

Sanika Khadkikar

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EDUCATION

The Pennsylvania State University, State College, PA 2022

Ph.D. in Physics

Exploring the fundamental physics of neutron stars using astrophysics and gravitational waves, advisor Bangalore Sathyaprakash

Birla Institute of Science and Technology, Pilani, India 2017 - 2022

M. Sc. (Hons) in Physics

B.E. (Hons) in Mechanical Engineering

Quasi-stationary sequences of hyper-massive neutron stars with exotic equations of state, advisor Sarmistha Banik

The Pennsylvania State University, State College, PA 2021 - 2022

BITS Pilani Master's Thesis exchange program

Binary neutron star post-merger signal analysis using wavelet transforms, advisor Bangalore Sathyaprakash and Sujith R.

RESEARCH INTERESTS

Gravitational-wave data analysis, black holes, neutron stars, multimessenger astronomy, compact-object binaries, stochastic gravitational-wave backgrounds, next-generation gravitational-wave detectors

SELECTED FELLOWSHIPS AND HONORS

Homer F. Braddock Scholarship in Biology, Chemistry, and Physics 2022

Off-Campus International Master's Thesis Fellowship 2021

Charpak Indo-France Research Scholarship 2021

Caltech Summer Undergraduate Research Fellowship 2020

BITS Pilani Merit Scholarship 2018- 2021

INSPIRE Award by the Govt. of India 2014

Publications

- Gupta, I., et al. (2023). Characterizing gravitational wave detector networks: From A# to Cosmic Explorer. arXiv. <https://arxiv.org/abs/2307.10421>
- Evans, M., et al. (2023). Cosmic Explorer: A submission to the NSF MPSAC ngGW Subcommittee. arXiv. <https://arxiv.org/abs/2306.13745>
- Khadkikar, S., Mangat, C. S., and Banik, S. (2022). Quasi-stationary sequences of hyper-massive neutron stars with exotic equations of state. *Journal of Astrophysics and Astronomy*, 43(2), 57. <https://doi.org/10.1007/s12036-022-09849-0>
- Khadkikar, S., Raduta, A. R., Oertel, M., and Sedrakian, A. (2021). Maximum mass of compact

stars from gravitational wave events with finite-temperature equations of state. *Physical Review C*, 103(5), 055811. <https://doi.org/10.1103/PhysRevC.103.055811>

CONTRIBUTED PRESENTATIONS

- LIGO -Virgo Collaboration Meeting, *virtual*
- American Physical Society April Meeting , *Sacramento, CA*
- Penn State Primordial Universe and Gravity Seminar, *State College, PA*

TEACHING AND MENTORSHIP

Graduate Teaching Assistant	2022-2024
<i>Department of Physics, Pennsylvania State University</i>	
Quantum Information and Computing	
Introductory Electromagnetism	
Introductory Mechanics	
Undergraduate Teaching Assistant	2020
<i>Department of Physics, BITS Pilani</i>	
Statistical Mechanics	

SERVICE AND OUTREACH

GAPP Graduate Student Liaison	2024
<i>Department of Physics, Pennsylvania State University</i>	
Instrumental in arranging and managing the Gravity, Astrophysics and Particle Physics (GAPP) seminars at Pennstate along with faculty	
PAW Pals Volunteer	2023-2024
<i>Physics and Astronomy for Women+, Pennsylvania State University</i>	
Instrumental in arranging and managing the Gravity, Astrophysics and Particle Physics (GAPP) seminars at Pennstate along with faculty	
Gravi-tea Time Podcast	2024
<i>Institute of Gravitation and the Cosmos (IGC), Pennsylvania State University</i>	
Creator of the podcast aimed towards bringing the latest breakthroughs in gravitational physics and astrophysics straight from the researchers, explained in a nuanced yet accessible way for advanced undergrads and grad students	