

Nir Davidson

List of Publications by Year in descending order

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98
papers

1,868
citations

236925

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h-index

265206

42
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101
all docs

101
docs citations

101
times ranked

1487
citing authors

#	ARTICLE	IF	CITATIONS
1	Phase locking of lasers with Gaussian coupling. Optics Express, 2022, 30, 1114.	3.4	7
2	Real-time full-field imaging through scattering media by all-optical feedback. Physical Review A, 2022, 105, .	2.5	2
3	Controlling Nonlinear Interaction in a Many-Mode Laser by Tuning Disorder. Physical Review Letters, 2022, 128, 143901.	7.8	4
4	Chiral States in Coupled-Lasers Lattice by On-Site Complex Potential. Physical Review Letters, 2022, 128, 163901.	7.8	4
5	Anyonic-parity-time symmetry in complex-coupled lasers. Science Advances, 2022, 8, .	10.3	11
6	High-resolution digital spatial control of a highly multimode laser. Optica, 2021, 8, 880.	9.3	15
7	Exact Mapping Between a Laser Network and the Classical XY Hamiltonian. , 2021, , .		1
8	Synchronization of complex human networks. Nature Communications, 2020, 11, 3854.	12.8	51
9	Rotation sensing with improved stability using point-source atom interferometry. Physical Review A, 2020, 102, .	2.5	9
10	Weak-to-strong transition of quantum measurement in a trapped-ion system. Nature Physics, 2020, 16, 1206-1210.	16.7	41
11	Atom interferometry with thousand-fold increase in dynamic range. Science Advances, 2020, 6, .	10.3	13
12	Composite-Fringe Atom Interferometry for High-Dynamic-Range Sensing. Physical Review Applied, 2020, 13, .	3.8	12
13	Improved Phase Locking of Laser Arrays with Nonlinear Coupling. Physical Review Letters, 2020, 124, 133901.	7.8	13
14	Observation of Spin-Spin Fermion-Mediated Interactions between Ultracold Bosons. Physical Review Letters, 2020, 124, 163401.	7.8	41
15	Rapid fair sampling of the $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle X \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle Y \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle$ spin Hamiltonian with a laser simulator. Physical Review Research, 2020, 2, .	2.3	23
16	Fast laser speckle suppression with an intracavity diffuser. Nanophotonics, 2020, 10, 129-136.	6.0	14
17	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
18	Experimental demonstration of crowd synchrony and first-order transition with lasers. Physical Review Research, 2020, 2, .	3.6	7

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19	A humble leader. Nature Photonics, 2019, 13, 581-582.	31.4	0
20	Multiport atom interferometry for inertial sensing. Physical Review A, 2019, 100, .	2.5	9
21	Rapid laser solver for the phase retrieval problem. Science Advances, 2019, 5, eaax4530.	10.3	35
22	Complex lasers with controllable coherence. Nature Reviews Physics, 2019, 1, 156-168.	26.6	97
23	Topologically Controlled Intracavity Laser Modes Based on Pancharatnam-Berry Phase. ACS Photonics, 2018, 5, 1817-1821.	6.6	35
24	Spin-controlled twisted laser beams: intra-cavity multi-tasking geometric phase metasurfaces. Optics Express, 2018, 26, 905.	3.4	25
25	Rapid and efficient formation of propagation invariant shaped laser beams. Optics Express, 2018, 26, 4431.	3.4	17
26	Spatiotemporal supermodes: Rapid reduction of spatial coherence in highly multimode lasers. Physical Review A, 2018, 98, .	2.5	20
27	High phase space density loading of a falling magnetic trap. Applied Physics B: Lasers and Optics, 2018, 124, 1.	2.2	0
28	Observation of Optomechanical Strain in a Cold Atomic Cloud. Physical Review Letters, 2017, 119, 163201.	7.8	7
29	Observing Power-Law Dynamics of Position-Velocity Correlation in Anomalous Diffusion. Physical Review Letters, 2017, 119, 060602.	7.8	19
30	Observing Dissipative Topological Defects with Coupled Lasers. Physical Review Letters, 2017, 119, 013902.	7.8	48
31	Intra-cavity spin controlled geometric phase metasurface. , 2017, , .		0
32	Lasing with propagation invariant shaped beams. , 2017, , .		0
33	Teaching an old laser new tricks: Solving the inverse scattering problem rapidly. , 2017, , .		0
34	Talbot diffraction and Fourier filtering for phase locking an array of lasers. Applied Optics, 2017, 56, A126.	2.1	25
35	Efficient in-phase locking of coupled lasers. , 2017, , .		0
36	Digital degenerate cavity laser. , 2017, , .		0

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37	Dynamic decoupling in the presence of colored control noise. <i>Physical Review A</i> , 2016, 94, .	2.5	5
38	Manipulating the spatial coherence of a laser source. <i>Optics Express</i> , 2015, 23, 12989.	3.4	37
39	Phase locking of even and odd number of lasers on a ring geometry: effects of topological-charge. <i>Optics Express</i> , 2015, 23, 13041.	3.4	18
40	Conversion of out-of-phase to in-phase order in coupled laser arrays with second harmonics. <i>Photonics Research</i> , 2015, 3, 77.	7.0	13
41	Anomalous symmetry breaking in classical two-dimensional diffusion of coherent atoms. <i>Physical Review A</i> , 2014, 89, .	2.5	4
42	Cluster synchronization in large laser networks. <i>IEICE Proceeding Series</i> , 2014, 1, 61-64.	0.0	0
43	Real-time wavefront shaping through scattering media by all-optical feedback. <i>Nature Photonics</i> , 2013, 7, 919-924.	31.4	108
44	Observing Geometric Frustration with Thousands of Coupled Lasers. <i>Physical Review Letters</i> , 2013, 110, 184102.	7.8	174
45	Efficient method for controlling the spatial coherence of a laser. <i>Optics Letters</i> , 2013, 38, 3858.	3.3	95
46	Measuring maximal eigenvalue distribution of Wishart random matrices with coupled lasers. <i>Physical Review E</i> , 2012, 85, 020101.	2.1	29
47	Controlling Synchronization in Large Laser Networks. <i>Physical Review Letters</i> , 2012, 108, 214101.	7.8	77
48	Synchronized Cluster Formation in Coupled Laser Networks. <i>Physical Review Letters</i> , 2011, 106, 223901.	7.8	66
49	Passive Beam Combining in Compact Slab Lasers. <i>IEEE Journal of Quantum Electronics</i> , 2010, 46, 76-79.	1.9	1
50	Passive phase locking of 25 fiber lasers. <i>Optics Letters</i> , 2010, 35, 1434.	3.3	43
51	Diffraction elimination of slow images. , 2009, , .		0
52	Diffusion and self-similarity of stored light in vapor. , 2009, , .		0
53	Passive Laser Beam Combining With Intracavity Interferometric Combiners. <i>IEEE Journal of Selected Topics in Quantum Electronics</i> , 2009, 15, 301-311.	2.9	34
54	Elimination, reversal and directional bias of optical diffraction. <i>Nature Physics</i> , 2009, 5, 665-668.	16.7	70

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55	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
56	Ramsey-like measurement of the decoherence rate between Zeeman sublevels. <i>Physical Review A</i> , 2008, 78, .	2.5	17
57	Fiber lasers generating radially and azimuthally polarized light. <i>Applied Physics Letters</i> , 2008, 93, 191104.	3.3	55
58	Changes in excitation line shapes due to beliaev damping in a BEC. , 2007, , .		0
59	Spatial selection of atoms in optical billiard. , 2007, , .		0
60	Upscaling coherent addition of laser distributions. , 2007, , .		0
61	Ultra cold bosons in incommensurate optical lattices. , 2007, , .		0
62	Realization of Loschmidt Echo in Atom Optics Billiard. , 2007, , .		0
63	Realization of Loschmidt echo in atom optics billiard. , 2007, , .		0
64	Theory of Dicke narrowing in coherent population trapping. <i>Physical Review A</i> , 2007, 76, .	2.5	32
65	New methods of mode conversion and brightness enhancement in high-power lasers. , 2007, , .		1
66	Angular dependence of Dicke-narrowed electromagnetically induced transparency resonances. <i>Physical Review A</i> , 2007, 76, .	2.5	36
67	Passive intracavity coherent addition of nine laser distributions. <i>Applied Physics Letters</i> , 2006, 88, 041103.	3.3	9
68	Peak in the static structure factor of a Bose-Einstein condensate. <i>Physical Review A</i> , 2005, 72, .	2.5	5
69	Ideal collimation, concentration, and imaging with curved diffractive optical elements. <i>Review of Scientific Instruments</i> , 2005, 76, 111101.	1.3	8
70	Imposing a Gaussian distribution in multichannel laser resonators. <i>IEEE Journal of Quantum Electronics</i> , 2005, 41, 686-693.	1.9	6
71	Intracavity coherent addition of Gaussian beam distributions using a planar interferometric coupler. <i>Applied Physics Letters</i> , 2004, 85, 2187-2189.	3.3	36
72	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

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73	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
74	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
75	Echo spectroscopy and quantum stability of trapped atoms. , 2003, , .		1
76	Suppression of inhomogeneous broadening in rf spectroscopy of optically trapped atoms. , 2003, , .		0
77	Adiabatic focusing of cold atoms in a blue-detuned laser standing wave. <i>Applied Physics B: Lasers and Optics</i> , 2000, 70, 683-688.	2.2	3
78	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
79	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
80	Diffractive optics: Design, realization, and applications. <i>Fiber and Integrated Optics</i> , 1997, 16, 1-25.	2.5	7
81	Compression Of A Cold Atomic Cloud By A Short Laser Pulse. , 0, , .		0
82	A dark Optical Trap for atoms with a holographic phase plate. , 0, , .		0
83	Transverse Mode Selection with Phase Elements. , 0, , .		1
84	Anamorphic beam shaping of totally incoherent light. , 0, , .		0
85	Vectorial effects in high numerical aperture diffractive lens. , 0, , .		0
86	Efficient formation of pure helical beams from a Gaussian beam. , 0, , .		0
87	High-order mode selection in Q-switched Nd:YAG lasers. , 0, , .		0
88	Inelastic collisions between Bogoliubov excitations due to three-wave mixing. , 0, , .		0
89	Bragg spectroscopy of the multi-branch Bogoliubov spectrum of elongated Bose-Einstein condensates. , 0, , .		0
90	Laser mode selection with intracavity phase elements. , 0, , .		0

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91	Effect of phase errors on laser mode selection with binary phase elements. , 0, , .		0
92	Compact and simple configurations for converting laser beam distributions. , 0, , .		0
93	Laser configurations for high-order transverse mode selection and coherent beam combining. , 0, , .		0
94	Stable selection of very high transverse modes in passive Q-switched lasers. , 0, , .		0
95	Spectroscopic and collisional splitting in the spectrum of a strongly driven bose condensate. , 0, , .		0
96	Onset of superfluidity in 2D optical lattices with bond percolation. , 0, , .		0
97	Novel laser resonator configurations for achieving high power and brightness. , 0, , .		0
98	Efficient intra-cavity passive coherent addition of nine laser channels. , 0, , .		0