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Bingjie Wang

Research interests

Cosmology and extragalactic astronomy

Starbursts, galaxy evolution, reionization,
21-cm cosmology, the cosmic microwave background

Education

Exp. 2021 **Johns Hopkins University**, Baltimore, MD
M.A., Ph.D., Astrophysics, advisor: Prof. Timothy M. Heckman
Thesis: Implications for the epoch of reionization in the local universe

2012 – 2016 **University of Pittsburgh**, Pittsburgh, PA
Magna Cum Laude
B.A., Philosophy
B.Phil., Physics with honors, advisor: Prof. Arthur B. Kosowsky
Thesis: Evaluating the standard model of cosmology in light of large-scale anomalies in the cosmic microwave background

Refereed publications

Total citations: 180; h-index: 8 (Google scholar, 6/22/21).
Links to ADS are embedded in titles.

Primary-author [1] The Low-redshift Lyman-continuum Survey: [S II]-deficiency and the leakage of ionizing radiation,
B. Wang, T. Heckman, and the survey collaboration, ApJ 916, 3 (2021)

[2] A systematic study of galactic outflows via fluorescence emission: implications for their size and structure,
B. Wang, T. Heckman, G. Zhu, and C. Norman, ApJ 894, 149 (2020)
– featured in AAS NOVA research highlights

[3] A new technique for finding galaxies leaking Lyman-continuum radiation: [S II]-deficiency,
B. Wang, T. Heckman, C. Leitherer, et al., ApJ 885, 57 (2019)

[4] A projected estimate of the reionization optical depth using the CLASS experiment's sample variance limited E-mode measurement,
D. Watts, **B. Wang**, and the CLASS collaboration, ApJ 863, 121 (2018)

[5] Microwave background correlations from dipole anisotropy modulation,
S. Aiola, **B. Wang**, A. Kosowsky, et al., PRD 92 (6), 063008 (2015)

[6] Gaussian approximation of peak values in the integrated Sachs-Wolfe effect,
S. Aiola, A. Kosowsky, and **B. Wang**, PRD 91 (4), 043510 (2015)

Others [7] On-sky performance of the CLASS Q-band telescope,
J. Appel, et al. (including B. Wang), ApJ 876, 126 (2019)

[8] Fermi-LAT counterparts of IceCube neutrinos above 100 TeV,
F. Krauß, et al. (including B. Wang), A&A 620, A174 (2018)

Honors and awards

2020 Rodger Doxsey Prize, American Astronomical Society

2019 First-prize poster, First Light at University of São Paulo

2016 ΣΠΣ physics honors society initiate

2012 – 2016 Dean's honor list (7 semesters)

2016 Julia Thompson award for excellence in scientific writing, University of Pittsburgh

2015 Halliday award for excellence in undergraduate research, University of Pittsburgh

2015 Thomas-Lain fund scholarship, University of Pittsburgh

2014 Research internship in science & engineering, Deutschen Akademischen Austauschdienstes

2014 Emil Sanielevici undergraduate research scholarship, University of Pittsburgh

Technical skills

Proficient
- Python, C, Git, Java, LaTeX
- The Cosmic Linear Anisotropy Solving System (CLASS) & modifications, HEALPix, HST UV spectroscopic & imaging analyses, high-performance computing, MCMC, PolSpice

Working knowledge
- SQL, Fortran90, Bash/shell, Mathematica, HTML
- 21cmFAST, Radiation Scattering in Astrophysical Simulations (RASCAS), machine learning

Presentations

03/12/21 Invited talk, STARs at Arizona State University,
"Star-forming galaxies: ionizing-photon escape and outflow scale"

01/12/21 Dissertation talk, 237$^{\text{th}}$ Meeting of the American Astronomical Society,
"Implications for the epoch of reionization in the local universe"

10/29/20 Department lunch talk, University of California at Berkeley,
"Implications for the epoch of reionization in the local universe"

02/24/20 CAS wine & cheese, Johns Hopkins University,
"A systematic study of galactic outflows via fluorescence emission: implications for their size and structure"

08/06/19 First light, University of São Paulo, Brazil,
"A new technique for finding galaxies leaking Lyman-continuum radiation: [S II]-deficiency"

10/22/18 CAS wine & cheese, Johns Hopkins University,
"Modeling the global 21-cm signal"

08/06/15 Undergraduate summer research, Princeton University,
"Filtering the microwave background temperature through correlation with polarization"

02/25/15 Annual Sanielevici lecture, University of Pittsburgh,
"Re-examining dark energy through large-scale structures of the universe"

09/12/14 Workshop on large-scale anomalies, Case Western Reserve University,
"Gaussian approximation of peak values in the integrated Sachs-Wolfe effect."

07/05/14 DAAD RISE scholarship holder meeting, Heidelberg, Germany,
"Black holes as possible sources of high-energy neutrinos"

04/03/14 Workshop on astrophysics and cosmology, Pennsylvania State University,
"ΛCDM estimates on the stacked late-ISW signal"

Community service

Reviewer for The Astrophysical Journal

Teaching experience

09/16 - 12/18 Graduate teaching assistant; courses taught:

Graduate radiative astrophysics; graduate astrophysical dynamics	Fall 2018
Graduate radiative astrophysics; cosmology	Fall 2017
General physics for biological science majors II; general physics lab II	Spring 2017
General physics for physical science majors II; general physics lab I	Fall 2016

Summer schools

07/08 - 08/07/19 First light: stars, galaxies and black holes in the epoch of reionization, University of São Paulo, Brazil.

07/03 - 28/17 Particles, strings and cosmology, University of Hamburg, Germany.

References

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