

SUNAO SUGIYAMA

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CONTACT INFORMATION

Address	Center for Particle Cosmology, Department of Physics and Astronomy, University of Pennsylvania, Philadelphia, PA 19104, USA
Room	4N21
Email	ssunao@sas.upenn.edu
Website	https://git-sunao.github.io
GitHub	https://github.com/git-sunao

RESEARCH INTERESTS

Theoretical and Observational cosmology: *large-scale structure of the Universe, gravitational weak/micro lensing, primordial black hole*

COLLABORATIONS

Subaru HSC weak lensing working group, member (2021-present, **co-chair** since 2024Nov)
Dark Energy Survey (DES), member (2024-present)

POSITIONS

Current	Postdoctoral researcher, University of Pennsylvania, Philadelphia, the United States Mentor: Prof. Bhuvnesh Jain	Sep. 2023 – present
Past	JSPS Overseas Research Fellow, University of Pennsylvania, Philadelphia, the United States Postdoctoral researcher, Kavli IPMU, Chiba, Japan Mentor: Prof. Masahiro Takada, funded partially by beyond AI	Sep. 2023 – Aug. 2025 Apr. 2023 – Aug. 2023
	JSPS Research Fellowships for Young Scientists, Kavli IPMU, Chiba, Japan	Apr. 2021 – Mar. 2023
Educations	University of Tokyo, Tokyo, Japan, Ph.D. course in Physics Dissertation: <i>“Joint cosmology analyses using gravitational weak lensing data from Subaru Hyper Suprime-Cam”</i> Supervisor: Prof. Masahiro Takada University of Tokyo, Tokyo, Japan, M.S. in Physics Dissertation: <i>“Validation of cosmological analysis based on perturbation theory for wide-field galaxy survey”</i> Supervisor: Prof. Masahiro Takada University of Tokyo, Tokyo, Japan, B.A. in Physics	Apr. 2020 – Mar. 2023 Apr. 2018 – Mar. 2020 Apr. 2014 – Mar. 2018

GRANT & AWARDS

Grant-in-Aid for JSPS Research Fellows (DC2), Japan Society for the Promotion of Science, Apr. 2021 – Mar. 2023

The School of Science Encouragement Award (Doctoral program), University of Tokyo, the School of Science, Mar. 2023

TEACHING

Collaborative coding: git and github, **CD3 symposium** 2023, Kavli IPMU

Coadvised students: Rafael C. H. Gomes (a PhD student at UPenn since 2023), Noriaki Nakasawa (a master student at the University of Nagoya, 2022)

PROFESSIONAL ACTIVITIES

Society	The Astronomical Society of Japan (ASJ), 2018 – present The Physical Society of Japan (JPS), 2022 – present
Seminar/Workshop/Conference	IPMU weekly lunch seminar (co-organizer), 2019 – 2021 HSC weaklensing mini workshop (organizer), Aug. 2022 Sesto 2025 - Tracing Cosmic Evolution with Galaxy Clusters V (SOC), 2025
Referee	International Journal of Modern Physics D The Astrophysical Journal American Astronomical Society Journals Journal of Cosmology and Astroparticle Physics
Computing	Developer of <code>fft-extended-source</code> , <code>fastnc</code> , <code>dark emulator</code> as a part of <code>Dark Quest Project</code> I can work with C, C++, Python, HSC pipeline (for image analysis)
Accepted Observation	PI of Definitive search for PBH dark matter in the multiverse cosmology with HSC co-PI of Survey of M31 eclipsing binaries: Toward a 1% distance measurement

PUBLIC ENGAGEMENT AND OUTREACH

Apperence on *Cosmic Front, Primordial Black Hole: the master key of the Universe (title in Japanese)* produced by NHK, 2021

Interviewed by Quanta Magazine on *Clashing Cosmic Numbers Challenge Our Best Theory of the Universe*, 2024

Interviewed by Asahi Shimbun on *Breakdown in the standard model of the Universe? An analysis using precise dark matter “map” (title in Japanese)*, 2024

LIST OF PUBLICATIONS, TALKS, AND PRESS RELEASES

The list of publications, talks, and press releases is available [here](#).