Elliott H Lieb

List of Publications by Year
in descending order

144 papers	18,128 citations	25034 57 h-index	12597 132 g-index
147 all docs	147 docs citations	147 times ranked	5312 citing authors

#	Article	IF	Citations
1	On the extension of the FKG inequality to <i>n</i> functions. Journal of Mathematical Physics, 2022, 63, .	1.1	2
2	A trace inequality of Ando, Hiai, and Okubo and a monotonicity property of the Golden–Thompson inequality. Journal of Mathematical Physics, 2022, 63, .	1.1	1
3	Inequalities for $$L^p$$-Norms that Sharpen the Triangle Inequality and Complement Hanner's Inequality. Journal of Geometric Analysis, 2021, 31, 4051-4073.	1.0	1
4	On the Convolution Inequality <i>f ≥ f † f</i>. International Mathematics Research Notices, 2021, 2021, 18604-18612.	1.0	1
5	Simplified approach to the repulsive Bose gas from low to high densities and its numerical accuracy. Physical Review A, 2021, 103, .	2.5	4
6	Analysis of a Simple Equation for the Ground State of the Bose Gas II: Monotonicity, Convexity, and Condensate Fraction. SIAM Journal on Mathematical Analysis, 2021, 53, 5322-5360.	1.9	3
7	Divergence of the Effective Mass of a Polaron in the Strong Coupling Limit. Journal of Statistical Physics, 2020, 180, 23-33.	1.2	12
8	The local density approximation in density functional theory. Pure and Applied Analysis, 2020, 2, 35-73.	1.1	23
9	Analysis of a simple equation for the ground state energy of the Bose gas. Pure and Applied Analysis, 2020, 2, 659-684.	1.1	5
10	Inequalities that sharpen the triangle inequality for sums of N functions in L^p. Arkiv for Matematik, 2020, 58, 57-69.	0.5	1
11	Periodic energy minimizers for a one-dimensional liquid drop model. Letters in Mathematical Physics, 2019, 109, 2069-2081.	1.1	3
12	Floating Wigner crystal with no boundary charge fluctuations. Physical Review B, 2019, 100, .	3.2	26
13	Local incompressibility estimates for the Laughlin phase. Communications in Mathematical Physics, 2019, 365, 431-470.	2.2	16
14	A dual form of the sharp Nash inequality and its weighted generalization. Bulletin of the London Mathematical Society, 2019, 51, 129-144.	0.8	0
15	Nematic Liquid Crystal Phase in a System of Interacting Dimers and Monomers. Communications in Mathematical Physics, 2018, 363, 955-1002.	2.2	5
16	Rigidity of the Laughlin Liquid. Journal of Statistical Physics, 2018, 172, 544-554.	1.2	14
17	Norms of quantum Gaussian multi-mode channels. Journal of Mathematical Physics, 2017, 58, 062204.	1.1	10
18	On a quantum entropy power inequality of Audenaert, Datta, and Ozols. Journal of Mathematical Physics, 2016, 57, .	1.1	5

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19	Entropy and Entanglement Bounds for Reduced Density Matrices of Fermionic States. Communications in Mathematical Physics, 2016, 344, 655-671.	2.2	7
20	Proof of the Wehrl-type Entropy Conjecture for Symmetric $${SU(N)}$$ Coherent States. Communications in Mathematical Physics, 2016, 348, 567-578.	2.2	9
21	Maximizers for the Stein–Tomas Inequality. Geometric and Functional Analysis, 2016, 26, 1095-1134.	1.8	21
22	A Pfaffian Formula for Monomer–Dimer Partition Functions. Journal of Statistical Physics, 2016, 163, 211-238.	1.2	9
23	Inequalities for the Moments of the Eigenvalues of the Schrodinger Hamiltonian and Their Relation to Sobolev Inequalities. , 2015, , 269-304.		109
24	A Compactness Lemma and Its Application to the Existence of Minimizers for the Liquid Drop Model. SIAM Journal on Mathematical Analysis, 2015, 47, 4436-4450.	1.9	42
25	Improved Lieb-Oxford exchange-correlation inequality with a gradient correction. Physical Review A, 2015, 91, .	2.5	35
26	Ground state energy of large polaron systems. Journal of Mathematical Physics, 2015, 56, 021901.	1.1	0
27	EXISTENCE OF GROUND STATES FOR NEGATIVE IONS AT THE BINDING THRESHOLD. Reviews in Mathematical Physics, 2014, 26, 1350021.	1.7	11
28	FREEMAN DYSON. , 2014, , .		0
29	Equivalence of Two Definitions of the Effective Mass of a Polaron. Journal of Statistical Physics, 2014, 154, 51-57.	1.2	9
30	Stability Estimates for the Lowest Eigenvalue of a Schrödinger Operator. Geometric and Functional Analysis, 2014, 24, 63-84.	1.8	30
31	Proof of an entropy conjecture for Bloch coherent spin states and its generalizations. Acta Mathematica, 2014, 212, 379-398.	3.9	39
32	Exact Results for Itinerant Ferromagnetism in Multiorbital Systems on Square and Cubic Lattices. Physical Review Letters, 2014, 112, .	7.8	35
33	Formation of Stripes and Slabs Near the Ferromagnetic Transition. Communications in Mathematical Physics, 2014, 331, 333-350.	2.2	9
34	Entropy meters and the entropy of non-extensive systems. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2014, 470, 20140192.	2.1	19
35	On an extension problem for density matrices. Journal of Mathematical Physics, 2013, 54, .	1.1	15
36	The entropy concept for non-equilibrium states. Proceedings of the Royal Society A: Mathematical, Physical and Engineering Sciences, 2013, 469, 20130408.	2.1	57

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37	Monotonicity of a relative RÃ©nyi entropy. Journal of Mathematical Physics, 2013, 54, .	1.1	169
38	Extended Quantum Conditional Entropy and Quantum Uncertainty Inequalities. Communications in Mathematical Physics, 2013, 323, 487-495.	2.2	26
39	Symmetry of Bipolaron Bound States for Small Coulomb Repulsion. Communications in Mathematical Physics, 2013, 319, 557-573.	2.2	6
40	Realization of stripes and slabs in two and three dimensions. Physical Review B, 2013, 88, .	3.2	8
41	Further Implications of the Bessisâ€"Moussaâ€"Villani Conjecture. Journal of Statistical Physics, 2012, 149, 86-91.	1.2	1
42	Entropy and the Uncertainty Principle. Annales Henri Poincare, 2012, 13, 1711-1717.	1.7	20
43	Binding of Polarons and Atoms at Threshold. Communications in Mathematical Physics, 2012, 313, 405-424.	2.2	11
44	Non-Abelian Vortices in Supersymmetric Gauge Field Theory via Direct Methods. Communications in Mathematical Physics, 2012, 313, 445-478.	2.2	18
45	Bounds for Entanglement via an Extension of Strong Subadditivity of Entropy. Letters in Mathematical Physics, 2012, 101, 1-11.	1.1	31
46	A New, Rearrangement-free Proof of the Sharp Hardyâ€"Littlewoodâ€"Sobolev Inequality. , 2012, , 55-67.		47
47	Checkerboards, stripes, and corner energies in spin models with competing interactions. Physical Review B, 2011, 84, .	3.2	28
48	Stability and absence of binding forÂmulti-polaron systems. Publications Mathematiques De L'Institut Des Hautes Etudes Scientifiques, 2011, 113, 39-67.	4.3	19
49	EQUIVALENCE OF SOBOLEV INEQUALITIES AND LIEB-THIRRING INEQUALITIES. , 2010, , .		15
50	Inversion positivity and the sharp Hardyâ€"Littlewoodâ€"Sobolev inequality. Calculus of Variations and Partial Differential Equations, 2010, 39, 85-99.	1.7	68
51	Bipolaron and N-Polaron Binding Energies. Physical Review Letters, 2010, 104, 210402.	7.8	19
52	Localization of multidimensional Wigner distributions. Journal of Mathematical Physics, 2010, 51, 102101.	1.1	5
53	Yrast line of a rapidly rotating Bose gas: Gross-Pitaevskii regime. Physical Review A, 2009, 79, .	2.5	26
54	Probabilistic Coherence and Proper Scoring Rules. IEEE Transactions on Information Theory, 2009, 55, 4786-4792.	2.4	96

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55	Periodic Minimizers in 1D Local Mean Field Theory. Communications in Mathematical Physics, 2009, 286, 163-177.	2.2	22
56	Pattern formation in systems with competing interactions. , 2009, , .		3
57	Hardy-Lieb-Thirring inequalities for fractional Schrödinger operators. Journal of the American Mathematical Society, 2008, 21, 925-950.	3.9	184
58	Laughlin's function on a cylinder: plasma analogy and representation as a quantum polymer. Physica Status Solidi (B): Basic Research, 2008, 245, 439-446.	1.5	7
59	Bose-Einstein Condensation and Spontaneous Symmetry Breaking. Reports on Mathematical Physics, 2007, 59, 389-399.	0.8	16
60	Stability of Relativistic Matter with Magnetic Fields for Nuclear Charges up to the Critical Value. Communications in Mathematical Physics, 2007, 275, 479-489.	2.2	25
61	Number of Bound States of Schrödinger Operators with Matrix-Valued Potentials. Letters in Mathematical Physics, 2007, 82, 107-116.	1.1	6
62	Lieb–Thirring Inequalities for Schrödinger Operators with Complex-valued Potentials. Letters in Mathematical Physics, 2006, 77, 309-316.	1.1	65
63	Some matrix rearrangement inequalities. Annali Di Matematica Pura Ed Applicata, 2006, 185, S315-S324.	1.0	2
64	Derivation of the Gross-Pitaevskii Equation for Rotating Bose Gases. Communications in Mathematical Physics, 2006, 264, 505-537.	2.2	140
65	The Thermodynamic Limit for Matter Interacting with Coulomb Forces and with the Quantized Electromagnetic Field: I. The Lower Bound. Communications in Mathematical Physics, 2005, 258, 675-695.	2.2	8
66	Ground-state energy of the low-density Fermi gas. Physical Review A, 2005, 71, .	2.5	36
67	The Quantum-Mechanical Many-Body Problem: The Bose Gas. , 2005, , 97-183.		3
68	Justification of c-Number Substitutions in Bosonic Hamiltonians. Physical Review Letters, 2005, 94, 080401.	7.8	56
69	Equivalent Forms of the Bessis–Moussa–Villani Conjecture. Journal of Statistical Physics, 2004, 115, 185-190.	1.2	33
70	One-Dimensional Behavior of Dilute, Trapped Bose Gases. Communications in Mathematical Physics, 2004, 244, 347-393.	2.2	43
71	Ground State Energy of the Two-Component Charged Bose Gas. Communications in Mathematical Physics, 2004, 252, 485-534.	2.2	55
72	A Note on Polarization Vectors in Quantum Electrodynamics. Communications in Mathematical Physics, 2004, 252, 477-483.	2.2	23

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73	The Stability of Matter and Quantum Electrodynamics. Milan Journal of Mathematics, 2003, 71, 199-217.	1.1	9
74	One-Dimensional Bosons in Three-Dimensional Traps. Physical Review Letters, 2003, 91, 150401.	7.8	100
75	Polarization of Interacting Bosons with Spin. Physical Review Letters, 2002, 89, 220403.	7.8	69
76	Superfluidity in dilute trapped Bose gases. Physical Review B, 2002, 66, .	3.2	42
77	CONVEX MULTIVARIABLE TRACE FUNCTIONS. Reviews in Mathematical Physics, 2002, 14, 631-648.	1.7	9
78	Proof of Bose-Einstein Condensation for Dilute Trapped Gases. Physical Review Letters, 2002, 88, 170409.	7.8	264
79	Segregation in the Falicov--Kimball Model. Communications in Mathematical Physics, 2002, 227, 243-279.	2.2	38
80	Stability of a Model of Relativistic Quantum Electrodynamics. Communications in Mathematical Physics, 2002, 228, 561-588.	2.2	30
81	A Bound on Binding Energies and Mass Renormalization in Models of Quantum Electrodynamics. Journal of Statistical Physics, 2002, 108, 1057-1069.	1.2	21
82	Ground State Energy of the One-Component Charged Bose Gas. Communications in Mathematical Physics, 2001, 217, 127-163.	2.2	51
83	A Rigorous DerivationÂ¶of the Grossâ€"Pitaevskii Energy FunctionalÂ¶for a Two-dimensional Bose Gas. Communications in Mathematical Physics, 2001, 224, 17-31.	2.2	131
84	Ground states in non-relativistic quantum electrodynamics. Inventiones Mathematicae, 2001, 145, 557-595.	2.5	150
85	The Ground State Energy of a Dilute Two-Dimensional Bose Gas. Journal of Statistical Physics, 2001, 103, 509-526.	1.2	78
86	Renormalization of the Regularized Relativistic Electron-Positron Field. Communications in Mathematical Physics, 2000, 213, 673-683.	2.2	19
87	Bosons in a trap: A rigorous derivation of the Gross-Pitaevskii energy functional. Physical Review A, 2000, 61, .	2.5	304
88	Ground State Energy of the Low Density Bose Gas. Physical Review Letters, 1998, 80, 2504-2507.	7.8	155
89	Stability of Relativistic Matter with Magnetic Fields. Physical Review Letters, 1997, 79, 1785-1788.	7.8	21
90	Some of the Early History of Exactly Soluble Models. International Journal of Modern Physics B, 1997, 11, 3-10.	2.0	3

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91	Stability and instability of relativistic electrons in classical electromagnetic fields. Journal of Statistical Physics, 1997, 89, 37-59.	1.2	47
92	Exact Ground State Energy of the Strong-Coupling Polaron. Communications in Mathematical Physics, 1997, 188, 499-500.	2.2	17
93	The stability of matter in magnetic fields. Zeitschrift FÃ¼r Physik B-Condensed Matter, 1996, 103, 271-274.	1.1	0
94	Bond alternation in ring-shaped molecules: The stability of the Peierls instability. International Journal of Quantum Chemistry, 1996, 58, 699-706.	2.0	7
95	Stability of Matter in Magnetic Fields. Physical Review Letters, 1995, 75, 985-989.	7.8	80
96	Asymptotics of heavy atoms in high magnetic fields: II. Semiclassical regions. Communications in Mathematical Physics, 1994, 161, 77-124.	2.2	97
97	Generalized Hartree-Fock theory and the Hubbard model. Journal of Statistical Physics, 1994, 76, 3-89.	1.2	179
98	Sharp uniform convexity and smoothness inequalities for trace norms. Inventiones Mathematicae, 1994, 115, 463-482.	2.5	192
99	Flux Phase of the Half-Filled Band. Physical Review Letters, 1994, 73, 2158-2161.	7.8	278
100	COHERENT STATES AS A TOOL FOR OBTAINING RIGOROUS BOUNDS. , 1994, , .		4
101	Optimal hypercontractivity for fermi fields and related non-commutative integration inequalities. Communications in Mathematical Physics, 1993, 155, 27-46.	2.2	63
102	Uniform density theorem for the Hubbard model. Journal of Mathematical Physics, 1993, 34, 891-898.	1.1	27
103	The stability of matter: from atoms to stars. Bulletin of the American Mathematical Society, 1990, 22, 1-49.	1.5	111
104	Integral bounds for radar ambiguity functions and Wigner distributions. Journal of Mathematical Physics, 1990, 31, 594-599.	1.1	135
105	Symmetric decreasing rearrangement is sometimes continuous. Journal of the American Mathematical Society, 1989, 2, 683-773.	3.9	190
106	Existence of Nï¿½el order in some spin-1/2 Heisenberg antiferromagnets. Journal of Statistical Physics, 1988, 53, 1019-1030.	1.2	147
107	Valence bond ground states in isotropic quantum antiferromagnets. Communications in Mathematical Physics, 1988, 115, 477-528.	2.2	1,195
108	The stability and instability of relativistic matter. Communications in Mathematical Physics, 1988, 118, 177-213.	2.2	198

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109	Approximate neutrality of large-Z ions. Communications in Mathematical Physics, 1988, 116, 635-644.	2.2	46
110	TheN 7/5 law for charged bosons. Communications in Mathematical Physics, 1988, 116, 417-448.	2.2	87
111	The Chandrasekhar theory of stellar collapse as the limit of quantum mechanics. Communications in Mathematical Physics, 1987, 112, 147-174.	2.2	266
112	Stability of coulomb systems with magnetic fields. Communications in Mathematical Physics, 1986, 104, 251-270.	2.2	147
113	Sobolev inequalities with remainder terms. Journal of Functional Analysis, 1985, 62, 73-86.	1.4	112
114	Minimum action solutions of some vector field equations. Communications in Mathematical Physics, 1984, 96, 97-113.	2.2	147
115	On the lowest eigenvalue of the Laplacian for the intersection of two domains. Inventiones Mathematicae, 1983, 74, 441-448.	2.5	177
116	Density functionals for coulomb systems. International Journal of Quantum Chemistry, 1983, 24, 243-277.	2.0	1,007
117	One-electron relativistic molecules with Coulomb interaction. Communications in Mathematical Physics, 1983, 90, 497-510.	2.2	116
118	Sharp Constants in the Hardy-Littlewood-Sobolev and Related Inequalities. Annals of Mathematics, 1983, 118, 349.	4.2	839
119	A Relation Between Pointwise Convergence of Functions and Convergence of Functionals. Proceedings of the American Mathematical Society, 1983, 88, 486.	0.8	1,133
120	Thomas-fermi and related theories of atoms and molecules. Reviews of Modern Physics, 1981, 53, 603-641.	45.6	662
121	The Thomas-Fermi-von Weizsäcker theory of atoms and molecules. Communications in Mathematical Physics, 1981, 79, 167-180.	2.2	248
122	Improved lower bound on the indirect Coulomb energy. International Journal of Quantum Chemistry, 1981, 19, 427-439.	2.0	444
123	Phase transitions and reflection positivity. II. Lattice systems with short-range and Coulomb interactions. Journal of Statistical Physics, 1980, 22, 297-347.	1.2	94
124	A lower bound for Coulomb energies. Physics Letters, Section A: General, Atomic and Solid State Physics, 1979, 70, 444-446.	2.1	123
125	Lattice models for liquid crystals. Journal of Statistical Physics, 1979, 20, 679-693.	1.2	45
126	Phase transitions in quantum spin systems with isotropic and nonisotropic interactions. Journal of Statistical Physics, 1978, 18, 335-383.	1.2	403

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127	On semi-classical bounds for eigenvalues of Schrödinger operators. Physics Letters, Section A: General, Atomic and Solid State Physics, 1978, 66, 427-429.	2.1	93
128	Proof of an entropy conjecture of Wehrl. Communications in Mathematical Physics, 1978, 62, 35-41.	2.2	252
129	New proofs of long range order. , 1978, , 59-67.		7
130	Existence and Uniqueness of the Minimizing Solution of Choquard's Nonlinear Equation. Studies in Applied Mathematics, 1977, 57, 93-105.	2.4	828
131	The Thomas-Fermi theory of atoms, molecules and solids. Advances in Mathematics, 1977, 23, 22-116.	1.1	587
132	The stability of matter. Reviews of Modern Physics, 1976, 48, 553-569.	45.6	438
133	Bounds on the eigenvalues of the Laplace and Schroedinger operators. Bulletin of the American Mathematical Society, 1976, 82, 751-753.	3.9	210
134	The thermodynamic limit for jellium. Journal of Statistical Physics, 1975, 12, 291-310.	1.2	162
135	Bound for the Kinetic Energy of Fermions Which Proves the Stability of Matter. Physical Review Letters, 1975, 35, 687-689.	7.8	331
136	On solutions to the Hartree–Fock problem for atoms and molecules. Journal of Chemical Physics, 1974, 61, 735-736.	3.0	52
137	The classical limit of quantum spin systems. Communications in Mathematical Physics, 1973, 31, 327-340.	2.2	414
138	The constitution of matter: Existence of thermodynamics for systems composed of electrons and nuclei. Advances in Mathematics, 1972, 9, 316-398.	1.1	258
139	Theory of monomer-dimer systems. Communications in Mathematical Physics, 1972, 25, 190-232.	2.2	436
140	Simplified Approach to the Ground-State Energy of an Imperfect Bose Gas. III. Application to the One-Dimensional Model. Physical Review, 1964, 134, A312-A315.	2.7	11
141	Simplified Approach to the Ground-State Energy of an Imperfect Bose Gas. II. Charged Bose Gas at High Density. Physical Review, 1964, 133, A899-A906.	2.7	34
142	Simplified Approach to the Ground-State Energy of an Imperfect Bose Gas. Physical Review, 1963, 130, 2518-2528.	2.7	84
143	Ground-State Energy and Effective Mass of the Polaron. Physical Review, 1958, 111, 728-733.	2.7	66
144	Statistical mechanics of the uniform electron gas. Journal De L'Ecole Polytechnique - Mathematiques, 0, 5, 79-116.	0.0	22