# Béla Szilágyi

## List of Publications by Year
in descending order

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|---|---|---|---|
| **57** papers | **4,552** citations | 101543 **36** h-index | 149698 **56** g-index |
| **57** all docs | **57** docs citations | **57** times ranked | **2242** citing authors |

| # | Article | IF | Citations |
|---|---------|-----|-----------|
| 1 | Improved effective-one-body model of spinning, nonprecessing binary black holes for the era of gravitational-wave astrophysics with advanced detectors. Physical Review D, 2017, 95, . | 4.7 | 401 |
| 2 | Effective-one-body model for black-hole binaries with generic mass ratios and spins. Physical Review D, 2014, 89, . | 4.7 | 360 |
| 3 | Catalog of 174 Binary Black Hole Simulations for Gravitational Wave Astronomy. Physical Review Letters, 2013, 111, 241104. | 7.8 | 325 |
| 4 | Inspiral-merger-ringdown waveforms of spinning, precessing black-hole binaries in the effective-one-body formalism. Physical Review D, 2014, 89, . | 4.7 | 265 |
| 5 | The SXS collaboration catalog of binary black hole simulations. Classical and Quantum Gravity, 2019, 36, 195006. | 4.0 | 217 |
| 6 | Effects of Neutron-Star Dynamic Tides on Gravitational Waveforms within the Effective-One-Body Approach. Physical Review Letters, 2016, 116, 181101. | 7.8 | 204 |
| 7 | Multipolar effective-one-body waveforms for precessing binary black holes: Construction and validation. Physical Review D, 2020, 102, . | 4.7 | 182 |
| 8 | Simulations of binary black hole mergers using spectral methods. Physical Review D, 2009, 80, . | 4.7 | 140 |
| 9 | Black-hole–neutron-star mergers at realistic mass ratios: Equation of state and spin orientation effects. Physical Review D, 2013, 87, . | 4.7 | 134 |
| 10 | Numerical relativity waveform surrogate model for generically precessing binary black hole mergers. Physical Review D, 2017, 96, . | 4.7 | 134 |
| 11 | Neutron star-black hole mergers with a nuclear equation of state and neutrino cooling: Dependence in the binary parameters. Physical Review D, 2014, 90, . | 4.7 | 132 |
| 12 | Post-merger evolution of a neutron star-black hole binary with neutrino transport. Physical Review D, 2015, 91, . | 4.7 | 124 |
| 13 | Fast and Accurate Prediction of Numerical Relativity Waveforms from Binary Black Hole Coalescences Using Surrogate Models. Physical Review Letters, 2015, 115, 121102. | 7.8 | 124 |
| 14 | Simulations of unequal-mass black hole binaries with spectral methods. Physical Review D, 2012, 86, . | 4.7 | 91 |
| 15 | Complete waveform model for compact binaries on eccentric orbits. Physical Review D, 2017, 95, . | 4.7 | 88 |
| 16 | Well-posed initial-boundary evolution in general relativity. Physical Review D, 2003, 68, . | 4.7 | 84 |
| 17 | Improved methods for simulating nearly extremal binary black holes. Classical and Quantum Gravity, 2015, 32, 105009. | 4.0 | 81 |
| 18 | Simulating merging binary black holes with nearly extremal spins. Physical Review D, 2011, 83, . | 4.7 | 79 |

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|---|---------|-----|-----------|
| 19 | Dynamical excision boundaries in spectral evolutions of binary black hole spacetimes. Classical and Quantum Gravity, 2013, 30, 115001. | 4.0 | 74 |
| 20 | Final spin and radiated energy in numerical simulations of binary black holes with equal masses and equal, aligned or antialigned spins. Physical Review D, 2013, 88, . | 4.7 | 72 |
| 21 | Approaching the Post-Newtonian Regime with Numerical Relativity: A Compact-Object Binary Simulation Spanning 350 Gravitational-Wave Cycles. Physical Review Letters, 2015, 115, 031102. | 7.8 | 68 |
| 22 | Modeling the source of GW150914 with targeted numerical-relativity simulations. Classical and Quantum Gravity, 2016, 33, 244002. | 4.0 | 67 |
| 23 | Improved gauge driver for the generalized harmonic Einstein system. Physical Review D, 2009, 80, . | 4.7 | 63 |
| 24 | On the accuracy and precision of numerical waveforms: effect of waveform extraction methodology. Classical and Quantum Gravity, 2016, 33, 165001. | 4.0 | 59 |
| 25 | Black hole-neutron star mergers for $10 \, ‰ \, ‰ M_{...}$ holes. Physical Review D, 2012, 85, . | 4.7 | 57 |
| 26 | First direct comparison of nondisrupting neutron star-black hole and binary black hole merger simulations. Physical Review D, 2013, 88, . | 4.7 | 56 |
| 27 | Key elements of robustness in binary black hole evolutions using spectral methods. International Journal of Modern Physics D, 2014, 23, 1430014. | 2.1 | 55 |
| 28 | Periastron advance in spinning black hole binaries: Gravitational self-force from numerical relativity. Physical Review D, 2013, 88, . | 4.7 | 54 |
| 29 | Periastron advance in spinning black hole binaries: comparing effective-one-body and numerical relativity. Physical Review D, 2013, 88, . | 4.7 | 50 |
| 30 | Accuracy and precision of gravitational-wave models of inspiraling neutron star-black hole binaries with spin: Comparison with matter-free numerical relativity in the low-frequency regime. Physical Review D, 2015, 92, . | 4.7 | 44 |
| 31 | Comparing gravitational waveform extrapolation to Cauchy-characteristic extraction in binary black hole simulations. Physical Review D, 2013, 88, . | 4.7 | 43 |
| 32 | Binary neutron stars with arbitrary spins in numerical relativity. Physical Review D, 2015, 92, . | 4.7 | 41 |
| 33 | Suitability of hybrid gravitational waveforms for unequal-mass binaries. Physical Review D, 2013, 87, . | 4.7 | 39 |
| 34 | Simulations of inspiraling and merging double neutron stars using the Spectral Einstein Code. Physical Review D, 2016, 93, . | 4.7 | 39 |
| 35 | Gravitational wave extraction based on Cauchy–characteristic extraction and characteristic evolution. Classical and Quantum Gravity, 2005, 22, 5089-5107. | 4.0 | 38 |
| 36 | Comparing post-Newtonian and numerical relativity precession dynamics. Physical Review D, 2015, 92, . | 4.7 | 37 |

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|---|---------|-----|-----------|
| 37 | Accuracy of binary black hole waveform models for aligned-spin binaries. Physical Review D, 2016, 93, . | 4.7 | 37 |
| 38 | Cauchy boundaries in linearized gravitational theory. Physical Review D, 2000, 62, . | 4.7 | 35 |
| 39 | Characteristic evolutions in numerical relativity using six angular patches. Classical and Quantum Gravity, 2007, 24, S327-S339. | 4.0 | 33 |
| 40 | Nearly extremal apparent horizons in simulations of merging black holes. Classical and Quantum Gravity, 2015, 32, 065007. | 4.0 | 33 |
| 41 | Constraining the parameters of GW150914 and GW170104 with numerical relativity surrogates. Physical Review D, 2019, 99, . | 4.7 | 32 |
| 42 | Magnetic effects on the low-$T/|W|$ instability in differentially rotating neutron stars. Physical Review D, 2014, 90, . | 4.7 | 28 |
| 43 | Stability of nonspinning effective-one-body model in approximating two-body dynamics and gravitational-wave emission. Physical Review D, 2014, 89, . | 4.7 | 27 |
| 44 | Evolution of the magnetized, neutrino-cooled accretion disk in the aftermath of a black hole-neutron star binary merger. Physical Review D, 2018, 97, . | 4.7 | 27 |
| 45 | Spectral Cauchy characteristic extraction of strain, news and gravitational radiation flux. Classical and Quantum Gravity, 2016, 33, 225007. | 4.0 | 23 |
| 46 | Exact solutions for the intrinsic geometry of black hole coalescence. Physical Review D, 1999, 60, . | 4.7 | 21 |
| 47 | Spectral characteristic evolution: a new algorithm for gravitational wave propagation. Classical and Quantum Gravity, 2015, 32, 025008. | 4.0 | 19 |
| 48 | Template banks for binary black hole searches with numerical relativity waveforms. Physical Review D, 2014, 89, . | 4.7 | 16 |
| 49 | Measuring the properties of nearly extremal black holes with gravitational waves. Physical Review D, 2018, 98, . | 4.7 | 16 |
| 50 | Geometrically motivated coordinate system for exploring spacetime dynamics in numerical-relativity simulations using a quasi-Kinnersley tetrad. Physical Review D, 2012, 86, . | 4.7 | 15 |
| 51 | Sparse Representations of Gravitational Waves from Precessing Compact Binaries. Physical Review Letters, 2014, 113, 021101. | 7.8 | 15 |
| 52 | Gauge invariant spectral Cauchy characteristic extraction. Classical and Quantum Gravity, 2015, 32, 235018. | 4.0 | 13 |
| 53 | Detection and characterization of spin-orbit resonances in the advanced gravitational wave detectors era. Physical Review D, 2018, 98, . | 4.7 | 13 |
| 54 | Spectral Cauchy-characteristic extraction of the gravitational wave news function. Physical Review D, 2020, 102, . | 4.7 | 13 |

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|---|---------|-----|-----------|
| 55 | Joint approach for reducing eccentricity and spurious gravitational radiation in binary black hole initial data construction. Physical Review D, 2013, 88, . | 4.7 | 10 |
| 56 | Are different approaches to constructing initial data for binary black hole simulations of the same astrophysical situation equivalent?. Physical Review D, 2012, 86, . | 4.7 | 5 |
| 57 | DETERMINATION OF UNAMBIGUOUS BINARY BLACK HOLE MERGER WAVEFORMS AT SCRI. , 2012, , . | | 0 |