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Papers (short authorlist)

⋆ *denotes joint first-author papers,* † *denotes student supervised.*

27. N.V. Krishnendu, Tamara Evstafyeva, ⋆**Aditya Vijaykumar**, William E. East et al.
Implications of GW241011 for rotating exotic compact objects
Submitted to PRL, arXiv:2511.17341.

26. Madison VanWyngarden, Maya Fishbach, **Aditya Vijaykumar**, Alexandra G. Guerrero, Daniel E. Holz
How Low Can You Go: Constraining the Effects of Catalog Incompleteness on Dark Siren Cosmology
Submitted to ApJ, arXiv:2511.04786.

25. Hui Tong et al. (including **Aditya Vijaykumar**)
Evidence of the pair instability gap in the distribution of black hole masses
Submitted to Nature, arXiv:2509.04151.

24. Colm Talbot et al. (including **Aditya Vijaykumar**)
Inference with finite time series II: the window strikes back
Submitted to CQG, arXiv:2508.11091.

23. Avinash Tiwari, Prolay Chanda, Shasvath J. Kapadia, Susmita Adhikari, **Aditya Vijaykumar**, Basudeb Dasgupta
Profiling Dark Matter Spikes with Gravitational Waves from Accelerated Binaries
Submitted to PRL, arXiv:2508.03803.

22. Andris Doroszmai, Isobel M. Romero-Shaw, **Aditya Vijaykumar**, Silvia Toonen, et al.
Hierarchical Triples vs. Globular Clusters: Binary black hole merger eccentricity distributions compete and evolve with redshift
Submitted to MNRAS, arXiv:2507.23212.

21. †Avinash Tiwari, **Aditya Vijaykumar**, Shasvath J. Kapadia, Shrobana Ghosh, Alex B. Nielsen
A pipeline to search for signatures of line-of-sight acceleration in gravitational wave signals produced by compact binary coalescences
Submitted to PRD, arXiv:2506.22272.

20. Kanchan Soni, **Aditya Vijaykumar**, Sanjit Mitra
Assessing the potential of LIGO-India in resolving the Hubble Tension
Submitted to CQG, arXiv:2409.11361.

19. †Avinash Tiwari, **Aditya Vijaykumar**, Shasvath J. Kapadia, Sourav Chatterjee, Giacomo Fragione
Profiling stellar environments of gravitational wave sources
Phys. Rev. D 112, 084034, arXiv:2407.15117.

18. Alexandra G. Hanselman, **Aditya Vijaykumar**, Maya Fishbach, Daniel E. Holz
Gravitational-wave dark siren cosmology systematics from galaxy weighting
ApJ 979 9, arXiv:2405.14818.

17. Sreejith Nair, ⋆**Aditya Vijaykumar**, Sudipta Sarkar
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JCAP 11 (2024) 004, arXiv:2405.05038.

16. ⋆**Aditya Vijaykumar**, Alexandra G. Hanselman, Michael Zevin
Consistent eccentricities for gravitational wave astronomy: Resolving discrepancies between astrophysical simulations and waveform models
ApJ 969 132, arXiv:2402.07892.

15. Mukesh Kumar Singh, Shasvath J. Kapadia **Aditya Vijaykumar**, Parameswaran Ajith
Impact of higher harmonics of gravitational radiation on the population inference of binary black holes
ApJ 971 23, arXiv:2312.07376.

14. †Kruthi Krishna, ⋆**Aditya Vijaykumar**, Apratim Ganguly, *et al*
Accelerated parameter estimation in Bilby with relative binning
arXiv:2312.06009.

13. **Aditya Vijaykumar**, Maya Fishbach, Susmita Adhikari, Daniel E. Holz
Inferring host galaxy properties of LIGO-Virgo-KAGRA's black holes
ApJ 972 157, arXiv:2312.03316.

12. Divyajyoti, N.V. Krishnendu, Muhammed Saleem, Marta Colleoni, **Aditya Vijaykumar**, K.G. Arun, Chandra Kant Mishra
Effect of double spin-precession and higher harmonics on spin-induced quadrupole moment measurements
Phys. Rev. D 109, 023016, arXiv:2311.05506.

11. †Avinash Tiwari, ⋆**Aditya Vijaykumar**, Shasvath J. Kapadia, Giacomo Fragione, Sourav Chatterjee
Accelerated binary black holes in globular clusters: forecasts and detectability in the era of space-based gravitational-wave detectors
MNRAS, 527, 8586, arXiv:2307.00930.

10. **Aditya Vijaykumar**, †Avinash Tiwari, Shasvath J. Kapadia, K.G. Arun, Parameswaran Ajith
Waltzing binaries: Probing line-of-sight acceleration of merging compact objects with gravitational waves
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In press: Astrobites

9. †Adhrit Ravichandran, **Aditya Vijaykumar**, Shasvath J. Kapadia, Prayush Kumar
Rapid Identification and Classification of Eccentric Gravitational Wave Inspirals with Machine Learning
Submitted to PRD, arXiv:2302.00666.

8. Srashti Goyal, **Aditya Vijaykumar**, Jose Maria Ezquiaga, Miguel Zumalacarregui
Probing lens-induced gravitational-wave birefringence as a test of general relativity
Phys. Rev. D 108, 024052, arXiv:2301.04826.
In press: Astrobites

7. Bikram Keshari Pradhan, **Aditya Vijaykumar**, Debarati Chatterjee
Impact of updated Multipole Love and f-Love Universal Relations in context of Binary Neutron Stars
Phys. Rev. D 107, 023010, arXiv:2210.09425.

6. **Aditya Vijaykumar**, Shasvath J. Kapadia, Parameswaran Ajith
Can a binary neutron star merger in the vicinity of a supermassive black hole enable a detection of a post-merger gravitational wave signal?
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5. **Aditya Vijaykumar**, Ajit Kumar Mehta, Apratim Ganguly
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4. Sumit Kumar, **Aditya Vijaykumar**, Alexander H. Nitz
Detecting Baryon Acoustic Oscillations with third generation gravitational wave observatories,
ApJ 930 113, arXiv:2110.06152.

3. M. Saleem, Javed Rana, V. Gayathri, ⋆**Aditya Vijaykumar** et al.
The Science Case for LIGO-India
Class. Quantum Grav. 39 025004, arXiv:2105.01716.

2. **Aditya Vijaykumar**, M. V. S. Saketh, Sumit Kumar, Parameswaran Ajith, Tirthankar Roy Choudhury
Probing the large scale structure using gravitational wave observations of binary black holes,
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1. **Aditya Vijaykumar**, Shasvath J. Kapadia, Parameswaran Ajith
Constraints on the time variation of the gravitational constant using gravitational wave observations of binary neutron stars,

Phys. Rev. Lett. 126, 141104, arXiv:2003.12832.
In press: phys.org.

Papers (long authorlist, with substantial contribution)

9. Abac et al. (LIGO Scientific, Virgo, and KAGRA Collaborations)
GW241011 and GW241110: Exploring Binary Formation and Fundamental Physics with Asymmetric, High-spin Black Hole Coalescences,
ApJL, arXiv:2510.26931.
8. Abac et al. (LIGO Scientific, Virgo, and KAGRA Collaborations)
Upper Limits on the Isotropic Gravitational-Wave Background from the first part of LIGO, Virgo, and KAGRA's fourth Observing Run,
arXiv:2508.20721.
7. Abac et al. (LIGO Scientific, Virgo, and KAGRA Collaborations) [**Paper Writing Team Lead**]
GWTC-4.0: Population Properties of Merging Compact Binaries,
arXiv:2508.18083.
6. Abac et al. (LIGO Scientific, Virgo, and KAGRA Collaborations)
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5. Abac et al. (LIGO Scientific, Virgo, and KAGRA Collaborations)
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arXiv:2507.08219.
4. Abbott et al. (LIGO Scientific and Virgo Collaborations)
Tests of General Relativity with GWTC-3,
Accepted to *Physical Review D*, arXiv:2112.06861.
3. Abbott et al. (LIGO Scientific and Virgo Collaborations)
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2. Abbott et al. (LIGO Scientific and Virgo Collaborations)
GWTC-2: Compact Binary Coalescences Observed by LIGO and Virgo During the First Half of the Third Observing Run,
Phys. Rev. X 11 (2021) 021053, arXiv:2010.14527.
1. P. Virtanen *et al.* (including **Aditya Vijaykumar** as *SciPy 1.0 Contributor*)
SciPy 1.0–Fundamental Algorithms for Scientific Computing in Python,
Nat Methods 17, 261–272 (2020), arXiv:1907.10121.