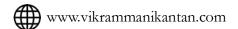
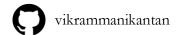
# Vikram Manikantan







#### Education

May 2027 Ph.D., M.S., Astronomy & Astrophysics

University of Arizona

GPA: 4.0/4.0

Northwestern University

GPA: 3.8/4.0

Jun 2022 **B.A., Physics w/ Honors** 

+ Computer Science Minor

## Research Projects

Jan 2023 Multi-Messenger Eccentric Binary Black Hole Mergers (with Einstein Toolkit)

present

- o Running numerical relativity and magnetohydrodynamic simulations to understand the evolution of an eccentric binary black hole system.
- O Studying multi-messenger signals (gravitational waves and electromagnetic) to provide measurable, quantitative differences from circular mergers.

Oct 2022 Initial Accretion Disk Solutions and Their Effect on Simulation Evolution (with Athena++ - present GRMHD Simulations)

- Developed in-house analysis tools in python with Numpy and Matplotlib to study Athena++ simulation data sets.
- o Implemented two additional accretion disk torus solutions (Penna+ 2013; Chakrabarti 1985) for the Athena++ GRMHD simulation suite.

July 2020 **Magnetized Winds as a Dominant Mode of Angular Momentum Transport^** (with H-AMR – Feb 2023 GRMHD Simulations)

- O Awarded outstanding thesis research project in physics & astronomy at Northwestern University. Department Record; Press Release.
- Developed novel python analysis code to study multiple angular momentum transport modes within magnetically arrested accretion disks.
- Designed a new, consistent method to define disk/wind boundaries in magnetically driven accretion regimes.

### **Employment**

Aug 2022	Astrophysics Graduate Research Assistant	University of Arizona
– present	Advisor: Prof. Vasilis Paschalidis	Tucson, AZ
2	Computational Astrophysics Researcher Advisor: Prof. Sasha Tchekhovskoy	Northwestern University Evanston, IL
Jun 2021 – Aug 2021	Solutions Engineering Summer Intern	Deloitte Consulting Chicago, IL

<sup>^</sup> Manuscript available upon request

# Publication(s)

1. **Manikantan et al. 2023**, Magnetized Winds as the Dominant Mode of Angular Momentum Transport in Magnetically Arrested Disks (in prep)

#### **Grants**

Feb 2023	Theoretical Astrophysics Program Travel Grant (University of Arizona) <u>Announcement</u>	\$1000
Jun 2020	Summer Undergraduate Research Grant (Northwestern University)	\$3500
Jun 2019	Undergraduate Research Assistantship Program (Northwestern University)	\$3500

## **Presentations**

Jun 2022	Annual European Astronomical Society Meeting (EAS)	Poster
May 2022	UChicago High-Energy Astrophysics Journal Club	Talk
Jan 2022	239th American Astronomical Society Meeting (Cancelled)	Poster

# Teaching/Mentoring

Jan 2022	Senior Student Mentor in the Society of Physics Students and We're in Physics mentorship program
– Jun 2022	
Jan 2022	Undergraduate Grader for physics 140-2 and 140-3 (introductory honors physics for majors)
– Jun 2022	

#### **Awards**

AY 2021	Outstanding Undergraduate Thesis Research in the Physics and	Northwestern
-2022	Astronomy Department	University
		Evanston, IL

Department Record; Press Release.

### References

1.	Professor Vasilis Paschalidis	University of Arizona
3.	Professor Sasha Tchekhovskoy	Northwestern University
5.	Professor Jens Koch	Northwestern University

<sup>\*</sup> Contact information available upon request