Riccardo Buscicchio | Publication list

riccardo.buscicchio@unimib.it • www.riccardobuscicchio.com • June 4, 2024

Publications:

20 short-author papers published in major peer-reviewed journals
(out of which **5** first-authored papers).
12 collaboration papers, with substantial contribution, published in major peer-reviewed journals
4 papers in submission stage,
2 other publications (thesis, white papers, long-authorlist reviews)

Total number of citations: >10700. **h-index**: 22 (using ADS and iNSPIRE).
Web links to list services: ADS; iNSPIRE; arXiv; orcid.

Submitted short-author and collaboration papers which I have substantially contributed to.:

4. *Partial alignment between jets and megamasers: coherent or selective accretion?*.
M. Dotti, **R. Buscicchio**, F. Bollati, R. Decarli, W. Del Pozzo, A. Franchini.
arXiv:2403.18002 [astro-ph.GA].

3. *LISA Definition Study Report*.
M. Colpi, K. Danzmann, M. Hewitson, K. Holley-Bockelmann, et al. (incl. **R. Buscicchio**).
arXiv:2402.07571 [astro-ph.CO].

2. *The last three years: multiband gravitational-wave observations of stellar-mass binary black holes*.
A. Klein, G. Pratten, **R. Buscicchio**, P. Schmidt, C. J. Moore, E. Finch, A. Bonino, L. M. Thomas, N. Williams, D. Gerosa, S. McGee, M. Nicholl, A. Vecchio.
arXiv:2204.03423 [astro-ph.HE].

1. *Search for gravitational-lensing signatures in the full third observing run of the LIGO-Virgo network*.
LIGO Scientific Collaboration, Virgo Collaboration, KAGRA collaboration.
arXiv:2304.08393 [gr-qc].

Papers in major peer-reviewed journals:

20. *A weakly-parametric approach to stochastic background inference in LISA*.
F. Pozzoli, **R. Buscicchio**, C. J. Moore, A. Sesana, F. Haardt, A. Sesana.
Physical Review D (in press). arXiv:2311.12111 [astro-ph.CO].

19. *A fast test for the identification and confirmation of massive black hole binary*.
M. Dotti, F. Rigamonti, S. Rinaldi, W. Del Pozzo, R. Decarli, **R. Buscicchio**.
Astronomy & Astrophysics 680 (2023) A69. arXiv:2310.06896 [astro-ph.HE].

18. *Glitch systematics on the observation of massive black-hole binaries with LISA*.
A. Spadaro, **R. Buscicchio**, D. Vetrugno, A. Klein, D. Gerosa, S. Vitale, R. Dolesi, W. J. Weber, M. Colpi.
Physical Review D Phys. Rev. D 108 (2023) 123029. arXiv:2306.03923 [gr-qc].

17. *Implications of pulsar timing array observations for LISA detections of massive black hole binaries*.
N. Steinle, H. Middleton, C. J. Moore, S. Chen, A. Klein, G. Pratten, **R. Buscicchio**, E. Finch, A. Vecchio.
Monthly Notices of the Royal Astronomical Society 525 2 (2023). arXiv:2305.05955 [astro-ph.HE].

16. *Parameter estimation of binary black holes in the endpoint of the up-down instability*.
V. De Renzis, D. Gerosa, M. Mould, **R. Buscicchio**, L. Zanga.
Physical Review D 108 (2023) 024024. arXiv:2304.13063 [gr-qc].

15. *Improved detection statistics for non Gaussian gravitational wave stochastic backgrounds*.
M. Ballelli, **R. Buscicchio**, B. Patricelli, A. Ain, G. Cella.
Physical Review D 107 (2023) 124044. arXiv:2212.10038 [gr-qc].

14. *Detecting non-Gaussian gravitational wave backgrounds: a unified framework*.
R. Buscicchio, A. Ain, M. Ballelli, G. Cella, B. Patricelli.
Physical Review D 107 (2023) 063027. arXiv:2209.01400 [gr-qc].

13. *Detectability of a spatial correlation between stellar-mass black hole mergers and Active Galactic Nuclei in the Local Universe*.
N. Veronesi, E.M. Rossi, S. van Velzen, **R. Buscicchio**.
Monthly Notices of the Royal Astronomical Society 514 2 (2023). arXiv:2203.05907 [astro-ph.HE].

12. *Bayesian parameter estimation of stellar-mass black-hole binaries with LISA*.
R. Buscicchio, A. Klein, E. Roebber, C. J. Moore, D. Gerosa, E. Finch, A. Vecchio.
Physical Review D 104 (2021) 044065. arXiv:2106.05259 [astro-ph.HE].

11. *An Interactive Gravitational-Wave Detector Model for Museums and Fairs*.
S. J. Cooper, A. C. Green, H. R. Middleton, C. P. L. Berry, **R. Buscicchio**, E. Butler, C. J. Collins, C. Gettings, D. Hoyland, A. W. Jones, J. H. Lindon, I. Romero-Shaw, S. P. Stevenson, E. P. Takeva, S. Vinciguerra, A. Vecchio, C. M. Mow-Lowry, A. Freise.
American Journal of Physics 89 (2021) 702–712. arXiv:2004.03052 [physics.ed-ph].

10. *Evidence for hierarchical black hole mergers in the second LIGO–Virgo gravitational-wave catalog*.
C. Kimball, C. Talbot, C.P.L. Berry, M. Zevin, E. Thrane, V. Kalogera, **R. Buscicchio**, M. Carney, T. Dent, H. Middleton, E. Payne, J. Veitch, D. Williams .
Astrophysical Journal Letters 915 (2021) L35. arXiv:2011.05332 [astro-ph.HE].

9. *Testing general relativity with gravitational-wave catalogs: the insidious nature of waveform systematics*.
C. J. Moore, E. Finch, **R. Buscicchio**, D. Gerosa.
iScience 24 (2021) 102577. arXiv:2103.16486 [gr-qc].

8. *LoCuSS: The splashback radius of massive galaxy clusters and its dependence on cluster merger history*.
M. Bianconi, **R. Buscicchio**, G. P. Smith, S. L. McGee, C.P. Haines, A. Finoguenov, A. Babul.
Astrophysical Journal 911 (2021) 136. arXiv:2010.05920 [astro-ph.GA].

7. *Search for Black Hole Merger Families*.
D. Veske, A. G. Sullivan, Z. Marka, I. Bartos, K. R. Corley, J. Samsing, **R. Buscicchio**, S. Marka.
Astrophysical Journal Letters 907 (2021) L48. arXiv:2011.06591 [astro-ph.HE].

6. *Constraining the lensing of binary black holes from their stochastic background*.
R. Buscicchio, C. J. Moore, G. Pratten, P. Schmidt, M. Bianconi, A. Vecchio.
Physical Review Letters 125 (2020) 141102. arXiv:2006.04516 [astro-ph.CO].

5. *Constraining the lensing of binary neutron stars from their stochastic background*.
R. Buscicchio, C. J. Moore, G. Pratten, P. Schmidt, A. Vecchio.
Physical Review D 102 (2020) 081501 . arXiv:2008.12621 [astro-ph.HE].

4. *Measuring precession in asymmetric compact binaries*.
G. Pratten, P. Schmidt, **R. Buscicchio**, L. M. Thomas.
Physical Review Research 2 (2020) 043096. arXiv:2006.16153 [gr-qc].

3. *Populations of double white dwarfs in Milky Way satellites and their detectability with LISA*.
V. Korol, S. Toonen, A. Klein, V. Belokurov, F. Vincenzo, **R. Buscicchio**, D. Gerosa, C. J. Moore, E. Roebber, E. M. Rossi, A. Vecchio.
Astronomy & Astrophysics 638 (2020) A153. arXiv:2002.10462 [astro-ph.GA].

2. *Milky Way satellites shining bright in gravitational waves*.
E. Roebber, **R. Buscicchio**, A. Vecchio, C. J. Moore, A. Klein, V. Korol, S. Toonen, D. Gerosa, J. Goldstein, S. M. Gaebel, T. E. Woods.
Astrophysical Journal Letters 894 (2020) L15. arXiv:2002.10465 [astro-ph.GA].

1. *Label Switching Problem in Bayesian Analysis for Gravitational Wave Astronomy*.
R. Buscicchio, E. Roebber, J. M. Goldstein, C. J. Moore .
Physical Review D 100 (2019) 084041. arXiv:1907.11631 [astro-ph.IM].

Collaboration papers in major peer-reviewed journals, which I have substantially contributed to.:

12. *GWTC-2.1: Deep Extended Catalog of Compact Binary Coalescences Observed by LIGO and Virgo During the First Half of the Third Observing Run*.
LIGO Scientific Collaboration, Virgo Collaboration, KAGRA collaboration.
Physical Review D Phys. Rev. D Physical Review D 109 (2024) 022001. arXiv:2108.01045 [gr-qc].

11. *The population of merging compact binaries inferred using gravitational waves through GWTC-3*.
LIGO Scientific Collaboration, Virgo Collaboration, KAGRA collaboration.
Physical Review X 13 (2021) 011048. arXiv:2111.03634 [astro-ph.HE].

10. *Tests of General Relativity with GWTC-3*.
LIGO Scientific Collaboration, Virgo Collaboration, KAGRA collaboration.
Physical Review D (accepted). arXiv:2112.06861 [gr-qc].

9. *Search for lensing signatures in the gravitational-wave observations from the first half of LIGO-Virgo's third observing run*.
LIGO Scientific Collaboration, Virgo Collaboration, KAGRA collaboration.
Astrophysical Journal Letters (2021) 923. arXiv:2105.06384 [gr-qc].

8. *GWTC-3: Compact Binary Coalescences Observed by LIGO and Virgo During the Second Part of the Third Observing Run.*
   LIGO Scientific Collaboration, Virgo Collaboration, KAGRA collaboration.
   Physical Review X 13 (2023) 041039. arXiv:2111.03606 [gr-qc].
7. *Observation of gravitational waves from two neutron star-black hole coalescences.*
   LIGO Scientific Collaboration, Virgo Collaboration.
   Astrophysical Journal Letters, 915, L5 (2021). arXiv:2106.15163 [astro-ph.HE].
6. *GWTC-2: Compact Binary Coalescences Observed by LIGO and Virgo During the First Half of the Third Observing Run.*
   LIGO Scientific Collaboration, Virgo Collaboration.
   Physical Review X 11 (2021) 021053. arXiv:2010.14527 [gr-qc].
5. *Population Properties of Compact Objects from the Second LIGO-Virgo Gravitational-Wave Transient Catalog.*
   LIGO Scientific Collaboration, Virgo Collaboration.
   Astrophysical Journal Letters 913 (2021) L7. arXiv:2010.14533 [astro-ph.HE].
4. *Upper Limits on the Isotropic Gravitational-Wave Background from Advanced LIGO's and Advanced Virgo's Third Observing Run.*
   LIGO Scientific Collaboration, Virgo Collaboration, KAGRA collaboration.
   Physical Review D 104 (2021) 022004. arXiv:2101.12130 [gr-qc].
3. *Binary Black Hole Population Properties Inferred from the First and Second Observing Runs of Advanced LIGO and Advanced Virgo .*
   LIGO Scientific Collaboration, Virgo Collaboration.
   Astrophysical Journal 882 (2019) L24. arXiv:1811.12940 [astro-ph.HE].
2. *Properties and astrophysical implications of the 150 Msun binary black hole merger GW190521.*
   LIGO Scientific Collaboration, Virgo Collaboration.
   Astrophysical Journal Letters 900 (2020) L13. arXiv:2009.01190 [astro-ph.HE].
1. *GW190521: A Binary Black Hole Merger with a Total Mass of 150 $M_\odot$.*
   LIGO Scientific Collaboration, Virgo Collaboration.
   Physical Review Letters 125 (2020) 101102. arXiv:2009.01075 [gr-qc].

Other publications. These include PhD thesis, and other collaboration papers.:

2. *LISA - Laser Interferometer Space Antenna - Definition Study Report.*
   The European Space Agency.
   ESA-SCI-DIR-RP-002.
1. *Topics in Bayesian population inference for gravitational wave astronomy.*
   R. Buscicchio.
   PhD thesis.