


Yu-Cheng QIU

High energy theory/phenomenology

 [qiuyucheng-hep.github.io](https://github.com/qiuyucheng-hep)

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 [/authors/1712090](https://pubs.acs.org/doi/10.26434/chemrxiv-2024-1712090)

Education	Ph.D. in Physics	2017.06 – 2022.08
	The Hong Kong University of Science and Technology, Hong Kong Thesis: “Naturally vanishing cosmological constant and its phenomenology” Supervisor: Prof. S. -H. Henry Tye	
	B.Sc. in Physics	2013.09 – 2017.06
	Soochow University, Suzhou	
Experience	Posdtoc , City University of Hong Kong, Hong Kong	2025.08 – Present
	Postdoc , Tsung-Dao Lee Institute, Shanghai	2022.09 – 2025.09
	Visiting Scholar , Kavli IPMU, Tokyo	2023.07 – 2023.07
	Visiting Scholar , The HKUST Jockey Club IAS, Hong Kong	2022.09 – 2022.10
Research interest	Axion Dark matter Dark energy Yukawa hierarchy Instanton/Sphaleron Discrete gauge symmetry dS vacua construction Landscape and swampland	
Award	TDLI Postdoctoral Fellowship	2024 TDLI
	2022 Postdoctoral International Exchange Program Introduction Project	2022 TDLI
	Best TA Honorable Mention	2018-2019 HKUST
	Outstanding Graduates	2017 Soochow U.
	Hui-Chun Chin and Tsung-Dao Lee CURE	2015 Soochow U.
Teaching	PHYS 5260 Advanced Quantum Mechanism TA, HKUST	Fall 2019
	PHYS 5260 Advanced Quantum Mechanism TA, HKUST	Spring 2019
	PHYS 3033 Electricity and Magnetism I TA, HKUST	Fall 2018
	PHYS 1114 General Physics II TA, HKUST	Spring 2018
	PHYS 3126 Optics TA, Soochow U.	Fall 2015
Service	Physical Review D Reviewer	2025
	Physics Letters A Reviewer	2024

Publication

- High Reheating Temperature without Axion Domain Walls 2509.24812
Shota Nakagawa, Yuichiro Nakai, **Y. -C. Qiu**, Lingyun Wang, Yaoduo Wang Sep 29, 2025
- The Lifespan of our Universe
Hoang Nhan Luu, **Y. -C. Qiu**, S. -H. Henry Tye
JCAP 09 (2025) 055 | 2506.24011 Sep 18, 2025
- Quest for a phenomenologically consistent low cutoff theory 2505.10233
Sudhakantha Girmohanta, **Y. -C. Qiu** May 15, 2025
- Interpreting Cosmic Birefringence and DESI Data with Evolving Axion in Λ CDM
Shota Nakagawa, Yuichiro Nakai, **Y. -C. Qiu**, Masaki Yamada
Phys.Lett.B 868 (2025) 139774 | 2503.18924 Jul 29, 2025
- Dynamical dark energy from an ultralight axion
Hoang Nhan Luu, **Y. -C. Qiu**, S. -H. Henry Tye
Phys.Rev.D 112 (2025) 2, 023524 | 2503.18120 Jul 15, 2025

- Wiggly dilaton: a landscape of spontaneously broken scale invariance
Sudhakantha Girmohanta, Yuichiro Nakai, **Y. -C. Qiu**, Zhihao Zhang
Phys.Lett.B 866 (2025) 139534 | 2411.16304 Nov 25, 2024
- Gemini dark matter
Andrew Cheek, **Y. -C. Qiu**, Liang Tan
Phys.Rev.D 110 (2024) 7, 075021 | 2407.01099 Jul 1, 2024
- Large CP Violation from the Minimum Seesaw Model
Y. -C. Qiu, Jin-Wei Wang, Tsutomu T. Yanagida
Phys.Rev.D 110 (2024) 7, 075013 | 2406.16352 Jun 24, 2024
- Ultraheavy Atomic Dark Matter Freeze-Out through Rearrangement
Y. -C. Qiu, Jie Sheng, Liang Tan, Chuan-Yang Xing
Phys.Rev.D 109 (2024) 9, 095007 | 2312.13758 Dec 21, 2023
- Can we explain cosmic birefringence without a new light field beyond Standard Model?
Yuichiro Nakai, Ryo Namba, Ippei Obata, **Y. -C. Qiu**, Ryo Saito
JHEP 01 (2024) 057 | 2310.09152 Oct 16, 2023
- Baryon number violating rate as a function of the proton-proton collision energy
Y. -C. Qiu, S. -H. Henry Tye
Phys.Rev.D 108 (2023) 11, 113004 | 2309.07410 Mar 5, 2023
- Predictions of m_{ee} and neutrino mass from a consistent Froggatt-Nielsen model
Y. -C. Qiu, Jin-Wei Wang, Tsutomu T. Yanagida
Phys.Rev.D 108 (2023) 11, 115021 | 2307.16470 Jul 31, 2023
- A model of the quintessence axion
Sudhakantha Girmohanta, **Y. -C. Qiu**, Jin-Wei Wang, Tsutomu T. Yanagida
Phys.Rev.D 108 (2023) 1, 015028 | 2303.02852 Mar 5, 2023
- High-quality axions in a class of chiral $U(1)$ gauge theories
Y. -C. Qiu, Jin-wei Wang, Tsutomu T. Yanagida
Phys.Rev.Lett. 131 (2023) 7, 071802 | 2301.02345 Jan 5, 2023
- Electroweak Axion as the Fuzzy Dark Matter
– A Proposal for the Mixed Fuzzy and Cold Dark Matters 2211.15967
Y. -C. Qiu, Tsutomu T. Yanagida Nov 29, 2022
- A Novel Solution to the Gravitino Problem
Y. -C. Qiu, S. -H. Henry Tye
JHEP 02 (2023) 006 | 2207.03144 Jul 7, 2022
- Probing The Neutrino Sector via A Statistical Approach
Y. -C. Qiu, Hui-Yu Zhu
Int.J.Mod.Phys.A 37 (2022) 10, 2250055 | 2110.10462 Oct 22, 2021
- The Hubble Constant in the Axi-Higgs Universe
Leo WH Fung, Lingfeng Li, Tao Liu, Hoang Nhan Luu, **Y. -C. Qiu**, S. -H. Henry Tye
Phys.Rev.Res. 5 (2023) 2, L022059 | 2105.01631 May 4, 2021
- Axi-Higgs cosmology
Leo W.H. Fung, Lingfeng Li, Tao Liu, Hoang Nhan Luu, **Y. -C. Qiu**, S. -H. Henry Tye
JCAP 08 (2021) 057 | 2102.11257 Feb 22, 2021
- Standard Model from A Supergravity Model with a Naturally Small Cosmological Constant
Shing Yan Li, **Y. -C. Qiu**, S. -H. Henry Tye
JHEP 05 (2021) 181 | 2010.10089 Oct 20, 2020
- Linking the Supersymmetric Standard Model to the Cosmological Constant
Y. -C. Qiu, S. -H. Henry Tye
JHEP 01 (2021) 117 | 2006.16620 Jun 30, 2020

- Role of Bloch Waves in baryon-number violating processes
Y. -C. Qiu, S. -H. Henry Tye
Phys.Rev.D 100 (2019) 3, 033006 | 1812.07181 Dec 18, 2018

Conference/Public Presentation

- "a Λ CDM"
Purple Mountain Observatory July 1, 2025
- "a Λ CDM"
Jiangsu University of Science and Technology Jun 28, 2025
- "a Λ CDM"
3rd Topics of Particle, Astro and Cosmo Frontiers (TOPAC 2025) Jun 8, 2025
- "Wiggly dilaton"
KEK Theory Meeting on Particle Physics Phenomenology (KEK-PH2025winter) Feb 18, 2025
- "Wiggly dilaton"
IAS Program on Fundamental Physics (FP 2025), HKUST Jan 15, 2025
- "Gemini dark matter"
The 4th Asian-European-Institutes Workshop for BSM Oct 08, 2024
- "Ultraheavy Atomic Dark Matter Freeze-Out through Rearrangement"
Majorana-Raychaudhuri Seminars (online) Jun 14, 2024
- "Ultraheavy Atomic Dark Matter Freeze-Out through Rearrangement"
University of Electronic Science and Technology of China May 10, 2024
- "Ultraheavy Atomic Dark Matter Freeze-Out through Rearrangement"
City University of Hong Kong Mar 14, 2024
- "Can We Explain Cosmic Birefringence Without a New Light Field beyond the Standard Model?"
2024 IAS program on HEP, HKUST Jan 16, 2024
- "Can We Explain Cosmic Birefringence Without a New Light Field beyond the Standard Model?"
Jagiellonian University Nov 23, 2023
- "Can We Explain Cosmic Birefringence Without a New Light Field beyond the Standard Model?"
OKC & Nordita Theoretical Cosmology journal club, Stockholm University Nov 16, 2023
- "High-quality Axions in a Class of Chiral $U(1)$ Gauge Theories"
Tsinghua University Oct 19, 2023
- "Axi-Higgs Cosmology"
Purple Mountain Observatory, Chinese Academy of Sciences May 25, 2023
- "High-quality Axions in a Class of Chiral $U(1)$ Gauge Theories"
IAS program on Particle Theory, HKUST Mar 07, 2023
- "Axi-Higgs Cosmology"
SYSU-PKU Collider physics forum For Young scientists (SPeCial4Young) (Online) Nov 02, 2022
- "Linking the Supersymmetric Standard Model to the Cosmological Constant"
The XXVIII International Conference on Supersymmetry and Unification of Fundamental Interactions
SUSY 2021 (Online) Aug 23, 2021
- "Linking the Supersymmetric Standard Model to the Cosmological Constant"
Phenomenology 2021 Symposium (Online) May 24, 2021