

List of Publications - Prof. Alessandra Buonanno ¹

Articles

- [1] Alexandre Toubiana, Lorenzo Pompili, Alessandra Buonanno, Jonathan R. Gair, and Michael L. Katz. *Measuring source properties and quasi-normal-mode frequencies of heavy massive black-hole binaries with LISA*. (2023). arXiv: 2307.15086 [gr-qc]
- [2] Maarten van de Meent et al. *Enhancing the SEOBNRv5 effective-one-body waveform model with second-order gravitational self-force fluxes*. (2023). arXiv: 2303.18026 [gr-qc]
- [3] Mohammed Khalil et al. *Theoretical groundwork supporting the precessing-spin two-body dynamics of the effective-one-body waveform models SEOBNRv5*. (2023). arXiv: 2303.18143 [gr-qc]
- [4] Lorenzo Pompili et al. *Laying the foundation of the effective-one-body waveform models SEOBNRv5: improved accuracy and efficiency for spinning non-precessing binary black holes*. (2023). arXiv: 2303.18039 [gr-qc]
- [5] Antoni Ramos-Buades et al. *SEOBNRv5PHM: Next generation of accurate and efficient multipolar precessing-spin effective-one-body waveforms for binary black holes*. (2023). arXiv: 2303.18046 [gr-qc]
- [6] Deyan P. Mihaylov et al. *pySEOBNR: a software package for the next generation of effective-one-body multipolar waveform models*. (2023). arXiv: 2303.18203 [gr-qc]
- [7] Félix-Louis Julié, Vishal Baibhav, Emanuele Berti, and Alessandra Buonanno. *Third post-Newtonian effective-one-body Hamiltonian in scalar-tensor and Einstein-scalar-Gauss-Bonnet gravity*. (2022). arXiv: 2212.13802 [gr-qc]
- [8] M. V. S. Saketh, Jan Steinhoff, Justin Vines, and Alessandra Buonanno. *Modeling horizon absorption in spinning binary black holes using effective worldline theory*. (2022). arXiv: 2212.13095 [gr-qc]
- [9] Elisa Maggio, Hector O. Silva, Alessandra Buonanno, and Abhirup Ghosh. *Tests of general relativity in the nonlinear regime: a parametrized plunge-merger-ringdown gravitational waveform model*. (2022). arXiv: 2212.09655 [gr-qc]
- [10] Jonas Wildberger et al. *Adapting to noise distribution shifts in flow-based gravitational-wave inference*. (2022). arXiv: 2211.08801 [gr-qc]
- [11] Maximilian Dax et al. *Neural Importance Sampling for Rapid and Reliable Gravitational-Wave Inference*. (2022). arXiv: 2210.05686 [gr-qc]
- [12] Hector O. Silva, Abhirup Ghosh, and Alessandra Buonanno. *Black-hole ringdown as a probe of higher-curvature gravity theories*. (2022). arXiv: 2205.05132 [gr-qc]
- [13] Mohammed Khalil, Alessandra Buonanno, Jan Steinhoff, and Justin Vines. *Energetics and scattering of gravitational two-body systems at fourth post-Minkowskian order*. **Phys. Rev. D** **106.2** (2022), p. 024042. arXiv: 2204.05047 [gr-qc]
- [14] Ajit Kumar Mehta et al. *Tests of General Relativity with Gravitational-Wave Observations using a Flexible-Theory-Independent Method*. (2022). arXiv: 2203.13937 [gr-qc]
- [15] Antoni Ramos-Buades, Alessandra Buonanno, Mohammed Khalil, and Serguei Ossokine. *Effective-one-body multipolar waveforms for eccentric binary black holes with nonprecessing spins*. **Phys. Rev. D** **105.4** (2022), p. 044035. arXiv: 2112.06952 [gr-qc]
- [16] Vicky Kalogera et al. *The Next Generation Global Gravitational Wave Observatory: The Science Book*. (2021). arXiv: 2111.06990 [gr-qc]

¹For publications of the LIGO Scientific Collaboration which have used Buonanno's and her group's work, please see below.

- [17] M. V. S. Saketh, Justin Vines, Jan Steinhoff, and Alessandra Buonanno. *Conservative and radiative dynamics in classical relativistic scattering and bound systems*. **Phys. Rev. Res.** **4.1** (2022), p. 013127. arXiv: 2109.05994 [gr-qc]
- [18] Maximilian Dax et al. *Real-Time Gravitational Wave Science with Neural Posterior Estimation*. **Phys. Rev. Lett.** **127.24** (2021), p. 241103. arXiv: 2106.12594 [gr-qc]
- [19] Deyan P. Mihaylov, Serguei Ossokine, Alessandra Buonanno, and Abhirup Ghosh. *Fast post-adiabatic waveforms in the time domain: Applications to compact binary coalescences in LIGO and Virgo*. **Phys. Rev. D** **104.12** (2021), p. 124087. arXiv: 2105.06983 [gr-qc]
- [20] Ajit Kumar Mehta et al. *Observing Intermediate-mass Black Holes and the Upper Stellar-mass gap with LIGO and Virgo*. **Astrophys. J.** **924.1** (2022), p. 39. arXiv: 2105.06366 [gr-qc]
- [21] Héctor Estellés et al. *A Detailed Analysis of GW190521 with Phenomenological Waveform Models*. **Astrophys. J.** **924.2** (2022), p. 79. arXiv: 2105.06360 [gr-qc]
- [22] Mohammed Khalil, Alessandra Buonanno, Jan Steinhoff, and Justin Vines. *Radiation-reaction force and multipolar waveforms for eccentric, spin-aligned binaries in the effective-one-body formalism*. **Phys. Rev. D** **104.2** (2021), p. 024046. arXiv: 2104.11705 [gr-qc]
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- [26] Mohammed Khalil, Jan Steinhoff, Justin Vines, and Alessandra Buonanno. *Fourth post-Newtonian effective-one-body Hamiltonians with generic spins*. **Phys. Rev. D** **101.10** (2020), p. 104034. arXiv: 2003.04469 [gr-qc]
- [27] Enrico Barausse et al. *Prospects for Fundamental Physics with LISA*. **Gen. Rel. Grav.** **52.8** (2020), p. 81. arXiv: 2001.09793 [gr-qc]
- [28] Noah Sennett, Richard Brito, Alessandra Buonanno, Victor Gorbenko, and Leonardo Senatore. *Gravitational-Wave Constraints on an Effective Field-Theory Extension of General Relativity*. **Phys. Rev. D** **102.4** (2020), p. 044056. arXiv: 1912.09917 [gr-qc]
- [29] Andrea Antonelli, Maarten van de Meent, Alessandra Buonanno, Jan Steinhoff, and Justin Vines. *Quasicircular inspirals and plunges from nonspinning effective-one-body Hamiltonians with gravitational self-force information*. **Phys. Rev. D** **101.2** (2020), p. 024024. arXiv: 1907.11597 [gr-qc]
- [30] Mohammed Khalil, Noah Sennett, Jan Steinhoff, and Alessandra Buonanno. *Theory-agnostic framework for dynamical scalarization of compact binaries*. **Phys. Rev. D** **100.12** (2019), p. 124013. arXiv: 1906.08161 [gr-qc]
- [31] B.S. Sathyaprakash et al. *Extreme Gravity and Fundamental Physics*. (2019). arXiv: 1903.09221 [astro-ph.HE]
- [32] Katerina Chatziioannou et al. *On the properties of the massive binary black hole merger GW170729*. **Phys. Rev. D** **100** (2019), p. 104015. arXiv: 1903.06742 [gr-qc]
- [33] Andrea Antonelli, Alessandra Buonanno, Jan Steinhoff, Maarten van de Meent, and Justin Vines. *Energetics of two-body Hamiltonians in post-Minkowskian gravity*. **Phys. Rev. D** **99** (2019), p. 104004. arXiv: 1901.07102 [gr-qc]

- [34] Francois Foucart et al. *Gravitational waveforms from spectral Einstein code simulations: Neutron star-neutron star and low-mass black hole-neutron star binaries*. **Phys. Rev. D** **99** (2019), p. 044008. arXiv: 1812.06988 [gr-qc]
- [35] Justin Vines, Jan Steinhoff, and Alessandra Buonanno. *Spinning-black-hole scattering and the test-black-hole limit at second post-Minkowskian order*. **Phys. Rev. D** **99** (2019), p. 064054. arXiv: 1812.00956 [gr-qc]
- [36] Ian Hinder, Serguei Ossokine, Harald P. Pfeiffer, and Alessandra Buonanno. *Gravitational waveforms for high spin and high mass-ratio binary black holes: A synergistic use of numerical-relativity codes*. **Phys. Rev. D** **99** (2019), p. 061501. arXiv: 1810.10585 [gr-qc]
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- [42] Alejandro Bohé et al. *Improved effective-one-body model of spinning, nonprecessing binary black holes for the era of gravitational-wave astrophysics with advanced detectors*. **Phys. Rev. D** **95** (2017), p. 044028. arXiv: 1611.03703 [gr-qc]
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