

B Andrei Bernevig

List of Publications by Year in descending order

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papers

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#	ARTICLE	IF	CITATIONS
1	Topological materials discovery from crystal symmetry. <i>Nature Reviews Materials</i> , 2022, 7, 196-216.	23.3	65
2	Exact quantum scars in the chiral nonlinear Luttinger liquid. <i>Physical Review B</i> , 2022, 105, .	1.1	17
3	Evidence for a monolayer excitonic insulator. <i>Nature Physics</i> , 2022, 18, 87-93.	6.5	70
4	Superfluid Weight Bounds from Symmetry and Quantum Geometry in Flat Bands. <i>Physical Review Letters</i> , 2022, 128, 087002.	2.9	26
5	Topology invisible to eigenvalues in obstructed atomic insulators. <i>Physical Review B</i> , 2022, 105, .	1.1	13
6	Progress and prospects in magnetic topological materials. <i>Nature</i> , 2022, 603, 41-51.	13.7	133
7	<mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"><mml:mrow><mml:mi>O</mml:mi><mml:mo>(</mml:mo><mml:mi>N</mml:mi></mml:mrow></mml:math>		
8	Catalogue of flat-band stoichiometric materials. <i>Nature</i> , 2022, 603, 824-828.	13.7	65
9	Bulk and edge properties of twisted double bilayer graphene. <i>Nature Physics</i> , 2022, 18, 48-53.	6.5	14
10	General construction and topological classification of crystalline flat bands. <i>Nature Physics</i> , 2022, 18, 185-189.	6.5	45
11	Trions in twisted bilayer graphene. <i>Physical Review B</i> , 2022, 105, .	1.1	11
12	Obstructed Surface States as the Descriptor for Predicting Catalytic Active Sites in Inorganic Crystalline Materials. <i>Advanced Materials</i> , 2022, 34, e2201328.	11.1	18
13	Quasi-symmetry-protected topology in a semi-metal. <i>Nature Physics</i> , 2022, 18, 813-818.	6.5	15
14	All topological bands of all nonmagnetic stoichiometric materials. <i>Science</i> , 2022, 376, eabg9094.	6.0	84
15	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. <i>Physical Review Letters</i> , 2022, 128, .	2.9	17
16	Sixfold excitations in electrides. <i>Physical Review Research</i> , 2021, 3, .	1.3	37
17	Crystalline symmetry-protected non-trivial topology in prototype compound BaAl ₄ . <i>Npj Quantum Materials</i> , 2021, 6, .	1.8	7
18	Symmetry-broken Chern insulators and Rashba-like Landau-level crossings in magic-angle bilayer graphene. <i>Nature Physics</i> , 2021, 17, 710-714.	6.5	114

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19	Fractional chiral hinge insulator. Physical Review B, 2021, 103, .	1.1	8
20	Twisted bilayer graphene. IV. Exact insulator ground states and phase diagram. Physical Review B, 2021, 103, .	1.1	123
21	Twisted bilayer graphene. I. Matrix elements, approximations, perturbation theory, and a two-band model. Physical Review B, 2021, 103, .	1.1	93
22	Twisted bilayer graphene. V. Exact analytic many-body excitations in Coulomb Hamiltonians: Charge gap, Goldstone modes, and absence of Cooper pairing. Physical Review B, 2021, 103, .	1.1	89
23	Twisted bilayer graphene. II. Stable symmetry anomaly. Physical Review B, 2021, 103, .	1.1	85
24	Twisted bilayer graphene. VI. An exact diagonalization study at nonzero integer filling. Physical Review B, 2021, 103, .	1.1	79
25	Twisted bilayer graphene. III. Interacting Hamiltonian and exact symmetries. Physical Review B, 2021, 103, .	1.1	98
26	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, .	1.1	25
27	Delocalization Transition of a Disordered Axion Insulator. Physical Review Letters, 2021, 127, 016602.	2.9	13
28	Multiple flat bands and topological Hofstadter butterfly in twisted bilayer graphene close to the second magic angle. Proceedings of the National Academy of Sciences of the United States of America, 2021, 118, .	3.3	35
29	Twisted symmetric trilayer graphene. II. Projected Hartree-Fock study. Physical Review B, 2021, 104, .	1.1	20
30	Thermalization and Its Absence within Krylov Subspaces of a Constrained Hamiltonian. , 2021, , 147-209.		14
31	Fragile Topology and Flat-Band Superconductivity in the Strong-Coupling Regime. Physical Review Letters, 2021, 126, 027002.	2.9	66
32	A charge-density-wave topological semimetal. Nature Physics, 2021, 17, 381-387.	6.5	76
33	Magnetic topological quantum chemistry. Nature Communications, 2021, 12, 5965.	5.8	118
34	Competing Zero-Field Chern Insulators in Superconducting Twisted Bilayer Graphene. Physical Review Letters, 2021, 127, 197701.	2.9	80
35	Noncompact atomic insulators. Physical Review B, 2021, 104, .	1.1	8
36	Cascades between Light and Heavy Fermions in the Normal State of Magic-Angle Twisted Bilayer Graphene. Physical Review Letters, 2021, 127, 266402.	2.9	44

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37	Hofstadter Topology: Noncrystalline Topological Materials at High Flux. Physical Review Letters, 2020, 125, 236804.	2.9	49
38	Large classes of quantum scarred Hamiltonians from matrix product states. Physical Review B, 2020, 102, .	1.1	62
39	Landau level of fragile topology. Physical Review B, 2020, 102, .	1.1	63
40	High-throughput calculations of magnetic topological materials. Nature, 2020, 586, 702-707.	13.7	241
41	Colossal magnetoresistance in a nonsymmorphic antiferromagnetic insulator. Npj Quantum Materials, 2020, 5, .	1.8	38
42	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, .	1.1	17
43	$\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:mi} \rangle \hat{I} \langle \text{mml:mi} \rangle \langle \text{mml:math} \rangle$ -pairing in Hubbard models: From spectrum generating algebras to quantum many-body scars. Physical Review B, 2020, 102, .	1.1	90
44	Quantum many-body scars in a Landau level on a thin torus. Physical Review B, 2020, 102, .	1.1	51
45	Strongly correlated Chern insulators in magic-angle twisted bilayer graphene. Nature, 2020, 588, 610-615.	13.7	262
46	Detection of topological materials with machine learning. Physical Review B, 2020, 101, .	1.1	32
47	Cascade of electronic transitions in magic-angle twisted bilayer graphene. Nature, 2020, 582, 198-202.	13.7	282
48	Fermionic tensor networks for higher-order topological insulators from charge pumping. Physical Review B, 2020, 101, .	1.1	3
49	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.	3.3	12
50	Glide-resolved photoemission spectroscopy: Measuring topological invariants in nonsymmorphic space groups. Physical Review B, 2020, 101, .	1.1	2
51	Fragile Phases as Affine Monoids: Classification and Material Examples. Physical Review X, 2020, 10, .	2.8	43
52	Signatures of Sixfold Degenerate Exotic Fermions in a Superconducting Metal PdSb ₂ . Advanced Materials, 2020, 32, e1906046.	11.1	36
53	Twisted bulk-boundary correspondence of fragile topology. Science, 2020, 367, 794-797.	6.0	93
54	Experimental characterization of fragile topology in an acoustic metamaterial. Science, 2020, 367, 797-800.	6.0	90

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55	Strong and fragile topological Dirac semimetals with higher-order Fermi arcs. Nature Communications, 2020, 11, 627.	5.8	152
56	Topology-Bounded Superfluid Weight in Twisted Bilayer Graphene. Physical Review Letters, 2020, 124, 167002.	2.9	140
57	Spin-Orbit-Induced Topological Flat Bands in Line and Split Graphs of Bipartite Lattices. Physical Review Letters, 2020, 125, 266403.	2.9	43
58	Fragile topology in line-graph lattices with two, three, or four gapped flat bands. Physical Review Research, 2020, 2, .	1.3	21
59	Flatbands and Perfect Metal in Trilayer Moiré Graphene. Physical Review Letters, 2019, 123, 026402.	2.9	83
60	All Magic Angles in Twisted Bilayer Graphene are Topological. Physical Review Letters, 2019, 123, 036401.	2.9	327
61	Spectroscopic signatures of many-body correlations in magic-angle twisted bilayer graphene. Nature, 2019, 572, 101-105.	13.7	459
62	Twisted Bilayer Graphene: A Phonon-Driven Superconductor. Physical Review Letters, 2019, 122, 257002.	2.9	255
63	Higher-Order Topology, Monopole Nodal Lines, and the Origin of Large Fermi Arcs in Transition Metal Dichalcogenides $X\text{Te}$		

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73	Recent Progress in the Study of Topological Semimetals. Journal of the Physical Society of Japan, 2018, 87, 041001.	0.7	118
74	Entanglement of exact excited states of Affleck-Kennedy-Lieb-Tasaki models: Exact results, many-body scars, and violation of the strong eigenstate thermalization hypothesis. Physical Review B, 2018, 98, .	1.1	205
75	Exact excited states of nonintegrable models. Physical Review B, 2018, 98, .	1.1	174
76	Higher-order topological insulators. Science Advances, 2018, 4, eaat0346.	4.7	1,066
77	Topology of Disconnected Elementary Band Representations. Physical Review Letters, 2018, 120, 266401.	2.9	102
78	Higher-order topology in bismuth. Nature Physics, 2018, 14, 918-924.	6.5	590
79	Wallpaper fermions and the nonsymmorphic Dirac insulator. Science, 2018, 361, 246-251.	6.0	125
80	Structure of the entanglement entropy of (3+1)-dimensional gapped phases of matter. Physical Review B, 2018, 97, .	1.1	5
81	Analysis of Influenza and RSV dynamics in the community using a "Local Transmission Zone"™ approach. Scientific Reports, 2017, 7, 42012.	1.6	3
82	Crystal growth and stoichiometry-dependent properties of the ferromagnetic Weyl semimetal $\text{ZrCo}_2\text{As}_3\text{Sn}$. Journal of Physics Condensed Matter, 2017, 29, 225702.	0.7	7
83	Z2Pack: Numerical implementation of hybrid Wannier centers for identifying topological materials. Physical Review B, 2017, 95, .	1.1	322
84	Double crystallographic groups and their representations on the Bilbao Crystallographic Server. Journal of Applied Crystallography, 2017, 50, 1457-1477.	1.9	177
85	Distinguishing a Majorana zero mode using spin-resolved measurements. Science, 2017, 358, 772-776.	6.0	191
86	Graph theory data for topological quantum chemistry. Physical Review E, 2017, 96, 023310.	0.8	84
87	Topological quantum chemistry. Nature, 2017, 547, 298-305.	13.7	947
88	Modular anomalies in (2+1) - and (3+1) -dimensional edge theories. Physical Review B, 2017, 95, .	1.1	1
89	Quantized electric multipole insulators. Science, 2017, 357, 61-66.	6.0	1,321
90	Electric multipole moments, topological multipole moment pumping, and chiral hinge states in crystalline insulators. Physical Review B, 2017, 96, .	1.1	920

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91	High-resolution studies of the Majorana atomic chain platform. Nature Physics, 2017, 13, 286-291.	6.5	180
92	No-go theorem for boson condensation in topologically ordered quantum liquids. New Journal of Physics, 2016, 18, 123009.	1.2	10
93	Time-Reversal-Breaking Weyl Fermions in Magnetic Heusler Alloys. Physical Review Letters, 2016, 117, 236401.	2.9	282
94	Manipulating Majorana zero modes on atomic rings with an external magnetic field. Nature Communications, 2016, 7, 10395.	5.8	59
95	Two-dimensional chiral topological superconductivity in Shiba lattices. Nature Communications, 2016, 7, 12297.	5.8	105
96	Hourglass fermions. Nature, 2016, 532, 189-194.	13.7	343
97	Detection of Majorana Kramers Pairs Using a Quantum Point Contact. Physical Review Letters, 2016, 117, 046804.	2.9	37
98	$\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \text{display="inline"} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle \text{MoTe} \langle \text{mml:mi} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:mrow} \rangle \langle \text{mml:mi} \rangle \text{A Type-II Weyl Topological Metal. Physical Review Letters, 2016, 117, 056805.}$	2.9	37
99	Boson condensation in topologically ordered quantum liquids. Physical Review B, 2016, 93, .	1.1	36
100	Berry-phase description of topological crystalline insulators. Physical Review B, 2016, 93, .	1.1	60
101	Topological Insulators from Group Cohomology. Physical Review X, 2016, 6, .	2.8	100
102	Beyond Dirac and Weyl fermions: Unconventional quasiparticles in conventional crystals. Science, 2016, 353, aaf5037.	6.0	881
103	Imaging electronic states on topological semimetals using scanning tunneling microscopy. New Journal of Physics, 2016, 18, 105003.	1.2	23
104	Parafermionic phases with symmetry breaking and topological order. Physical Review B, 2016, 94, .	1.1	33
105	Quasiparticle interference of the Fermi arcs and surface-bulk connectivity of a Weyl semimetal. Science, 2016, 351, 1184-1187.	6.0	156
106	Matrix product state representation of non-Abelian quasiholes. Physical Review B, 2015, 92, .	1.1	14
107	Projective construction of the \mathbb{Z}_2 fractional quantum Hall states and their excitations on the torus geometry. Physical Review B, 2015, 92, .	1.1	14
108	Entanglement analysis of isotropic spin-1 chains. Journal of Statistical Mechanics: Theory and Experiment, 2015, 2015, P07017.	0.9	12

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109	Giant supercurrent states in a superconductor-InAs/GaSb-superconductor junction. Journal of Applied Physics, 2015, 118, .	1.1	12
110	Weyl Semimetal Phase in Noncentrosymmetric Transition-Metal Monophosphides. Physical Review X, 2015, 5, .	2.8	1,242
111	Interacting bosons in topological optical flux lattices. Physical Review B, 2015, 91, .	1.1	23
112	It's been a Weyl coming. Nature Physics, 2015, 11, 698-699.	6.5	57
113	Type-II Weyl semimetals. Nature, 2015, 527, 495-498.	13.7	1,977
114	New Class of Topological Superconductors Protected by Magnetic Group Symmetries. Physical Review Letters, 2014, 112, 106401.	2.9	54
115	Braiding Non-Abelian Quasiholes in Fractional Quantum Hall States. Physical Review Letters, 2014, 113, 116801.	2.9	37
116	$\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi mathvariant="double-struck"} \rangle Z \langle \text{mml:mi} \rangle \langle \text{mml:mn} \rangle 2 \langle \text{mml:mn} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:math} \rangle$ fractional topological insulators in two dimensions. Physical Review B, 2014, 90, .	1.1	27
117	Wilson-loop characterization of inversion-symmetric topological insulators. Physical Review B, 2014, 89, .	1.1	283
118	Topological superconductivity induced by ferromagnetic metal chains. Physical Review B, 2014, 90, .	1.1	127
119	Haldane statistics for fractional Chern insulators with an arbitrary Chern number. Physical Review B, 2014, 89, .	1.1	31
120	Large-Chern-Number Quantum Anomalous Hall Effect in Thin-Film Topological Crystalline Insulators. Physical Review Letters, 2014, 112, 046801.	2.9	170
121	One-dimensional topological edge states of bismuth bilayers. Nature Physics, 2014, 10, 664-669.	6.5	320
122	Observation of Majorana fermions in ferromagnetic atomic chains on a superconductor. Science, 2014, 346, 602-607.	6.0	1,581
123	Spin-Orbit-Free Topological Insulators without Time-Reversal Symmetry. Physical Review Letters, 2014, 113, 116403.	2.9	111
124	Topological insulators with commensurate antiferromagnetism. Physical Review B, 2013, 88, .	1.1	82
125	Bloch Model Wave Functions and Pseudopotentials for All Fractional Chern Insulators. Physical Review Letters, 2013, 110, 106802.	2.9	81
126	Entanglement spectrum classification of $\langle \text{mml:math xmlns:mml="http://www.w3.org/1998/Math/MathML"} \rangle \langle \text{mml:math} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:mi} \rangle C \langle \text{mml:mi} \rangle \langle \text{mml:mi} \rangle n \langle \text{mml:mi} \rangle \langle \text{mml:msub} \rangle \langle \text{mml:math} \rangle$ -invariant noninteracting topological insulators in two dimensions. Physical Review B, 2013, 87, .	1.1	65

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127	Theory of quasiparticle interference in mirror-symmetric two-dimensional systems and its application to surface states of topological crystalline insulators. Physical Review B, 2013, 88, .	1.1	31
128	Fractional Chern insulators beyond Laughlin states. Physical Review B, 2013, 87, .	1.1	46
129	Series of Abelian and non-Abelian states in C_{ν} fractional Chern insulators. Physical Review B, 2013, 87, .	1.1	86
130	Signature of phase transitions in the disordered quantum spin Hall state from the entanglement spectrum. Physical Review B, 2012, 86, .	1.1	13
131	Emergent many-body translational symmetries of Abelian and non-Abelian fractionally filled topological insulators. Physical Review B, 2012, 85, .	1.1	122
132	Multi-Weyl Topological Semimetals Stabilized by Point Group Symmetry. Physical Review Letters, 2012, 108, 266802.	2.9	545
133	Bulk topological invariants in noninteracting point group symmetric insulators. Physical Review B, 2012, 86, .	1.1	347
134	Gauge-fixed Wannier wave functions for fractional topological insulators. Physical Review B, 2012, 86, .	1.1	66
135	Zoology of fractional Chern insulators. Physical Review B, 2012, 85, .	1.1	133
136	Robustness of s -Wave Pairing in Electron-Overdoped xy Physical Review X, 2011, 1, .	2.8	73
137	Inversion-symmetric topological insulators. Physical Review B, 2011, 83, .	1.1	404
138	Equivalent expression of Z_2 topological invariant for band insulators using the non-Abelian Berry connection. Physical Review B, 2011, 84, .	1.1	667
139	Trace index and spectral flow in the entanglement spectrum of topological insulators. Physical Review B, 2011, 84, .	1.1	70
140	Decomposition of fractional quantum Hall model states: Product rule symmetries and approximations. Physical Review B, 2011, 84, .	1.1	46
141	Fractional Chern Insulator. Physical Review X, 2011, 1, .	2.8	390
142	Mechanism for Explaining Differences in the Order Parameters of FeAs-Based and FeP-Based Pnictide Superconductors. Physical Review Letters, 2011, 106, 187003.	2.9	126
143	Exotic d -Wave Superconducting State of Strongly Hole-Doped Kx Physical Review B, 2011, 84, .	2.9	141
144	Haldane statistics in the finite-size entanglement spectra of $1/m$ fractional quantum Hall states. Physical Review B, 2011, 84, .	1.1	32

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145	Bulk-edge correspondence in entanglement spectra. <i>Physical Review B</i> , 2011, 84, .	1.1	125
146	Electron-quasihole duality and second-order differential equation for Read-Rezayi and Jack wave functions. <i>Physical Review B</i> , 2010, 82, .	1.1	9
147	Nonlocal Order in Gapless Systems: Entanglement Spectrum in Spin Chains. <i>Physical Review Letters</i> , 2010, 105, 116805.	2.9	120
148	Entanglement Gap and a New Principle of Adiabatic Continuity. <i>Physical Review Letters</i> , 2010, 104, 180502.	2.9	155
149	Entanglement Spectrum of a Disordered Topological Chern Insulator. <i>Physical Review Letters</i> , 2010, 105, 115501.	2.9	182
150	Leggett mode in a strong-coupling model of iron arsenide superconductors. <i>Physical Review B</i> , 2010, 82, .	1.1	24
151	Scenario for fractional quantum Hall effect in bulk isotropic materials. <i>Physical Review B</i> , 2009, 79, .	1.1	13
152	Anatomy of Abelian and Non-Abelian Fractional Quantum Hall States. <i>Physical Review Letters</i> , 2009, 103, 206801.	2.9	61
153	Theory of magnetic order in Fe _{1+y} Te _{1-x} Se _x . <i>Europhysics Letters</i> , 2009, 86, 67005.	0.7	67
154	Central charge and quasihole scaling dimensions from model wavefunctions: toward relating Jack wavefunctions to \mathcal{W} -algebras. <i>Journal of Physics A: Mathematical and Theoretical</i> , 2009, 42, 245206.	0.7	30
155	Functional renormalization-group study of the doping dependence of pairing symmetry in the iron pnictide superconductors. <i>Physical Review B</i> , 2009, 80, .	1.1	108
156	Model Fractional Quantum Hall States and Jack Polynomials. <i>Physical Review Letters</i> , 2008, 100, 246802.	2.9	243
157	Pairing Symmetry in a Two-Orbital Exchange Coupling Model of Oxypnictides. <i>Physical Review Letters</i> , 2008, 101, 206404.	2.9	358
158	Properties of Non-Abelian Fractional Quantum Hall States at Filling $\nu = \frac{1}{2}$. <i>Physical Review Letters</i> , 2008, 101, 246806.	2.9	79
159	Experimental consequences of the $\nu = \frac{1}{2}$ -wave		

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163	Helical Liquid and the Edge of Quantum Spin Hall Systems. Physical Review Letters, 2006, 96, 106401.	2.9	648
164	Quantum Spin Hall Effect. Physical Review Letters, 2006, 96, 106802.	2.9	1,651
165	Quantum Spin Hall Effect and Topological Phase Transition in HgTe Quantum Wells. Science, 2006, 314, 1757-1761.	6.0	5,715
166	Transport equations and spin-charge propagating mode in a strongly confined two-dimensional hole gas. Physical Review B, 2006, 74, .	1.1	8
167	BAND COLLAPSE AND THE QUANTUM HALL EFFECT IN GRAPHENE. International Journal of Modern Physics B, 2006, 20, 3257-3278.	1.0	24
168	Orbitronics: The Intrinsic Orbital Current in p-Doped Silicon. Physical Review Letters, 2005, 95, 066601.	2.9	92
169	Intrinsic Spin Hall Effect in the Two-Dimensional Hole Gas. Physical Review Letters, 2005, 95, 016801.	2.9	145
170	Maxwell Equation for Coupled Spin-Charge Wave Propagation. Physical Review Letters, 2005, 95, 076602.	2.9	22