

Horng-Tzer Yau

List of Publications by Year in descending order

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77
papers

4,910
citations

66343

42
h-index

110387

64
g-index

78
all docs

78
docs citations

78
times ranked

974
citing authors

#	ARTICLE	IF	CITATIONS
1	The Chandrasekhar theory of stellar collapse as the limit of quantum mechanics. <i>Communications in Mathematical Physics</i> , 1987, 112, 147-174.	2.2	266
2	Derivation of the cubic non-linear Schrödinger equation from quantum dynamics of many-body systems. <i>Inventiones Mathematicae</i> , 2007, 167, 515-614.	2.5	213
3	Rigidity of eigenvalues of generalized Wigner matrices. <i>Advances in Mathematics</i> , 2012, 229, 1435-1515.	1.1	206
4	Relative entropy and hydrodynamics of Ginzburg-Landau models. <i>Letters in Mathematical Physics</i> , 1991, 22, 63-80.	1.1	201
5	The stability and instability of relativistic matter. <i>Communications in Mathematical Physics</i> , 1988, 118, 177-213.	2.2	198
6	Linear Boltzmann equation as the weak coupling limit of a random Schrödinger equation. <i>Communications on Pure and Applied Mathematics</i> , 2000, 53, 667-735.	3.1	172
7	Derivation of the nonlinear Schrödinger equation from a many-body Coulomb system. <i>Advances in Theoretical and Mathematical Physics</i> , 2001, 5, 1169-1205.	0.6	167
8	Spectral statistics of Erdős-Rényi graphs I: Local semicircle law. <i>Annals of Probability</i> , 2013, 41, .	1.8	157
9	Local Semicircle Law and Complete Delocalization for Wigner Random Matrices. <i>Communications in Mathematical Physics</i> , 2009, 287, 641-655.	2.2	149
10	Semicircle law on short scales and delocalization of eigenvectors for Wigner random matrices. <i>Annals of Probability</i> , 2009, 37, .	1.8	138
11	Bulk universality for generalized Wigner matrices. <i>Probability Theory and Related Fields</i> , 2012, 154, 341-407.	1.8	136
12	Spectral gap and logarithmic Sobolev inequality for Kawasaki and Glauber dynamics. <i>Communications in Mathematical Physics</i> , 1993, 156, 399-433.	2.2	133
13	Spectral Statistics of Erdős-Rényi Graphs II: Eigenvalue Spacing and the Extreme Eigenvalues. <i>Communications in Mathematical Physics</i> , 2012, 314, 587-640.	2.2	133
14	Stability of coulomb systems with magnetic fields. <i>Communications in Mathematical Physics</i> , 1986, 104, 283-290.	2.2	118
15	Wegner Estimate and Level Repulsion for Wigner Random Matrices. <i>International Mathematics Research Notices</i> , 2010, 2010, 436-479.	1.0	116
16	Universality of random matrices and local relaxation flow. <i>Inventiones Mathematicae</i> , 2011, 185, 75-119.	2.5	116
17	Rigorous derivation of the Gross-Pitaevskii equation with a large interaction potential. <i>Journal of the American Mathematical Society</i> , 2009, 22, 1099-1156.	3.9	107
18	Edge Universality of Beta Ensembles. <i>Communications in Mathematical Physics</i> , 2014, 332, 261-353.	2.2	98

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19	TheN 7/5 law for charged bosons. Communications in Mathematical Physics, 1988, 116, 417-448.	2.2	87
20	Universality of general $\hat{\Gamma}^2$ -ensembles. Duke Mathematical Journal, 2014, 163, .	1.5	84
21	The local semicircle law for a general class of random matrices. Electronic Journal of Probability, 2013, 18, .	1.0	82
22	The local relaxation flow approach to universality of the local statistics for random matrices. Annales De L'institut Henri Poincare (B) Probability and Statistics, 2012, 48, .	1.1	76
23	Lower Bounds on the Blow-Up Rate of the Axisymmetric Navier-Stokes Equations II. Communications in Partial Differential Equations, 2009, 34, 203-232.	2.2	73
24	The Second Order Upper Bound for the Ground Energy of a Bose Gas. Journal of Statistical Physics, 2009, 136, 453-503.	1.2	72
25	Universality of local spectral statistics of random matrices. Bulletin of the American Mathematical Society, 2012, 49, 377-414.	1.5	72
26	Gross-Pitaevskii Equation as the Mean Field Limit of Weakly Coupled Bosons. Archive for Rational Mechanics and Analysis, 2006, 179, 265-283.	2.4	71
27	On the principal components of sample covariance matrices. Probability Theory and Related Fields, 2016, 164, 459-552.	1.8	70
28	Averaging Fluctuations in Resolvents of Random Band Matrices. Annales Henri Poincare, 2013, 14, 1837-1926.	1.7	68
29	Bulk universality for Wigner hermitian matrices with subexponential decay. Mathematical Research Letters, 2010, 17, 667-674.	0.5	62
30	Fixed Energy Universality for Generalized Wigner Matrices. Communications on Pure and Applied Mathematics, 2016, 69, 1815-1881.	3.1	60
31	Bulk universality for Wigner matrices. Communications on Pure and Applied Mathematics, 2010, 63, 895-925.	3.1	59
32	Delocalization and Diffusion Profile for Random Band Matrices. Communications in Mathematical Physics, 2013, 323, 367-416.	2.2	58
33	Nonlinear Hartree equation as the mean field limit of weakly coupled fermions. Journal Des Mathematiques Pures Et Appliquees, 2004, 83, 1241-1273.	1.6	57
34	Lower Bound on the Blow-up Rate of the Axisymmetric Navier-Stokes Equations. International Mathematics Research Notices, 2008, 2008, .	1.0	56
35	Local circular law for random matrices. Probability Theory and Related Fields, 2014, 159, 545-595.	1.8	56
36	Ground-state energy of a low-density Bose gas: A second-order upper bound. Physical Review A, 2008, 78, .	2.5	49

#	ARTICLE	IF	CITATIONS
37	Bulk universality of general $\hat{\eta}^2$ -ensembles with non-convex potential. Journal of Mathematical Physics, 2012, 53, .	1.1	49
38	Universality for generalized Wigner matrices with Bernoulli distribution. Electronic Journal of Combinatorics, 2011, 2, 15-81.	0.1	46
39	Logarithmic Sobolev inequality for generalized simple exclusion processes. Probability Theory and Related Fields, 1997, 109, 507-538.	1.8	45
40	Fixed energy universality of Dyson Brownian motion. Advances in Mathematics, 2019, 346, 1137-1332.	1.1	45
41	Logarithmic Sobolev inequality for lattice gases with mixing conditions. Communications in Mathematical Physics, 1996, 181, 367-408.	2.2	44
42	Gap universality of generalized Wigner and β -ensembles. Journal of the European Mathematical Society, 2015, 17, 1927-2036.	1.4	44
43	Convergence of Local Statistics of Dyson Brownian Motion. Communications in Mathematical Physics, 2017, 355, 949-1000.	2.2	44
44	Universality of Sine-Kernel for Wigner Matrices with a Small Gaussian Perturbation. Electronic Journal of Probability, 2010, 15, .	1.0	43
45	Local Semicircle Law for Random Regular Graphs. Communications on Pure and Applied Mathematics, 2017, 70, 1898-1960.	3.1	43
46	Isotropic local laws for sample covariance and generalized Wigner matrices. Electronic Journal of Probability, 2014, 19, .	1.0	41
47	Bulk universality of sparse random matrices. Journal of Mathematical Physics, 2015, 56, .	1.1	39
48	The Stability and Instability of Relativistic Matter. , 2005, , 485-521.		38
49	Universality for a class of random band matrices. Advances in Theoretical and Mathematical Physics, 2017, 21, 739-800.	0.6	38
50	Quantum Diffusion of the Random Schrödinger Evolution in the Scaling Limit II. The Recollision Diagrams. Communications in Mathematical Physics, 2007, 271, 1-53.	2.2	33
51	The local circular law II: the edge case. Probability Theory and Related Fields, 2014, 159, 619-660.	1.8	33
52	Local Kesten-McKay Law for Random Regular Graphs. Communications in Mathematical Physics, 2019, 369, 523-636.	2.2	29
53	Bulk eigenvalue statistics for random regular graphs. Annals of Probability, 2017, 45, .	1.8	27
54	Eigenvector statistics of sparse random matrices. Electronic Journal of Probability, 2017, 22, .	1.0	25

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55	Quantum Diffusion for the Anderson Model in the Scaling Limit. Annales Henri Poincare, 2007, 8, 621-685.	1.7	24
56	Random Band Matrices in the Delocalized Phase I: Quantum Unique Ergodicity and Universality. Communications on Pure and Applied Mathematics, 2020, 73, 1526-1596.	3.1	23
57	The two-dimensional Coulomb plasma: quasi-free approximation and central limit theorem. Advances in Theoretical and Mathematical Physics, 2019, 23, 841-1002.	0.6	23
58	Local Density for Two-Dimensional One-Component Plasma. Communications in Mathematical Physics, 2017, 356, 189-230.	2.2	22
59	Many-Body Stability Implies a Bound on the Fine-Structure Constant. Physical Review Letters, 1988, 61, 1695-1697.	7.8	20
60	Metastability of Ginzburg-Landau model with a conservation law. Journal of Statistical Physics, 1994, 74, 705-742.	1.2	18
61	Edge rigidity and universality of random regular graphs of intermediate degree. Geometric and Functional Analysis, 2020, 30, 693-769.	1.8	13
62	A comment on the Wigner-Dyson-Mehta bulk universality conjecture for Wigner matrices. Electronic Journal of Probability, 2012, 17, .	1.0	9
63	Superdiffusivity of Two Dimensional Lattice Gas Models. Journal of Statistical Physics, 2005, 119, 963-995.	1.2	8
64	Dynamical Approach to the TAP Equations for the Sherrington-Kirkpatrick Model. Journal of Statistical Physics, 2021, 183, 1.	1.2	5
65	Global eigenvalue distribution of matrices defined by the skew-shift. Analysis and PDE, 2021, 14, 1153-1198.	1.4	1
66	FEYNMAN GRAPHS AND RENORMALIZATION IN QUANTUM DIFFUSION. , 2008, , .		1
67	The Wigner-Dyson-Gaudin-Mehta Conjecture. Notices of the International Congress of Chinese Mathematicians, 2013, 1, 10-13.	0.0	1
68	Introduction to Special Issue: In Honor of Elliott Lieb's 80th birthday. Journal of Mathematical Physics, 2012, 53, 095101.	1.1	0
69	The Stability and Instability of Relativistic Matter. , 2001, , 485-521.		0
70	The work of Cédric Villani. , 2011, , .		0
71	A Rigorous Examination of the Chandrasekhar Theory of Stellar Collapse. , 1991, , 390-394.		0
72	Many-Body Stability Implies a Bound on the Fine-Structure Constant. , 1991, , 432-434.		0

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73	Many-Body Stability Implies a Bound on the Fine-Structure Constant. , 1997, , 484-486.		0
74	A Rigorous Examination of the Chandrasekhar Theory of Stellar Collapse. , 1997, , 437-441.		0
75	The Stability and Instability of Relativistic Matter. , 1997, , 487-523.		0
76	Stability of relativistic Coulomb and gravitating systems. , 1989, , 444-458.		0
77	The replica symmetric formula for the SK model revisited. Journal of Mathematical Physics, 2022, 63, .	1.1	0