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Lingyuan **Ji**

Education

2017–2022 **Doctor of Philosophy in Physics**, *Johns Hopkins University, Department of Physics and Astronomy*, Baltimore MD, USA, Advisor: Marc Kamionkowski

2013–2017 **Bachelor of Science in Physics**, *University of Science and Technology of China, Department of Physics*, Hefei, China, Advisors: Antonino Marciano, Yifu Cai

Appointments

2022– (present) **BCCP Fellow**, *Berkeley Center for Cosmological Physics*, Department of Physics, University of California, Berkeley, CA

Publications

[1] Weichen Winston Yin, Liang Dai, Junwu Huang, **Lingyuan Ji**, and Simone Ferraro. A New Probe of Cosmic Birefringence Using Galaxy Polarization and Shapes. 2 2024, 2402.18568.

[2] Neha Anil Kumar, Mesut Çalışkan, Gabriela Sato-Polito, Marc Kamionkowski, and **Lingyuan Ji**. Linear polarization of the stochastic gravitational-wave background with pulsar timing arrays. 12 2023, 2312.03056.

[3] Mesut Çalışkan, Neha Anil Kumar, **Lingyuan Ji**, Jose M. Ezquiaga, Roberto Cotesta, Emanuele Berti, and Marc Kamionkowski. Probing wave-optics effects and low-mass dark matter halos with lensing of gravitational waves from massive black holes. *Phys. Rev. D*, 108(12):123543, 2023, 2307.06990.

[4] Jose M. Diego et al. BUFFALO/Flashlights: Constraints on the abundance of lensed supergiant stars in the Spock galaxy at redshift 1. *Astron. Astrophys.*, 681:A124, 2024, 2304.09222.

[5] **Lingyuan Ji**. *The Inhomogeneous Universe: Dark Matter, Gravitational Lensing, and 21cm Polarization*. PhD thesis, Johns Hopkins U. (main), 7 2022.

[6] Mesut Çalışkan, **Lingyuan Ji**, Roberto Cotesta, Emanuele Berti, Marc Kamionkowski, and Sylvain Marsat. Observability of lensing of gravitational waves from massive black hole binaries with LISA. *Phys. Rev. D*, 107(4):043029, 2023, 2206.02803.

[7] **Lingyuan Ji**, Marc Kamionkowski, and Jose Luis Bernal. Cosmological perturbations: Noncold relics without the Boltzmann hierarchy. *Phys. Rev. D*, 106(10):103531, 2022, 2201.11129.

[8] **Lingyuan Ji**, Selim C. Hotinli, and Marc Kamionkowski. Cross-correlation of the polarizations of the 21-cm and cosmic microwave backgrounds. *Phys. Rev. D*, 107(12):123533, 2023, 2110.01619.

[9] **Lingyuan Ji**, David E. Kaplan, Surjeet Rajendran, and Erwin H. Tanin. Thermal perturbations from cosmological constant relaxation. *Phys. Rev. D*, 105(1):015025, 2022, 2109.05285.

[10] **Lingyuan Ji**. Wave Dark Matter Non-minimally Coupled to Gravity. 6 2021, 2106.11971.

[11] **Lingyuan Ji**, Marc Kamionkowski, and Keisuke Inomata. Standard model prediction for cosmological 21 cm circular polarization. *Phys. Rev. D*, 103(2):023516, 2021, 2005.10250.

[12] **Lingyuan Ji** and Marc Kamionkowski. Reheating constraints to WIMP inflation. *Phys. Rev. D*, 100(8):083519, 2019, 1905.05770.

[13] Cyril Creque-Sarbinowski, **Lingyuan Ji**, Ely D. Kovetz, and Marc Kamionkowski. Direct millicharged dark matter cannot explain the EDGES signal. *Phys. Rev. D*, 100(2):023528, 2019, 1903.09154.

[14] **Lingyuan Ji**, Ely D. Kovetz, and Marc Kamionkowski. Strong Lensing of Gamma Ray Bursts as a Probe of Compact Dark Matter. *Phys. Rev. D*, 98(12):123523, 2018, 1809.09627.

Presentations

Apr 2023 **Invited Seminar**, *KICP Seminar Series*, University of Chicago, Chicago, IL
Cosmological perturbations: Noncold relics without the Boltzmann hierarchy

Mar 2022 **Invited Seminar**, *Lunch Seminar Series*, Kavli IPMU, Online
Cosmological-Perturbation Solver without the Boltzmann Hierarchy

Jan 2022 **Invited Seminar**, *INPA Seminar Series*, Lawrence Berkeley National Lab, Online
Cosmological-Perturbation Solver without the Boltzmann Hierarchy

Dec 2021 **Talk**, *PACMAN Meeting*, NYU/CCA, Online
Wave Dark Matter Non-minimally Coupled to Gravity

Nov 2021 **Talk**, *Cosmology Lunch*, Princeton/IAS, NJ, USA
Cosmological-Perturbation Solver without the Boltzmann Hierarchy

Nov 2021 **Invited Seminar**, Ben-Gurion University, Online
Cosmological-Perturbation Solver without the Boltzmann Hierarchy

Aug 2021 **Poster**, *COSMO'21*, University of Illinois, Online
Wave Dark Matter Non-minimally Coupled to Gravity

Mar 2021 **Invited Talk**, *BSM PANDEMIC Double Feature*, Online
Standard Model Prediction for Cosmological 21cm Circular Polarization

Sep 2019 **Poster**, *Cosmic Controversies*, University of Chicago, IL, USA
Reheating constraints to WIMP inflation

Nov 2018 **Talk**, University of Oxford, UK
Strong Lensing of Gamma Ray Bursts as a Probe of Compact Dark Matter

Nov 2018 **Talk**, Imperial College London, UK
Strong Lensing of Gamma Ray Bursts as a Probe of Compact Dark Matter

Awards

2016 **National Scholarship**, *Ministry of Education, China*

2015 **Global Responsibility Scholarship**, *University of Science and Technology of China*

2014 **National Scholarship**, *Ministry of Education, China*

Programming Languages and Packages

Numerical Python, C Symbolic Mathematica, SymPy

Packages `CLASS`/`CAMB` (cosmological perturbation), `21cmFAST` (21cm semi-numerical simulation), `GADGET` (N-body simulation), `Blender` (3D visualization)

Teaching

Spring 2019 **Teaching Assistant**, *AS.171.205 Intro to Practical Data Science: Beautiful Data*
Lecturer: Prof. Alexander Szalay

Fall 2018 **Teaching Assistant**, *AS.171.646 General Relativity*
Lecturer: Prof. David Kaplan

Spring 2018 **Teaching Assistant**, *AS.171.627 Astrophysical Dynamics*
Lecturer: Prof. Nadia Zakamska

Fall 2017 **Teaching Assistant**, *AS.171.107 General Physics for Physical Sciences Majors*
Lecturer: Prof. Robert Leheny & Prof. Rosemary Wyse

Fall 2017 **Teacher**, *AS.173.111 General Physics Laboratory I*

References

Letter 1 Marc Kamionkowski, *Johns Hopkins University*, `kamion@jhu.edu`

Letter 2 Ely D. Kovetz, *Ben-Gurion University*, `kovetz@bgu.ac.il`

Letter 3 David E. Kaplan, *Johns Hopkins University*, `david.kaplan@jhu.edu`

Compiled at March 1, 2024. For the latest version, visit:
https://github.com/lingyuanji/resume/blob/master/resume.pdf