

Yuki Takaha

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RESEARCH INTEREST

Statistical mechanics, nonequilibrium physics, disordered systems, amorphous solids and glasses, self-organized criticality, percolation, active matter, rheology

EDUCATION

• PhD course

Department of Basic Science, Graduate School of Arts and Sciences, The University of Tokyo
◦ Advisor: Prof. Atsushi Ikeda

April 2023 - present

Tokyo, Japan

• Master of Science in the field of Multidisciplinary Sciences

Department of Basic Science, Graduate School of Arts and Sciences, The University of Tokyo
◦ Advisor: Prof. Atsushi Ikeda

April 2021 - March 2023

Tokyo, Japan

• Bachelor of Science

Department of Physics, Faculty of Science, The University of Tokyo

April 2017 - March 2021

Tokyo, Japan

PUBLICATIONS

3. Y. Takaha, H. Mizuno, and A. Ikeda

“Avalanche criticality emerges by thermal fluctuation in a quiescent glass”
Physical Review E **112**, L043401(2025), arXiv:2409.15775

2. Y. Takaha, H. Mizuno, and A. Ikeda

“Arrhenius temperature dependence of the crystallization time of deeply supercooled liquids”
Physical Review Research **6**, 013040(2024), arXiv:2303.07817

1. Y. Takaha and D. Nishiguchi

“Quasi-two-dimensional bacterial swimming around pillars: Enhanced trapping efficiency and curvature dependence”
Physical Review E **107**, 014602(2023), arXiv:2203.16017

AWARDS, FELLOWSHIPS, & GRANTS

• 3rd Poster Prize Award for the Topic 4-Disordered and glassy systems

Jul. 2025

29th International Conference on Statistical Physics

• JSPS Doctorial Course Research Fellowship(DC2)

Apr. 2024 - Mar. 2026

Japan Society for the Promotion of Science

• Student Presentation Award of the Physical Society of Japan

Oct. 2023

JPS 78th Annual Meeting

• World-leading Innovative Graduate Study Program of Advanced Basic Science Course

Apr. 2021 - Mar. 2024

The University of Tokyo

PRESENTATION

*Presenting author

INTERNATIONAL CONFERENCES AND MEETINGS

11. **Y. Takaha***, H Mizuno, and A. Ikeda
“Avalanche criticality emerges by thermal fluctuation in a quiescent glass”
The 10th International Discussion Meeting on Relations in Complex Systems, **Invited talk**, Barcelona, Spain, July 2025
10. H. Kobayashi*, **Y. Takaha**, C. Yuhan, Y. Sato, A. Kawamoto, and T. Nomura
“Topology optimization of soft robots with rigid actuators using the material point method and extended position-based dynamics”
18th U.S. National Congress on Computational Mechanics, Oral, Illinois, USA, July 2025
9. **Y. Takaha***, H Mizuno, and A. Ikeda
“Avalanche criticality emerges by thermal fluctuation in a quiescent glass”
29th International Conference on Statistical Physics, Poster, Florence, Italy, July 2025
8. **Y. Takaha***, H Mizuno, and A. Ikeda
“Avalanche criticality emerges by thermal fluctuation in a quiescent glass”
Soft and Liquid Matter Physics: Past, Present and Future, Poster, Tokyo, Japan, March 2025
7. **Y. Takaha***, H Mizuno, and A. Ikeda
“Avalanche criticality emerges by thermal fluctuation in a quiescent glass”
9th Workshop on Physics between Ecole Normale Supérieure and University of Tokyo, Oral, Tokyo, Japan, December 2024
6. **Y. Takaha***, H Mizuno, and A. Ikeda
“Avalanche criticality emerges by thermal fluctuation in a quiescent glass”
Seeking Unifying Principles in Equilibrium and Driven Materials, Oral, Capri, Italy, October 2024
5. **Y. Takaha***, H Mizuno, and A. Ikeda
“Avalanche criticality of rearrangements in aging glasses”
Long-term Workshop on Frontiers in Non-equilibrium Physics 2024, Oral, Kyoto, Japan, August 2024
4. **Y. Takaha***, H Mizuno, and A. Ikeda
“Crystallization dynamics of deeply supercooled liquids”
The 7th International Soft Matter Conference, Poster, Osaka, Japan, September 2023
3. D. Nishiguchi* and **Y. Takaha**
“How dimension matters for bacterial swimming: Enhanced attractions in quasi-two dimensions”
28th International Conference on Statistical Physics, Oral, Tokyo, Japan, August 2023
2. **Y. Takaha***, H. Mizuno, and A. Ikeda
“Crystallization dynamics of deeply supercooled liquids”
28th International Conference on Statistical Physics, Poster, Tokyo, Japan, August 2023
1. **Y. Takaha***, H. Mizuno, and A. Ikeda
“Relaxation and crystallization dynamics of a monodisperse soft sphere glass”
Japan-France joint seminar “Physics of dense and active disordered materials”, Poster, Kyoto, Japan, March 2023

DOMESTIC CONFERENCES AND MEETINGS

10. **Y. Takaha*** and A. Ikeda
“Activation processes in the aging dynamics of structural glasses”
JPS 80th Annual Meeting, oral, Hiroshima, September 2025
9. **Y. Takaha***, H Mizuno, and A. Ikeda
“Avalanche criticality emerges by thermal fluctuation in a quiescent glass”
The 12th Soft Matter conference, poster, Osaka, December 2024
8. **Y. Takaha***, H Mizuno, and A. Ikeda
“Avalanche criticality emerges by thermal fluctuation in a quiescent glass”
Forefront research in glass and related fields, oral, Chiba, November 2024
7. **Y. Takaha***, J. Si, S. Ishikawa, T. Yasuda, N. Sakumichi, and T. Sakai
“Gelation condition of a dilute polymer solution”
The 11th Soft Matter conference, oral, Tokyo, December 2023
6. **Y. Takaha***, H Mizuno, and A. Ikeda
“Avalanche criticality of rearrangements in aging dynamics”
JPS 78th Annual Meeting, oral, Iwate, September 2023

5. **Y. Takaha*** and A. Ikeda
“Crystallization dynamics of a monodisperse soft sphere glass”
The 36th discussion meeting on molecular simulation, oral, Tokyo, December 2022
4. **Y. Takaha*** and A. Ikeda
“Relaxation and crystallization dynamics of a monodisperse soft sphere glass”
The 10th Soft Matter conference, poster, Fukuoka, November 2022
3. **Y. Takaha*** and A. Ikeda
“Crystallization dynamics of a monodisperse soft-sphere glass”
JPS 2022 Autumn Meeting Program, oral, Tokyo, September 2022
2. **Y. Takaha*** and D. Nishiguchi
“Quasi-two-dimensional bacterial swimming around pillars: Enhanced trapping efficiency and curvature dependence”
The 5th research meeting of “Information physics of living matters”, poster, Hyogo, June 2022
1. **Y. Takaha*** and D. Nishiguchi
“Quasi-two-dimensional bacterial swimming around pillars: Enhanced trapping efficiency and curvature dependence”
JPS 2021 Autumn Meeting Program, oral, online, September 2021