

# Duncan Haldane

## List of Publications by Year in descending order

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107  
papers

29,454  
citations

23500

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26548

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109  
all docs

109  
docs citations

109  
times ranked

11027  
citing authors

#	ARTICLE	IF	CITATIONS
1	Model for a Quantum Hall Effect without Landau Levels: Condensed-Matter Realization of the "Parity Anomaly". Physical Review Letters, 1988, 61, 2015-2018.	2.9	4,579
2	Nonlinear Field Theory of Large-Spin Heisenberg Antiferromagnets: Semiclassically Quantized Solitons of the One-Dimensional Easy-Axis Néel State. Physical Review Letters, 1983, 50, 1153-1156.	2.9	3,126
3	'Luttinger liquid theory' of one-dimensional quantum fluids. I. Properties of the Luttinger model and their extension to the general 1D interacting spinless Fermi gas. Journal of Physics C: Solid State Physics, 1981, 14, 2585-2609.	1.5	2,118
4	Possible Realization of Directional Optical Waveguides in Photonic Crystals with Broken Time-Reversal Symmetry. Physical Review Letters, 2008, 100, 013904.	2.9	2,040
5	Fractional Quantization of the Hall Effect: A Hierarchy of Incompressible Quantum Fluid States. Physical Review Letters, 1983, 51, 605-608.	2.9	1,827
6	Entanglement Spectrum as a Generalization of Entanglement Entropy: Identification of Topological Order in Non-Abelian Fractional Quantum Hall Effect States. Physical Review Letters, 2008, 101, 010504.	2.9	1,169
7	Effective Harmonic-Fluid Approach to Low-Energy Properties of One-Dimensional Quantum Fluids. Physical Review Letters, 1981, 47, 1840-1843.	2.9	1,039
8	Analogs of quantum-Hall-effect edge states in photonic crystals. Physical Review A, 2008, 78, .	1.0	963
9	~Fractional statistics~ in arbitrary dimensions: A generalization of the Pauli principle. Physical Review Letters, 1991, 67, 937-940.	2.9	840

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#	ARTICLE	IF	CITATIONS
19	Incompressible Paired Hall State, Stripe Order, and the Composite Fermion Liquid Phase in Half-Filled Landau Levels. <i>Physical Review Letters</i> , 2000, 84, 4685-4688.	2.9	337
20	Periodic Laughlin-Jastrow wave functions for the fractional quantized Hall effect. <i>Physical Review B</i> , 1985, 31, 2529-2531.	1.1	297
21	Spin-singlet wave function for the half-integral quantum Hall effect. <i>Physical Review Letters</i> , 1988, 60, 956-959.	2.9	285
22	Many-Particle Translational Symmetries of Two-Dimensional Electrons at Rational Landau-Level Filling. <i>Physical Review Letters</i> , 1985, 55, 2095-2098.	2.9	283
23	Yangian symmetry of integrable quantum chains with long-range interactions and a new description of states in conformal field theory. <i>Physical Review Letters</i> , 1992, 69, 2021-2025.	2.9	271
24	Spinon gas description of the $S=1/2$ Heisenberg chain with inverse-square exchange: Exact spectrum and thermodynamics. <i>Physical Review Letters</i> , 1991, 66, 1529-1532.	2.9	268
25	Extended Heisenberg models of antiferromagnetism: Analogies to the fractional quantum Hall effect. <i>Physical Review Letters</i> , 1988, 60, 531-534.	2.9	265
26	Model Fractional Quantum Hall States and Jack Polynomials. <i>Physical Review Letters</i> , 2008, 100, 246802.	2.9	243
27	Geometrical Description of the Fractional Quantum Hall Effect. <i>Physical Review Letters</i> , 2011, 107, 116801.	2.9	230
28	Yang-Baxter equation in long-range interacting systems. <i>Journal of Physics A</i> , 1993, 26, 5219-5236.	1.6	225
29	Nondissipative Spin Hall Effect via Quantized Edge Transport. <i>Physical Review Letters</i> , 2005, 95, 136602.	2.9	192
30	Spinon physics and quantum spin chains (abstract). <i>Journal of Applied Physics</i> , 1985, 57, 3359-3359.	1.1	160
31	Models with inverse-square exchange. <i>Physical Review B</i> , 1992, 46, 9359-9368.	1.1	144
32	Stability of Chiral Luttinger Liquids and Abelian Quantum Hall States. <i>Physical Review Letters</i> , 1995, 74, 2090-2093.	2.9	138
33	Theory of the atomic limit of the Anderson model. I. Perturbation expansions re-examined. <i>Journal of Physics C: Solid State Physics</i> , 1978, 11, 5015-5034.	1.5	132
34	Charge-Density-Wave Ordering in Half-Filled High Landau Levels. <i>Physical Review Letters</i> , 1999, 83, 1219-1222.	2.9	129
35	Quantum dynamics and statistics of vortices in two-dimensional superfluids. <i>Physical Review Letters</i> , 1985, 55, 2887-2890.	2.9	123
36	Path dependence of the geometric rotation of polarization in optical fibers. <i>Optics Letters</i> , 1986, 11, 730.	1.7	105

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37	Laughlin state on stretched and squeezed cylinders and edge excitations in the quantum Hall effect. Physical Review B, 1994, 50, 17199-17207.	1.1	101
38	Topological Entanglement and Clustering of Jain Hierarchy States. Physical Review Letters, 2009, 103, 016801.	2.9	96
39	Exact calculation of the ground-state dynamical spin correlation function of a $S=1/2$ antiferromagnetic Heisenberg chain with free spinons. Physical Review Letters, 1993, 71, 4055-4058.	2.9	88
40	Band mass anisotropy and the intrinsic metric of fractional quantum Hall systems. Physical Review B, 2012, 85, .	1.1	87
41	Phase diagrams of surface structures from Bethe-ansatz solutions of the quantum sine-Gordon model. Physical Review B, 1983, 28, 2743-2745.	1.1	86
42	Localization, wave-function topology, and the integer quantized Hall effect. Physical Review Letters, 1988, 60, 619-622.	2.9	85
43	Geometrical Interpretation of Momentum and Crystal Momentum of Classical and Quantum Ferromagnetic Heisenberg Chains. Physical Review Letters, 1986, 57, 1488-1491.	2.9	84
44	Generalized clustering conditions of Jack polynomials at negative Jack parameter $\lambda_{\pm}$ . Physical Review B, 2008, 77, .	1.1	84
45	Spontaneous Breakdown of Translational Symmetry in Quantum Hall Systems: Crystalline Order in High Landau Levels. Physical Review Letters, 2000, 85, 5396-5399.	2.9	82
46	Properties of Non-Abelian Fractional Quantum Hall States at Filling $\nu = \frac{1}{2}$ . Physical Review Letters, 2008, 101, 246806.	2.9	79
47	Wigner crystals in the lowest Landau level at low-filling factors. Physical Review B, 2001, 64, .	1.1	76
48	Model Wave Functions for the Collective Modes and the Magnetoroton Theory of the Fractional Quantum Hall Effect. Physical Review Letters, 2012, 108, 256807.	2.9	71
49	Clustering Properties and Model Wave Functions for Non-Abelian Fractional Quantum Hall Quasielectrons. Physical Review Letters, 2009, 102, 066802.	2.9	69
50	Model anisotropic quantum Hall states. Physical Review B, 2012, 85, .	1.1	69
51	Impurity effect, degeneracy, and topological invariant in the quantum Hall effect. Physical Review B, 1986, 33, 3844-3850.	1.1	68
52	Topological Nodal Cooper Pairing in Doped Weyl Metals. Physical Review Letters, 2018, 120, 067003.	2.9	68
53	Hartree-Fock study of the Anderson model coupled to a boson field; mixed valence states. Physical Review B, 1977, 15, 281-289.	1.1	67
54	Disorder-Driven Collapse of the Mobility Gap and Transition to an Insulator in the Fractional Quantum Hall Effect. Physical Review Letters, 2003, 90, 256802.	2.9	65

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55	Odd-Integer Quantum Hall Effect in Graphene: Interaction and Disorder Effects. Physical Review Letters, 2007, 99, 196802.	2.9	64
56	Incompressible states of the fractionally quantized Hall effect in the presence of impurities: A finite-size study. Physical Review B, 1985, 32, 6924-6927.	1.1	62
57	Excitation spectrum of a generalised Heisenberg ferromagnetic spin chain with arbitrary spin. Journal of Physics C: Solid State Physics, 1982, 15, L1309-L1313.	1.5	57
58	Particle-hole symmetry breaking and the $\frac{1}{2}$ fractional quantum Hall effect. Physical Review B, 2009, 80, .	1.1	56
59	Off-Diagonal Long-Range Order in Fractional Quantum-Hall-Effect States. Physical Review Letters, 1988, 61, 1985-1988.	2.9	52
60	Landau Level Mixing and Levitation of Extended States in Two Dimensions. Physical Review Letters, 1997, 78, 298-301.	2.9	51
61	New model for the mixed-valence phenomenon in rare-earth materials. Physical Review B, 1977, 15, 2477-2484.	1.1	49
62	Coupling between charge and spin degrees of freedom in the one-dimensional Fermi gas with backscattering. Journal of Physics C: Solid State Physics, 1979, 12, 4791-4799.	1.5	48
63	Quantum field ground state of the sine-Gordon model with finite soliton density: exact results. Journal of Physics A, 1982, 15, 507-525.	1.6	46
64	Quantized spin currents in two-dimensional chiral magnets. Physical Review B, 1995, 52, 4223-4225.	1.1	42
65	Mobility gap in fractional quantum Hall liquids: Effects of disorder and layer thickness. Physical Review B, 2005, 72, .	1.1	42
66	Fractional Quantum Hall States at $\frac{1}{2}$ and $\frac{1}{3}$ filling: Density-matrix renormalization group calculations. Physical Review Letters, 2015, 115, 126805.	2.9	41
67	Elementary Excitations of One-Dimensional $\hat{J}$ Model with Inverse-Square Exchange. Physical Review Letters, 1994, 73, 2887-2890.	2.9	39
68	Squeezed strings and Yangian symmetry of the Heisenberg chain with long-range interaction. Physical Review B, 1993, 47, 12459-12469.	1.1	38
69	Spin Hall effect and spin transfer in a disordered Rashba model. Physical Review B, 2005, 72, .	1.1	37
70	Minimal entangled states and modular matrix for fractional quantum Hall effect in topological flat bands. Physical Review B, 2013, 88, .	1.1	35
71	Topological phase transition in the $\hat{\nu}=2/3$ quantum Hall effect. Physical Review B, 1996, 53, 15845-15855.	1.1	33
72	Fractional quantum Hall states at $\frac{1}{3}$ and $\frac{2}{5}$ filling: Density-matrix renormalization group calculations. Physical Review B, 2011, 83, .	1.1	33

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73	Entanglement Entropy of the $\nu=1/2$ Composite Fermion Non-Fermi Liquid State. Physical Review Letters, 2015, 114, 206402.	2.9	33
74	Probing the geometry of the Laughlin state. New Journal of Physics, 2016, 18, 025011.	1.2	33
75	Mapping the braiding properties of the Moore-Read state. Physical Review B, 2009, 80, .	1.1	32
76	Quantum Phase Transitions and the $\nu=1/2$ Fractional Hall State in Wide Quantum Wells. Physical Review Letters, 2012, 109, 266806.	2.9	32
77	Single-particle Green's functions of the Calogero-Sutherland model at couplings $\nu=1/2, 1$ , and $2$ . Physical Review B, 1995, 52, 8729-8746.	1.1	31
78	Fractional quantum Hall bilayers at half filling: Tunneling-driven non-Abelian phase. Physical Review B, 2016, 94, .	1.1	31
79	Chiral Gravitons in Fractional Quantum Hall Liquids. Physical Review Letters, 2019, 123, 146801.	2.9	29
80	Dynamical $T=0$ correlations of the $S=1/2$ one-dimensional Heisenberg antiferromagnet with $1/r^2$ exchange in a magnetic field. Physical Review B, 1994, 50, 6889-6899.	1.1	28
81	Comment on "Observation of Berry's topological phase by use of an optical fiber". Physical Review Letters, 1987, 59, 1788-1788.	2.9	27
82	Guiding-center Hall viscosity and intrinsic dipole moment along edges of incompressible fractional quantum Hall fluids. Physical Review B, 2014, 90, .	1.1	27
83	Berry Phase and Model Wave Function in the Half-Filled Landau Level. Physical Review Letters, 2018, 121, 147202.	2.9	27
84	Lowest-order Landau-level mixing corrections for $\nu=2$ quantum Hall effect. Physical Review B, 1990, 42, 4532-4536.	1.1	26
85	Integrals of motion of the Haldane-Shastry model. Journal of Physics A, 1995, 28, 2369-2377.	1.6	26
86	Comment on "Weyl fermions and the anomalous Hall effect in metallic ferromagnets". Physical Review B, 2014, 89, .	1.1	26
87	Physics of the Ideal Semion Gas: Spinons and Quantum Symmetries of the Integrable Haldane-Shastry Spin Chain. Springer Series in Solid-state Sciences, 1994, , 3-20.	0.3	25
88	Identifying Non-Abelian Topological Order through Minimal Entangled States. Physical Review Letters, 2014, 112, 096803.	2.9	24
89	The hierarchical structure in the orbital entanglement spectrum of fractional quantum Hall systems. New Journal of Physics, 2011, 13, 105001.	1.2	23
90	Topological characterization of the non-Abelian Moore-Read state using density-matrix renormalization group. Physical Review B, 2015, 92, .	1.1	23

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91	Lattice Monte Carlo for quantum Hall states on a torus. Physical Review B, 2019, 99, .	1.1	19
92	Pomeranchuk Instability of Composite Fermi Liquids. Physical Review Letters, 2018, 121, 147601.	2.9	18
93	The origin of holomorphic states in Landau levels from non-commutative geometry and a new formula for their overlaps on the torus. Journal of Mathematical Physics, 2018, 59, .	0.5	18
94	The soliton wavenumber cut-off and the excitation spectrum of the 1-D Heisenberg ferromagnet in the semiclassical continuum approximation. Journal of Physics C: Solid State Physics, 1982, 15, L831-L835.	1.5	17
95	Broken-Symmetry States of Dirac Fermions in Graphene with a Partially Filled High Landau Level. Physical Review Letters, 2008, 100, 116802.	2.9	17
96	A modular-invariant modified Weierstrass sigma-function as a building block for lowest-Landau-level wavefunctions on the torus. Journal of Mathematical Physics, 2018, 59, 071901.	0.5	16
97	Nature of Quasielectrons and the Continuum of Neutral Bulk Excitations in Laughlin Quantum Hall Fluids. Physical Review Letters, 2014, 112, 026804.	2.9	15
98	Stability of the particle-hole Pfaffian state and the $\nu = 5/2$ fractional quantum Hall effect. Physical Review B, 2021, 104, .	1.1	14
99	Exact diagonalization study of domain structure in integer filling factor quantum Hall ferromagnets. Physical Review B, 2003, 67, .	1.1	12
100	Effective Harmonic-Fluid Approach to Low-Energy Properties of One-Dimensional Quantum Fluids.. Physical Review Letters, 1982, 48, 569-569.	2.9	11
101	Graviton chirality and topological order in the half-filled Landau level. Physical Review B, 2021, 104, .	1.1	9
102	Geometry of flux attachment in anisotropic fractional quantum Hall states. Physical Review B, 2018, 98, .	1.1	6
103	Non-Abelian statistics in one dimension: Topological momentum spacings and SU(2) level-k fusion rules. Physical Review B, 2019, 100, .	1.1	6
104	Microscopic diagnosis of universal geometric responses in fractional quantum Hall liquids. Physical Review B, 2021, 103, .	1.1	6
105	Elementary excitations of the quantum sine-Gordon model in the massless regime: Derivation from the XXZ model. Physical Review B, 1983, 28, 2505-2508.	1.1	1
106	Gauge-invariant perturbation expansion in powers of electric charge for the density-of-states of a network model for charged-particle motion in a uniform background magnetic flux density. Journal of Mathematical Physics, 2021, 62, 071901.	0.5	0
107	Stripes and Pairing in the $\nu = 5/2$ Quantum Hall Effect. , 2001, , 203-213.		0