

PAULO MONTERO-CAMACHO

Citizenship: Costa Rican

191 W. Woodruff Ave. ♦ Columbus, Ohio 43210

+1 614 961 2656 ♦ monterocamacho.1@osu.edu

RESEARCH INTERESTS

Cosmology: 21cm cosmology, CMB polarization, early universe, non-standard probes of cosmology, primordial black holes, cosmic reionization, exoplanets and WFIRST.

Neutron star binary mergers: instabilities and their impact in gravitational waves observables.

AWARDS

Member of the Project Winning Team in SSI	2017
University of Costa Rica research scholarship	2010-2013
University of Costa Rica TA scholarship	2010-2012
University of Costa Rica scholarship for excellence for incoming students	2009

EDUCATION

PhD. in Physics The Ohio State University, Columbus OH. Advisor: Christopher M. Hirata	Expected graduation: Summer 2019
Master of Science in Physics The Ohio State University, Columbus OH.	Fall 2016
Bachelor of Science in Physics University of Costa Rica, San Jose. Graduated with honors, first of the class. Advisor: Francisco Frutos	Winter 2012
Scientific High School Of Costa Rica Graduated with honors.	Winter 2008

WORK EXPERIENCE AND SERVICE

Graduate Research Assistant, CCAPP & OSU. Under professor Chris Hirata.	Fall 2016 - Summer 2019
Coordinator Cosmology Lunch, CCAPP Journal Club.	Fall 2017 - Spring 2019
Mentor for Bridge program, Department of Physics, OSU Mentor graduate students from underrepresented groups.	Fall 2017 - Summer 2019
Graduate Teaching Asistant, Department of Physics, OSU Taught Physics 1251: Electromagnetism, Optics, Waves and Modern Physics.	Fall 2015 - Spring 2016
Grader, Department of Physics, OSU Graded Physics 2300 & 2301: Intermediate Mechanics. Under professor Gregory Kilcup.	Fall 2014 - Spring 2015
Lecturer, Department of Physics, University of Costa Rica Taught General Physics II: Waves, Thermodynamics and Electrostatics.	Fall 2013 - Spring 2014
Grader, Department of Physics, University of Costa Rica Graded General Physics III: Electrodynamics, Optics and Modern Physics. Under professor Rodrigo Carboni.	Fall 2010 - Fall 2012

Grader, Department of Physics, University of Costa Rica

Fall 2012

Graded Mathematical Methods for Physicists III.

Special Functions, Green Functions and Forms. Under professor Francisco Frutos

Grader, Department of Physics, University of Costa Rica

Spring 2013

Graded Electromagnetism I: Electrostatics.

Under professor Marcela Hernandez

Research Assistant, CICIMA, University of Costa Rica

Spring 2012 - Fall 2013

Growth and analysis of thin films of different materials.

Research Assistant, Department of Physics, University of Costa Rica

Spring 2012 - Fall 2013

Assistant in project: Problems of Contemporary Quantum Cosmology.

Under professor Max Chaves

Research Assistant, Department of Physics, University of Costa Rica

Fall 2010 - Summer 2014

Research in General Relativity with professor Francisco Frutos and Javier Bonatti.

Explored new perturbed and exact space-time metrics.

PUBLICATIONS

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](#)
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](#)
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](#)
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](#)
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](#)

PRESENTATIONS

13. University of Costa Rica, Department of Physics Colloquium, February 13th 2019, San Jose, Costa Rica. *Impact of inhomogeneous reionization in the Lyman- α forest.*
12. Caltech Cosmology Journal Club. October 23rd 2018, Pasadena. *The imprint of inhomogeneous reionization in the Lyman- α forest.*
11. CMU Astro lunch. October 2nd 2018, Pittsburgh. *Constraining the effect of reionization on the Lyman- α forest.*
10. CCAPP seminar. July 17th 2018, Columbus. *Exploring circular polarization in the CMB due to conventional sources of cosmic birefringence.*
9. APS April meeting. April 16th 2018, Columbus. *Exploring circular polarization in the CMB due to conventional sources of cosmic birefringence.*
8. Poster. Saas-Fee, Switzerland. 48th Saas-Fee course: Black hole formation and growth. Winter 2018. *Stability of tides: g-modes in binary neutron stars.*
7. VII Essential Cosmology for the Next Generation, COTB-2017. December 11th 2017, Mexico. *Exploring circular polarization in the CMB due to conventional sources of cosmic birefringence.*
6. Poster. Paris, France. COSMO-17. Fall 2017. *CMB Circ. Pol.*

5. SSI-2017: SLAC Summer Institute 2017. August 24th 2017. Project talk: *Primordial black holes as dark matter*.
4. Poster. Palo Alto, CA. SSI-2017: SLAC Summer Institute 2017. Summer 2017. *CMB Circ. Pol.*
3. University of Costa Rica, Department of Physics Colloquium, December 7th 2016. *Exploring circular polarization in the CMB due to cosmic birefringence*.
2. University of Costa Rica, Department of Physics Colloquium, June 18th 2014. *Approximate metric for a rotating deformed mass*.
1. XIX SIMMAC- International Symposium on Mathematical Methods Applied to the Sciences. February 2014. *Slowly rotating Curzon-Chazy metric*.

OUTREACH

Friends of Ohio State Astronomy and Astrophysics Volunteer.	Summer 2018
OSU Physics Open House Coordinated the cosmology group.	Spring 2018
TeVPA 2017 Conference Volunteer.	Summer 2017
OSC Summer Institute Volunteered to guide high school students along their summer projects.	Summer 2017
TC-535: Astronomy and its Applications. University of Costa Rica Worked with the planetarium of University of Costa Rica to coordinate, organize and lead visits from elementary school students, and children with special needs.	Spring 2011 - Fall 2011
Taught in Project: Terapia Física, University of Costa Rica, Department of Physics Reinforcement in different mathematical topics for physics students (second and third year) with professor Manuel Ortega.	Spring 2011

REFERENCES

Prof. Christopher M. Hirata Department of Physics and Astronomy, The Ohio State University	<i>hirata.10@osu.edu</i>
Prof. Klaus Honscheid Department of Physics, The Ohio State University	<i>kh@physics.osu.edu</i>
Prof. Paul Martini Department of Astronomy, The Ohio State University	<i>martini.10@osu.edu</i>