Martin A. Fernandez

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EDUCATION

Currently: PhD Candidate in Physics, University of California Riverside.

M.S. in Physics	University of California Riverside	2018
B.S. in Physics	Western Washington University	2017

RESEARCH

2018 – 2022: Using cosmological simulations and machine learning to explore beyond-standard-model physics and constrain cosmological & astrophysical parameters. Advised by Dr. Simeon Bird (University of California Riverside).

2016 – 2017: Theory & modeling of guided wave plasmon polariton modes on novel waveguide architectures. Advised by Dr. Brad Johnson (Western Washington University).

2015 – 2017: Identifying & characterizing pre-main sequence double-lined spectroscopic binaries in young star forming environments. Advised by 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 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

TEACHING

UCR Teaching Assistant, Physics 2LC: Waves & Optics	2018
WWU Teaching Assistant, Tools and Data Analysis	2016 & 2017
WWU Teaching Assistant, Classical Mechanics	2016

OUTREACH

Advisor/mentor for high school student 2018 – 2020

Currently at UC Berkeley 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).

PUBLICATIONS

Fernandez, M. A. and Bird, S., *Constraints on neutrino mass from a Lyman-α Forest Emulator*, **in preparation**.

Fernandez, M. A., Ho M.-F., and Bird, S., *A Multi-fidelity Emulator for the Lyman-α Forest Flux Power Spectrum*, **in review (MNRAS)**. 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.

Troup, N. W., Nidever, D. L., De Lee, N., Carlberg, J., Majewski S. R., Fernandez, M., et al. 2016, *Companions to APOGEE Stars. I. A Milky Way-spanning Catalog of Stellar and Substellar Companion Candidates and Their Diverse Hosts*, **AJ, 151, 85**. arXiv: 1601.00688.