

April 8, 2018

BARRY SIMON

IBM Professor of Mathematics and Theoretical Physics
California Institute of Technology
Pasadena, CA 91125

Papers

- [1] Convergence of regularized, renormalized perturbation series for super-renormalizable field theories, *Nuovo Cimento* **59A** (1969), 199–214.
- [2] Some pictorial compactifications of the real line, *Amer. Math. Monthly* **76** (1969), 536–538.
- [3] On the growth of the number of bound state with increase in potential strength, *J. Math. Phys.* **10** (1969), 1123–1126.
- [4] On the growth of the ground state binding energy with increase in potential strength, *J. Math. Phys.* **10** (1969), 1415–1421.
- [5] On positive eigenvalues of one-body Schrödinger operators, *Commun. Pure Appl. Math.* **12** (1969), 531–538.
- [6] (with J. J. Loeffel, A. Martin and A. S. Wightman) Padé approximants and the anharmonic oscillator, *Phys. Lett.* **30B** (1969), 656–658.
- [7] Coupling constant analyticity for the anharmonic oscillator (with an appendix by A. Dicke), *Ann. Phys.* **58** (1970), 76–136.
- [8] Some comments on the Jin–Martin lower bound, *Phys. Rev.* **D1** (1970), 1240–1241.
- [9] On the infinitude or finiteness of the number of bound states of an N -body quantum system, I, *Helv. Phys. Acta* **43** (1970), 607–630.
- [10] (with S. Graffi and V. Grecchi) Borel summability: Application to the anharmonic oscillator, *Phys. Lett.* **32B** (1970), 631–634.
- [11] Borel summability of the ground state energy in spatially cutoff $(\phi^4)_2$, *Phys. Rev. Lett.* **25** (1970), 1583–1586.
- [12] Distributions and their Hermite expansions, *J. Math. Phys.* **12** (1970), 140–148.
- [13] Hamiltonians defined as quadratic forms, *Commun. Math. Phys.* **21** (1971), 192–210.
- [14] The theory of semi-analytic vectors: A new proof of a theorem of Masson and McClary, *Ind. Math. J.* **20** (1971), 1145–1151.
- [15] Wave operators for classical particle scattering, *Commun. Math. Phys.* **23** (1971), 37–48.

- [16] (with R. Hoegh-Krohn) Hypercontractive semigroups and two-dimensional self-coupled Bose fields, *J. Funct. Anal.* **9** (1972), 121–180.
- [17] Determination of eigenvalues by divergent perturbation series, *Adv. in Math.* **7** (1971), 240–253.
- [18] (with L. Rosen) The $(\phi^{2n})_2$ Hamiltonian for complex coupling constant, *Trans. Amer. Math. Soc.* **165** (1972), 365–379.
- [19] Convergence of time-dependent perturbation theory for autoionizing states of atoms, *Phys. Lett.* **A36** (1971), 23–24.
- [20] Resonances in n -body quantum systems with dilation analytic potentials and the foundations of time-dependent perturbation theory, *Ann. of Math.* **97** (1973), 247–274.
- [21] On the Glimm–Jaffe linear lower bound in $P(\phi)_2$ field theories, *J. Funct. Anal.* **10** (1972), 251–258.
- [22] A remark on groups with the fixed point property, *Proc. Amer. Math. Soc.* **32** (1972), 623–624.
- [23] Continuum embedded eigenvalues in $P(\phi)_2$ field theory, *Proc. Amer. Math. Soc.* **35** (1972), 223–226.
- [24] Essential self-adjointness of Schrödinger operators with positive potentials, *Math. Ann.* **201** (1973), 211–220.
- [25] Quadratic form techniques and the Balslev–Combes theorem, *Commun. Math. Phys.* **27** (1972), 1–9.
- [26] (with M. Reed) A spectral mapping theorem for tensor products of unbounded operators, *Bull. Amer. Math. Soc.* **78** (1972), 730–733.
- [27] (with F. Guerra and L. Rosen) Nelson’s symmetry and the infinite volume behavior of the vacuum in $P(\phi)_2$, *Commun. Math. Phys.* **27** (1972), 10–22.
- [28] Summability methods, the strong asymptotic condition, and unitarity in quantum field theory, *Phys. Rev. Lett.* **28** (1972), 1145–1146.
- [29] Uniform cross norms, *Pacific J. Math.* **46** (1973), 555–560.
- [30] (with M. Reed) Tensor products of closed operators on Banach spaces, *J. Funct. Anal.* **13** (1973), 107–124.
- [31] (with F. Guerra and L. Rosen) The vacuum energy for $P(\phi)_2$: Infinite volume limit and coupling constant dependence, *Commun. Math. Phys.* **29** (1973), 233–247.
- [32] (with F. Guerra and L. Rosen) Statistical mechanical results in the $P(\phi)_2$ quantum field theory, *Phys. Lett.* **44B** (1973), 102–104.

- [33] (with F. Guerra and L. Rosen) The $P(\phi)_2$ Euclidean quantum field theory as classical statistical mechanics, *Ann. of Math.* **101** (1975), 111–259.
- [34] (with F. Guerra and L. Rosen) Boundary conditions for the $P(\phi)_2$ Euclidean field theory, *Ann. Inst. H. Poincaré* **25A** (1976), 231–334.
- [35] Essential self-adjointness of Schrödinger operators with singular potentials *Arch. Ration. Mech. Anal.* **52** (1973), 44–48.
- [36] Ergodic semigroups of positivity preserving self-adjoint operators, *J. Funct. Anal.* **12** (1973), 335–339.
- [37] Correlation inequalities and the mass gap in $P(\phi)_2$, I. Domination by the two point function, *Commun. Math. Phys.* **31** (1973), 127–136.
- [38] Schrödinger operators with singular magnetic vector potentials, *Math. Z.* **131** (1973), 361–370.
- [39] (with E. Lieb) Thomas–Fermi theory revisited, *Phys. Rev. Lett.* **31** (1973), 681–683.
- [40] (with R. Griffiths) Griffiths–Hurst–Sherman inequalities and a Lee–Yang theorem for the $(\phi^4)_2$ field theory, *Phys. Rev. Lett.* **30** (1973), 931–933.
- [41] Quadratic forms and Klauder’s phenomenon: A remark on very singular perturbations, *J. Funct. Anal.* **14** (1973), 295–298.
- [42] Positivity of the Hamiltonian semigroup and the construction of Euclidean region fields, *Helv. Phys. Acta* **46** (1973), 686–696.
- [43] Pointwise bounds on eigenfunctions and wave packets in N -body quantum systems, I, *Proc. Amer. Math. Soc.* **42** (1974), 395–401.
- [44] Absence of positive eigenvalues in a class of multiparticle quantum systems, *Math. Ann.* **207** (1974), 133–138.
- [45] (with E. Lieb) On solutions to the Hartree–Fock problem for atoms and molecules, *J. Chem. Phys.* **61** (1974), 735–736.
- [46] Pointwise bounds on eigenfunctions and wave packets in N -body quantum systems, II, *Proc. Amer. Math. Soc.* **45** (1974), 454–456.
- [47] (with R. Griffiths) The $(\phi^4)_2$ field theory as a classical Ising model, *Commun. Math. Phys.* **33** (1973), 145–164.
- [48] Correlation inequalities and the mass gap in $P(\phi)_2$, II. Uniqueness of the vacuum for a class of strongly coupled theories, *Ann. of Math.* **101** (1975), 260–267.
- [49] (with F. Guerra and L. Rosen) The pressure is independent of the boundary conditions in $P(\phi)_2$ field theories, *Bull. Amer. Math. Soc.* **80** (1974), 1205–1209.

- [50] (with F. Guerra and L. Rosen) Correlation inequalities and the mass gap in $P(\phi)_2$, III. Mass gap for a class of strongly coupled theories with nonzero external field, *Commun. Math. Phys.* **41** (1975), 19–32.
- [51] Pointwise bounds on eigenfunctions and wave packets in N -body quantum systems, III, *Trans. Amer. Math. Soc.* **208** (1975), 317–329.
- [52] (with J. Rosen) Global support properties of stationary ergodic processes, *Duke Math. J.* **42** (1975), 51–55.
- [53] (with E. Lieb) The Thomas–Fermi theory of atoms, molecules and solids, *Adv. in Math.* **23** (1977), 22–116.
- [54] (with J. Rosen) Fluctuations in $P(\phi)_1$ processes, *Ann. Prob.* **4** (1976), 155–174.
- [55] (with E. Lieb) The Hartree–Fock theory for Coulomb systems, *Commun. Math. Phys.* **53** (1977), 185–194.
- [56] Existence of the scattering matrix for the linearized Boltzmann equation, *Commun. Math. Phys.* **41** (1975), 99–108.
- [57] Operator theory needed in quantum statistical mechanics in boxes, pp. 389–398, Appendix B, in E. Lieb and J. Lebowitz, “The constitution of matter,” *Adv. in Math.* **9** (1972), 316–398.
- [58] Convergence theorems for entropy, Appendix to E. Lieb and M. B. Ruskai, “Proof of the strong subadditivity of quantum mechanical entropy, *J. Math. Phys.* **14** (1973), 1938–1941.
- [59] (with W. Faris) Degenerate and non-degenerate ground states for Schrödinger operators, *Duke Math. J.* **42** (1975), 559–567.
- [60] (with E. Seiler) An inequality among determinants, *Proc. Natl. Acad. Sc.* **72** (1975), 3277–3278.
- [61] (with E. Seiler) On finite mass renormalizations in the two-dimensional Yukawa model, *J. Math. Phys.* **16** (1975), 2289–2293.
- [62] (with E. Seiler) Bounds in the Yukawa₂ quantum field theory: Upper bound on the pressure, Hamiltonian bound and linear lower bound, *Commun. Math. Phys.* **45** (1975), 99–114.
- [63] (with E. Seiler) Nelson symmetry and all that in the Yukawa₂ and $(\varphi^4)_3$ field theories, *Ann. Phys.* **97** (1976), 470–518.
- [64] (with J. Fröhlich and T. Spencer) Phase transitions and continuous symmetry breaking, *Phys. Rev. Lett.* **36** (1976), 804–806.
- [65] (with J. Fröhlich and T. Spencer) Infrared bounds, phase transitions and continuous symmetry breaking, *Commun. Math. Phys.* **50** (1976), 79–85.

- [66] Universal diamagnetism of spinless Bose systems, *Phys. Rev. Lett.* **36** (1976), 1083–1084.
- [67] (with F. J. Dyson and E. Lieb) Phase transitions in the quantum Heisenberg model, *Phys. Rev. Lett.* **37** (1976), 120–123.
- [68] (with F. J. Dyson and E. Lieb) Phase transitions in quantum spin systems with isotropic and non-isotropic interactions, *J. Statist. Phys.* **18** (1978), 335–383.
- [69] A remark on Nelson’s best hypercontractive estimates, *Proc. Amer. Math. Soc.* **55** (1976), 376–378.
- [70] The bound state of weakly coupled Schrödinger operators in one and two dimensions, *Ann. Phys.* **97** (1976), 279–288.
- [71] (with P. Deift) On the decoupling of the finite singularities from the question of asymptotic completeness in two-body quantum systems, *J. Funct. Anal.* **23** (1976), 218–238.
- [72] On the absorption of eigenvalues by continuous spectrum in regular perturbation problems, *J. Funct. Anal.* **25** (1977), 338–344.
- [73] Analysis with weak trace ideals and the number of bound states of Schrödinger operators, *Trans. Amer. Math. Soc.* **224** (1976), 367–380.
- [74] Notes on infinite determinants of Hilbert space operators, *Adv. in Math.* **24** (1977), 244–273.
- [75] On the genericity of nonvanishing instability intervals in Hill’s equation, *Ann. Inst. H. Poincaré* **A24** (1976), 91–93.
- [76] An abstract Kato’s inequality for generators of positivity preserving semigroups, *Ind. Math. J.* **26** (1977), 1067–1073.
- [77] (with J. Fröhlich) Pure states for general $P(\phi)_2$ theories: Construction, regularity and variational equality, *Ann. of Math.* **105** (1977), 493–526.
- [78] (with M. Reed) The scattering of classical waves from inhomogeneous media, *Math. Z.* **155** (1977), 163–168.
- [79] (with J. Avron) Analytic properties of band functions, *Ann. Phys.* **110** (1978), 85–110.
- [80] (with R. Blankenbecler and M. L. Goldberger) The bound states of weakly coupled long-range one-dimensional quantum Hamiltonians, *Ann. Phys.* **108** (1977), 69–78.
- [81] A canonical decomposition for quadratic forms with applications to monotone convergence theorems, *J. Funct. Anal.* **28** (1978), 377–385.
- [82] Lower semicontinuity of positive quadratic forms, *Proc. Roy. Soc. Edinburgh* **29** (1977), 267–273.

- [83] (with P. Deift) A time-dependent approach to the completeness of multiparticle quantum systems, *Commun. Pure Appl. Math.* **30** (1977), 573–583.
- [84] Geometric methods in multiparticle quantum systems, *Commun. Math. Phys.* **55** (1977), 259–274
- [85] N -body scattering in the two-cluster region, *Commun. Math. Phys.* **58** (1978), 205–210.
- [86] Kato’s inequality and the comparison of semigroups, *J. Funct. Anal.* **32** (1979), 97–101.
- [87] (with J. Avron and I. Herbst) The Zeeman effect revisited, *Phys. Lett.* **62A** (1977), 214–216.
- [88] (with J. Avron and I. Herbst) Formation of negative ions in magnetic fields, *Phys. Rev. Lett.* **39** (1977), 1068–1070.
- [89] (with J. Avron and I. Herbst) Schrödinger operators with magnetic fields, I. General interactions, *Duke Math. J.* **45** (1978), 847–883.
- [90] (with J. Avron and I. Herbst) Schrödinger operators with magnetic fields, II. Separation of center of mass in homogeneous magnetic fields, *Ann. Phys.* **114** (1978), 431–451.
- [91] (with J. Avron and I. Herbst) Schrödinger operators in magnetic fields, III. Atoms in homogeneous magnetic field, *Commun. Math. Phys.* **79** (1981), 529–572.
- [92] (with J. Avron and I. Herbst) Schrödinger operators in magnetic fields, IV. Strongly bound states of hydrogen in intense magnetic field, *Phys. Rev.* **A20** (1979), 2287–2296.
- [93] (with J. Fröhlich, R. Israel, and E. Lieb) Phase transitions and reflection positivity, I. General theory and long range lattice models, *Commun. Math. Phys.* **62** (1978), 1–34.
- [94] (with J. Fröhlich, R. Israel, and E. Lieb) Phase transitions and reflection positivity, II. Lattice systems with short-range and Coulomb interactions, *J. Statist. Phys.* **22** (1980), 297–347.
- [95] (with P. Deift, W. Hunziker, and E. Vock) Pointwise bounds on eigenfunctions and wave packets in N -body quantum systems, IV, *Commun. Math. Phys.* **64** (1978), 1–34.
- [96] Scattering theory and quadratic forms: On a theorem of Schechter, *Commun. Math. Phys.* **53**(1977), 151–153.
- [97] (with E. Lieb) Monotonicity of the electronic contribution to the Born–Oppenheimer energy, *J. Phys.* **B11** (1978), L537–L542.
- [98] Maximal and minimal Schrödinger forms, *J. Oper. Th.* **1** (1979), 37–47.

- [99] (with E. B. Davies) Scattering theory for systems with different spatial asymptotics on the left and right, *Commun. Math. Phys.* **63** (1978), 277–301.
- [100] (with I. Herbst) Stark effect revisited, *Phys. Rev. Lett.* **41** (1978), 67–69.
- [101] (with I. Herbst) Some remarkable examples in eigenvalue perturbation theory, *Phys. Lett.* **78B** (1978), 304–306.
- [102] (with I. Herbst) Dilation analyticity in constant electric field, II. The N -body problem, Borel summability, *Commun. Math. Phys.* **80** (1981), 181–216.
- [103] (with C. Radin) Invariant domains for the time-dependent Schrödinger equation, *J. Diff. Eqn.* **29** (1978), 289–296.
- [104] (with L. Benassi, V. Grecchi, and E. Harrell) The Bender–Wu formula and the Stark effect in hydrogen, *Phys. Rev. Lett.* **42** (1979), 704–707.
- [105] (with E. Harrell) The mathematical theory of resonances which have exponentially small widths, *Duke Math. J.* **47** (1980), 845–902.
- [106] Phase space analysis of simple scattering systems. Extensions of some work of Enss, *Duke Math. J.* **46** (1979), 119–168.
- [107] The definition of molecular resonance curves by the method of exterior complex scaling, *Phys. Lett.* **71A** (1979), 211–214.
- [108] (with J. Morgan) On the asymptotics of Born–Oppenheimer curves for large nuclear separations, *Intl. J. Quan. Chem.* **17** (1980), 1143–1166.
- [109] (with M. Schechter) Unique continuation for Schrödinger operators with unbounded potential, *J. Math. Anal. Appl.* **77** (1980), 482–492.
- [110] Brownian motion, L^p properties of Schrödinger operators and the localization of binding, *J. Funct. Anal.* **35** (1980), 215–229.
- [111] (with S. Graffi and V. Grecchi) Complete separability of the Stark effect in hydrogen, *J. Phys.* **A12** (1979), L193–L197.
- [112] A remark on Dobrushin’s uniqueness theorem, *Commun. Math. Phys.* **68** (1979), 183–185.
- [113] The classical limit of quantum partition functions, *Commun. Math. Phys.* **71** (1980), 247–276.
- [114] (with M. Klaus) Binding of Schrödinger particles through conspiracy of potential wells, *Ann. Inst. H. Poincaré* **A30** (1979), 83–87.
- [115] (with M. Klaus) Coupling constant thresholds in nonrelativistic quantum mechanics, I. Short range two-body case, *Ann. Phys.* **130** (1980), 251–281.

- [116] (with A. Alonso) The Birman–Krein–Vishik theory of self-adjoint extensions of semibounded operators, *J. Oper. Th.* **4** (1980), 251–270.
- [117] (with J. Avron) A counterexample to the paramagnetic conjecture, *Phys. Lett.* **75A** (1979), 41–42.
- [118] Mean field upper bound on the transition temperature of multi-component spin systems, *J. Statist. Phys.* **22** (1980), 481–493.
- [119] (with M. Hoffmann-Ostenhof and T. Hoffmann-Ostenhof) On the nodal structure of atomic eigenfunctions, *J. Phys.* **A13** (1980), 1131–1133.
- [120] (with M. Hoffmann-Ostenhof and T. Hoffmann-Ostenhof) Brownian motion and a consequence of Harnack’s inequality: Nodes of quantum wave functions, *Proc. Amer. Math. Soc.* **80** (1980), 301–305.
- [121] (with J. Morgan) The calculation of molecular resonances, *J. Phys.* **B14** (1981), L167–L171.
- [122] (with M. Klaus) Coupling constant threshold in non-relativistic quantum mechanics, II. Two-body thresholds in N -body systems, *Commun. Math. Phys.* **78** (1980), 153–168.
- [123] (with M. Klaus) Coupling constant thresholds in non-relativistic quantum mechanics, III. Long range potentials.
- [124] (with V. Enss) Bounds on total cross-sections in atom-atom and atom-ion collisions by geometric methods, *Phys. Rev. Lett.* **44** (1980), 319–321.
- [125] (with V. Enss) Finite total cross-sections in non-relativistic quantum mechanics, *Commun. Math. Phys.* **76** (1980), 177–210.
- [126] Decay of correlations in ferromagnets, *Phys. Rev. Lett.* **44** (1980), 547–549.
- [127] Correlation inequalities and the decay of correlations in ferromagnets, *Commun. Math. Phys.* **77** (1980), 111–126.
- [128] (with M. Aizenman) Local Ward identities and the decay of correlations in ferromagnets, *Commun. Math. Phys.* **77** (1980), 137–143.
- [129] (with M. Aizenman) A comparison of plane rotor Ising models, *Phys. Lett.* **76A** (1980), 281–282.
- [130] (with K. Miller) Quantum magnetic Hamiltonians with remarkable spectral properties, *Phys. Rev. Lett.* **44** (1980), 1706–1707.
- [131] (with P. Perry and I. Sigal) Absence of singular continuous spectrum in N -body quantum systems, *Bull. Amer. Math. Soc.* **3** (1980), 1019–1024.

- [132] (with P. Perry and I. Sigal) Spectral analysis of multiparticle Schrödinger operators, *Ann. of Math.* **114** (1981), 519–567.
- [133] (with R. Carmona) Pointwise bounds on eigenfunctions and wave packets in N -body quantum systems, V. Lower bounds and path integrals, *Commun. Math. Phys.* **80** (1981), 59–98.
- [134] (with E. Lieb) Pointwise bounds on eigenfunctions and wave packets in N -body quantum systems, VI. Asymptotics in the two cluster region, *Adv. Appl. Math.* **1** (1980), 324–343.
- [135] (with M. Aizenman) Brownian motion and Harnack’s inequality for Schrödinger operators, *Commun. Pure Appl. Math.* **35** (1982), 209–273. Winner of 1982 Stampacchia Prize
- [136] Large time behavior of the L^p norm of Schrödinger semigroups, *J. Funct. Anal.* **40** (1981), 66–83.
- [137] Spectrum and continuum eigenfunctions of Schrödinger operators, *J. Funct. Anal.* **42** (1981), 347–355.
- [138] Convergence in trace ideals, *Proc. Amer. Math. Soc.* **83** (1981), 39–43.
- [139] (with A. Sokal) Making entropy-energy arguments rigorous, *J. Statist. Phys.* **25** (1981), 679–694.
- [140] Pointwise domination of matrices and comparison of \mathcal{I}_p norms, *Pacific J. Math.* **97** (1981), 471–475.
- [141] (with J. Avron) Asymptotics of the gap in the Mathieu equation, *Ann. Phys.* **134** (1981), 76–84.
- [142] (with J. Avron) Transient and recurrent spectrum, *J. Funct. Anal.* **43** (1981), 1–31.
- [143] The rate of falloff of Ising model correlations at large temperatures, *J. Statist. Phys.* **26** (1981), 53–58.
- [144] Absence of continuous symmetry breaking in a one-dimensional n^{-2} model, *J. Statist. Phys.* **26** (1981), 307–311.
- [145] (with S. Friedland) The codimension of degenerate pencils, *Linear Alg. Appl.* **44** (1982), 41–53.
- [146] (with J. Avron) Almost periodic Hill’s equation and the rings of Saturn, *Phys. Rev. Lett.* **46** (1981), 1166–1168.
- [147] (with J. Avron) Almost periodic Schrödinger operators, I. Limit periodic potentials, *Commun. Math. Phys.* **82** (1982), 101–120.
- [148] (with J. Avron) Singular continuous spectrum for a class of almost periodic Jacobi matrices, *Bull. Amer. Math. Soc.* **6** (1982), 81–85.

- [149] (with J. Avron) Almost periodic Schrödinger operators, II. The integrated density of states, *Duke Math. J.* **50** (1983), 369–391.
- [150] Hardy and Rellich inequalities in fractional dimension, *J. Oper. Th.* **9** (1983), 143–146.
- [151] Continuity of the density of states in magnetic field, *J. Phys.* **A15** (1982), 2981–2983.
- [152] (with J. Bellissard) Cantor spectrum for the almost Mathieu equation, *J. Funct. Anal.* **48** (1982), 408–419.
- [153] (with L. Yaffe) Rigorous perimeter law upper bound on Wilson loops, *Phys. Lett.* **115B** (1982), 145–147.
- [154] (with E. Harrell) Schrödinger operator methods in the study of a certain nonlinear PDE, *Proc. Amer. Math. Soc.* **88** (1983), 376–377.
- [155] (with W. Craig) Subharmonicity of the Lyapunov index, *Duke Math. J.* **50** (1983), 551–560.
- [156] (with N. Corngold and E. Harrell) The mathematical theory of resonances which have exponentially small widths, II, *J. Math. Anal. Appl.* **99** (1984), 447–457.
- [157] Some Jacobi matrices with decaying potential and dense point spectrum, *Commun. Math. Phys.* **87** (1982), 253–258.
- [158] Some quantum operators with discrete spectrum but classically continuous spectrum, *Ann. Phys.* **146** (1983), 209–220.
- [159] Nonclassical eigenvalue asymptotics, *J. Funct. Anal.* **53** (1983), 84–98.
- [160] (with M. Hoffmann-Ostenhof and T. Hoffmann-Ostenhof) A multi-particle Coulomb system with bound state at threshold, *J. Phys.* **A16** (1983), 1125–1131.
- [161] Semiclassical analysis of low lying eigenvalues, I. Non-degenerate minima: Asymptotic expansions, *Ann. Inst. H. Poincaré* **38** (1983), 295–307.
- [162] Semiclassical analysis of low lying eigenvalues, II. Tunneling, *Ann. of Math.* **120** (1984), 89–118.
- [163] Instantons, double wells and large deviations, *Bull. Amer. Math. Soc.* **8** (1983), 323–326.
- [164] Equality of the density of states in a wide class of tight binding Lorentzian models, *Phys. Rev.* **B27** (1983), 3859–3860.
- [165] (with F. Bentosela, R. Carmona, P. Duclos, B. Souillard, and R. Weder) Schrödinger operators with electric field and random or deterministic potential, *Commun. Math. Phys.* **88** (1983), 387–397.

- [166] (with W. Craig) Log Hölder continuity of the integrated density of states for stochastic Jacobi matrices, *Commun. Math. Phys.* **90** (1983), 207–218.
- [167] (with J. Avron and W. Craig) Large coupling behavior of the Lyapunov exponent for tight binding one-dimensional random systems, *J. Phys.* **A16** (1983), L209–L211.
- [168] Kotani theory for one-dimensional stochastic Jacobi matrices, *Commun. Math. Phys.* **89** (1983), 227–234.
- [169] (with P. Deift) Almost periodic Schrödinger operators, III. The absolutely continuous spectrum in one dimension, *Commun. Math. Phys.* **90** (1983), 389–411.
- [170] Almost periodic Schrödinger operators, IV. The Maryland model, *Ann. Phys.* **159** (1985), 157–183.
- [171] (with J. Avron and R. Seiler) Homotopy and quantization in condensed matter physics, *Phys. Rev. Lett.* **51** (1983), 51–53.
- [172] Holonomy, the quantum adiabatic theorem and Berry’s phase, *Phys. Rev. Lett.* **51** (1983), 2167–2170.
- [173] (with E. B. Davies) Ultracontractivity and the heat kernel for Schrödinger operators and Dirichlet Laplacians, *J. Funct. Anal.* **59** (1984), 335–395.
- [174] Semiclassical analysis of low lying eigenvalues, III. Width of the ground state band in strongly coupled solids, *Ann. Phys.* **158** (1984), 415–420.
- [175] (with E. Lieb, I. Sigal, and W. Thirring) Asymptotic neutrality of large Z ions, *Phys. Rev. Lett.* **52** (1984), 994–996.
- [176] (with F. Delyon and B. Souillard) From power law localized to extended states in a class of one-dimensional disordered systems, *Phys. Rev. Lett.* **52** (1984), 2187–2189.
- [177] Semiclassical analysis of low lying eigenvalues, IV. The flea on the elephant, *J. Funct. Anal.* **63** (1988), 123–136.
- [178] (with F. Delyon and B. Souillard) From power pure point to continuous spectrum in disordered systems, *Ann. Inst. H. Poincaré* **42** (1985), 283–309.
- [179] (with W. Kirsch) Universal lower bounds on eigenvalue splittings for one-dimensional Schrödinger operators, *Commun. Math. Phys.* **97** (1985), 453–460.
- [180] (with W. Kirsch) Lifshitz tails for periodic plus random potentials, *J. Statist. Phys.* **42** (1986), 799–808.
- [181] (with W. Kirsch) Comparison theorems for the gap of Schrödinger operators, *J. Funct. Anal.* **75** (1987), 396–410.

- [182] (with W. Kirsch and S. Kotani) Absence of absolutely continuous spectrum for some one-dimensional random but deterministic Schrödinger operators, *Ann. Inst. H. Poincaré* **42** (1985), 383–406.
- [183] (with J. Avron) Stability of gaps for periodic potentials under variation of the magnetic field, *J. Phys.* **A18** (1985), 2199–2205.
- [184] (with F. Gesztesy and B. Thaller) On the self-adjointness of Dirac operators with anomalous magnetic moment, *Proc. Amer. Math. Soc.* **94** (1985), 115–118.
- [185] Schrödinger semigroups on the scale of Sobolev spaces, *Pacific J. Math.* **122** (1986), 475–480.
- [186] (with E. B. Davies) L^1 -properties of intrinsic Schrödinger semigroups, *J. Funct. Anal.* **65** (1986), 126–146.
- [187] (with M. Taylor and T. Wolff) Some rigorous results for the Anderson model, *Phys. Rev. Lett.* **54** (1985), 1589–1592.
- [188] (with M. Taylor) Harmonic analysis on $SL(2, \mathbb{R})$ and smoothness of the density of states in the one-dimensional Anderson model, *Commun. Math. Phys.* **101** (1985), 1–19.
- [189] (with T. Wolff) Singular continuous spectrum under rank one perturbations and localization for random Hamiltonians, *Commun. Pure Appl. Math.* **39** (1986), 75–90.
- [190] Localization in general one-dimensional random systems, I. Jacobi matrices, *Commun. Math. Phys.* **102** (1985), 327–336.
- [191] Internal Lifshitz tails, *J. Statist. Phys.* **46** (1987), 911–918.
- [192] (with S. Kotani) Localization in general one-dimensional random systems, II. Continuum Schrödinger operators, *Commun. Math. Phys.* **112** (1987), 103–119.
- [193] (with D. Bolle, F. Gesztesy, and H. Grosse) Krein’s spectral shift function and Fredholm determinants as efficient methods to study supersymmetric quantum mechanics, *Lett. Math. Phys.* **13** (1987), 127–133.
- [194] (with F. Delyon and B. Souillard) Localization for off-diagonal disorder and for continuous Schrödinger operators, *Commun. Math. Phys.* **109** (1987), 157–165.
- [195] (with D. Bolle, F. Gesztesy, and H. Grosse) Witten index, axial anomaly and Krein’s spectral shift function in supersymmetric quantum mechanics, *J. Math. Phys.* **28** (1987), 1512–1525.
- [196] (with E. B. Davies and M. Taylor) L^p spectral theory of Kleinian groups, *J. Funct. Anal.* **78** (1988), 116–136.
- [197] (with F. Gesztesy) Topological invariance of the Witten index, *J. Funct. Anal.* **79** (1988), 91–103.

- [198] (with S. Kotani) Stochastic Schrödinger operators and Jacobi matrices on the strip, *Commun. Math. Phys.* **119** (1988), 403–429.
- [199] (with E. Lieb, I. Sigal, and W. Thirring) Approximate neutrality of large Z ions, *Commun. Math. Phys.* **116** (1988), 635–644.
- [200] (with F. Gesztesy) On a theorem of Deift and Hempel, *Commun. Math. Phys.* **116** (1988), 503–505.
- [201] (with W. Kirsch) Corrections to the classical behavior of the number of bound states of Schrödinger operators, *Ann. Phys.* **183** (1988), 122–130.
- [202] (with H. Englisch, M. Schroder, and W. Kirsch) Density of surface states in discrete models, *Phys. Rev. Lett.* **61** (1988), 1261–1262,
- [203] (with F. Gesztesy, D. Gurarie, H. Holden, M. Klaus, L. Sadun, and P. Vogl) Trapping and cascading of eigenvalues in the large coupling limit, *Commun. Math. Phys.* **118** (1988), 597–634.
- [204] (with J. Avron, L. Sadun, and J. Segert) Topological invariants in Fermi systems with time-reversal invariance, *Phys. Rev. Lett.* **61** (1988), 1329–1332.
- [205] (with J. Avron, L. Sadun, and J. Segert) Chern numbers and Berry’s phases in Fermi systems, *Commun. Math. Phys.* **124** (1989), 595–627.
- [206] (with F. Gesztesy) Constructing solutions of the mKdV-equation, *J. Funct. Anal.* **89** (1990) 53–60.
- [207] (with H. Englisch, M. Schroder, and W. Kirsch) Random Hamiltonians ergodic in all but one direction, *Commun. Math. Phys.* **128** (1990), 613–625.
- [208] (with T. Spencer) Trace class perturbations and the absence of absolutely continuous spectrum, *Commun. Math. Phys.* **125** (1989), 113–126.
- [209] (with J. Avron and J. Howland) Adiabatic theorems for dense point spectrum, *Commun. Math. Phys.* **128** (1990), 497–507.
- [210] (with R. Carmona and W. Masters) Relativistic Schrödinger operators: Asymptotic behavior of the eigenfunctions, *J. Funct. Anal.* **91** (1990), 117–142.
- [211] (with J. Avron and P. van Mouche) On the measure of the spectrum for the almost Mathieu operator, *Commun. Math. Phys.* **132** (1990), 103–118.
- [212] (with E. B. Davies) Spectral properties of the Neumann Laplacian of horns, *Geom. Funct. Anal.* **2** (1992), 105–117.
- [213] (with F. Gesztesy and W. Schweiger) Commutation methods applied to the mKdV-equation, *Trans. Amer. Math. Soc.* **324** (1991), 465–525.

- [214] (with F. Gesztesy, H. Holden, and E. Saab) Explicit construction of solutions of the modified Kadomtsev–Petviashvili equation, *J. Funct. Anal.* **98** (1991), 211–228.
- [215] (with F. Gesztesy) A short proof of Zheludev’s theorem, *Trans. Amer. Math. Soc.* **335** (1993), 329–340.
- [216] (with J. Avron and R. Seiler) The quantum Hall effect and the relative index for projections, *Phys. Rev. Lett.* **65** (1990), 2185–2188.
- [217] (with R. Hempel and L. Seco) The essential spectrum of Neumann Laplacians on some bounded singular domains, *J. Funct. Anal.* **102** (1991), 448–483.
- [218] Absence of ballistic motion, *Commun. Math. Phys.* **134** (1990), 209–212.
- [219] (with E. B. Davies) L^p -norms of non-critical Schrödinger semigroups, *J. Funct. Anal.* **102** (1991), 95–115.
- [220] Best constants to some operator smoothness estimates, *J. Funct. Anal.* **107** (1992), 66–71.
- [221] The Neumann Laplacian of a jelly roll, *Proc. Amer. Math. Soc.* **114** (1992), 783–785.
- [222] The Weyl transform and L^p functions on phase space, *Proc. Amer. Math. Soc.* **116** (1992), 1045–1047.
- [223] Large time behavior of the heat kernel: On a theorem of Chavel and Karp, *Proc. Amer. Math. Soc.* **118** (1993), 513–514.
- [224] (with F. Gesztesy, H. Holden, and Z. Zhao) On the Toda and Kac–van Moerbeke systems, *Trans. Amer. Math. Soc.* **339** (1993), 849–868.
- [225] (with V. Jaksic and S. Molchanov) Eigenvalue asymptotics of the Neumann Laplacian of regions and manifolds with cusps, *J. Funct. Anal.* **106** (1992), 59–79.
- [226] (with F. Gesztesy and G. M. Graf) The ground state energy of Schrödinger operators, *Commun. Math. Phys.* **150** (1992), 375–384.
- [227] (with G. M. Graf) Asymptotic series for the ground state energy of Schrödinger operators, *J. Funct. Anal.* **112** (1993), 442–446.
- [228] (with J. Avron and R. Seiler) Charge deficiency, charge transport and comparison of dimensions, *Commun. Math. Phys.* **159** (1994), 399–422.
- [229] (with J. Avron and R. Seiler) The index of a pair of projections, *J. Funct. Anal.* **120** (1994), 220–237.

- [230] (with F. Gesztesy, H. Holden, and Z. Zhao) Trace formulae and inverse spectral theory for Schrödinger operators, *Bull. Amer. Math. Soc.* **29** (1993), 250–255.
- [231] (with A. Gordon, V. Jaksic, and S. Molchanov) Spectral properties of random Schrödinger operators with unbounded potentials, *Commun. Math. Phys.* **157** (1993), 23–50.
- [232] Cyclic vectors in the Anderson model, *Rev. Math. Phys.* **6** (1994), 1183–1185.
- [233] (with R. del Rio, S. Jitomirskaya, and N. Makarov) Singular continuous spectrum is generic, *Bull. Amer. Math. Soc.* **31** (1994), 208–212.
- [234] Operators with singular continuous spectrum: I. General operators, *Ann. of Math.* **141** (1995), 131–145.
- [235] (with R. del Rio and N. Makarov) Operators with singular continuous spectrum: II. Rank one operators, *Commun. Math. Phys.* **165** (1994), 59–67.
- [236] (with S. Jitomirskaya) Operators with singular continuous spectrum: III. Almost periodic Schrödinger operators, *Commun. Math. Phys.* **165** (1994), 201–205.
- [237] (with F. Gesztesy and H. Holden) Absolute summability of the trace relation for certain Schrödinger operators, *Commun. Math. Phys.* **168** (1995), 137–161.
- [238] (with F. Gesztesy) Rank one perturbations at infinite coupling, *J. Funct. Anal.* **128** (1995), 245–252.
- [239] (with F. Gesztesy, H. Holden, and Z. Zhao) Higher order trace relations for Schrödinger operators, *Rev. Math. Phys.* **7** (1995), 893–922.
- [240] (with F. Gesztesy, H. Holden, and Z. Zhao) A trace formula for multi-dimensional Schrödinger operators, *J. Funct. Anal.* **141** (1996), 449–465.
- [241] (with F. Gesztesy) The xi function, *Acta Math.* **176** (1996), 49–71.
- [242] L^p norms of the Borel transform and the decomposition of measures, *Proc. Amer. Math. Soc.* **123** (1995), 3749–3755.
- [243] (with R. del Rio and G. Stolz) Stability of spectral types for Sturm–Liouville operators, *Math. Research Lett.* **1** (1994), 437–450.
- [244] (with A. Kiselev) Rank one perturbations with infinitesimal coupling, *J. Funct. Anal.* **130** (1995), 345–356.
- [245] (with A. Hof and O. Knill) Singular continuous spectrum for palindromic Schrödinger operators, *Commun. Math. Phys.* **174** (1995), 149–159.

- [246] Operators with singular continuous spectrum, VI. Graph Laplacians and Laplace–Beltrami operators, *Proc. Amer. Math. Soc.* **124** (1996), 1177–1182.
- [247] (with G. Stolz) Operators with singular continuous spectrum, V. Sparse potentials, *Proc. Amer. Math. Soc.* **124** (1996), 2073–2080.
- [248] Operators with singular continuous spectrum, VII. Examples with borderline time decay, *Commun. Math. Phys.* **176** (1996), 713–722.
- [249] (with F. Gesztesy) Uniqueness theorems in inverse spectral theory for one-dimensional Schrödinger operators, *Trans. Amer. Math. Soc.* **348** (1996), 349–373.
- [250] (with R. del Rio, S. Jitomirskaya, and Y. Last) Operators with singular continuous spectrum, IV. Hausdorff dimensions, rank one perturbations, and localization, *J. d’Analyse Math.* **69** (1996), 153–200.
- [251] (with R. del Rio, S. Jitomirskaya, and Y. Last) What is localization?, *Phys. Rev. Lett.* **75** (1995), 117–119.
- [252] (with F. Gesztesy and G. Teschl) Zeros of the Wronskian and renormalized oscillation theory, *Am. J. Math.* **118** (1996), 571–594.
- [253] Bounded eigenfunctions and absolutely continuous spectra for one-dimensional Schrödinger operators, *Proc. Amer. Math. Soc.* **124** (1996), 3361–3369.
- [254] Some Schrödinger operators with dense point spectrum, *Proc. Amer. Math. Soc.* **125** (1997), 203–208.
- [255] (with W. Bulla, F. Gesztesy, and W. Renger) Weakly coupled bound states in quantum waveguides, *Proc. Amer. Math. Soc.* **125** (1997), 1487–1495.
- [256] (with Y. F. Zhu) The Lyapunov exponents for Schrödinger operators with slowly oscillating potentials, *J. Funct. Anal.* **140** (1996), 541–556.
- [257] (with A. Gordon, S. Jitomirskaya, and Y. Last) Duality and singular continuous spectrum in the almost Mathieu equation, *Acta Math.* **178** (1997), 169–183.
- [258] (with F. Gesztesy and G. Teschl) Spectral deformations of one-dimensional Schrödinger operators, *J. d’Analyse Math.* **70** (1996), 267–324.
- [259] (with R. del Rio) Point spectrum and mixed spectral types for rank one perturbations, *Proc. Amer. Math. Soc.* **125** (1997), 3593–3599.
- [260] (with F. Gesztesy) Inverse spectral analysis with partial information on the potential, I. The case of an a.c. component in the spectrum, *Helv. Phys. Acta* **70** (1997), 66–71.

- [261] (with F. Gesztesy) m -functions and inverse spectral analysis for finite and semi-infinite Jacobi matrices, *J. d'Analyse Math.* **73** (1997), 267–297.
- [262] Spectral averaging and the Krein spectral shift, *Proc. Amer. Math. Soc.* **126** (1998), 1409–1413.
- [263] (with Y. Last) Eigenfunctions, transfer matrices, and absolutely continuous spectrum of one-dimensional Schrödinger operators, *Invent. Math.* **135** (1999), 329–367.
- [264] (with F. Gesztesy) Inverse spectral analysis with partial information on the potential, II. The case of discrete spectrum, *Trans. Amer. Math. Soc.* **352** (2000), 2765–2787.
- [265] (with A. Kiselev and Y. Last) Modified Prüfer and EFGP transforms and the spectral analysis of one-dimensional Schrödinger operators, *Commun. Math. Phys.* **194** (1998), 1–45.
- [266] (with R. del Rio and F. Gesztesy) Inverse spectral analysis with partial information on the potential, III. Updating boundary conditions, *Int. Math. Res. Not.* (1997) **no. 15**, 751–758.
- [267] (with Y. Last) Modified Prüfer and EFGP transforms and deterministic models with dense point spectrum, *J. Funct. Anal.* **154** (1998), 513–530.
- [268] (with F. Gesztesy) On the determination of a potential from three spectra, *Amer. Math. Soc. Transl. (2)* **189** (1999), 85–92.
- [269] (with A. Kiselev and C. Remling) Effective perturbation methods for one-dimensional Schrödinger operators, *J. Diff. Eq.* **151** (1999), 290–312.
- [270] The classical moment problem as a self-adjoint finite difference operator, *Adv. in Math.* **137** (1998), 82–203.
- [271] A new approach to inverse spectral theory, I. Fundamental formalism, *Ann. of Math.* **150** (1999), 1029–1057.
- [272] (with F. Gesztesy) A new approach to inverse spectral theory, II. General real potentials and the connection to the spectral measure, *Ann. of Math.* **152** (2000), 593–643.
- [273] (with A. Ramm) A new approach to inverse spectral theory, III. Short-range potentials *J. d'Analyse Math.* **80** (2000), 319–334.
- [274] A Feynman–Kac formula for unbounded semigroups, *Proc. Intl. Conf. Infinite Dimensional (Stochastic) Analysis and Quantum Physics, Leipzig 1999*, Canadian Math. Soc. Conf. Proc. **28** (2000), 317–321.
- [275] (with F. Gesztesy) On local Borg–Marchenko uniqueness results *Commun. Math. Phys.* **211** (2000), 273–287.

- [276] Resonances in one dimension and Fredholm determinants, *J. Funct. Anal.* **178** (2000), 396–420.
- [277] (with D. Hundertmark) An optimal L^p -bound on the Krein spectral shift function, *J. d'Analyse Math.* **87** (2002), 199–208.
- [278] (with W. Kirsch) Approach to equilibrium for a forced Burgers equation, *J. Evol. Eqns.* **1** (2001), 411–419.
- [279] (with A. Kiselev and Y. Last) Stability of singular spectral types under decaying perturbations, *J. Funct. Anal.* **198** (2003), 1–27.
- [280] (with D. Hundertmark) Lieb–Thirring inequalities for Jacobi matrices, *J. Approx. Theory* **118** (2002), 106–130.
- [281] (with R. Killip) Sum rules for Jacobi matrices and their applications to spectral theory, *Ann. of Math.* **158** (2003), 253–321.
- [282] (with A. Zlatoš) Sum rules and the Szegő condition for orthogonal polynomials on the real line, *Commun. Math. Phys.* **242** (2003), 393–423.
- [283] (with S. Denisov) Zeros of orthogonal polynomials on the real line, *J. Approx. Theory* **121** (2003), 357–364.
- [284] (with D. Damanik and D. Hundertmark) Bound states and the Szegő condition for Jacobi matrices and Schrödinger operators, *J. Funct. Anal.* **205** (2003), 357–379.
- [285] (with D. Damanik, D. Hundertmark, and R. Killip) Variational estimates for discrete Schrödinger operators with potentials of indefinite sign, *Commun. Math. Phys.* **238** (2003), 545–562.
- [286] (with D. Hundertmark) A diamagnetic inequality for semigroup differences, *J. Reine Angew. Math.* **571** (2004), 107–130.
- [287] The Golinskii–Ibragimov method and a theorem of Damanik–Killip, *Int. Math. Res. Not.* (2003), **no. 36**, 1973–1986.
- [288] A canonical factorization for meromorphic Herglotz functions on the unit disk and sum rules for Jacobi matrices, *J. Funct. Anal.* **214** (2004), 396–409.
- [289] (with F. Gesztesy) Connectedness of the isospectral manifold for one-dimensional half-line Schrödinger operators, *J. Statist. Phys.* **116** (2004), 361–365.
- [290] Ratio asymptotics and weak asymptotic measures for orthogonal polynomials on the real line, *J. Approx. Theory* **126** (2004), 198–217.
- [291] (with D. Damanik and R. Killip) Necessary and sufficient conditions in the spectral theory of Jacobi matrices and Schrödinger operators, *Int. Math. Res. Not.* (2004), **no. 22**, 1087–1097.

- [292] (with V. Totik) Limits of zeros of orthogonal polynomials on the circle, *Math. Nachr.* **278** (2005), 1615–1620.
- [293] On a theorem of Kac and Gilbert, *J. Funct. Anal.* **223** (2005), 109–115.
- [294] Orthogonal polynomials on the unit circle: New results, *Int. Math. Res. Not.* (2004), **no. 53**, 2837–2880.
- [295] (with D. Damanik and R. Killip) Schrödinger operators with few bound states, *Commun. Math. Phys.* **258** (2005), 741–750.
- [296] (with A. Zlatoš) Higher-order Szegő theorems with two singular points, *J. Approx. Theory* **134** (2005), 114–129.
- [297] Aizenman’s theorem for orthogonal polynomials on the unit circle, *Const. Approx.* **23** (2006), 229–240.
- [298] Fine structure of the zeros of orthogonal polynomials, I. A tale of two pictures, *Electronic Transactions on Numerical Analysis* **25** (2006), 328–268.
- [299] Fine structure of the zeros of orthogonal polynomials, II. OPUC with competing exponential decay, *J. Approx. Theory* **135** (2005), 125–139.
- [300] Fine structure of the zeros of orthogonal polynomials, III. Periodic recursion coefficients, *Commun. Pure Appl. Math.* **59** (2006) 1042–1062.
- [301] (with D. Damanik) Jost functions and Jost solutions for Jacobi matrices, I. A necessary and sufficient condition for Szegő asymptotics, *Invent. Math.* **165** (2006), 1–50.
- [302] (with D. Damanik) Jost functions and Jost solutions for Jacobi matrices, II. Decay and analyticity, *Int. Math. Res. Not.* **2006**, Article ID 19396, 32 pages, 2006.
- [303] Meromorphic Szegő functions and asymptotic series for Verblunsky coefficients, *Acta Math.* **195** (2005), 267–285.
- [304] (with Y. Last) The essential spectrum of Schrödinger, Jacobi, and CMV operators, *J. d’Analyse Math.* **98** (2006), 183–220.
- [305] Meromorphic Jost functions and asymptotic series for Jacobi parameters, *Funct. Anal. Appl.* **41** (2007), 143–153.
- [306] (with R. Killip) Sum rules and spectral measures of Schrödinger operators with L^2 potentials, *Ann. of Math.* **158** (2003), 253–321.
- [307] (with E. B. Davies) Eigenvalue estimates for non-normal matrices and the zeros of random orthogonal polynomials on the unit circle, *J. Approx. Theory* **141** (2006), 189–213.

- [308] Rank one perturbations and the zeros of paraorthogonal polynomials on the unit circle, *J. Math. Anal. Appl.* **329** (2007), 376–382.
- [309] (with Y. Last) Fine structure of the zeros of orthogonal polynomials, IV. A priori bounds and clock behavior, *Comm. Pure Appl. Math.* **61** (2008), 486–538.
- [310] Zeros of OPUC and long time asymptotics of Schur and related flows, *Inverse Problems and Imaging* **1** (2007), 189–215.
- [311] (with M. J. Cantero) Poisson brackets of orthogonal polynomials, *J. Approx. Theory* **158** (2009), 3–48.
- [312] (with D. Damanik and R. Killip) Perturbations of orthogonal polynomials with periodic recursion coefficients, *Ann. of Math.* **171** (2010), 1931–2010.
- [313] (with R. Frank and T. Weidl) Eigenvalue bounds for perturbations of Schrödinger operators and Jacobi matrices with regular ground states, *Comm. Math. Phys.* **282** (2008), 199–208.
- [314] (with F. Gesztesy and A. Pushnitski) On the Koplienko spectral shift function, I. Basics, *Zh. Mat. Fiz. Anal. Geom.* **4** (2008), no. 1, 63–107.
- [315] (with D. Hundertmark) Eigenvalue bounds in the gaps of Schrödinger operators and Jacobi matrices, *J. Math. Anal. Appl.* **340** (2008), 892–900.
- [316] Two extensions of Lubinsky’s universality theorem, *J. Anal. Math.* **105** (2008), 345–362.
- [317] Equilibrium measures and capacities in spectral theory, *Inverse Problems and Imaging* **1** (2007), 713–772.
- [318] Weak convergence of CD kernels and applications, *Duke Math. J.* **146** (2009), 305–330.
- [319] Regularity and the Cesàro-Nevai class, *J. Approx. Theory* **156** (2009), 142–153.
- [320] (with Y. Kreimer and Y. Last) Monotone Jacobi parameters and non-Szegő weights, *J. Approx. Theory* **157** (2009), 144–171.
- [321] (with J. Breuer and Y. Last) The Nevai condition, *Constr. Approx.* **32** (2010), 221–254.
- [322] Schrödinger operators with purely discrete spectrum, *Methods Funct. Anal. Topology* **15** (2009), 61–66.
- [323] (with J. Christiansen and M. Zinchenko) Finite gap Jacobi matrices, I. The isospectral torus, *Constr. Approx.* **32** (2010), 1–65.

- [324] (with A. Avila and Y. Last) Bulk universality and clock spacing of zeros for ergodic Jacobi matrices with a.c. spectrum, *Analysis & PDE* **3** (2010), 81–108.
- [325] (with A. Poltoratski and M. Zinchenko) The Hilbert transform of a measure, *J. d'Analyse Math.* **111** (2010), 247–265.
- [326] (with J. Breuer and E. Ryckman) Equality of the spectral and dynamical definitions of reflection, *Comm. Math. Phys.* **295** (2010), 531–550.
- [327] (with J. Christiansen and M. Zinchenko) Finite gap Jacobi matrices, II. The Szegő class, *Constr. Approx.* **33** (2011), 365–403.
- [328] (with J. Breuer) Natural boundaries and spectral theory, *Advances in Math.* **226** (2011), 4902–4920.
- [329] (with R. Frank) Critical Lieb–Thirring bounds in gaps and the generalized Nevai conjecture for finite gap Jacobi matrices, *Duke Math. J.* **157** (2011), 461–493.
- [330] (with A. Martinez-Finkelshtein) Asymptotics of the L^2 norm of derivatives of OPUC, *J. Approx. Theory* **163** (2011), 747–778.
- [331] On the removal of finite discrete spectrum by coefficient stripping, *J. Spectral Theory* **1** (2011), 81–85.
- [332] (with J. Christiansen and M. Zinchenko) Finite gap Jacobi matrices, III. Beyond the Szeg class, *Constr. Approx.* **35** (2012), 259–272.
- [333] (with J. Breuer and Y. Last) Stability of asymptotics of Christoffel-Darboux kernels, *Comm. Math. Phys.* **330** (2014), 1155–1178.
- [334] (with H. Krüger) Cantor polynomials and some related classes of OPRL, *J. Approx. Theory* **191** (2015), 71–93.
- [335] (with R. Frank) Eigenvalue Bounds for Schrödinger Operators with Complex Potentials. II , *J. Spectr. Theory* **7** (2017), 633–658.
- [336] (with J. Christiansen and M. Zinchenko) Asymptotics of the Chebyshev Polynomials of General Sets, I., *Invent. Math* **208** (2017), 217–245.
- [337] A Cayley-Hamiltonian Theorem for Periodic Finite Band Matrices, in *Functional analysis and operator theory for quantum physics*, ed. J. Dittrich, H. Kovařk and A. Laptev, EMS Ser. Congr. Rep., Eur. Math. Soc., Zrich (2017), 525–529.
- [338] (with R. Frank and M. Lemm) Condensation of fermion pairs in a domain, *Calculus of Variations and Partial Differential Equations*, **56** (2017, 54:1-54:40).
- [339] (with J. Breuer and O. Zeitouni) Large Deviations and Sum Rules for Spectral Theory - A Pedagogical Approach, *J. Spectr. Theory*, to appear.

- [340] (with J. Breuer and O. Zeitouni) Large Deviations and the Lukic Conjecture, preprint
- [341] (with J. Christiansen, P. Yuditskii and M. Zinchenko) Asymptotics of Chebyshev Polynomials, II. DCT Subsets of \mathbb{R} , preprint
- [342] Unitaries Permuting Two Orthogonal Projections, *Linear Alg. Appl.*, **528** (2017), 436–441.
- [343] (with A. Bttcher and I. Spitkovsky) Similarity between two projections, *Int. Eq. and Op. Th.* **89** (2017), 507–518.
- [344] (with J. Christiansen and M. Zinchenko) Asymptotics of Chebyshev Polynomials, III. Sets Saturating Szegő, Schiefermayr, and Totik–Widom Bounds, to appear in *Analysis as a Tool in Mathematical Physics – in Memory of Boris Pavlov*, ed. P. Kurasov, A. Laptev, S. Naboko and B. Simon.

Books and Monographs

- [1] *Quantum Mechanics for Hamiltonians Defined by Quadratic Forms*, Princeton Series in Physics, Princeton University Press, 1971.
- [2] (with M. Reed) *Methods of Modern Mathematical Physics, Vol. I: Functional Analysis*, Academic Press, 1972. Voted most significant mathematical physics book of the 20th century at 2000 ICMP.
- [3] (with M. Reed) *Methods of Modern Mathematical Physics, Vol. II: Fourier Analysis, Self-Adjointness*, Academic Press, 1975. Voted most significant mathematical physics book of the 20th century at 2000 ICMP.
- [4] *The $P(\phi)_2$ Euclidean (Quantum) Field Theory*, Princeton Series in Physics, Princeton University Press, 1974.
- [5] (with M. Reed) *Methods of Modern Mathematical Physics, Vol. III: Scattering Theory*, Academic Press, 1978. Voted most significant mathematical physics book of the 20th century at 2000 ICMP.
- [6] (editor, with E. Lieb) *Studies in Mathematical Physics, Essays in Honor of Valentine Bargmann*, Princeton University Press, 1976
- [7] (with M. Reed) *Methods of Modern Mathematical Physics, Vol. IV: Analysis of Operators*, Academic Press, 1977. Voted most significant mathematical physics book of the 20th century at 2000 ICMP.
- [8] *Trace Ideals and Their Applications*, Cambridge University Press, 1979; second edition, *Mathematical Surveys and Monographs*, Vol. 120, American Mathematical Society, 2005.

- [9] *Functional Integration and Quantum Physics*, Academic Press, 1979; second edition, AMS Chelsea Publishing, 2005.
- [10] (with H. Cycon, R. Froese and W. Kirsch) *Schrödinger Operators with Application to Quantum Mechanics and Global Geometry*, Springer, 1987.
- [11] *The Statistical Mechanics of Lattice Gases, Vol. I*, Princeton University Press, 1993.
- [12] *Representations of Finite and Compact Groups*, Graduate Studies in Mathematics, Vol. 10, American Mathematical Society, 1996.
- [13] *Orthogonal Polynomials on the Unit Circle, Part 1: Classical Theory*, AMS Colloquium Publications, American Mathematical Society, 2005. Winner of the 2015 Bolyai Prize.
- [14] *Orthogonal Polynomials on the Unit Circle, Part 2: Spectral Theory*, AMS Colloquium Publications, American Mathematical Society, 2005. Winner of the 2015 Bolyai Prize.
- [15] *Szegő's Theorem and Its Descendants: Spectral Theory for L^2 Perturbations of Orthogonal Polynomials*, M.B. Porter Lectures, Princeton University Press, Princeton, NJ, 2011.
- [16] *Convexity: An Analytic Viewpoint*, Cambridge University Press, Cambridge, 2011.
- [17] *A Comprehensive Course in Analysis, Part 1: Real Analysis*, American Mathematical Society, 2015.
- [18] *A Comprehensive Course in Analysis, Part 2A: Basic Complex Analysis*, American Mathematical Society, 2015.
- [19] *A Comprehensive Course in Analysis, Part 2B: Advanced Complex Analysis*, American Mathematical Society, 2015.
- [20] *A Comprehensive Course in Analysis, Part 3: Harmonic Analysis*, American Mathematical Society, 2015.
- [21] *A Comprehensive Course in Analysis, Part 4: Operator Theory*, American Mathematical Society, 2015.

Conference Proceedings, Summer School Notes, Review Articles

- [1] Analyticity in the coupling constant and the Padé approximation, *Proc. 8th East. Theo. Phys. Conf.* (1969), 167–195.

- [2] The anharmonic oscillator: A singular perturbation theory, *Cargese Lectures in Theoretical Physics* **5** (ed. D. Bessis), Gordon and Breach, 1972, 383–414.
- [3] Studying spatially cutoff two-dimensional Bose field theories, *Field Theory and Statistical Mechanics* (eds. R.N. Sen and C. Weil), Keter Press, 1972, 197–224.
- [4] Topics in functional analysis, *Mathematics of Contemporary Physics* (ed. R. Streater), Academic Press, 1972, 18–76.
- [5] Perturbation theory and coupling constant analyticity in two-dimensional field theories, *Fundamental Interactions in Physics and Astronomy*, Plenum, 1973, 120–136.
- [6] The Glimm–Jaffe ϕ -bound: A Markov proof, *Constructive Quantum Theory* (eds. G. Velo and A. S. Wightman), Springer, 1973, 125–131.
- [7] Bose field theory as statistical mechanics, III. The classical Ising approximation, *Constructive Quantum Field Theory*, (eds. G. Velo and A. S. Wightman), Springer, 1973, 290–297.
- [8] Approximation of path integrals and Markov fields by spin systems, *Proc. 1974 Intl. Cong. Math.*, 1975, 399–402.
- [9] Bose quantum field theory as an Ising ferromagnet: Recent developments, *Intl. Symp. on Math. Problems in Theoretical Physics* (ed. H. Araki), Springer, 1976.
- [10] An introduction to the self-adjointness and spectral analysis of Schrödinger operators, *The Schrödinger Equation* (eds. W. Thirring and P. Urban), Springer, 1977 (*Acta Phys. Aus. Suppl.* **17** Vienna, 19–42).
- [11] On the number of bound states of two-body Schrödinger operators: A review, *from* [6], pp. 305–326.
- [12] Quantum dynamics: From automorphism to Hamiltonian, *from* [6], pp. 327–349.
- [13] Classical boundary conditions as a tool in quantum physics, *Adv. in Math.* **30** (1978), 268–281.
- [14] New rigorous existence theorems for phase transitions in model systems, *Proc. IUPAP Stat. Mech. Meeting*, Haifa, 1977.
- [15] Resonances and complex scaling: A rigorous overview, *Intl. J. Quant. Chem.* **14** (1978), 529–542.
- [16] An overview of rigorous scattering theory, *Atomic Scattering Theory—Mathematical and Computational Aspects* (ed. J. Nutall), Univ. of Western Ontario, 1–24.

- [17] Identifying the classical limit of a quantum spin system, *Colloq. Math. Soc. Bolyai* **27** (1979), 989–1001.
- [18] Lattice systems, *Encyclopedia of Statistical Sciences* **4** (eds. Kotz and Johnson), Wiley, 1983, 519–522.
- [19] Quantum physics and functional integration, *Encyclopedia of Statistical Sciences* **7** (eds. Kotz and Johnson), Wiley, 1986, 453–456.
- [20] Feynman integrals, *McGraw–Hill Encyclopedia of Science and Technology*, 5th ed., 1982, 391–392.
- [21] Schrödinger semigroups, *Bull. Amer. Math. Soc.* **7** (1982), 447–526.
- [22] (with V. Enss) Total cross sections in non-relativistic scattering theory, *Quantum Mechanics in Mathematics, Chemistry and Physics* (eds. K. Gustafson and W. Reinhardt), Plenum, 1981, 1–26.
- [23] Large orders and summability of eigenvalue perturbation theory: A mathematical overview, *Intl. J. Quant. Chem.* **21** (1982), 3–25.
- [24] Spectral analysis of multiparticle Schrödinger operators, *Spectral Theory of Differential Operators* (ed. I. Knowles and R. T. Lewis), North Holland, 1981, 369–370.
- [25] m -functions and the absolutely continuous spectrum of one-dimensional almost periodic Schrödinger operators, *Differential Equations* (ed. I. Knowles and R. T. Lewis), North Holland, 1984, 519.
- [26] Almost periodic Schrödinger operators: A review, *Adv. Appl. Math.* **3** (1982), 463–490.
- [27] Fifteen problems in mathematical physics, *Perspectives in Mathematics*, Oberwolfach Anniversary Volume, Birkhäuser, 1984, 423–454.
- [28] Boundedness of continuum eigenfunctions and their relation to spectral problems, *Linear and Complex Analysis Problem Book* (ed. V. Havin, S. Khrushchev, and N. Nikol'skii), Lecture Notes in Math., **1043**, Springer, 1984.
- [29] (with E. B. Davies) Ultracontractive semigroups and some problems in analysis, *Aspects of Mathematics and its Applications* (ed. J. Barroso), Elsevier, 1986.
- [30] (with B. Souillard) Franco-American meeting on the mathematics of random and almost periodic potentials, *J. Statist. Phys.* **36** (1984), 273–288.
- [31] Some aspects of the theory of Schrödinger operators, *Schrödinger Operators, Como, 1984* (ed. S. Graffi), Lecture Notes in Math. **159**, Springer, 1985.
- [32] Lifshitz tails for the Anderson model, *J. Statist. Phys.* **38** (1985), 65–76.

- [33] Regularity of the density of states for stochastic Jacobi matrices: A review, *IMA Conf. Proc., Random Media* **7** (1987), 245–266.
- [34] Schrödinger operators with random and almost periodic potentials, *Recent Developments in Mathematical Physics* (eds. H. Mitter and L. Pittner), Springer, 1987.
- [35] (with E. B. Davies and L. Gross) Hypercontractivity: A bibliographic review, *Ideas and Methods in Quantum and Statistical Mechanics*, **2** (eds. S. Albeverio et al.), Cambridge University Press, 1992, 370–289.
- [36] Fifty years of eigenvalue perturbation theory, *Bull. Amer. Math. Soc.* **24** (1991), 303–319.
- [37] The Scott correction and the quasi-classical limit, *Asterisque* **210** (1992), 295–302.
- [38] Spectral analysis of rank one perturbations and applications, *Proc. Mathematical Quantum Theory, II: Schrödinger Operators* (eds. J. Feldman, R. Froese and L. Rosen) CRM Proc. Lecture Notes **8** (1995), 109–149.
- [39] Schrödinger operators in the twentieth century, *J. Math. Phys.* **41** (2000), 3523–3555.
- [40] Schrödinger operators in the twenty-first century, *Mathematical Physics 2000* (eds. A. Fokas et al.), Imperial College Press, London, 283–288.
- [41] (with H. Cordes, A. Jensen, S. T. Kuroda, G. Ponce and M. Taylor) Tosio Kato (1917-1999), *Notices A.M.S* **47** (2000), 650-657
- [42] Sturm oscillation and comparison theorems, *Sturm–Liouville Theory, Past and Present* (eds. W. O. Amrein, A. M. Hinz, and D. B. Pearson), Birkhäuser, 2005, 29–44.
- [43] Analogs of the m -function in the theory of orthogonal polynomials on the unit circle, *J. Comp. Appl. Math.* **171** (2004), 411–424.
- [44] The sharp form of the strong Szegő theorem, *Contemp. Math.* **387** (2005), 253–275.
- [45] Ed Nelson’s work in quantum theory, *Diffusion, Quantum Theory, and Radically Elementary Mathematics* (ed. W. G. Faris), Mathematical Notes **47**, Princeton University Press, 2006, 75–93.
- [46] OPUC on one foot, *Bull. Amer. Math. Soc.* **42** (2005), 431–460.
- [47] CMV matrices: Five years after, *J. Comput. Appl. Math.* **208** (2007), 120–154.

- [48] Orthogonal polynomials with exponentially decaying recursion coefficients, *Probability and Mathematical Physics* (eds. D. Dawson, V. Jakšić, and B. Vainberg), CRM Proc. and Lecture Notes **42** (2007), 453–463.
- [49] Fine structure of the zeros of orthogonal polynomials: A review, *Difference Equations, Special Functions and Orthogonal Polynomials* (eds. S. Elaydi et al.), World Scientific, Singapore (2007), 636–653.
- [50] (with J. Christiansen and M. Zinchenko) Finite gap Jacobi matrices: An announcement, *J. Comp. Applied Math.* **233** (2009), 652–662.
- [51] (with D. Damanik and A. Pushnitski) The analytic theory of matrix orthogonal polynomials, *Surveys in Approximation Theory* **4** (2008), 1–85.
- [52] The Christoffel–Darboux kernel, in *Perspectives in PDE, Harmonic Analysis and Applications*, a volume in honor of V.G. Maz’ya’s 70th birthday, Proceedings of Symposia in Pure Mathematics **79** (2008), 295–335.
- [53] A celebration of Jürg and Tom, *J. Statist. Phys.* **134** (2009), 809–812 (special issue in honor of the 60th birthday of Jürg Fröhlich and Tom Spencer).
- [54] Fine structure of the zeros of orthogonal polynomials: A progress report, in *Recent Trends in Orthogonal Polynomials and Approximation Theory*, a volume in honor of Guillermo Lopez’s 60th birthday, *Contempo. Math.* **507** (2010), 241–254.
- [55] Spectral theory of orthogonal polynomials, *Proc. ICMP 2012, Aalborg*, World Scientific, Singapore, 2014, 217–228.
- [56] (with J. Christiansen and M. Zinchenko) Finite gap Jacobi matrices: A review, *Spectral Analysis, Differential Equations and Mathematical Physics, A Festschrift for Fritz Gesztesy on the Occasion of his 60th Birthday*, (eds. H. Holden, B. Simon and G. Teschl), AMS, 2013, 87–104.
- [57] Mathematical physics at Princeton in the 1970s, *IAMP News Bulletin*, July 2012.
- [58] (with A. Jaffe) Obituary: Arthur Strong Wightman (1922–2013), *IAMP News Bulletin*, January 2013.
- [59] (B. Simon was coordinating editor; contributions by J. Fröhlich, F. Guerra, K. Hepp, A. Jaffe, C. Nappi, E. Nelson, D. Ruelle, B. Simon, R. Streater, F. Strocchi and G. Velo), In Memory of Arthur Strong Wightman, *Notices A.M.S* **62** (2015), 249–257.
- [60] Spectral Theory Sum Rules, Meromorphic Herglotz Functions and Large Deviations, *Notices A.M.S.* **64** (2017) 9–10, blurb for JMM plenary talk, Atlanta, Jan, 2017.

- [61] Tosio Kato's Work on Non-Relativistic Quantum Mechanics: part 1, *Bulletin of Mathematical Sciences*, **8** (2018), 121-232.
- [62] Tosio Kato's Work on Non-Relativistic Quantum Mechanics: part 2, *Bulletin of Mathematical Sciences*, to appear.
- [63] Tosio Kato's Work on Non-Relativistic Quantum Mechanics: An Outline, to appear in Proc. Kato Centennial Conference.
- [64] Tosio Kato's Work on Non-Relativistic Quantum Mechanics: A Brief Report, *IAMP News Bulletin*, January, 2018.
- [65] Tosio Kato's Work on Non-Relativistic Quantum Mechanics: A Brief Report, to appear in *IAMP News Bulletin* and in *Analysis and Operator Theory In Honor of Tosio Kato's 100 th Birthday*, a volume edited by Th. M. Rassias and V. Zagrebnov to be published by Springer.