

# Nigel Cooper

## List of Publications by Year in descending order

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159  
papers

7,937  
citations

50276

46  
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53230

85  
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159  
all docs

159  
docs citations

159  
times ranked

4340  
citing authors

#	ARTICLE	IF	CITATIONS
1	Measuring the Chern number of Hofstadter bands with ultracold bosonic atoms. <i>Nature Physics</i> , 2015, 11, 162-166.	16.7	777
2	Topological bands for ultracold atoms. <i>Reviews of Modern Physics</i> , 2019, 91, .	45.6	541
3	Rapidly rotating atomic gases. <i>Advances in Physics</i> , 2008, 57, 539-616.	14.4	500
4	Quantum Phases of Vortices in Rotating Bose-Einstein Condensates. <i>Physical Review Letters</i> , 2001, 87, 120405.	7.8	389
5	Thermoelectric response of an interacting two-dimensional electron gas in a quantizing magnetic field. <i>Physical Review B</i> , 1997, 55, 2344-2359.	3.2	189
6	Stable Topological Superfluid Phase of Ultracold Polar Fermionic Molecules. <i>Physical Review Letters</i> , 2009, 103, 155302.	7.8	179
7	Topological Kondo Effect with Majorana Fermions. <i>Physical Review Letters</i> , 2012, 109, 156803.	7.8	163
8	Mapping the Berry curvature from semiclassical dynamics in optical lattices. <i>Physical Review A</i> , 2012, 85, .	2.5	156
9	Optical Flux Lattices for Ultracold Atomic Gases. <i>Physical Review Letters</i> , 2011, 106, 175301.	7.8	152
10	Reaching Fractional Quantum Hall States with Optical Flux Lattices. <i>Physical Review Letters</i> , 2013, 110, 185301.	7.8	142
11	Stable Skyrmions in Two-Component Bose-Einstein Condensates. <i>Physical Review Letters</i> , 2002, 88, 080401.	7.8	137
12	Quantum Quenches in Chern Insulators. <i>Physical Review Letters</i> , 2015, 115, 236403.	7.8	133
13	Composite Fermion Theory for Bosonic Quantum Hall States on Lattices. <i>Physical Review Letters</i> , 2009, 103, 105303.	7.8	131
14	Periodically driven quantum matter: The case of resonant modulations. <i>Physical Review A</i> , 2015, 91, .	2.5	119
15	Composite fermion description of rotating Bose-Einstein condensates. <i>Physical Review B</i> , 1999, 60, R16279-R16282.	3.2	114
16	Vortex Lattices in Rotating Atomic Bose Gases with Dipolar Interactions. <i>Physical Review Letters</i> , 2005, 95, 200402.	7.8	113
17	Construction of a paired wave function for spinless electrons at filling fraction $\hat{\nu} = 2\hat{\nu}^*5$ . <i>Physical Review B</i> , 2007, 75, .	3.2	101
18	Tenfold Way for Quadratic Lindbladians. <i>Physical Review Letters</i> , 2020, 124, 040401.	7.8	100

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19	Synthetic Spin-Orbit Coupling in an Optical Lattice Clock. <i>Physical Review Letters</i> , 2016, 116, 035301.	7.8	99
20	Scattering theory for Floquet-Bloch states. <i>Physical Review A</i> , 2015, 91, .	2.5	93
21	Quantum Oscillations without a Fermi Surface and the Anomalous de Haas-van Alphen Effect. <i>Physical Review Letters</i> , 2015, 115, 146401.	7.8	88
22	Stability of fermionic gases close to a $p$ -wave Feshbach resonance. <i>Physical Review A</i> , 2008, 78, .	2.5	76
23	Correlated Phases of Bosons in the Flat Lowest Band of the Dice Lattice. <i>Physical Review Letters</i> , 2012, 108, 045306.	7.8	75
24	Theory of photoluminescence of the $\nu=1$ quantum Hall state: Excitons, spin waves, and spin textures. <i>Physical Review B</i> , 1997, 55, 2436-2455.	3.2	73
25	Interaction Effects at Crossings of Spin-Polarized One-Dimensional Subbands. <i>Physical Review Letters</i> , 2003, 91, 136404.	7.8	73
26	Topological $p$ -wave superfluid phase of fermionic polar molecules. <i>Physical Review A</i> , 2011, 84, .		
27	Excitons in topological Kondo insulators: Theory of thermodynamic and transport anomalies in $Sb_2Te_3$ . <i>Physical Review Letters</i> , 2017, 118, 096604.	7.8	73
28	Pseudopotentials for multiparticle interactions in the quantum Hall regime. <i>Physical Review B</i> , 2007, 75, .	3.2	72
29	Fractional Chern Insulators in Harper-Hofstadter Bands with Higher Chern Number. <i>Physical Review Letters</i> , 2015, 115, 126401.	7.8	71
30	$Z_2$ Topological Insulators in Ultracold Atomic Gases. <i>Physical Review Letters</i> , 2011, 107, 145301.	7.8	68
31	Coulomb interactions and the integer quantum Hall effect: Screening and transport. <i>Physical Review B</i> , 1993, 48, 4530-4544.	3.2	65
32	Strongly Resonant $p$ -Wave Superfluids. <i>Physical Review Letters</i> , 2007, 99, 210402.	7.8	65
33	Incompressible Liquid State of Rapidly Rotating Bosons at Filling Factor $3/2$ . <i>Physical Review Letters</i> , 2005, 95, 160404.	7.8	64
34	Vortex lattices in the lowest Landau level for confined Bose-Einstein condensates. <i>Physical Review A</i> , 2004, 70, .	2.5	62
35	Propagating Magnetic Vortex Rings in Ferromagnets. <i>Physical Review Letters</i> , 1999, 82, 1554-1557.	7.8	61
36	Topology of One-Dimensional Quantum Systems Out of Equilibrium. <i>Physical Review Letters</i> , 2018, 121, 090401.	7.8	60

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37	Generalized quantum Hall projection Hamiltonians. Physical Review B, 2007, 75, .	3.2	58
38	Dynamic Optical Lattices of Subwavelength Spacing for Ultracold Atoms. Physical Review Letters, 2015, 115, 140401.	7.8	57
39	Vortex lattices in Bose-Einstein condensates with dipolar interactions beyond the weak-interaction limit. Physical Review A, 2007, 75, .	2.5	56
40	Devil's staircases and supersolids in a one-dimensional dipolar Bose gas. Physical Review B, 2009, 80, .	3.2	56
41	Measuring the Superfluid Fraction of an Ultracold Atomic Gas. Physical Review Letters, 2010, 104, 030401.	7.8	56
42	Condensed ground states of frustrated Bose-Hubbard models. Physical Review A, 2010, 82, .	2.5	54
43	Optical flux lattices for two-photon dressed states. Europhysics Letters, 2011, 95, 66004.	2.0	50
44	Particle-Hole Symmetry in the Fermion-Chern-Simons and Dirac Descriptions of a Half-Filled Landau Level. Physical Review X, 2017, 7, .	8.9	50
45	Theory of spin-split cyclotron resonance in the extreme quantum limit. Physical Review Letters, 1994, 72, 2057-2060.	7.8	48
46	Skyrmions in quantum Hall systems with realistic force laws. Physical Review B, 1997, 55, R1934-R1937.	3.2	46
47	Effects of disorder and momentum relaxation on the intertube transport of incommensurate carbon nanotube ropes and multiwall nanotubes. Physical Review B, 2006, 74, .	3.2	46
48	Classification of topological insulators and superconductors out of equilibrium. Physical Review B, 2019, 99, .	3.2	46
49	Conductance fingerprint of Majorana fermions in the topological Kondo effect. Physical Review B, 2014, 89, .	3.2	45
50	Population dynamics in a Floquet realization of the Harper-Hofstadter Hamiltonian. Physical Review A, 2015, 91, .	2.5	45
51	Hall response and edge current dynamics in Chern insulators out of equilibrium. Physical Review B, 2016, 94, .	3.2	45
52	Superradiance Induced Particle Flow via Dynamical Gauge Coupling. Physical Review Letters, 2016, 117, 175302.	7.8	45
53	Observable Bulk Signatures of Non-Abelian Quantum Hall States. Physical Review Letters, 2009, 102, 176807.	7.8	43
54	Nonuniversal behavior of finite quantum Hall systems as a result of weak macroscopic inhomogeneities. Physical Review B, 1996, 53, 1558-1572.	3.2	42

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55	Experimental observation of vortex rings in a bulk magnet. Nature Physics, 2021, 17, 316-321.	16.7	42
56	Dynamic optical superlattices with topological bands. Physical Review A, 2014, 89, .	2.5	41
57	Bosonic Integer Quantum Hall Effect in Optical Flux Lattices. Physical Review Letters, 2015, 115, 116802.	7.8	41
58	Neutral Fermion Excitations in the Moore-Read State at Filling Factor $\nu = 5/2$ . Physical Review Letters, 2011, 107, 036803.	7.8	40
59	Topological marker currents in Chern insulators. Nature Physics, 2019, 15, 257-261.	16.7	40
60	Designing Topological Bands in Reciprocal Space. Physical Review Letters, 2012, 109, 215302.	7.8	38
61	Quantum noise, scaling, and domain formation in a spinor Bose-Einstein condensate. Physical Review A, 2008, 77, .	2.5	37
62	Signature of the Fulde-Ferrell-Larkin-Ovchinnikov Phase in the Collective Modes of a Trapped Ultracold Fermi Gas. Physical Review Letters, 2009, 103, 065301.	7.8	35
63	Free expansion of lowest-Landau-level states of trapped atoms: A wave-function microscope. Physical Review A, 2003, 68, .	2.5	34
64	Exact Ground States of Rotating Bose Gases Close to a Feshbach Resonance. Physical Review Letters, 2004, 92, 220405.	7.8	32
65	Signatures of Fractional Exclusion Statistics in the Spectroscopy of Quantum Hall Droplets. Physical Review Letters, 2015, 114, 106802.	7.8	31
66	Synthetic dimensions in the strong-coupling limit: Supersolids and pair superfluids. Physical Review A, 2016, 94, .	2.5	30
67	Large skyrmions in an Al <sub>0.13</sub> Ga <sub>0.87</sub> As quantum well. Physical Review B, 2000, 61, 4469-4472.	3.2	29
68	$P$ -Band Induced Self-Organization and Dynamics with Repulsively Driven Ultracold Atoms in an Optical Cavity. Physical Review Letters, 2019, 123, 233601.	7.8	29
69	Critical Response of a Quantum van der Pol Oscillator. Physical Review Letters, 2019, 123, 250401.	7.8	29
70	Imaging the coherent propagation of collective modes in the excitonic insulator Ta <sub>2</sub> NiSe <sub>5</sub> at room temperature. Science Advances, 2021, 7, .	10.3	29
71	Anomalous de Haas-van Alphen Effect in InAs/GaSb Quantum Wells. Physical Review Letters, 2017, 118, 176801.	7.8	28
72	Phases of driven two-level systems with nonlocal dissipation. Physical Review A, 2018, 97, .	2.5	28

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73	Fragility of time-reversal symmetry protected topological phases. Nature Physics, 2020, 16, 1181-1183.	16.7	28
74	Excitonic recombination processes in spin-polarized two-dimensional electron gases. Physical Review B, 1998, 58, R4227-R4230.	3.2	27
75	Surface Acoustic-Wave-Induced Magnetoresistance Oscillations in a Two-Dimensional Electron Gas. Physical Review Letters, 2004, 93, 036804.	7.8	27
76	Kane-Mele with a twist: Quasicrystalline higher-order topological insulators with fractional mass kinks. Physical Review Research, 2020, 2, .	3.6	27
77	Edge excitations and topological order in a rotating Bose gas. Physical Review B, 2005, 71, .	3.2	25
78	Competing compressible and incompressible phases in rotating atomic Bose gases at filling factor $\nu=2$ . Physical Review A, 2007, 75, .	2.5	24
79	Predicted signatures of p-wave superfluid phases and Majorana zero modes of fermionic atoms in rf absorption. Physical Review B, 2007, 76, .	3.2	23
80	Skyrmions in the Moore-Read State at $\nu=5/2$ . Physical Review Letters, 2010, 104, 086801.	3.2	23
81	Interacting bosons in topological optical flux lattices. Physical Review B, 2015, 91, .	3.2	23
82	Solitary Waves of Planar Ferromagnets and the Breakdown of the Spin-Polarized Quantum Hall Effect. Physical Review Letters, 1998, 80, 4554-4557.	7.8	22
83	Single vortex states in a confined Bose-Einstein condensate. Physical Review A, 2005, 72, .	2.5	21
84	Realizing discontinuous quantum phase transitions in a strongly correlated driven optical lattice. Nature Physics, 2022, 18, 259-264.	16.7	21
85	Density Waves and Supersolidity in Rapidly Rotating Atomic Fermi Gases. Physical Review Letters, 2007, 99, 190409.	7.8	20
86	Vortex states of a disordered quantum Hall bilayer. Physical Review B, 2009, 80, .	3.2	20
87	Structure and consequences of vortex-core states in p-wave superfluids. Physical Review B, 2011, 83, .	3.2	20
88	Effects of Berry Curvature on the Collective Modes of Ultracold Gases. Physical Review Letters, 2013, 111, 220407.	7.8	20
89	Bose-Einstein condensation and many-body localization of rotational excitations of polar molecules following a microwave pulse. Physical Review A, 2014, 90, .	2.5	20
90	Quantum Hall states of atomic Bose gases: Density profiles in single-layer and multilayer geometries. Physical Review A, 2005, 72, .	2.5	19

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91	Chiral entanglement in triangular lattice models. <i>Physical Review A</i> , 2008, 77, .	2.5	19
92	Local Tensor Network for Strongly Correlated Projective States. <i>Physical Review Letters</i> , 2011, 106, 156401.	7.8	19
93	Adiabatic control of atomic dressed states for transport and sensing. <i>Physical Review A</i> , 2015, 92, .	2.5	19
94	Quantized Rabi oscillations and circular dichroism in quantum Hall systems. <i>Physical Review A</i> , 2018, 97, .	2.5	19
95	Longitudinal resistance of a quantum Hall system with a density gradient. <i>Physical Review B</i> , 2006, 73, .	3.2	17
96	Dissipation and Tunneling in Quantum Hall Bilayers. <i>Physical Review Letters</i> , 2004, 93, 126803.	7.8	16
97	Quantum Monte Carlo calculation of the zero-temperature phase diagram of the two-component fermionic hard-core gas in two dimensions. <i>Physical Review B</i> , 2011, 83, .	3.2	16
98	Probing Fractional Topological Insulators with Magnetic Edge Perturbations. <i>Physical Review Letters</i> , 2012, 108, 206804.	7.8	16
99	Theory of quantum oscillations in quasicrystals: Quantizing spiral Fermi surfaces. <i>Physical Review B</i> , 2019, 100, .	3.2	16
100	Interacting symmetry-protected topological phases out of equilibrium. <i>Physical Review Research</i> , 2019, 1, .	3.6	15
101	Quantum and classical surface-acoustic-wave-induced magnetoresistance oscillations in a two-dimensional electron gas. <i>Physical Review B</i> , 2005, 71, .	3.2	14
102	Semiclassical dynamics, Berry curvature, and spiral holonomy in optical quasicrystals. <i>Physical Review A</i> , 2018, 97, .	2.5	14
103	Statistical properties of the low-temperature conductance peak heights for Corbino disks in the quantum Hall regime. <i>Physical Review B</i> , 1997, 55, 4551-4557.	3.2	13
104	Anomalous diffusion in a dynamical optical lattice. <i>Physical Review A</i> , 2018, 97, .	2.5	13
105	First order phase transition between two centro-symmetric superradiant crystals. <i>Physical Review Research</i> , 2021, 3, .	3.6	13
106	Quantum and classical dissipative effects on tunneling in quantum Hall bilayers. <i>Physical Review B</i> , 2005, 71, .	3.2	12
107	Huge positive magnetoresistance of GaAs <sup>δ</sup> /AlGaAs high electron mobility transistor structures at high temperatures. <i>Applied Physics Letters</i> , 2007, 90, 252106.	3.3	12
108	Critical Supercurrents and Self-Organization in Quantum Hall Bilayers. <i>Physical Review Letters</i> , 2010, 105, 236805.	7.8	12

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109	Collective modes as a probe of imbalanced Fermi gases. <i>Physical Review A</i> , 2010, 81, .	2.5	11
110	Correlations and beam splitters for quantum Hall anyons. <i>Physical Review B</i> , 2010, 81, .	3.2	11
111	Spectroscopic method to measure the superfluid fraction of an ultracold atomic gas. <i>Physical Review A</i> , 2011, 83, .	2.5	11
112	Coupled Ferromagnetic and Nematic Ordering of Fermions in an Optical Flux Lattice. <i>Physical Review Letters</i> , 2012, 109, 265301.	7.8	11
113	Long-Range Coherence and Multiple Steady States in a Lossy Qubit Array. <i>Physical Review Letters</i> , 2020, 125, 240404.	7.8	11
114	Composite Fermion Dynamics in Half-Filled Landau Levels of Graphene. <i>Acta Physica Polonica A</i> , 2011, 119, 592-594.	0.5	11
115	Vortex lattices for ultracold bosonic atoms in a non-Abelian gauge potential. <i>Physical Review A</i> , 2012, 85, .	2.5	10
116	Quantum oscillations in interaction-driven insulators. <i>SciPost Physics</i> , 2022, 12, .	4.9	10
117	Experimental Realization of a Fermionic Spin-Momentum Lattice. <i>Physical Review Letters</i> , 2022, 128, .	7.8	10
118	Synchronization transition in dipole-coupled two-level systems with positional disorder. <i>Physical Review A</i> , 2017, 96, .	2.5	9
119	Effects of disorder on the transport of collective modes in an excitonic condensate. <i>Physical Review B</i> , 2020, 101, .	3.2	9
120	Leaky exciton condensates in transition metal dichalcogenide moiré bilayers. <i>Physical Review Research</i> , 2022, 4, .	3.6	9
121	Moiré-Induced Optical Nonlinearities: Single- and Multiphoton Resonances. <i>Physical Review Letters</i> , 2022, 128, .	7.8	9
122	Breakdown of Counterflow Superfluidity in a Disordered Quantum Hall Bilayer. <i>Advances in Condensed Matter Physics</i> , 2011, 2011, 1-7.	1.1	8
123	Out-of-equilibrium steady states of a locally driven lossy qubit array. <i>Physical Review Research</i> , 2021, 3, .	3.6	8
124	Dynamic nuclear polarisation in biased quantum wires with spin-orbit interaction. <i>Europhysics Letters</i> , 2008, 81, 68001.	2.0	7
125	Theory of NMR in semiconductor quantum point contact devices. <i>Physical Review B</i> , 2008, 77, .	3.2	7
126	Quantum fluctuations of vortex lattices in ultracold gases. <i>Physical Review A</i> , 2012, 86, .	2.5	7



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127	Adiabatic preparation of vortex lattices. <i>Physical Review A</i> , 2013, 88, .	2.5	7
128	Synthetic gauge fields for lattices with multi-orbital unit cells: routes towards a $\nu=1$ flux dice lattice with flat bands. <i>New Journal of Physics</i> , 2018, 20, 073025.	2.9	7
129	Theory of the Josephson Junction Laser. <i>Physical Review Letters</i> , 2018, 121, 027004.	7.8	7
130	Theory of exciton recombination from the magnetically induced Wigner crystal. <i>Physical Review B</i> , 1996, 53, 10804-10812.	3.2	6
131	Derivative relation for thermopower in the quantum Hall regime. <i>Physical Review B</i> , 1997, 56, R7116-R7119.	3.2	6
132	Magneto-optical study of excitonic states in 2DEGs near filling factor $\nu=1$ . <i>Physica B: Condensed Matter</i> , 1998, 249-251, 538-543.	2.7	6
133	Virial theorems for vortex states in a confined Bose-Einstein condensate. <i>Physical Review A</i> , 2005, 72, .	2.5	6
134	Vortex lattices in rotating atomic Bose gases with non-local interactions. <i>Solid State Communications</i> , 2006, 140, 61-65.	1.9	6
135	Electron heating and huge positive magnetoresistance in an AlGaAs/GaAs high electron mobility transistor structure at high temperatures. <i>Applied Physics Letters</i> , 2008, 92, 152117.	3.3	6
136	Skyrmion-antiskyrmion pairs in ultracold atomic gases. <i>Physical Review A</i> , 2011, 83, .	2.5	6
137	Many-Body Decay of the Gapped Lowest Excitation of a Bose-Einstein Condensate. <i>Physical Review Letters</i> , 2021, 126, 060402.	7.8	6
138	Elastic backscattering of quantum spin Hall edge modes from Coulomb interactions with nonmagnetic impurities. <i>Physical Review B</i> , 2021, 103, .	3.2	6
139	Kramers' degeneracy for open systems in thermal equilibrium. <i>Physical Review B</i> , 2022, 105, .	3.2	6
140	Nested-sphere description of the $N$ -level Chern number and the generalized Bloch hypersphere. <i>Physical Review Research</i> , 2022, 4, .	3.6	6
141	Artificial magnetic fields in momentum space in spin-orbit-coupled systems. <i>Physical Review A</i> , 2015, 91, .	2.5	5
142	Dissipative transport in quantum Hall ferromagnets by spin-wave scattering. <i>Physical Review B</i> , 2002, 65, .	3.2	4
143	Nuclear magnetic resonance probes for the Kondo scenario for the 0.7 feature in semiconductor quantum point contact devices. <i>Journal of Physics Condensed Matter</i> , 2008, 20, 164215.	1.8	4
144	Scattering theory for quantum Hall anyons in a saddle point potential. <i>Physical Review B</i> , 2009, 80, .	3.2	4

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145	Probing ultracold Fermi gases with light-induced gauge potentials. <i>Physical Review A</i> , 2011, 83, .	2.5	4
146	Decay rates and energies of free magnons and bound states in dissipative $XZ$ chains. <i>Physical Review A</i> , 2019, 99, .	2.5	4
147	Steady states of a driven dissipative dipolar XXZ chain. <i>Journal of Physics B: Atomic, Molecular and Optical Physics</i> , 2020, 53, 135302.	1.5	4
148	Low-frequency quantum oscillations from interactions in layered metals. <i>Physical Review Research</i> , 2021, 3, .	3.6	4
149	Excitons, spin-waves and Skyrmions in the optical spectra of a two dimensional electron gas. <i>Solid-State Electronics</i> , 1998, 42, 1169-1174.	1.4	3
150	Diamagnetism and flux creep in bilayer exciton superfluids. <i>Physical Review B</i> , 2012, 85, .	3.2	3
151	Stable collective dynamics of two-level systems coupled by dipole interactions. <i>Physical Review A</i> , 2017, 95, .	2.5	3
152	Strictly local tensor networks for topological insulators with short-range interactions. <i>Physical Review B</i> , 2019, 99, .	3.2	3
153	Search for non-Abelian statistics in half-filled Landau levels of graphene. <i>Journal of Physics: Conference Series</i> , 2011, 334, 012048.	0.4	2
154	Skyrmions in quantum Hall systems with realistic force laws. <i>Physica E: Low-Dimensional Systems and Nanostructures</i> , 1997, 1, 62-64.	2.7	1
155	Preparing and Probing Chern Bands with Cold Atoms. , 0, , 274-298.		0
156	Skyrmions in a Half-Filled Second Landau Level. <i>AIP Conference Proceedings</i> , 2011, , .	0.4	0
157	Ferromagnetic-nematic order and strongly correlated phases of fermions in optical flux lattices. <i>Physical Review A</i> , 2015, 92, .	2.5	0
158	Skyrmions in Bose-Einstein condensates. , 2002, , .		0
159	Fractional Quantum Hall States with Non-Abelian Statistics. <i>Acta Physica Polonica A</i> , 2009, 116, 847-848.	0.5	0