

Vikram Manikantan



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vikrammanikantan



vikrammanikantan.com

Education

May 2027 **Ph.D., Astronomy & Astrophysics**

University of Arizona

GPA: 4.0/4.0

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

Northwestern University

+ Computer Science Minor

GPA: 3.8/4.0

Research Projects

Jan 2023 **Multi-Messenger Eccentric Binary BH Mergers** (with Einstein Toolkit)

– present

- Running numerical relativity and magnetohydrodynamic simulations to understand the evolution of an eccentric binary black hole system.
- Studying multi-messenger signals (gravitational waves and electromagnetic) to provide qualitative 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.
- Implemented two additional accretion disk torus solutions (Penna+ 2013; Chakrabarti 1985;) into Athena++ code.

Jul 2020 **Magnetized Winds as a Dominant Mode of Angular Momentum Transport[^]** (with H-AMR

- Feb 2023 GRMHD Simulations)

- Won department-wide outstanding thesis research project [Department Page](#); [Press Release](#).
- Developed novel python analysis code to study multiple angular momentum transport modes within magnetically arrested accretion disks.

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	\$1000
	Announcement.	
Jun 2020	Summer Undergraduate Research Grant	\$3500
Jun 2019	Undergraduate Research Assistantship Program	\$3500

Presentations_____

Jun 2022	Annual European Astronomical Society Meeting (EAS)	Poster
May 2022	UChicago High-Energy Journal Club	Talk
Jan 2022	237 th American Astronomical Society Meeting (Cancelled)	Poster

Meetings_____

Jul 2023 **Code/Astro Workshop** at Northwestern University

Teaching/Mentoring_____

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

Awards_____

AY 2021 **Outstanding Undergraduate Thesis Research in the Physics** Northwestern University

- 2022 **and Astronomy Department** Evanston, IL

[Department Page](#); [Press Release](#).

References_____

1. Prof. Vasilis Paschalidis University of Arizona
3. Prof. Sasha Tchekhovskoy Northwestern University