

HUI-YU ZHU

POSTDOC.

(+86) 136-1280-3384

hzhuaav@ibs.re.kr

<https://jacquelynzhy.github.io>

CURRENT POSITION	Senior Researcher in Institute for Basic Science <i>Cosmology, Gravity and Astroparticle Physics Group</i> • Address: Institute for Basic Science (IBS), 55, Expo-ro, Yuseong-gu, Daejeon, Korea.	2024.11 -
EDUCATION	Hong Kong University of Science and Technology (HKUST) <i>Ph.D. in Physics</i> • Supervisor: Prof. George Smoot and Prof. Yi Wang	2019 - 2024
	Southern University of Science and Technology (SUSTech) <i>B.S. in Physics</i> • Supervisor: Prof. Leonardo Modesto	2015 - 2019
AWARDS AND SCHOLARSHIP	• Postgraduate Scholarship, HKUST • The Graduation Design Excellence Award, SUSTech • National Encouragement Scholarship, China • Bronze Medal, University Physics Competition • National Encouragement Scholarship, China • Second Prize, Chinese Undergraduate Physics Tournament • Third Prize, Outstanding Student Scholarship, SUSTech • Bronze Medal, Musical Instrument Competition In Guangdong	2019 - 2024 2019 2018 2017 2017 2017 2016 2015
TEACHING EXPERIENCE	Teaching Assistant in the HKUST <i>Physics Department</i> • General Physics I with Calculus • Introduction of Stellar Astrophysics • Methods of Experimental Physics I • Methods of Experimental Physics I	2022 2022 2021 2020
	Teaching Assistant in the SUSTech <i>Physics Department</i> • Introduction to Quantum Field Theory • General Relativity: From Black Hole to Cosmology	2019 2018
SERVICES	Organizer for: Workshop on QNM and BH Perturbation, IBS Assistant for: International Conference on High Energy Physics, HKUST Assistant for: International Conference on Quantum Gravity, SUSTech	
SKILLS	Languages: Chinese (Native), English (Fluent), Japanese (Beginner), Italian(Beginner). Programming: Python, Mathematica.	

INVITED TALKS & SEMINARS	• Workshop on QNM and BH Perturbation, IBS, Daejeon, Korea	2025.05
	• Seminar at Niels Bohr Institute, Copenhagen , Denmark	2025.04
	• Workshop on Cosmology, Gravitation and Particle Physics, FZU, Czech	2025.04
	• Seminar at École normale supérieure de Lyon, France	2025.04
	• Seminar at HKUST, Hong Kong, China	2024.12
	• Workshop on Cosmology, Gravity, Particle Physics, CAS-IBS-IST, Japan	2024.10
	• Seminar at Yangzhou University, China	2024.04
	• Seminar at Shanghai Jiao Tong University, China	2024.03
	• Seminar at SUSTech, China	2023.10
	• Seminar at Kyoto University, Japan	2023.06
• Seminar at RIKEN iTHEMS, Japan	2023.06	
• Seminar at Kavli IPMU, Japan	2023.06	

CONTRIBUTED TALKS & POSTER	• CosPA 2025, IBS, Daejeon, South Korea	2025.07
	• New Horizon of Black Hole Physics, YITP, Kyoto, Japan	2025.01
	• High1 Workshop on Particle, String and Cosmology, KAIST & IBS, Korea	2025.01
	• COSMO24, Kyoto University, Japan (Poster)	2024.10
	• Workshop on cosmology, Gravity, and Particle physics, USTC-IBS-IST, Japan	2024.09
	• New horizons for Psi school & workshop, IST, Lisbon, Portugal (Poster)	2024.07
	• YITP Long Term Workshop on Gravity and Cosmology, Kyoto, Japan	2024.01
	• International Symposium on Cosmology and Particle Astrophysics, Hong Kong	2023.11
	• Joint Annual Conference of Physical Societies, Hong Kong, China	2023.07
	• Conference on String theory, Gravity and Cosmology, APCPT (Online)	2022.06
• Conference on Gravity and Cosmology, YITP (Online)	2022.06	

SCHOOLS	• LPTHE Advanced Summer School in QFT and QG, Vietnam	2024
	• Summer School on String Theory, Field Theory and Holographic Theory, China	2021
	• Winter School on X-ray Data Analysis, Fudan University, China	2018
	• Xinjiang Astronomical Observatory Summer Camp, China	2017

ACADEMIC VISITING	• Niels Bohr Institute, 1 week (Host: Vitor Cardoso)	2025
	• Lyon ENS, 1 week (Host: Etera Livine)	2025
	• HKUST, 1 week (Host: Yi Wang)	2025
	• Yangzhou University, 1 week (Host: Yen Chin Ong)	2024
	• Shanghai Jiaotong University, 1 week (Host: Yucheng Qiu)	2024
	• Kyoto University, 2 weeks (Host: Takahiro Tanaka)	2023
	• Kavli IPMU, 1 week (Host: Misao Sasaki)	2023
• University of Science and Technology of China, 4 months (Host: Yifu Cai)	2023	

REFERENCES

- [1] Q. Ding, M. He, V. Takhistov and H. Y. Zhu, “Superradiant Bosons Driving Supermassive Black Hole Mergers,” [arXiv:2505.09696 [hep-ph]].
- [2] H. Y. Zhu, X. Tong, G. Manzoni and Y. Ma, “Survival of the Fittest: Testing Superradiance Termination with Simulated Binary Black Hole Statistics,” *Astrophys. J.* **981**, no.2, 165 (2025) doi:10.3847/1538-4357/adb1db [arXiv:2409.14159 [gr-qc]].

- [3] K. Fan, X. Tong, Y. Wang and H. Y. Zhu, “Modulating binary dynamics via the termination of black hole superradiance,” *Phys. Rev. D* **109**, no.2, 024059 (2024) doi:10.1103/PhysRevD.109.024059 [arXiv:2311.17013 [gr-qc]].
- [4] C. Chen, A. Ota, H. Y. Zhu and Y. Zhu, “Missing one-loop contributions in secondary gravitational waves,” *Phys. Rev. D* **107**, no.8, 083518 (2023) doi:10.1103/PhysRevD.107.083518 [arXiv:2210.17176 [astro-ph.CO]].
- [5] X. Tong, Y. Wang and H. Y. Zhu, “Termination of superradiance from a binary companion,” *Phys. Rev. D* **106** (2022) no.4, 043002 doi:10.1103/PhysRevD.106.043002 [arXiv:2205.10527 [gr-qc]].
- [6] Y. C. Qiu and H. Y. Zhu, “Probing neutrino sector via a statistical approach,” *Int. J. Mod. Phys. A* **37** (2022) no.10, 2250055 doi:10.1142/S0217751X22500555 [arXiv:2110.10462 [hep-ph]].
- [7] X. Tong, Y. Wang and H. Y. Zhu, “Gravitational Collider Physics via Pulsar–Black Hole Binaries II: Fine and Hyperfine Structures Are Favored,” *Astrophys. J.* **924** (2022) no.2, 99 doi:10.3847/1538-4357/ac36db [arXiv:2106.13484 [astro-ph.HE]].
- [8] L. Modesto, H. Y. Zhu and J. Y. Zhang, “Approaching a spacetime singularity in conformal gravity,” [arXiv:1906.09043 [gr-qc]].

Note: Except [2] & [8], the author’s name is listed in the sequence of the surname’s first character, among which I am the corresponding author for [1] and [3]. In other work, I contribute equally with my collaborators.