

Max L. Trostel | CV

CONTACT	University of Texas at Austin Department of Physics 2515 Speedway, C1600 Austin, TX 78712	<i>E-mail:</i> trostel@utexas.edu
EDUCATION	University of Texas at Austin Graduate student in physics	Sep 2020 – Present
	Carleton College , Northfield, MN B.A. in Physics (Math minor) <i>cum laude</i> , Jun 2019 Cumulative GPA: 3.78/4.00, Physics: 3.80, Math: 3.67	Sep 2015 – Jun 2019
	Senior thesis: <i>Predicting the Weather: The Physics of Earth's Atmosphere</i> <ul style="list-style-type: none">• Advisors: Joel M. Weisberg, Arjendu K. Pattanayak• Public talk presented Feb 1, 2019. Awarded Distinction Jun 2019.	
RESEARCH EXPERIENCE	General relativity and Lorentz symmetry <i>Department of Physics and Astronomy, Carleton College</i> <ul style="list-style-type: none">• Developing equations for sensitivities to Lorentz violation in Sagnac gyroscope experiments [1, 2].• Advisor: Jay D. Tasson	Jan 2018 – Jul 2019
	Climate variability and global warming <i>Department of Atmospheric Sciences, Texas A&M University</i> <ul style="list-style-type: none">• Implementing a novel statistical analysis in Python to better separate modes of internal multidecadal variability in the climate from external forcings.• Advisor: Yangyang Xu• Poster: <i>Isolating Warming and Multidecadal Variability in Pacific Sea Surface Temperatures</i>	Jun 2018 – Aug 2018
	Quantum chaos simulation <i>Department of Physics and Astronomy, Carleton College</i> <ul style="list-style-type: none">• Implementing simulations of the quantum, semiclassical, and classical damped-driven Duffing oscillator and analyzing the transition from quantum periodicity to classical chaos [3].• Advisors: Arjendu K. Pattanayak, Andrés Aragonese	Mar 2016 – Jan 2018
	Observational astronomy <i>Department Physics and Astronomy, University of Maine</i>	Jun 2014 – Aug 2014

- Developing software in MATLAB to correct the color of starfield images for the effects of the Earth's atmosphere and human eye color perception.
- Advisor: Neil F. Comins
- Presentation: *Effects of the Earth's atmosphere and human neural processing of light on the apparent colors of stars*

PROFESSIONAL
EXPERIENCE**Graduate Teaching Assistant**

Sep 2020 – Present

University of Texas at Austin

- PHY 375R: Introduction to Relativity (Fall 2020)

Math Teaching Fellow

Aug 2019 – Jun 2020

Conserve School

- Teaching algebra, precalculus, and calculus.

Asst. System Administrator for Physics

Mar 2017 – Jun 2019

Department of Physics and Astronomy, Carleton College

- Maintaining computer systems for classroom and research applications in the department.
- Website development and maintenance for the department.
- Various coding and database development projects for use in the classroom and research.

*Department of Physics and Astronomy, Carleton College*CODING
EXPERIENCE

- **Unix and Linux system administration:** Installing Linux operating systems; writing scripts in Bash; other advanced commands in the terminal.
- **XML:** Writing and parsing for instrumentation and database projects.
- **Python:** Extensive use in multiple research projects; projects for asst. system admin job.
- **Mathematica:** Symbolic manipulation for theoretical physics research; numerical and symbolic applications throughout physics and math courses.
- **MATLAB:** Various research projects; math course on numerical analysis.

PUBLICATIONS

- [1] **M.L. Trostel**, S. Moseley, N. Scaramuzza, and J.D. Tasson, *Ring Laser Gyroscope Tests of Lorentz Symmetry*, Proceedings of the Eighth Meeting on CPT and Lorentz Symmetry (CPT '19), preprint: arXiv:1907.07071.
- [2] S. Moseley, N. Scaramuzza, J.D. Tasson, and **M.L. Trostel**, *Lorentz violation and Sagnac gyroscopes*, Phys. Rev. D **100**, 6 (2019).
- [3] **M.L. Trostel**, M.Z.R. Misplon, A. Aroganoses, and A.K. Pattanayak, *Characterizing Complex Dynamics in the Classical and Semi-Classical Duffing Oscillator Using Ordinal Patterns Analysis*, Entropy **20**, 40 (2018).