku University
Eiji Hato
University of Tokyo
2
Pirmin Fontaine | Chair of Logistics & Operations Analytics | pirmin.fontaine@ku.de
We'll start with Bavaria, Germany.

Tuesday-2

- **Timetabling 2** (Jiateng Yin)
- **Robust Optimization** (Koki Satsukawa)
- **Integrating Fixed-Route and On-Demand Transit** (Vikrant Vaze)
- **Logistics optimization 1** (Toru Seo)
- **Game Theory 1** (Negin Alisoltani)
- **On-Demand Mobility 1** (Francesco Viti)
- Sun and Vaze(2025) *In understanding the formation mechanism of transit deserts, the introduction of choice models is essential but this inherently leads to a non-convex problem, requiring specialized solution methods.*
- Yafeng amd Mike *discussed that to treat a system as a mean field model, the assumption infinite is indeed strong. To justify a finite mean field approximation, one can analyze the error between the finite-N system and the infinite-population mean field game using the Wasserstein distance. Having just 3 to 5 agents is actually the most troublesome case. It's neither large enough for a proper mean field approximation nor small enough for tractable exact analysis.*

Wendsday-1



We all set out for the Minna-island.

During the Battle of Okinawa, it was used as an evacuation site in preparation, and residents were subsequently forced to evacuate.


Return
Ferry
14:45
Brazil
Germany

Wendsday-2

Did you have fun?

Kids Tours(Operational Experiment)

A conference where researchers from diverse backgrounds can enjoy and participate equally.


BLUE


TRISTAN XII
Daichi Ogawa


Summary up to Wednesday

Thursday-1

- **Traffic and Transit Assignment 1** (Judith Y. T. Wang)
- **Distributed Control and Decentralized Allocation** (Koki Satsukawa)
- **Sustainable Transport Planning** (Junji Urata)
- **Last-Mile Delivery 2** (Takamasa Iryo)
- **Two-Sided Markets** (Yuki Oyama)
- **Data-Driven Analysis 1** (Haoning Xi)

Liu, Chem, Chow and Lin(2025) *It's elegant that the assignment, where each type-k user selects their preferred resource if available and otherwise chooses randomly from the rest, is characterized as a user equilibrium (UE) under FCFS and also corresponds to a subgame perfect Nash equilibrium*


Fall 2025
C2SMART
CONNECTED CITIES WITH SMART TRANSPORTATION

Thursday-2

- **Dynamic Fleet Management** (Tai-Yu Ma)
- **Reinforcement Learning** (Prateek Bansal)
- **Equity-Based Transportation Management** (Daisuke Fukuda)
- **Timetabling 3**(Roberto Maria Rosati)
- **Vehicle Routing Problem 2**(Bilge Atasoy)
- **Disaster Management** (Valentina Morandi)

Ye & Bansal (2025): *Theire study redefines the problem as a stochastic sequential decision process and introduces a novel multi-phase reinforcement learning framework using* Deep Deterministic Policy Gradient *to plan EV charging infrastructure over multiple years. A key innovation lies in jointly optimizing charger deployment and fleet size as dynamic decision variables under uncertainty.*

Rosati, Cacchiani and Hemmelmayr(2025)*Multi-Neighborhood Search is characterized by its ability to efficiently navigate both local and global search spaces using Simulated Annealing, through operations such as Change, Swap, and MergeLocomotive, allowing for the rapid generation of practical solutions.*

GALA DINNER

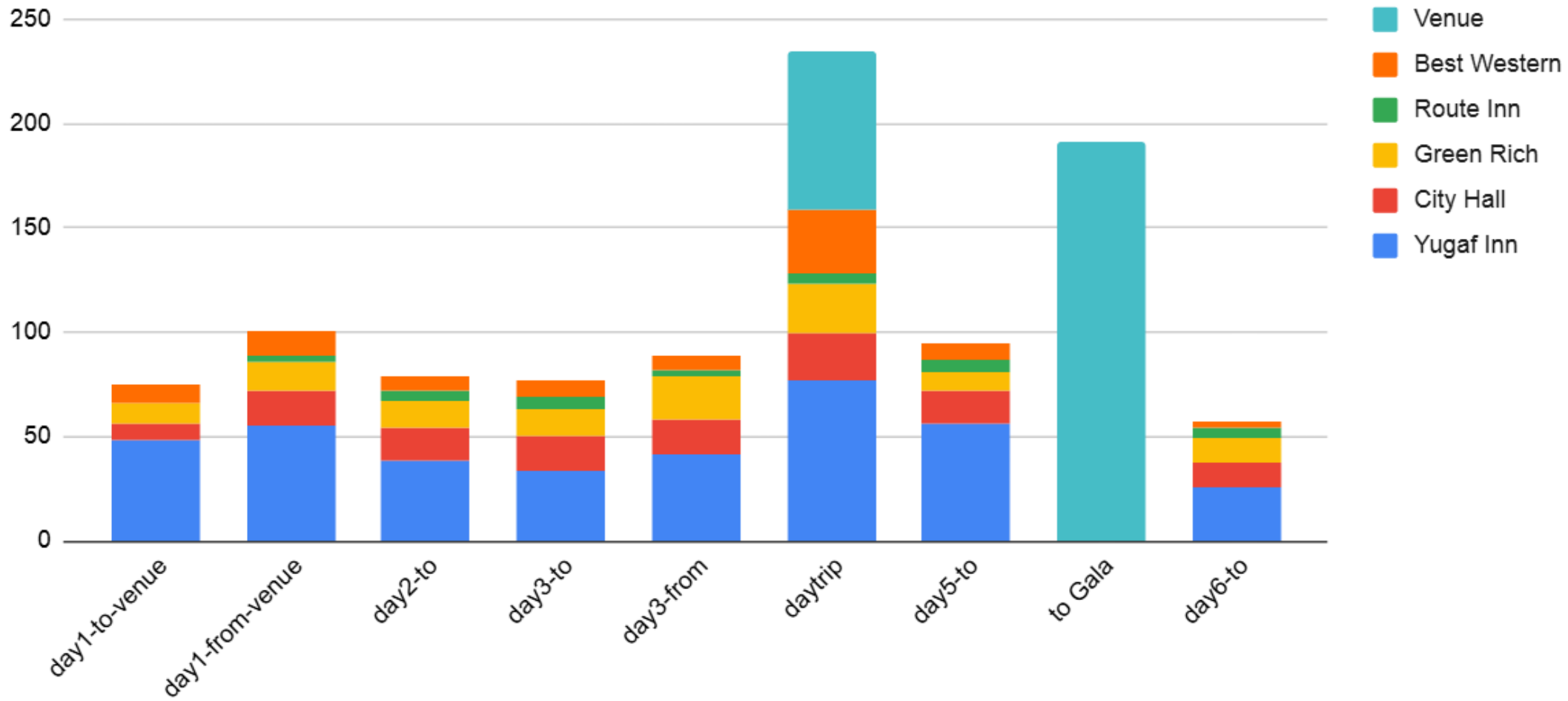

Germany
Brazil
VOTE
投票
VOTE


Vote for the Next TRISTAN!
How to vote
① Tear the ballot paper in half and place your choice into the ballot box, OR
② Mark a circle on your preferred country.
Voting closes before the Gala Dinner.


Brazil

Were we truly able to operate the bus as OR experts?

Over 1,300 participants throughout TRISTAN.



Friday-1

- **Logistics Optimization 2** (Ricardo Giesen)
- **Vehicle Routing Problem 3**(Pirmin Fontaine)
- **Discrete Choice Model 2** (Giancarlos Parady)
- **Resilience** (Hajime Watanabe)
- **Column Generation 2** (Negin Alisoltani)
- **OD Estimation**(Chao Zhang)

Alisoltani et, al.(2025)*In P2P optimization, it is remarkable that the study goes beyond simple matching by extending column generation to handle complex real-time assignment problems with fare constraints using soft constraints.*

Lu et al.(2025) *A novel framework is established that mathematically incorporates the psychological effects of crowding as row and jointly optimizes route generation and line planning. In particular, the integration of column generation and cut generation offers a scalable and extensible solution approach.*

Friday-2

- **Drone and Air Mobility**(Yun Hui Lin)
- **Network Design 2**(Ryuichi Tani)
- **Data-Driven Analysis 2**(Takao Dantsuji)
- **Traffic and Transit Assignment 2**(Hiroe Ando)
- **Game Theory 2**(Kenan Zhang)
- **On-Demand Mobility 2**(Yusuke Hara)

Kukiku & Bierlaire.(2025). *This study proposes a groundbreaking modeling approach for generating synthetic populations along life courses, with strong potential for longitudinal forecasting.*

Lin, Zhang and Yao.(2025*) The proposed Population Markov Potential Game (PMPG), which integrates population games, potential games, and Markov games, introduces an inspiring new paradigm for traffic assignment by proving the existence of a Nash policy that also solves an equivalent optimization problem.*

To TRISTAN XII Okinawa's Special Issues

TRISTAN Okinawa's Special Issues Team

- We find compelling is the ability to show that people can retain some freedom of choice while committing to control, moving beyond mean-field assumptions to propose a new market framework that incorporates multiplicity and enables both coordination and autonomy.
- So the question for us researchers is how can we reframe transportation modelling as a **humanitarian, participatory, and combinatorial form of choice**? The Okinawa roundtable was absolutely fascinating.
- We are currently considering the preparation of a **special issue**, taking into account the sessions of TRISTAN XII Okinawa

Certificate of attendance: TRISTAN XII


Let’s be sure to meet in Brazil in the summer of 2028!