Lorenzo Speri | Publication list

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Publications:

28 short-author papers published in major peer-reviewed journals
(out of which **7** first-authored papers).
9 papers in submission stage,

Total number of citations: >5500. **h-index**: 22 (using ADS and iNSPIRE).
Web links to list services: ADS; iNSPIRE; arXiv; orcid.

Papers in major peer-reviewed journals:

28. *Systematics in tests of general relativity using LISA massive black hole binaries.*
Garg, Mudit; Sberna, Laura; **Speri, Lorenzo**; Duque, Francisco; Gair, Jonathan.
10.1093/mnras/stae2605. Published in Monthly Notices of the Royal Astronomical Society.

27. *Impact of correlations on the modeling and inference of beyond vacuum–general relativistic effects in extreme-mass-ratio inspirals.*
Kejriwal, Shubham; **Speri, Lorenzo**; Chua, Alvin J. K.
10.1103/PhysRevD.110.084060. Published in Physical Review D.

26. *The second data release from the European Pulsar Timing Array. V. Search for continuous gravitational wave signals.*
EPTA Collaboration et al. (include **Speri, L.**).
10.1051/0004-6361/202348568. Published in Astronomy and Astrophysics.

25. *Assessing the importance of first postadiabatic terms for small-mass-ratio binaries.*
Burke, Ollie; Piovano, Gabriel Andres; Warburton, Niels; Lynch, Philip; **Speri, Lorenzo**; Kavanagh, Chris; Wardell, Barry; Pound, Adam; Durkan, Leanne; Miller, Jeremy.
10.1103/PhysRevD.109.124048. Published in Physical Review D.

24. *Comparing Recent Pulsar Timing Array Results on the Nanohertz Stochastic Gravitational-wave Background.*
Agazie, G. et al. (include **Speri, L.**).
10.3847/1538-4357/ad36be. Published in The Astrophysical Journal.

23. *The second data release from the European Pulsar Timing Array. IV. Implications for massive black holes, dark matter, and the early Universe.*
EPTA Collaboration et al. (include **Speri, L.**).
10.1051/0004-6361/202347433. Published in Astronomy and Astrophysics.

22. *Impact of the noise knowledge uncertainty for the science exploitation of cosmological and astrophysical stochastic gravitational wave background with LISA.*
Muratore, Martina; Gair, Jonathan; **Speri, Lorenzo**.
10.1103/PhysRevD.109.042001. Published in Physical Review D.

21. *Cosmology with the Laser Interferometer Space Antenna.*
Auclair, Pierre et al. (include **Speri, L.**).
10.1007/s41114-023-00045-2. Published in Living Reviews in Relativity.

20. *The second data release from the European Pulsar Timing Array. I. The dataset and timing analysis.*
EPTA Collaboration et al. (include **Speri, L.**).
10.1051/0004-6361/202346841. Published in Astronomy and Astrophysics.

19. *The second data release from the European Pulsar Timing Array. II. Customised pulsar noise models for spatially correlated gravitational waves.*
EPTA Collaboration et al. (include **Speri, L.**).
10.1051/0004-6361/202346842. Published in Astronomy and Astrophysics.

18. *The second data release from the European Pulsar Timing Array. III. Search for gravitational wave signals.*
EPTA Collaboration et al. (include **Speri, L.**).
10.1051/0004-6361/202346844. Published in Astronomy and Astrophysics.

17. *Second Data Release from the European Pulsar Timing Array: Challenging the Ultralight Dark Matter Paradigm.*
Smarra, Clemente et al. (include **Speri, L.**).
10.1103/PhysRevLett.131.171001. Published in Physical Review Letters.

16. *Cosmology with massive black hole binary mergers in the LISA era*.
Mangiagli, A.; Caprini, C.; Volonteri, M.; Marsat, S.; Vergani, S.; Tamanini, N.; **Speri, L.**.
Published in 41st International Conference on High Energy Physics.

15. *Searching for continuous Gravitational Waves in the second data release of the International Pulsar Timing Array*.
Falxa, M. et al. (include **Speri, L.**).
10.1093/mnras/stad812. Published in Monthly Notices of the Royal Astronomical Society.

14. *Probing Accretion Physics with Gravitational Waves*.
Speri, Lorenzo; Antonelli, Andrea; Sberna, Laura; Babak, Stanislav; Barausse, Enrico; Gair, Jonathan R.; Katz, Michael L.
10.1103/PhysRevX.13.021035. Published in Physical Review X.

13. *Constraining the evolution of Newton's constant with slow inspirals observed from spaceborne gravitational-wave detectors*.
Barbieri, Riccardo; Savastano, Stefano; **Speri, Lorenzo**; Antonelli, Andrea; Sberna, Laura; Burke, Ollie; Gair, Jonathan; Tamanini, Nicola.
10.1103/PhysRevD.107.064073. Published in Physical Review D.

12. *Quality over quantity: Optimizing pulsar timing array analysis for stochastic and continuous gravitational wave signals*.
Speri, Lorenzo; Porayko, Nataliya K.; Falxa, Mikel; Chen, Siyuan; Gair, Jonathan R.; Sesana, Alberto; Taylor, Stephen R.
10.1093/mnras/stac3237. Published in Monthly Notices of the Royal Astronomical Society.

11. *A roadmap of gravitational wave data analysis*.
Speri, Lorenzo; Karnesis, Nikolaos; Renzini, Arianna I.; Gair, Jonathan R.
10.1038/s41550-022-01849-y. Published in Nature Astronomy.

10. *Modeling transient resonances in extreme-mass-ratio inspirals*.
Gupta, Priti; **Speri, Lorenzo**; Bonga, Beátrice; Chua, Alvin J. K.; Tanaka, Takahiro.
10.1103/PhysRevD.106.104001. Published in Physical Review D.

9. *Assessing the impact of instrumental calibration uncertainty on LISA science*.
Savalle, Etienne; Gair, Jonathan; **Speri, Lorenzo**; Babak, Stanislav.
10.1103/PhysRevD.106.022003. Published in Physical Review D.

8. *Workshop on Gravitational-Wave Astrophysics for Early Career Scientists*.
Bayle, Jean-Baptiste et al. (include **Speri, L.**).
10.1038/s41550-022-01629-8. Published in Nature Astronomy.

7. *The International Pulsar Timing Array second data release: Search for an isotropic gravitational wave background*.
Antoniadis, J. et al. (include **Speri, L.**).
10.1093/mnras/stab3418. Published in Monthly Notices of the Royal Astronomical Society.

6. *Noise analysis in the European Pulsar Timing Array data release 2 and its implications on the gravitational-wave background search*.
Chalumeau, A. et al. (include **Speri, L.**).
10.1093/mnras/stab3283. Published in Monthly Notices of the Royal Astronomical Society.

5. *Common-red-signal analysis with 24-yr high-precision timing of the European Pulsar Timing Array: inferences in the stochastic gravitational-wave background search*.
Chen, S. et al. (include **Speri, L.**).
10.1093/mnras/stab2833. Published in Monthly Notices of the Royal Astronomical Society.

4. *Fast extreme-mass-ratio-inspiral waveforms: New tools for millihertz gravitational-wave data analysis*.
Katz, Michael L.; Chua, Alvin J. K.; **Speri, Lorenzo**; Warburton, Niels; Hughes, Scott A.
10.1103/PhysRevD.104.064047. Published in Physical Review D.

3. *Assessing the impact of transient orbital resonances*.
Speri, Lorenzo; Gair, Jonathan R.
10.1103/PhysRevD.103.124032. Published in Physical Review D.

2. *Testing the quasar Hubble diagram with LISA standard sirens*.
Speri, Lorenzo; Tamanini, Nicola; Caldwell, Robert R.; Gair, Jonathan R.; Wang, Benjamin.
10.1103/PhysRevD.103.083526. Published in Physical Review D.

1. *Fast and Fourier: Extreme Mass Ratio Inspiral Waveforms in the Frequency Domain*.
Speri, Lorenzo; Katz, Michael L.; Chua, Alvin J. K.; Hughes, Scott A.; Warburton, Niels; Thompson, Jonathan E.; Chapman-Bird, Christian E. A.; Gair, Jonathan R.
10.48550/arXiv.2307.12585. Published in Frontiers in Applied Mathematics and Statistics.

Submitted papers.:

9. *The implications of stochastic gas torques for asymmetric binaries in the LISA band*.
Copparoni, Lorenzo; **Speri, Lorenzo**; Sberna, Laura; Derdzinski, Andrea; Barausse, Enrico.
10.48550/arXiv.2502.10087.

8. *Is your stochastic signal really detectable?*.
Pozzoli, Federico; Gair, Jonathan; Buscicchio, Riccardo; **Speri, Lorenzo**.
10.48550/arXiv.2412.10468.

7. *Constraining accretion physics with gravitational waves from eccentric extreme-mass-ratio inspirals*.
Duque, Francisco; Kejriwal, Shubham; Sberna, Laura; **Speri, Lorenzo**; Gair, Jonathan.
10.48550/arXiv.2411.03436.

6. *Impact of relativistic waveforms in LISA's science objectives with extreme-mass-ratio inspirals*.
Khalvati, Hassan; Santini, Alessandro; Duque, Francisco; **Speri, Lorenzo**; Gair, Jonathan; Yang, Huan; Brito, Richard.
10.48550/arXiv.2410.17310.

5. *Fewer supermassive binary black holes in pulsar timing array observations*.
Goncharov, Boris et al. (include **Speri, L.**).
10.48550/arXiv.2409.03627.

4. *Probing fundamental physics with Extreme Mass Ratio Inspirals: a full Bayesian inference for scalar charge*.
Speri, Lorenzo; Barsanti, Susanna; Maselli, Andrea; Sotiriou, Thomas P.; Warburton, Niels; van de Meent, Maarten; Chua, Alvin J. K.; Burke, Ollie; Gair, Jonathan.
10.48550/arXiv.2406.07607.

3. *GWnext 2024: Meeting Summary*.
Torres-Orjuela, Alejandro et al. (include **Speri, L.**).
10.48550/arXiv.2406.03498.

2. *LISA Definition Study Report*.
Colpi, Monica et al. (include **Speri, L.**).
10.48550/arXiv.2402.07571.

1. *Massive black hole binaries in LISA: constraining cosmological parameters at high redshifts*.
Mangiagli, Alberto; Caprini, Chiara; Marsat, Sylvain; **Speri, Lorenzo**; Caldwell, Robert R.; Tamanini, Nicola.
10.48550/arXiv.2312.04632.