Martin A. Fernandez

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EMPLOYMENT & EDUCATION

2023-	Postdoctoral Fellow	Department of Atmospheric Science,
		Colorado State University
2023	PhD in Physics	University of California Riverside
2018	M.S. in Physics	University of California Riverside
2017	B.S. in Physics	Western Washington University

RESEARCH

- 2023 present: Using machine learning methods to improve climate and weather forecasting. With Dr. Elizabeth Barnes (Colorado State University).
- 2018 2023: Using cosmological simulations and machine learning to explore beyond-standard-model physics and constrain cosmological & astrophysical parameters. With Dr. Simeon Bird (University of California Riverside).
- 2016 2017: Theory & modeling of guided wave plasmon polariton modes on novel waveguide architectures. With Dr. Brad Johnson (Western Washington University).
- 2015 2017: Identifying & characterizing pre-main sequence double-lined spectroscopic binaries in young star forming environments. With Dr. Kevin Covey (Western Washington University).

PROGRAMMING SKILLS

6+ years: Python and LATEX.

4+ years: High-performance computing (SLURM), including the use of TACC resources (Frontera,

Stampede2), and the XSEDE (now ACCESS) allocation system.

1+ years: C, Mathematica, IDL, and HTML/CSS.

AWARDS

NSF GRFP (Graduate Research Fellowship Program)	2019-2022
UCR Chancellor's Distinguished Fellowship	2017
WWU Alumni Association Leader Scholarship	2016

OUTREACH

Advisor/mentor for high school student	2018 - 2020
Currently at Stanford studying computer science.	
UCR Physics Organization for Women and the UnderRepresented	2018 - 2020
Served as treasurer for 2019.	
WWU Public Night Sky Observing host	2015 - 2017
WWU Women in Physics	2015 - 2017

Volunteer/Organizer for outreach events, including: GEMS Fair (2016, 2017), GEMS Academy (2017), Compass2Campus (2015, 2016), Scouting for Science (2016, 2017), March for Science (2017), Mix it Up (2015, 2016).

FIRST AUTHOR PUBLICATIONS

- Fernandez, M. A., Ho M.-F., and Bird, S., A Multi-fidelity Emulator for the Lyman-α Forest Flux Power Spectrum, MNRAS 517, 3200. arXiv: 2207.06445.
- Fernandez, M. A., Bird, S., and Upton Sanderbeck, P. 2021, Effect of separate initial conditions on the Lyman-α forest in simulations, MNRAS 503, 1668. arXiv: 2009.09119.
- Fernandez, M. A., Bird, S., and Cui, Y. 2020, Cosmic Filaments from Cosmic Strings, Phys. Rev. D 102.043509. arXiv: 2004.13752.
- Fernandez, M. A., Covey, K. R., De Lee, N., et al. 2017, Identification and Radial Velocity Extraction for 100+ Double-Lined Spectroscopic Binaries in the APOGEE/IN-SYNC Fields, PASP 129.084201. arXiv: 1706.01161.