

Davide Gerosa | Publication list

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Counts: 27 papers published in major peer-reviewed journals, 5 papers in submission stage, 4 other papers published in conference proceedings, software journals, etc. (out of which 18 first-authored papers and 3 papers covered by press releases).

Total number of citations: >1000 (using ADS and InSPIRE).

h-index: 16

Web links to list services: ADS; INSPIRE; ARXIV.

Submitted papers:

5. *The binary black hole explorer: on-the-fly visualizations of precessing binary black holes.*
V. Varma, L. C. Stein, **D. Gerosa**.
arXiv:1811.06552 [astro-ph.HE].
4. *Wide precession: binary black-hole spins repeatedly oscillating from full alignment to full anti-alignment.*
D. Gerosa, Alicia Lima, Emanuele Berti, Ulrich Sperhake, Michael Kesden, Richard O'Shaughnessy.
arXiv:1811.05979 [gr-qc].
3. *Optimizing LIGO with LISA forewarnings to improve black-hole spectroscopy.*
R. Tso, **D. Gerosa**, Y. Chen.
arXiv:1807.00075 [gr-qc].
2. *Black holes, gravitational waves and fundamental physics: a roadmap.*
L. Barack, et al. (199 authors incl. **D. Gerosa**).
arXiv:1806.05195 [gr-qc].
1. *The origin of low spin black holes in LIGO/Virgo mergers.*
K. Belczynski, J. Klencki, G. Meynet, C. L. Fryer, D. A. Brown, M. Chruslinska, W. Gladysz, R. O'Shaughnessy, T. Bulik, E. Berti, D. E. Holz, **D. Gerosa**, M. Giersz, S. Ekstrom, C. Georgy, A. Askar, J.-P. Lasota.
arXiv:1706.07053 [astro-ph.HE].

Papers in major peer-reviewed journals:

27. *Frequency-domain waveform approximants capturing Doppler shifts.*
K. Chamberlain, C. J. Moore, **D. Gerosa**, N. Yunes.
Physical Review D, in press. arXiv:1809.04799 [gr-qc].
26. *High-accuracy mass, spin, and recoil predictions of generic black-hole merger remnants.*
V. Varma, **D. Gerosa**, F. Hébert, L. C. Stein, H. Zhang.
Physical Review Letters, in press. arXiv:1809.091259 [gr-qc].
25. *Spin orientations of merging black holes formed from the evolution of stellar binaries.*
D. Gerosa, E. Berti, R. O'Shaughnessy, K. Belczynski, M. Kesden, D. Wysocki, W. Gladysz.
Physical Review D 98 (2018) 084036. arXiv:1808.02491 [astro-ph.HE].
24. *Mining gravitational-wave catalogs to understand binary stellar evolution: a new hierarchical bayesian framework.*
S. R. Taylor, **D. Gerosa**.
Physical Review D 98 (2018) 083017. arXiv:1806.08365 [astro-ph.HE].
23. *Gravitational-wave astrophysics with effective-spin measurements: asymmetries and selection biases.*
K. K. Y. Ng, S. Vitale, A. Zimmerman, K. Chatziioannou, **D. Gerosa**, C.-J. Haster.
Physical Review D 98 (2018) 083007. arXiv:1805.03046 [gr-qc].
22. *Black-hole kicks from numerical-relativity surrogate models.*
D. Gerosa, F. Hébert, L. C. Stein
Physical Review D 97 (2018) 104049. arXiv:1802.04276 [gr-qc].
 - Open source code.

21. *Explaining LIGO's observations via isolated binary evolution with natal kicks.*
D. Wysocki, **D. Gerosa**, R. O'Shaughnessy, K. Belczynski, W. Gladysz, E. Berti, M. Kesden, D. Holz
Physical Review D 97 (2018) 043014. arXiv:1709.01943 [astro-ph.HE]
20. *Impact of Bayesian priors on the characterization of binary black hole coalescences.*
S. Vitale, **D. Gerosa**, C.-J. Haster, K. Chatziioannou, A. Zimmerman.
Physical Review Letters 119 (2017) 251103. arXiv:1707.04637 [gr-qc].
19. *Long-lived inverse chirp signals from core collapse in massive scalar-tensor gravity.*
U. Sperhake, C. J. Moore, R. Rosca, M. Agathos, **D. Gerosa**, C. D. Ott.
Physical Review Letters 119 (2017) 201103. arXiv:1708.03651 [gr-qc].
18. *Nutational resonances, transitional precession, and precession-averaged evolution in binary black-hole systems.*
X. Zhao, M. Kesden, **D. Gerosa**.
Physical Review D 96 (2017) 024007. arXiv:1705.02369 [gr-qc].
17. *Inferences about supernova physics from gravitational-wave measurements: GW151226 spin misalignment as an indicator of strong black-hole natal kicks.*
R. O'Shaughnessy, **D. Gerosa**, D. Wysocki.
Physical Review Letters 119 (2017) 011101. arXiv:1704.03879 [gr-qc].
• APS Editor's choice (physics.aps.org). Covered by press release.
16. *Are merging black holes born from stellar collapse or previous mergers?*
D. Gerosa, E. Berti.
Physical Review D 95 (2017) 124046. arXiv:1703.06223 [gr-qc].
• PRD Editors' Suggestion.
15. *On the equal-mass limit of precessing black-hole binaries.*
D. Gerosa, U. Sperhake, J. Vošmera.
Classical and Quantum Gravity 34 (2017) 6, 064004. arXiv:1612.05263 [gr-qc].
14. *Black-hole kicks as new gravitational-wave observables.*
D. Gerosa, C. Moore.
Physical Review Letters 117 (2016) 011101. arXiv:1606.04226 [gr-qc].
• PRL Editors' Suggestion. Covered by press release.
13. *PRECESSION: Dynamics of spinning black-hole binaries with python.*
D. Gerosa, M. Kesden.
Physical Review D 93 (2016) 124066. arXiv:1605.01067 [astro-ph.HE].
• Open source code.
12. *Numerical simulations of stellar collapse in scalar-tensor theories of gravity.*
D. Gerosa, U. Sperhake, C. D. Ott.
Classical and Quantum Gravity 33 (2016) 13, 135002. arXiv:1602.06952 [gr-qc].
11. *Distinguishing black-hole spin-orbit resonances by their gravitational wave signatures. II: Full parameter estimation.*
D. Trifirò, R. O'Shaughnessy, **D. Gerosa**, E. Berti, M. Kesden, T. Littenberg, U. Sperhake.
Physical Review D 93 (2016) 044071. arXiv:1507.05587 [gr-qc].
10. *Testing general relativity with present and future astrophysical observations.*
E. Berti, et al. (53 authors incl. **D. Gerosa**).
Classical and Quantum Gravity 32 (2015) 24, 243001. arXiv:1501.07274 [gr-qc]. Topical Review.
9. *Precessional instability in binary black holes with aligned spins.*
D. Gerosa, M. Kesden, R. O'Shaughnessy, A. Klein, E. Berti, U. Sperhake, D. Trifirò.
Physical Review Letters 115 (2015) 141102. arXiv:1506.09116 [gr-qc].
• PRL Editors' Suggestion.
8. *Tensor-multi-scalar theories: relativistic stars and 3+1 decomposition.*
M. Horbatsch, H. O. Silva, **D. Gerosa**, P. Pani, E. Berti, L. Gualtieri, U. Sperhake.
Classical and Quantum Gravity 32 (2015) 20, 204001. arXiv:1505.07462 [gr-qc].
• IoP Editor's choice (CQG+, IOPselect).
7. *Multi-timescale analysis of phase transitions in precessing black-hole binaries.*
D. Gerosa, M. Kesden, U. Sperhake, E. Berti, R. O'Shaughnessy.
Physical Review D 92 (2015) 064016. arXiv:1506.03492 [gr-qc].

6. *Spin alignment and differential accretion in merging black hole binaries.*
D. Gerosa, B. Veronesi, G. Lodato, G. Rosotti.
 Monthly Notices of the Royal Astronomical Society 451 (2015) 3941-3954. arXiv:1503.06807 [astro-ph.GA].
5. *Effective potentials and morphological transitions for binary black-hole spin precession.*
 M. Kesden, **D. Gerosa**, R. O'Shaughnessy, E. Berti, U. Sperhake.
Physical Review Letters 114 (2015) 081103. arXiv:1411.0674 [gr-qc].
 • Covered by press release.
4. *Missing black holes in brightest cluster galaxies as evidence for the occurrence of superkicks in nature.*
D. Gerosa, A. Sesana.
 Monthly Notices of the Royal Astronomical Society 446 (2015) 38-55. arXiv:1405.2072 [astro-ph.GA].
3. *Distinguishing black-hole spin-orbit resonances by their gravitational-wave signatures.*
D. Gerosa, R. O'Shaughnessy, M. Kesden, E. Berti, U. Sperhake.
 Physical Review D 89 (2014) 124025. arXiv:1403.7147 [gr-qc].
2. *Resonant-plane locking and spin alignment in stellar-mass black-hole binaries: a diagnostic of compact-binary formation.*
D. Gerosa, M. Kesden, E. Berti, R. O'Shaughnessy, U. Sperhake.
 Physical Review D 87 (2013) 10, 104028. arXiv:1302.4442 [gr-qc].
1. *Black hole mergers: do gas discs lead to spin alignment?*
 G. Lodato, **D. Gerosa**.
 Monthly Notices of the Royal Astronomical Society Letters 429 (2013) L30-L34. arXiv:1211.0284 [astro-ph.CO].

Conference proceedings, software papers, etc.:

4. *Reanalysis of LIGO black-hole coalescences with alternative prior assumptions.*
D. Gerosa, S. Vitale, C.-J. Haster, K. Chatziioannou, A. Zimmerman.
 Proc. of the International Astronomical Union, IAU Symposium 338, in press. arXiv:1712.06635 [astro-ph.HE].
3. *Surprises from the spins: astrophysics and relativity with detections of spinning black-hole mergers.*
D. Gerosa
 Journal of Physics: Conference Series 957 (2018) 1, 012014. arXiv:1711.10038 [astro-ph.HE].
2. *filltex: Automatic queries to ADS and INSPIRE databases to fill LaTeX bibliography.*
D. Gerosa, M. Vallisneri.
 The Journal of Open Source Software 2 (2017) 13.
 • Open source code.
1. *Rival families: waveforms from resonant black-hole binaries as probes of their astrophysical formation history*
D. Gerosa.
 Astrophysics and Space Science Proceedings, 40 (2015) 137-145