

Nathan R Newbury

List of Publications by Year in descending order

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133
papers

6,960
citations

92079

37
h-index

83414

72
g-index

138
all docs

138
docs citations

138
times ranked

4993
citing authors

#	ARTICLE	IF	CITATIONS
1	Dual-comb spectroscopy. <i>Optica</i> , 2016, 3, 414.	9.3	1,214
2	Coherent Multiheterodyne Spectroscopy Using Stabilized Optical Frequency Combs. <i>Physical Review Letters</i> , 2008, 100, 013902.	8.0	665
3	An optical-frequency synthesizer using integrated photonics. <i>Nature</i> , 2018, 557, 81-85.	36.2	577
4	Searching for applications with a fine-tooth comb. <i>Nature Photonics</i> , 2011, 5, 186-188.	23.1	397
5	Phase-locked, erbium-fiber-laser-based frequency comb in the near infrared. <i>Optics Letters</i> , 2004, 29, 250.	3.3	364
6	High-coherence mid-infrared dual-comb spectroscopy spanning 2.6 to 5.2 μm . <i>Nature Photonics</i> , 2018, 12, 202-208.	23.1	263
7	Low-noise fiber-laser frequency combs (Invited). <i>Journal of the Optical Society of America B: Optical Physics</i> , 2007, 24, 1756.	2.0	256
8	Optical two-way time and frequency transfer over free space. <i>Nature Photonics</i> , 2013, 7, 434-438.	23.1	240
9	Sensitivity of coherent dual-comb spectroscopy. <i>Optics Express</i> , 2010, 18, 7929.	3.4	199
10	Regional trace-gas source attribution using a field-deployed dual frequency comb spectrometer. <i>Optica</i> , 2018, 5, 320.	9.3	137
11	Sub-micron absolute distance measurements in sub-millisecond times with dual free-running femtosecond Er fiber-lasers. <i>Optics Express</i> , 2011, 19, 18501.	3.4	128
12	Gas-phase broadband spectroscopy using active sources: progress, status, and applications [Invited]. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2017, 34, 104.	2.0	110
13	Comb-calibrated frequency-modulated continuous-wave lidar for absolute distance measurements. <i>Optics Letters</i> , 2013, 38, 2026.	3.3	106
14	High-performance, vibration-immune, fiber-laser frequency comb. <i>Optics Letters</i> , 2009, 34, 638.	3.3	100
15	Ultrabroadband Supercontinuum Generation and Frequency-Comb Stabilization Using On-Chip Waveguides with Both Cubic and Quadratic Nonlinearities. <i>Physical Review Applied</i> , 2017, 8, .	3.8	96
16	Synchronization of Distant Optical Clocks at the Femtosecond Level. <i>Physical Review X</i> , 2016, 6, .	9.1	91
17	Open-path dual-comb spectroscopy to an airborne retroreflector. <i>Optica</i> , 2017, 4, 724.	9.3	87
18	Optical Frequency Comb Generation based on Erbium Fiber Lasers. <i>Nanophotonics</i> , 2016, 5, 196-213.	6.3	85

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19	Self-referenced frequency combs using high-efficiency silicon-nitride waveguides. Optics Letters, 2017, 42, 2314.	3.3	84
20	Accurate frequency referencing for fieldable dual-comb spectroscopy. Optics Express, 2016, 24, 30495.	3.4	81
21	SAGE: A proposal for a space atomic gravity explorer. European Physical Journal D, 2019, 73, 1.	1.3	81
22	Time-domain spectroscopy of molecular free-induction decay in the infrared. Optics Letters, 2010, 35, 1395.	3.3	78
23	Mid-infrared dual-comb spectroscopy of volatile organic compounds across long open-air paths. Optica, 2019, 6, 165.	9.3	71
24	Toward a low-jitter 10 GHz pulsed source with an optical frequency comb generator. Optics Express, 2008, 16, 8498.	3.4	69
25	Synchronization of clocks through 12 km of strongly turbulent air over a city. Applied Physics Letters, 2016, 109, .	3.2	63
26	Femtosecond time synchronization of optical clocks off of a flying quadcopter. Nature Communications, 2019, 10, 1819.	13.2	63
27	Intercomparison of open-path trace gas measurements with two dual-frequency-comb spectrometers. Atmospheric Measurement Techniques, 2017, 10, 3295-3311.	3.1	60
28	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	55
29	Comparing Optical Oscillators across the Air to Milliradians in Phase and $\frac{1}{2\pi} \frac{d\phi}{dt}$ in Frequency. Physical Review Letters, 2018, 120, 050801.	8.0	55
30	Phase, timing, and amplitude noise on supercontinua generated in microstructure fiber. Optics Express, 2004, 12, 2166.	3.4	52
31	The time-programmable frequency comb and its use in quantum-limited ranging. Nature, 2022, 610, 667-673.	36.2	51
32	Tight real-time synchronization of a microwave clock to an optical clock across a turbulent air path. Optica, 2016, 3, 441.	9.3	50
33	Multifunctional integrated photonics in the mid-infrared with suspended AlGaAs on silicon. Optica, 2019, 6, 1246.	9.3	46
34	Dual-comb photoacoustic spectroscopy. Nature Communications, 2020, 11, 3152.	13.2	45
35	Coherent laser ranging for precision imaging through flames. Optica, 2018, 5, 988.	9.3	43
36	Broadband Phase Spectroscopy over Turbulent Air Paths. Physical Review Letters, 2015, 115, 103901.	8.0	40

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37	Precise multispecies agricultural gas flux determined using broadband open-path dual-comb spectroscopy. <i>Science Advances</i> , 2021, 7, .	10.9	39
38	Characterization of an actively linearized ultrabroadband chirped laser with a fiber-laser optical frequency comb. <i>Optics Letters</i> , 2011, 36, 1152.	3.3	37
39	Speckle phase noise in coherent laser ranging: fundamental precision limitations. <i>Optics Letters</i> , 2014, 39, 4776.	3.3	34
40	Broadband phase-coherent optical frequency synthesis with actively linked Ti:sapphire and Cr:forsterite femtosecond lasers. <i>Optics Letters</i> , 2004, 29, 403.	3.3	33
41	Room-temperature-deposited dielectrics and superconductors for integrated photonics. <i>Optics Express</i> , 2017, 25, 10322.	3.4	33
42	Compact mid-infrared dual-comb spectrometer for outdoor spectroscopy. <i>Optics Express</i> , 2020, 28, 14740.	3.4	33
43	Mid-infrared dual frequency comb spectroscopy for combustion analysis from 2.8 to 5 μm . <i>Proceedings of the Combustion Institute</i> , 2021, 38, 1627-1635.	4.5	31
44	Femtosecond optical two-way time-frequency transfer in the presence of motion. <i>Physical Review A</i> , 2019, 99, .	2.5	30
45	Time synchronization over a free-space optical communication channel. <i>Optica</i> , 2018, 5, 1542.	9.3	30
46	Optical time-frequency transfer across a free-space, three-node network. <i>APL Photonics</i> , 2020, 5, .	5.5	29
47	Wake mode sidebands and instability in mode-locked lasers with slow saturable absorbers. <i>Optics Letters</i> , 2017, 42, 2362.	3.3	29
48	Frequency characterization of a swept- and fixed-wavelength external-cavity quantum cascade laser by use of a frequency comb. <i>Optics Express</i> , 2012, 20, 12432.	3.4	26
49	Estimating vehicle carbon dioxide emissions from Boulder, Colorado, using horizontal path-integrated column measurements. <i>Atmospheric Chemistry and Physics</i> , 2019, 19, 4177-4192.	5.0	26
50	Wavelength references for interferometry in air. <i>Applied Optics</i> , 2005, 44, 7793.	2.1	25
51	Fundamental physics with a state-of-the-art optical clock in space. <i>Quantum Science and Technology</i> , 2022, 7, 044002.	5.9	25
52	Absolute spectroscopy of N ₂ O near 45 μm with a comb-calibrated, frequency-swept quantum cascade laser spectrometer. <i>Optics Express</i> , 2013, 21, 1020.	3.4	24
53	Open-Path Dual-Comb Spectroscopy for Multispecies Trace Gas Detection in the 4.5–5 μm Spectral Region. <i>Laser and Photonics Reviews</i> , 2021, 15, 2000583.	10.1	23
54	Speed-dependent Voigt lineshape parameter database from dual frequency comb measurements up to 1305 K. Part I: Pure H ₂ O absorption, 6801–7188 cm^{-1} . <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2018, 210, 240-250.		21

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55	Fully self-referenced frequency comb consuming 5 watts of electrical power. <i>OSA Continuum</i> , 2018, 1, 274.	1.8	21
56	Quantum-limited optical time transfer for future geosynchronous links. <i>Nature</i> , 2023, 618, 721-726.	36.2	20
57	Dual-comb spectroscopy with tailored spectral broadening in Si ₃ N ₄ nanophotonics. <i>Optics Express</i> , 2019, 27, 11869.	3.4	18
58	Optical atomic clock comparison through turbulent air. <i>Physical Review Research</i> , 2020, 2, .	3.6	17
59	Broadband, high-resolution investigation of advanced absorption line shapes at high temperature. <i>Physical Review A</i> , 2017, 96, .	2.5	15
60	Speed-dependent Voigt lineshape parameter database from dual frequency comb measurements at temperatures up to 1305 K. Part II: Argon-broadened H ₂ O absorption, 6801-7188 cm ⁻¹ . <i>Journal of Quantitative Spectroscopy and Radiative Transfer</i> , 2018, 217, 189-212.	2.4	15
61	Time-domain stabilization of carrier-envelope phase in femtosecond light pulses. <i>Optics Express</i> , 2014, 22, 11788.	3.4	12
62	Optical atomic clock aboard an Earth-orbiting space station (OACESS): enhancing searches for physics beyond the standard model in space. <i>Quantum Science and Technology</i> , 2023, 8, 014003.	5.9	12
63	Real-time liquid-phase organic reaction monitoring with mid-infrared attenuated total reflectance dual frequency comb spectroscopy. <i>Journal of Molecular Spectroscopy</i> , 2019, 356, 39-45.	1.3	11
64	Optical timing jitter due to atmospheric turbulence: comparison of frequency comb measurements to predictions from micrometeorological sensors. <i>Optics Express</i> , 2020, 28, 26661.	3.4	10
65	Optical sampling analog-to-digital converter based on two asynchronous mode-locked fiber lasers. <i>Journal of the Optical Society of America B: Optical Physics</i> , 2017, 34, 824.	2.0	9
66	Frequency and Timing Distribution using Optical Methods. , 2015, , .		8
67	Scaling up Frequency-Comb-Based Optical Time Transfer to Long Terrestrial Distances. <i>Physical Review Applied</i> , 2021, 15, .	3.8	8
68	Towards an Integrated-Photonics Optical-Frequency Synthesizer With < 1 Hz Residual Frequency Noise. , 2017, , .		7
69	Measurement of gravitational time delay using drag-free spacecraft and an optical clock. <i>Proceedings of the International Astronomical Union</i> , 2009, 5, 414-419.	0.0	5
70	Obtaining more energetic modelocked pulses from a SESAM-based fiber laser. <i>Optics Express</i> , 2020, 28, 20345.	3.4	5
71	Synchronization of optical oscillators over a free-space link at the femtosecond level. , 2015, , .		4
72	Optical system design for femtosecond-level synchronization of clocks. <i>Proceedings of SPIE</i> , 2016, , .	1.0	2

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73	Optical two-way time synchronization at the femtosecond level over a 4-km free space link. , 2015, , .		2
74	Application of quantum-limited optical time transfer to space-based optical clock comparisons and coherent networks. APL Photonics, 2024, 9, .	5.5	2
75	Spectroscopy with a coherent dual frequency comb interferometer at 3.4 μ m. Proceedings of SPIE, 2010, , .	1.0	1
76	Dual comb-based characterization of rapidly tuned lasers. , 2011, , .		1
77	Photonic advances in time and frequency metrology: Frequency combs. , 2014, , .		1
78	Mid-Infrared Optical Frequency Combs based on Difference Frequency Generation for Dual-Comb Spectroscopy. , 2015, , .		1
79	Fiber Laser Based Dual-Comb Spectroscopy with Dynamically Controlled Spectral Resolution. , 2021, , .		1
80	Dual-comb-based characterization of rapidly tuned lasers. , 2011, , .		1
81	Dual Frequency Comb Spectroscopy for Trace Gas Monitoring Over Open-Air Paths. , 2017, , .		1
82	Open-Path Dual Frequency Comb Spectroscopy Applied to Source Quantification. , 2018, , .		1
83	Micrometeorological flux measurements using spatially- scanned open-path dual-comb spectroscopy. , 2020, , .		1
84	Discussion on "The alternating-current series motor." Journal of the Institution of Electrical Engineers, 1905, 35, 89-112.	0.0	0
85	Measuring optical waveforms with fiber frequency combs. , 2009, , .		0
86	Precision spectroscopy with frequency combs at 3.4 μ m. Proceedings of SPIE, 2011, , .	1.0	0
87	A method for comparing remote optical clocks over a free-space optical link. , 2012, , .		0
88	High-performance free-space photonic links for frequency/time transfer. , 2013, , .		0
89	Precision metrology with coherent dual frequency combs. , 2013, , .		0
90	Optical Combs for Sensor Applications. , 2014, , .		0

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91	Femtosecond-Level Synchronization Over Kilometer-Scale Turbulent Air Paths. , 2015, , .		0
92	Free-space time and frequency transfer. , 2015, , .		0
93	Combustion Diagnostics and Chemical Sensing with Frequency Comb Lasers. , 2016, , .		0
94	Frequency combs for robust optical timekeeping. , 2016, , .		0
95	Enhanced link availability for free space optical time-frequency transfer using adaptive optic terminals. Proceedings of SPIE, 2016, , .	1.0	0
96	Full stabilization and control of an integrated photonics optical frequency synthesizer. , 2017, , .		0
97	Doppler-tolerant synchronization of clocks over free space at the femtosecond level. , 2017, , .		0
98	Novel Uses of Stabilized Optical Frequency Combs: From Regional Methane Leak Source Identification to Diagnostics for Extreme Combustion. , 2018, , .		0
99	Time Synchronization Over a Free-Space Optical Communication Channel. , 2018, , .		0
100	Optical Two-Way Time-Frequency Transfer across a Three-Node Free-Space Network. , 2020, , .		0
101	Feedlot-produced ammonia emissions quantified using dual-comb spectroscopy. , 2021, , .		0
102	Frequency comb spectroscopy with coherent optical sampling. , 2009, , .		0
103	Infrared Time Domain Spectroscopy with Synchronized Frequency Combs. , 2010, , .		0
104	Performance of a Coherent Dual Frequency Comb Spectrometer. , 2011, , .		0
105	Near-Infrared Dual-Comb Spectroscopy of Gases. , 2014, , .		0
106	Dual-Comb Spectroscopy with Difference-Frequency-Generated Mid-Infrared Frequency Combs. , 2015, , .		0
107	Real-time Phase Correction for High-SNR Fieldable Dual-Comb Spectroscopy. , 2016, , .		0
108	Dual Comb Outdoor Spectroscopy for Complex Molecular Response Retrieval. , 2016, , .		0

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109	Remote Synchronization of a Microwave Clock to an Optical Clock at the Femtosecond Level. , 2016, , .		0
110	On-chip waveguides for self-referencing low-power and high-repetition-rate laser frequency combs. , 2017, , .		0
111	Optimizing the Power Efficiency of a SESAM Fiber Comb Laser. , 2017, , .		0
112	Operating an optical frequency comb using a 5-W handheld USB charger. , 2018, , .		0
113	Compact Fiber Frequency Combs for Precision Measurement Outside the Metrology Lab. , 2018, , .		0
114	Open Path MIR DCS for Chemical Detection. , 2018, , .		0
115	Progress towards a three-node free-space clock network. , 2018, , .		0
116	Femtosecond Synchronization through Turbulent Air Off a Quadcopter. , 2018, , .		0
117	A Compact Mid-infrared Dual-Comb Spectrometer with 1000 nm of Spectral Coverage. , 2019, , .		0
118	Imaging through Flames with Coherent Laser Ranging. , 2019, , .		0
119	Optical two-way time transfer with enhanced SNR for longer distance free-space links. , 2019, , .		0
120	Measurement of acetone emission using a compact midinfrared dual-comb spectrometer. , 2019, , .		0
121	Precision Optical Time-Frequency Transfer Over Free Space Links With Laser Frequency Combs. , 2019, , .		0
122	Preliminary Measurements for Three-Node Optical Two-Way Time and Frequency Transfer. , 2019, , .		0
123	Mid-infrared Dual-comb Spectroscopy of Volatile Organic Compounds Across Long Open-air Paths. , 2019, , .		0
124	Mid-Infrared Dual-Comb Spectroscopy of Biomass Pyrolysis. , 2020, , .		0
125	Atmospheric monitoring in the 4.5 to 4.9 μm region using open-path dual-comb spectroscopy. , 2020, , .		0
126	Retrieval of the Refractive Index Structure Parameter from Frequency Comb Timing Jitter Data. , 2020, , .		0

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127	Comparison of Livestock Emissions Measurements Using Open-Path Dual-Comb Spectroscopy and Closed-Path Cavity Ring-Down Spectroscopy. , 2020, , .		0
128	Agri-combs: Open-path dual-comb spectroscopy of livestock emissions. , 2020, , .		0
129	Beef cattle feedlot emissions measured using open-path dual-comb spectroscopy. , 2020, , .		0
130	Ultra-Precise Time and Frequency Transfer through Turbulent Air. , 2020, , .		0
131	Impact of Atmospheric Turbulence on Frequency Comb Optical Timing Jitter. , 2020, , .		0
132	Broadband dual-comb spectroscopy for open-path field measurement of H ₂ O and H ₂ O. , 2021, , .		0
133	Free-form dual-comb spectroscopy for compressive sensing and imaging. Nature Photonics, 0, , .	23.1	0