

Rupert L Frank

List of Publications by Year in descending order

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129
papers

3,347
citations

186265
28
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175258
52
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134
all docs

134
docs citations

134
times ranked

1186
citing authors

#	ARTICLE	IF	CITATIONS
1	Minimizers for a one-dimensional interaction energy. <i>Nonlinear Analysis: Theory, Methods & Applications</i> , 2022, 216, 112691.	1.1	5
2	Reverse conformally invariant Sobolev inequalities on the sphere. <i>Journal of Functional Analysis</i> , 2022, 282, 109339.	1.4	2
3	Which magnetic fields support a zero mode?. <i>Journal Fur Die Reine Und Angewandte Mathematik</i> , 2022, 2022, 1-36.	0.9	1
4	Inequalities for L^p -Norms that Sharpen the Triangle Inequality and Complement Hanner's Inequality. <i>Journal of Geometric Analysis</i> , 2021, 31, 4051-4073.	1.0	1
5	Quantum Corrections to the Pekar Asymptotics of a Strongly Coupled Polaron. <i>Communications on Pure and Applied Mathematics</i> , 2021, 74, 544-588.	3.1	9
6	Equivalence of Sobolev Norms Involving Generalized Hardy Operators. <i>International Mathematics Research Notices</i> , 2021, 2021, 2284-2303.	1.0	16
7	Energy asymptotics in the three-dimensional Brezis-Nirenberg problem. <i>Calculus of Variations and Partial Differential Equations</i> , 2021, 60, 1.	1.7	3
8	The Lieb-Thirring inequality revisited. <i>Journal of the European Mathematical Society</i> , 2021, 23, 2583-2600.	1.4	11
9	The Nonlinear Schrödinger Equation for Orthonormal Functions II: Application to Lieb-Thirring Inequalities. <i>Communications in Mathematical Physics</i> , 2021, 384, 1783-1828.	2.2	6
10	Existence and nonexistence in the liquid drop model. <i>Calculus of Variations and Partial Differential Equations</i> , 2021, 60, 1.	1.7	6
11	Hypercontractivity of the semigroup of the fractional Laplacian on the n-sphere. <i>Journal of Functional Analysis</i> , 2021, 281, 109145.	1.4	4
12	Non-degeneracy for the critical Lane-Emden system. <i>Proceedings of the American Mathematical Society</i> , 2021, 149, 265-278.	0.8	11
13	Two Consequences of Davies' Hardy Inequality. <i>Functional Analysis and Its Applications</i> , 2021, 55, 174-177.	0.4	1
14	Counting eigenvalues of Schrödinger operators with fast decaying complex potentials. <i>Advances in Mathematics</i> , 2021, 397, 108115.	1.1	3
15	Two-term spectral asymptotics for the Dirichlet Laplacian in a Lipschitz domain. <i>Journal Fur Die Reine Und Angewandte Mathematik</i> , 2020, 2020, 195-228.	0.9	9
16	Classification of solutions of an equation related to a conformal log Sobolev inequality. <i>Advances in Mathematics</i> , 2020, 375, 107395.	1.1	10
17	On the error in the two-term Weyl formula for the Dirichlet Laplacian. <i>Journal of Mathematical Physics</i> , 2020, 61, .	1.1	3
18	Liquid Drop Model for Nuclear Matter in the Dilute Limit. <i>SIAM Journal on Mathematical Analysis</i> , 2020, 52, 1980-1999.	1.9	2

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19	A non-linear adiabatic theorem for the one-dimensional Landau-Pekar equations. Journal of Functional Analysis, 2020, 279, 108631.	1.4	11
20	Energy asymptotics in the Brezis-Nirenberg problem: The higher-dimensional case. Mathematics in Engineering, 2020, 2, 119-140.	0.9	4
21	Inequalities that sharpen the triangle inequality for sums of N functions in L^p . Arkiv for Matematik, 2020, 58, 57-69.	0.5	1
22	Periodic energy minimizers for a one-dimensional liquid drop model. Letters in Mathematical Physics, 2019, 109, 2069-2081.	1.1	3
23	Non-spherical equilibrium shapes in the liquid drop model. Journal of Mathematical Physics, 2019, 60, 071506.	1.1	3
24	Schatten Class Conditions for Functions of Schrödinger Operators. Annales Henri Poincare, 2019, 20, 3543-3562.	1.7	4
25	Reverse Hardy-Littlewood-Sobolev inequalities. Journal Des Mathematiques Pures Et Appliquees, 2019, 132, 133-165.	1.6	11
26	Kato smoothness and functions of perturbed self-adjoint operators. Advances in Mathematics, 2019, 351, 343-387.	1.1	5
27	Bound on the number of negative eigenvalues of two-dimensional Schrödinger operators on domains. St Petersburg Mathematical Journal, 2019, 30, 573-589.	0.4	4
28	The BCS critical temperature in a weak homogeneous magnetic field. Journal of Spectral Theory, 2019, 9, 1005-1062.	0.8	5
29	Sharp decay estimates for critical Dirac equations. Transactions of the American Mathematical Society, 2019, 373, 2045-2070.	0.9	10
30	Singular solutions to a semilinear biharmonic equation with a general critical nonlinearity. Atti Della Accademia Nazionale Dei Lincei, Classe Di Scienze Fisiche, Matematiche E Naturali, Rendiconti Lincei Matematica E Applicazioni, 2019, 30, 817-846.	0.6	1
31	Classification of positive singular solutions to a nonlinear biharmonic equation with critical exponent. Analysis and PDE, 2019, 12, 1101-1113.	1.4	19
32	Eigenvalue bounds for Schrödinger operators with complex potentials. III. Transactions of the American Mathematical Society, 2018, 370, 219-240.	0.9	48
33	Minimizers for the fractional Sobolev inequality on domains. Calculus of Variations and Partial Differential Equations, 2018, 57, 1.	1.7	15
34	The Ionization Conjecture in Thomas-Fermi-Dirac-von Weizsäcker Theory. Communications on Pure and Applied Mathematics, 2018, 71, 577-614.	3.1	15
35	A "liquid-solid" phase transition in a simple model for swarming, based on the "no flat-spots" theorem for subharmonic functions. Indiana University Mathematics Journal, 2018, 67, 1547-1569.	0.9	14
36	Inequalities for quantum divergences and the Audenaert-Datta conjecture. Journal of Physics A: Mathematical and Theoretical, 2018, 51, 483001.	2.1	12

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37	Extremizers for the Airy–Stichartz inequality. <i>Mathematische Annalen</i> , 2018, 372, 1121-1166.	1.4	3
38	The Maximal Excess Charge in Müller Density-Matrix-Functional Theory. <i>Annales Henri Poincare</i> , 2018, 19, 2839-2867.	1.7	6
39	The BCS Critical Temperature in a Weak External Electric Field via a Linear Two-Body Operator. <i>Springer Proceedings in Mathematics and Statistics</i> , 2018, , 29-62.	0.2	0
40	Derivation of an effective evolution equation for a strongly coupled polaron. <i>Analysis and PDE</i> , 2017, 10, 379-422.	1.4	24
41	Condensation of fermion pairs in a domain. <i>Calculus of Variations and Partial Differential Equations</i> , 2017, 56, 1.	1.7	3
42	Endpoint resolvent estimates for compact Riemannian manifolds. <i>Journal of Functional Analysis</i> , 2017, 272, 3904-3918.	1.4	5
43	Eigenvalue bounds for Schrödinger operators with complex potentials. II. <i>Journal of Spectral Theory</i> , 2017, 7, 633-658.	0.8	38
44	Spectral Theory for Schrödinger Operators with δ -Interactions Supported on Curves in \mathbb{R}^3 . <i>Annales Henri Poincare</i> , 2017, 18, 1305-1347.	1.7	9
45	Spectral cluster bounds for orthonormal systems and oscillatory integral operators in Schatten spaces. <i>Advances in Mathematics</i> , 2017, 317, 157-192.	1.1	8
46	Norms of quantum Gaussian multi-mode channels. <i>Journal of Mathematical Physics</i> , 2017, 58, 062204.	1.1	10
47	Eigenvalue Bounds for the Fractional Laplacian: A Review. , 2017, , 210-235.		12
48	Restriction theorems for orthonormal functions, Strichartz inequalities, and uniform Sobolev estimates. <i>American Journal of Mathematics</i> , 2017, 139, 1649-1691.	1.1	45
49	Eigenvalues of Schrödinger operators with complex surface potentials. , 2017, , 245-259.		3
50	Averaging of nonlinear Schrödinger equations with strong magnetic confinement. <i>Communications in Mathematical Sciences</i> , 2017, 15, 1933-1945.	1.0	4
51	Maximizers for the Stein–Tomas Inequality. <i>Geometric and Functional Analysis</i> , 2016, 26, 1095-1134.	1.8	21
52	Nonexistence of Large Nuclei in the Liquid Drop Model. <i>Letters in Mathematical Physics</i> , 2016, 106, 1033-1036.	1.1	17
53	Multi-Component Ginzburg-Landau Theory: Microscopic Derivation and Examples. <i>Annales Henri Poincare</i> , 2016, 17, 2285-2340.	1.7	12
54	The External Field Dependence of the BCS Critical Temperature. <i>Communications in Mathematical Physics</i> , 2016, 342, 189-216.	2.2	19

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55	On the number of eigenvalues of Schrödinger operators with complex potentials. Journal of the London Mathematical Society, 2016, 94, 377-390.	1.0	33
56	Incompatibility of Time-Dependent Bogoliubov-de-Gennes and Ginzburg-Landau Equations. Letters in Mathematical Physics, 2016, 106, 913-923.	1.1	5
57	Refined semiclassical asymptotics for fractional powers of the Laplace operator. Journal Fur Die Reine Und Angewandte Mathematik, 2016, 2016, 1-37.	0.9	24
58	Some operator and trace function convexity theorems. Linear Algebra and Its Applications, 2016, 490, 174-185.	0.9	15
59	Uniqueness of Radial Solutions for the Fractional Laplacian. Communications on Pure and Applied Mathematics, 2016, 69, 1671-1726.	3.1	257
60	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
61	Trace Class Conditions for Functions of Schrödinger Operators. Communications in Mathematical Physics, 2015, 335, 477-496.	2.2	10
62	The Ground State Energy of a Polaron in a Strong Magnetic Field. Communications in Mathematical Physics, 2015, 338, 1-29.	2.2	11
63	The spectral density of a product of spectral projections. Journal of Functional Analysis, 2015, 268, 3867-3894.	1.4	8
64	Ground state energy of large polaron systems. Journal of Mathematical Physics, 2015, 56, 021901.	1.1	0
65	An extension problem for the CR fractional Laplacian. Advances in Mathematics, 2015, 270, 97-137.	1.1	39
66	Weak perturbations of the p-Laplacian. Calculus of Variations and Partial Differential Equations, 2015, 53, 781-801.	1.7	3
67	EXISTENCE OF GROUND STATES FOR NEGATIVE IONS AT THE BINDING THRESHOLD. Reviews in Mathematical Physics, 2014, 26, 1350021.	1.7	11
68	Strichartz inequality for orthonormal functions. Journal of the European Mathematical Society, 2014, 16, 1507-1526.	1.4	33
69	Stability Estimates for the Lowest Eigenvalue of a Schrödinger Operator. Geometric and Functional Analysis, 2014, 24, 63-84.	1.8	30
70	Maximizers for Gagliardo-Nirenberg inequalities and related non-local problems. Mathematische Annalen, 2014, 360, 653-673.	1.4	60
71	Cwikel's theorem and the CLR inequality. Journal of Spectral Theory, 2014, 4, 1-21.	0.8	28
72	Dynamics of a Strongly Coupled Polaron. Letters in Mathematical Physics, 2014, 104, 911-929.	1.1	24

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73	Intrinsic metrics for non-local symmetric Dirichlet forms and applications to spectral theory. Journal of Functional Analysis, 2014, 266, 4765-4808.	1.4	52
74	Monotonicity of a relative Rényi entropy. Journal of Mathematical Physics, 2013, 54, .	1.1	169
75	Extended Quantum Conditional Entropy and Quantum Uncertainty Inequalities. Communications in Mathematical Physics, 2013, 323, 487-495.	2.2	26
76	A positive density analogue of the Lieb–Thirring inequality. Duke Mathematical Journal, 2013, 162, .	1.5	26
77	Symmetry of Bipolaron Bound States for Small Coulomb Repulsion. Communications in Mathematical Physics, 2013, 319, 557-573.	2.2	6
78	Uniqueness of non-linear ground states for fractional Laplacians in \mathbb{R}^n . Acta Mathematica, 2013, 210, 261-318.	3.9	267
79	Heat Kernels of Metric Trees and Applications. SIAM Journal on Mathematical Analysis, 2013, 45, 1027-1046.	1.9	4
80	Remainder terms in the fractional Sobolev inequality. Indiana University Mathematics Journal, 2013, 62, 1381-1397.	0.9	36
81	Sharp trace asymptotics for a class of 2D-magnetic operators. Annales De L'Institut Fourier, 2013, 63, 2457-2513.	0.6	5
82	Microscopic derivation of Ginzburg-Landau theory. Journal of the American Mathematical Society, 2012, 25, 667-713.	3.9	72
83	Sharp constants in several inequalities on the Heisenberg group. Annals of Mathematics, 2012, 176, 349-381.	4.2	96
84	Semi-classical analysis of the Laplace operator with Robin boundary conditions. Bulletin of Mathematical Sciences, 2012, 2, 281-319.	0.7	18
85	Fractional Hardy–Sobolev–Maz'ya inequality for domains. Studia Mathematica, 2012, 208, 151-166.	0.7	26
86	Lieb-Thirring inequality for a model of particles with point interactions. Journal of Mathematical Physics, 2012, 53, 095201.	1.1	16
87	Entropy and the Uncertainty Principle. Annales Henri Poincaré, 2012, 13, 1711-1717.	1.7	20
88	Binding of Polarons and Atoms at Threshold. Communications in Mathematical Physics, 2012, 313, 405-424.	2.2	11
89	Hardy–Sobolev–Maz'ya inequalities for arbitrary domains. Journal Des Mathematiques Pures Et Appliquees, 2012, 97, 39-54.	1.6	29
90	A New, Rearrangement-free Proof of the Sharp Hardy–Littlewood–Sobolev Inequality. , 2012, , 55-67.		47

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91	Eigenvalue bounds for Schrödinger operators with complex potentials. Bulletin of the London Mathematical Society, 2011, 43, 745-750.	0.8	72
92	BINDING, STABILITY, AND NON-BINDING OF MULTI-POLARON SYSTEMS. , 2011, , .		1
93	Critical Lieb-Thirring bounds in gaps and the generalized Nevai conjecture for finite gap Jacobi matrices. Duke Mathematical Journal, 2011, 157, .	1.5	11
94	Eigenvalue Bounds for Schrödinger Operators with a Homogeneous Magnetic Field. Letters in Mathematical Physics, 2011, 97, 227-241.	1.1	2
95	Weakly coupled bound states of Pauli operators. Calculus of Variations and Partial Differential Equations, 2011, 40, 253-271.	1.7	6
96	Stability and absence of binding for multi-polaron systems. Publications Mathematiques De L'Institut Des Hautes Etudes Scientifiques, 2011, 113, 39-67.	4.3	19
97	Eigenvalue estimates for Schrödinger operators on metric trees. Advances in Mathematics, 2011, 226, 5165-5197.	1.1	15
98	Energy Cost to Make a Hole in the Fermi Sea. Physical Review Letters, 2011, 106, 150402.	7.8	15
99	Possible Lattice Distortions in the Hubbard Model for Graphene. Physical Review Letters, 2011, 107, 066801.	7.8	24
100	A Sharp Bound on Eigenvalues of Schrödinger Operators on the Half-line with Complex-valued Potentials. , 2011, , 39-44.		30
101	TWO-TERM SPECTRAL ASYMPTOTICS FOR THE DIRICHLET LAPLACIAN ON A BOUNDED DOMAIN. , 2011, , .		12
102	EQUIVALENCE OF SOBOLEV INEQUALITIES AND LIEB-THIRRING INEQUALITIES. , 2010, , .		15
103	Inversion positivity and the sharp Hardy-Littlewood-Sobolev inequality. Calculus of Variations and Partial Differential Equations, 2010, 39, 85-99.	1.7	68
104	Inequalities between Dirichlet and Neumann Eigenvalues on the Heisenberg Group. International Mathematics Research Notices, 2010, 2010, 2889-2902.	1.0	5
105	Bipolaron and $N < -Polaron Binding Energies. Physical Review Letters, 2010, 104, 210402.$	7.8	19
106	Sharp Fractional Hardy Inequalities in Half-Spaces. International Mathematical Series, 2010, , 161-167.	0.3	20
107	SINGULAR SPECTRUM FOR RADIAL TREES. Reviews in Mathematical Physics, 2009, 21, 929-945.	1.7	20
108	Polya's conjecture in the presence of a constant magnetic field. Journal of the European Mathematical Society, 2009, 11, 1365-1383.	1.4	19

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109	A Simple Proof of Hardy-Lieb-Thirring Inequalities. Communications in Mathematical Physics, 2009, 290, 789-800.	2.2	39
110	A Note on Low Energy Scattering for Homogeneous Long-Range Potentials. Annales Henri Poincare, 2009, 10, 573-575.	1.7	3
111	Hardy-Lieb-Thirring inequalities for fractional Schrödinger operators. Journal of the American Mathematical Society, 2008, 21, 925-950.	3.9	184
112	The Ground State Energy of Heavy Atoms: Relativistic Lowering of the Leading Energy Correction. Communications in Mathematical Physics, 2008, 278, 549-566.	2.2	21
113	Eigenvalue Bounds for Perturbations of Schrödinger Operators and Jacobi Matrices With Regular Ground States. Communications in Mathematical Physics, 2008, 282, 199-208.	2.2	25
114	Non-linear ground state representations and sharp Hardy inequalities. Journal of Functional Analysis, 2008, 255, 3407-3430.	1.4	252
115	Lieb-Thirring inequalities on the half-line with critical exponent. Journal of the European Mathematical Society, 2008, 10, 739-755.	1.4	7
116	Eigenvalue estimates for magnetic Schrödinger operators in domains. Proceedings of the American Mathematical Society, 2008, 136, 4245-4255.	0.8	7
117	Eigenvalue Estimates for the Aharonov-Bohm Operator in a Domain. , 2008, , 115-137.		3
118	The sharp constant in the Hardy-Sobolev-Maz'ya inequality in the three dimensional upper half-space. Mathematical Research Letters, 2008, 15, 613-622.	0.5	53
119	On the asymptotic number of edge states for magnetic Schrödinger operators. Proceedings of the London Mathematical Society, 2007, 95, 1-19.	1.3	12
120	Müller's exchange-correlation energy in density-matrix-functional theory. Physical Review A, 2007, 76, .	2.5	44
121	The critical temperature for the BCS equation at weak coupling. Journal of Geometric Analysis, 2007, 17, 559-567.	1.0	54
122	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
123	Absolute Continuity of the Spectrum for Periodically Modulated Leaky Wires in \mathbb{R}^3 . Annales Henri Poincare, 2007, 8, 241-263.	1.7	8
124	Number of Bound States of Schrödinger Operators with Matrix-Valued Potentials. Letters in Mathematical Physics, 2007, 82, 107-116.	1.1	6
125	On the Spectrum of Partially Periodic Operators. , 2007, , 35-50.		2
126	Lieb-Thirring Inequalities for Schrödinger Operators with Complex-valued Potentials. Letters in Mathematical Physics, 2006, 77, 309-316.	1.1	65

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127	On Lieb-Thirring Inequalities for Schrödinger Operators with Virtual Level. Communications in Mathematical Physics, 2006, 264, 725-740.	2.2	39
128	On the Laplacian in the halfspace with a periodic boundary condition. Arkiv for Matematik, 2006, 44, 277-298.	0.5	4
129	The Stein-Tomas inequality in trace ideals. Séminaire Laurent Schwartz "EDP Et Applications, 0, , 1-12.	0.0	2