

LIST OF PUBLICATIONS

(László ERDŐS)

September 18, 2025

Review papers and conference proceedings are marked with (*)

1. L. Erdős and D. Q. Tuyen, *Ergodic properties of the multidimensional Rayleigh gas with semipermeable barrier*. J. Stat. Phys. **59**(5/6), 1589–1602 (1990).
2. L. Erdős, *On some problems of P. Turán concerning power sums of complex numbers*. Acta Math. Hung. **59**(1-2), 11–24 (1992).
3. L. Erdős and D. Q. Tuyen, *Central limit theorems in the one-dimensional Rayleigh gas*. Commun. Math. Phys. **143**, 451–466 (1992).
4. L. Erdős, *Ground state density of the Pauli operator in the large field limit*. Lett. Math. Phys. **29**, 219–240 (1993).
5. L. Erdős, *Estimates on stochastic oscillatory integrals and on the heat kernel of the magnetic Schrödinger operator*. Duke Math. J. **76**(2), 541–566 (1994).
6. L. Erdős, *Magnetic Lieb-Thirring inequalities*. Commun. Math. Phys. **170**, 629–668 (1995).
7. (*) L. Erdős, *Magnetic Lieb-Thirring inequalities and stochastic oscillatory integrals*. pp. 127–133 in Operator Theory Advances and Applications, Vol. **78**, Eds. M. Demuth and B.-W. Schulze, Birkhäuser, 1995.
8. L. Erdős, *Gaussian decay of the magnetic eigenfunctions*. Geom. Funct. Anal. **6**(2), 231–248 (1996).
9. L. Erdős, *Rayleigh-type isoperimetric inequality with a homogeneous magnetic field*. Calc. Var. Partial Differ. Equ. **4**, 283–292 (1996).
10. L. Erdős and J. P. Solovej, *Semiclassical eigenvalue estimates for the Pauli operator with strong non-homogeneous magnetic fields. I. Non-asymptotic Lieb-Thirring type estimate*. Duke Math. J. **96**(1) 127–171 (1999).
11. L. Erdős and J. P. Solovej, *Semiclassical eigenvalue estimates for the Pauli operator with strong non-homogeneous magnetic fields. II. Leading order asymptotic estimates*. Commun. Math. Phys. **188**, 599–656 (1997).
12. L. Erdős, *Dia- and paramagnetism for nonhomogeneous magnetic fields*. J. Math. Phys. **38**(3), 1289–1317 (1997).

13. L. Erdős, *Lifschitz tail in a magnetic field: the nonclassical regime*. Probab. Theory Relat. Fields **112**, 321–371 (1998).
14. L. Erdős and H.-T. Yau, *Linear Boltzmann equation as scaling limit of quantum Lorenz gas*. Advances in Differential Equations and Mathematical Physics. Contemp. Math. **217**, 137–155 (1998).
15. (*) L. Erdős, *Linear Boltzmann equation as the weak coupling limit of the random Schrödinger equation*. Operator Theory Advances and Applications **108**, 233–242. Eds. J. Dittrich, P. Exner and M. Tater, Birkhäuser 1999.
16. L. Erdős and H.-T. Yau, *Linear Boltzmann equation as the weak coupling limit of the random Schrödinger equation*. Commun. Pure Appl. Math. **53**, 667–735 (2000).
17. L. Erdős, M. Loss and V. Vougalter, *Diamagnetic behavior of sums of Dirichlet eigenvalues*. Ann. Inst. Fourier **50**(3), 891–907 (2000).
18. F. Castella, L. Erdős, F. Frommlet and P. A. Markowich, *Fokker-Planck equations as scaling limits of reversible quantum systems*. J. Stat. Phys. **100**(3/4), 543–601, (2000).
19. (*) L. Erdős, J. P. Solovej, *The kernel of Dirac operators on S^3 and $\mathbf{R}^3$* . In: Differential equations and mathematical physics (Birmingham, AL, 1999), AMS/IP Stud. Adv. Math. **16**, 111–119 (2000).
20. L. Erdős, J. P. Solovej, *The kernel of Dirac operators on S^3 and $\mathbf{R}^3$* . Rev. Math. Phys. **13**(10), 1247–1280 (2001).
21. L. Erdős, *Lifschitz tail in a magnetic field: coexistence of classical and quantum behavior in the borderline case*. Probab. Theory Rel. Fields **121**, 219–236 (2001).
22. (*) L. Erdős, *Long time dynamics of an electron in a weakly coupled phonon field*. Proceedings of the XIII-th International Congress on Mathematical Physics (London, 2000), 273–281, International Press 2001.
23. L. Erdős, *Spectral shift and multiplicity of the first eigenvalue of the magnetic Schrödinger operator in two dimensions*. Ann. Inst. Fourier **52**(6), 1833–1874 (2002).
24. L. Erdős, V. Vougalter, *Pauli operator and Aharonov-Casher theorem for measure valued magnetic fields*. Commun. Math. Phys. **225**, 399–421 (2002).
25. L. Erdős, *Linear Boltzmann equation as the long time dynamics of an electron weakly coupled to a phonon field*. J. Stat. Phys. **107**, 1043–1128 (2002).

26. C. Bardos, L. Erdős, F. Golse, N. Mauser and H.-T. Yau, *Derivation of the Schrödinger-Poisson equation from the quantum N -body problem*. C. R. Acad. Sci. Ser. I. **334**, 515–520 (2002).
27. L. Erdős and H.-T. Yau, *Derivation of the nonlinear Schrödinger equation from a many body Coulomb system*. Adv. Theor. Math. Phys. **5**, 1169–1205 (2001).
28. (*) L. Erdős, V. Vougalter, *Two dimensional Pauli operator via scalar potential*. (Proceedings of QMath-8 Conference, Taxco, Mexico, 2001. Eds: R. Weder, P. Exner, B. Grebert) Contemporary Math. **307**, 129–133 (2002).
29. (*) L. Erdős, *Scaling limits of Schrödinger Quantum Mechanics*. In: "Dynamical semigroups: dissipation, chaos, quanta: Proceedings of the 38-th Winter School of Theor. Physics, Łańcuch Zdroj, Poland, 2002" Lecture Notes in Physics **597**. Springer, Berlin, 2002.
30. L. Erdős and J. P. Solovej, *Uniform Lieb-Thirring inequality for the three dimensional Pauli operator with a strong non-homogeneous magnetic field*. Ann. Henri Poincaré **5**, 671–741 (2004).
31. L. Erdős, M. Salmhofer and H.-T. Yau, *On the quantum Boltzmann equation*. J. Stat. Phys. **116**, 367–380 (2004).
32. L. Erdős and J. P. Solovej, *Magnetic Lieb-Thirring inequalities with optimal dependence on the field strength*. J. Stat. Phys. **116**(1-4), 475–506 (2004).
33. A. Elgart, L. Erdős, B. Schlein and H.-T. Yau, *Nonlinear Hartree equation as the mean field limit of weakly coupled fermions*. J. Math. Pures Appl. **83**, 1241–1273 (2004).
34. L. Erdős, D. Hasler and J. P. Solovej, *Existence of the $D0$ - $D4$ Bound State: a detailed Proof*. Ann. Henri Poincaré **6**, 247–267 (2005).
35. L. Erdős, B. Schlein and H.-T. Yau, *Derivation of the Gross-Pitaevskii Hierarchy for the Dynamics of Bose-Einstein Condensate*. Comm. Pure Appl. Math. **59**(12), 1659–1741 (2006).
(xxx.lanl.gov/abs/math-ph/0410005)
36. A. Elgart, L. Erdős, B. Schlein and H.-T. Yau, *Gross-Pitaevskii Equation as the Mean Field Limit of Weakly Coupled Bosons*. Arch. Ration. Mech. Anal. **179**(2), 265–283 (2006).
(xxx.lanl.gov/abs/math-ph/0410038)

37. D. Eng and L. Erdős, *The Linear Boltzmann Equation as the Low Density Limit of a Random Schrödinger Equation*. Rev. Math. Phys, **17**(6), 669–743 (2005).
(xxx.lanl.gov/abs/math-ph/0412044)
38. (*) L. Erdős, M. Salmhofer and H.-T. Yau, *Towards the quantum Brownian motion*. In: "Mathematical Physics of Quantum Mechanics. Selected and Refereed Lectures from QMath9. Lecture Notes in Physics, **690**, 233–258 (2006). (xxx.lanl.gov/abs/math-ph/0503001)
39. L. Erdős, B. Schlein, H.-T. Yau, *Derivation of the Cubic Non-linear Schrödinger Equation from Quantum Dynamics of Many-Body Systems*. Invent. Math. **167**, 515–614 (2007). (xxx.lanl.gov/abs/math-ph/0508010)
40. (*) L. Erdős, *Recent developments in quantum mechanics with magnetic fields*. Proc. of Symposia in Pure Math. Vol **76**. Spectral Theory and Mathematical Physics: A Festschrift in Honor of Barry Simon's 60th Birthday. Part 2. 401–428, Amer. Math. Soc. 2006.
(xxx.lanl.gov/abs/math-ph/0510055)
41. L. Erdős, M. Salmhofer, H.-T. Yau, *Quantum diffusion of the random Schrödinger evolution in the scaling limit*. Acta Math. **200**(2), 211–277 (2008).
(xxx.lanl.gov/abs/math-ph/0512014)
42. L. Erdős, M. Salmhofer, H.-T. Yau, *Quantum diffusion of the random Schrödinger evolution in the scaling limit II. The recollision diagrams*. Commun. Math. Phys. **271**, 1–53 (2007). (xxx.lanl.gov/abs/math-ph/0512015)
43. L. Erdős, M. Salmhofer, *Decay of the Fourier transform of surfaces with vanishing curvature*. Math. Z. **257**(2), 261–294 (2007). (xxx.lanl.gov/abs/math-ph/0604039)
44. L. Erdős, M. Salmhofer, H.-T. Yau, *Quantum diffusion for the Anderson model in scaling limit*. Ann. Henri Poincare **8**(4), 621–685 (2007). (xxx.lanl.gov/abs/math-ph/0502025)
45. L. Erdős, B. Schlein, H.-T. Yau, *Derivation of the Gross-Pitaevskii equation for the dynamics of Bose-Einstein Condensate*. Ann. Math.(2) **172**(1), 291–370 (2010).
(xxx.lanl.gov/abs/math-ph/0606017)
46. (*) L. Erdős, B. Schlein, H.-T. Yau, *Rigorous Derivation of the Gross-Pitaevskii Equation*. Phys. Rev. Lett. **98**, 040404 (2007).
(xxx.lanl.gov/abs/math-ph/0612028)

47. L. Erdős, B. Schlein, H.-T. Yau, *Semicircle law on short scales and delocalization of eigenvectors for Wigner random matrices*. Ann. Probab. **37**(3), 815–852 (2009).
(xxx.lanl.gov/abs/0711.1730)
48. R. Adami, L. Erdős, *Rate of decoherence for an electron weakly coupled to a phonon gas*. J. Stat. Phys. **132**(2), 301–328 (2008).
(xxx.lanl.gov/abs/0802.1229)
49. L. Erdős, B. Schlein, H.-T. Yau, *Local semicircle law and complete delocalization for Wigner random matrices*. Comm. Math. Phys. **287**, 641–655 (2009).
(xxx.lanl.gov/abs/0803.0542)
50. L. Erdős, B. Schlein, H.-T. Yau, *Rigorous Derivation of the Gross-Pitaevskii Equation with a Large Interaction Potential*. J. Amer. Math. Soc. **22**(4), 1099–1156 (2009).
(xxx.lanl.gov/abs/0802.3877)
51. L. Erdős, B. Schlein, *Quantum dynamics with mean field interactions: a new approach*. J. Stat. Phys. **134**, 859–870 (2009). (xxx.lanl.gov/abs/0804.3774)
52. (*) L. Erdős, M. Salmhofer, H.-T. Yau, *Feynman graphs and renormalization in quantum diffusion*. In: "Quantum Field Theory and Beyond. Proceedings of the conference in honor of the 80th birthday of Wolfhart Zimmermann", 167–183, World Scientific, 2011.
(<http://arxiv.org/abs/0806.4751>)
53. L. Erdős, B. Schlein, H.-T. Yau, *The ground state energy of a low density Bose gas: a second order upper bound*. Phys. Rev. A. **78**, no. 5, 053627 (2008).
(<http://arxiv.org/abs/0806.4873>)
54. L. Erdős, A. Michelangeli, B. Schlein, *Dynamical formation of correlations in a Bose-Einstein condensate*. Comm. Math. Phys. **289**(3), 1171–1210 (2009).
(<http://arxiv.org/abs/0808.0207>)
55. L. Erdős, B. Schlein, H.-T. Yau, *Wegner estimate and level repulsion for Wigner random matrices*. Int. Math. Res. Not. **2010**(3), 436–479 (2010).
(<http://arxiv.org/abs/0811.2591>)
56. L. Erdős, J.P. Solovej, *Ground state energy of large atoms in a self-generated magnetic field*. Commun. Math. Phys. **294**(1), 229–249 (2010).
(<http://arxiv.org/abs/0903.1816>)

57. L. Erdős, J. Ramirez, B. Schlein , H.-T. Yau, *Universality of sine-kernel for Wigner matrices with a small Gaussian perturbation*. Electron. J. Probab. **15**, Paper 18, 526–604 (2010).
(<http://arxiv.org/abs/0905.2089>)
58. L. Erdős, S. Péché, J. Ramirez, B. Schlein , H.-T. Yau, *Bulk Universality for Wigner Matrices*. Comm. Pure Appl. Math. **63**(7), 895–925 (2010).
(<http://arxiv.org/abs/0905.4176>)
59. L. Erdős, J. Ramirez, B. Schlein , T. Tao, V. Vu, H.-T. Yau, *Bulk Universality for Wigner Hermitian matrices with subexponential decay*. Math. Res. Lett. **17**(4), 667–674 (2010).
(<http://arxiv.org/abs/0906.4400>)
60. L. Erdős, B. Schlein , H.-T. Yau, *Universality of Random Matrices and Local Relaxation Flow*. Invent. Math. **185**(1), 75–119 (2011).
(<http://arxiv.org/abs/0907.5605>)
61. (*) L. Erdős, *Universality of Wigner Random Matrices*. In: "Proceedings of the XVI-th ICMP, Prague", 99–105, World Scientific 2010.
(<http://arxiv.org/abs/0909.2691>)
62. L. Erdős, B. Schlein, H.-T. Yau, J. Yin, *The local relaxation flow approach to universality of the local statistics for random matrices*. Ann. inst. Henri Poincaré (B) Probab. **48**(1), 1–46 (2012).
(<http://arxiv.org/abs/0911.3687>)
63. L. Erdős, H.-T. Yau, J. Yin, *Bulk universality for generalized Wigner matrices*. Probab. Theory Relat. Fields, **154**(1-2), 341–407 (2012). (<http://arxiv.org/abs/1001.3453>)
64. L. Erdős, A. Knowles, *Quantum Diffusion and Eigenfunction Delocalization in a Random Band Matrix Model*. Commun. Math. Phys. **303**(2), 509–554 (2011).
(<http://arxiv.org/abs/1002.1695>)
65. L. Erdős, H.-T. Yau, J. Yin, *Universality for generalized Wigner matrices with Bernoulli distribution*. J. of Combinatorics, **1**(2), 15–85 (2011).
(<http://arxiv.org/abs/1003.3813>)
66. (*) L. Erdős, *Universality of Wigner Random Matrices: a Survey of Recent Results*. Russ. Math. Surv. **66**(3) 67–198 (2011).
(<http://arxiv.org/abs/1004.0861>)
67. L. Erdős, A. Knowles, *Quantum Diffusion and Delocalization for Band Matrices with*

- General Distribution*. Ann. Henri Poincare, **12**(7), 1227–1319 (2011).
(<http://arxiv.org/abs/1005.1838>)
- 68.** L. Erdős, H.-T. Yau, J. Yin, *Rigidity of Eigenvalues of Generalized Wigner Matrices*. Adv. Math. **229**(3), 1435–1515 (2012). (<http://arxiv.org/abs/1007.4652>)
- 69.** (*) L. Erdős, *Lecture Notes on Quantum Brownian Motion*. In: "Quantum Theory from Small to Large Scales. École de Physique des Houches, Session XCV." pp. 3–98, Oxford University Press, 2012.
(<http://arxiv.org/abs/1009.0843>)
- 70.** L. Erdős, D. Hasler, *Wegner estimate and Anderson localization for random magnetic fields*. Commun. Math. Phys. **309**(2), 507–542 (2012).
(<http://arxiv.org/abs/1012.5185>)
- 71.** L. Erdős, D. Hasler, *Wegner estimate for random magnetic Laplacian on Z^2* . Ann. Henri Poincare **13**(8), 1719–1731 (2012).
(<http://arxiv.org/abs/1101.2139>)
- 72.** L. Erdős, A. Knowles, H.-T. Yau, J. Yin, *Spectral Statistics of Erdős-Rényi Graphs I: Local Semicircle Law*. Ann. Probab. **41**(3B), 2279–2375 (2013).
(<http://arxiv.org/abs/1103.1919>)
- 73.** L. Erdős, A. Knowles, H.-T. Yau, J. Yin, *Spectral Statistics of Erdős-Rényi Graphs II: Eigenvalue Spacing and the Extreme Eigenvalues*. Comm. Math. Phys. **314**(3), 587–640 (2012).
(<http://arxiv.org/abs/1103.3869>)
- 74.** L. Erdős, D. Hasler, *Anderson Localization at Band Edges for Random Magnetic Fields*. J. Stat. Phys. **146**(5), 900–923 (2012).
(<http://arxiv.org/abs/1103.3744>)
- 75.** P. Bourgade, L. Erdős, H.-T. Yau, *Universality of General β -Ensembles*. Duke Math. J. **163**(6), 1127–1190 (2014).
(<http://arxiv.org/abs/1104.2272>)
- 76.** L. Erdős, S. Fournais, J.P. Solovej, *Stability and semiclassics in self-generated fields*. J. Eur. Math. Soc. **15**, 2093–2113 (2013). (<http://arxiv.org/abs/1105.0506>)
- 77.** L. Erdős, S. Fournais, J.P. Solovej: *Second order semiclassics with self-generated magnetic fields*. Ann. Henri Poincare, **13**(4), 671–730 (2012). (<http://arxiv.org/abs/1105.0512>)
- 78.** L. Erdős, S. Fournais, J.P. Solovej, *Scott correction for large atoms and molecules in*

- a self-generated magnetic field.* Commun. Math. Phys. **312**(3), 847–882 (2012).
(<http://arxiv.org/abs/1105.0521>)
- 79.** (*) L. Erdős, H.-T. Yau, *Universality of local spectral statistics of random matrices.* Bull. Amer. Math. Soc. **49**(3), 377–414 (2012).
(<http://arxiv.org/abs/1106.4986>)
- 80.** L. Erdős, S. Fournais, J.P. Solovej: *Relativistic Scott correction in self-generated magnetic fields.* J. Math. Phys. **53**, 095202 (2012).
(<http://arxiv.org/abs/1112.0673>)
- 81.** P. Bourgade, L. Erdős, H.-T. Yau: *Bulk Universality of General β -Ensembles with Non-convex Potential.* J. Math. Phys. **53**, 095221 (2012).
(<http://arxiv.org/abs/1201.2283>)
- 82.** L. Erdős, H.-T. Yau: *A comment on the Wigner-Dyson-Mehta bulk universality conjecture for Wigner matrices.* Electron. J. Probab. **17**, 1–5 (2012).
(<http://arxiv.org/abs/1201.5619>)
- 83.** L. Erdős, A. Knowles, H.-T. Yau, J. Yin, *Delocalization and Diffusion Profile for Random Band Matrices.* Comm. Math. Phys. **323**, 367–416 (2013).
(<http://arxiv.org/abs/1205.5669>)
- 84.** L. Erdős, A. Knowles, H.-T. Yau, *Averaging Fluctuations in Resolvents of Random Band Matrices.* Ann. Henri Poincaré **14**(8), 1837–1926 (2013).
([arxiv:1205.5664](http://arxiv.org/abs/1205.5664))
- 85.** L. Erdős, B. Farrell, *Local Eigenvalue Density for General MANOVA Matrices.* J. Stat. Phys. **152**(6), 1003–1032 (2013).
(<http://arxiv.org/abs/1207.0031>)
- 86.** L. Erdős, H.-T. Yau, *Gap Universality of Generalized Wigner and β -Ensembles.* J. Eur. Math. Soc. **17**(8), 1927–2036 (2015). (<http://arxiv.org/abs/1211.3786>)
- 87.** L. Erdős, A. Knowles, H.-T. Yau, J. Yin, *The Local Semicircle Law for a General Class of Random Matrices.* Electron. J. Probab. **18**, 1–58. (2013).
(<http://arxiv.org/abs/1212.0164>)
- 88.** L. Erdős, *Universality for random matrices and log-gases.* In: Current Developments in Mathematics 2012, Ed. D. Jerison, M. Kisin, T. Mrowka. R. Stanley, H.-T. Yau, S.-T. Yau, 59–132, International Press 2013.
(<http://arxiv.org/abs/1212.0839>)

89. P. Bourgade, L. Erdős, H.-T. Yau: *Edge universality of beta ensembles*. Commun. Math. Phys. **332**(1), 261–354 (2014). (<http://arxiv.org/abs/1306.5728>)
90. A. Bloemendal, L. Erdős, A. Knowles, H.-T. Yau, J. Yin: *Isotropic local laws for sample covariance and generalized Wigner matrices*. Electron. J. Probab. **19**, paper 33, 1–53 (2014). (<http://arxiv.org/abs/1308.5729>)
91. L. Erdős, A. Knowles: *The Altshuler-Shklovskii formulas for random band matrices I: the unimodular case*. Commun. Math. Phys. **333**(3), 1365–1416 (2015). [arxiv:1309.5106](https://arxiv.org/abs/1309.5106)
92. L. Erdős, A. Knowles: *The Altshuler-Shklovskii formulas for random band matrices II: the general case*. Ann. Henri Poincaré, **16**, 709–799 (2015). [arxiv:1309.5107](https://arxiv.org/abs/1309.5107)
93. O. Ajanki, L. Erdős, T. Krüger, *Local semicircle law with imprimitive variance matrix*. Electron. Commun. Probab. **19**(33), 1–9 (2014). [arxiv:1311.2016](https://arxiv.org/abs/1311.2016)
94. L. Erdős, D. Schröder, *Phase transition in the density of states of quantum spin glasses*. Math. Phys. Anal. Geom. **17**(3-4), 441–464 (2014). [arxiv:1407.1552](https://arxiv.org/abs/1407.1552)
95. (*) L. Erdős, *Random matrices, log-gases and Hölder regularity*. Proceedings of ICM 2014, Seoul, Vol. III. 213–236 (2015). [arxiv:1407.5752](https://arxiv.org/abs/1407.5752)
96. P. Bourgade, L. Erdős, H.-T. Yau, J. Yin, *Fixed energy universality for generalized Wigner matrices*. Comm. Pure Appl. Math. **69**(10), 1815–1881 (2016). [arxiv:1407.5606](https://arxiv.org/abs/1407.5606)
97. Z. Bao, L. Erdős, *Delocalization for a class of random block band matrices*. Probab. Theory Relat. Fields, **167**(3), 673–776 (2016). [arxiv:1503.07510](https://arxiv.org/abs/1503.07510).
98. L. Erdős, K. Schnelli, *Universality for Random Matrix Flows with Time-dependent Density*. Ann. inst. Henri Poincaré (B) Probab. **53**(4), 1606–1656 (2017). [arxiv:1504.00650](https://arxiv.org/abs/1504.00650)
99. O. Ajanki, L. Erdős, T. Krüger, *Quadratic vector equations on complex upper half-plane*. Mem. Amer. Math. Soc. **261** No. 1261 (2019). [arxiv:1506.05095](https://arxiv.org/abs/1506.05095).
100. O. Ajanki, L. Erdős, T. Krüger, *Universality for general Wigner-type matrices*. Probab. Theory Relat. Fields **169**(3-4), 667–727 (2017). [arxiv:1506.05098](https://arxiv.org/abs/1506.05098)
101. Z. Bao, L. Erdős, K. Schnelli, *Local stability of the free additive convolution*. J. Funct. Anal. **271**(3), 672–719 (2016). [arxiv:1508.05905](https://arxiv.org/abs/1508.05905).
102. Z. Bao, L. Erdős, K. Schnelli, *Local law of addition of random matrices on optimal scale*. Comm. Math. Phys. **349**(3), 947–990 (2016). DOI 10.1007/s00220-016-2805-6 [arxiv:1509.07080](https://arxiv.org/abs/1509.07080).

103. O. Ajanki, L. Erdős, T. Krüger, *Local spectral statistics of Gaussian matrices with correlated entries*. J. Stat. Phys. **163**(2), 280–302 (2016). [arxiv:1510.01147](#). DOI 10.1007/s10955-016-1479-y
104. O. Ajanki, L. Erdős, T. Krüger, *Singularities of solutions to quadratic vector equations on complex upper half-plane*. Comm. Pure Appl. Math. **70**(9), 1672–1705 (2017). [arxiv:1512.03703](#)
105. P. Bourgade, L. Erdős, H.-T. Yau, J. Yin, *Universality for a class of band matrices*. Adv. Theor. Math. Phys. **21**(3), 739–800 (2017). [arxiv:1602.02312](#)
106. O. Ajanki, L. Erdős, T. Krüger, *Stability of the Matrix Dyson Equation and Random Matrices with Correlations*. Probab. Theory Relat. Fields, **173**(1–2), 293–373 (2019). DOI: 10.1007/s00440-018-0835-z, [arxiv:1604.08188](#)
107. Z. Bao, L. Erdős, K. Schnelli, *Convergence Rate for Spectral Distribution of Addition of Random Matrices*. Adv. Math. **319**, 251–291 (2017). DOI: 10.1016/j.aim.2017.08.028, [arxiv:1606.03076](#).
108. J. Alt, L. Erdős, T. Krüger, *Local law for random Gram matrices*. Electron. J. Probab. **22**, 1–41 (2017). [arxiv:1606.07353](#)
109. L. Erdős, D. Schröder, *Fluctuations of Rectangular Young Diagrams of Interlacing Wigner Eigenvalues*. Int. Math. Res. Not. **2018**(10), rnw330 (2017). DOI: 10.1093/imrn/rnw330 (2017), [arxiv:1608.05163](#)
110. L. Erdős, D. Schröder, *Fluctuations of functions of Wigner matrices*. Electron. Commun. Probab. **21**, paper 86, 1–15 (2016). [arxiv:1610.07084](#).
111. Z. Bao, L. Erdős, K. Schnelli, *Local single ring theorem on optimal scale*. Ann. Probab. **47**(3), 1270–1334 (2019). [arxiv:1612.05920](#).
112. J. Alt, L. Erdős, T. Krüger, *Local inhomogeneous circular law*. Ann. Appl. Probab. **28**(1), 148–203 (2018). DOI: 10.1214/17-AAP1302, [arxiv:1612.07776](#)
113. L. Erdős, T. Krüger, D. Schröder, *Random matrices with slow correlation decay*. Forum Math. Sigma **7**, e8 (2019). doi:10.1017/fms.2019.2, [arxiv:1705.10661](#)
114. J. Alt, L. Erdős, T. Krüger, Y. Nemish, *Location of the spectrum of Kronecker random matrices*. Ann. inst. Henri Poincaré (B) Probab. **55**(2), 661–696 (2019). [arxiv:1706.08343](#)
115. L. Erdős, T. Krüger, D. Renfrew, *Power law decay for systems of random cou-*

- pled differential equations*. SIAM J. Math. Anal. **50**(3), 3271–3290 (2018). DOI: 10.1137/17M1143125, [arxiv:1708.01546](#).
116. Z. Bao, L. Erdős, K. Schnelli, *Spectral rigidity for addition of random matrices at the regular edge*. J. Funct. Anal. **279**(7), 108639 (2020). DOI: 10.1016/j.jfa.2020.108639. [arxiv:1708.01597](#).
 117. (*) L. Erdős, H.-T. Yau: *A dynamical approach to random matrix theory*. Courant Lecture Notes in Mathematics, **28**. Courant Institute of Mathematical Sciences, NY; American Mathematical Society, Providence, RI, 2017. ISBN: 978-1-4704-3648-3
 118. L. Erdős, P. Mühlbacher, *Bounds on the norm of Wigner-type random matrices*. Random Matrices: Theory Appl. **8**(3), 1950009 (2019). DOI: 10.1142/S2010326319500096. [arxiv:1802.05175](#).
 119. J. Alt, L. Erdős, T. Krüger, D. Schröder, *Correlated random matrices: band rigidity and edge universality*. Ann. Probab. **48**(2), 963–1001 (2020). [arxiv:1804.07744](#).
 120. J. Alt, L. Erdős, T. Krüger, *The Dyson equation with linear self-energy: spectral bands, edges and cusps*. Doc. Math. **25**, 1421–1539 (2020). [arxiv:1804.07752](#).
 121. Z. Bao, L. Erdős, K. Schnelli, *On the support of the free additive convolution*. J. Anal. Math. **142**(1), 323–348 (2021). [arxiv:1804.11199](#).
 122. L. Erdős, T. Krüger, Y. Nemish, *Local laws for polynomials of Wigner matrices*. J. Funct. Anal. **278**(12), 108507 (2020). DOI: 10.1016/j.jfa.2020.108507; [arxiv:1804.11340](#).
 123. G. Cipolloni, L. Erdős, *Fluctuations for linear eigenvalue statistics of sample covariance random matrices*. Random Matrices: Theory Appl., **9**(3), 2050006 (2020). DOI: 10.1142/S2010326320500069; [arxiv:1806.08751](#).
 124. L. Erdős, T. Krüger, D. Schröder, *Cusp universality for random matrices I: local law and the complex Hermitian case*. Commun. Math. Physics **378**, 1203–1278 (2020). DOI: 10.1007/s00220-019-03657-4; [arxiv:1809.03971](#).
 125. G. Cipolloni, L. Erdős, T. Krüger, D. Schröder, *Cusp universality for random matrices II: the real symmetric case*. Pure and Applied Analysis **1-4**, 615–707 (2019). DOI 10.2140/paa.2019.1.615 [arxiv:1811.04055](#).
 126. (*) L. Erdős, *The matrix Dyson equation and its applications for random matrices*. In: Random matrices, 75–158, IAS/Park City Math. Ser., 26, Amer. Math. Soc., Providence, RI, 2019. [arxiv:1903.10060](#).
 127. J. Alt, L. Erdős, T. Krüger, *Spectral radius of random matrices with independent*

- entries. Prob. Math. Phys. **2**(2), 221–280 (2021). [arxiv:1907.13631](#). DOI: 10.2140/pmp.2021.2.221
- 128.** G. Cipolloni, L. Erdős, D. Schröder, *Edge universality for non-Hermitian random matrices*. Probab. Theory Relat. Fields **179**, 1–28 (2021). [arxiv:1908.00969](#) DOI 10.1007/s00440-020-01003-7.
 - 129.** G. Cipolloni, L. Erdős, D. Schröder, *Optimal lower bound on the least singular value of the shifted Ginibre ensemble*. Prob. Math. Physics **1**(1), 101–146 (2020). [arxiv:1908.01653](#). DOI 10.2140/pmp.2020.1.101.
 - 130.** L. Erdős, T. Krüger, D. Renfrew, *Randomly coupled differential equations with elliptic correlations*. Ann. Appl. Probab. **33**(4), 3098–3144 (2023). [arxiv:1908.05178](#). DOI: 10.1214/22-AAP1886
 - 131.** L. Erdős, T. Krüger, Y. Nemish, *Scattering in quantum dots via noncommutative rational functions*. Ann. Henri Poincaré, **22**(12), 4205–4269 (2021). [arxiv:1911.05112](#).
 - 132.** G. Cipolloni, L. Erdős, D. Schröder, *Central limit theorem for linear eigenvalue statistics of non-Hermitian random matrices*. Comm. Pure Appl. Math. **76**(5), 899–1136 (2023). DOI: [doi.org/10.1002/cpa.22028](#), [arxiv:1912.04100](#).
 - 133.** G. Cipolloni, L. Erdős, D. Schröder, *Fluctuation around the circular law for random matrices with real entries*. Electron. J. Probab. **26**: 1–61 (2021). [arxiv:2002.02438](#). DOI: 10.1214/21-EJP591
 - 134.** Z. Bao, L. Erdős, K. Schnelli, *Equipartition principle for Wigner matrices*. Forum Math. Sigma **9**, e44 (2021). [arxiv:2008.07061](#). DOI: 10.1017/fms.2021.38
 - 135.** G. Cipolloni, L. Erdős, D. Schröder, *Eigenstate Thermalization Hypothesis for Wigner Matrices*. Commun. Math. Phys. **388**, 1005–1048 (2021). [arxiv:2012.13215](#). DOI: 10.1007/s00220-021-04239-z
 - 136.** G. Cipolloni, L. Erdős, D. Schröder, *Functional Central Limit Theorems for Wigner Matrices*. Ann. Appl. Probab. **33**(1), 447–489 (2023). [arxiv:2012.13218](#). DOI: 10.1214/22-AAP1820
 - 137.** G. Cipolloni, L. Erdős, D. Schröder, *Thermalisation for Wigner Matrices*. J. Funct. Anal. **282**(8), 109394 (2022). [arxiv:2102.09975](#). <https://doi.org/10.1016/j.jfa.2022.109394>
 - 138.** G. Cipolloni, L. Erdős, D. Schröder, *Normal fluctuation in quantum ergodicity for Wigner matrices*. Ann. Probab. **50**(3), 984–1012 (2022). DOI: 10.1214/21-AOP1552

arxiv:2103.06730.

- 139. G. Cipolloni, L. Erdős, D. Schröder, *On the condition number of the shifted real Ginibre ensemble*. SIAM J. Matrix Anal. Appl. **43**(3), 2022. (Online first) DOI: 10.1137/21M1424408, arxiv:2105.13719.
- 140. G. Cipolloni, L. Erdős, D. Schröder, *Density of small singular values of the shifted real Ginibre ensemble*. Ann. Henri Poincaré, **23**(11), 3981–4002 (2022). DOI: 10.1007/s00023-022-01188-8 arxiv:2105.13720.
- 141. G. Cipolloni, L. Erdős, D. Schröder, *Quenched universality for deformed Wigner matrices*. Probab. Theory Relat. Fields. **185**, 1183–1218 (2023). DOI: 10.1007/s00440-022-01156-7 arxiv:2106.10200.
- 142. G. Dubach, L. Erdős, *Dynamics of a rank-one perturbation of a Hermitian matrix*. Electron. Commun. Probab. **28**, paper 13, 1–13 (2023). arxiv:2108.13694.
- 143. G. Cipolloni, L. Erdős, D. Schröder, *On the Spectral Form Factor for Random Matrices*. Commun. Math. Phys. **401**, 1665–1700 (2023). DOI: 10.1007/s00220-023-04692-y (2023) arxiv:2109.06712.
- 144. L. Erdős, H. C. Ji, *Functional CLT for non-Hermitian random matrices*. Ann. inst. Henri Poincaré (B) Probab. Statist. **59**(4): 2083–2105 (2023). DOI: 10.1214/22-AIHP1304 arxiv:2112.11382.
- 145. L. Erdős, Y. Xu, *Small deviation estimates for the largest eigenvalue of Wigner matrices*. Bernoulli, **29**(2), 1063–1079 (2023). arxiv:2112.12093. DOI: 10.3150/22-BEJ1490
- 146. G. Cipolloni, L. Erdős, D. Schröder, *Optimal multi-resolvent local laws for Wigner matrices*. Electron. J. Probab. **27**, paper 117, 1–38 (2022). arxiv:2112.13693. DOI: 10.1214/22-EJP838
- 147. G. Cipolloni, L. Erdős, D. Schröder, *Rank-uniform local law for Wigner matrices*. Forum Math. Sigma **10**, e96 (2022). arxiv:2203.01861.
- 148. G. Cipolloni, L. Erdős, D. Schröder, Y. Xu, *Directional extremal statistics for Ginibre eigenvalues*. J. Math. Phys. (Editor’s pick) **63**(10), 103303 (2022). arxiv:2206.04443, DOI: 10.1063/5.0104290
- 149. G. Cipolloni, L. Erdős, D. Schröder, Y. Xu, *On the rightmost eigenvalue of non-Hermitian random matrices*. Ann. Probab. **51**(6): 2192–2242 (2023). arxiv:2206.04448, DOI: 10.1214/23-AOP1643

150. L. Erdős, B. McKenna, *Extremal statistics of quadratic forms of GOE/GUE eigenvectors*. Ann. Appl. Probab. **34**(1B), 1623–1662 (2024). [arxiv:2208.12206](#), DOI: 10.1214/23-AAP2000
151. G. Cipolloni, L. Erdős, D. Schröder, *Mesoscopic central limit theorem for non-Hermitian random matrices*. Probab. Theory Related Fields, **188**(3-4), 1131–1182 (2024). [arxiv:2210.12060](#), DOI:10.1007/s00440-023-01229-1.
152. G. Cipolloni, L. Erdős, Y. Xu, *Precise asymptotics for the spectral radius of a large random matrix*. J. Math. Phys. **65**. (6), 063302 (2024), [arxiv:2210.15643](#). DOI: 10.1063/5.0209705
153. G. Cipolloni, L. Erdős, J. Henheik, D. Schröder, *Optimal Lower Bound on Eigenvector Overlaps for non-Hermitian Random Matrices*. J. Funct. Anal. **287**, 110495, (2024). DOI: <https://doi.org/10.1016/j.jfa.2024.110495>, [arxiv:2301.03549](#).
154. L. Erdős, H. C. Ji, *Wegner estimate and upper bound on the eigenvalue condition number of non-Hermitian random matrices*. Comm. Pure Appl. Math. **77**(9), 3785–3840 (2024). DOI: <https://doi.org/10.1002/cpa.22201>, [arxiv:2301.04981](#).
155. G. Cipolloni, L. Erdős, J. Henheik, O. Kolupaiev, *Gaussian fluctuations in the Equipartition Principle for Wigner matrices*. Forum Math. Sigma **11**, e74 (2023). [arxiv:2301.05181](#). DOI: 10.1017/fms.2023.70
156. S. Sugimoto, J. Henheik, V. Riabov, L. Erdős, *Eigenstate Thermalisation Hypothesis for Translation Invariant Spin Systems*. J. Stat. Phys. **190**, 128 (2023). [arxiv:2304.04213](#), DOI: 10.1007/s10955-023-03132-4
157. L. Erdős, Hong Chang Ji, *Density of Brown measure of free circular Brownian motion*. Doc. Math. **30**, 417–453 (2025). [arxiv:2307.08626](#).
158. G. Cipolloni, L. Erdős, J. Henheik, *Eigenstate thermalisation at the edge for Wigner matrices*. To appear in Annales inst. Henri Poincare. [arxiv:2309.05488](#).
159. L. Erdős, J. Henheik, J. Reker, V. Riabov, *Prethermalization for Deformed Wigner Matrices*. Ann. Henri Poincare. **26**, 1991–2033 (2025). DOI: 10.1007/s00023-024-01518-y, [arxiv:2310.06677](#).
160. G. Cipolloni, L. Erdős, Y. Xu, *Universality of extremal eigenvalues of large random matrices*. Preprint. [arxiv:2312.08325](#).
161. G. Cipolloni, L. Erdős, J. Henheik, *Out-of-time-ordered correlators for Wigner matrices*. Adv. Theor. Math. Phys. **28**(6), 2025–2083 (2024). [arxiv:2402.17609](#).

162. L. Erdős, V. Riabov, *Eigenstate Thermalization Hypothesis for Wigner-type Matrices*. Commun. Math. Physics. **405** 282 (2024).
DOI: 10.1007/s00220-024-05143-y, [arxiv:2403.10359](#).
163. A. Campbell, G. Cipolloni, L. Erdős, Hong Chang Ji, *On the spectral edge of non-Hermitian random matrices*. Preprint. [arxiv:2404.17512](#). Accepted to Ann. Probab.
164. G. Cipolloni, L. Erdős, Hong Chang Ji, *Non-Hermitian spectral universality at critical points*. Probab. Theory Related Fields. Online first (2025)
DOI: 10.1007/s00440-025-01384-7, [arxiv:2409.17030](#).
165. L. Erdős, J. Henheik, V. Riabov, *Cusp universality for correlated random matrices*. Commun. Math. Phys. **406**:253 (2025)
DOI: 10.1007/s00220-025-05417-z, [arxiv:2410.06813](#).
166. L. Erdős, J. Henheik, O. Kolupaiev, *Loschmidt Echo for Deformed Wigner Matrices*. Letters in Math. Phys. **115** 14, (2025).
DOI: 10.1007/s11005-025-01904-5, [arxiv:2410.08108](#).
167. G. Cipolloni, L. Erdős, J. Henheik, O. Kolupaiev, *Eigenvector decorrelation for random matrices*. Preprint. [arxiv:2410.10718](#).
168. G. Cipolloni, L. Erdős, Y. Xu, *Optimal decay of eigenvector overlap for non-Hermitian random matrices*. J. Funct. Anal. **290**(1) 111180 (2026)
DOI:10.1016/j.jfa.2025.111180, [arxiv:2411.16572](#).
169. Z. Bao, G. Cipolloni, L. Erdős, J. Henheik, O. Kolupaiev, *Decorrelation transition in the Wigner minor process*. [arxiv:2503.06549](#). Accepted to Probab. Theory Related Fields
170. Z. Bao, G. Cipolloni, L. Erdős, J. Henheik, O. Kolupaiev, *Law of fractional logarithm for random matrices*. Preprint. [arxiv:2503.18922](#).
171. L. Erdős, V. Riabov, *The Zigzag Strategy for Random Band Matrices*. Preprint. [arxiv:2506.06441](#).
172. L. Erdős, J. Henheik, C. Vogel, *Normal and Dynamical Typicality in a Random Matrix Model*. Preprint. [arxiv:2506.17177](#).