

# Kenshi KUROKI (黒木 健志)

November 10, 2025

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## Personal Data

Date of birth: Jan. 21, 1996

Place of birth: Nagasaki, Japan

Nationality: Japan

## Present Position and Affiliation

### Postdoctoral Fellow

Quark Matter Research Center  
Institute of Modern Physics, Chinese Academy of Sciences, China

## Academic Position

Jul. 2025 – Present	<b>Postdoctoral Fellow</b> Institute of Modern Physics Chinese Academy of Sciences, China
Jul. 2025 – Present	<b>Co-Researcher Partnership</b> Faculty of Science and Technology Sophia University, Japan
Apr. 2024 – Jun. 2025	<b>Postdoctoral Fellow</b> Faculty of Science and Technology Sophia University, Japan
Apr. 2021 – Mar. 2024	<b>Research Assistant</b> Faculty of Science and Technology Sophia University, Japan

## Education

Apr. 2021 – Mar. 2024	<b>Doctor of Philosophy in Physics (Ph.D.)</b> Department of Physics, Faculty of Science and Technology Sophia University, Japan Supervisor: Prof. Tetsufumi Hirano Dissertation title: “Hadron correlation and interaction from a dynamical model in high-energy nuclear collisions”
Apr. 2019 – Mar. 2021	<b>Master of Science in Physics (M.Sc.)</b> Department of Physics, Faculty of Science and Technology Sophia University, Japan Supervisor: Prof. Tetsufumi Hirano Dissertation title: “Effects of event-by-event fluctuations in ultra-central heavy-ion collisions”

Apr. 2015 – Mar. 2019 **Bachelor of Science (B.S.)**  
Department of Engineering and Applied Science,  
Faculty of Science and Technology  
Sophia University, Japan

## Award

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Jun. 2024 **Exemption from Return for Particularly Outstanding Achievement,**  
Japan Student Services Organization (JASSO)

## Fellowship/Scholarship

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Apr. 2021 – Mar. 2024 Sophia Alumni Entrepreneurs Club Scholarship  
Apr. 2021 – Mar. 2024 Japan Student Services Organization (JASSO) Scholarship  
Apr. 2021 – Mar. 2024 Sophia University Graduate School Scholarship for Fostering  
Researchers in Doctoral Program

## Membership of Academic Society

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The Physical Society of Japan

## Community Service

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Organizer for Jet Modification and Hard-Soft Correlations (SoftJet 2024), Tokyo,  
Japan, Sep. 28–29, 2024, (Local Organizing Committee)

## Computational Skill

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Operating System Linux, Windows  
Programming C/C++  
Miscellaneous Shell (Bash, zsh), L<sup>A</sup>T<sub>E</sub>X, gnuplot, Github, Microsoft Office

## Language Skill

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Japanese Native  
English Proficient

## Reference

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Shunzo Kumano	Professor, Quark Matter Research Center Institute of Modern Physics Chinese Academy of Sciences	No.1 Xinqiao North Road, Henan Bei'an, Huicheng District, Huizhou, Guangdong, 516000, China shunzo.kumano@kek.jp
Tetsufumi Hirano	Professor, Department of Physics, Faculty of Science and Technology, Sophia University	7-1, Kioi-cho, Chiyoda-ku, Tokyo, 102-8554, Japan +81-3-3238-3434 hirano@sophia.ac.jp
Koichi Murase	Research Assistant Professor, Physics Department, Tokyo Metropolitan University	1-1, Minami-Osawa, Hachioji-shi, Tokyo 192-0397, Japan phys.murase@gmail.com

# Publications

Citation data is based on INSPIRE (Nov. 10, 2025).

## Refereed Journal

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- **K. Kuroki, A. Sakai, K. Murase, and T. Hirano**, (Corresponding author)  
“Hydrodynamic fluctuations and ultra-central flow puzzle in heavy-ion collisions”, **Phys. Lett. B** **842**, 137958 (2023), arXiv:2305.01977 [nucl-th]. [*14 citations*]

## Submitted Paper

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- **S. Kumano and K. Kuroki**, (Corresponding author)  
“Tensor-polarized twist-3 parton distribution functions  $f_{LT}(x)$  for the spin-1 deuteron by using twist-2 relations”, arXiv:2509.05046 [hep-ph]. [*0 citations*]

## Conference Proceedings

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- **K. Kuroki and T. Hirano**, (Corresponding author, Refereed)  
“ $p\text{-}\phi$  femtoscopic correlation analysis using a dynamical model”, **The 21st International Conference on Strangeness in Quark Matter (SQM 2024)**, Strasbourg, France, Jun. 5, 2024, **EPJ Web Conf.** **316**, 03009 (2025), arXiv:2410.01204 [hep-ph]. [*1 citations*]

# Presentations

The speaker is marked with a circle.

## Invited Talk

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- ○K. Kuroki,  
“Effects of collision dynamics on  $p\phi$  correlation function” (Japanese), **2nd Workshop on Intersection of J-PARC and Heavy Ion Collision Experiments**, Tokai, Ibaraki, Japan, Mar. 7, 2025.
- ○K. Kuroki,  
“Effects of dynamics on interaction study via femtoscopy” (Japanese), **Go-Forward 2025**, Nagasaki, Japan, Feb. 28, 2025.
- ○K. Kuroki,  
“Effects of collision dynamics on  $p\phi$  femtoscopy”, **10th Asian Triangle Heavy-Ion Conference - ATHIC 2025**, Berhampur, India, Jan. 15, 2025.
- ○K. Kuroki,  
“ $p-\phi$  interaction from femtoscopy using a dynamical model”, **International workshop on J-PARC hadron physics 2024 (J-PARC Hadron 2024)**, Tokai, Ibaraki, Japan, Jul. 23, 2024.
- ○K. Kuroki,  
“Effects of hydrodynamic fluctuations on anisotropic flow in ultra-central heavy-ion collisions” (Japanese), **Post Quark Matter 2019**, Nagoya University, Nagoya, Japan, Dec. 22, 2019.

## Invited Seminar

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- ○K. Kuroki,  
“Study on hadron correlations and interactions using a dynamical model” (Japanese), **42nd Heavy Ion Pub workshop**, Kyoto University, Kyoto, Japan, Mar. 26, 2025.
- ○K. Kuroki,  
“Phenomenology of high-energy nuclear collisions using relativistic hydrodynamic models” (Japanese), **Sohaken Seminar**, Hiroshima University, Hiroshima, Japan, Jul. 3, 2023.

## Contributed Talk

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- ○K. Kuroki and T. Hirano,  
“ $p-\phi$  femtoscopic correlation analysis using a dynamical model”, **The 21st International Conference on Strangeness in Quark Matter (SQM 2024)**, Strasbourg, France, Jun. 5, 2024.
- ○K. Kuroki and T. Hirano,  
“ $p-\phi$  femtoscopy using a dynamical model” (Japanese), **The Physical Society of Japan 2024 Spring Meeting**, Online, Japan, Mar. 19, 2024.

- ○K. Kuroki, A. Sakai, K. Murase, and T. Hirano,  
“Effects of hydrodynamic fluctuations in ultra-central heavy-ion collisions” (Japanese),  
**The Physical Society of Japan the 77th Annual Meeting**, Online, Japan, Mar. 15, 2022.
- ○K. Kuroki, A. Sakai, K. Murase, and T. Hirano,  
“Effects of hydrodynamic fluctuations in ultra-central high-energy heavy-ion collisions” (Japanese), **The Physical Society of Japan the 75th Annual Meeting**, Online, Japan, Mar. 16, 2020.

## Poster Presentation

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- ○K. Kuroki and T. Hirano,  
“ $p\text{-}\phi$  correlation and interaction using a dynamical model” (Japanese), **Tutorial workshop for high-energy heavy-ion collision physics 2024**, Osaka University, Osaka, Japan, Aug. 6, 2024.
- ○K. Kuroki, A. Sakai, K. Murase, and T. Hirano,  
“Effects of hydrodynamic fluctuations in ultra-central Pb-Pb collisions at LHC”, **The 29th International Conference on Ultra-relativistic Nucleus-Nucleus Collisions (QM 2022)**, Online, Apr. 6, 2022.
- ○K. Kuroki, A. Sakai, K. Murase, and T. Hirano,  
“Effects of hydrodynamic fluctuations on azimuthal flow in ultra-central heavy ion collisions”, **The 28th International Conference on Ultra-relativistic Nucleus-Nucleus Collisions (QM 2019)**, Wuhan, China, Nov. 4, 2019.