

B Andrei Bernevig

List of Publications by Year in descending order

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170
papers

36,773
citations

6613

79
h-index

4432

172
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178
all docs

178
docs citations

178
times ranked

14536
citing authors

#	ARTICLE	IF	CITATIONS
1	Quantum Spin Hall Effect and Topological Phase Transition in HgTe Quantum Wells. <i>Science</i> , 2006, 314, 1757-1761.	12.6	5,715
2	Type-II Weyl semimetals. <i>Nature</i> , 2015, 527, 495-498.	27.8	1,977
3	Quantum Spin Hall Effect. <i>Physical Review Letters</i> , 2006, 96, 106802.	7.8	1,651
4	Observation of Majorana fermions in ferromagnetic atomic chains on a superconductor. <i>Science</i> , 2014, 346, 602-607.	12.6	1,581
5	Quantized electric multipole insulators. <i>Science</i> , 2017, 357, 61-66.	12.6	1,321
6	Weyl Semimetal Phase in Noncentrosymmetric Transition-Metal Monophosphides. <i>Physical Review X</i> , 2015, 5, .	8.9	1,242
7	Higher-order topological insulators. <i>Science Advances</i> , 2018, 4, eaat0346.	10.3	1,066
8	Topological quantum chemistry. <i>Nature</i> , 2017, 547, 298-305.	27.8	947
9	Electric multipole moments, topological multipole moment pumping, and chiral hinge states in crystalline insulators. <i>Physical Review B</i> , 2017, 96, .	3.2	920
10	Beyond Dirac and Weyl fermions: Unconventional quasiparticles in conventional crystals. <i>Science</i> , 2016, 353, aaf5037.	12.6	881
11	A complete catalogue of high-quality topological materials. <i>Nature</i> , 2019, 566, 480-485.	27.8	721
12	Equivalent expression of $\langle \mathcal{M} \rangle = \frac{1}{2\pi} \int_{\text{BZ}} \mathcal{M}(\mathbf{k}) d^3k$ topological invariant for band insulators using the non-Abelian Berry connection. <i>Physical Review B</i> , 2011, 84, .	3.2	667
13	Helical Liquid and the Edge of Quantum Spin Hall Systems. <i>Physical Review Letters</i> , 2006, 96, 106401.	7.8	648
14	Higher-order topology in bismuth. <i>Nature Physics</i> , 2018, 14, 918-924.	16.7	590
15	Multi-Weyl Topological Semimetals Stabilized by Point Group Symmetry. <i>Physical Review Letters</i> , 2012, 108, 266802.	7.8	545
16	Exact SU(2) Symmetry and Persistent Spin Helix in a Spin-Orbit Coupled System. <i>Physical Review Letters</i> , 2006, 97, 236601.	7.8	467
17	Spectroscopic signatures of many-body correlations in magic-angle twisted bilayer graphene. <i>Nature</i> , 2019, 572, 101-105.	27.8	459
18	Inversion-symmetric topological insulators. <i>Physical Review B</i> , 2011, 83, .	3.2	404

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19	Fractional Chern Insulator. Physical Review X, 2011, 1, .	8.9	390
20	Pairing Symmetry in a Two-Orbital Exchange Coupling Model of Oxypnictides. Physical Review Letters, 2008, 101, 206404.	7.8	358
21	$\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle \text{MoTe} \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle 056805$ A Type-II Weyl Topological Metal. Physical Review Letters, 2016, 117, 056805.	7.8	358
22	Bulk topological invariants in noninteracting point group symmetric insulators. Physical Review B, 2012, 86, .	3.2	347
23	Hourglass fermions. Nature, 2016, 532, 189-194.	27.8	343
24	All Magic Angles in Twisted Bilayer Graphene are Topological. Physical Review Letters, 2019, 123, 036401.	7.8	327
25	Z2Pack: Numerical implementation of hybrid Wannier centers for identifying topological materials. Physical Review B, 2017, 95, .	3.2	322
26	One-dimensional topological edge states of bismuth bilayers. Nature Physics, 2014, 10, 664-669.	16.7	320
27	Wilson-loop characterization of inversion-symmetric topological insulators. Physical Review B, 2014, 89, .	3.2	283
28	Time-Reversal-Breaking Weyl Fermions in Magnetic Heusler Alloys. Physical Review Letters, 2016, 117, 236401.	7.8	282
29	Cascade of electronic transitions in magic-angle twisted bilayer graphene. Nature, 2020, 582, 198-202.	27.8	282
30	Strongly correlated Chern insulators in magic-angle twisted bilayer graphene. Nature, 2020, 588, 610-615.	27.8	262
31	Twisted Bilayer Graphene: A Phonon-Driven Superconductor. Physical Review Letters, 2019, 122, 257002.	7.8	255
32	Model Fractional Quantum Hall States and Jack Polynomials. Physical Review Letters, 2008, 100, 246802.	7.8	243
33	Higher-Order Topology, Monopole Nodal Lines, and the Origin of Large Fermi Arcs in Transition Metal Dichalcogenides $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML" display="inline"} \rangle \langle \text{mml:mi} \rangle X \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle \text{Te} \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle 056805$		

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37	Entanglement Spectrum of a Disordered Topological Chern Insulator. Physical Review Letters, 2010, 105, 115501.	7.8	182
38	High-resolution studies of the Majorana atomic chain platform. Nature Physics, 2017, 13, 286-291.	16.7	180
39	Double crystallographic groups and their representations on the Bilbao Crystallographic Server. Journal of Applied Crystallography, 2017, 50, 1457-1477.	4.5	177
40	Exact excited states of nonintegrable models. Physical Review B, 2018, 98, .	3.2	174
41	Large-Chern-Number Quantum Anomalous Hall Effect in Thin-Film Topological Crystalline Insulators. Physical Review Letters, 2014, 112, 046801.	7.8	170
42	Building blocks of topological quantum chemistry: Elementary band representations. Physical Review B, 2018, 97, .	3.2	160
43	Quasiparticle interference of the Fermi arcs and surface-bulk connectivity of a Weyl semimetal. Science, 2016, 351, 1184-1187.	12.6	156
44	Entanglement Gap and a New Principle of Adiabatic Continuity. Physical Review Letters, 2010, 104, 180502.	7.8	155
45	Strong and fragile topological Dirac semimetals with higher-order Fermi arcs. Nature Communications, 2020, 11, 627.	12.8	152
46	Intrinsic Spin Hall Effect in the Two-Dimensional Hole Gas. Physical Review Letters, 2005, 95, 016801.	7.8	145
47	Exotic d -Wave Superconducting State of Strongly Hole-Doped $K_x C_60$. Physical Review Letters, 2011, 107, 117001.	7.8	141
48	Topology-Bounded Superfluid Weight in Twisted Bilayer Graphene. Physical Review Letters, 2020, 124, 167002.	7.8	140
49	Zoology of fractional Chern insulators. Physical Review B, 2012, 85, .	3.2	133
50	Progress and prospects in magnetic topological materials. Nature, 2022, 603, 41-51.	27.8	133
51	Topological superconductivity induced by ferromagnetic metal chains. Physical Review B, 2014, 90, .	3.2	127
52	Observation of a Majorana zero mode in a topologically protected edge channel. Science, 2019, 364, 1255-1259.	12.6	127
53	Mechanism for Explaining Differences in the Order Parameters of FeAs-Based and FeP-Based Pnictide Superconductors. Physical Review Letters, 2011, 106, 187003.	7.8	126
54	Bulk-edge correspondence in entanglement spectra. Physical Review B, 2011, 84, .	3.2	125

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55	Wallpaper fermions and the nonsymmorphic Dirac insulator. <i>Science</i> , 2018, 361, 246-251.	12.6	125
56	Twisted bilayer graphene. IV. Exact insulator ground states and phase diagram. <i>Physical Review B</i> , 2021, 103, .	3.2	123
57	Emergent many-body translational symmetries of Abelian and non-Abelian fractionally filled topological insulators. <i>Physical Review B</i> , 2012, 85, .	3.2	122
58	Nonlocal Order in Gapless Systems: Entanglement Spectrum in Spin Chains. <i>Physical Review Letters</i> , 2010, 105, 116805.	7.8	120
59	Recent Progress in the Study of Topological Semimetals. <i>Journal of the Physical Society of Japan</i> , 2018, 87, 041001.	1.6	118
60	Magnetic topological quantum chemistry. <i>Nature Communications</i> , 2021, 12, 5965.	12.8	118
61	Symmetry-broken Chern insulators and Rashba-like Landau-level crossings in magic-angle bilayer graphene. <i>Nature Physics</i> , 2021, 17, 710-714.	16.7	114
62	Spin-Orbit-Free Topological Insulators without Time-Reversal Symmetry. <i>Physical Review Letters</i> , 2014, 113, 116403.	7.8	111
63	Functional renormalization-group study of the doping dependence of pairing symmetry in the iron pnictide superconductors. <i>Physical Review B</i> , 2009, 80, .	3.2	108
64	Two-dimensional chiral topological superconductivity in Shiba lattices. <i>Nature Communications</i> , 2016, 7, 12297.	12.8	105
65	Topology of Disconnected Elementary Band Representations. <i>Physical Review Letters</i> , 2018, 120, 266401.	7.8	102
66	Experimental consequences of the s -wave χ		

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73	Experimental characterization of fragile topology in an acoustic metamaterial. <i>Science</i> , 2020, 367, 797-800.	12.6	90
74	Twisted bilayer graphene. V. Exact analytic many-body excitations in Coulomb Hamiltonians: Charge gap, Goldstone modes, and absence of Cooper pairing. <i>Physical Review B</i> , 2021, 103, .	3.2	89
75	Series of Abelian and non-Abelian states in Chern insulators. <i>Physical Review B</i> , 2013, 87, .	3.2	86
76	Twisted bilayer graphene. II. Stable symmetry anomaly. <i>Physical Review B</i> , 2021, 103, .	3.2	85
77	Graph theory data for topological quantum chemistry. <i>Physical Review E</i> , 2017, 96, 023310.	2.1	84
78	All topological bands of all nonmagnetic stoichiometric materials. <i>Science</i> , 2022, 376, eabg9094.	12.6	84
79	Flatbands and Perfect Metal in Trilayer Moiré Graphene. <i>Physical Review Letters</i> , 2019, 123, 026402.	7.8	83
80	Topological insulators with commensurate antiferromagnetism. <i>Physical Review B</i> , 2013, 88, .	3.2	82
81	Bloch Model Wave Functions and Pseudopotentials for All Fractional Chern Insulators. <i>Physical Review Letters</i> , 2013, 110, 106802.	7.8	81
82	Competing Zero-Field Chern Insulators in Superconducting Twisted Bilayer Graphene. <i>Physical Review Letters</i> , 2021, 127, 197701.	7.8	80
83	Properties of Non-Abelian Fractional Quantum Hall States at Filling $\nu = k/2r$. <i>Physical Review Letters</i> , 2008, 101, 246806.	7.8	79
84	Twisted bilayer graphene. VI. An exact diagonalization study at nonzero integer filling. <i>Physical Review B</i> , 2021, 103, .	3.2	79
85	A charge-density-wave topological semimetal. <i>Nature Physics</i> , 2021, 17, 381-387.	16.7	76
86	Robustness of s-Wave Pairing in Electron-Overdoped s_{\pm} Superconductors. <i>Physical Review X</i> , 2011, 1, .	8.9	73
87	Theory of the Three-Dimensional Quantum Hall Effect in Graphite. <i>Physical Review Letters</i> , 2007, 99, 146804.	7.8	70
88	Trace index and spectral flow in the entanglement spectrum of topological insulators. <i>Physical Review B</i> , 2011, 84, .	3.2	70
89	Evidence for a monolayer excitonic insulator. <i>Nature Physics</i> , 2022, 18, 87-93.	16.7	70
90	Theory of magnetic order in $\text{Fe}_{1+x}\text{Te}_{1-x}\text{Se}_x$. <i>Europhysics Letters</i> , 2009, 86, 67005.	2.0	67

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91	Gauge-fixed Wannier wave functions for fractional topological insulators. Physical Review B, 2012, 86, .	3.2	66
92	Fragile Topology and Flat-Band Superconductivity in the Strong-Coupling Regime. Physical Review Letters, 2021, 126, 027002.	7.8	66
93	Entanglement spectrum classification of C_n -invariant noninteracting topological insulators in two dimensions. Physical Review B, 2013, 87, .	3.2	65
94	Topological materials discovery from crystal symmetry. Nature Reviews Materials, 2022, 7, 196-216.	48.7	65
95	Catalogue of flat-band stoichiometric materials. Nature, 2022, 603, 824-828.	27.8	65
96	Landau level of fragile topology. Physical Review B, 2020, 102, .	3.2	63
97	Twisted bilayer graphene. I. Matrix elements, approximations, perturbation theory, and a 3×3 two-band model. Physical Review B, 2021, 103, .	3.2	63
98	Large classes of quantum scarred Hamiltonians from matrix product states. Physical Review B, 2020, 102, .	3.2	62
99	Anatomy of Abelian and Non-Abelian Fractional Quantum Hall States. Physical Review Letters, 2009, 103, 206801.	7.8	61
100	Berry-phase description of topological crystalline insulators. Physical Review B, 2016, 93, .	3.2	60
101	Manipulating Majorana zero modes on atomic rings with an external magnetic field. Nature Communications, 2016, 7, 10395.	12.8	59
102	It's been a Weyl coming. Nature Physics, 2015, 11, 698-699.	16.7	57
103	Entanglement entropy from tensor network states for stabilizer codes. Physical Review B, 2018, 97, .	3.2	57
104	New Class of Topological Superconductors Protected by Magnetic Group Symmetries. Physical Review Letters, 2014, 112, 106401.	7.8	54
105	Quantum many-body scars in a Landau level on a thin torus. Physical Review B, 2020, 102, .	3.2	51
106	Band connectivity for topological quantum chemistry: Band structures as a graph theory problem. Physical Review B, 2018, 97, .	3.2	49
107	Hofstadter Topology: Noncrystalline Topological Materials at High Flux. Physical Review Letters, 2020, 125, 236804.	7.8	49
108	Three-dimensional superconductors with hybrid higher-order topology. Physical Review B, 2019, 99, .	3.2	47

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109	Decomposition of fractional quantum Hall model states: Product rule symmetries and approximations. <i>Physical Review B</i> , 2011, 84, .	3.2	46
110	Fractional Chern insulators beyond Laughlin states. <i>Physical Review B</i> , 2013, 87, .	3.2	46
111	General construction and topological classification of crystalline flat bands. <i>Nature Physics</i> , 2022, 18, 185-189.	16.7	45
112	Cascades between Light and Heavy Fermions in the Normal State of Magic-Angle Twisted Bilayer Graphene. <i>Physical Review Letters</i> , 2021, 127, 266402.	7.8	44
113	Fragile Phases as Affine Monoids: Classification and Material Examples. <i>Physical Review X</i> , 2020, 10, .	8.9	43
114	Spin-Orbit-Induced Topological Flat Bands in Line and Split Graphs of Bipartite Lattices. <i>Physical Review Letters</i> , 2020, 125, 266403.	7.8	43
115	Colossal magnetoresistance in a nonsymmorphic antiferromagnetic insulator. <i>Npj Quantum Materials</i> , 2020, 5, .	5.2	38
116	Braiding Non-Abelian Quasiholes in Fractional Quantum Hall States. <i>Physical Review Letters</i> , 2014, 113, 116801.	7.8	37
117	Detection of Majorana Kramers Pairs Using a Quantum Point Contact. <i>Physical Review Letters</i> , 2016, 117, 046804.	7.8	37
118	Sixfold excitations in electrified. <i>Physical Review Research</i> , 2021, 3, .	3.6	37
119	Boson condensation in topologically ordered quantum liquids. <i>Physical Review B</i> , 2016, 93, .	3.2	36
120	Signatures of Sixfold Degenerate Exotic Fermions in a Superconducting Metal PdSb ₂ . <i>Advanced Materials</i> , 2020, 32, e1906046.	21.0	36
121	Multiple flat bands and topological Hofstadter butterfly in twisted bilayer graphene close to the second magic angle. <i>Proceedings of the National Academy of Sciences of the United States of America</i> , 2021, 118, .	7.1	35
122	Parafermionic phases with symmetry breaking and topological order. <i>Physical Review B</i> , 2016, 94, .	3.2	33
123	Haldane statistics in the finite-size entanglement spectra of $1/\nu$ fractional quantum Hall states. <i>Physical Review B</i> , 2011, 84, .	3.2	32
124	Detection of topological materials with machine learning. <i>Physical Review B</i> , 2020, 101, .	3.2	32
125	Theory of quasiparticle interference in mirror-symmetric two-dimensional systems and its application to surface states of topological crystalline insulators. <i>Physical Review B</i> , 2013, 88, .	3.2	31
126	Haldane statistics for fractional Chern insulators with an arbitrary Chern number. <i>Physical Review B</i> , 2014, 89, .	3.2	31

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127	Central charge and quasihole scaling dimensions from model wavefunctions: toward relating Jack wavefunctions to W -algebras. Journal of Physics A: Mathematical and Theoretical, 2009, 42, 245206.	2.1	30
128	Z_2 fractional topological insulators in two dimensions. Physical Review B, 2014, 90, .	3.2	27
129	Majorana spin in magnetic atomic chain systems. Physical Review B, 2018, 97, .	3.2	27
130	Superfluid Weight Bounds from Symmetry and Quantum Geometry in Flat Bands. Physical Review Letters, 2022, 128, 087002.	7.8	26
131	Twisted symmetric trilayer graphene: Single-particle and many-body Hamiltonians and hidden nonlocal symmetries of trilayer moiré systems with and without displacement field. Physical Review B, 2021, 103, .	3.2	25
132	BAND COLLAPSE AND THE QUANTUM HALL EFFECT IN GRAPHENE. International Journal of Modern Physics B, 2006, 20, 3257-3278.	2.0	24
133	Leggett mode in a strong-coupling model of iron arsenide superconductors. Physical Review B, 2010, 82, .	3.2	24
134	Interacting bosons in topological optical flux lattices. Physical Review B, 2015, 91, .	3.2	23
135	Imaging electronic states on topological semimetals using scanning tunneling microscopy. New Journal of Physics, 2016, 18, 105003.	2.9	23
136	Maxwell Equation for Coupled Spin-Charge Wave Propagation. Physical Review Letters, 2005, 95, 076602.	7.8	22
137	Fragile topology in line-graph lattices with two, three, or four gapped flat bands. Physical Review Research, 2020, 2, .	3.6	21
138	Twisted symmetric trilayer graphene. II. Projected Hartree-Fock study. Physical Review B, 2021, 104, .	3.2	20
139	Obstructed Surface States as the Descriptor for Predicting Catalytic Active Sites in Inorganic Crystalline Materials. Advanced Materials, 2022, 34, e2201328.	21.0	18
140	Application of induction procedure and Smith decomposition in calculation and topological classification of electronic band structures in the 230 space groups. Physical Review B, 2020, 102, .	3.2	17
141	Exact quantum scars in the chiral nonlinear Luttinger liquid. Physical Review B, 2022, 105, .	3.2	17
142	Observation of Reentrant Correlated Insulators and Interaction-Driven Fermi-Surface Reconstructions at One Magnetic Flux Quantum per Moiré Unit Cell in Magic-Angle Twisted Bilayer Graphene. Physical Review Letters, 2022, 128, .	7.8	17
143	Quasi-symmetry-protected topology in a semi-metal. Nature Physics, 2022, 18, 813-818.	16.7	15
144	Matrix product state representation of non-Abelian quasiholes. Physical Review B, 2015, 92, .	3.2	14

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145	Projective construction of the $\mathbb{Z} \times \mathbb{Z}$ fractional quantum Hall states and their excitations on the torus geometry. Physical Review B, 2015, 92, .	3.2	14
146	Thermalization and Its Absence within Krylov Subspaces of a Constrained Hamiltonian. , 2021, , 147-209.		14
147	Bulk and edge properties of twisted double bilayer graphene. Nature Physics, 2022, 18, 48-53.	16.7	14
148	Scenario for fractional quantum Hall effect in bulk isotropic materials. Physical Review B, 2009, 79, .	3.2	13
149	Signature of phase transitions in the disordered quantum spin Hall state from the entanglement spectrum. Physical Review B, 2012, 86, .	3.2	13
150	Delocalization Transition of a Disordered Axion Insulator. Physical Review Letters, 2021, 127, 016602.	7.8	13
151	Topology invisible to eigenvalues in obstructed atomic insulators. Physical Review B, 2022, 105, .	3.2	13
152	Entanglement analysis of isotropic spin-1 chains. Journal of Statistical Mechanics: Theory and Experiment, 2015, 2015, P07017.	2.3	12
153	Giant supercurrent states in a superconductor-InAs/GaSb-superconductor junction. Journal of Applied Physics, 2015, 118, .	2.5	12
154	Observation of backscattering induced by magnetism in a topological edge state. Proceedings of the National Academy of Sciences of the United States of America, 2020, 117, 16214-16218.	7.1	12
155	Trions in twisted bilayer graphene. Physical Review B, 2022, 105, .	3.2	11
156	No-go theorem for boson condensation in topologically ordered quantum liquids. New Journal of Physics, 2016, 18, 123009.	2.9	10
157	Electron-quasihole duality and second-order differential equation for Read-Rezayi and Jack wave functions. Physical Review B, 2010, 82, .	3.2	9
158	Restricted Boltzmann machines and matrix product states of one-dimensional translationally invariant stabilizer codes. Physical Review B, 2019, 99, .	3.2	9
159	Transport equations and spin-charge propagating mode in a strongly confined two-dimensional hole gas. Physical Review B, 2006, 74, .	3.2	8
160	Fractional chiral hinge insulator. Physical Review B, 2021, 103, .	3.2	8
161	Noncompact atomic insulators. Physical Review B, 2021, 104, .	3.2	8
162	The quantum Hall effect in graphene from a lattice perspective. Solid State Communications, 2007, 143, 20-26.	1.9	7

