BÃ©la SzilÃ¡gyi

List of Publications by Year
in descending order

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	Spectral Cauchy-characteristic extraction of the gravitational wave news function. Physical Review D, 2020, 102, .	4.7	13
2	Multipolar effective-one-body waveforms for precessing binary black holes: Construction and validation. Physical Review D, 2020, 102, .	4.7	182
3	Constraining the parameters of GW150914 and GW170104 with numerical relativity surrogates. Physical Review D, 2019, 99, .	4.7	32
4	The SXS collaboration catalog of binary black hole simulations. Classical and Quantum Gravity, 2019, 36, 195006.	4.0	217
5	Detection and characterization of spin-orbit resonances in the advanced gravitational wave detectors era. Physical Review D, 2018, 98, .	4.7	13
6	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
7	Measuring the properties of nearly extremal black holes with gravitational waves. Physical Review D, 2018, 98, .	4.7	16
8	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
9	Numerical relativity waveform surrogate model for generically precessing binary black hole mergers. Physical Review D, 2017, 96, .	4.7	134
10	Complete waveform model for compact binaries on eccentric orbits. Physical Review D, 2017, 95, .	4.7	88
11	On the accuracy and precision of numerical waveforms: effect of waveform extraction methodology. Classical and Quantum Gravity, 2016, 33, 165001.	4.0	59
12	Accuracy of binary black hole waveform models for aligned-spin binaries. Physical Review D, 2016, 93, .	4.7	37
13	Simulations of inspiraling and merging double neutron stars using the Spectral Einstein Code. Physical Review D, 2016, 93, .	4.7	39
14	Effects of Neutron-Star Dynamic Tides on Gravitational Waveforms within the Effective-One-Body Approach. Physical Review Letters, 2016, 116, 181101.	7.8	204
15	Modeling the source of GW150914 with targeted numerical-relativity simulations. Classical and Quantum Gravity, 2016, 33, 244002.	4.0	67
16	Spectral Cauchy characteristic extraction of strain, news and gravitational radiation flux. Classical and Quantum Gravity, 2016, 33, 225007.	4.0	23
17	Post-merger evolution of a neutron star-black hole binary with neutrino transport. Physical Review D, 2015, 91, .	4.7	124
18	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

#	ARTICLE	IF	CITATIONS
19	Comparing post-Newtonian and numerical relativity precession dynamics. Physical Review D, 2015, 92, .	4.7	37
20	Binary neutron stars with arbitrary spins in numerical relativity. Physical Review D, 2015, 92, .	4.7	41
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	Gauge invariant spectral Cauchy characteristic extraction. Classical and Quantum Gravity, 2015, 32, 235018.	4.0	13
23	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
24	Improved methods for simulating nearly extremal binary black holes. Classical and Quantum Gravity, 2015, 32, 105009.	4.0	81
25	Nearly extremal apparent horizons in simulations of merging black holes. Classical and Quantum Gravity, 2015, 32, 065007.	4.0	33
26	Spectral characteristic evolution: a new algorithm for gravitational wave propagation. Classical and Quantum Gravity, 2015, 32, 025008.	4.0	19
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	Stability of nonspinning effective-one-body model in approximating two-body dynamics and gravitational-wave emission. Physical Review D, 2014, 89, .	4.7	27
29	Effective-one-body model for black-hole binaries with generic mass ratios and spins. Physical Review D, 2014, 89, .	4.7	360
30	Sparse Representations of Gravitational Waves from Precessing Compact Binaries. Physical Review Letters, 2014, 113, 021101.	7.8	15
31	Inspiral-merger-ringdown waveforms of spinning, precessing black-hole binaries in the effective-one-body formalism. Physical Review D, 2014, 89, .	4.7	265
32	Magnetic effects on the low-$T/\lvert W \rvert$ instability in differentially rotating neutron stars. Physical Review D, 2014, 90, .	4.7	28
33	Template banks for binary black hole searches with numerical relativity waveforms. Physical Review D, 2014, 89, .	4.7	16
34	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
35	Periastron advance in spinning black hole binaries: comparing effective-one-body and numerical relativity. Physical Review D, 2013, 88, .	4.7	50
36	Catalog of 174 Binary Black Hole Simulations for Gravitational Wave Astronomy. Physical Review Letters, 2013, 111, 241104.	7.8	325

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37	Comparing gravitational waveform extrapolation to Cauchy-characteristic extraction in binary black hole simulations. Physical Review D, 2013, 88, .	4.7	43
38	Dynamical excision boundaries in spectral evolutions of binary black hole spacetimes. Classical and Quantum Gravity, 2013, 30, 115001.	4.0	74
39	Suitability of hybrid gravitational waveforms for unequal-mass binaries. Physical Review D, 2013, 87, .	4.7	39
40	Joint approach for reducing eccentricity and spurious gravitational radiation in binary black hole initial data construction. Physical Review D, 2013, 88, .	4.7	10
41	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
42	First direct comparison of nondisrupting neutron star-black hole and binary black hole merger simulations. Physical Review D, 2013, 88, .	4.7	56
43	Periastron advance in spinning black hole binaries: Gravitational self-force from numerical relativity. Physical Review D, 2013, 88, .	4.7	54
44	Black-holeâ€"neutron-star mergers at realistic mass ratios: Equation of state and spin orientation effects. Physical Review D, 2013, 87, .	4.7	134
45	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
46	Simulations of unequal-mass black hole binaries with spectral methods. Physical Review D, 2012, 86, .	4.7	91
47	Black hole-neutron star mergers for $10\,â€‰â€‰M_{\odot}$ holes. Physical Review D, 2012, 85, .	4.7	87
48	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
49	DETERMINATION OF UNAMBIGUOUS BINARY BLACK HOLE MERGER WAVEFORMS AT SCRI. , 2012, , .		0
50	Simulating merging binary black holes with nearly extremal spins. Physical Review D, 2011, 83, .	4.7	79
51	Improved gauge driver for the generalized harmonic Einstein system. Physical Review D, 2009, 80, .	4.7	63
52	Simulations of binary black hole mergers using spectral methods. Physical Review D, 2009, 80, .	4.7	140
53	Characteristic evolutions in numerical relativity using six angular patches. Classical and Quantum Gravity, 2007, 24, S327-S339.	4.0	33
54	Gravitational wave extraction based on Cauchyâ€"characteristic extraction and characteristic evolution. Classical and Quantum Gravity, 2005, 22, 5089-5107.	4.0	38

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55	Well-posed initial-boundary evolution in general relativity. Physical Review D, 2003, 68, .	4.7	84
56	Cauchy boundaries in linearized gravitational theory. Physical Review D, 2000, 62, .	4.7	35
57	Exact solutions for the intrinsic geometry of black hole coalescence. Physical Review D, 1999, 60, .	4.7	21