Kenneth A Strain

List of Publications by Year
in descending order

159 papers	9,600 citations	70961 41 h-index	37111 96 g-index
161 all docs	161 docs citations	161 times ranked	6025 citing authors

#	Article	IF	Citations
1	The Einstein Telescope: a third-generation gravitational wave observatory. Classical and Quantum Gravity, 2010, 27, 194002.	1.5	1,211
2	Enhanced sensitivity of the LIGO gravitational wave detector by using squeezed states of light. Nature Photonics, 2013, 7, 613-619.	15.6	825
3	Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA. Living Reviews in Relativity, 2018, 21, 3.	8.2	808
4	Sensitivity studies for third-generation gravitational wave observatories. Classical and Quantum Gravity, 2011, 28, 094013.	1.5	644
5	Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA. Living Reviews in Relativity, 2020, 23, 3.	8.2	447
6	Prospects for Observing and Localizing Gravitational-Wave Transients with Advanced LIGO and Advanced Virgo. Living Reviews in Relativity, 2016, 19, 1.	8.2	427
7	Quantum-Enhanced Advanced LIGO Detectors in the Era of Gravitational-Wave Astronomy. Physical Review Letters, 2019, 123, 231107.	2.9	359
8	Scientific objectives of Einstein Telescope. Classical and Quantum Gravity, 2012, 29, 124013.	1.5	355
9	The third generation of gravitational wave observatories and their science reach. Classical and Quantum Gravity, 2010, 27, 084007.	1.5	287
10	The GEO 600 gravitational wave detector. Classical and Quantum Gravity, 2002, 19, 1377-1387.	1.5	284
11	Characterization of transient noise in Advanced LIGO relevant to gravitational wave signal GW150914. Classical and Quantum Gravity, 2016, 33, 134001.	1.5	225
12	A Gravitational-wave Measurement of the Hubble Constant Following the Second Observing Run of Advanced LIGO and Virgo. Astrophysical Journal, 2021, 909, 218.	1.6	144
13	The GEO-HF project. Classical and Quantum Gravity, 2006, 23, S207-S214.	1.5	133
14	LIGO detector characterization in the second and third observing runs. Classical and Quantum Gravity, 2021, 38, 135014.	1.5	128
15	Status of the GEO600 detector. Classical and Quantum Gravity, 2006, 23, S71-S78.	1.5	123
16	Update on quadruple suspension design for Advanced LIGO. Classical and Quantum Gravity, 2012, 29, 235004.	1.5	123
17	A cryogenic silicon interferometer for gravitational-wave detection. Classical and Quantum Gravity, 2020, 37, 165003.	1.5	120
18	SEARCH FOR GRAVITATIONAL-WAVE INSPIRAL SIGNALS ASSOCIATED WITH SHORT GAMMA-RAY BURSTS DURING LIGO'S FIFTH AND VIRGO'S FIRST SCIENCE RUN. Astrophysical Journal, 2010, 715, 1453-1461.	1.6	90

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19	Upper Limits on a Stochastic Background of Gravitational Waves. Physical Review Letters, 2005, 95, 221101.	2.9	89
20	Design and development of the advanced LIGO monolithic fused silica suspension. Classical and Quantum Gravity, 2012, 29, 035003.	1.5	88
21	Experimental demonstration of dual recycling for interferometric gravitational-wave detectors. Physical Review Letters, 1991, 66, 1391-1394.	2.9	87
22	GEO 600 and the GEO-HF upgrade program: successes and challenges. Classical and Quantum Gravity, 2016, 33, 075009.	1.5	86
23	Status of GEO 600. Classical and Quantum Gravity, 2004, 21, S417-S423.	1.5	85
24	GEO 600 triple pendulum suspension system: Seismic isolation and control. Review of Scientific Instruments, 2000, 71, 2539-2545.	0.6	81
25	The upgrade of GEO 600. Journal of Physics: Conference Series, 2010, 228, 012012.	0.3	79
26	Advanced techniques in GEO 600. Classical and Quantum Gravity, 2014, 31, 224002.	1.5	77
27	Quadruple suspension design for Advanced LIGO. Classical and Quantum Gravity, 2002, 19, 4043-4058.	1.5	73
28	The basic physics of the binary black hole merger GW150914. Annalen Der Physik, 2017, 529, 1600209.	0.9	69
29	Experimental Demonstration of a Suspended Dual Recycling Interferometer for Gravitational Wave Detection. Physical Review Letters, 1998, 81, 5493-5496.	2.9	66
30	Sensors and actuators for the Advanced LIGO mirror suspensions. Classical and Quantum Gravity, 2012, 29, 115005.	1.5	65
31	DC-readout of a signal-recycled gravitational wave detector. Classical and Quantum Gravity, 2009, 26, 055012.	1.5	64
32	Interferometer Techniques for Gravitational-Wave Detection. Living Reviews in Relativity, 2010, 13, 1.	8.2	63
33	Approaching the motional ground state of a 10-kg object. Science, 2021, 372, 1333-1336.	6.0	59
34	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.	1.6	52
35	Modulation, signal, and quantum noise in interferometers. Physical Review A, 1991, 44, 4693-4703.	1.0	51
36	First Demonstration of 6ÂdB Quantum Noise Reduction in a Kilometer Scale Gravitational Wave Observatory. Physical Review Letters, 2021, 126, 041102.	2.9	50

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37	The Glasgow 10â€‰m prototype laser interferometric gravitational wave detector. Review of Scientific Instruments, 1995, 66, 4447-4452.	0.6	48
38	Interferometer techniques for gravitational-wave detection. Living Reviews in Relativity, 2016, 19, 3.	8.2	48
39	Sensing and control in dual-recycling laser interferometer gravitational-wave detectors. Applied Optics, 2003, 42, 1244.	2.1	47
40	Direct limits for scalar field dark matter from a gravitational-wave detector. Nature, 2021, 600, 424-428.	13.7	43
41	Aspects of the suspension system for GEO 600. Review of Scientific Instruments, 1998, 69, 3055-3061.	0.6	41
42	Search for gravitational-wave bursts in LIGO's third science run. Classical and Quantum Gravity, 2006, 23, S29-S39.	1.5	40
43	Environmental noise in advanced LIGO detectors. Classical and Quantum Gravity, 2021, 38, 145001.	1.5	38
44	Invited Article: CO2 laser production of fused silica fibers for use in interferometric gravitational wave detector mirror suspensions. Review of Scientific Instruments, 2011, 82, 011301.	0.6	37
45	Dual recycling for GEO 600. Classical and Quantum Gravity, 2004, 21, S473-S480.	1.5	35
46	Finite element modelling of the mechanical loss of silica suspension fibres for advanced gravitational wave detectors. Classical and Quantum Gravity, 2009, 26, 215012.	1.5	32
47	Experimental test of higher-order Laguerreâ€“Gauss modes in the 10 m Glasgow prototype interferometer. Classical and Quantum Gravity, 2013, 30, 035004.	1.5	29
48	Design of a speed meter interferometer proof-of-principle experiment. Classical and Quantum Gravity, 2014, 31, 215009.	1.5	29
49	Charge measurement and mitigation for the main test masses of the GEO 600 gravitational wave observatory. Classical and Quantum Gravity, 2007, 24, 6379-6391.	1.5	28
50	Mode-cleaning and injection optics of the gravitational-wave detector GEO600. Review of Scientific Instruments, 2003, 74, 3787-3795.	0.6	27
51	The status of GEO 600. Classical and Quantum Gravity, 2005, 22, S193-S198.	1.5	27
52	Demonstration and comparison of tuned and detuned signal recycling in a large-scale gravitational wave detector. Classical and Quantum Gravity, 2007, 24, 1513-1523.	1.5	27
53	Damping and tuning of the fibre violin modes in monolithic silica suspensions. Classical and Quantum Gravity, 2004, 21, S923-S933.	1.5	26
54	The AEI 10 m prototype interferometer. Classical and Quantum Gravity, 2010, 27, 084023.	1.5	25

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55	Squeezed light for the interferometric detection of high-frequency gravitational waves. Classical and Quantum Gravity, 2004, 21, S1045-S1051.	1.5	24
56	First Demonstration of Electrostatic Damping of Parametric Instability at Advanced LIGO. Physical Review Letters, 2017, 118, 151102.	2.9	24
57	The modecleaner system and suspension aspects of GEO 600. Classical and Quantum Gravity, 2002, 19, 1835-1842.	1.5	21
58	Wave-front distortion in laser-interferometric gravitational-wave detectors. Physical Review D, 1991, 43, 3117-3130.	1.6	20
59	Optimal time-domain combination of the two calibrated output quadratures of GEO 600. Classical and Quantum Gravity, 2005, 22, 4253-4261.	1.5	20
60	Linear projection of technical noise for interferometric gravitational-wave detectors. Classical and Quantum Gravity, 2006, 23, 527-537.	1.5	20
61	AIGO: a southern hemisphere detector for the worldwide array of ground-based interferometric gravitational wave detectors. Classical and Quantum Gravity, 2010, 27, 084005.	1.5	20
62	First joint observation by the underground gravitational-wave detector KAGRA with GEO 600. Progress of Theoretical and Experimental Physics, 2022, 2022, .	1.8	20
63	Light scattering described in the mode picture. Applied Optics, 1994, 33, 7547.	2.1	19
64	Test of an 18â€mâ€long suspended modecleaner cavity. Review of Scientific Instruments, 1996, 67, 2443-2448.	0.6	19
65	Dual recycling for GEO 600. Classical and Quantum Gravity, 2002, 19, 1547-1553.	1.5	19
66	Calibration of GEO 600 for the S1 science run. Classical and Quantum Gravity, 2003, 20, S885-S893.	1.5	19
67	Alignment control of GEO 600. Classical and Quantum Gravity, 2004, 21, S441-S449.	1.5	19
68	Damping and local control of mirror suspensions for laser interferometric gravitational wave detectors. Review of Scientific Instruments, 2012, 83, 044501.	0.6	19
69	Automatic beam alignment in the Garching 30-m prototype of a laser-interferometric gravitational wave detector. Optics Communications, 1999, 160, 321-334.	1.0	18
70	Seismic isolation and suspension systems for Advanced LIGO. , 2004, , .		18
71	Comparison of advanced gravitational-wave detectors. Physical Review D, 2002, 65, .	1.6	17
72	Silica research in Glasgow. Classical and Quantum Gravity, 2002, 19, 1655-1662.	1.5	17

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73	PQMon: a powerful veto for burst events. Classical and Quantum Gravity, 2003, 20, S895-S902.	1.5	17
74	Principles of calibrating the dual-recycled GEO 600. Review of Scientific Instruments, 2004, 75, 4702-4709.	0.6	17
75	Calibration of the power-recycled gravitational wave detector, GEO 600. Review of Scientific Instruments, 2003, 74, 4184-4190.	0.6	16
76	Local-oscillator noise coupling in balanced homodyne readout for advanced gravitational wave detectors. Physical Review D, 2015, 92, .	1.6	16
77	Quantum correlation measurements in interferometric gravitational-wave detectors. Physical Review A, 2017, 95, .	1.0	16
78	Modeling of multistage pendulums: Triple pendulum suspension for GEO 600. Review of Scientific Instruments, 2000, 71, 2546-2551.	0.6	15
79	Data acquisition and detector characterization of GEO600. Classical and Quantum Gravity, 2002, 19, 1399-1407.	1.5	15
80	Calibration of the dual-recycled GEO 600 detector for the S3 science run. Classical and Quantum Gravity, 2004, 21, S1711-S1722.	1.5	15
81	Commissioning, characterization and operation of the dual-recycled GEO 600. Classical and Quantum Gravity, 2004, 21, S1737-S1745.	1.5	15
82	Photon-pressure-induced test mass deformation in gravitational-wave detectors. Classical and Quantum Gravity, 2007, 24, 5681-5688.	1.5	15
83	Enhanced characteristics of fused silica fibers using laser polishing. Classical and Quantum Gravity, 2014, 31, 105006.	1.5	15
84	The automatic alignment system of GEO 600. Classical and Quantum Gravity, 2002, 19, 1849-1855.	1.5	14
85	A report on the status of the GEO 600 gravitational wave detector. Classical and Quantum Gravity, 2003, 20, S581-S591.	1.5	14
86	High power and ultra-low-noise photodetector for squeezed-light enhanced gravitational wave detectors. Optics Express, 2016, 24, 20107.	1.7	14
87	Seismic attenuation system for the AEI 10 meter Prototype. Classical and Quantum Gravity, 2012, 29, 245007.	1.5	13
88	Design of the 10 m AEI prototype facility for interferometry studies. Applied Physics B: Lasers and Optics, 2012, 106, 551-557.	1.1	13
89	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.	1.5	13
90	Huddle test measurement of a near Johnson noise limited geophone. Review of Scientific Instruments, 2017, 88, 115008.	0.6	13

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91	Performance of a 1200 m long suspended Fabryâ€“Perot cavity. Classical and Quantum Gravity, 2002, 19, 1389-1397.	1.5	12
92	An investigation of eddy-current damping of multi-stage pendulum suspensions for use in interferometric gravitational wave detectors. Review of Scientific Instruments, 2004, 75, 4516-4522.	0.6	12
93	Laser amplitude stabilization for advanced interferometric gravitational wave detectors. Classical and Quantum Gravity, 2005, 22, 4279-4283.	1.5	12
94	Apparatus for dimensional characterization of fused silica fibers for the suspensions of advanced gravitational wave detectors. Review of Scientific Instruments, 2011, 82, 044502.	0.6	12
95	Matrix heater in the gravitational wave observatory GEO 600. Optics Express, 2018, 26, 22687.	1.7	12
96	Signal based vetoes for the detection of gravitational waves from inspiralling compact binaries. Physical Review D, 2005, 72, .	1.6	11
97	Physical instrumental vetoes for gravitational-wave burst triggers. Physical Review D, 2007, 76, .	1.6	11
98	First results from the â€˜Violin-Modeâ€™ tests on an advanced LIGO suspension at MIT. Classical and Quantum Gravity, 2011, 28, 245001.	1.5	11
99	The output mode cleaner of GEO 600. Classical and Quantum Gravity, 2012, 29, 055009.	1.5	11
100	Suspension platform interferometer for the AEI 10 m prototype: concept, design and optical layout. Classical and Quantum Gravity, 2012, 29, 095024.	1.5	11
101	Improving the robustness of the advanced LIGO detectors to earthquakes. Classical and Quantum Gravity, 2020, 37, 235007.	1.5	11
102	Robust vetoes for gravitational-wave burst triggers using known instrumental couplings. Classical and Quantum Gravity, 2006, 23, 5825-5837.	1.5	10
103	Results from the first burst hardware injections performed on GEO 600. Classical and Quantum Gravity, 2005, 22, 3015-3028.	1.5	9
104	Coupling of lateral grating displacement to the output ports of a diffractive Fabryâ€“Perot cavity. Journal of Optics, 2009, 11, 085502.	1.5	9
105	Optical layout for a 10 m Fabryâ€“Perot Michelson interferometer with tunable stability. Classical and Quantum Gravity, 2012, 29, 075003.	1.5	9
106	Lowest observed surface and weld losses in fused silica fibres for gravitational wave detectors. Classical and Quantum Gravity, 2020, 37, 195019.	1.5	9
107	Experimental demonstration of the use of a Fabryâ€“Perot cavity as a mirror of variable reflectivity. Review of Scientific Instruments, 1994, 65, 799-802.	0.6	8
108	Experimental demonstration of a suspended diffractively coupled optical cavity. Optics Letters, 2009, 34, 3184.	1.7	8

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109	Thermal correction of astigmatism in the gravitational wave observatory GEOâ€‰600. Classical and Quantum Gravity, 2014, 31, 065008.	1.5	8
110	Novel sensing and control schemes for a three-mirror coupled cavity. Classical and Quantum Gravity, 2007, 24, 3825-3836.	1.5	7
111	Effects of static and dynamic higher-order optical modes in balanced homodyne readout for future gravitational waves detectors. Physical Review D, 2017, 95, .	1.6	7
112	Response of a Fabryâ€"Perot optical cavity to phase modulation sidebands for use in electro-optic control systems. Applied Optics, 1997, 36, 6802.	2.1	6
113	Sensing and control of the advanced LIGO optical configuration. , 2004, , .		6
114	Limitations of Underactuated Modal Damping for Multistage Vibration Isolation Systems. IEEE/ASME Transactions on Mechatronics, 2015, 20, 393-404.	3.7	6
115	Effects of transients in LIGO suspensions on searches for gravitational waves. Review of Scientific Instruments, 2017, 88, 124501.	0.6	6
116	Control and automatic alignment of the output mode cleaner of GEO 600. Journal of Physics: Conference Series, 2010, 228, 012014.	0.3	5
117	Commissioning of the tuned DC readout at GEO 600. Journal of Physics: Conference Series, 2010, 228, 012013.	0.3	5
118	Quantum noise cancellation in asymmetric speed metres with balanced homodyne readout. New Journal of Physics, 2018, 20, 103040.	1.2	5
119	Automatic beam alignment for the mode-cleaner cavities of GEO 600. Applied Optics, 2004, 43, 1938.	2.1	4
120	Translational, rotational, and vibrational coupling into phase in diffractively coupled optical cavities. Optics Letters, 2011, 36, 2746.	1.7	4
121	A new method for the absolute amplitude calibration of GEOâ€‰600. Classical and Quantum Gravity, 2012, 29, 065001.	1.5	4
122	Status of the AEI 10 m prototype. Classical and Quantum Gravity, 2012, 29, 145005.	1.5	4
123	A source of illumination for low-noise â€˜Violin-Modeâ€™ shadow sensors, intended for use in interferometric gravitational wave detectors. Measurement Science and Technology, 2014, 25, 125111.	1.4	4
124	Demonstration of an optical spring in the 100 g mirror regime. Classical and Quantum Gravity, 2016, 33, 075007.	1.5	4
125	Passive-performance, analysis, and upgrades of a 1-ton seismic attenuation system. Classical and Quantum Gravity, 2017, 34, 065002.	1.5	4
126	Towards dual recycling with the aid of time and frequency domain simulations. Classical and Quantum Gravity, 2004, 21, S991-S998.	1.5	3

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127	Optical modulation techniques for length sensing and control of optical cavities. Applied Optics, 2007, 46, 7739.	2.1	3
128	Measurement and simulation of laser power noise in GEO 600. Classical and Quantum Gravity, 2008, 25, 035003.	1.5	3
129	Large interferometers for small displacements: a technological view of gravitational wave detection. , 2009, , .		3
130	Violin mode amplitude glitch monitor for the presence of excess noise on the monolithic silica suspensions of GEO 600. Classical and Quantum Gravity, 2010, 27, 155017.	1.5	3
131	Experimental demonstration of coupled optical springs. Classical and Quantum Gravity, 2017, 34, 035020.	1.5	3
132	Local active isolation of the AEI-SAS for the AEI 10 m prototype facility. Classical and Quantum Gravity, 2020, 37, 115004.	1.5	3
133	Point Absorber Limits to Future Gravitational-Wave Detectors. Physical Review Letters, 2021, 127, 241102.	2.9	3
134	Response of a Fabryâ€“Perot optical cavity to phase modulation sidebands for use in electro-optic control systems: errata. Applied Optics, 1998, 37, 4936.	2.1	2
135	The status of GEO600. AIP Conference Proceedings, 2000, , .	0.3	2
136	Narrow-band phase noise measurement around an electro-optically applied, RF phase modulation of a laser field. Journal of Optics, 2001, 3, 196-199.	1.5	2
137	Status of the GEO600 gravitational wave detector. , 2003, , .		2
138	The status of GEO 600. , 2004, , .		2
139	Feedforward correction of mirror misalignment fluctuations for the GEO 600 gravitational wave detector. Classical and Quantum Gravity, 2005, 22, 3093-3104.	1.5	2
140	Control sideband generation for dual-recycled laser interferometric gravitational wave detectors. Classical and Quantum Gravity, 2006, 23, 5661-5666.	1.5	2
141	Designs of the frequency reference cavity for the AEI 10 m Prototype interferometer. Journal of Physics: Conference Series, 2010, 228, 012028.	0.3	2
142	Towards a Suspension Platform Interferometer for the AEI 10 m Prototype Interferometer. Journal of Physics: Conference Series, 2010, 228, 012027.	0.3	2
143	Progress and challenges in advanced ground-based gravitational-wave detectors. General Relativity and Gravitation, 2014, 46, 1.	0.7	2
144	Concepts and research for future detectors. General Relativity and Gravitation, 2014, 46, 1.	0.7	2

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145	Comparison of different sloshing speedmeters. Classical and Quantum Gravity, 2020, 37, 085022.	1.5	2
146	Prospects for observing and localizing gravitational-wave transients with Advanced LIGO, Advanced Virgo and KAGRA. , 2018, 21, 1.		2
147	Suspension design for GEO 600â€"an update. AIP Conference Proceedings, 2000, , .	0.3	1
148	Techniques in the optimization of length sensing and control systems for a three-mirror coupled cavity. Classical and Quantum Gravity, 2008, 25, 235003.	1.5	1
149	Lateral input-optic displacement in a diffractive Fabry-Perot cavity. Journal of Physics: Conference Series, 2010, 228, 012022.	0.3	1
150	Experimental demonstration of a suspended, diffractively coupled Fabryâ€"Perot cavity. Classical and Quantum Gravity, 2010, 27, 084029.	1.5	1
151	The AEI 10 m Prototype Interferometer frequency control using the reference cavity and its angular control. Journal of Physics: Conference Series, 2012, 363, 012012.	0.3	1
152	Costâ€"benefit analysis for commissioning decisions in GEO 600. Classical and Quantum Gravity, 2015, 32, 135014.	1.5	1
153	Modulated Differential Wavefront Sensing: Alignment Scheme for Beams with Large Higher Order Mode Content. Galaxies, 2020, 8, 81.	1.1	1
154	Experimental investigation of the limitations of polarisation optics for future gravitational wave detectors based on the polarisation Sagnac speedmeter. Classical and Quantum Gravity, 2021, 38, 195004.	1.5	1
155	Toward gravitational wave detection. AIP Conference Proceedings, 2000, , .	0.3	0
156	Detector characterization in GEO 600. Classical and Quantum Gravity, 2003, 20, S731-S739.	1.5	0
157	New design of electrostatic mirror actuators for application in high-precision interferometry. Classical and Quantum Gravity, 2015, 32, 175021.	1.5	0
158	Upper limit to the transverse to longitudinal motion coupling of a waveguide mirror. Classical and Quantum Gravity, 2015, 32, 175005.	1.5	0
159	Demonstration of a switchable damping system to allow low-noise operation of high- Q low-mass suspension systems. Physical Review D, 2017, 96, .	1.6	0