ZHOU, CONGHAO

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CONTACT

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RESEARCH INTERESTS

dark matter · gravitational lensing · galaxy clusters · large scale structure · multi-wavelength observation

EDUCATION

University of California, Santa Cruz

2020 - Present
2021 on Leave

Ph.D. in Physics
Physics Department
Thesis: *TBD*
Comittee: Tesla E. Jeltema, Alexie S. Leauthaud

Duke University

2020

B.A. in Physics with Highest Distinction
Department of Physics
Thesis: *Intrinsic Alignment of redMaPPer Clusters in the Dark Energy Survey*
Comittee: Michael A. Troxel, Christopher W. Walter, Robert L. Wolpert

LEAD PUBLICATION

1. Constraining optical selection effection with DES and SPT, in prep.

   C. Zhou, S. Grandis, H.Y. Wu, A.N. Salcedo et al.

2. Relationship between 2D and 3D Galaxy Stellar Mass and Correlations with Halo Mass

   C. Zhou, A.S. Leauthaud, B. Diemer, S. Huang, S. Xu. et al.

3. Resposne bias in shear calibration, in prep.

   C. Zhou, M.R. Becker, M. Gatti et al.

4. Forecasting the constraints on optical selection bias and projection effects of galaxy cluster lensing with multiwavelength data, PRD

   C. Zhou, H.Y Wu, A.N. Salcedo, S. Grandis, T.E. Jeltema, A.S. Leauthaud et al.

5. The intrinsic alignment of red galaxies in DES Y1 redMaPPer galaxy clusters , MNRAS

   C. Zhou, A. Tong, M.A. Troxel, J. Blazek, C. Lin et al.

CONTRIBUTED PUBLICATION

1. The Outskirt Stellar Mass of Low-Redshift Massive Galaxies is an Excellent Halo Mass Proxy in Illustris/IllustrisTNG Simulations , arXiv

   S. Xu et al.

2. Improving Galaxy Cluster Selection with the Outskirt Stellar Mass of Galaxies , arXiv

   M.Kwiecien et al.

3. Optical galaxy cluster mock catalogs with realistic projection effects: validations with the SDSS redMaPPer clusters , arXiv

   A. Lee et al.

4. Building an Efficient Cluster Cosmology Software Package for Modeling Cluster Counts and Lensing , arXiv

   M. Aguena et al.

5. Dark Energy Survey Year 3 results: Simulation-based cosmological inference with wavelet harmonics, scattering transforms, and moments of weak lensing mass maps. Validation on simulations , PRD

   M. Gatti et al.

6. Dark Energy Survey Year 3 Results: Deep Field Optical + Near-Infrared Images and Catalogue , MNRAS

   W.G. Hartley, A. Choi, A. Amon et al.

TALKS

dec. 2024	Theoretical Astrophysics and Cosmology Seminar, University of Arizona
nov. 2024	Cosmology Seminar, UC Davis
apr. 2024	CMB S4 Cluster AWG Meeting
mar. 2024	Center for the Fundamental Physics of the Universe Seminar, Brown University
mar. 2024	Journal Club, University of Pennsylvania
oct. 2023	Cosmology Seminar, Tsinghua University
oct. 2023	Joint Stony Brook University/ Brookhaven National Lab Cosmology Seminar

OBSERVING EXPERIENCE

5.5 effective nights	Dark Energy Spectroscopic Instrument, Mayall 4m at Kitt Peak

PROFESSIONAL MEMBERSHIP

2024 - Present	Student Member, American Astronomical Society
2024 - Present	Student Member, American Physical Society
2020 - Present	Student Member, LSST Dark Energy Science Coolaboration
2020 - Present	Student Member, Dark Energy Spectroscopic Instrument
2018 - Present	Student Member, Dark Energy Survey

OUTREACH

2023 - 2024	Starlight Over Street Light
2022	UC Santa Cruz Physics Outreach Taskforce
2022	Science Internship Program Mentor
2022	UC Santa Cruz Physics Mentoring Program Mentor

PROFESSIONAL SERVICE

2024 - present	Refree, Astronomy & Astrophysics
jul.2023-jun.2024	Organizer, BCG Seminar, Boise State
sep.2023-jun.2024	Organizer, CosmoGal Seminar, UC Santa Cruz
jan. 2023	LOC, APS Conference for Undergraduate Women in Physics at UC Santa Cruz
aug. 2022	SOC, LSST DESC 2022 Chicago Meeting
apr. 2022 - present	DES Early Career Scientists Committee
jul. 2022 - present	LSST DESC Mentoring Comittee

TEACHING

2024 Spring	Application of Quantum Materials (Grader)
2024 Winter	Electricity, Magnetism, and Optics (TA)
2022 Fall	Quantum Mechanics (TA)
2022 Summer	Intermediate Physics Laboratory (TA)
2022 Spring	Advanced Astrophysics Laboratory (TA)
3 times	Introductory Physics Laboratory (TA)

December 16, 2024