Sebastian S Steinlechner

List of Publications by Year
in descending order

126 papers	46,259 citations	16451 64 h-index	15732 125 g-index
128 all docs	128 docs citations	128 times ranked	17636 citing authors

#	Article	IF	Citations
1	Observation of Gravitational Waves from a Binary Black Hole Merger. Physical Review Letters, 2016, 116, 061102.	7.8	8,753
2	GW170817: Observation of Gravitational Waves from a Binary Neutron Star Inspiral. Physical Review Letters, 2017, 119, 161101.	7.8	6,413
3	Multi-messenger Observations of a Binary Neutron Star Merger[*]. Astrophysical Journal Letters, 2017, 848, L12.	8.3	2,805
4	GW151226: Observation of Gravitational Waves from a 22-Solar-Mass Binary Black Hole Coalescence. Physical Review Letters, 2016, 116, 241103.	7.8	2,701
5	Gravitational Waves and Gamma-Rays from a Binary Neutron Star Merger: GW170817 and GRB 170817A. Astrophysical Journal Letters, 2017, 848, L13.	8.3	2,314
6	GW170104: Observation of a 50-Solar-Mass Binary Black Hole Coalescence at Redshift 0.2. Physical Review Letters, 2017, 118, 221101.	7.8	1,987
7	Advanced LIGO. Classical and Quantum Gravity, 2015, 32, 074001.	4.0	1,929
8	GW170814: A Three-Detector Observation of Gravitational Waves from a Binary Black Hole Coalescence. Physical Review Letters, 2017, 119, 141101.	7.8	1,600
9	Tests of General Relativity with GW150914. Physical Review Letters, 2016, 116, 221101.	7.8	1,224
10	Characterization of the LIGO detectors during their sixth science run. Classical and Quantum Gravity, 2015, 32, 115012.	4.0	1,029
11	GW170608: Observation of a 19 Solar-mass Binary Black Hole Coalescence. Astrophysical Journal Letters, 2017, 851, L35.	8.3	968
12	Binary Black Hole Mergers in the First Advanced LIGO Observing Run. Physical Review X, 2016, 6, .	8.9	898
13	Enhanced sensitivity of the LIGO gravitational wave detector by using squeezed states of light. Nature Photonics, 2013, 7, 613-619.	31.4	825
14	Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA. Living Reviews in Relativity, 2018, 21, 3.	26.7	808
15	Exploring the sensitivity of next generation gravitational wave detectors. Classical and Quantum Gravity, 2017, 34, 044001.	4.0	735
16	A gravitational wave observatory operating beyond the quantum shot-noise limit. Nature Physics, 2011, 7, 962-965.	16.7	716
17	A gravitational-wave standard siren measurement of the Hubble constant. Nature, 2017, 551, 85-88.	27.8	674
18	Properties of the Binary Black Hole Merger GW150914. Physical Review Letters, 2016, 116, 241102.	7.8	673

#	Article	IF	Citations
19	ASTROPHYSICAL IMPLICATIONS OF THE BINARY BLACK HOLE MERGER GW150914. Astrophysical Journal Letters, 2016, 818, L22.	8.3	633
20	GW150914: The Advanced LIGO Detectors in the Era of First Discoveries. Physical Review Letters, 2016, 116, 131103.	7.8	466
21	Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA. Living Reviews in Relativity, 2020, 23, 3.	26.7	447
22	Prospects for Observing and Localizing Gravitational-Wave Transients with Advanced LIGO and Advanced Virgo. Living Reviews in Relativity, 2016, 19, 1.	26.7	427
23	GW150914: First results from the search for binary black hole coalescence with Advanced LIGO. Physical Review D, 2016, 93, .	4.7	315
24	Observation of one-way Einsteinâ€“Podolskyâ€“Rosen steering. Nature Photonics, 2012, 6, 596-599.	31.4	308
25	GW150914: Implications for the Stochastic Gravitational-Wave Background from Binary Black Holes. Physical Review Letters, 2016, 116, 131102.	7.8	269
26	Quantum Enhancement of the Zero-Area Sagnac Interferometer Topology for Gravitational Wave Detection. Physical Review Letters, 2010, 104, 251102.	7.8	250
27	THE RATE OF BINARY BLACK HOLE MERGERS INFERRED FROM ADVANCED LIGO OBSERVATIONS SURROUNDING GW150914. Astrophysical Journal Letters, 2016, 833, L1.	8.3	230
28	Characterization of transient noise in Advanced LIGO relevant to gravitational wave signal GW150914. Classical and Quantum Gravity, 2016, 33, 134001.	4.0	225
29	LOCALIZATION AND BROADBAND FOLLOW-UP OF THE GRAVITATIONAL-WAVE TRANSIENT GW150914. Astrophysical Journal Letters, 2016, 826, L13.	8.3	210
30	Upper Limits on the Stochastic Gravitational-Wave Background from Advanced LIGOâ€™s First Observing Run. Physical Review Letters, 2017, 118, 121101.	7.8	194
31	Search for Post-merger Gravitational Waves from the Remnant of the Binary Neutron Star Merger GW170817. Astrophysical Journal Letters, 2017, 851, L16.	8.3	189
32	Search for gravitational waves from low mass compact binary coalescence in LIGOâ€™s sixth science run and Virgoâ€™s science runs 2 and 3. Physical Review D, 2012, 85, .	4.7	185
33	Squeezed light at 1550 nm with a quantum noise reduction of 123 dB. Optics Express, 2011, 19, 25763.	3.4	171
34	Estimating the Contribution of Dynamical Ejecta in the Kilonova Associated withÂGW170817. Astrophysical Journal Letters, 2017, 850, L39.	8.3	156
35	UPPER LIMITS ON THE RATES OF BINARY NEUTRON STAR AND NEUTRON STARâ€“BLACK HOLE MERGERS FROM ADVANCED LIGOâ€™S FIRST OBSERVING RUN. Astrophysical Journal Letters, 2016, 832, L21.	8.3	146
36	Search for High-energy Neutrinos from Binary Neutron Star Merger GW170817 with ANTARES, IceCube, and the Pierre Auger Observatory. Astrophysical Journal Letters, 2017, 850, L35.	8.3	135

#	Article	IF	Citations
37	Parameter estimation for compact binary coalescence signals with the first generation gravitational-wave detector network. Physical Review D, 2013, 88, .	4.7	132
38	First Search for Gravitational Waves from Known Pulsars with Advanced LIGO. Astrophysical Journal, 2017, 839, 12.	4.5	131
39	GRAVITATIONAL WAVES FROM KNOWN PULSARS: RESULTS FROM THE INITIAL DETECTOR ERA. Astrophysical Journal, 2014, 785, 119.	4.5	125
40	Observing gravitational-wave transient GW150914 with minimal assumptions. Physical Review D, 2016, 93, .	4.7	119
41	Search for gravitational waves from compact binary coalescence in LIGO and Virgo data from S5 and VSR1. Physical Review D, 2010, 82, .	4.7	111
42	All-sky search for gravitational-wave bursts in the second joint LIGO-Virgo run. Physical Review D, 2012, 85, .	4.7	107
43	Improved Analysis of GW150914 Using a Fully Spin-Precessing Waveform Model. Physical Review X, 2016, 6, .	8.9	106
44	Challenges and opportunities of gravitational-wave searches at MHz to GHz frequencies. Living Reviews in Relativity, 2021, 24, 1.	26.7	105
45	Directly comparing GW150914 with numerical solutions of Einsteinâ€™s equations for binary black hole coalescence. Physical Review D, 2016, 94, .	4.7	102
46	Effects of waveform model systematics on the interpretation of GW150914. Classical and Quantum Gravity, 2017, 34, 104002.	4.0	98
47	Search for gravitational waves from binary black hole inspiral, merger, and ringdown in LIGO-Virgo data from 2009â€“2010. Physical Review D, 2013, 87, .	4.7	92
48	High-energy neutrino follow-up search of gravitational wave event GW150914 with ANTARES and IceCube. Physical Review D, 2016, 93, .	4.7	92
49	Einstein@Home all-sky search for periodic gravitational waves in LIGO S5 data. Physical Review D, 2013, 87, .	4.7	91
50	Improved Upper Limits on the Stochastic Gravitational-Wave Background from 2009â€“2010 LIGO and Virgo Data. Physical Review Letters, 2014, 113, 231101.	7.8	86
51	Search for gravitational waves from binary black hole inspiral, merger, and ringdown. Physical Review D, 2011, 83, .	4.7	85
52	Directional Limits on Persistent Gravitational Waves from Advanced LIGOâ€™s First Observing Run. Physical Review Letters, 2017, 118, 121102.	7.8	84
53	Quantum-dense metrology. Nature Photonics, 2013, 7, 626-630.	31.4	83
54	Search for intermediate mass black hole binaries in the first observing run of Advanced LIGO. Physical Review D, 2017, 96, .	4.7	73

#	Article	IF	Citations
55	On the Progenitor of Binary Neutron Star Merger GW170817. Astrophysical Journal Letters, 2017, 850, L40.	8.3	73
56	Calibration of the Advanced LIGO detectors for the discovery of the binary black-hole merger GW150914. Physical Review D, 2017, 95, .	4.7	72
57	Strong Einstein-Podolsky-Rosen steering with unconditional entangled states. Physical Review A, 2013, 87, .	2.5	70
58	All-sky search for short gravitational-wave bursts in the first Advanced LIGO run. Physical Review D, 2017, 95, .	4.7	69
59	The basic physics of the binary black hole merger GW150914. Annalen Der Physik, 2017, 529, 1600209.	2.4	69
60	Constraints on Cosmic Strings from the LIGO-Virgo Gravitational-Wave Detectors. Physical Review Letters, 2014, 112, 131101.	7.8	68
61	First Search for Nontensorial Gravitational Waves from Known Pulsars. Physical Review Letters, 2018, 120, 031104.	7.8	68
62	All-sky search for periodic gravitational waves in the full S5 LIGO data. Physical Review D, 2012, 85, .	4.7	66
63	SEARCHES FOR CONTINUOUS GRAVITATIONAL WAVES FROM NINE YOUNG SUPERNOVA REMNANTS. Astrophysical Journal, 2015, 813, 39.	4.5	66
64	Directed search for continuous gravitational waves from the Galactic center. Physical Review D, 2013, 88, .	4.7	65
65	All-sky search for periodic gravitational waves in the O1 LIGO data. Physical Review D, 2017, 96, .	4.7	64
66	First all-sky search for continuous gravitational waves from unknown sources in binary systems. Physical Review D, 2014, 90, .	4.7	60
67	First targeted search for gravitational-wave bursts from core-collapse supernovae in data of first-generation laser interferometer detectors. Physical Review D, 2016, 94, .	4.7	60
68	First low-frequency Einstein@Home all-sky search for continuous gravitational waves in Advanced LIGO data. Physical Review D, 2017, 96, .	4.7	60
69	Search for gravitational waves from Scorpius X-1 in the first Advanced LIGO observing run with a hidden Markov model. Physical Review D, 2017, 95, .	4.7	59
70	FIRST SEARCHES FOR OPTICAL COUNTERPARTS TO GRAVITATIONAL-WAVE CANDIDATE EVENTS. Astrophysical Journal, Supplement Series, 2014, 211, 7.	7.7	57
71	SEARCH FOR GRAVITATIONAL WAVE BURSTS FROM SIX MAGNETARS. Astrophysical Journal Letters, 2011, 734, L35.	8.3	55
72	Search for Gravitational Waves Associated with Gamma-Ray Bursts during the First Advanced LIGO Observing Run and Implications for the Origin of GRB 150906B. Astrophysical Journal, 2017, 841, 89.	4.5	52

#	Article	IF	Citations
73	Search for gravitational waves from intermediate mass binary black holes. Physical Review D, 2012, 85, .	4.7	48
74	Directed search for gravitational waves from Scorpius X-1 with initial LIGO data. Physical Review D, 2015, 91, .	4.7	47
75	First narrow-band search for continuous gravitational waves from known pulsars in advanced detector data. Physical Review D, 2017, 96, .	4.7	47
76	Upper Limits on Gravitational Waves from Scorpius X-1 from a Model-based Cross-correlation Search in Advanced LIGO Data. Astrophysical Journal, 2017, 847, 47.	4.5	46
77	Upper limits on a stochastic gravitational-wave background using LIGO and Virgo interferometers at 600â€“1000ÂHz. Physical Review D, 2012, 85, .	4.7	43
78	High-efficiency frequency doubling of continuous-wave laser light. Optics Letters, 2011, 36, 3467.	3.3	42
79	The NINJA-2 project: detecting and characterizing gravitational waveforms modelled using numerical binary black hole simulations. Classical and Quantum Gravity, 2014, 31, 115004.	4.0	42
80	Search for high-energy neutrinos from gravitational wave event GW151226 and candidate LVT151012 with ANTARES and IceCube. Physical Review D, 2017, 96, .	4.7	40
81	Searching for stochastic gravitational waves using data from the two colocated LIGO Hanford detectors. Physical Review D, 2015, 91, .	4.7	39
82	Narrow-band search of continuous gravitational-wave signals from Crab and Vela pulsars in Virgo VSR4 data. Physical Review D, 2015, 91, .	4.7	37
83	Search for gravitational radiation from intermediate mass black hole binaries in data from the second LIGO-Virgo joint science run. Physical Review D, 2014, 89, .	4.7	35
84	Comprehensive all-sky search for periodic gravitational waves in the sixth science run LIGO data. Physical Review D, 2016, 94, .	4.7	35
85	Demonstration of a quantum-enhanced fiber Sagnac interferometer. Optics Letters, 2010, 35, 1665.	3.3	34
86	Implementation of an $mathcal{F}$-statistic all-sky search for continuous gravitational waves in Virgo VSR1 data. Classical and Quantum Gravity, 2014, 31, 165014.	4.0	34
87	A first search for coincident gravitational waves and high energy neutrinos using LIGO, Virgo and ANTARES data from 2007. Journal of Cosmology and Astroparticle Physics, 2013, 2013, 008-008.	5.4	32
88	Search for Gravitational Waves Associated with<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mi>Î³</mml:mi></mml:math>-ray Bursts Detected by the Interplanetary Network. Physical Review Letters, 2014, 113, 011102.	7.8	32
89	First low frequency all-sky search for continuous gravitational wave signals. Physical Review D, 2016, 93, .	4.7	32
90	Search for long-lived gravitational-wave transients coincident with long gamma-ray bursts. Physical Review D, 2013, 88, .	4.7	31

#	Article	IF	Citations
91	Results of the deepest all-sky survey for continuous gravitational waves on LIGO S6 data running on the Einstein@Home volunteer distributed computing project. Physical Review D, 2016, 94, .	4.7	31
92	Demonstration of interferometer enhancement through Einsteinâ€“Podolskyâ€“Rosen entanglement. Nature Photonics, 2020, 14, 240-244.	31.4	30
93	Multimessenger search for sources of gravitational waves and high-energy neutrinos: Initial results for LIGO-Virgo and IceCube. Physical Review D, 2014, 90, .	4.7	29
94	Design of a speed meter interferometer proof-of-principle experiment. Classical and Quantum Gravity, 2014, 31, 215009.	4.0	29
95	Methods and results of a search for gravitational waves associated with gamma-ray bursts using the GEO 600, LIGO, and Virgo detectors. Physical Review D, 2014, 89, .	4.7	29
96	All-sky search for long-duration gravitational wave transients with initial LIGO. Physical Review D, 2016, 93, .	4.7	29
97	Search for gravitational wave ringdowns from perturbed intermediate mass black holes in LIGO-Virgo data from 2005â€“2010. Physical Review D, 2014, 89, .	4.7	28
98	Observation of cw squeezed light at 1550 nm. Optics Letters, 2009, 34, 1060.	3.3	24
99	A new quantum speed-meter interferometer: measuring speed to search for intermediate mass black holes. Light: Science and Applications, 2018, 7, 11.	16.6	24
100	Application of a Hough search for continuous gravitational waves on data from the fifth LIGO science run. Classical and Quantum Gravity, 2014, 31, 085014.	4.0	21
101	Quantum noise of non-ideal Sagnac speed meter interferometer with asymmetries. New Journal of Physics, 2015, 17, 043031.	2.9	21
102	First joint observation by the underground gravitational-wave detector KAGRA with GEO 600. Progress of Theoretical and Experimental Physics, 2022, 2022, .	6.6	20
103	Search for continuous gravitational waves from neutron stars in globular cluster NGC 6544. Physical Review D, 2017, 95, .	4.7	19
104	Building blocks for future detectors: Silicon test masses and 1550 nm laser light. Journal of Physics: Conference Series, 2010, 228, 012029.	0.4	17
105	Continuous-wave nonclassical light with gigahertz squeezing bandwidth. Optics Letters, 2012, 37, 2367.	3.3	17
106	Search of the Orion spur for continuous gravitational waves using a loosely coherent algorithm on data from LIGO interferometers. Physical Review D, 2016, 93, .	4.7	17
107	Optical absorption of silicon nitride membranes at 1064Ânm and at 1550Ânm. Physical Review D, 2017, 96, .	4.7	17
108	Local-oscillator noise coupling in balanced homodyne readout for advanced gravitational wave detectors. Physical Review D, 2015, 92, .	4.7	16

#	Article	IF	Citations
109	Measuring small absorptions by exploiting photothermal self-phase modulation. Applied Optics, 2010, 49, 5391.	2.1	14
110	Search for transient gravitational waves in coincidence with short-duration radio transients during 2007â€“2013. Physical Review D, 2016, 93, .	4.7	14
111	Mitigating Mode-Matching Loss in Nonclassical Laser Interferometry. Physical Review Letters, 2018, 121, 263602.	7.8	14
112	Candidates for a possible third-generation gravitational wave detector: comparison of ring-Sagnac and sloshing-Sagnac speedmeter interferometers. Classical and Quantum Gravity, 2017, 34, 024001.	4.0	13
113	Mapping the optical absorption of a substrate-transferred crystalline AlGaAs coating at 1.5 Î¼m. Classical and Quantum Gravity, 2015, 32, 105008.	4.0	12
114	Reduction of Classical Measurement Noise via Quantum-Dense Metrology. Physical Review Letters, 2016, 117, 180801.	7.8	12
115	Photothermal self-phase-modulation technique for absorption measurements on high-reflective coatings. Applied Optics, 2012, 51, 1156.	1.8	10
116	Effects of static and dynamic higher-order optical modes in balanced homodyne readout for future gravitational waves detectors. Physical Review D, 2017, 95, .	4.7	7
117	Optical absorption measurements on crystalline silicon test masses at 1550 nm. Classical and Quantum Gravity, 2013, 30, 095007.	4.0	6
118	NQontrol: An open-source platform for digital control-loops in quantum-optical experiments. Review of Scientific Instruments, 2020, 91, 035114.	1.3	6
119	Quantum noise cancellation in asymmetric speed metres with balanced homodyne readout. New Journal of Physics, 2018, 20, 103040.	2.9	5
120	Highly efficient generation of coherent light at 2128â€‰â€‰nm via degenerate optical-parametric oscillation. Optics Letters, 2020, 45, 6194.	3.3	4
121	Squeezed light at 2128â€‰â€‰nm for future gravitational-wave observatories. Optics Letters, 2021, 46, 5850.	3.3	4
122	Publisherâ€™s Note: Search for gravitational waves from compact binary coalescence in LIGO and Virgo data from S5 and VSR1 [Phys. Rev. D82, 102001 (2010)]. Physical Review D, 2012, 85, .	4.7	2
123	Concepts and research for future detectors. General Relativity and Gravitation, 2014, 46, 1.	2.0	2
124	Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA. , 2018, 21, 1.		2
125	Publisherâ€™s Note: Search for gravitational waves from binary black hole inspiral, merger, and ringdown [Phys. Rev. D83, 122005 (2011)]. Physical Review D, 2012, 85, .	4.7	0
126	Demonstration of a switchable damping system to allow low-noise operation of high- Q low-mass suspension systems. Physical Review D, 2017, 96, .	4.7	0