

# Kyohei Yamada

March 12, 2025  
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## Employment

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Dec 2023 - Present	<b>Postdoctoral Research Associate</b> Joseph Henry Laboratories of Physics, Jadwin Hall, Princeton University
Nov 2023 - Dec 2023	<b>Senior Research Assistant</b> Joseph Henry Laboratories of Physics, Jadwin Hall, Princeton University
Oct 2023	<b>Project Researcher</b> Department of Physics, Graduate School of Science, The University of Tokyo
Apr 2021 - Sep 2023	<b>Research Fellowship for Young Scientists (DC2)</b> Japan Society for the Promotion of Science

## Education

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Apr 2020 - Dec 2023	<b>Ph.D.</b> Department of Physics, Graduate School of Science, The University of Tokyo
Apr 2018 - Mar 2020	<b>M.S.</b> Department of Physics, Graduate School of Science, The University of Tokyo
Apr 2016 - Mar 2018	<b>B.S.</b> Department of Physics, School of Science, The University of Tokyo

## Awards

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Oct 2024	26th High Energy Physics Young Researcher's Award
Jul 2019	The 56th Radioisotope and Radiation Research Meeting, Presentation Award

## Fellowships

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Apr 2021 - Sep 2023	Japan Society for the Promotion of Science (JSPS), Research Fellowship for Young Scientists (DC2)
Oct 2018 - Mar 2023	The Program of Excellence in Photon Science (XPS) Fellowship

## Publications

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1. T. Fujino, S. Takakura *et al.*, "A measurement of atmospheric circular polarization with POLARBEAR", *ApJ* 981 15 (2025)
2. N. Galitzki *et al.*, "The Simons Observatory: Design, Integration, and Testing of the Small Aperture Telescopes", *ApJS* 274 33 (2024)
3. K. Shu *et al.*, "Cooling positronium to ultralow velocities with a chirped laser pulse train", *Nature* (2024)
4. The POLARBEAR Collaboration, "Exploration of the polarization angle variability of the Crab Nebula with POLARBEAR and its application to the search for axion-like particles", *Phys. Rev. D* 110, 063013 (2024), arXiv:2403.02096 [astro-ph.CO]
5. K. Yamada *et al.*, "The Simons Observatory: Cryogenic Half-Wave Plate Rotation Mechanism for the Small Aperture Telescope." , *Rev. Sci. Instrum.* 95, 024504 (2024)
6. J. Sugiyama *et al.*, "The Simons Observatory Development and Optical Evaluation of Achromatic Half-wave Plates", *J. Low Temp. Phys.* 214, 173 (2024)
7. M. Murata *et al.*, "The Simons Observatory: A fully remote controlled calibration system with a sparse wire grid for cosmic microwave background telescopes" , *Rev. Sci. Instrum.* 94, 124502 (2023)

8. The POLARBEAR Collaboration, "Constraints on axionlike polarization oscillations in the cosmic microwave background with POLARBEAR", *Phys. Rev. D* 108, 0430171111 (2023), arXiv:2303.08410 [astro-ph.CO]
9. K. Shu, K. Yamada *et al.*, "Development of a porous silica cavity for laser excitation of confined positronium", *JJAP Conference Proceedings* volume 9, 011202-011202 (2023).
10. The POLARBEAR Collaboration *et al.*, "Improved Upper Limit on Degree-scale CMB B-mode Polarization Power from the 670 Square-degree POLARBEAR Survey", *ApJ* 931 101 (2022)
11. K. Yamada *et al.*, "Theoretical Analysis and Experimental Demonstration of a Chirped Pulse-Train Generator and its Potential for Efficient Cooling of Positronium", *Physical Review Applied* 16 (2021) 014009
12. Simons Observatory Collaboration *et al.*, "Simons Observatory Small Aperture Telescope overview," *SPIE* volume 11445, pages1372-1379 (2020)

## Conferences and Talks

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1. "Exploration of the polarization angle variability of the Crab Nebula with POLARBEAR and its application to the search for axion-like particles (Invited)", *Parity Violation from Home*, Nov 2024, Online
2. "Exploration of the polarization angle variability of the Crab Nebula with POLARBEAR and its application to the search for axion-like particles", *Astro Colloquium*, August 2024, The University of Melbourne
3. "Exploration of the polarization angle variability of the Crab Nebula with POLARBEAR and its application to the search for axion-like particles", *Gravity Group Meeting*, April 2024, Princeton University
4. "Exploration of the polarization angle variability of the Crab Nebula with POLARBEAR and its application to the search for axion-like particles (Invited)", *14th JSPS core-to-core program: CMB Japan group seminar for young scientists*, March 2024, Tsukuba
5. "Results of ultra-light axion-like particle search by the observation of Crab Nebula with POLARBEAR", *The Physical Society of Japan 2024 spring meeting*, March 2024, Online
6. "Axion search by the observation of Crab Nebula with Simons Array and Polarbear", *The Physical Society of Japan 2023 spring meeting*, March 2023, Online
7. "Axion search by the observation of Crab Nebula of Simons Array and Polarbear", *The astronomical society of Japan autumn annual meeting 2022*, September 2022, Niigata university
8. "Performance evaluation of the rotation mechanism of the cryogenic continuous half-wave plate modulator for Simons Observatory", *The Physical Society of Japan 2021 Autumn Meeting*, September 2021, Online
9. "Detector Evaluation by Planet Observations in the Simons Array experiment", *The astronomical society of Japan autumn annual meeting 2021*, September 2021, Online
10. "Development of inductively coupled position and temperature sensors for cryogenic rotating half wave plate", *The 19th International Workshop on Low Temperature Detectors (LTD19)*, July 28th 2021, Online
11. "Development of a cryogenic continuously rotating half-wave plate for Simons Observatory", *The Physical Society of Japan 2021 Annual (76th) Meeting*, March 2021, Online
12. "Remote monitoring of a cryogenic continuously rotating half-wave plate in CMB polarimetry", *The Physical Society of Japan 2020 Autumn Meeting*, September 2020, Online
13. "Cooling of positronium for Bose-Einstein condensation II", *The Physical Society of Japan 2020 Annual (75th) Meeting*, March 2020, Online
14. "Development of cooling laser for positronium Bose-Einstein condensation", *4th Japan-China Joint Workshop on Positron Science*, November 2019, Nara
15. "Cooling of positronium for Bose-Einstein condensation I", *The Physical Society of Japan 2019 Autumn Meeting*, September 2019, Yamagata university
16. "Cooling of positronium for Bose-Einstein condensation I", *The 56th Radioisotope and Radiation Research Meeting*, July 2019, the university of Tokyo
17. "Cooling of positronium for Bose-Einstein condensation III", *The Physical Society of Japan 2019 Annual (74th) Meeting*, March 2019, Kyushu university

18. “Recent Progress towards Positronium Bose-Einstein Condensation” , The 11th International Workshop on Fundamental Physics Using Atoms, March 2019, OIST
19. “Cooling of positronium for Bose-Einstein condensation I” , Positron Annihilation Study for Science and Engineering 2018, December 2018, Kyoto university
20. “Cooling of positronium for Bose-Einstein condensation II” , The Physical Society of Japan 2018 Autumn Meeting, September 2018, Shinshu university