

Heyang Long

She/Her/Hers

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📄 Publication

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🐙 Github

📍 191 West Woodruff Ave, M2000, Columbus, OH 43210

🌐 Website: <https://cosmosheep.github.io>

Research Interest

Cosmology

- Epoch of Reionization, Intergalactic Medium
- 21 cm Intensity Mapping, Line Intensity Mapping, Lyman-alpha Forest, Weak Gravitational Lensing

Astrophysics

- Gravitational Waves, Compact Objects, White Dwarf Binaries
- Primordial Black Hole

Education

Aug 2018 –

The Ohio State University, Columbus, OH

Ph.D in Physics

Advisor: Christopher M. Hirata

Sep 2014 – June 2018

Nanjing University, Nanjing, China

B.S in Physics

Academic Visits

Jul. – Oct. 2017

University of Pittsburgh, PITT PACC, Pittsburgh, PA

Visiting Undergraduate Student with Prof. Tao Han

Jun. 2022

University of California, Berkeley, Berkeley, CA

Visiting Graduate Student with Prof. Liang Dai

Awards

2022 | APS DAP Student Travel Grant, \$600

2018 | Nanjing University Outstanding Graduates

Publications

Major Author

1. "Impact of inhomogeneous reionization on post-reionization 21 cm intensity mapping measurement of cosmological parameters"
Heyang Long, Catalina Morales-Gutiérrez, Paulo Montero-Camacho, and Christopher M. Hirata.
Submitted to MNRAS ([arXiv](#))
2. "Probing Large Scale Ionizing Background Fluctuation with Lyman α Forest and Galaxy Cross-correlation at $z=2.4$ "
Heyang Long, Christopher M. Hirata. Submitted to MNRAS ([arXiv](#))
3. "Streaming Velocity Effects on the Post-reionization 21 cm Baryon Acoustic Oscillation Signal."
Heyang Long, Jahmour J. Givans, and Christopher M. Hirata. [MNRAS](#), 513, 1, 117 -128 (2022) ([arXiv](#))

4. "A synthetic Roman Space Telescope High-Latitude Imaging Survey: simulation suite and the impact of wavefront errors on weak gravitational lensing."
Troxel, M. A., **Heyang Long**, C. M. Hirata, A. Choi, M. Jarvis, R. Mandelbaum, K. Wang, M. Yamamoto, S. Hemmati, and P. Capak. *MNRAS*, 501, 2, 2044-2070 (2021) ([arXiv](#))

Contributing Author

5. "A Synthetic Roman Space Telescope High-Latitude Time-Domain Survey: Supernovae in the Deep Field"
Wang, Kevin X., *et al.* (inc. **Heyang Long**). Submitted to MNRAS ([arXiv](#))
6. "Weak Gravitational Lensing Shear Estimation with Metacalibration for the Roman High-Latitude Imaging Survey."
Yamamoto, Masaya, *et al.* (inc. **Heyang Long**). Accepted by *MNRAS* ([arXiv](#))

Presentations

- Oct. 2022 | 4. **Invited Talk**, DESI Lyman- α & WG Telecon, remote
- Apr. 2022 | 4. **Contributed Talk**, APS April Meeting, New York, NY
- Nov. 2021 | 3. **Invited Talk**, Roman Science Investigation Team Workshop, remote
- Aug. 2021 | 2. **Contributed Talk**, COSMO'21, remote, UIUC, IL
- Aug. 2019 | 1. **Poster**, The 12th Great Lakes Cosmology Workshop, Rochester, NY

Conferences & Summer Schools

- Aug. 2022 | 4. N3AS School on Multi-Messenger Astrophysics, Santa Cruz, CA
- Aug. 2021 | 3. CMB-S4 Summer Collaboration Meeting, remote
- Jun. 2020 | 2. Michigan Cosmology Summer School, remote, Ann Arbor, MI
- Mar. 2019 | 1. WFIRST Synthetic Data Hackathon, Baltimore, MD

Research Advising Experience

- 2021 - | **Catalina Morales-Gutiérrez**, Undergraduate Student at Universidad de Costa Rica
- 2021 - | **Yuanyuan Yang**, Undergraduate Student at OSU
- 2021 - | **Emily Koivu**, Graduate Student at OSU

Service & Teaching Experience

- 2022 - | **Referee**, MNRAS
- 2021 - 2022 | **Co-organizer**, Cosmology Lunch Journal Club, CCAPP, OSU
- 2018 - 2020 | **Graduate Teaching Assistant**
- Physics 1250, *Mechanics, Work and Energy, Thermal Physics*, OSU, Fall 2018 & Fall 2019
 - Physics 1251, *E&M, Waves, Optics, Modern Physics*, OSU, Spring 2019 & Spring 2020

Programming Skills

- **Language**: Proficient in Python, experienced in C and Fortran
- **Cosmology & Astrophysics Simulations**: GalSim, GADGET-2, 21cmFAST, CLASS, Starburst99, Tlusty
- **Script**: Perl, Bash

Outreach

Jul 2022 - | Treasurer, Society of Women in Physics, OSU

2022 | Volunteer Judge, Ohio Academy of Science State Science Day, Columbus, OH

Reference

- **Prof. Christopher M. Hirata**
Department of Physics and Astronomy, The Ohio State University
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- **Prof. Michael Troxel**
Department of Physics, Duke University
michael.troxel@duke.edu
- **Prof. Liang Dai**
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