Lawrence E Kidder

List of Publications by Year
in descending order

122 papers	10,090 citations	26610 56 h-index	33869 99 g-index
123 all docs	123 docs citations	123 times ranked	2997 citing authors

#	Article	IF	Citations
1	Coalescing binary systems of compact objects to (post)5/2-Newtonian order. V. Spin effects. Physical Review D, 1995, 52, 821-847.	1.6	633
2	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, .	1.6	401
3	Effective-one-body model for black-hole binaries with generic mass ratios and spins. Physical Review D, 2014, 89, .	1.6	360
4	Catalog of 174 Binary Black Hole Simulations for Gravitational Wave Astronomy. Physical Review Letters, 2013, 111, 241104.	2.9	325
5	High-accuracy comparison of numerical relativity simulations with post-Newtonian expansions. Physical Review D, 2007, 76, .	1.6	305
6	A new generalized harmonic evolution system. Classical and Quantum Gravity, 2006, 23, S447-S462.	1.5	276
7	Spin effects in the inspiral of coalescing compact binaries. Physical Review D, 1993, 47, R4183-R4187.	1.6	265
8	Inspiral-merger-ringdown waveforms of spinning, precessing black-hole binaries in the effective-one-body formalism. Physical Review D, 2014, 89, .	1.6	265
9	The SXS collaboration catalog of binary black hole simulations. Classical and Quantum Gravity, 2019, 36, 195006.	1.5	217
10	Surrogate models for precessing binary black hole simulations with unequal masses. Physical Review Research, 2019, 1, .	1.3	213
11	Inspiral-merger-ringdown multipolar waveforms of nonspinning black-hole binaries using the effective-one-body formalism. Physical Review D, 2011, 84, .	1.6	209
12	Effects of Neutron-Star Dynamic Tides on Gravitational Waveforms within the Effective-One-Body Approach. Physical Review Letters, 2016, 116, 181101.	2.9	204
13	High-accuracy waveforms for binary black hole inspiral, merger, and ringdown. Physical Review D, 2009, 79, .	1.6	201
14	A multidomain spectral method for solving elliptic equations. Computer Physics Communications, 2003, 152, 253-273.	3.0	196
15	Multipolar effective-one-body waveforms for precessing binary black holes: Construction and validation. Physical Review D, 2020, 102, .	1.6	182
16	Solving Einsteinâ€™s equations with dual coordinate frames. Physical Review D, 2006, 74, .	1.6	171
17	Reducing orbital eccentricity in binary black hole simulations. Classical and Quantum Gravity, 2007, 24, S59-S81.	1.5	170
18	Low mass binary neutron star mergers: Gravitational waves and neutrino emission. Physical Review D, 2016, 93, .	1.6	157

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19	Surrogate model of hybridized numerical relativity binary black hole waveforms. Physical Review D, 2019, 99, .	1.6	153
20	Estimating the final spin of a binary black hole coalescence. Physical Review D, 2008, 77, .	1.6	152
21	Effective-one-body waveforms calibrated to numerical relativity simulations: Coalescence of nonspinning, equal-mass black holes. Physical Review D, 2009, 79, .	1.6	149
22	Extending the lifetime of 3D black hole computations with a new hyperbolic system of evolution equations. Physical Review D, 2001, 64, .	1.6	138
23	Black-holeâ€“neutron-star mergers at realistic mass ratios: Equation of state and spin orientation effects. Physical Review D, 2013, 87, .	1.6	134
24	Numerical relativity waveform surrogate model for generically precessing binary black hole mergers. Physical Review D, 2017, 96, .	1.6	134
25	Evolving black hole-neutron star binaries in general relativity using pseudospectral and finite difference methods. Physical Review D, 2008, 78, .	1.6	133
26	Neutron star-black hole mergers with a nuclear equation of state and neutrino cooling: Dependence in the binary parameters. Physical Review D, 2014, 90, .	1.6	132
27	Post-merger evolution of a neutron star-black hole binary with neutrino transport. Physical Review D, 2015, 91, .	1.6	124
28	Effective-one-body waveforms calibrated to numerical relativity simulations: Coalescence of nonprecessing, spinning, equal-mass black holes. Physical Review D, 2010, 81, .	1.6	123
29	Error-analysis and comparison to analytical models of numerical waveforms produced by the NRAR Collaboration. Classical and Quantum Gravity, 2013, 31, 025012.	1.5	123
30	Coalescing binary systems of compact objects to(post)52-Newtonian order. III. Transition from inspiral to plunge. Physical Review D, 1993, 47, 3281-3291.	1.6	121
31	Using full information when computing modes of post-Newtonian waveforms from inspiralling compact binaries in circular orbit. Physical Review D, 2008, 77, .	1.6	117
32	High-accuracy numerical simulation of black-hole binaries: Computation of the gravitational-wave energy flux and comparisons with post-Newtonian approximants. Physical Review D, 2008, 78, .	1.6	115
33	Impact of an improved neutrino energy estimate on outflows in neutron star merger simulations. Physical Review D, 2016, 94, .	1.6	113
34	Testing gravitational-wave searches with numerical relativity waveforms: results from the first Numerical INJection Analysis (NINJA) project. Classical and Quantum Gravity, 2009, 26, 165008.	1.5	110
35	The NINJA-2 catalog of hybrid post-Newtonian/numerical-relativity waveforms for non-precessing black-hole binaries. Classical and Quantum Gravity, 2012, 29, 124001.	1.5	106
36	Black hole-neutron star mergers: Effects of the orientation of the black hole spin. Physical Review D, 2011, 83, .	1.6	103

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37	Complete waveform model for compact binaries on eccentric orbits. Physical Review D, 2017, 95, .	1.6	88
38	BLACK HOLE-NEUTRON STAR MERGERS WITH A HOT NUCLEAR EQUATION OF STATE: OUTFLOW AND NEUTRINO-COOLED DISK FOR A LOW-MASS, HIGH-SPIN CASE. Astrophysical Journal, 2013, 776, 47.	1.6	83
39	Reducing orbital eccentricity of precessing black-hole binaries. Physical Review D, 2011, 83, .	1.6	82
40	On the properties of the massive binary black hole merger GW170729. Physical Review D, 2019, 100, .	1.6	82
41	Improved methods for simulating nearly extremal binary black holes. Classical and Quantum Gravity, 2015, 32, 105009.	1.5	81
42	Eccentric binary black hole inspiral-merger-ringdown gravitational waveform model from numerical relativity and post-Newtonian theory. Physical Review D, 2018, 98, .	1.6	81
43	Black hole evolution by spectral methods. Physical Review D, 2000, 62, .	1.6	79
44	Initial data for black holeâ€“neutron star binaries: A flexible, high-accuracy spectral method. Physical Review D, 2008, 77, .	1.6	77
45	SpECTRE: A task-based discontinuous Galerkin code for relativistic astrophysics. Journal of Computational Physics, 2017, 335, 84-114.	1.9	77
46	Equation of state effects in black holeâ€“neutron star mergers. Classical and Quantum Gravity, 2010, 27, 114106.	1.5	76
47	Dynamical excision boundaries in spectral evolutions of binary black hole spacetimes. Classical and Quantum Gravity, 2013, 30, 115001.	1.5	74
48	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, .	1.6	72
49	Approaching the Post-Newtonian Regime with Numerical Relativity: A Compact-Object Binary Simulation Spanning 350 Gravitational-Wave Cycles. Physical Review Letters, 2015, 115, 031102.	2.9	68
50	Samurai project: Verifying the consistency of black-hole-binary waveforms for gravitational-wave detection. Physical Review D, 2009, 79, .	1.6	67
51	Modeling the source of GW150914 with targeted numerical-relativity simulations. Classical and Quantum Gravity, 2016, 33, 244002.	1.5	67
52	Massive disc formation in the tidal disruption of a neutron star by a nearly extremal black hole. Classical and Quantum Gravity, 2013, 30, 135004.	1.5	66
53	Boundary conditions for the Einstein evolution system. Physical Review D, 2005, 71, .	1.6	59
54	On the accuracy and precision of numerical waveforms: effect of waveform extraction methodology. Classical and Quantum Gravity, 2016, 33, 165001.	1.5	59

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55	Black hole-neutron star mergers for<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mn>10</mml:mn><mml:mtext>â€‰</mml:mtext><mml:mtext>â€‰</mml:mtext><mml:msub><mml:mi>M</mml:mi> holes. Physical Review D, 2012, 85, .		
56	Measuring orbital eccentricity and periastron advance in quasicircular black hole simulations. Physical Review D, 2010, 82, .	1.6	56
57	First direct comparison of nondisrupting neutron star-black hole and binary black hole merger simulations. Physical Review D, 2013, 88, .	1.6	56
58	Periastron advance in spinning black hole binaries: Gravitational self-force from numerical relativity. Physical Review D, 2013, 88, .	1.6	54
59	Distinguishing the nature of comparable-mass neutron star binary systems with multimessenger observations: GW170817 case study. Physical Review D, 2019, 100, .	1.6	54
60	Eccentric binary black hole surrogate models for the gravitational waveform and remnant properties: Comparable mass, nonspinning case. Physical Review D, 2021, 103, .	1.6	53
61	Aligned-spin neutron-starâ€“black-hole waveform model based on the effective-one-body approach and numerical-relativity simulations. Physical Review D, 2020, 102, .	1.6	51
62	Periastron advance in spinning black hole binaries: comparing effective-one-body and numerical relativity. Physical Review D, 2013, 88, .	1.6	50
63	Monte-Carlo Neutrino Transport in Neutron Star Merger Simulations. Astrophysical Journal Letters, 2020, 902, L27.	3.0	50
64	Optimal constraint projection for hyperbolic evolution systems. Physical Review D, 2004, 70, .	1.6	49
65	3D simulations of linearized scalar fields in Kerr spacetime. Physical Review D, 2004, 69, .	1.6	45
66	Comparing gravitational waveform extrapolation to Cauchy-characteristic extraction in binary black hole simulations. Physical Review D, 2013, 88, .	1.6	43
67	Binary neutron stars with arbitrary spins in numerical relativity. Physical Review D, 2015, 92, .	1.6	41
68	Status of NINJA: the Numerical INJection Analysis project. Classical and Quantum Gravity, 2009, 26, 114008.	1.5	39
69	Suitability of hybrid gravitational waveforms for unequal-mass binaries. Physical Review D, 2013, 87, .	1.6	39
70	Simulations of inspiraling and merging double neutron stars using the Spectral Einstein Code. Physical Review D, 2016, 93, .	1.6	39
71	Unequal mass binary neutron star simulations with neutrino transport: Ejecta and neutrino emission. Physical Review D, 2020, 101, .	1.6	38
72	Comparing post-Newtonian and numerical relativity precession dynamics. Physical Review D, 2015, 92, .	1.6	37

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73	Accuracy of binary black hole waveform models for aligned-spin binaries. Physical Review D, 2016, 93, .	1.6	37
74	Computation of displacement and spin gravitational memory in numerical relativity. Physical Review D, 2020, 102, .	1.6	37
75	Adding gravitational memory to waveform catalogs using BMS balance laws. Physical Review D, 2021, 103, .	1.6	35
76	Testing the accuracy and stability of spectral methods in numerical relativity. Physical Review D, 2007, 75, .	1.6	34
77	Toward stable 3D numerical evolutions of black-hole spacetimes. Physical Review D, 2002, 66, .	1.6	33
78	High accuracy simulations of Kerr tails: coordinate dependence and higher multipoles. Classical and Quantum Gravity, 2008, 25, 105022.	1.5	33
79	Nearly extremal apparent horizons in simulations of merging black holes. Classical and Quantum Gravity, 2015, 32, 065007.	1.5	33
80	Constraining the parameters of GW150914 and GW170104 with numerical relativity surrogates. Physical Review D, 2019, 99, .	1.6	32
81	Controlling the growth of constraints in hyperbolic evolution systems. Physical Review D, 2004, 69, .	1.6	31
82	Addendum to â€˜The NINJA-2 catalog of hybrid post-Newtonian/numerical-relativity waveforms for non-precessing black-hole binariesâ€™. Classical and Quantum Gravity, 2013, 30, 199401.	1.5	28
83	Magnetic effects on the low-<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>T</mml:mi><mml:mo>/</mml:mo><mml:mo stretchy="false">|</mml:mo><mml:mi>W</mml:mi><mml:mo stretchy="false">|</mml:mo></mml:mrow></mml:math>instability in differentially rotating neutron stars. Physical Review D, 2014, 89, .	1.6	28
84	Impact of subdominant modes on the interpretation of gravitational-wave signals from heavy binary black hole systems. Physical Review D, 2020, 101, .	1.6	28
85	Stability of nonspinning effective-one-body model in approximating two-body dynamics and gravitational-wave emission. Physical Review D, 2014, 89, .	1.6	27
86	Evolution of the magnetized, neutrino-cooled accretion disk in the aftermath of a black hole-neutron star binary merger. Physical Review D, 2018, 97, .	1.6	27
87	A note on the radiation reaction in the 2.5PN waveform from inspiralling binaries in quasi-circular orbits. Classical and Quantum Gravity, 2007, 24, 5307-5312.	1.5	25
88	Precession-tracking coordinates for simulations of compact-object binaries. Physical Review D, 2013, 88, .	1.6	25
89	Spectral methods for numerical relativity: The initial data problem. Physical Review D, 2000, 62, .	1.6	23
90	Black hole-neutron star mergers using a survey of finite-temperature equations of state. Physical Review D, 2018, 98, .	1.6	22

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91	High precision ringdown modeling: Multimode fits and BMS frames. Physical Review D, 2022, 105, .	1.6	21
92	Orbiting binary black hole evolutions with a multipatch high order finite-difference approach. Physical Review D, 2009, 80, .	1.6	20
93	Ineffectiveness of PadÃ© resummation techniques in post-Newtonian approximations. Physical Review D, 2008, 78, .	1.6	18
94	Spectral methods for the wave equation in second-order form. Physical Review D, 2010, 82, .	1.6	18
95	Hyperboloidal evolution of test fields in three spatial dimensions. Physical Review D, 2010, 81, .	1.6	17
96	Initial data for Einstein's equations with superposed gravitational waves. Physical Review D, 2005, 71, .	1.6	16
97	Template banks for binary black hole searches with numerical relativity waveforms. Physical Review D, 2014, 89, .	1.6	16
98	Measuring the properties of nearly extremal black holes with gravitational waves. Physical Review D, 2018, 98, .	1.6	16
99	Extending gravitational wave extraction using Weyl characteristic fields. Physical Review D, 2021, 103, .	1.6	16
100	Implementation of Monte Carlo Transport in the General Relativistic SpEC Code. Astrophysical Journal, 2021, 920, 82.	1.6	16
101	General-relativistic neutron star evolutions with the discontinuous Galerkin method. Physical Review D, 2018, 98, .	1.6	15
102	Fixing the BMS frame of numerical relativity waveforms. Physical Review D, 2021, 104, .	1.6	15
103	Detection and characterization of spin-orbit resonances in the advanced gravitational wave detectors era. Physical Review D, 2018, 98, .	1.6	13
104	Comparing remnant properties from horizon data and asymptotic data in numerical relativity. Physical Review D, 2021, 103, .	1.6	13
105	Initial data for black holeâ€“neutron star binaries, with rotating stars. Classical and Quantum Gravity, 2016, 33, 225012.	1.5	10
106	Critical behavior in 3D gravitational collapse of massless scalar fields. Physical Review D, 2019, 99, .	1.6	10
107	Comparison of momentum transport models for numerical relativity. Physical Review D, 2020, 102, .	1.6	10
108	High-accuracy waveforms for black hole-neutron star systems with spinning black holes. Physical Review D, 2021, 103, .	1.6	10

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109	Toroidal horizons in binary black hole mergers. Physical Review D, 2016, 94, .	1.6	9
110	Parallel adaptive event horizon finder for numerical relativity. Physical Review D, 2016, 94, .	1.6	8
111	Systematic effects from black hole-neutron star waveform model uncertainties on the neutron star equation of state. Physical Review D, 2019, 99, .	1.6	8
112	Up-down instability of binary black holes in numerical relativity. Physical Review D, 2021, 103, .	1.6	8
113	Gravitational-wave echoes from numerical-relativity waveforms via spacetime construction near merging compact objects. Physical Review D, 2022, 105, .	1.6	8
114	Simulating magnetized neutron stars with discontinuous Galerkin methods. Physical Review D, 2022, 105, .	1.6	7
115	Are different approaches to constructing initial data for binary black hole simulations of the same astrophysical situation equivalent?. Physical Review D, 2012, 86, .	1.6	5
116	Initial data for high-compactness black holeâ€“neutron star binaries. Classical and Quantum Gravity, 2016, 33, 105009.	1.5	5
117	Axisymmetric hydrodynamics in numerical relativity using a multipatch method. Classical and Quantum Gravity, 2020, 37, 235010.	1.5	2
118	A scalable elliptic solver with task-based parallelism for the SpECTRE numerical relativity code. Physical Review D, 2022, 105, .	1.6	2
119	Efficient simulations of high-spin black holes with a new gauge. Physical Review D, 2021, 104, .	1.6	1
120	A New Generalized Harmonic Evolution System. , 2006, , .		0
121	EVOLVING RELATIVISTIC FLUID SPACETIMES USING PSEUDOSPECTRAL METHODS AND FINITE DIFFERENCING. , 2008, , .		0
122	REDUCING ORBITAL ECCENTRICITY IN BINARY BLACK HOLE SIMULATIONS. , 2008, , .		0