Duncan Haldane

List of Publications by Citations

106 papers	**24,925** citations	**56** h-index	**109** g-index
109 ext. papers	**27,533** ext. citations	**5.3** avg, IF	**7.51** L-index

#	Paper	IF	Citations
106	Model for a quantum Hall effect without Landau levels: Condensed-matter realization of the "parity anomaly". *Physical Review Letters*, **1988**, 61, 2015-2018	7.4	3442
105	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	7.4	2766
104	'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		1894
103	Fractional Quantization of the Hall Effect: A Hierarchy of Incompressible Quantum Fluid States. *Physical Review Letters*, **1983**, 51, 605-608	7.4	1655
102	Possible realization of directional optical waveguides in photonic crystals with broken time-reversal symmetry. *Physical Review Letters*, **2008**, 100, 013904	7.4	1480
101	Effective Harmonic-Fluid Approach to Low-Energy Properties of One-Dimensional Quantum Fluids. *Physical Review Letters*, **1981**, 47, 1840-1843	7.4	943
100	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	7.4	931
99	"Fractional statistics" in arbitrary dimensions: A generalization of the Pauli principle. *Physical Review Letters*, **1991**, 67, 937-940	7.4	755
98	Analogs of quantum-Hall-effect edge states in photonic crystals. *Physical Review A*, **2008**, 78,	2.6	701
97	Exact Jastrow-Gutzwiller resonating-valence-bond ground state of the spin-(1/2 antiferromagnetic Heisenberg chain with 1/r2 exchange. *Physical Review Letters*, **1988**, 60, 635-638	7.4	668
96	General Relation of Correlation Exponents and Spectral Properties of One-Dimensional Fermi Systems: Application to the Anisotropic S=12 Heisenberg Chain. *Physical Review Letters*, **1980**, 45, 1358-1362	7.4	645
95	Critical theory of quantum spin chains. *Physical Review B*, **1987**, 36, 5291-5300	3.3	465
94	Scaling Theory of the Asymmetric Anderson Model. *Physical Review Letters*, **1978**, 40, 416-419	7.4	455
93	Berry curvature on the fermi surface: anomalous Hall effect as a topological fermi-liquid property. *Physical Review Letters*, **2004**, 93, 206602	7.4	440
92	O(3) nonlinear sigma model and the topological distinction between integer- and half-integer-spin antiferromagnets in two dimensions. *Physical Review Letters*, **1988**, 61, 1029-1032	7.4	424
91	Spontaneous dimerization in the S=12 Heisenberg antiferromagnetic chain with competing interactions. *Physical Review B*, **1982**, 25, 4925-4928	3.3	424
90	Quantum spin-Hall effect and topologically invariant Chern numbers. *Physical Review Letters*, **2006**, 97, 036808	7.4	413

89	Finite-size studies of the incompressible state of the fractionally quantized Hall effect and its excitations. *Physical Review Letters*, **1985**, 54, 237-240	7.4	376
88	Incompressible paired hall state, stripe order, and the composite fermion liquid phase in half-filled landau levels. *Physical Review Letters*, **2000**, 84, 4685-8	7.4	309
87	Spin-singlet wave function for the half-integral quantum Hall effect. *Physical Review Letters*, **1988**, 60, 956-959	7.4	265
86	Periodic Laughlin-Jastrow wave functions for the fractional quantized Hall effect. *Physical Review B*, **1985**, 31, 2529-2531	3.3	262
85	"Spinon gas" description of the S=1/2 Heisenberg chain with inverse-square exchange: Exact spectrum and thermodynamics. *Physical Review Letters*, **1991**, 66, 1529-1532	7.4	252
84	Extended Heisenberg models of antiferromagnetism: Analogies to the fractional quantum Hall effect. *Physical Review Letters*, **1988**, 60, 531-534	7.4	247
83	Many-particle translational symmetries of two-dimensional electrons at rational Landau-level filling. *Physical Review Letters*, **1985**, 55, 2095-2098	7.4	246
82	Yangian symmetry of integrable quantum chains with long-range interactions and a new description of states in conformal field theory. *Physical Review Letters*, **1992**, 69, 2021-2025	7.4	245
81	Model fractional quantum Hall states and Jack polynomials. *Physical Review Letters*, **2008**, 100, 246802	7.4	202
80	Yang-Baxter equation in long-range interacting systems. *Journal of Physics A*, **1993**, 26, 5219-5236		200
79	Geometrical description of the fractional quantum Hall effect. *Physical Review Letters*, **2011**, 107, 116801	7.4	180
78	Nondissipative spin Hall effect via quantized edge transport. *Physical Review Letters*, **2005**, 95, 136602	7.4	162
77	[physics]and quantum spin chains (abstract). *Journal of Applied Physics*, **1985**, 57, 3359-3359	2.5	146
76	Models with inverse-square exchange. *Physical Review B*, **1992**, 46, 9359-9368	3.3	131
75	Charge-Density-Wave Ordering in Half-Filled High Landau Levels. *Physical Review Letters*, **1999**, 83, 1219-1222	7.4	123
74	Theory of the atomic limit of the Anderson model. I. Perturbation expansions re-examined. *Journal of Physics C: Solid State Physics*, **1978**, 11, 5015-5034		118
73	Stability of chiral Luttinger liquids and Abelian quantum Hall states. *Physical Review Letters*, **1995**, 74, 2090-2093	7.4	117
72	Quantum dynamics and statistics of vortices in two-dimensional superfluids. *Physical Review Letters*, **1985**, 55, 2887-2890	7.4	117

71	Path dependence of the geometric rotation of polarization in optical fibers. *Optics Letters*, **1986**, 11, 730-2	3	92
70	Topological entanglement and clustering of Jain hierarchy states. *Physical Review Letters*, **2009**, 103, 016801	7.4	89
69	Laughlin state on stretched and squeezed cylinders and edge excitations in the quantum Hall effect. *Physical Review B*, **1994**, 50, 17199-17207	3.3	89
68	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	7.4	87
67	Localization, wave-function topology, and the integer quantized Hall effect. *Physical Review Letters*, **1988**, 60, 619-622	7.4	82
66	Phase diagrams of surface structures from Bethe-ansatz solutions of the quantum sine-Gordon model. *Physical Review B*, **1983**, 28, 2743-2745	3.3	79
65	Generalized clustering conditions of Jack polynomials at negative Jack parameter *Physical Review B*, **2008**, 77,	3.3	73
64	Band mass anisotropy and the intrinsic metric of fractional quantum Hall systems. *Physical Review B*, **2012**, 85,	3.3	72
63	Geometrical interpretation of momentum and crystal momentum of classical and quantum ferromagnetic Heisenberg chains. *Physical Review Letters*, **1986**, 57, 1488-1491	7.4	72
62	Spontaneous breakdown of translational symmetry in quantum hall systems: crystalline order in high landau levels. *Physical Review Letters*, **2000**, 85, 5396-9	7.4	70
61	Wigner crystals in the lowest Landau level at low-filling factors. *Physical Review B*, **2001**, 64,	3.3	68
60	Impurity effect, degeneracy, and topological invariant in the quantum Hall effect. *Physical Review B*, **1986**, 33, 3844-3850	3.3	66
59	Properties of non-Abelian fractional quantum Hall states at filling nu = k/r. *Physical Review Letters*, **2008**, 101, 246806	7.4	65
58	Odd-integer quantum Hall effect in graphene: interaction and disorder effects. *Physical Review Letters*, **2007**, 99, 196802	7.4	64
57	Hartree-Fock study of the Anderson model coupled to a boson field; mixed valence states. *Physical Review B*, **1977**, 15, 281-289	3.3	62
56	Model anisotropic quantum Hall states. *Physical Review B*, **2012**, 85,	3.3	59
55	Clustering properties and model wave functions for non-Abelian fractional quantum Hall quasielectrons. *Physical Review Letters*, **2009**, 102, 066802	7.4	58
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	7.4	57

53	Incompressible states of the fractionally quantized Hall effect in the presence of impurities: A finite-size study. *Physical Review B*, **1985**, 32, 6924-6927	3.3	57
52	Particle-hole symmetry breaking and the ꭇ52 fractional quantum Hall effect. *Physical Review B*, **2009**, 80,	3.3	53
51	Off-diagonal long-range order in fractional quantum-Hall-effect states. *Physical Review Letters*, **1988**, 61, 1985-1988	7.4	50
50	Model wave functions for the collective modes and the magnetoroton theory of the fractional quantum Hall effect. *Physical Review Letters*, **2012**, 108, 256807	7.4	49
49	Excitation spectrum of a generalised Heisenberg ferromagnetic spin chain with arbitrary spin. *Journal of Physics C: Solid State Physics*, **1982**, 15, L1309-L1313		47
48	New model for the mixed-valence phenomenon in rare-earth materials. *Physical Review B*, **1977**, 15, 2477-2484	3.3	47
47	Quantum field ground state of the sine-Gordon model with finite soliton density: exact results. *Journal of Physics A*, **1982**, 15, 507-525		45
46	Landau Level Mixing and Levitation of Extended States in Two Dimensions. *Physical Review Letters*, **1997**, 78, 298-301	7.4	43
45	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		43
44	Topological Nodal Cooper Pairing in Doped Weyl Metals. *Physical Review Letters*, **2018**, 120, 067003	7.4	39
43	Mobility gap in fractional quantum Hall liquids: Effects of disorder and layer thickness. *Physical Review B*, **2005**, 72,	3.3	38
42	Quantized spin currents in two-dimensional chiral magnets. *Physical Review B*, **1995**, 52, 4223-4225	3.3	37
41	Elementary excitations of one-dimensional t-J model with inverse-square exchange. *Physical Review Letters*, **1994**, 73, 2887-2890	7.4	36
40	Spin Hall effect and spin transfer in a disordered Rashba model. *Physical Review B*, **2005**, 72,	3.3	35
39	Squeezed strings and Yangian symmetry of the Heisenberg chain with long-range interaction. *Physical Review B*, **1993**, 47, 12459-12469	3.3	33
38	Minimal entangled states and modular matrix for fractional quantum Hall effect in topological flat bands. *Physical Review B*, **2013**, 88,	3.3	31
37	Mapping the braiding properties of the Moore-Read state. *Physical Review B*, **2009**, 80,	3.3	30
36	Quantum phase transitions and the ꭇ5/2 fractional Hall state in wide quantum wells. *Physical Review Letters*, **2012**, 109, 266806	7.4	29

35	Topological phase transition in the nu =2/3 quantum Hall effect. *Physical Review B*, **1996**, 53, 15845-15855	3.3	29
34	Fractional quantum Hall states at 13 and 52 filling: Density-matrix renormalization group calculations. *Physical Review B*, **2011**, 83,	3.3	28
33	Single-particle Green's functions of the Calogero-Sutherland model at couplings lambda =1/2, 1, and 2. *Physical Review B*, **1995**, 52, 8729-8746	3.3	28
32	Dynamical T=0 correlations of the S=1/2 one-dimensional Heisenberg antiferromagnet with $1/r2$ exchange in a magnetic field. *Physical Review B*, **1994**, 50, 6889-6899	3.3	28
31	Entanglement Entropy of the ν1/2 Composite Fermion Non-Fermi Liquid State. *Physical Review Letters*, **2015**, 114, 206402	7.4	27
30	Fractional Quantum Hall States at ν13/5 and 12/5 and Their Non-Abelian Nature. *Physical Review Letters*, **2015**, 115, 126805	7.4	26
29	Comment on ν Weyl fermions and the anomalous Hall effect in metallic ferromagnetsν *Physical Review B*, **2014**, 89,	3.3	23
28	Comment on "Observation of Berry's topological phase by use of an optical fiber". *Physical Review Letters*, **1987**, 59, 1788	7.4	23
27	Integrals of motion of the Haldane-Shastry model. *Journal of Physics A*, **1995**, 28, 2369-2377		22
26	Guiding-center Hall viscosity and intrinsic dipole moment along edges of incompressible fractional quantum Hall fluids. *Physical Review B*, **2014**, 90,	3.3	21
25	The hierarchical structure in the orbital entanglement spectrum of fractional quantum Hall systems. *New Journal of Physics*, **2011**, 13, 105001	2.9	21
24	Lowest-order Landau-level mixing corrections for 4 >= nu >2 quantum Hall effect. *Physical Review B*, **1990**, 42, 4532-4536	3.3	21
23	Probing the geometry of the Laughlin state. *New Journal of Physics*, **2016**, 18, 025011	2.9	20
22	Identifying non-Abelian topological order through minimal entangled states. *Physical Review Letters*, **2014**, 112, 096803	7.4	19
21	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	0.4	19
20	Berry Phase and Model Wave Function in the Half-Filled Landau Level. *Physical Review Letters*, **2018**, 121, 147202	7.4	18
19	Fractional quantum Hall bilayers at half filling: Tunneling-driven non-Abelian phase. *Physical Review B*, **2016**, 94,	3.3	17
18	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		15

LIST OF PUBLICATIONS

17	Topological characterization of the non-Abelian Moore-Read state using density-matrix renormalization group. *Physical Review B*, **2015**, 92,	3.3	14
16	Nature of quasielectrons and the continuum of neutral bulk excitations in Laughlin quantum Hall fluids. *Physical Review Letters*, **2014**, 112, 026804	7.4	13
15	Broken-symmetry states of Dirac fermions in graphene with a partially filled high Landau level. *Physical Review Letters*, **2008**, 100, 116802	7.4	13
14	Pomeranchuk Instability of Composite Fermi Liquids. *Physical Review Letters*, **2018**, 121, 147601	7.4	13
13	Exact diagonalization study of domain structure in integer filling factor quantum Hall ferromagnets. *Physical Review B*, **2003**, 67,	3.3	12
12	Chiral Gravitons in Fractional Quantum Hall Liquids. *Physical Review Letters*, **2019**, 123, 146801	7.4	11
11	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	1.2	11
10	Effective Harmonic-Fluid Approach to Low-Energy Properties of One-Dimensional Quantum Fluids.. *Physical Review Letters*, **1982**, 48, 569-569	7.4	11
9	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, 081901	1.2	10
8	Lattice Monte Carlo for quantum Hall states on a torus. *Physical Review B*, **2019**, 99,	3.3	9
7	Stability of the particle-hole Pfaffian state and the 52-fractional quantum Hall effect. *Physical Review B*, **2021**, 104,	3.3	5
6	Graviton chirality and topological order in the half-filled Landau level. *Physical Review B*, **2021**, 104,	3.3	4
5	Non-Abelian statistics in one dimension: Topological momentum spacings and SU(2) level-k fusion rules. *Physical Review B*, **2019**, 100,	3.3	3
4	Geometry of flux attachment in anisotropic fractional quantum Hall states. *Physical Review B*, **2018**, 98,	3.3	3
3	Elementary excitations of the quantum sine-Gordon model in the massless regime ☐>8☐ Derivation from the XXZ model. *Physical Review B*, **1983**, 28, 2505-2508	3.3	1
2	Stripes and Pairing in the v = 5/2 Quantum Hall Effect **2001**, 203-213		
1	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	1.2	