Nathan R Newbury

List of Publications by Year
in descending order

127 papers	6,554 citations	109321 35 h-index	102487 66 g-index
129 all docs	129 docs citations	129 times ranked	3616 citing authors

#	Article	IF	Citations
1	Dual-comb spectroscopy. Optica, 2016, 3, 414.	9.3	1,158
2	Coherent Multiheterodyne Spectroscopy Using Stabilized Optical Frequency Combs. Physical Review Letters, 2008, 100, 013902.	7.8	658
3	An optical-frequency synthesizer using integrated photonics. Nature, 2018, 557, 81-85.	27.8	550
4	Searching for applications with a fine-tooth comb. Nature Photonics, 2011, 5, 186-188.	31.4	385
5	Phase-locked, erbium-fiber-laser-based frequency comb in the near infrared. Optics Letters, 2004, 29, 250.	3.3	362
6	Low-noise fiber-laser frequency combs (Invited). Journal of the Optical Society of America B: Optical Physics, 2007, 24, 1756.	2.1	252
7	High-coherence mid-infrared dual-comb spectroscopy spanning 2.6 to 5.2â€‰Î¼m. Nature Photonics, 2018, 12, 202-208.	31.4	250
8	Optical two-way time and frequency transfer over free space. Nature Photonics, 2013, 7, 434-438.	31.4	233
9	Sensitivity of coherent dual-comb spectroscopy. Optics Express, 2010, 18, 7929.	3.4	188
10	Regional trace-gas source attribution using a field-deployed dual frequency comb spectrometer. Optica, 2018, 5, 320.	9.3	129
11	Sub-micron absolute distance measurements in sub-millisecond times with dual free-running femtosecond Er fiber-lasers. Optics Express, 2011, 19, 18501.	3.4	123
12	Gas-phase broadband spectroscopy using active sources: progress, status, and applications [Invited]. Journal of the Optical Society of America B: Optical Physics, 2017, 34, 104.	2.1	105
13	Comb-calibrated frequency-modulated continuous-wave ladar for absolute distance measurements. Optics Letters, 2013, 38, 2026.	3.3	102
14	High-performance, vibration-immune, fiber-laser frequency comb. Optics Letters, 2009, 34, 638.	3.3	98
15	Ultrabroadband Supercontinuum Generation and Frequency-Comb Stabilization Using On-Chip Waveguides with Both Cubic and Quadratic Nonlinearities. Physical Review Applied, 2017, 8, .	3.8	90
16	Synchronization of Distant Optical Clocks at the Femtosecond Level. Physical Review X, 2016, 6, .	8.9	85
17	Optical Frequency Comb Generation based on Erbium Fiber Lasers. Nanophotonics, 2016, 5, 196-213.	6.0	81
18	Open-path dual-comb spectroscopy to an airborne retroreflector. Optica, 2017, 4, 724.	9.3	81

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19	Self-referenced frequency combs using high-efficiency silicon-nitride waveguides. Optics Letters, 2017, 42, 2314.	3.3	80
20	Accurate frequency referencing for fieldable dual-comb spectroscopy. Optics Express, 2016, 24, 30495.	3.4	77
21	Time-domain spectroscopy of molecular free-induction decay in the infrared. Optics Letters, 2010, 35, 1395.	3.3	76
22	SAGE: A proposal for a space atomic gravity explorer. European Physical Journal D, 2019, 73, 1.	1.3	75
23	Toward a low-jitter 10 GHz pulsed source with an optical frequency comb generator. Optics Express, 2008, 16, 8498.	3.4	67
24	Mid-infrared dual-comb spectroscopy of volatile organic compounds across long open-air paths. Optica, 2019, 6, 165.	9.3	67
25	Synchronization of clocks through 12â€‰km of strongly turbulent air over a city. Applied Physics Letters, 2016, 109, .	3.3	61
26	Femtosecond time synchronization of optical clocks off of a flying quadcopter. Nature Communications, 2019, 10, 1819.	12.8	59
27	Intercomparison of open-path trace gas measurements with two dual-frequency-comb spectrometers. Atmospheric Measurement Techniques, 2017, 10, 3295-3311.	3.1	57
28	Comparing Optical Oscillators across the Air to Milliradians in Phase and <mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"><mml:mrow><mml:mn>1</mml:mn><mml:msup><mml:mn>0</mml:mn><mml:mrow><mml:mo>a</mml:mo></mml:mrow><mml:mo></mml:mo><mml:n in Frequency. Physical Review Letters, 2018, 120, 050801.	7.8	53
29	Phase, timing, and amplitude noise on supercontinua generated in microstructure fiber. Optics Express, 2004, 12, 2166.	3.4	52
30	Microwave generation with low residual phase noise from a femtosecond fiber laser with an intracavity electro-optic modulator. Optics Express, 2011, 19, 24387.	3.4	52
31	Tight real-time synchronization of a microwave clock to an optical clock across a turbulent air path. Optica, 2016, 3, 441.	9.3	49
32	Dual-comb photoacoustic spectroscopy. Nature Communications, 2020, 11, 3152.	12.8	41
33	Multifunctional integrated photonics in the mid-infrared with suspended AlGaAs on silicon. Optica, 2019, 6, 1246.	9.3	41
34	Broadband Phase Spectroscopy over Turbulent Air Paths. Physical Review Letters, 2015, 115, 103901.	7.8	40
35	Characterization of an actively linearized ultrabroadband chirped laser with a fiber-laser optical frequency comb. Optics Letters, 2011, 36, 1152.	3.3	35
36	Coherent laser ranging for precision imaging through flames. Optica, 2018, 5, 988.	9.3	34

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37	Broadband phase-coherent optical frequency synthesis with actively linked Ti:sapphire and Cr:forsterite femtosecond lasers. Optics Letters, 2004, 29, 403.	3.3	33
38	Speckle phase noise in coherent laser ranging: fundamental precision limitations. Optics Letters, 2014, 39, 4776.	3.3	33
39	Precise multispecies agricultural gas flux determined using broadband open-path dual-comb spectroscopy. Science Advances, 2021, 7, .	10.3	32
40	Room-temperature-deposited dielectrics and superconductors for integrated photonics. Optics Express, 2017, 25, 10322.	3.4	31
41	Compact mid-infrared dual-comb spectrometer for outdoor spectroscopy. Optics Express, 2020, 28, 14740.	3.4	31
42	Femtosecond optical two-way time-frequency transfer in the presence of motion. Physical Review A, 2019, 99, .	2.5	29
43	Wake mode sidebands and instability in mode-locked lasers with slow saturable absorbers. Optics Letters, 2017, 42, 2362.	3.3	29
44	Mid-infrared dual frequency comb spectroscopy for combustion analysis from 2.8 to 5â€Âµm. Proceedings of the Combustion Institute, 2021, 38, 1627-1635.	3.9	28
45	Time synchronization over a free-space optical communication channel. Optica, 2018, 5, 1542.	9.3	28
46	Optical time-frequency transfer across a free-space, three-node network. APL Photonics, 2020, 5, .	5.7	26
47	Frequency characterization of a swept- and fixed-wavelength external-cavity quantum cascade laser by use of a frequency comb. Optics Express, 2012, 20, 12432.	3.4	25
48	Estimating vehicle carbon dioxide emissions from Boulder, Colorado, using horizontal path-integrated column measurements. Atmospheric Chemistry and Physics, 2019, 19, 4177-4192.	4.9	25
49	Wavelength references for interferometry in air. Applied Optics, 2005, 44, 7793.	2.1	24
50	Absolute spectroscopy of N_2O near 45 Î¼m with a comb-calibrated, frequency-swept quantum cascade laser spectrometer. Optics Express, 2013, 21, 1020.	3.4	24
51	Fully self-referenced frequency comb consuming 5 watts of electrical power. OSA Continuum, 2018, 1, 274.	1.8	21
52	Openâ€Path Dualâ€Comb Spectroscopy for Multispecies Trace Gas Detection in the 4.5â€“5ÂÂµm Spectral Region. Laser and Photonics Reviews, 2021, 15, 2000583.	8.7	19
53	Speed-dependent Voigt lineshape parameter database from dual frequency comb measurements up to 1305â€ K. Part I: Pure H2O absorption, 6801â€“7188Âcmâ^'1. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 210, 240-250.	2.3	18
54	Dual-comb spectroscopy with tailored spectral broadening in Si₃N₄ nanophotonics. Optics Express, 2019, 27, 11869.	3.4	17

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55	Optical atomic clock comparison through turbulent air. Physical Review Research, 2020, 2, .	3.6	16
56	Broadband, high-resolution investigation of advanced absorption line shapes at high temperature. Physical Review A, 2017, 96, .	2.5	13
57	Time-domain stabilization of carrier-envelope phase in femtosecond light pulses. Optics Express, 2014, 22, 11788.	3.4	12
58	Speed-dependent Voigt lineshape parameter database from dual frequency comb measurements at temperatures up to 1305â€¯K. Part II: Argon-broadened H2O absorption, 6801â€“7188Âcmâ¯1. Journal of Quantitative Spectroscopy and Radiative Transfer, 2018, 217, 189-212.	2.3	12
59	Real-time liquid-phase organic reaction monitoring with mid-infrared attenuated total reflectance dual frequency comb spectroscopy. Journal of Molecular Spectroscopy, 2019, 356, 39-45.	1.2	11
60	Intercomparison of Open-Path Trace Gas Measurements with Two Dual Frequency Comb Spectrometers. , 2017, 10, 3295-3311.		11
61	Optical timing jitter due to atmospheric turbulence: comparison of frequency comb measurements to predictions from micrometeorological sensors. Optics Express, 2020, 28, 26661.	3.4	8
62	Frequency and Timing Distribution using Optical Methods. , 2015, , .		7
63	Towards an Integrated-Photonics Optical-Frequency Synthesizer With <1 Hz Residual Frequency Noise. , 2017, , .		7
64	Scaling up Frequency-Comb-Based Optical Time Transfer to Long Terrestrial Distances. Physical Review Applied, 2021, 15, .	3.8	6
65	Measurement of gravitational time delay using drag-free spacecraft and an optical clock. Proceedings of the International Astronomical Union, 2009, 5, 414-419.	0.0	5
66	Obtaining more energetic modelocked pulses from a SESAM-based fiber laser. Optics Express, 2020, 28, 20345.	3.4	5
67	Synchronization of optical oscillators over a free-space link at the femtosecond level. , 2015, , .		4
68	Optical system design for femtosecond-level synchronization of clocks. Proceedings of SPIE, 2016, , .	0.8	2
69	Optical two-way time synchronization at the femtosecond level over a 4-km free space link. , 2015, , .		2
70	Spectroscopy with a coherent dual frequency comb interferometer at 3.4 Î¼m. Proceedings of SPIE, 2010, , .	0.8	1
71	Dual comb-based characterization of rapidly tuned lasers. , 2011, , .		1
72	Photonic advances in time and frequency metrology: Frequency combs. , 2014, , .		1

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73	Mid-Infrared Optical Frequency Combs based on Difference Frequency Generation for Dual-Comb Spectroscopy. , 2015, , .		1
74	Fiber Laser Based Dual-Comb Spectroscopy with Dynamically Controlled Spectral Resolution. , 2021, , .		1
75	Dual-comb-based characterization of rapidly tuned lasers. , 2011, , .		1
76	Micrometeorological flux measurements using spatially- scanned open-path dual-comb spectroscopy. , 2020, , .		1
77	Measuring optical waveforms with fiber frequency combs. , 2009, , .		0
78	Precision spectroscopy with frequency combs at 3.4 Î¼m. , 2011, , .		0
79	A method for comparing remote optical clocks over a free-space optical link. , 2012, , .		0
80	High-performance free-space photonic links for frequency/time transfer. , 2013, , .		0
81	Precision metrology with coherent dual frequency combs. , 2013, , .		0
82	Optical Combs for Sensor Applications. , 2014, , .		0
83	Femtosecond-Level Synchronization Over Kilometer-Scale Turbulent Air Paths. , 2015, , .		0
84	Free-space time and frequency transfer. , 2015, , .		0
85	Combustion Diagnostics and Chemical Sensing with Frequency Comb Lasers. , 2016, , .		0
86	Frequency combs for robust optical timekeeping. , 2016, , .		0
87	Enhanced link availability for free space optical time-frequency transfer using adaptive optic terminals. , 2016, , .		0
88	Full stabilization and control of an integrated photonics optical frequency synthesizer. , 2017, , .		0
89	Doppler-tolerant synchronization of clocks over free space at the femtosecond level. , 2017, , .		0
90	Novel Uses of Stabilized Optical Frequency Combs: From Regional Methane Leak Source Identification to Diagnostics for Extreme Combustion. , 2018, , .		0

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91	Time Synchronization Over a Free-Space Optical Communication Channel. , 2018, , .		0
92	Optical Two-Way Time-Frequency Transfer across a Three-Node Free-Space Network. , 2020, , .		0
93	Feedlot-produced ammonia emissions quantified using dual-comb spectroscopy. , 2021, , .		0
94	Frequency comb spectroscopy with coherent optical sampling. , 2009, , .		0
95	Infrared Time Domain Spectroscopy with Synchronized Frequency Combs. , 2010, , .		0
96	Performance of a Coherent Dual Frequency Comb Spectrometer. , 2011, , .		0
97	Near-Infrared Dual-Comb Spectroscopy of Gases. , 2014, , .		0
98	Dual-Comb Spectroscopy with Difference-Frequency-Generated Mid-Infrared Frequency Combs. , 2015, , .		0
99	Real-time Phase Correction for High-SNR Fieldable Dual-Comb Spectroscopy. , 2016, , .		0
100	Dual Comb Outdoor Spectroscopy for Complex Molecular Response Retrieval. , 2016, , .		0
101	Remote Synchronization of a Microwave Clock to an Optical Clock at the Femtosecond Level. , 2016, , .		0
102	On-chip waveguides for self-referencing low-power and high-repetition-rate laser frequency combs. , 2017, , .		0
103	Optimizing the Power Efficiency of a SESAM Fiber Comb Laser. , 2017, , .		0
104	Dual Frequency Comb Spectroscopy for Trace Gas Monitoring Over Open-Air Paths. , 2017, , .		0
105	Operating an optical frequency comb using a 5-W handheld USB charger. , 2018, , .		0
106	Compact Fiber Frequency Combs for Precision Measurement Outside the Metrology Lab. , 2018, , .		0
107	Open Path MIR DCS for Chemical Detection. , 2018, , .		0
108	Open-Path Dual Frequency Comb Spectroscopy Applied to Source Quantification. , 2018, , .		0

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109	Progress towards a three-node free-space clock network. , 2018, , .		0
110	Femtosecond Synchronization through Turbulent Air Off a Quadcopter. , 2018, , .		0
111	A Compact Mid-infrared Dual-Comb Spectrometer with 1000 nm of Spectral Coverage. , 2019, , .		0
112	Imaging through Flames with Coherent Laser Ranging. , 2019, , .		0
113	Optical two-way time transfer with enhanced SNR for longer distance free-space links. , 2019, , .		0
114	Measurement of acetone emission using a compact midinfrared dual-comb spectrometer. , 2019, , .		0
115	Precision Optical Time-Frequency Transfer Over Free Space Links With Laser Frequency Combs. , 2019, , .		0
116	Preliminary Measurements for Three-Node Optical Two-Way Time and Frequency Transfer. , 2019, , .		0
117	Mid-infrared Dual-comb Spectroscopy of Volatile Organic Compounds Across Long Open-air Paths. , 2019, , .		0
118	Mid-Infrared Dual-Comb Spectroscopy of Biomass Pyrolysis. , 2020, , .		0
119	Atmospheric monitoring in the 4.5 to 4.9 pm region using open-path dual-comb spectroscopy. , 2020, , .		0
120	Retrieval of the Refractive Index Structure Parameter from Frequency Comb Timing Jitter Data. , 2020, , .		0
121	Comparison of Livestock Emissions Measurements Using Open-Path Dual-Comb Spectroscopy and Closed-Path Cavity Ring-Down Spectroscopy. , 2020, , .		0
122	Agri-combs: Open-path dual-comb spectroscopy of livestock emissions. , 2020, , .		0
123	Beef cattle feedlot emissions measured using open-path dual-comb spectroscopy. , 2020, , .		0
124	Ultra-Precise Time and Frequency Transfer through Turbulent Air. , 2020, , .		0
125	Impact of Atmospheric Turbulence on Frequency Comb Optical Timing Jitter. , 2020, , .		0
126	Broadband dual-comb spectroscopy for open-path field measurement of H216O and H218O. , 2021, , .		0

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127	10.1063/5.0010704.1. , 2020, , .		0