

CURRICULUM VITAE and LIST OF PUBLICATIONS

(Jan 2012)

PERSONAL

- **Name:** László ERDŐS
- **Born:** April 14, 1966 in Budapest, Hungary
- **Citizenship:** Hungarian
- **Home address:**
Deidesheimer Str. 24
D-80797, Munich, Germany
- **Home phone:** (49) 89 3266 7736
- **Institute/ mailing address:**
Mathematisches Institut der LMU (University Munich)
Theresienstr. 39. Munich, Germany, D-80333
- **Office phone:** (49) 89 2180 4457
- **Telefax:** (49) 89 2180 4438
- **E-mail address:** lerdos@mathematik.uni-muenchen.de

DEGREES

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

Diploma thesis advisor: Professor Domokos Szász.

Title: *A mechanical model of the Brownian motion: the Rayleigh gas.*

POSITIONS

- 2003–** Universitätsprofessor (C4/Lehrstuhl), Ludwig-Maximilians Univ., München
- 2003–2004** Full Professor Georgia Inst. Technology (On leave)
- 2001–2003** Tenured Associate Professor Georgia Inst. Technology
- 1998–2001** Assistant Professor Georgia Inst. Technology
- 1995–1998** Courant Instructor/Assistant Prof. (including one year Visiting Membership) Courant Institute, NYU
- 1994-1995** Postdoctoral fellow, Forschungsinstitut für Mathematik, ETH.

RESEARCH INTEREST

- Quantum Dynamics
- Partial Differential Equations
- Spectral Analysis of Schrödinger Operators
- Stochastic Analysis and Disordered Systems
- Mathematical Physics

GRANTS, FELLOWSHIPS

- Fellowship of the Hungarian Republic, 1987-1990.
- Alfred P. Sloan Foundation Dissertation Fellowship 1993-1994.
- NSF grant (DMS-9970323), 1999-2002
- NSF grant (DMS-0200235), 2002-2005
- Start-up fund (Munich University), 2003-2007
- Participant: Elite Graduate Program TMP (2007-2017)
- Participant: SFB TR12, Symmetries and Universality (2007-2016)

PRIZES, AWARDS

- Member of the Hungarian team at the $XXIV^{th}$ and XXV^{th} International Mathematical Olympiade in Paris, 1983 and Prague, 1984. Silver and bronze medals.
- Member of the Hungarian team at the XV^{th} International Physics Olympiade in Sigtuna, Sweden, 1984. Bronze medal.
- Three prizes (third, second and first) in the M. Schweitzer Memorial Mathematical Competition in 1986, 1988 and 1989. (national contest for university students in Hungary).
- First prize three times in the F. Riesz Memorial Mathematical Competition in 1986, 1987 and 1988. (national contest for younger university students in Hungary).
- Géza Grünwald Prize, 1995. This is a prize of the J. Bolyai Math. Society for outstanding young researchers.
- Annales Henri Poincaré Distinguished Paper Award for the paper No. 44 on the list of publications.

LONG TERM INVITATIONS

- Schrödinger Institute, Vienna, 1994, 1998 and 2001.
- ETH, Zürich, 1997,
- University of Aarhus, 1997.
- Center for Theoretical Studies, Hsinchu, Taiwan; 1998, 1999, 2000, 2002.
- Professeur invite, Institut Fourier, Grenoble, 2000.
- Academia Sinica, Taiwan, 2001
- University of Copenhagen, 2003
- Courant Institute, 2003
- Stanford University, 2003, 2004, 2005
- Harvard University, 2005-2006 (sabbatical)
- Harvard University, 2009-2010 (sabbatical)

TEACHING EXPERIENCE

- Teaching Assistant at L. Eötvös University, Hungary 1987-1990
- Teaching Assistant at Princeton University, 1991-1993.
- Calculus and Ordinary Differential Equations at NYU
- Calculus I-II, Honours Calculus, Complex Analysis at Georgiatech
- Functional Analysis, Numerik I and Part.Diff.Eq in Munich.
- Seminars on various topics in Mathematical Physics, Analysis etc.

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 –)
- Chair of the Budget Committee (Munich 2004 –2008)
- Elected member of the Fachbereichsrat (faculty council) (Munich 2004–2007)
- Director of the Institute (2007-2008)

PROFESSIONAL ADMINISTRATION

- Session organizer, AMS Meeting, Gainesville, FL, 1999
- Session organizer, AMS-DMV Meeting, Mainz, Germany, 2005
- Co-organizer of a 3 month program at ESI, Vienna (2006 May-Jul)
- Co-organizer, Boltzmann Memorial Meeting, Munich (2006 Oct)
- Co-organizer, Oberwolfach Seminar, Oberwolfach (2008 May)
- Co-organizer, Spectral Days 2012, Munich (2012 May)
- Member of the Editorial Board, Journal of Statistical Physics (2008 –)
- Member of the Editorial Board, Journal of Mathematical Physics (2012 –)
- Elected member of the Executive Committee and Treasurer of the IAMP International Association of Mathematical Physics (2009 –)

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 integrals and on the heat kernel of the magnetic Schrödinger operator*. Duke Math. Journal **76**, No.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. (GAFA), **6** No.2, 231-248 (1996).
9. L. Erdős, *Rayleigh-type isoperimetric inequality with a homogeneous magnetic field*. Calc. Var. and PDE. **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 J. Math. **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*. Journal of Math. Phys. **38**(3), 1289-1317 (1997).

13. L. Erdős, *Lifschitz tail in a magnetic field: the nonclassical regime*. Prob. Theor. Rel. 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. Contemporary Mathematics **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, Vol. **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, Vol. LIII. 667-735 (2000).
17. L. Erdős, M. Loss and V. Vougalter, *Diamagnetic behavior of sums of Dirichlet eigenvalues*. Ann. Inst. Fourier (Grenoble), Vol **50**, no. 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** no. (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** No. 10, 1247-1280 (2001)
21. L. Erdős, *Lifschitz tail in a magnetic field: coexistence of classical and quantum behavior in the borderline case*. Prob. Theor. 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), pp. 273-281 (2001), International Press
23. L. Erdős, *Spectral shift and multiplicity of the first eigenvalue of the magnetic Schrödinger operator in two dimensions*. Ann. Inst. Fourier (Grenoble) **52** (2002), 6, 1833-1874.
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**, p. 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. Inst. H. 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. Inst. H. 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** (2006), no.12, 1659-1741.
(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**, No. 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, Vol. 17, No. 6 (2005) 669-743.
(xxx.lanl.gov/abs/math-ph/0412044)
38. (*) L. Erdős, M. Salmhofer and H.-T. Yau, *Towards the quantum Brownian motion*. Lecture Notes in Physics, **690**, Mathematical Physics of Quantum Mechanics, Selected and Refereed Lectures from QMath9. Eds. Joachim Asch and Alain Joye. pp. 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. pp. 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**, no.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** no 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. Inst. H. Poincare **8** no. 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**, no.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**, No. 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. Statis. Physics **132**, no. 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** (2009), no. 4, 1099–1156.
(xxx.lanl.gov/abs/0802.3877)
51. L. Erdős, B. Schlein, *Quantum dynamics with mean field interactions: a new approach*. J. Statis. Physics **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, World Scientific, 2011, pp. 167-183,
(<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** (2009), no. 3, 1171–1210.
(<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. Notices. **2010**, No. 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**, No. 1, 229–249 (2009)
(<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*. *Electr. J. Prob.* **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**, No. 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** (2010), no. 4, 667–674.
(<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** (2011), no.1, 75–119.
(<http://arxiv.org/abs/0907.5605>)
61. (*) L. Erdős, *Universality of Wigner Random Matrices*. *Proceedings of the XVI-th ICMP, Prague, World Scientific*, 99–105, (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*. Accepted to *Annales Inst. H. Poincaré (B), Probability and Statistics*
(<http://arxiv.org/abs/0911.3687>)
63. L. Erdős, H.-T. Yau, J. Yin, *Bulk universality for generalized Wigner matrices*. Accepted to *Prob. Theor. Rel. Fields* (<http://arxiv.org/abs/1001.3453>)
64. L. Erdős, A. Knowles, *Quantum Diffusion and Eigenfunction Delocalization in a Random Band Matrix Model*. To appear in *Commun. Math. Phys.*
(<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** (2011), no. 2, 15–85
(<http://arxiv.org/abs/1003.3813>)
66. (*) L. Erdős, *Universality of Wigner Random Matrices: a Survey of Recent Results*. *Russian Math. Surveys* **66** (3) 67–198.
(<http://arxiv.org/abs/1004.0861>)

67. L. Erdős, A. Knowles, *Quantum Diffusion and Delocalization for Band Matrices with General Distribution*. *Annales Inst. H. Poincaré*, **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*. Accepted to *Adv. Math.* (<http://arxiv.org/abs/1007.4652>)
69. (*) L. Erdős, *Lecture Notes on Quantum Brownian Motion*. Submitted to the Les Houches lecture notes series.
(<http://arxiv.org/abs/1009.0843>)
70. L. Erdős, D. Hasler, *Wegner estimate and Anderson localization for random magnetic fields*. *Commun. Math. Phys.* **309**, No. 2, 507–542 (2012)
(<http://arxiv.org/abs/1012.5185>)
71. L. Erdős, D. Hasler, *Anderson localization for random magnetic Laplacians on Z^2* . Submitted to *AHP*
(<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*. To appear in *Annals Prob.* (<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*. Submitted to *Comm. Math. Phys.* (<http://arxiv.org/abs/1103.3869>)
74. L. Erdős, D. Hasler, *Anderson Localization at Band Edges for Random Magnetic Fields*. To appear in *J. Statis. Phys.* (<http://arxiv.org/abs/1103.3744>)
75. P. Bourgade, L. Erdős, H.-T. Yau: *Universality of General β -Ensembles*.
(<http://arxiv.org/abs/1104.2272>)
Submitted to *Annals of Math.*
76. L. Erdős, S. Fournais, J.P. Solovej: *Stability and semiclassics in self-generated fields*.
(<http://arxiv.org/abs/1105.0506>)
Submitted to *Journal of EMS*.
77. L. Erdős, S. Fournais, J.P. Solovej: *Second order semiclassics with self-generated magnetic fields*. (<http://arxiv.org/abs/1105.0512>) Accepted to *Ann. Inst. H. Poincaré*
78. L. Erdős, S. Fournais, J.P. Solovej: *Scott correction for large atoms and molecules in*

a self-generated magnetic field. Accepted to Comm. Math. Phys.
(<http://arxiv.org/abs/1105.0521>)

- 79.** (*) L. Erdős, H.-T. Yau: *Universality of local spectral statistics of random matrices.*
(<http://arxiv.org/abs/1106.4986>)
To appear in Bull. AMS
- 80.** L. Erdős, S. Fournais, J.P. Solovej: *Relativistic Scott correction in self-generated magnetic fields.* Preprint. Submitted to the special issue of J. Math. Phys. dedicated to the 80-th birthday of Elliott Lieb.
(<http://arxiv.org/abs/1112.0673>)
- 81.** P. Bourgade, L. Erdős, H.-T. Yau: *Bulk Universality of General β -Ensembles with Non-convex Potential.*
(<http://arxiv.org/abs/1201.2283>)

SELECTED CONFERENCE CONTRIBUTIONS

- *Central limit theorem for the one-dimensional Rayleigh gas*, 64th 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, Holzgau, 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 non-homogeneous 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*, Journées 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 nonhomogeneous 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 transport", 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

LECTURES GIVEN AT RESEARCH SEMINARS, COLLOQUIA

- *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 degrees of freedom* Math. Physics Seminar, UC Davis, CA, 2003 Sep.
- *Quantum dynamics of many degrees of freedom* Mathematical Colloquium, University of Stuttgart, 2003 Nov.
- *Quantum dynamics of many degrees 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.

SUPERVISED THESES

- 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*