

# Takara Sakai

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<https://takala4.github.io/cv/>

## EDUCATION

Ph.D. Information Science, Tohoku University, 2023 (Supervisor: Prof. Akamatsu)

M.S. Information Science, Tohoku University, 2020

B.S. Civil engineering, Tohoku University, 2018

## APPOINTMENTS

2023.10– Tokyo Institute of Technology  
Specially Appointed Assistant Professor, School of Environment and Society

2020.04–2023.09 JSPS Research Fellowship for Young Scientist (Tokubetsu Kenkyuin) DC1

## RESEARCH AREAS

Transportation science: dynamic traffic assignment, traffic control, pricing, mechanism design, economic analysis, simulation, algorithm

## PUBLICATIONS

### Journal Articles

1. Takara Sakai, Masanao Wakui, and Takashi Akamatsu, 2023. A Fast Algorithm for Solving Fujita-Ogawa Model in Discrete Two-dimensional Space. Japanese Journal of JSCE Vol.79, No.4, Article ID:22-00341.
2. Masanao Wakui, Takara Sakai, and Takashi Akamatsu, 2023. An Efficient Algorithm for Solving Dynamic User Equilibrium Traffic Assignment in Large-scale Networks. Japanese Journal of JSCE, Vol.79, No.4, Article ID:22-00301.
3. Takara Sakai, Takashi Akamatsu, and Koki Satsukawa, 2021. Departure Time Choice Problems with Heterogeneous Values of Schedule Delay in Tandem Bottlenecks. Journal of JSCE Series D3: Infrastructure Planning and Management, Vol.77, No.4, pp.330-345.
4. Takashi Akamatsu., Takeshi Nagae, Minoru Osawa, Koki Satsukawa, Takara Sakai and Daijiro Mizutani, 2021. Model-based analysis on social acceptability and feasibility of a focused protection strategy against the COVID-19 pandemic. Scientific reports, 11(1), p.2003.
5. Takara Sakai and Takashi Akamatsu, 2019. Stability of Congestion Patterns and Macroscopic Fundamental Diagrams in Tokyo Metropolitan Expressway Network. Journal of JSCE Series D3: Infrastructure Planning and Management, Vol.75, No.2, pp.097-108.

## Preprints

1. Takara Sakai, Takashi Akamatsu, Koki Satsukawa: A Paradox of Telecommuting and Staggered Work Hours in the Bottleneck Model 2023, <https://arxiv.org/abs/2309.08352>
2. Takara Sakai, Takashi Akamatsu, Koki Satsukawa: Queue replacement principle for corridor problems with heterogeneous commuters 2022, <https://arxiv.org/abs/2210.03357>
3. Takara Sakai, Koki Satsukawa, Takashi Akamatsu: Non-existence of queues for system optimal departure patterns in tree networks 2022, <https://arxiv.org/abs/2205.06015>

## Conference Proceedings

1. Takara Sakai, Takashi Akamatsu, Koki Satsukawa, 2021. Departure time choice problems in a corridor network with heterogeneous value of schedule delay. The 25th HKSTS International Conference.
2. Takara Sakai, Takashi Akamatsu, 2018. Spatio-Temporal Regularities of Traffic Congestion Patterns in the Metropolitan Expressway Network. The 5th CWRU-Tohoku Joint Workshop.

## Conference Papers Presented

1. Takara Sakai, Takashi Akamatsu, Koki Satsukawa, 2023. Welfare impacts of remote and flexible working policies in the bottleneck model. 11th Symposium of the European Association for Research in Transportation, ETH Zurich.
2. Takara Sakai, Takashi Akamatsu, and Koki Satsukawa, 2023. Queue replacement principle for corridor problems with heterogeneous commuters. 9th International Symposium on Dynamic Traffic Assignment. Northwestern University, Chicago, Illinois, US.
3. Takara Sakai, Takashi Akamatsu, Koki Satsukawa, 2021. Departure time choice problems in a corridor network with heterogeneous value of schedule delay. The 25th HKSTS International Conference, online.
4. Takara Sakai, Takashi Akamatsu, 2018. Spatio-Temporal Regularities of Traffic Congestion Patterns in the Metropolitan Expressway Network. The 5th CWRU-Tohoku Joint Workshop, Tohoku University.

## GRANTS AND AWARDS

### Awards and Honors

- 2020      The Best of Presentation, Dept. of Civil and Environmental Eng. Graduate School of Eng. Tohoku University
- 2018      The Best of Presentation, Dept. of Civil Eng. School of Eng. Tohoku University

### Grants and Fellowships

- 2020–2023      Grant-in-Aid for JSPS Research Fellow (20J21744). JSPS KAKENHI. PI.

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