

Nir Davidson

List of Publications by Year in descending order

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98
papers

1,868
citations

236925

25
h-index

265206

42
g-index

101
all docs

101
docs citations

101
times ranked

1487
citing authors

#	ARTICLE	IF	CITATIONS
1	Observing Geometric Frustration with Thousands of Coupled Lasers. <i>Physical Review Letters</i> , 2013, 110, 184102.	7.8	174
2	High-numerical-aperture focusing of radially polarized doughnut beams with a parabolic mirror and a flat diffractive lens. <i>Optics Letters</i> , 2004, 29, 1318.	3.3	135
3	Real-time wavefront shaping through scattering media by all-optical feedback. <i>Nature Photonics</i> , 2013, 7, 919-924.	31.4	108
4	Complex lasers with controllable coherence. <i>Nature Reviews Physics</i> , 2019, 1, 156-168.	26.6	97
5	Efficient method for controlling the spatial coherence of a laser. <i>Optics Letters</i> , 2013, 38, 3858.	3.3	95
6	Controlling Synchronization in Large Laser Networks. <i>Physical Review Letters</i> , 2012, 108, 214101.	7.8	77
7	Elimination, reversal and directional bias of optical diffraction. <i>Nature Physics</i> , 2009, 5, 665-668.	16.7	70
8	Synchronized Cluster Formation in Coupled Laser Networks. <i>Physical Review Letters</i> , 2011, 106, 223901.	7.8	66
9	Fiber lasers generating radially and azimuthally polarized light. <i>Applied Physics Letters</i> , 2008, 93, 191104.	3.3	55
10	Theory of thermal motion in electromagnetically induced transparency: Effects of diffusion, Doppler broadening, and Dicke and Ramsey narrowing. <i>Physical Review A</i> , 2008, 77, .	2.5	54
11	Synchronization of complex human networks. <i>Nature Communications</i> , 2020, 11, 3854.	12.8	51
12	Observing Dissipative Topological Defects with Coupled Lasers. <i>Physical Review Letters</i> , 2017, 119, 013902.	7.8	48
13	Efficient selection of high-order Laguerre-Gaussian modes in a Q-switched Nd:YAG laser. <i>IEEE Journal of Quantum Electronics</i> , 2003, 39, 74-82.	1.9	47
14	Passive phase locking of 25 fiber lasers. <i>Optics Letters</i> , 2010, 35, 1434.	3.3	43
15	Weak-to-strong transition of quantum measurement in a trapped-ion system. <i>Nature Physics</i> , 2020, 16, 1206-1210.	16.7	41
16	Observation of Spin-Spin Fermion-Mediated Interactions between Ultracold Bosons. <i>Physical Review Letters</i> , 2020, 124, 163401.	7.8	41
17	Manipulating the spatial coherence of a laser source. <i>Optics Express</i> , 2015, 23, 12989.	3.4	37
18	Intracavity coherent addition of Gaussian beam distributions using a planar interferometric coupler. <i>Applied Physics Letters</i> , 2004, 85, 2187-2189.	3.3	36

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19	Angular dependence of Dicke-narrowed electromagnetically induced transparency resonances. Physical Review A, 2007, 76, .	2.5	36
20	Topologically Controlled Intracavity Laser Modes Based on Pancharatnam-Berry Phase. ACS Photonics, 2018, 5, 1817-1821.	6.6	35
21	Rapid laser solver for the phase retrieval problem. Science Advances, 2019, 5, eaax4530.	10.3	35
22	Passive Laser Beam Combining With Intracavity Interferometric Combiners. IEEE Journal of Selected Topics in Quantum Electronics, 2009, 15, 301-311.	2.9	34
23	Theory of Dicke narrowing in coherent population trapping. Physical Review A, 2007, 76, .	2.5	32
24	Measuring maximal eigenvalue distribution of Wishart random matrices with coupled lasers. Physical Review E, 2012, 85, 020101.	2.1	29
25	Talbot diffraction and Fourier filtering for phase locking an array of lasers. Applied Optics, 2017, 56, A126.	2.1	25
26	Spin-controlled twisted laser beams: intra-cavity multi-tasking geometric phase metasurfaces. Optics Express, 2018, 26, 905.	3.4	25
27	Rapid fair sampling of the $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle X \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle Y \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle$ spin Hamiltonian with a laser simulator. Physical Review Research, 2020, 2, .	2.8	23
28	Spatiotemporal supermodes: Rapid reduction of spatial coherence in highly multimode lasers. Physical Review A, 2018, 98, .	2.5	20
29	Observing Power-Law Dynamics of Position-Velocity Correlation in Anomalous Diffusion. Physical Review Letters, 2017, 119, 060602.	7.8	19
30	Phase locking of even and odd number of lasers on a ring geometry: effects of topological-charge. Optics Express, 2015, 23, 13041.	3.4	18
31	Ramsey-like measurement of the decoherence rate between Zeeman sublevels. Physical Review A, 2008, 78, .	2.5	17
32	Rapid and efficient formation of propagation invariant shaped laser beams. Optics Express, 2018, 26, 4431.	3.4	17
33	High-resolution digital spatial control of a highly multimode laser. Optica, 2021, 8, 880.	9.3	15
34	Fast laser speckle suppression with an intracavity diffuser. Nanophotonics, 2020, 10, 129-136.	6.0	14
35	Exact mapping between a laser network loss rate and the classical XY Hamiltonian by laser loss control. Nanophotonics, 2020, 9, 4117-4126.	6.0	14
36	Conversion of out-of-phase to in-phase order in coupled laser arrays with second harmonics. Photonics Research, 2015, 3, 77.	7.0	13

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37	Atom interferometry with thousand-fold increase in dynamic range. <i>Science Advances</i> , 2020, 6, .	10.3	13
38	Improved Phase Locking of Laser Arrays with Nonlinear Coupling. <i>Physical Review Letters</i> , 2020, 124, 133901.	7.8	13
39	Composite-Fringe Atom Interferometry for High-Dynamic-Range Sensing. <i>Physical Review Applied</i> , 2020, 13, .	3.8	12
40	Anyonic-parity-time symmetry in complex-coupled lasers. <i>Science Advances</i> , 2022, 8, .	10.3	11
41	Passive intracavity coherent addition of nine laser distributions. <i>Applied Physics Letters</i> , 2006, 88, 041103.	3.3	9
42	Multiport atom interferometry for inertial sensing. <i>Physical Review A</i> , 2019, 100, .	2.5	9
43	Rotation sensing with improved stability using point-source atom interferometry. <i>Physical Review A</i> , 2020, 102, .	2.5	9
44	Saturation of the weak probe amplification in a strongly driven cold and dense atomic cloud. <i>European Physical Journal D</i> , 1999, 7, 467.	1.3	8
45	Ideal collimation, concentration, and imaging with curved diffractive optical elements. <i>Review of Scientific Instruments</i> , 2005, 76, 111101.	1.3	8
46	Diffractive optics: Design, realization, and applications. <i>Fiber and Integrated Optics</i> , 1997, 16, 1-25.	2.5	7
47	Observation of Optomechanical Strain in a Cold Atomic Cloud. <i>Physical Review Letters</i> , 2017, 119, 163201.	7.8	7
48	Experimental demonstration of crowd synchrony and first-order transition with lasers. <i>Physical Review Research</i> , 2020, 2, .	3.6	7
49	Phase locking of lasers with Gaussian coupling. <i>Optics Express</i> , 2022, 30, 1114.	3.4	7
50	Fabrication of binary phase surface relief optical elements by selective deposition of dielectric layers. <i>Review of Scientific Instruments</i> , 1999, 70, 1264-1267.	1.3	6
51	Curved diffractive optical element for uniform concentration at the thermodynamic limit at finite distance. <i>Journal of the Optical Society of America A: Optics and Image Science, and Vision</i> , 2004, 21, 656.	1.5	6
52	Imposing a Gaussian distribution in multichannel laser resonators. <i>IEEE Journal of Quantum Electronics</i> , 2005, 41, 686-693.	1.9	6
53	Peak in the static structure factor of a Bose-Einstein condensate. <i>Physical Review A</i> , 2005, 72, .	2.5	5
54	Dynamic decoupling in the presence of colored control noise. <i>Physical Review A</i> , 2016, 94, .	2.5	5

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55	Anomalous symmetry breaking in classical two-dimensional diffusion of coherent atoms. Physical Review A, 2014, 89, .	2.5	4
56	Controlling Nonlinear Interaction in a Many-Mode Laser by Tuning Disorder. Physical Review Letters, 2022, 128, 143901.	7.8	4
57	Chiral States in Coupled-Lasers Lattice by On-Site Complex Potential. Physical Review Letters, 2022, 128, 163901.	7.8	4
58	Adiabatic focusing of cold atoms in a blue-detuned laser standing wave. Applied Physics B: Lasers and Optics, 2000, 70, 683-688.	2.2	3
59	Real-time full-field imaging through scattering media by all-optical feedback. Physical Review A, 2022, 105, .	2.5	2
60	Transverse Mode Selection with Phase Elements. , 0, , .		1
61	Echo spectroscopy and quantum stability of trapped atoms. , 2003, , .		1
62	New methods of mode conversion and brightness enhancement in high-power lasers. , 2007, , .		1
63	Passive Beam Combining in Compact Slab Lasers. IEEE Journal of Quantum Electronics, 2010, 46, 76-79.	1.9	1
64	Exact Mapping Between a Laser Network and the Classical XY Hamiltonian. , 2021, , .		1
65	Compression Of A Cold Atomic Cloud By A Short Laser Pulse. , 0, , .		0
66	A dark Optical Trap for atoms with a holographic phase plate. , 0, , .		0
67	Anamorphic beam shaping of totally incoherent light. , 0, , .		0
68	Vectorial effects in high numerical aperture diffractive lens. , 0, , .		0
69	Efficient formation of pure helical beams from a Gaussian beam. , 0, , .		0
70	High-order mode selection in Q-switched Nd:YAG lasers. , 0, , .		0
71	Inelastic collisions between Bogoliubov excitations due to three-wave mixing. , 0, , .		0
72	Suppression of inhomogeneous broadening in rf spectroscopy of optically trapped atoms. , 2003, , .		0

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73	Bragg spectroscopy of the multi-branch Bogoliubov spectrum of elongated Bose-Einstein condensates. , 0, , .		0
74	Laser mode selection with intracavity phase elements. , 0, , .		0
75	Effect of phase errors on laser mode selection with binary phase elements. , 0, , .		0
76	Compact and simple configurations for converting laser beam distributions. , 0, , .		0
77	Laser configurations for high-order transverse mode selection and coherent beam combining. , 0, , .		0
78	Stable selection of very high transverse modes in passive Q-switched lasers. , 0, , .		0
79	Spectroscopic and collisional splitting in the spectrum of a strongly driven bose condensate. , 0, , .		0
80	Onset of superfluidity in 2D optical lattices with bond percolation. , 0, , .		0
81	Novel laser resonator configurations for achieving high power and brightness. , 0, , .		0
82	Efficient intra-cavity passive coherent addition of nine laser channels. , 0, , .		0
83	Changes in excitation line shapes due to beliaev damping in a BEC. , 2007, , .		0
84	Spatial selection of atoms in optical billiard. , 2007, , .		0
85	Upscaling coherent addition of laser distributions. , 2007, , .		0
86	Ultra cold bosons in incommensurate optical lattices. , 2007, , .		0
87	Realization of Loschmidt Echo in Atom Optics Billiard. , 2007, , .		0
88	Realization of Loschmidt echo in atom optics billiard. , 2007, , .		0
89	Diffraction elimination of slow images. , 2009, , .		0
90	Diffusion and self-similarity of stored light in vapor. , 2009, , .		0

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91	Intra-cavity spin controlled geometric phase metasurface. , 2017, , .		0
92	Lasing with propagation invariant shaped beams. , 2017, , .		0
93	Teaching an old laser new tricks: Solving the inverse scattering problem rapidly. , 2017, , .		0
94	Efficient in-phase locking of coupled lasers. , 2017, , .		0
95	Digital degenerate cavity laser. , 2017, , .		0
96	High phase space density loading of a falling magnetic trap. Applied Physics B: Lasers and Optics, 2018, 124, 1.	2.2	0
97	A humble leader. Nature Photonics, 2019, 13, 581-582.	31.4	0
98	Cluster synchronization in large laser networks. IEICE Proceeding Series, 2014, 1, 61-64.	0.0	0