CURRICULUM VITAE & LIST OF PUBLICATIONS

PERSONAL

- **Name:** László ERDŐS
- **Born:** April 14, 1966 in Budapest, Hungary
- **Citizenship:** Germany, Hungary
- **Home address:**
  Albrechtstrasse 83-85, Top 10
  3400 Klosterneuburg, Austria
- **Institute address:**
  ISTA, Am Campus 1
  3400 Klosterneuburg, Austria
- **Office phone:** (+43) 2243 9000 5601
- **E-mail address:** lerdos@ist.ac.at
- **ORCID iD:** 0000-0001-5366-9603

EDUCATION

2001 Habilitation, University of Vienna
Title: *Asymptotic analysis of complex quantum problems*

1994 Ph.D. in Mathematics, Princeton University
Thesis advisor: Professor Elliott H. Lieb
Title: *Magnetic Schrödinger operators and estimates on stochastic oscillatory integrals*

1990 Diploma in Mathematics, Loránd Eötvös University
Thesis advisor: Professor Domokos Szász
Title: *A mechanical model of the Brownian motion: the Rayleigh gas*

Date: Sep 17, 2025

EMPLOYMENT

2013–	Professor
	Institute of Science and Technology Austria
2003–2013	Professor (C4/W3)
	Ludwig Maximilian University of Munich
2003–2004	Professor
	Georgia Institute of Technology
2001–2003	Tenured Associate Professor
	Georgia Institute of Technology
1998–2001	Assistant Professor
	Georgia Institute of Technology
1995–1998	Courant Instructor/Assistant Professor
	Courant Institute, New York University
1994–1995	Postdoctoral Fellow
	Forschungsinstitut für Mathematik
	Swiss Federal Institute of Technology, Zürich

RESEARCH INTERESTS

- Mathematical Physics
- Quantum Dynamics
- Spectral Analysis of Schrödinger Operators
- Stochastic Analysis and Disordered Systems
- Random Matrices

GRANTS & FELLOWSHIPS

- Alfred P. Sloan Foundation Dissertation Fellowship 1993–1994
- NSF grant (DMS-9970323), 1999–2002
- NSF grant (DMS-0200235), 2002–2005
- PI in SFB TR12, Symmetries and Universality, 2007–2016
- Aisenstadt Chair, Centre de Recherches Mathématiques, Montreal, 2012
- ERC Advanced Grant 1,755k Euro, 2014–2019
- ERC Advanced Grant, 1,912k Euro, 2021–2026
- PI in SFB TRR 352, Mathematics of many-body quantum systems, 2023–2026

PRIZES & AWARDS

• Silver Medal at the International Mathematical Olympiad (1983)

• Bronze Medal at the International Mathematical Olympiad (1984)

• Bronze Medal at the International Physics Olympiad (1984)

• Third, Second and First Prize at the M. Schweitzer Memorial Mathematical Competition (1986, 1988 and 1989)

• Three First Prizes in the F. Riesz Memorial Mathematical Competition (1986, 1987 and 1988)

• Géza Grünwald Prize of the János Bolyai Mathematical Society (1995)

• Annales Henri Poincaré Distinguished Paper Award for the paper No. 44 in the list of publications.

• Annales Henri Poincaré Distinguished Paper Award for the paper No. 67 in the list of publications.

• Invited Speaker at the European Congress of Mathematics (2008)

• Plenary Speaker at the International Congress of Mathematical Physics (2009)

• Invited Speaker at the International Congress of Mathematicians (2014)

• Elected Corresponding Member of the Austrian Academy of Sciences (2015)

• Elected Member of the Academia Europaea (2015)

• Elected Foreign Member of the Hungarian Academy of Sciences (2016)

• Leonard Eisenbud Prize of the American Mathematical Society (2017)

• ISI Highly Cited Researcher (2017)

• ISI Highly Cited Researcher (2018)

• Erwin Schrödinger Prize of the Austrian Academy of Sciences (2020)

• Fellow of the American Mathematical Society (2022)

• Elected member of Leopoldina (German National Academy of Sciences) (2025)

LONG TERM INVITATIONS

- Erwin Schrödinger Institute (1994, 1998, and 2001)
- Swiss Federal Institute of Technology in Zürich (1997)
- University of Aarhus (1997)
- Center for Theoretical Studies, Hsinchu, Taiwan (1998, 1999, 2000, and 2002)
- Professeur invité, Institut Fourier, Grenoble (2000)
- Academica Sinica, Taiwan (2001)
- University of Copenhagen (2003)
- Courant Institute, New York University (2003)
- Stanford University (2003, 2004, and 2005)
- Harvard University, (2005–2006, sabbatical)
- Harvard University, (2009–2010, sabbatical)
- Harvard University, (2011–2012, sabbatical)
- Member, Institute for Advanced Study (2013–2014)

DEPARTMENTAL ADMINISTRATION

- Member of the Graduate Committee (Georgiatech 1999-2001)
- Member and temporary chair of the Hiring Committee (Georgiatech 2001-2003)
- Member of the Vorstand (governing body of the department) (Munich, 2003–2008)
- Colloquium Chair (Munich 2004 – 2013)
- Chair of the Budget Committee (Munich 2004 –2008)
- Elected member of the Fachbereichsrat (faculty council) (Munich 2004–2007)
- Director of the Institute at LMU (2007-2008)

EDITORIAL DUTIES

- Member of the Editorial Board (2008–2013) Journal of Statistical Physics
- Member of the Editorial Advisory Board (2012–2023) Journal of Mathematical Physics
- Member of the Editorial Board (since 2013) Communications in Mathematical Physics
- Member of the Editorial Board (since 2015) Probability Theory and Related Fields
- Member of the Scientific Advisory Board (since 2020) EMS Press
- Member of the Editorial Board (since 2020) Journal of Functional Analysis
- Member of the Editorial Board (since 2020) Probability and Mathematical Physics

PROFESSIONAL SERVICE

- Session organizer, AMS Meeting, Gainesville, FL (1999)
- Session organizer, AMS-DMV Meeting, Mainz (2005)
- Co-organizer of a 3-month-program at ESI, Vienna (2006)
- Co-organizer, Boltzmann Memorial Meeting, Munich (2006)
- Co-organizer, Oberwolfach Seminar, Oberwolfach (2008)
- Co-organizer, Spectral Days 2012, Munich (2012)
- Elected member of the Executive Committee and Treasurer of the International Association of Mathematical Physics (2009–2014)
- Panel Member ERC Consolidator Grant, Mathematics PE1 (2014–2020)
- Co-organizer of a 3-month-program at ESI, Vienna (2015)
- Co-organizer, Young Researcher Symposium, Fields Institute, Toronto (2016)
- Member of the Scientific Program Committee of SPA-2017, Moscow (2017)
- Co-organizer: Summer school on Probability, Mathematical Physics, ISTA (2018)
- Member of the Advisory Board, QMath 14, Aarhus (2019)
- Co-organizer: From Many Body Problems to Random Matrices. Conference in honor of H.-T. Yau's 60th birthday, Banff (2019)

- Co-organizer: Oberwolfach conference on Random Matrices (2019)
- Member of the Kuratorium of the Austrian Science Fund, (2020–2026)
- Section organizer (Random structures), Qmath 16, Munich (2026)

LIST OF PUBLICATIONS

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 intergrals 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, Ladek 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 Poincare **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 Poincare **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 XVIth 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 Poincare (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 Poincare **14**(8), 1837-1926 (2013). (arxiv: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

92. L. Erdős, A. Knowles: *The Altshuler-Shklovskii formulas for random band matrices II: the general case.* Ann. Henri Poincare, **16**, 709–799 (2015). arxiv:1309.5107

93. O. Ajanki, L. Erdős, T. Krüger, *Local semicircle law with imprimitive variance matrix.* Electron. Commun. Prob. **19**(33), 1–9 (2014). arxiv: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

95. (*) L. Erdős, *Random matrices, log-gases and Hölder regularity.* Proceedings of ICM 2014, Seoul, Vol. III. 213–236 (2015). arxiv: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

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.

98. L. Erdős, K. Schnelli, *Universality for Random Matrix Flows with Time-dependent Density.* Ann. inst. Henri Poincare (B) Probab. **53**(4), 1606–1656 (2017). arxiv: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.

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

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.

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.

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 Poincare (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. Prob. **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 Poincare, **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 Poincare, **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 matri-*

ces. 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 Rel. 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.

SELECTED CONFERENCE CONTRIBUTIONS

• *Central limit theorem for the one-dimensional Rayleigh gas*, 64^{th} Statistical Mechanics Meeting, Rutgers University, Dec. 1990.

• *Magnetic Lieb-Thirring inequalities*, Conference on Mathematical Quantum Theory, Vancouver, Aug. 1993.

• *Magnetic Lieb-Thirring inequalities*, Conference on Schrödinger Operators, Vienna, Dec. 1993.

• *Estimates on the magnetic heat kernel*, International Conference on PDE and Mathematical Physics, Birmingham AL, 1994.

• *Magnetic Lieb-Thirring inequalities*, Mathematics of Many-Body Quantum Theory, AMS meeting, Lexington KY, March 1994.

• *Stochastic oscillatory integrals*, Conference on PDE, Holzhau, 1994.

• *Ground state density of the Pauli operator*, Workshop on Mathematical Physics, Clausthal, 1994.

• *Magnetic Lieb-Thirring inequalities*, International Congress on Mathematical Physics, Paris, 1994.

• *Gaussian decay of the magnetic eigenfunctions*, Workshop on Schrödinger operators, Oberwolfach, 1995.

• *Gaussian decay of the magnetic eigenfunctions*, Special Session on Math. Physics at the AMS Meeting No. 908, Orlando, FL 1996.

• *Semiclassics and Lieb-Thirring inequality for the Pauli operator in a strong nonhomogeneous magnetic field*, Conference on "Mathematical Results in Quantum Mechanics", Ascona, Switzerland, 1996.

• *Semiclassics in strong nonhomogeneous magnetic fields*, Satellite conference to European Congress of Mathematics on "Aspects of spectral theory", Vienna, 1996.

• *Paramagnetism, diamagnetism*, PCMI Summer School, IAS, Princeton, 1996.

• *Uniform semiclassical eigenvalue estimates in a strong nonhomogeneous magnetic field*, International Congress on Mathematical Physics, Brisbane, Australia, 1997.

• *Lifschitz tail in a magnetic field: the nonclassical regime* Third Joint Meeting AMS-SMM, Oaxaca, Mexico, 1997

• *Uniform semiclassical eigenvalue estimates in a strong nonhomogeneous magnetic field*, Journees Semi-classiques VII. Institute Fourier, Grenoble, France 1998.

• *Rayleigh-type isoperimetric inequality with a homogeneous magnetic field* AMS Western Section Meeting, Davis, CA, 1998.

• *Lifschitz tail in a magnetic field: the nonclassical regime*, Workshop on Quantum Mechanics of Magnetic fields, ESI, Vienna, 1998.

• *Linear Boltzmann equation as the weak coupling limit of the random Schrödinger equation*, QMath7 International conference on Quantum Mechanics, Prague, 1998.

• *Dia- and paramagnetism in nonhonogeneous magnetic fields*, Oberwolfach, 1998.

• *Linear Boltzmann equation as the weak coupling limit of the random Schrödinger equation*, GIT-UAB International Conference on Differential Equations and Mathematical Physics, Birmingham, AL, 1999.

• *Linear Boltzmann equation as the weak coupling limit of the random Schrödinger equation* 16-th International Conference on Transport Theory, Atlanta, 1999.

• *Linear Boltzmann equation as the weak coupling limit of the random Schrödinger equation (invited)* IMS Conference on Differential Equations from Mechanics, Chinese University of Hongkong, 1999.

• *Linear Boltzmann equation as the weak coupling limit of the random Schrödinger equation (invited)* Conference on "Open classical and dynamical systems", Lille, France, 1999.

• *Derivation of Macroscopic Kinetic Equations from Microscopic Quantum Mechanics.* 3 hour lecture series at "International Summer School on Schrödinger operators", Shonan Village Center, Japan, 1999.

• *Uniform magnetic Lieb-Thirring inequality for the Pauli operator with a general potential and a strong magnetic field* Meeting on "Large Coulomb Systems", Oberwolfach, 1999.

• *Fokker-Planck equation as scaling limits of reversible quantum systems.*, AMS Meeting, Austin, 1999.

• *Lifschitz tail in a magnetic field: the threshold case.* Meeting on "Stochastic Analysis", Oberwolfach, 1999.

• *Derivation of Boltzmann equations from Schrödinger Quantum Mechanics.* 19th Annual Western States Mathematical Physics Meeting; Caltech, Pasadena, February, 2000.

• *On the derivation of quantum kinetic equations from Schrödinger equation.* **Invited talk at the Int. Congress on Mathematical Physics;** London, July 2000.

• *Pauli operator and Aharonov Casher theorem for measure valued magnetic fields.* Special Session on Analytical Problems in Mathematical Physics, 960-th AMS Meeting, Birmingham, AL, 2000 Nov.

• *How does Boltzmann equation emerge from quantum mechanics* 3 hour lecture in the Spring School on "Stochastic models from statistical physics", Blaubeuren, Germany, 2001 Apr.

• *Scaling limits of quantum dynamics* Invited talk at the Mini-workshop on "Multiscale methods in nonlinear PDE", Cambridge, 2001 Apr.

• *Pauli operator and Aharonov Casher theorem for measure valued magnetic fields.*

Meeting on Schrödinger Operators, Oberwolfach, 2001 May.

• *Spectral shift and multiplicity of the first eigenvalue of the magnetic Schrödinger operator in two dimensions.* Invited speaker at the conference on "PDE and quantum mechanics", Cardiff, 2001 Jul.

• *Quantum dynamics of an electron in a phonon field* Invited talk, AMS-SMF Joint Meeting, Probability and Statistical Physics Section, Lyon, 2001 Jul.

• *Long time evolution of an electron weakly coupled to a phonon field.* Meeting on "Relativistic quantum systems and QED", Oberwolfach, 2001 Aug.

• *Scaling limits of Schrödinger quantum mechanics.* 3 lectures given at the Karpacz Winter School of Theoretical Physics in Poland, 2002 Feb.

• *Derivation of the nonlinear Hartree equation from many body Coulomb dynamics.* International Conference on PDE and Math. Phys., UAB, Birmingham, AL, 2002 March.

• *Derivation of the nonlinear Hartree equation from many body Coulomb dynamics.* Conference on the occasion of E. Lieb 70th birthday, Vienna, 2002 July.

• *Long time evolution of an electron in a weakly coupled phonon field* [Invited] Conference on Multiscale Methods in Quantum Mechanics, Theory and Applications, Rome, Italy, 2002 Dec.

• *Classical evolution equations derived from quantum dynamics with many degrees of freedom.* Conference on "Frontiers of PDEs and Dynamical Systems", Rutgers University, 2003 May

• *Quantum Diffusion of Random Schrödinger Evolution in a Scaling Limit.* Conference on "Transport properties of quantum systems in disordered media", Lille, France, 2003 June

• *Quantum dynamics of many degrees of freedom.* Conference on "Randomness in space and time", Budapest, Hungary, 2003 June

• *Multiplicity of magnetic ground states.* Satellite conference to ICMP on Mathematical Problems of Quantum mechanics, Lisbon, Portugal, 2003 July

• *Mean field limits of quantum many body systems.* Meeting on Classical and Quantum Mechanical Models of Many-Particle Systems. Oberwolfach, 2003 Nov.

• *Towards the Quantum Brownian Motion.* Plenary lecture at the Einstein Memorial conference of the German Physical Society, Ulm, 2004 March.

• *Quantum Diffusion* Invited talk at the "Workshop on Kinetic Theory" at Fields Institute, Toronto, Canada, 2004 Apr.

• *Towards the Quantum Brownian Motion.* Meeting on Disordered Systems. Oberwolfach, 2004 May.

• *Nonlinear Hartree equation as the mean field limit of weakly coupled fermions.* Invited talk at the "Workshop on N-particle Systems" in Rennes, France, 2004 May.

• *Kinetic and diffusive scaling limits of random Schrodinger evolution.* Minicourse at the "Workshop: Dynamics in Statistical Mechanics", CRM, Montreal, Canada, 2004 Aug

• *Towards the Quantum Brownian Motion.* Minicourse at Workshop "Quantum dynamics and quantum transpor", Warwick, UK, 2004 Sep.

• *Towards the Quantum Brownian Motion.* Plenary talk at the QMath9 conference, Giens, France, 2004 Sep.

• *Scaling limits of quantum dynamics* Plenary talk at the annual meeting of the German Mathematical Society, Heideberg, 2004 Sep.

• *Uniform magnetic Lieb-Thirring inequalities* Oberwolfach, 2004 Dec.

• *The Gross-Pitaevskii equation from the modified dynamics of the Bose-Einstein condensate* Invited talk at the conference "Mathematical Methods in Quantum Mechanics" in Bressanone, Italy. 2005 Feb.

• *Multiplicity of the magnetic ground state.* Conference on Spectral Theory and Geometry, Matrei, Austria, 2005 Jul.

• *Quantum diffusion: subtleties of the discrete model.* Conference on "Order, Disorder and Transport: Recent Advances in Schrodinger operator theory". Banff, Canada, 2005 Sep.

• *Towards the quantum Brownian motion.* 6-hour lecture series at the Winter School "Singular phenomena and scaling in mathematical models". Bonn, 2006 Feb

• *Recent developments in quantum mechanics with magnetic fields.* Barry Simon's birthday conference, Caltech, 2006 Mar

• *Effective dynamics of many-body quantum systems.* Conference in honor of Yves Colin de Verdiere, Grenoble, 2006 May

• *Classical and quantum Brownian Motion.* 4-hour lecture series at the PASI Summer school, Chile, 2006 Jul.

• *Derivation of the Gross-Pitaevskii equation for the dynamics of the Bose-Einstein condensate.* Conference in honor of Domokos Szász, Budapest, 2006 Aug

• *Derivation of Brownian motion from quantum mechanics.* BIRS Conference on Evolution of microscopic and macroscopic fields. Banff, Canada, 2006 Sep

• *Scaling limits of N-body systems.* Conference on Multiscale Problems, TU Munich, 2006 Oct

• *Gross Pitaevski equation for the dynamics of the Bose condensate.* Oberwolfach, 2006 Dec.

• *Limit equations for N-particle quantum systems.* 6-hour lecture series at the winter school "Mathematical Methods in Quantum Mechanics", Bressanone, 2007 Feb.

• *Gross Pitaevski equation for the dynamics of the Bose condensate.* Workshop on "Analysis and Stochastics in Quantum Many-Body Systems", Leipzig, May 2007

• *Derivation of the time-dependent Gross Pitaevski equation for the dynamics of the Bose condensate.* 33d Journees Equations aux derivees partielles, Evian-les-Bains, Jun 2007.

• *Derivation of nonlinear evolution equations from the dynamics of interacting quantum particles. (2 hour)* Conference on Stochastic and Quantum Dynamics, Milan, Oct 2007

• *Derivation of Brownian motion from quantum mechanics.* Conference on Microscopic Origins of Dissipation and Noise, Leipzig, Nov 2007.

• *Quantum Brownian motion as a scaling limit of random Schrodinger evolution.* Conference on "Applications of the renormalization group", ESI, Vienna, Nov 2007.

• *Semicircle law on short scales and delocalization for Wigner random matrices* Mathematical Physics Days at Weizmann Institute, Rehovot, Israel, Dec 2007.

•*Classical and Quantum Brownian Motion.* Conference on Open Classical and Quantum Dynamical Systems, III. Lille, March 2008

• *Semicircle law on short scales and delocalization of eigenvectors for Wigner random matrices..* Fritz Fest, Budapest, March 2008

• *Derivation of the Gross-Pitaevskii equation for the dynamics of the Bose-Einstein condensate.* **Invited lecture at the 5th European Congress of Mathematics,** Amsterdam, July 2008.

• *Quantum Brownian motion as a scaling limit of random Schrodinger evolution.* 4-hour Lecture series at the Summer School "Current topics in Mathematical Physics", ESI, Vienna, July 2008.

• *Gross-Pitaevskii equation and dynamical formation of correlations in the Bose-Einstein condensate.* Seminar in the framework of the special semester "Anderson Localization and Related Phenomena", Newton Institute, Cambridge, Aug 2008.

• *Local semicircle law and complete delocalization of eigenvectors for Wigner random matrices..* Oberwolfach Workshop, Sep 2008

• *Dynamical formation of correlations in a Bose-Einstein condensate.* Conference on Quantum Many-Body Systems: Bose-Einstein condensation. CRM Montreal, Oct 2008

• *Quantum Brownian motion as a scaling limit of random Schrodinger evolution.* 4-hour Lecture series at the SFB TR 12 meeting, Langeoog, Germany, Nov 2008 .

• *Local semicircle law, Wegner estimate and level repulsion for Wigner matrices.* Oberwolfach, Dec 2008.

• *Local semicircle law, Wegner estimate and level repulsion for Wigner matrices.* Cambridge, Dec 2008.

• *Local semicircle law, Wegner estimate and level repulsion for Wigner matrices.* Conference in honor of M. Aizenman's honorary degree. Cergy-Pontoise, 2009 Jan.

• *Dynamical formation of correlations in a Bose-Einstein condensate.* Conference on kinetic equations. Luminy, 2009 Feb.

• *Wegner estimate, level repulsion and sine-kernel for Wigner matrices.* Conference on random Schrodinger operators, Banff, 2009 Apr.

• *Local semicircle law, level repulsion and sine-kernel for Wigner matrices.* Conference on Spectral Theory. Schrödinger Institute, Vienna, 2009 May.

• *Bulk universality for Wigner random matrices.* Berlin-Leipzig Analysis/Probability Seminar. Berlin, Jun 2009

• *Bulk universality for Wigner random matrices.* **Plenary talk at the 16-th Int. Congress of Mathematical Physics.** Prague, Aug 2009.

• *Bulk universality for Wigner random matrices.* SFB-TR12 Meeting, Symmetries and Universality in Mesoscopic Systems. Gdansk, Sep 2009.

• *Universality for Wigner random matrices.* 4 hour lecture series at the Arizona School of Analysis with Applications, Tucson, AZ, 2010 March

• *Quantum Diffusion and Eigenfunction Delocalization in a Random Band Matrix Model.* Conference on Random Schrödinger Operators, Lausanne, 2010 Jun.

• *Universality of Wigner random matrices.* 10 hour lecture series at the Summer School of the Berlin-Zurich Graduate School in Probability, Disentis (Switzerland), 2010 Jul.

• *Quantum dynamics with many degrees of freedom.* 10 hour lecture series at the Summer School "Quantum Theory from Small to Large Scales" in Les Houches, France, 2010 Aug.

• *Universality of Wigner random matrices: Local semicircle law.* Conference on random matrices, American Institute of Mathematics, Palo Alto, 2010 Dec.

• *Quantum Brownian Motion.* Conference on "Trails in non-commutative land" at SISSA, Trieste, 2011 May.

• *Universality of local spectral statistics of random matrices.* Conference on the occasion of D. Szasz 70th birthday. Budapest, 2011 Aug.

• *1. Universality of Spectral Statistics for Random Matrices. 2. The local version of Wigner's semicircle law and Dyson's Brownian motion. 3. Quantum diffusion and random band matrices.* Lecture series as **Aisenstadt Chair** at Centre de recherches mathematiques (CRM) Montreal, 2012 March

• *Quantum diffusion and delocalization for random band matrices.* Workshop on SUSY and random matrices in honour of Tom Spencer, Paris, 2012 April.

• *Delocalization for random band matrices.* 107th Statistical Physics Meeting, Rutgers, 2012 May.

• *Quantum diffusion and delocalization for random band matrices.* Workshop on Random Matrices, Bonn, 2012 May

• *Universality of local spectral statistics of random matrices.* Abel Symposium, Oslo, 2012 Aug.

• *Universality of random matrices and log-gases.* Two lectures at the Current Developments in Mathematics conference at Harvard University, 2012 Nov.

• *Universality of random matrices and log-gases.* AMS Short Course at the joint AMS-MAA Meeting, San Diego, Jan 2013.

• *Universality for random matrices and log-gases.* Encounters of continuous and discrete mathematics, Budapest, May 2013.

• *Rigorous results on random band matrices.* SFB TR12 meeting, Bad Honnef, Jun 2013.

• *Universality for random matrices and log-gases.* Conference on A. Kramli's 70th birthday, Szeged, Jul 2013.

• *Random matrices and log-gases.* 6 hour lecture series at the Advanced school on Random Matrices and Growth Models, ICTP, Trieste, Sep 2013.

• *Universality for log-gases.* **Plenary talk** QMath 12, Berlin, Sep 2013

• *New corrections to mesoscopic level statistics for random band matrices.* Workshop on nonequilibrium dynamics and random matrices, IAS, Princeton, Nov 2013.

• *Hölder regularity theory in random matrices.* Probability, Analysis, Dynamics conference, Bristol, Apr 2014.

• *Spectral universality for a general class of matrices.* **Plenary talk** 37-th SPA Conference, Buenos Aires, Aug 2014.

• *Random matrices, log gases and Hölder regularity.* **Invited talk** ICM 2014, Seoul, Aug 2014.

• *Hölder regularity theory for random matrices.* Maxwell Symposium, Edinburgh, Apr 2015.

• *Spectral statistics of random band matrices: some old and new results.* Balint Toth 60 birthday conference, Budapest, 2015 Jul.

• *Diffusion in random band matrices.* AIHP Distinguished Paper Award ceremony at ICMP 2015, Santiago de Chile, 2015 Jul.

• *Universality of random matrices and log-gases.* Joint Austro-Hungarian Mathematics conference, Győr, Hungary, 2015 Aug.

• *Spectral statistics of random band matrices: old and new results.* Random Matrices, Random Growth Processes and Statistical Physics. Conference in honor of C. Tracy 70-th birthday. Stony Brook, 2015 Sep.

• *Local laws for eigenvalues of random matrices.* **Ising Lecture** 12th German Probability and Statistics Days, Bochum, Germany, 2016 March.

• *Local law of addition of random matrices.* Conference on Hyperbolic Dynamics and Statistical Physics (dedicated to 75th birthday of Domokos Szász) Erwin Schrödinger Institute, Vienna, 2016 May.

• *Short introduction to random matrices and random Schrodinger operators.* Young Researcher Symposium, Fields Institute, Toronto, Aug 2016.

• *The matrix Dyson equation in random matrix theory.* Conference on Frontiers in Mathematical Physics in honor of Barry Simon's 70th birthday. Montreal, Aug 2016.

• *The matrix Dyson equation in random matrix theory.* Synergies between Mathematical and Computational Approaches to Quantum Many-Body Physics. ESI, Vienna, Oct 2016.

• *The matrix Dyson equation in random matrix theory.* 3 hour lecture at the Summer school on Mathematical Aspects of Disordered Systems, ETH, Zürich, Jun 2017.

• *The matrix Dyson equation in random matrix theory.* 4 hour lecture at the Park City Summer school on Random Matrices, Park City, Utah, Jul 2017.

• *The matrix Dyson equation in random matrix theory.* Heinzfest, Herrsching, Germany, May 2018.

• *The matrix Dyson equation in random matrix theory.* 6 hour lecture at the EMS-IAMP Summer School in Mathematical Physics, Ischia, Italy, June 2018.

• *Random matrices and disordered quantum systems.* 6 hour lectures at Vienna Doctoral Summer School, Weissensee, Austria, Sep 2018.

• *Random matrices.* 3 hour lectures at the conference on *Random physical systems*, Puerto Natales, Chile, Dec 2018.

• *From Wigner-Dyson to Pearcey.* 2 hour lectures at *Workshop on statistical mechanics*, Les Diablerets, Switzerland, Feb 2019.

• *The matrix Dyson equation in random matrix theory.* 8 hour lectures at the Focus Program on Applications of Noncommutative Functions, Fields Institute, Toronto, June 2019.

• *From Wigner-Dyson to Pearcey: Universality of Local Eigenvalue Statistics of Random Matrices at the cusp.* Invited lecture at *Conference on Dynamics, Equations and Applications*, AGH UST Krakow, Poland, Sep 2019.

• *Edge universality for non-Hermitian random matrices.* Invited talk at School and Workshop on Random Matrix Theory and Point Processes, ICTP, Trieste, Sep 2019

• *Edge universality for non-Hermitian random matrices.* Invited talk at the XV Brunel-Bielefeld Workshop on Random Matrix Theory, ZIF Bielefeld, Dec 2019

• *Fluctuations in the circular law: CLT for i.i.d. random matrices.* Conference on

Random Schrödinger operators and related topics. Florence, Feb 2020.

• *Quantum Brownian motion as a scaling limit.* Conference on Calculus of Variations, Homogenization and Disorder. MIT, 2020 Sep. (online)

• *Eigenstate thermalization hypothesis and Gaussian fluctuations for Wigner matrices.* "Universality and Integrability in Random Matrix Theory and Interacting Particle Systems" online conference organized by MSRI, Aug 2021. (online)

• *Eigenstate thermalization hypothesis and Gaussian fluctuations for Wigner matrices.* "Structured Random Matrices in Down Under One" online conference organized by U. Melbourne, Jul 2021. (online)

• *Rank-uniform local law and quantum unique ergodicity for Wigner matrices.* "Random Matrices and Beyond", 60-th birthday conference of K. Johansson, KTH, Jun 2022.

• *Universality phenomena for random matrices.* Plenary speaker at Rényi Centennial Conference, Budapest, Jun 2022.

• *On the rightmost eigenvalue of non-Hermitian random matrices.* Probability and Mathematical Physics conference, Helsinki, Jun 2022

• *CLT and extremal statistics for non-Hermitian random matrices.* Advances in Mathematical Physics, E. Lieb 90th birthday conference, Harvard University, Jul 2022

• *Condition number and eigenvector overlap for random matrices.* School on random Schrödinger operators and random matrices. Hebrew University, Jerusalem, May 2023.

• *Condition number and eigenvector overlap for random matrices.* Conference on Correlations in Mathematical Quantum Mechanics. Copenhagen, Jun 2023.

• *Universality phenomena for random matrices.* Birthday conference of Alberto Parmeggiani, Bertinoro, Italy, Sep 2023.

• *Spectral universality for non-Hermitian random matrices.* Conference on Random Physics, Princeton, March 2024.

• *Universality phenomena for random matrices.* **Plenary talk** at IWOTA2024, University of Kent, UK, Aug 2024.

• *Multi-resolvent local laws and their applications.* 4-hour lecture series at the Summer School on Stochastic Interacting Particle Systems and Random Matrices. Renyi Center, Budapest, Jun 2025.

• *Multi-resolvent local laws and their applications.* 4-hour lecture series at the Summer School on Randomness in Physics and Mathematics. ZiF, Bielefeld, Aug 2025.

• *Multi-resolvent local laws and their applications.* 4-hour lecture series at the Summer School on Random Matrices, Kyoto University, Sep 2025.

• *Magnetic Schrödinger operator and stochastic oscillatory integrals* Statistical Physics Seminar, Rutgers University, NJ, 1994

• *Magnetic Lieb-Thirring inequalities* Analysis Seminar, Univ. of Michigan, MI, 1994.

• *Magnetic Schrödinger operator and stochastic oscillatory integrals* Analysis Seminar, University of Grenoble, France, 1994.

• *Estimates on stochastic oscillatory integrals* Probability Seminar, Federal Institute of Technology, Zürich, Switzerland, 1994.

• *Magnetic Schrödinger operator and stochastic oscillatory integrals* Theoretical Physics Seminar, Federal Institute of Technology, Lausanne, Switzerland, 1994.

• *Semiclassical eigenvalue estimates* Analysis Seminar, Federal Institute of Technology, Zürich, Switzerland, 1995.

• *Magnetic Schrödinger operator and stochastic oscillatory integrals* Mathematical Seminar, University of Erlangen, Germany, 1995.

• *Properties of the magnetic Schrödinger operator with probabilistic techniques* 5 hour short course given at University of Bochum, Germany, 1995.

• *Lieb-Thirring inequalities and probability* Analysis Seminar, University of Sussex, England, 1995.

• *Magnetic Schrödinger operator with probabilistic methods* Physics Colloquium, University of Geneva, Switzerland, 1995

• *Gaussian decay of magnetic eigenfunctions* Probability Seminar, New York University, 1995.

• *Gaussian decay of magnetic eigenfunctions* Analysis Seminar, Northeastern University, Boston, 1996.

• *Magnetic isoperimetric inequality* Math. Coll., Aarhus University, Denmark, 1996.

• *Lifschitz tail in a magnetic field: the nonclassical regime* Probability Seminar, Federal Institute of Technology, Zurich, Switzerland, 1997.

• *Lifschitz tail in a magnetic field: the nonclassical regime* Workshop on External Fields, Aarhus University, Denmark, 1997.

• *Lifschitz tail in a magnetic field: the nonclassical regime* Mathematical Institute of Hungarian Academy of Science, 1998.

• *Linear Boltzmann equation as scaling limit of quantum Lorenz gas.* Math. Colloquium, University of Copenhagen, Denmark, 1998.

• *Linear Boltzmann equation as scaling limit of quantum Lorenz gas.* Math. Colloquium, Ecole Polytechnique, Palaiseau, France, 1998.

• *Linear Boltzmann equation as scaling limit of quantum Lorenz gas.* Applied Math. Seminar New York University, 1998.

• *Lifschitz tail in a magnetic field: the nonclassical regime* Math. Colloquium, University of Copenhagen, Denmark, 1998.

• *Some spectral properties of the magnetic Schrödinger operator.* Lecture series at National Tsing-Hua University, Taiwan, 1998.

• *Weak coupling limit of the quantum Lorenz gas*, Lecture series at the Technical University of Berlin. 1998.

• *Weak coupling limit of the quantum Lorenz gas*, Applied Math. Seminar, Georgiatech. 1998

• *Stochastic methods in quantum mechanics of magnetic fields* Probability Seminar, Georgiatech. 1998.

• *Pauli operator with a strong inhomogeneous magnetic field* Mathematical Physics Seminar, University of Tokyo, 1999.

• *Stochastic oscillatory integrals, dia- and paramagnetism* Probability Seminar, Kyoto University, 1999.

• *Linear Boltzmann equation as the weak coupling limit of the random Schrödinger equation* Lecture Series at CTS, National Tsing-Hua University, Taiwan, 1999.

• *Fokker-Planck equation as scaling limits of reversible quantum systems.* Analysis seminar, Georgiatech, 1999.

• *Derivation of Boltzmann equation from Schrödinger quantum dynamics* Mathematical Physics Seminar, Univ. of Texas, 1999

• *Fokker-Planck equation as scaling limits of reversible quantum systems.* Seminar at Erwin Schrödinger Institute, Vienna, 1999

• *Derivation of quantum kinetic equations from Schrodinger equation* Colloquium at Univ. of Virginia, 2000 March

• *Magnetic Lieb-Thirring inequalities in a strong field.* Math. Phys. Seminar at Univ. of Virginia, 2000 March

• *How classical Boltzmann equation emerges from quantum mechanics.* Lecture series at Math. Phys. Seminar at Georgiatech, 2000 March.

• *Derivation of Boltzmann equation from Schrödinger quantum dynamics* Mathematical Physics Seminar, University Paris-Sud, Orsay, 2000 May.

• *Lifschitz tail in a magnetic field: the threshold case.* Mathematical Physics Seminar, University Paris-Nord, 2000 May

• *Classical Boltzmann equation from quantum mechanics.* Lecture series at University of Grenoble, France, 2000 May-June.

• *Quantum mechanics in strong magnetic fields.* Mathematical Physics Seminar, University of Grenoble, France, 2000 June.

• *Quantum mechanics in strong magnetic fields.* Lectures series at CTS, National Tsing-Hua University, Taiwan, 2000 June,

• *Pauli operator and Aharonov Casher theorem for measure valued magnetic fields.* Mathematical Physics seminar, Georgiatech, 2000 Sep.

• *Multiplicity of the magnetic ground state.* Analysis Seminar, Courant Institute, NYU, 2000 Dec.

• *Quantum kinetic equations from first principles.* Probability Seminar, Technical University, Budapest, 2001 Jan.

• *Scaling limits of quantum evolutions.* Habilitation defense, University of Vienna, 2001 Jan.

• *Derivation of kinetic equations from Schrödinger quantum mechanics.* Applied Math. Seminar, University of Chicago, 2001 Apr.

• *Rayleigh-type isoperimetric inequality with a homogeneous magnetic field.* Analysis Seminar, Max-Planck Institute, Leipzig, 2001 Jun.

• *How does Boltzmann equation emerge from quantum mechanics? (I-II).* Mathematical Physics Seminar, Max-Planck Institute, Leipzig, 2001 Jun.

• *Quantum mechanics of the Pauli operator in a strong magnetic field.* 3 lectures, Academia Sinica, Taipei, Taiwan, 2001 Jul.

• *Zero modes of the 3D Pauli operator.* Geometry Seminar, Georgiatech, 2002 Jan.

• *Scaling limits of the dynamics of random Schrödinger operators.* Eurandom Seminar, Eindhoven, 2002 March

• *Zero modes of the 3D Pauli operator.* Mathematical Physics Seminar, Warwick, UK, 2002 March

• *Magnetic isoperimetric inequality.* Analysis Seminar, Warwick, UK, 2002 March

• *Quantum dynamics of many degrees of freedom.* Mathematics Colloquium, Warwick, UK, 2002 March

• *Magnetic isoperimetric inequality and Lifschitz tail* Mathematical Physics seminar, Munich, 2002, May

• *Derivation of the nonlinear Hartree equation from many body Coulomb dynamics.* Mathematics Colloquium, Munich, 2002 May

• *Derivation of the nonlinear Hartree equation from many body Coulomb dynamics.* Math. Phys. seminar, Tech. Univ. Budapest, 2002 May.

Quantum dynamics with many degrees of freedom. MaPhySto Seminar, Aalborg University, Denmark, 2003 Feb.

• *Derivation of the nonlinear Schrödinger equation from a many body Coulomb system.* Oresund Seminar, Lund University, Sweden, 2003 Feb.

• *Quantum diffusion of the random Schrodinger evolution in a scaling limit.* Mathematical Colloquium, UAB, Birmingham, AL, 2003 Apr.

• *Quantum dynamics of many degress of freedom* Math. Physics Seminar, UC Davis, CA, 2003 Sep.

• *Quantum dynamics of many degress of freedom* Mathematical Colloquium, University of Stuttgart, 2003 Nov.

• *Quantum dynamics of many degress of freedom* Mathematical Colloquium, University of Bonn, 2003 Nov.

• *Quantum Diffusion* Analysis Seminar, Technical University, Munich, 2004 Jun

• *Uniform Lieb Thirring inequalities*, PDE Seminar, Berkeley, 2004 Oct.

• *Uniform Lieb Thirring inequalities*, Analysis Seminar, Stanford, 2004 Oct.

• *Towards the quantum Brownian motion*, Math. Colloquium, Univ. of Erlangen, 2004 Nov.

• *Towards the quantum Brownian motion*, Math. Physics Seminar, UC Irvine, 2005 Apr.

• *Detailed proof of the quantum Boltzmann equation*, 6 hour Lecture series, 2005 May, Rome

• *Towards the quantum Brownian motion*, Mathematical Physics Colloquium, Augsburg, 2005 Jun

• *Towards the quantum Brownian motion*, Mathematical Physics seminar, Princeton, 2005 Oct

• *Quantum dynamics of many body systems with a singular mean-field interaction*, Statistical Physics seminar, Princeton, 2005 Oct,

• *The Fourier Transform of surfaces and the four denominator lemma for random Schrödinger evolutions*, Mathematical Physics seminar, Caltech, 2006 Jan

• *The Fourier Transform of surfaces and the four denominator lemma for random Schrödinger evolutions*, Mathematical Physics seminar, UC Irvine, 2006 Jan

• *Mathematical analysis of quantum dynamics with many degrees of freedom*, Math. Colloquium, Columbia Univ, 2006 Feb

• *Quantum dynamics of many body systems with a singular mean-field interaction*, Nonlinear analysis seminar, Univ. Chicago, 2006 Feb,

• *Lieb-Thirring inequalities with magnetic fields*, Analysis Seminar, Harvard Univ. 2006 Feb

• *Towards the quantum Brownian motion*, Theoretical Physics Seminar, ETH, Zurich, 2006 Jun

• *Towards the quantum Brownian motion*, Mathematical Physics Seminar, Univ. Rome I, 2006 Nov

• *Recent developments in quantum mechanics with magnetic fields.* Mathematical Physics Seminar, Univ. Rome I, 2006 Nov

• *Gross-Pitaevskii equation for the dynamics of the Bose condensate* Theoretical Physics Colloquium, Univ. Cologne, 2007 Apr

• *Gross-Pitaevskii equation for the dynamics of the Bose condensate* Mathematical Physics Seminar, Univ. Bonn, 2007 May

• *Derivation of nonlinear evolution equations from the dynamics of interacting quantum particles.* Mathematical Colloquium, Univ Eichstaett, 2007 Nov

• *Semicircle law on short scales and delocalization for Wigner random matrices.* Mathematical Physics Seminar, Univ. Copenhagen, 2008 Jan.

• *Gross-Pitaevskii equation for the dynamics of the Bose condensate* Analysis Seminar, Technical Univ. Budapest, 2008 March

• *Gross-Pitaevskii equation for the dynamics of the Bose condensate* Mathematical Physics Seminar, Inst. Theoretische Physik, Heidelberg, 2008 Nov

• *Local semicircle law, Wegner estimate and level repulsion for Wigner matrices.* Mathematical Physics Seminar, University of Copenhagen, 2009 Feb.

• *Bulk universality for Wigner random matrices.* Mathematics Colloquium University of Copenhagen, 2009 Sep.

• *Universality for Wigner matrices via the local relaxation flow.* Mathematics Colloquium University of Toronto, 2009 Dec.

• *Dynamical formation of correlations in a Bose-Einstein condensate.* Analysis Seminar, Fields Institute, Toronto, 2009 Dec.

• *Bulk universality for generalized Wigner matrices.* Analysis Seminar, Brown University, 2010 Feb

• *Universality for Wigner matrices via the local relaxation flow.* Probability Seminar, University of Wisconsin, 2010 Apr

• *Universality for Wigner matrices via the local relaxation flow.* Probability and Math Physics Seminars, University of Erlangen, 2010 Jul

• *Quantum Diffusion and Eigenfunction Delocalization in a Random Band Matrix Model.* Mathematical Physics Seminar, Caltech, 2010 Dec.

• *Universality for Wigner random matrices.* Mathematics Colloquium, Caltech, 2010 Dec.

• *Universality of local spectral statistics of random matrices.* Mathematics Colloquium, Uni. Geneva, 2011 Dec.

• *Universality of local spectral statistics of random matrices.* Mathematics Seminar, Inst. Science and Techn, Austria, 2011 Dec.

• *Universality of local spectral statistics of random matrices.* Probability Seminar, University of Colorado, Boulder, 2012 Jan.

• *Universality for random matrices and log-gases.* Seymour Sherman Memorial Lecture, Indiana University, 2013 Mar.

• *Delocalization for random band matrices.* Probability Seminar, Indiana University, 2013 Mar.

• *Universality for random matrices and log-gases.* Mathematical Colloquium, University of Vienna, 2013 Apr.

• *New corrections to mesoscopic level statistics for random band matrices.* Mathematical Physics Seminar, University Vienna, Dec. 2013.

• *Universality for random matrices and log-gases.* Mathematical Colloquium, Heidelberg, Jul 2014.

• *Random matrices, log-gases and Hölder regularity.* Mathematical Colloquium, Politecnico Torino, Nov 2014.

• *Véletlen mátrixok spektrumának univerzalitása (Universality of the spectrum of random matrices).* Mathematics Institute Colloquium, ELTE Budapest, Sep 2015.

• *Random matrices and disordered quantum systems.* Lecture on the occasion of the Bolyai Prize ceremony at the Hungarian Academy of Sciences, Jan 2016.

• *Random matrices and log-gases.* Lecture series (4h) at the probability seminar at Institut Henri Poincare, Paris, Feb 2016.

• *Random matrices, log-gases and Hölder regularity.* Mathematical Colloquium, University of Brno, Oct 2016.

• *Random matrices, log-gases and Hölder regularity.* Mathematical Colloquium, Central European University, Budapest, Nov 2016.

• *The matrix Dyson equation in random matrix theory.* Mathematical physics seminar, University of Bristol, Feb 2017.

• *The matrix Dyson equation in random matrix theory.* Probability seminar, Institut Henri Poincare, Paris, May 2017.

• *The matrix Dyson equation in random matrix theory.* Probability seminar, Cambridge University, Oct 2017.

• *Random matrices via the matrix Dyson equation.* Mathematics Colloquium, University of Saarbrücken, Jan 2018.

• *Spectral universality of random matrices.* Leó Szilárd Physics Colloquium, Technical University of Budapest, Feb 2018.

• *Spectral rigidity for addition of random matrices* Probability Seminar, Zürich, Apr 2018.

• *Random matrices and the matrix Dyson equation.* Probability Seminar, Durham University, UK, Nov 2018.

• *Random matrices and the matrix Dyson equation.* Probability Seminar, Queen Mary University, London, UK, Nov 2018.

• *Universality at Criticality: Cusp and circular edge.* Probability Seminar, Lorand Eötvös University, Budapest, Oct 2019.

• *Spectral universality: a journey from heavy nuclei to Riemann zeta function via random matrices.* Seminar of the Master Class Mathematical Physics, Schrödinger Institute, Vienna, Oct 2019.

• *Edge Universality for Non-Hermitian Random Matrices.* Seminar of the Graduiertenkolleg 2131, Dortmund, Nov 2020. (online)

• *Eigenstate thermalization hypothesis and functional CLT for Wigner matrices.* AQFP seminar, Leipzig, Feb 2021. (online)

• *Order and disorder in mathematical physics.* Mathematics Colloquium, North Arizona University, March 2021 (online)

• *Eigenstate thermalization hypothesis and Gaussian fluctuations for Wigner matrices.* Zurich Mathematics Colloquium, May 2021. (online)

• *Eigenstate thermalization hypothesis and Gaussian fluctuations for Wigner matrices.* One World mathematical physics seminar of the IAMP, Jun 2021. (online)

• *Eigenstate thermalization hypothesis and Gaussian fluctuations for Wigner matrices.* London Analysis Seminar, Nov 2021. (online)

• *CLT and extremal statistics for non-Hermitian random matrices.* MathPhys Oberseminar, Tübingen, July 2022.

• *Universality in Random Matrix Theory beyond Wigner-Dyson-Mehta.* Erich Kamke Colloquium, Tübingen, July 2022.

• *Rank-uniform local law and quantum unique ergodicity for Wigner matrices.* Seminar at College de France, Paris, Dec 2022.

• *Rank-uniform local law and quantum unique ergodicity for Wigner matrices.* Mathematics and Physics Colloquium, Univ. Strasbourg, Dec 2022.

• *Condition numbers and eigenvector overlaps for random matrices.* Vienna-Budapest Probability seminar, Budapest, March 2023.

• *Universality phenomena for random matrices.* Mathematics Colloquium, University of Vienna, May 2023.

• *New results on universality for random matrices.* Mathematics Colloquium, University of Bonn, Oct 2023.

• *Universality phenomena for random matrices.* Mathematics Colloquium, TU Dortmund, Jan 2025.

• *Universality phenomena for random matrices.* Analysis seminar (online), Yale University, April 2025.

• Irina Kiba, M.Sc. Aug 2005 LMU. *Anderson localization for weakly correlated random potentials.*

• Dmytro Martynenko, M.Sc. May 2006 LMU. *Das Nelder-Mead-Algorithmus: Die Konvergierung und die Anwendung an der Implementierung von Kriechparametern fuer die Berechnung von Interieurbauteilen mit dem Programm ABAQUS* (Jointly with E. Kreppold, BMW)

• Irina Lade, M.Sc. Jun 2006 LMU. *Optimierungsstrategien für den Motor- und Getriebewarmlauf.* (Jointly with K. Kunze, BMW)

• Michael Reifinger, Diplom. Jul 2006 LMU. *Derivation of Boltzmann equation from a hard ball system.*

• Markus Furtner, Diplom, Jul 2008 LMU. *The Kakeya Problem.*

• Schekeb Sarwari, Diplom, Jul 2009, LMU *Numerical investigations of the long time solution of the Schrödinger equation*

• Markus Zmora, Diplom, Jul 2009, LMU *Elliptische Regularitätstheorie partieller Differentialgleichungen*

• Christian Marius Lemm, Bachelor, Jun 2010, LMU *Stability of matter.*

• Jonas Lührmann, Diplom, May 2011, LMU: *Mean field dynamics with magnetic fields*

• Marin Bukov, Bachelor, May 2011, LMU *Rigorous approach to Bose-Einstein condensation*

• Mikhail Khotyakov, Bachelor, Jun 2011, LMU *Two proofs of the sharp Hardy-Littlewood-Sobolev inequality*

• Anton Mühlmann, Diplom, Aug 2011, LMU *Regularity of eigenfunctions of Schrödinger operators with L^p potentials*

• Mohamed Bary, Diplom Mathematik (TUM), Aug 2012. *Thomas-Fermi-Theorie und Stabilität der Materie.*

• Sebastian Gottwald, Master TMP (LMU), Mar 2013. *Semiclassical quantum dynamics via the method of stationary phase for a rigorous approach to Feynman Path Integrals*

• Benedikt Staffler, Master TMP (LMU), Sep 2013. *Lifshitz tail for a random band matrix model.*

• Dominik Schröder, Master TMP (LMU), Aug 2014. *Phase transition in the density of states of quantum spin glasses.*

• Johannes Alt, Master TMP (LMU), Aug 2014. *The local semicircle law for a class of random matrices with a fourfold symmetry.*

• Torben Kruger, Ph.D (Dr.rer.nat.), LMU, Nov 2015. *Local spectral universality for random matrices with independent entries.*

• Johannes Alt, Ph.D., IST Austria, Jul 2018. *Dyson equation and eigenvalue statistics of random matrices.*

• Dominik Schröder, Ph.D., IST Austria, Mar 2019. *From Dyson to Pearcey: Universal statistics in random matrix theory.*

• Giorgio Cipolloni, Ph.D., IST Austria, Jan 2021. *Fluctuations in the spectrum of random matrices.*

• Jana Reker, Ph.D., IST Austria, Jun 2024. *Central limit theorems for random matrices: From resolvents to free probability.*

• Joscha Sven Henheik, Ph.D., IST Austria, Mar 2025. *Modeling complex quantum systems: Random matrices, BCS theory, and quantum lattice systems.*

• Vova Riabov, Ph.D., IST Austria, started Jun 2022.

• Oleksii Kolupaiev, Ph.D., IST Austria, started Jun 2023.

INTERNS

• Peter Mühlbacher, Jun-Aug 2016 and Nov 2017 – Feb 2018;

• Sofiia Dubova, Jul-Aug 2018;

• Tibor Döme, Aug-Sep 2018;

• Oleksii Kolupaiev, Jun-Aug 2021.

• Jakov Ljubicic, Jun-Aug 2025.