Kevin Zhou

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Education

Stanford University (expected) 2019 – 2024
PhD in Physics (advisor: Natalia Toro)

Oxford University (New College) 2018 – 2019
MSc in Mathematical and Theoretical Physics with distinction

Cambridge University (St. John's College) 2017 – 2018
MASt in Mathematics with distinction

Massachusetts Institute of Technology 2013 – 2017
BS in Physics and Mathematics

Publications

2112.02104 Probing Invisible Vector Meson Decays with NA64 and LDMX
P. Schuster, N. Toro, K. Zhou

2106.09033 Stellar Shocks From Dark Matter
A. Das, S. A. R. Ellis, P. Schuster, K. Zhou

2007.15656 Heterodyne Broadband Detection of Axion Dark Matter
A. Berlin, R. T. D'Agnolo, S. A. R. Ellis, K. Zhou

1912.11048 Axion Dark Matter Detection by Superconducting Resonant Frequency Conversion
A. Berlin, R. T. D'Agnolo, S. A. R. Ellis, C. Nantista, J. Neilson,
P. Schuster, S. Tantawi, N. Toro, K. Zhou, JHEP (2020)

1704.06266 Casimir Meets Poisson: Improved Quark/Gluon Discrimination with Counting Observables
C. Frye, A. Larkoski, J. Thaler, K. Zhou, JHEP (2017)

1704.05456 Generalized Fragmentation Functions for Fractal Jet Observables
B. Elder, M. Procura, J. Thaler, W. Wallewijn, K. Zhou, JHEP (2017)

1703.04722 Minimum Energetic Cost to Maintain a Target Nonequilibrium State
J. Horowitz, K. Zhou, J. England, Phys. Rev. E (2017)

Fellowships and Awards

NSF Graduate Research Fellowship 2017 – 2022
Marshall Scholarship 2017 – 2019
Demuth Prize, New College 2019
Dirac Prize, St. John's College 2018
Finalist, Hertz Fellowship 2017
Joel Matthew Orloff Award for Outstanding Research, MIT 2017

Honorable Mention, Putnam Mathematical Competition 2016, 2017
Gold Medal, International Physics Olympiad 2012, 2013
Winner, USA Junior Mathematical Olympiad 2011

Talks

Probing Dark Sectors With Invisible Vector Meson Decays
- SLAC Dark Matter Journal Club 11/2021
- ILC Workshop on Potential Experiments 10/2021
- LDMX Internal Meeting 10/2021

Stellar Shocks From Dark Asteroids
- COSMO '21 8/2021
- APS DPF 2021 Meeting 7/2021
- Phenomenology 2021 Symposium 5/2021

Searching for Scalar Dark Matter with Compact Mechanical Resonators
- SLAC Student Journal Club 5/2021
- SITP Student Journal Club 5/2021

Heterodyne Detection of Axion Dark Matter
- Virtual Axion Institute 8/2020

Outreach

U.S. Physics Olympiad 2015 – present

- Wrote and edited the largest physics competition in the United States (6,000 participants)
- Released 1,000 pages of free learning materials, used by students around the world
- Taught classes on problem solving and lab skills to finalists at annual summer camps
- Intensively trained team to represent the U.S. at the 2021 International Physics Olympiad, leading to its first ever 5 gold medal finish

Physics StackExchange 2014 – 2020

- Wrote answers on topics ranging from everyday physics to quantum field theory
- Total of over 1,000 answers with almost 2 million views

Splash 2013 – 2019

- Spoke to high school students at annual Splash events hosted at MIT, Oxford, and Stanford
- Taught classes on quantum cryptography, dimensional analysis, chirality, and particle physics