Dhong Yeon Cheong

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ACADEMIC POSITIONS

The University of Chicago, EFI/KICP/LITP Oct 2025 – Present
Joint Fermi/KICP Fellow, Enrico Fermi Institute
& Kavli Institute for Cosmological Physics & Leinweber Institute for Theoretical Physics

CERN, Theoretical Physics Department Jul 2023 – Jan 2024
CERN-CKC Graduate Student Fellow (Host: Nicholas L. Rodd)

KIAS, School of Physics Sep 2021 – Feb 2022
Visiting Student Research Assistant

EDUCATION

Yonsei University, Seoul, Korea Mar 2019 – Aug 2025
Ph.D. in Physics (Advisor: Seong Chan Park)
(Compulsory Military Service, Technical Research Personnel, ROK: March 1, 2022 – June 18, 2025)

Yonsei University, Seoul, Korea Mar 2015 – Feb 2019
B.S. in Physics

PUBLICATIONS [INSPIRE-HEP]

2607.27313 **Continuous Measurement of Quantum Axion Dark Matter**
Y. Bao, DYC, N. L. Rodd, J. Takach, L.-T. Wang, K. Zhou

2607.27313 **Suppressed Quantum Effects of Weakly Coupled Waves**
Y. Bao, DYC, N. L. Rodd, J. Takach, L.-T. Wang, K. Zhou

2603.22394 **Kinetic Isocurvature Perturbation**
K.J. Bae, DYC, J.-O. Gong, K. Harigaya, C.S. Shin

2510.05198 **Intrinsically Quantum Effects of Axion Dark Matter are Undetectable**
Y. Bao, DYC, N. L. Rodd, J. Takach, L.-T. Wang, K. Zhou, Phys. Rev. Lett. 136 (2026) 17, 171601

2509.04105 **Beyond the Starobinsky Model after ACT**
M. G. Park, DYC, S. C. Park, Phys. Lett. B 873 (2026) 140217

2506.06655 **Composite Hybrid Inflation: Primordial Black Holes and Stochastic Gravitational Waves**
G. Cacciapaglia, DYC, A. Deandrea, W. Isnard, S. C. Park, X. Wang, Y.-l. Zhang, JCAP 03 (2026) 054

2411.07713 **Wormhole-Induced ALP Dark Matter**
DYC, K. Hamaguchi, Y. Kanazawa, S. M. Lee, N. Nagata, S. C. Park, JHEP 02 (2025) 183

2408.04696 **A Quantum Description of Wave Dark Matter**
DYC, N. L. Rodd, L. T. Wang, Phys. Rev. D 111 (2025) 015028

2310.11260 **Effective Theory Approach for Axion Wormholes**
DYC, S. C. Park, C. S. Shin, JHEP 07 (2024) 039

2307.01852 **Composite Hybrid Inflation: Dilaton and Waterfall Pions**
G. Cacciapaglia, DYC, A. Deandrea, W. Isnard, S. C. Park, JCAP 10 (2023) 063

2210.11330 **Axion Quality Problem and Non-Minimal Gravitational Coupling in the Palatini Formulation**
DYC, K. Hamaguchi, Y. Kanazawa, S. M. Lee, N. Nagata, S. C. Park, Phys. Rev. D 108 (2023) 015007

2206.00890 **Phenomenological Implications for a Hidden Sector from the Festina Lente Bound**
K. Ban, DYC, H. Okada, H. Otsuka, J. C. Park, S. C. Park, PTEP 2023 (2023) 013B04

2205.14813 **The Inflaton that Could: Primordial Black Holes and Second-Order Gravitational Waves from Tachyonic Instability Induced in Higgs-R^2 Inflation**
DYC, K. Kohri, S. C. Park, JCAP 10 (2022) 015

2111.04010 **Festina-Lente Bound on Higgs Vacuum Structure and Inflation**
S. M. Lee, DYC, S. C. Hyun, S. C. Park, M. Seo, JHEP 02 (2022) 100

2111.00825 **Reheating in Models with Nonminimal Coupling in Metric and Palatini Formalisms**
DYC, S. M. Lee, S. C. Park, JCAP 02 (2022) 029

2103.00177 **Progress in Higgs Inflation**
DYC, S. M. Lee, S. C. Park, J. Korean Phys. Soc. (2021), invited review

2002.07981 **Beyond the Starobinsky Model for Inflation**
DYC, H. M. Lee, S. C. Park, Phys. Lett. B 805 (2020) 135453

1912.12032 **Primordial Black Holes in Higgs-R^2 Inflation as a Whole Dark Matter**
DYC, S. M. Lee, S. C. Park, JCAP 01 (2021) 032

1811.03622 **Higgs Inflation and the Refined dS Conjecture**
DYC, S. M. Lee, S. C. Park, Phys. Lett. B 789 (2019) 336–340

AWARDS AND FELLOWSHIPS

Enrico Fermi & KICP Fellowship, The University of Chicago October 2025 – August 2028
Postdoctoral Fellowship

Merit Academic Paper Award, Yonsei University July 2024
Academic paper award for [2210.11330]

KPS Encouragement Award, Korean Physical Society October 2023
Annual award for selective graduate students, award for [2103.00177]

CERN-CKC Graduate Student Fellowship July 2023 – January 2024
Full support for a six-month visit at CERN TH

Best Poster Award, Department of Physics, Yonsei University September 2022
Poster on Yonsei HEP-COSMO recent research outputs

Outstanding Presentation Award, Korean Physical Society Spring Meeting 2022 July 2022
Talk on "Gravitational Waves and PBHs from Tachyonic Instability in Higgs-R^2 Inflation"

ARF Independent Research Grant, Yonsei University August 2021 – December 2022
Research grant on "PBHs and GWs as Phenomenological Probes of Inflation"

Best Poster Award, SI 2019 August 2019
Poster on "Criticality and Primordial Black Holes in Higgs-R^2 Inflation"

B.S.-Ph.D. Integrated Scholarship, Yonsei University March 2019 – August 2021
Full scholarship for coursework

National Science & Technology Scholarship March 2017 – February 2019
Korea Student Aid Foundation, full scholarship for two years

RESEARCH INTERESTS

General: Early Universe Cosmology, Dark Matter, Beyond the Standard Model Phenomenology
Specific: Axions, Ultralight Dark Matter, Inflation, Primordial Black Holes & Gravitational Waves

TALKS & PRESENTATIONS

Invited Seminars

UC Irvine Seminar	Dec 2026
University of Toronto Seminar	Nov 2026
University of Florida *High Energy Theory in the Swamp*	Nov 2026
Northwestern University Seminar	Oct 2026
Seoul National University CTP Seminar	Aug 2026
Yonsei University HEP-COSMO Seminar	Jul 2026
Perimeter Institute Particle Physics Seminar	May 2026
University of Notre Dame Particle Physics Seminar	Apr 2026
Fermilab CPC Seminar	Apr 2026
University of Maryland EPT Seminar	Apr 2026
UIC High Energy Theory Seminar	Nov 2025
KAIST High-Energy Theory Seminar	May 2025
KIAS Particle Physics Seminar	Jan 2025
High Energy Phenomenology and Cosmology Webinar, IPM, Iran	Nov 2024
University of Chicago Particle Physics/Cosmo Journal Club	Nov 2024
UC Berkeley 4D Seminar	Nov 2024
JBNU Seminar	Oct 2024
CosKASI ECR Seminar	Nov 2023

Conference Talks (* : Invited Talks)

DPF 2026	Jul 2026
PLANCK 2026 and 6th EuCAPT Symposium	May 2026
PHENO 2026	May 2026
Paving the Way to New Discoveries in Particle Physics (Winter Aspen)	Feb 2026
ASPIRE Mini Workshop - GWs & DM with Quantum Technologies*	Dec 2025
PIKIMO 19	Nov 2025
29th International Summer Institute on Phenomenology of Elementary Particles and Cosmology	Aug 2025
The strong CP problem and its possible solutions: Pollica Physics*	Jun 2025
2025 APCTP-IBS FRP: The Origin and Evolution of the Universe*	Jun 2025
2025 Korea Gravitational Wave Group (KGWG) General Assembly*	Feb 2025
Dark Matter as a Portal to New Physics 2025*	Jan 2025
CTPU-CKC Joint Focus Program: Let There Be Light (Particles) Workshop*	Dec 2024
The 12th KIAS Workshop on Particle Physics and Cosmology	Nov 2024
KPS Fall Meeting 2024	Oct 2024
SSU 2024	Jul 2024
Workshop on Dark Universe	Jan 2024
Dark Matter as a Portal to New Physics 2024*	Jan 2024
OKC@15	Oct 2023
DESY Theory Workshop 2023	Sep 2023
PPC 2023	Jun 2023
2023 Winter-1 NRF-JSPS Workshop in Particle Physics, Cosmology, and Gravitation*	Jan 2023
100+7 GR & Beyond: Inflation*	Dec 2022
IBS-PNU Joint Workshop on Particle Physics and Cosmology	Dec 2022
Korea-Japan Workshop on Dark Energy (9th edition)	Nov 2022
Workshop on Physics of Dark Cosmos	Oct 2022
KPS Fall Meeting 2022	Oct 2022
LIO International Conference and France-Korea STAR Workshop	Jun 2022
KPS Spring Meeting 2022	Apr 2022
Asia-Pacific School and Workshop on Gravitation and Cosmology 2022	Mar 2022

Workshop on Particle Physics and Cosmology 2021	Nov 2021
Asia-Pacific Workshop on Particle Physics and Cosmology 2021	Aug 2021
Online JGRG Workshop 2020	Nov 2020
LIO International Conference on Composite Connections of Higgs, Dark Matter and Neutrinos	Sep 2020
KPS Spring Meeting 2020	Jul 2020
25th International Summer Institute on Phenomenology of Elementary Particles and Cosmology	Aug 2019
KPS Spring Meeting 2019	Apr 2019
The 2nd KMI School (KMI School 2019)	Feb 2019

Informal Talks

Fermilab Theory Division Chalk Talk	Nov 2024
CERN Cosmo Ice Cream	Oct 2023

PARTICIPATED SCHOOLS

KIAS-QUC Summer School on "A.I. in High Energy Physics"	Jul 2022
2020 GGI Lectures on the Theory of Fundamental Interactions	Jan 2020
IBS Summer School on Cosmology & Particle Physics	Jul 2019

SERVICE

Referee: Physical Review D, Journal of High Energy Physics (JHEP), European Physical Journal C (EPJC)

KICP Seminar organizer	Oct 2026 – Jun 2027
KICP Thunch/Funch Journal Club organizer	Oct 2025 – Jun 2026
Yonsei Cosmo Chalk organizer	Jan 2024 – Aug 2025

LANGUAGE

Korean - First language, native proficiency
English - Second language, native proficiency