

PAULO MONTERO-CAMACHO

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Citizenship: Costa Rican

RESEARCH INTERESTS

Cosmic Reionization — 21cm cosmology — Lyman- α Forest — CMB Polarization — Primordial Black Holes — Exoplanets Atmospheres — Applications of Atomic Polarizations in Astrophysics Modeling — Numerical Simulations
Astronomy in Central America & the Caribbean

EMPLOYMENT

Tsinghua University, China 2019
Postdoctoral Researcher and Shiu Mu Scholar at Department of Astronomy

EDUCATION

Ph.D., Physics, The Ohio State University, Columbus OH 2019
Advisor: Christopher M. Hirata
M.Sc., Physics, The Ohio State University, Columbus OH 2016
B.Sc., Physics with honors, University of Costa Rica, San José 2012

AWARDS/GRANTS

NSFC Research Fund for International Young Scientists 2020
Tsinghua Shui Mu Scholarship 2019
Project Winning Team in SLAC Summer Institute 2017
University of Costa Rica research scholarship 2010-2013
University of Costa Rica TA scholarship 2010-2012
University of Costa Rica scholarship of excellence for incoming students 2009

PUBLICATIONS

Summary: 7 refereed publications, 108 citations, * indicates advised/coached student

7. **Montero-Camacho, P.** and Mao, Yi, (2020) Ly α forest power spectrum as an emerging window into the epoch of reionization and cosmic dawn. *Monthly Notices of the Royal Astronomical Society*, **staa2918**, [arXiv:2003.10077](#) **Citations: 1**
6. Oklopčić, A., *Silva, M., **Montero-Camacho, P.**, and Hirata, C.M., (2020) Detecting Magnetic Fields in Exoplanets with Spectropolarimetry of the Helium Line at 1083 nm. *The Astrophysical Journal*, **890** (1) [arXiv:1910.02504](#) **Citations: 4**
5. **Montero-Camacho, P.**, Fang, X., *Vasquez, G., *Silva, M., and Hirata, C. M., (2019) Revisiting constraints on asteroid-mass primordial black holes as dark matter candidates. *Journal of Cosmology and Astroparticle Physics*, **08** 031, [arXiv:1906.05950](#) **Citations: 74**
4. **Montero-Camacho, P.**, Hirata, C. M., Martini, P., and Honscheid, K., (2019) Impact of inhomogeneous reionization in the Lyman- α forest. *Monthly Notices of the Royal Astronomical Society*, **stz1388**, [arXiv:1902.02892](#) **Citations: 4**
3. **Montero-Camacho, P.** and Hirata, C. M., (2018) Exploring circular polarization in the CMB due to conventional sources of cosmic birefringence. *Journal of Cosmology and Astroparticle Physics*, **08**, 040, [arXiv:1803.04505](#) **Citations: 17**
2. Frutos-Alfaro, F., **Montero-Camacho, P.**, Araya, M. and Bonatti-Gonzalez, J. (2015) Approximate metric for a rotating deformed mass. *International Journal of Astronomy and Astrophysics*, **5**, 1-10, [arXiv:1405.1776](#) **Citations: 6**
1. **Montero-Camacho, P.**, Frutos-Alfaro, F., Gutierrez-Chaves, C. and Cordero-Garcia, I. (2015) Slowly rotating curzon-chazy metric. *Revista de Matemática: Teoría y Aplicaciones*, **22** (2):265-274. [Local journal](#) **Citations: 2**

PRESENTATIONS

Summary: 18 presentations, 5 invited talks

18. Recorded Talk, Sazerac 21cm sip, online conference	01/2021
17. Contributed Talk, α -Cen 2020 Annual Meeting, online conference	12/2020
16. Contributed Talk, Guo Shoujing Meeting SYSU Zhuhai, Guangdong, China	11/2020
15. Recorded Talk, Sazerac online conference	07/2020
14. Invited Talk, DOA Cosmology Journal Club, Beijing, China	10/2019
13. Invited Talk, UCR Department of Physics Colloquium, San Jose, Costa Rica	02/2019
12. Contributed Talk, Caltech Cosmology Journal Club, Pasadena, CA	10/2018
11. Contributed Talk, CMU Astro Lunch, Pittsburgh, PA	10/2018
10. Invited Talk, OSU CCAPP Summer Seminar, Columbus, OH	07/2018
9. Contributed Talk, APS April Meeting 2018, Columbus, OH	04/2018
8. Contributed Poster, 48 th Saas-Fee course, Saas-Fee, Switzerland	01/2018
7. Contributed Talk, VII Essential Cosmology for the Next Generation, Punta Mita, Mexico	12/2017
6. Contributed Poster, COSMO-17, Paris, France	08/2017
5. Talk (Best Project Award), SLAC Summer Institute 2017, Palo Alto, CA	08/2017
4. Contributed Poster, SLAC Summer Institute 2017, Palo Alto, CA	08/2017
3. Invited Talk, UCR Department of Physics Colloquium, San José, Costa Rica	12/2016
2. Invited Talk, UCR Department of Physics Colloquium, San José, Costa Rica	06/2014
1. Contributed Talk, XIX SIMMAC, San José, Costa Rica	02/2014

ADVISING, TEACHING, WORK EXPERIENCE AND SERVICE

Advised and coached students:

Catalina Morales (Universidad de Costa Rica Undergraduate student, 2021-)

Heyang Long (OSU Graduate student, 2020-)

Makana Silva (OSU Graduate student, 2018-2020)

Gabriel Vasquez (OSU Graduate student, 2018-2019)

Work experience and Service:

Referee for Journal of Cosmology and Astroparticle Physics

Coordinator, Astro Coffee, Tsinghua University (2020-)

Coordinator, Cosmolunch Journal Club, CCAPP, OSU (2016-2019)

Research Assistant, CCAPP & OSU (2016-2019)

Research Assistant, Astrophysics section, UCR (2012-2014)

Undergraduate Research Assistant, Condensed Matter section, UCR (2012-2013)

Undergraduate Research Assistant, Theoretical Physics section, UCR (2012-2013)

Undergraduate Research Assistant, Astrophysics section, UCR (2010-2012)

Diversity and Inclusion:

Member of α -cen (2020-)

Mentor, Bridge program, Department of Physics, OSU (2017-2019)

Teaching:

Teaching Assistant, Physics 1251: EM, Optics, Modern Physics, OSU (2015-2016)

Teaching Assistant, Intermediate Mechanics, OSU (2014-2015)

Lecturer, Physics II: Waves, Thermodynamics, Electrostatics, UCR (2013-2014)

Teaching Assistant, E&M I: Electrostatics, UCR (2013)

Teaching Assistant, Mathematical methods for physicists III, UCR (2012)

Teaching Assistant, Physics III: E&M, Optics, Modern Physics, UCR (2010-2012)

REFERENCES

Prof. Christopher M. Hirata
Department of Physics and Astronomy, The Ohio State University

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Prof. Yi Mao
Department of Astronomy, Tsinghua University

ymao@tsinghua.edu.cn

Prof. Antonija Oklopčić
Anton Pannekoek Institute for Astronomy, University of Amsterdam

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