Thomas W Baumgarte

List of Publications by Year
in descending order

98	4,891	126907	110387
papers	citations	33 h-index	64 g-index

103	103	103	1950
all docs	docs citations	times ranked	citing authors

#	Article	IF	Citations
1	Numerical integration of Einsteinâ€™s field equations. Physical Review D, 1998, 59, .	4.7	948
2	On the Maximum Mass of Differentially Rotating Neutron Stars. Astrophysical Journal, 2000, 528, L29-L32.	4.5	266
3	Numerical relativity and compact binaries. Physics Reports, 2003, 376, 41-131.	25.6	148
4	General relativistic simulations of black-holeâ€“neutron-star mergers: Effects of black-hole spin. Physical Review D, 2009, 79, .	4.7	135
5	Fully general relativistic simulations of black hole-neutron star mergers. Physical Review D, 2008, 77, .	4.7	133
6	The Barâ€Mode Instability in Differentially Rotating Neutron Stars: Simulations in Full General Relativity. Astrophysical Journal, 2000, 542, 453-463.	4.5	132
7	Evolution of Rotating Supermassive Stars to the Onset of Collapse. Astrophysical Journal, 1999, 526, 941-952.	4.5	99
8	Innermost stable circular orbit of binary black holes. Physical Review D, 2000, 62, .	4.7	98
9	General Relativistic Binary Merger Simulations and Short Gamma-Ray Bursts. Astrophysical Journal, 2006, 641, L93-L96.	4.5	84
10	Effect of Differential Rotation on the Maximum Mass of Neutron Stars: Realistic Nuclear Equations of State. Astrophysical Journal, 2004, 610, 941-947.	4.5	83
11	Filling the holes: Evolving excised binary black hole initial data with puncture techniques. Physical Review D, 2007, 76, .	4.7	79
12	Stability and collapse of rapidly rotating, supramassive neutron stars: 3D simulations in general relativity. Physical Review D, 2000, 61, .	4.7	72
13	Hydrodynamic simulations in3+1general relativity. Physical Review D, 2003, 67, .	4.7	71
14	Oneâ€armed Spiral Instability in Differentially Rotating Stars. Astrophysical Journal, 2003, 595, 352-364.	4.5	69
15	Improved numerical stability of stationary black hole evolution calculations. Physical Review D, 2002, 66, .	4.7	66
16	Dynamical evolution of black hole-neutron star binaries in general relativity: Simulations of tidal disruption. Physical Review D, 2006, 73, .	4.7	66
17	Computing supernova collapse to neutron stars and black holes. Astrophysical Journal, 1995, 443, 717.	4.5	65
18	Delayed Collapse of Hot Neutron Stars to Black Holes via Hadronic Phase Transitions. Astrophysical Journal, 1996, 468, 823.	4.5	60

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19	General Relativistic Magnetohydrodynamics for the Numerical Construction of Dynamical Spacetimes. Astrophysical Journal, 2003, 585, 921-929.	4.5	58
20	Numerical relativity in spherical polar coordinates: Evolution calculations with the BSSN formulation. Physical Review D, 2013, 87, .	4.7	57
21	Dynamical Bar Instability in Rotating Stars: Effect of General Relativity. Astrophysical Journal, 2001, 548, 919-931.	4.5	55
22	Effects of Differential Rotation on the Maximum Mass of Neutron Stars. Astrophysical Journal, 2003, 583, 410-415.	4.5	54
23	Analytical representation of a black hole puncture solution. Physical Review D, 2007, 75, .	4.7	53
24	Quasiequilibrium black hole-neutron star binaries in general relativity. Physical Review D, 2007, 75, .	4.7	51
25	Black hole-neutron star binaries in general relativity: Effects of neutron star spin. Physical Review D, 2005, 72, .	4.7	50
26	Implementing an apparent-horizon finder in three dimensions. Physical Review D, 1996, 54, 4849-4857.	4.7	49
27	Relativistic black hole-neutron star binaries in quasiequilibrium: Effects of the black hole excision boundary condition. Physical Review D, 2008, 77, .	4.7	47
28	Collapse of a Magnetized Star to a Black Hole. Astrophysical Journal, 2003, 585, 930-947.	4.5	41
29	Dynamical Determination of the Innermost Stable Circular Orbit of Binary Neutron Stars. Physical Review Letters, 2004, 92, 141101.	7.8	40
30	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mi>SENR</mml:mi><mml:mo>/</mml:mo><mml:mi>NRPy</mml:mi><mml:mo></mml:mo></mml: : Numerical relativity in singular curvilinear coordinate systems. Physical Review D, 2018, 97, .	4.7	38
31	Quasiequilibrium sequences of black-holeâ€“neutron-star binaries in general relativity. Physical Review D, 2006, 74, .	4.7	37
32	Computing the Delayed Collapse of Hot Neutron Stars to Black Holes. Astrophysical Journal, 1996, 458, 680.	4.5	36
33	Black hole-neutron star binaries in general relativity: Quasiequilibrium formulation. Physical Review D, 2004, 70, .	4.7	35
34	Collapse of nonlinear gravitational waves in moving-puncture coordinates. Physical Review D, 2013, 88, .	4.7	33
35	Relativistic hydrodynamics in the presence of puncture black holes. Physical Review D, 2007, 76, .	4.7	32
36	Stability of coalescing binary stars against gravitational collapse: Hydrodynamical simulations. Physical Review D, 1998, 58, .	4.7	31

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37	Merger of white dwarf-neutron star binaries: Prelude to hydrodynamic simulations in general relativity. Physical Review D, 2009, 80, .	4.7	31
38	Numerical evolution of black holes with a hyperbolic formulation of general relativity. Physical Review D, 1997, 56, 6320-6335.	4.7	30
39	General relativistic hydrodynamics in curvilinear coordinates. Physical Review D, 2014, 89, .	4.7	28
40	Evolving Einsteinâ€™s field equations with matter: The â€œhydro without hydroâ€•test. Physical Review D, 1999, 60, .	4.7	27
41	Einstein constraints: Uniqueness and nonuniqueness in the conformal thin sandwich approach. Physical Review D, 2007, 75, .	4.7	27
42	Quasi-equilibrium binary black hole initial data for dynamical evolutions. Physical Review D, 2004, 70, .	4.7	26
43	Approximate initial data for binary black holes. Physical Review D, 2006, 74, .	4.7	25
44	Radiation of Angular Momentum by Neutrinos from Merged Binary Neutron Stars. Astrophysical Journal, 1998, 504, 431-441.	4.5	24
45	Critical Collapse of Rotating Radiation Fluids. Physical Review Letters, 2016, 116, 221103.	7.8	24
46	Numerical relativity in spherical polar coordinates: Off-center simulations. Physical Review D, 2015, 91, .	4.7	23
47	Can a combination of the conformal thin-sandwich and puncture methods yield binary black hole solutions in quasiequilibrium?. Physical Review D, 2003, 68, .	4.7	22
48	Treating instabilities in a hyperbolic formulation of Einsteinâ€™s equations. Physical Review D, 1998, 58, .	4.7	21
49	Computing the complete gravitational wavetrain from relativistic binary inspiral. Physical Review D, 2001, 63, .	4.7	20
50	Learning about compact binary merger: The interplay between numerical relativity and gravitational-wave astronomy. Physical Review D, 2008, 77, .	4.7	20
51	A simple family of analytical trumpet slices of the Schwarzschild spacetime. Classical and Quantum Gravity, 2014, 31, 117001.	4.0	20
52	Fully covariant and conformal formulation of the Z4 system in a reference-metric approach: Comparison with the BSSN formulation in spherical symmetry. Physical Review D, 2014, 89, .	4.7	19
53	Critical phenomena in the aspherical gravitational collapse of radiation fluids. Physical Review D, 2015, 92, .	4.7	19
54	Numerical relativity in spherical coordinates: A new dynamical spacetime and general relativistic MHD evolution framework for the Einstein Toolkit. Physical Review D, 2020, 101, .	4.7	19

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55	Comparing the inspiral of irrotational and corotational binary neutron stars. Physical Review D, 2001, 65, .	4.7	18
56	Trumpet-puncture initial data for black holes. Physical Review D, 2009, 80, .	4.7	18
57	Accretion onto a small black hole at the center of a neutron star. Physical Review D, 2021, 103, .	4.7	18
58	Towards a wave-extraction method for numerical relativity. III. Analytical examples for the Beetle-Burko radiation scalar. Physical Review D, 2006, 73, .	4.7	16
59	Formalism for the construction of binary neutron stars with arbitrary circulation. Physical Review D, 2009, 80, .	4.7	16
60	Aspherical deformations of the Choptuik spacetime. Physical Review D, 2018, 98, .	4.7	16
61	Critical Phenomena in the Gravitational Collapse of Electromagnetic Waves. Physical Review Letters, 2019, 123, 171103.	7.8	16
62	Numerical relativity in spherical coordinates with the Einstein Toolkit. Physical Review D, 2018, 97, .	4.7	15
63	Relativistic Bondi accretion for stiff equations of state. Monthly Notices of the Royal Astronomical Society, 2021, 502, 3003-3011.	4.4	14
64	Luminosity versus Rotation in a Supermassive Star. Astrophysical Journal, 1999, 526, 937-940.	4.5	14
65	Numerical testbed for singularity excision in moving black hole spacetimes. Physical Review D, 2001, 64, .	4.7	13
66	Trumpet slices of the Schwarzschild-Tangherlini spacetime. Physical Review D, 2010, 82, .	4.7	13
67	Maximally rotating supermassive stars at the onset of collapse: the perturbative effects of gas pressure, magnetic fields, dark matter, and dark energy. Monthly Notices of the Royal Astronomical Society, 2018, 477, 3694-3710.	4.4	13
68	Dynamical stability of quasitoroidal differentially rotating neutron stars. Physical Review D, 2019, 100, .	4.7	13
69	Binary black hole mergers. Physics Today, 2011, 64, 32-37.	0.3	12
70	Trumpet Slices in Kerr Spacetimes. Physical Review Letters, 2014, 113, 261101.	7.8	12
71	Critical gravitational collapse with angular momentum. Physical Review D, 2016, 94, .	4.7	12
72	Radiative falloff in neutron star spacetimes. Physical Review D, 2000, 62, .	4.7	11

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73	Critical gravitational collapse with angular momentum. II. Soft equations of state. Physical Review D, 2018, 97, .	4.7	11
74	Neutron stars harboring a primordial black hole: Maximum survival time. Physical Review D, 2021, 103, .	4.7	10
75	Gravitational wave trains in the quasiequilibrium approximation: A model problem in scalar gravitation. Physical Review D, 2001, 63, .	4.7	9
76	Excision boundary conditions for the conformal metric. Physical Review D, 2008, 78, .	4.7	9
77	Bona-Masso slicing conditions and the lapse close to black-hole punctures. Physical Review D, 2022, 105, .	4.7	9
78	Comparing criteria for circular orbits in general relativity. Physical Review D, 2002, 66, .	4.7	8
79	Critical collapse of ultrarelativistic fluids: Damping or growth of aspherical deformations. Physical Review D, 2018, 98, .	4.7	8
80	Critical phenomena in gravitational collapse with two competing massless matter fields. Physical Review D, 2019, 100, .	4.7	7
81	Critical phenomena in the gravitational collapse of electromagnetic dipole and quadrupole waves. Physical Review D, 2021, 103, .	4.7	7
82	Accretion onto black holes inside neutron stars with piecewise-polytropic equations of state: Analytic and numerical treatments. Physical Review D, 2021, 104, .	4.7	7
83	Publisher's Note: Quasi-equilibrium binary black hole initial data for dynamical evolutions [Phys. Rev. D70, 084033 (2004)]. Physical Review D, 2004, 70, .	4.7	6
84	Alternative approach to solving the Hamiltonian constraint. Physical Review D, 2012, 85, .	4.7	6
85	Bondi accretion in trumpet geometries. Classical and Quantum Gravity, 2017, 34, 035007.	4.0	5
86	Black Hole-Neutron Star Binary Merger Calculations: GRB Progenitors and the Stability of Mass Transfer. AIP Conference Proceedings, 2006, , .	0.4	4
87	GRAVITY DARKENING AND BRIGHTENING IN BINARIES. Astrophysical Journal, 2012, 752, 122.	4.5	4
88	Comparison of linear Brill and Teukolsky waves. Physical Review D, 2021, 104, .	4.7	4
89	Puncture black hole initial data in the conformal thin-sandwich formalism. Classical and Quantum Gravity, 2011, 28, 215003.	4.0	3
90	Invariants for tendex and vortex fields. Physical Review D, 2012, 86, .	4.7	3

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91	Dark matter heating of gas accreting onto Sgr A*. Monthly Notices of the Royal Astronomical Society, 2019, 490, 3414-3425.	4.4	3
92	Maximally rotating supermassive stars at the onset of collapse: effects of gas pressure. Monthly Notices of the Royal Astronomical Society, 2019, 488, 4195-4206.	4.4	3
93	Shells around black holes: The effect of freely specifiable quantities in Einsteinâ€™s constraint equations. Physical Review D, 2008, 77, .	4.7	2
94	Analytical tendex and vortex fields for perturbative black hole initial data. Physical Review D, 2012, 86, .	4.7	2
95	Relativistic radiation hydrodynamics in a reference-metric formulation. Physical Review D, 2020, 102, .	4.7	2
96	Black Holes: from Speculations to Observations. AIP Conference Proceedings, 2006, , .	0.4	1
97	Schwarzschildâ€“de Sitter spacetimes, McVittie coordinates, and trumpet geometries. Physical Review D, 2017, 96, .	4.7	1
98	The Newtonian limit in a model problem. General Relativity and Gravitation, 1993, 25, 1189-1204.	2.0	0