CURRICULUM VITAE OF ZIANG YAN

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Department of Physics and Astronomy
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EDUCATION

University of British Columbia, Vancouver 2017.09-2021.08(expected)
PhD in Physics
Supervisor: Profs. Gary Hinshaw and Ludovic van Waerbeke
Proposed Thesis: *Probing the Universe with Multiple Large-scale Structure Tracers*

University of British Columbia, Vancouver 2015.07-2017.08
MSc in Astronomy
Supervisor: Prof. Gary Hinshaw
Major Courses GPA: 92/100

Tsinghua University, Beijing 2011.09-2015.07
BSc in Physics
Supervisor: Prof. Charling Tao
Major Courses GPA: 91/100

HONORS AND AWARDS

2020 President's Academic Excellence Initiative PhD Award (UBC)
2018-2022 UBC Four Year Doctoral Fellowship (UBC)
2016 Physics and Astronomy Graduate Scholarship (UBC)
2015 Faculty of Science Graduate Award (UBC)
2014 The outstanding academic scholarship of Guanghua (Tsinghua)
2013-2015 Tsinghua Xuetang scholarship (Tsinghua)
2013-2015 Member Student of Tsinghua Xuetang Physics Program (Tsinghua)
2012 The outstanding academic scholarship of Zheng Geru (Tsinghua)

REFERENCES

Prof. Ludovic van Waerbeke — Department of Physics and Astronomy, UBC
waerbeke@phas.ubc.ca

Prof. Gary Hinshaw — Department of Physics and Astronomy, UBC
hinshaw@phas.ubc.ca

Prof. Paul Hickson — Department of Physics and Astronomy, UBC
hickson@physics.ubc.ca

Prof. Yin-Zhe Ma — School of Chemistry & Physics University of KwaZulu-Natal
ma@ukzn.ac.za

COMPUTER SKILLS

Language Python, Fortran, LaTeX, C, IDL
Software & Tools CAMB, Healpix, PYCCL, Tensorflow

RESEARCH EXPERIENCE

Graduate Research Assistant, University of British Columbia	2015.09-present
Undergraduate Research Assistant, Cosmology Group of Tsinghua University	2013.09-2015.08
Summer Research, APC, Paris	2014.07-2014.08
Tsinghua Student Research Training	2012-2013

INTERNATIONAL PROJECT INVOLVED

Kilo-Degree Survey (A large optical imaging survey in the Southern sky)	2019-Present
Cosmology Large Angular Scale Surveyor (A ground-based CMB polarization telescope)	2017-Present
Primordial Inflation Explorer (A proposed space emission to observe CMB polarization)	2016-2017

PUBLICATIONS

1. **Yan Z**, et al., "*Probing Galaxy Bias and Intergalactic Gas Pressure with KiDS Galaxies-tSZ-CMB Lensing Cross-correlations,*" **(In preparation)**
2. **Yan Z**., Mead A. J., Van Waerbeke L., Hinshaw G., McCarthy I. G., 2020, "*Galaxy cluster mass estimation with deep learning and hydrodynamical simulations,*" 2020, MNRAS, 499, 3445, doi:10.1093/mnras/staa3030, arXiv:2005.11819.
3. **Yan Z**., Raza N., Van Waerbeke L., Mead A. J., McCarthy I. G., Tröster T., Hinshaw G., "*An analysis of galaxy cluster mis-centring using cosmological hydrodynamic simulations,*" 2020, MNRAS, 493, 1120, doi:10.1093/mnras/staa295, arXiv:1912.06663.
4. **Yan Z**., Hojjati A., Tröster T., Hinshaw G., van Waerbeke L., "*An Assessment of Contamination in the thermal-SZ Map Using Cross Correlations,*" 2019, ApJ, 884, 139, doi:10.3847/1538-4357/ab40b2, arXiv:1809.09636.
5. Iuliano J., Eimer J., Parker L., Rhoades G., Ali A., Appel J. W., Bennett C., et al., "*The Cosmology Large Angular Scale Surveyor Receiver Design,*" 2018, SPIE, 10708, 1070828, doi:10.1117/12.2312954, arXiv:1807.04167.
6. Harrington K., Eimer J., Chuss D. T., Petroff M., Cleary J., DeGeorge M., Grunberg T. W., et al., "*Variable-delay polarization modulators for the CLASS telescopes,*" 2018, SPIE, 10708, 107082M, doi:10.1117/12.2313614
7. Dahal S., Ali A., Appel J. W., Essinger-Hileman T., Bennett C., Brewer M., Bustos R., et al., "*Design and characterization of the Cosmology Large Angular Scale Surveyor (CLASS) 93 GHz focal plane,*" 2018, SPIE, 10708, 107081Y, doi:10.1117/12.2311812, arXiv:1807.03927.

TALKS AND POSTERS

Talks

- Probing Galaxy Bias and Intergalactic Gas Pressure with KiDS Galaxies-tSZ-CMB Lensing Cross-correlations (Group seminar in Prof.Daniel Gruen and Prof.Stella Seitz's groups, online, 2020)
- Probing Galaxy Bias and Intergalactic Gas Pressure with KiDS Galaxies-tSZ-CMB Lensing Cross-correlations (Tsung-Dao Lee Institute seminar talk, online, 2020)

- Probing Galaxy Bias and Intergalactic Gas Pressure with KiDS Galaxies-tSZ-CMB Lensing Cross-correlations (KiDS-WL Telecon, online, 2020)
- Galaxy Cluster Mass Estimations with Convolutional Neural Network and BAHAMAS Simulation (Astronomy Colloquium, UBC, 2020)
- Galaxy Cluster Mass Estimations with Convolutional Neural Network and BAHAMAS Simulation (UBC-SFU-TRIUMF adjoint meeting, 2020)
- An analysis of galaxy cluster mis-centring using large scale hydrodynamical simulations (UBC-SFU-TRIUMF adjoint meeting, 2019)
- Galaxy Cluster Mass Estimations with Convolutional Neural Network and BAHAMAS Simulation (Invited talk at Institut d'Astrophysique Spatiale, 2019)
- Estimate the κ-CIB Contamination in κ-y Cross Correlation (UBC-SFU-TRIUMF adjoint meeting, 2017)
- Dark Energy as Cosmological Constant (Workshop at SSI2017)
- Reconstruct tSZ y map with Planck and ACT Data (Cosmology Group Seminar at THCA, 2016)
- Noise Analysis for QUBIC Instrument (Tsinghua Xuetang Physics Program Summer Internship Report, 2014)

Posters

- Galaxy Cluster Mis-centring Analysis with BAHAMAS Simulation (CosmoGold, IAP2019)
- Evaluation of Contamination in the Reconstructed tSZ signal: Taking $\kappa \times y$ as an Example (SSI2017)

WORKSHOPS AND MEETINGS

- CosmoGold IAP 2019 Workshop — IAP, Paris, France, 2019.06
- SSI SLAC Summer Institute 2017 Workshop — SLAC, CA, USA, 2017.08
- Frontier Conference in Cosmology — Beijing, China, 2014.06

TEACHING AND MENTORING EXPERIENCE

Teaching Assistant

- Introduction to Stars and Galaxies (UBC, 2018 Winter);
- Introductory Physics Laboratory for Engineers (UBC, 2018 Winter);
- Electricity, Light and Radiation (UBC, 2018 Summer);
- Energy and Waves (UBC, 2015 Winter);
- Introductory Physics (UBC, 2015 Winter);

Grader

- Theory of Measurement (UBC, 2020 Winter)
- High Energy Astrophysics (UBC, 2019 Winter)
- Group Theory (UBC, 2019 Winter)
- Cosmology (UBC, 2018 Winter)

Mentorship

Angela Zhou (high-school student): *An investigation of a dark matter-dark energy interaction model to explain discrepancies in Hubble rate measurements.*(2019-present)

OUTREACH

Public talks

- Kick Start the Universe (Three Minute Thesis Competition, UBC, 2017)
- Introduction to Astronomy (Xinhuang No.1 Middle School, Hunan, China, 2015)
- Introduction to Cosmology (Tsinghua Xuetang Program, 2015)

Book Translation (To Chinese)

- *Gravity: A Very Short Introduction* by Timothy Clifton; ISBN: 9787544392730
- *El sistema solar (The Solar System)* by Joel Gabas Masip; in-print

Other activities

- Writing science popularization articles on Chinese social media (2015-2020, with $\sim$ 200k readings)
- Outreach activity with Astronomy Club of High School Affiliated to Minzu University, Beijing (2015)
- Volunteer in stargazing activities (organized by Astronomy Club of Tsinghua University, 2014, 2015)

LANGUAGE SKILLS

Mandarin (Mother Tongue), English (Proficient), Japanese (Intermediate), German (Daily conversations), Cantonese (Moderate)