

Xiao-Gang Wen

List of Publications by Year in descending order

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177
times ranked

8981
citing authors

#	ARTICLE	IF	CITATIONS
19	Solution to the $\int_{\mathbb{R}^d} \frac{1}{ x } dx$ dimensional gauged chiral Fermion problem. Physical Review D, 2019, 99, .		
20	A new SU(2) anomaly. Journal of Mathematical Physics, 2019, 60, .	1.1	51
21	Emergent anomalous higher symmetries from topological order and from dynamical electromagnetic field in condensed matter systems. Physical Review B, 2019, 99, .	3.2	56
22	Classification of $\int_{\mathbb{R}^d} \frac{1}{ x } dx$ Bosonic Topological Orders (II): The Case When Some Pointlike Excitations Are Fermions. Physical Review X, 2019, 9, .	8.9	37
23	Gapped Quantum Systems and Entanglement Area Law. Quantum Science and Technology, 2019, , 115-153.	2.6	0
24	A Unification of Information and Matter. Quantum Science and Technology, 2019, , 335-364.	2.6	0
25	Local Transformations and Long-Range Entanglement. Quantum Science and Technology, 2019, , 191-229.	2.6	0
26	Choreographed entanglement dances: Topological states of quantum matter. Science, 2019, 363, .	12.6	95
27	Fermion decoration construction of symmetry-protected trivial order for fermion systems with any symmetry and in any dimension. Physical Review B, 2019, 100, .	3.2	20
28	Noninvertible anomalies and mapping-class-group transformation of anomalous partition functions. Physical Review Research, 2019, 1, .	3.6	36
29	Four revolutions in physics and the second quantum revolution "A unification of force and matter by quantum information. , 2019, , 181-204.		0
30	Majorana Fermions. Physical Review Letters, 2018, 120, 107002.		
31	Four revolutions in physics and the second quantum revolution "A unification of force and matter by quantum information. International Journal of Modern Physics B, 2018, 32, 1830010.	2.0	7
32	Classification of $\int_{\mathbb{R}^d} \frac{1}{ x } dx$ Bosonic Topological Orders: The Case When Pointlike Excitations Are All Bosons. Physical Review X, 2018, 8, .	8.9	54
33	Symmetric Gapped Interfaces of SPT and SET States: Systematic Constructions. Physical Review X, 2018, 8, .	8.9	83
34	Loop Optimization for Tensor Network Renormalization. Physical Review Letters, 2017, 118, 110504.	7.8	96
35	Discovery of Fractionalized Neutral Spin-1/2 Excitation of Topological Order. Chinese Physics Letters, 2017, 34, 090101.	3.3	11
36	Exactly soluble local bosonic cocycle models, statistical transmutation, and simplest time-reversal symmetric topological orders in 3+1 dimensions. Physical Review B, 2017, 95, .	3.2	26

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37	Gapped spin liquid with \mathbb{Z}_2 topological order for the kagome Heisenberg model. Physical Review B, 2017, 95, .	3.2	97
38	Classification of (2+1)-dimensional topological order and symmetry-protected topological order for bosonic and fermionic systems with on-site symmetries. Physical Review B, 2017, 95, .	3.2	44
39	Boundary-bulk relation in topological orders. Nuclear Physics B, 2017, 922, 62-76.	2.5	42
40	Hierarchy Construction and Non-Abelian Families of Generic Topological Orders. Physical Review Letters, 2017, 119, 040403.	7.8	7
41	Colloquium: Zoo of quantum-topological phases of matter. Reviews of Modern Physics, 2017, 89, .	45.6	486
42	Modular Extensions of Unitary Braided Fusion Categories and 2+1D Topological/SPT Orders with Symmetries. Communications in Mathematical Physics, 2017, 351, 709-739.	2.2	32
43	Tensor-product state approach to spin-1/2 Heisenberg model: Evidence for deconfined quantum criticality. Physical Review B, 2016, 94, .	3.3	70
44	Simple-current algebra constructions of 2+1-dimensional topological orders. Physical Review B, 2016, 93, .	3.2	12
45	Multikink topological terms and charge-binding domain-wall condensation induced symmetry-protected topological states: Beyond Chern-Simons/BF field theories. Physical Review B, 2016, 93, .	3.2	36
46	Theory of (2+1)-dimensional fermionic topological orders and fermionic/bosonic topological orders with symmetries. Physical Review B, 2016, 94, .	3.2	54
47	A theory of 2+1D bosonic topological orders. National Science Review, 2016, 3, 68-106.	9.5	79
48	Universal topological data for gapped quantum liquids in three dimensions and fusion algebra for non-Abelian string excitations. Physical Review B, 2015, 91, .	3.2	35
49	Gapped quantum liquids and topological order, stochastic local transformations and emergence of unitarity. Physical Review B, 2015, 91, .	3.2	61
50	Modular matrices from universal wave-function overlaps in Gutzwiller-projected parton wave functions. Physical Review B, 2015, 91, .	3.2	15
51	Boundary degeneracy of topological order. Physical Review B, 2015, 91, .	3.2	66
52	Classification of two-dimensional fermionic and bosonic topological orders. Physical Review B, 2015, 91, .	3.2	47
53	Universal Wave-Function Overlap and Universal Topological Data from Generic Gapped Ground States. Physical Review Letters, 2015, 115, 036802.	7.8	31
54	Bosonic anomalies, induced fractional quantum numbers, and degenerate zero modes: The anomalous edge physics of symmetry-protected topological states. Physical Review B, 2015, 91, .	3.2	46

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55	Topological degeneracy (Majorana zero-mode) and 1D fermionic topological order in a magnetic chain on superconductor via spontaneous \mathbb{Z}_2 symmetry breaking. Journal of Physics Condensed Matter, 2015, 27, 405601.	1.8	7
56	Gapped Domain Walls, Gapped Boundaries, and Topological Degeneracy. Physical Review Letters, 2015, 114, 076402.	7.8	97
57	Field-Theory Representation of Gauge-Gravity Symmetry-Protected Topological Invariants, Group Cohomology, and Beyond. Physical Review Letters, 2015, 114, 031601.	7.8	130
58	Non-Abelian string and particle braiding in topological order: Modular and twisted gauge theory. Physical Review B, 2015, 91, .	3.2	85
59	Construction of bosonic symmetry-protected trivial states and their topological invariants via twisted gauge theory. Physical Review B, 2015, 91, .	3.2	54
60	Topological order in Gutzwiller wave functions. Physical Review B, 2014, 90, .	3.2	29
61	Microscopic Realization of Two-Dimensional Bosonic Topological Insulators. Physical Review Letters, 2014, 113, 267206.	7.8	30
62	Symmetry-protected topological orders for interacting fermions: Fermionic topological nonlinear models and a special group supercohomology theory. Physical Review B, 2014, 90, .	3.2	206
63	Topological quasiparticles and the holographic bulk-edge relation in string-net models. Physical Review B, 2014, 90, .	3.2	78
64	Lattice model for fermionic toric code. Physical Review B, 2014, 90, .	3.2	41
65	Modular matrices as topological order parameter by a gauge-symmetry-preserved tensor renormalization approach. Physical Review B, 2014, 90, .	3.2	44
66	Symmetry-protected topological invariants of symmetry-protected topological phases of interacting bosons and fermions. Physical Review B, 2014, 89, .	3.2	64
67	Constructing symmetric topological phases of bosons in three dimensions via fermionic projective construction and dyon condensation. Physical Review B, 2014, 89, .	3.2	45
68	Universal symmetry-protected topological invariants for symmetry-protected topological states. Physical Review B, 2014, 89, .	3.2	48
69	Classifying gauge anomalies through symmetry-protected trivial orders and classifying gravitational anomalies through topological orders. Physical Review D, 2013, 88, .	4.7	138
70	Synthetic non-Abelian statistics by Abelian anyon condensation. Physical Review B, 2013, 87, .	3.2	50
71	Symmetry protected topological orders and the group cohomology of their symmetry group. Physical Review B, 2013, 87, .	3.2	832
72	Topological Order: From Long-Range Entangled Quantum Matter to a Unified Origin of Light and Electrons. , 2013, 2013, 1-20.		88

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73	Time-reversal symmetry breaking superconducting ground state in the doped Mott insulator on the honeycomb lattice. <i>Physical Review B</i> , 2013, 88, .	3.2	51
74	Quantized topological terms in weak-coupling gauge theories with a global symmetry and their connection to symmetry-enriched topological phases. <i>Physical Review B</i> , 2013, 87, .	3.2	82
75	Symmetry-Protected Quantum Spin Hall Phases in Two Dimensions. <i>Physical Review Letters</i> , 2013, 110, 067205.	7.8	69
76	Projective construction of two-dimensional symmetry-protected topological phases with U(1), SO(3), or SU(2) symmetries. <i>Physical Review B</i> , 2013, 87, .	3.2	43
77	A Lattice Non-Perturbative Definition of an $SO(10)$ Chiral Gauge Theory and Its Induced Standard Model. <i>Chinese Physics Letters</i> , 2013, 30, 111101.	3.3	40
78	Symmetry-Protected Topological Orders in Interacting Bosonic Systems. <i>Science</i> , 2012, 338, 1604-1606.	12.6	477
79	Symmetry-protected topological phases in spin ladders with two-body interactions. <i>Physical Review B</i> , 2012, 86, .	3.2	26
80	Chiral symmetry on the edge of two-dimensional symmetry protected topological phases. <i>Physical Review B</i> , 2012, 86, .	3.2	38
81	Projective non-Abelian statistics of dislocation defects in a $Z \times N$ rotor model. <i>Physical Review B</i> , 2012, 86, .	3.2	93
82	Majorana zero-modes and topological phases of multi-flavored Jackiw-Rebbi model. <i>Journal of High Energy Physics</i> , 2012, 2012, 1.	4.7	6
83	Interacting One-Dimensional Fermionic Symmetry-Protected Topological Phases. <i>Physical Review Letters</i> , 2012, 109, 096403.	7.8	48
84	Symmetry-protected topological phases in noninteracting fermion systems. <i>Physical Review B</i> , 2012, 85, .	3.2	98
85	Symmetry-protected topological orders of one-dimensional spin systems with $D \times 2$ symmetry. <i>Physical Review B</i> , 2011, 84, .	3.2	19
86	Classification of gapped symmetric phases in one-dimensional spin systems. <i>Physical Review B</i> , 2011, 83, .	3.2	651
87	Two-dimensional symmetry-protected topological orders and their protected gapless edge excitations. <i>Physical Review B</i> , 2011, 84, .	3.2	262
88	Complete classification of one-dimensional gapped quantum phases in interacting spin systems. <i>Physical Review B</i> , 2011, 84, .	3.2	304
89	High-Temperature Fractional Quantum Hall States. <i>Physical Review Letters</i> , 2011, 106, 236802.	7.8	754
90	Gapped quantum phases for the $S = 1$ spin chain with $D \times 2$ symmetry. <i>Physical Review B</i> , 2011, 84, .	3.2	20

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91	String-nets, single- and double-stranded quantum loop gases for non-Abelian anyons. Journal of Physics A: Mathematical and Theoretical, 2010, 43, 172002.	2.1	3
92	Tensor product representation of a topological ordered phase: Necessary symmetry conditions. Physical Review B, 2010, 82, .	3.2	42
93	Anyon Condensation and Continuous Topological Phase Transitions in Non-Abelian Fractional Quantum Hall States. Physical Review Letters, 2010, 105, 216804.	7.8	54
94	Local unitary transformation, long-range quantum entanglement, wave function renormalization, and topological order. Physical Review B, 2010, 82, .	3.2	579
95	Non-Abelian quantum Hall states and their quasiparticles: From the pattern of zeros to vertex algebra. Physical Review B, 2010, 81, .	3.2	25
96	Translation-invariant topological superconductors on a lattice. Physical Review B, 2010, 82, .	3.2	11
97	Topological Entanglement Entropy and Reduced Density Matrix Structure. Physical Review Letters, 2009, 103, 261601.	7.8	155
98	Tensor-entanglement-filtering renormalization approach and symmetry-protected topological order. Physical Review B, 2009, 80, .	3.2	682
99	Tensor-product representations for string-net condensed states. Physical Review B, 2009, 79, .	3.2	119
100	Translation-symmetry-protected topological orders in quantum spin systems. Physical Review B, 2009, 80, .	3.2	49
101	Mutual Chern-Simons Landau-Ginzburg theory for continuous quantum phase transition of Z_2 topological order. Physical Review B, 2009, 80, .	3.2	14
102	Tensor-entanglement renormalization group approach as a unified method for symmetry breaking and topological phase transitions. Physical Review B, 2008, 78, .	3.2	213
103	Classification of symmetric polynomials of infinite variables: Construction of Abelian and non-Abelian quantum Hall states. Physical Review B, 2008, 77, .	3.2	56
104	Topological quantum phase transition in the transverse Wen-plaquette model. Europhysics Letters, 2008, 84, 17004.	2.0	31
105	Mutual Chern-Simons theory for Z_2 topological order. Physical Review B, 2008, 78, .	3.2	17
106	Properties of an algebraic spin liquid on the kagome lattice. Physical Review B, 2008, 77, .	3.2	232
107	Topological Surface States in Three-Dimensional Magnetic Insulators. Physical Review Letters, 2008, 101, 186805.	7.8	136
108	Electromagnetic response of high-Tc superconductors: Slave-boson and doped-carrier theories. Physical Review B, 2008, 77, .	3.2	4

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109	Projected-Wave-Function Study of the Spin-1/2 Heisenberg Model on the Kagomé Lattice. Physical Review Letters, 2007, 98, 117205.	7.8	456
110	Mutual Chern-Simons theory and its applications in condensed matter physics. Frontiers of Physics in China, 2007, 2, 31-35.	1.0	1
111	Electron spectral function of high-temperature cuprate superconductors. , 2007, , 61-109.		0
112	Detecting Topological Order in a Ground State Wave Function. Physical Review Letters, 2006, 96, 110405.	7.8	1,444
113	Doping a Mott insulator: Physics of high-temperature superconductivity. Reviews of Modern Physics, 2006, 78, 17-85.	45.6	3,488
114	Doped carrier formulation and mean-field theory of the $t\text{-}t'\text{-}J$ model. Physical Review B, 2006, 74, .	3.2	35
115	String-net condensation: a physical mechanism for topological phases. Physical Review B, 2005, 71, .	3.2	955
116	An introduction to quantum order, string-net condensation, and emergence of light and fermions. Annals of Physics, 2005, 316, 1-29.	2.8	34
117	Pseudogap, superconducting energy scale, and Fermi arcs of underdoped cuprate superconductors. Physical Review B, 2005, 72, .	3.2	39
118	String and membrane condensation on three-dimensional lattices. Physical Review B, 2005, 72, .	3.2	68
119	Colloquium: Photons and electrons as emergent phenomena. Reviews of Modern Physics, 2005, 77, 871-879.	45.6	128
120	From New States of Matter to a Unification of Light and Electrons. Progress of Theoretical Physics Supplement, 2005, 160, 351-360.	0.1	4
121	Quasiadiabatic continuation of quantum states: The stability of topological ground-state degeneracy and emergent gauge invariance. Physical Review B, 2005, 72, .	3.2	243
122	Stability of $U(1)$ spin liquids in two dimensions. Physical Review B, 2004, 70, .	3.2	246
123	Quantum Orders in an Exact Soluble Model. Physical Review Letters, 2003, 90, 016803.	7.8	286
124	Quantum order from string-net condensations and the origin of light and massless fermions. Physical Review D, 2003, 68, .	4.7	91
125	Artificial light and quantum order in systems of screened dipoles. Physical Review B, 2003, 68, .	3.2	56
126	Fermions, strings, and gauge fields in lattice spin models. Physical Review B, 2003, 67, .	3.2	153

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127	Spin correlations in the algebraic spin liquid: Implications for high-Tc superconductors. Physical Review B, 2002, 66, .	3.2	150
128	Quantum orders and symmetric spin liquids. Physical Review B, 2002, 65, .	3.2	745
129	Quantum order: a quantum entanglement of many particles. Physics Letters, Section A: General, Atomic and Solid State Physics, 2002, 300, 175-181.	2.1	74
130	Origin of Gauge Bosons from Strong Quantum Correlations. Physical Review Letters, 2001, 88, 011602.	7.8	54
131	Electron Spectral Function and Algebraic Spin Liquid for the Normal State of Underdoped High-Tc Superconductors. Physical Review Letters, 2001, 86, 3871-3874.	7.8	166
132	Striped states in quantum Hall effect: Deriving a low-energy theory from Hartree-Fock. Physical Review B, 2001, 64, .	3.2	24
133	Staggered Local Density of States around the Vortex in Underdoped Cuprates. Physical Review Letters, 2001, 86, 5365-5368.	7.8	43
134	Anomalous Magnetic Splitting of the Kondo Resonance. Physical Review Letters, 2000, 85, 1722-1725.	7.8	87
135	Continuous Topological Phase Transitions between Clean Quantum Hall States. Physical Review Letters, 2000, 84, 3950-3953.	7.8	84
136	Tunneling Density of States of High-Tc Superconductors: d-Wave BCS Model versus SU(2) Slave-Boson Model. Physical Review Letters, 2000, 85, 3692-3695.	7.8	23
137	Staggered-Vorticity Correlations in a Lightly Doped $t\text{-}J$ Model: A Variational Approach. Physical Review Letters, 2000, 84, 3958-3961.	7.8	114
138	Projective construction of non-Abelian quantum Hall liquids. Physical Review B, 1999, 60, 8827-8838.	3.2	93
139	Binding Transition in Quantum Hall Edge States. Physical Review Letters, 1999, 83, 5563-5566.	7.8	10
140	Fractional Quantum Hall Liquids: New State of Matter, New Type of Order. , 1999, , 148-154.		0
141	THEORY OF THE UNUSUAL NORMAL AND SUPERCONDUCTING STATES OF UNDERDOPED CUPRATES. Journal of Physics and Chemistry of Solids, 1998, 59, 1723-1728.	4.0	2
142	Theory of Quasiparticles in the Underdoped High-Tc Superconducting State. Physical Review Letters, 1998, 80, 2193-2196.	7.8	101
143	Classification of disordered phases of quantum Hall edge states. Physical Review B, 1998, 57, 10138-10156.	3.2	38
144	SU(2) formulation of the $t\text{-}J$ model: Application to underdoped cuprates. Physical Review B, 1998, 57, 6003-6021.	3.2	199

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145	Massless Dirac Fermions, Gauge Fields, and Underdoped Cuprates. <i>Physical Review Letters</i> , 1997, 79, 2109-2112.	7.8	56
146	Disordered critical wave functions in random-bond models in two dimensions: Random-lattice fermions at $E=0$ without doubling. <i>Physical Review B</i> , 1997, 56, 1061-1064.	3.2	65
147	Unusual Superconducting State of Underdoped Cuprates. <i>Physical Review Letters</i> , 1997, 78, 4111-4114.	7.8	277
148	Instability of the disordered critical points of Dirac fermions. <i>Physical Review B</i> , 1996, 53, R7638-R7641.	3.2	35
149	Theory of Underdoped Cuprates. <i>Physical Review Letters</i> , 1996, 76, 503-506.	7.8	495
150	Localization in Two Dimensions, Gaussian Field Theories, and Multifractality. <i>Physical Review Letters</i> , 1996, 77, 4194-4197.	7.8	120
151	Quantum Boltzmann equation of composite fermions interacting with a gauge field. <i>Physical Review B</i> , 1995, 52, 17275-17292.	3.2	64
152	Exchange Effects in Artificial Atoms. <i>Japanese Journal of Applied Physics</i> , 1995, 34, 4369-4372.	1.5	4
153	Influence of gauge-field fluctuations on composite fermions near the half-filled state. <i>Physical Review B</i> , 1995, 51, 10779-10788.	3.2	16
154	Topological orders and edge excitations in fractional quantum Hall states. <i>Advances in Physics</i> , 1995, 44, 405-473.	14.4	836
155	DYNAMICS OF THE EDGE EXCITATIONS IN THE FQH EFFECTS. <i>International Journal of Modern Physics B</i> , 1994, 08, 457-464.	2.0	1
156	Transitions between Hall plateaus in the presence of strong Landau level mixing. <i>Physical Review Letters</i> , 1994, 72, 2454-2457.	7.8	50
157	Gauge-invariant response functions of fermions coupled to a gauge field. <i>Physical Review B</i> , 1994, 50, 17917-17932.	3.2	156
158	Large-N renormalization-group study of the commensurate dirty-boson problem. <i>Physical Review B</i> , 1994, 49, 4043-4052.	3.2	19
159	Instantons and the spectral function of electrons in the half-filled Landau level. <i>Physical Review B</i> , 1994, 50, 8078-8081.	3.2	36
160	Impurity effects on chiral one-dimensional electron systems. <i>Physical Review B</i> , 1994, 50, 5420-5428.	3.2	16
161	Orbital spins of the collective excitations in Hall liquids. <i>Physical Review B</i> , 1994, 49, 11066-11070.	3.2	14
162	THE GROUND STATE STRUCTURE AND MODULAR TRANSFORMATIONS OF FRACTIONAL QUANTUM HALL STATES ON A TORUS. <i>International Journal of Modern Physics B</i> , 1993, 07, 4227-4259.	2.0	91

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163	Effects of collective modes on pair tunneling into superconductors. Physical Review B, 1993, 48, 6319-6329.	3.2	17
164	Topological order and edge structure of $\hat{\nu}=1/2$ quantum Hall state. Physical Review Letters, 1993, 70, 355-358.	7.8	67
165	Transitions between the quantum Hall states and insulators induced by periodic potentials. Physical Review Letters, 1993, 70, 1501-1504.	7.8	107
166	Scaling theory of conserved current and universal amplitudes at anisotropic critical points. Physical Review B, 1992, 46, 2655-2662.	3.2	22
167	Conductance through a quantum dot in the fractional quantum Hall regime. Physical Review B, 1992, 45, 9489-9492.	3.2	42
168	Many-body coherence effects in conduction through a quantum dot in the fractional quantum Hall regime. Physical Review B, 1992, 46, 4681-4692.	3.2	105
169	Neutral superfluid modes and $\hat{\nu}$ -magnetic monopoles in multilayered quantum Hall systems. Physical Review Letters, 1992, 69, 1811-1814.	7.8	276
170	THEORY OF THE EDGE STATES IN FRACTIONAL QUANTUM HALL EFFECTS. International Journal of Modern Physics B, 1992, 06, 1711-1762.	2.0	673
171	Edge excitations in the fractional-quantum-Hall liquids. Physical Review Letters, 1991, 66, 1765-1768.	7.8	54
172	Paired Hall state at half filling. Physical Review Letters, 1991, 66, 3205-3208.	7.8	350
173	Edge transport properties of the fractional quantum Hall states and weak-impurity scattering of a one-dimensional charge-density wave. Physical Review B, 1991, 44, 5708-5719.	3.2	244
174	TOPOLOGICAL ORDERS AND CHERN-SIMONS THEORY IN STRONGLY CORRELATED QUANTUM LIQUID. International Journal of Modern Physics B, 1991, 05, 1641-1648.	2.0	104
175	Charge-bosons, neutral fermions, and h^2 -flux-field theory models. Physical Review B, 1988, 38, 12004-12007.	3.2	6
176	Charged boson condensation in high- T_c superconductors. Physical Review B, 1988, 37, 595-598.	3.2	46
177	The Josephson effect and flux quantum in RVB superconductors. Physics Letters, Section A: General, Atomic and Solid State Physics, 1987, 123, 188-190.	2.1	1