

# Curriculum Vitae of Friedrich (Fritz) Gesztesy

Department of Mathematics

University of Missouri

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## EDUCATION

Ph.D. 1976, University of Graz, Austria

Ph.D. Thesis: “Renormalization, Nelson’s symmetry and energy densities in a field theory with quadratic interaction”.

Ph.D. Advisors: H. G. Latal (University of Graz, Austria) and L. Streit (University of Bielefeld, Germany).

## FIELDS OF SPECIALIZATION

Mathematical Physics, Spectral Theory, Differential Equations, Completely Integrable Systems.

## POSITIONS HELD

Universitätsassistent (Assistant Professor) at the Institute for Theoretical Physics of the University of Graz, Austria, from January 1977 to May 1982.

Universitätsdozent (Associate Professor) at the Institute for Theoretical Physics of the University of Graz, Austria, from June 1982 to August 1988.

Professor of Mathematics at the University of Missouri, Columbia, MO 65211, USA, since September 1988.

Luther M. Defoe Distinguished Professorship, Department of Mathematics, University of Missouri, Columbia, September 1996 until August 2001.

M. & R. Houchins Distinguished Professorship, Department of Mathematics, University of Missouri, Columbia, since January 1, 2002.

## PROFESSIONAL HONORS

Alexander von Humboldt Fellowship (University of Bielefeld, Germany, 1980–81 and 1983–84).

Max Kade Fellowship (California Institute of Technology, Pasadena, CA, USA, 1987–88)

Theodor Körner Award in Natural Sciences (Vienna) 1983.

Ludwig Boltzmann Award (Austrian Physical Society) 1987.

Election to the Royal Norwegian Society of Science and Letters, Trondheim, Norway, January 1, 2002.

## EDITORIAL ACTIVITY

Advisory Board, *Mathematische Nachrichten* (Wiley–VCH), since November 2002.

Co-Editor, *Mathematische Nachrichten* (Wiley–VCH), since January 2008.

Editorial Board, *Operators and Matrices* (Element), since April 2006.

Editorial Board, *International Journal of Differential Equations* (Hindawi), since July 2009.

Editorial Board, *International Journal of Mathematics and Mathematical Sciences* (Hindawi), since July 2009.

Associate Editor, *Journal of Mathematical Analysis and Applications* (Academic Press – Elsevier), April 1999 until February 2006.

## SUPERVISED GRADUATE STUDENTS

**University of Graz, Austria:** M. Perusch (Ph.D., 1982) jointly with H. Mitter (Univ. of Graz); C. Nessmann (Ph.D., 1984); G. Karner (Ph.D., 1986)

**University of Technology, Graz, Austria:** K. Unterkofler (Masters, 1986 and Ph.D., 1989) jointly with W. Bulla (Univ. of Technology, Graz)

**University of Louvain-La-Neuve, Belgium:** J. Shabani (Ph.D., 1986) together with J.-P. Antoine (Univ. of Louvain, Belgium)

### University of Missouri:

Masters: J. M. Nowell (1991); W. M. Sticka (1991); R. Ratnaseelan (1993); M. Ünal (1993); R. Dickson (1995); S. Timischl (1995) jointly with B. Thaller (Univ. of Graz)

Ph.D.: G. Teschl (1995); M. Ünal (1995); R. Ratnaseelan (1996); W. Renger (1996); W. M. Sticka (1996); M. Mystkowski (1997); R. Dickson (1998); V. Batchenko (2005); M. Zinchenko (2006)

## MEMBERSHIPS

American Mathematical Society (AMS)

Mathematical Association of America (MAA)

## VISITING POSITIONS

Alexander von Humboldt Research Fellow at the Faculty of Physics of the University of Bielefeld, FRG, November 1980 to October 1981 and September 1983 to August 1984.

Research position at the Institute for Theoretical Physics of the University of Leuven, Belgium, October 1983 to February 1984.

Research position at the Centre de Physique Théorique, CNRS-Luminy, Marseille, France, June 1984 to August 1984.

Research position at the LPTHE-Orsay, Université de Paris XI, Paris, France, March 1986 to August 1986.

Max Kade Research Fellow at the Department of Mathematics, Caltech, Pasadena, USA, September 1987 to August 1988.

Visiting Professor at the Institute for Theoretical Physics at the University of Leuven, Belgium, June and July 1989.

Visiting Professor at the BiBoS - Research Center of the University of Bielefeld, Germany, May and June 1990.

Visiting Professor at the Department of Mathematical Sciences, University of Trondheim - NTH, Norway, July 1990.

Visiting Professor at the Department of Mathematics, Caltech, Pasadena, USA, July 20 to August 20, 1991.

Visiting Professor at the Department of Mathematical Sciences, University of Trondheim - NTH, Norway, May 19 to June 19, 1992.

Visiting Professor at the Department of Mathematics, Caltech, Pasadena, USA, August 1-14, 1992.

Visiting Professor at the Department of Mathematical Sciences, University of Trondheim - NTH, Norway, May 20 to June 20, 1993.

Visiting Professor at the Department of Mathematics, Caltech, Pasadena, USA, July 1 to August 15, 1993.

Visiting Professor at the Department of Mathematics, Caltech, Pasadena, USA, June 5 to July 10, 1994.

Visiting Professor at the Department of Mathematical Sciences, University of Trondheim - NTH, July 21 to August 21, 1994.

Visiting Professor at the Institute of Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, USA, May 16 to June 17, 1995.

Visiting Professor at the Erwin Schrödinger International Institute for Mathematical Physics, Vienna, Austria, June 21 to July 8, 1995.

Visiting the Mathematical Research Institute at Oberwolfach, Germany, July 9 to July 15, 1995.

Visiting Professor at the Department of Mathematical Sciences, University of Trondheim - NTH, July 19 to August 19, 1995.

Visiting Professor at the Department of Mathematics, Caltech, Pasadena, USA, May 20 to June 20, 1996.

Visiting Professor at the Department of Mathematics, Caltech, Pasadena, USA, July 20 to August 22, 1997.

Visiting Professor at the Department of Mathematical Sciences, Norwegian University of Science and Technology, Trondheim, Norway, May 28 to July 14, 1998.

Visiting Professor at the Department of Mathematics, Caltech, Pasadena, USA, July 20 to August 21, 1998.

Visiting Professor at the Department of Mathematical Sciences, Norwegian University of Science and Technology, Trondheim, Norway, May 24 to June 30, 1999.

Visiting Professor at the Department of Mathematics, Caltech, Pasadena, USA, July 20 to August 20, 1999.

Visiting Professor at the Department of Mathematical Sciences, Norwegian University of Science and Technology, Trondheim, Norway, May 22 to July 3, 2000.

Visiting Professor at the CCM, Universidade da Madeira, Portugal, July 10 to August 1, 2000.

Visiting Professor at the Department of Mathematical Sciences, Norwegian University of Science and Technology, Trondheim, Norway, May 23 to July 3, 2001.

Visiting Professor at the Department of Mathematics, Caltech, Pasadena, USA, July 18 to August 17, 2001.

Visiting Professor at the Department of Mathematical Sciences, Norwegian University of Science and Technology, Trondheim, Norway, May 26 to July 25, 2002.

Visiting Professor at the Department of Mathematical Sciences, Norwegian University of Science and Technology, Trondheim, Norway, June 19 to July 18, 2003.

Visiting Professor at the Department of Mathematical Sciences, Norwegian University of Science and Technology, Trondheim, Norway, May 26 to July 27, 2004.

Visiting Professor at the Department of Mathematical Sciences, Norwegian University of Science and Technology, Trondheim, Norway, May 26 to July 30, 2005.

Visiting Professor at the Department of Mathematics, Caltech, Pasadena, USA, August 15 to November 30, 2005.

Visiting Professor at the Department of Mathematical Sciences, Norwegian University of Science and Technology, Trondheim, Norway, May 10 to July 11, 2006.

Visiting Professor at the Department of Mathematical Sciences, Norwegian University of Science and Technology, Trondheim, Norway, May 26 to July 8, 2007.

Visiting Professor at the Faculty of Mathematics of the University of Vienna, Austria, February 29 to June 6, 2008.

Visiting Professor at the Department of Mathematical Sciences, Norwegian University of Science and Technology, Trondheim, Norway, June 6 to July 12, 2008.

Member of the Research Group in “Nonlinear Partial Differential Equations” at the Centre for Advanced Study (CAS) at the Norwegian Academy of Science and Letters, Oslo, Norway, May 25 to June 30, 2009.

Visiting Professor at the the Faculty of Mathematics of the University of Vienna, Austria, July 10 to August 18, 2009.

Visiting Professor at the Erwin Schrödinger International Institute for Mathematical Physics (ESI), Vienna, Austria, October 5 to October 11, 2009.

## INVITED TALKS

*2nd Western States Mathematical Physics Conference*, Dept. of Mathematics, California Institute of Technology, Pasadena, USA, on “Threshold behavior of scattering amplitudes in quantum mechanics”, April 1983.

*Bielefeld Encounters in Physics and Mathematics V: Mathematics and Physics at ZiF 1983*, ZiF, Univ. of Bielefeld, FRG, on “Low-energy scattering for charged particles”, September 1983.

Workshop: *Resonances - Models and Phenomena*, ZiF, Univ. of Bielefeld, FRG, on “Perturbation theory for resonances in terms of Fredholm determinants”, April 1984.

*Schrödinger Operators, Aarhus 1985*, Dept. of Mathematics, Univ. of Aarhus, Denmark, on “Scattering theory for one-dimensional systems with nontrivial spatial asymptotics”, October 1985.

*8th Autumn School on the Models and Methods in Few-Body Physics*, INIC, Lisboa, Portugal, on “On stationary two-body scattering theory in two dimensions”, October 1986.

*7th Western States Mathematical Physics Conference*, Dept. of Mathematics, California Institute of Technology, Pasadena, USA, on “The construction of solutions of the modified Korteweg-deVries equation using commutation formulas”, February 1988.

*Nordic Summer School in Mathematics 1988: Schrödinger Operators*, Aarhus University Center, Sandbjerg Slot, Denmark, on “Commutation formulas”, August 1988.

*Ideas and Methods in Mathematical Physics (Dedicated to the memory of Raphael Hoegh-Krohn 1938–1988)*, Department of Mathematics, University of Oslo, Norway, on “Non-uniqueness in inverse spectral problems”, September 1988.

*International Conference on Differential Equations and Applications*, Department of Mathematics, University of Graz, Austria, on “Commutation methods applied to nonlinear wave equations”, June 1989.

*26th Midwest P.D.E. Conference*, Argonne National Laboratory, Illinois, USA, on “Explicit construction of solutions of the modified Kadomtsev-Petviashvili and related equations”, November 1989.

*9th Western States Mathematical Physics Conference*, Dept. of Mathematics, California Institute of Technology, Pasadena, USA, on “On the (modified) Toda lattice”, February 1990.

*UAB International Conference on Differential Equations and Mathematical Physics*, Dept. of Mathematics, University of Alabama at Birmingham, USA, on “Miura-type transformations for various nonlinear evolution equations”, March 1990.

*XXVII Winter School of Theoretical Physics - Karpacz*, Institute for Theoretical Physics, University of Wrocław, Poland, on “(m)KdV-solitons relative to quasi-periodic backgrounds”, February 1991.

*Georgia Tech - UAB International Conference on Differential Equations and Mathematical Physics*, School of Mathematics, Georgia Tech, Atlanta, USA, on “Spectral deformations and soliton equations”, March 1992.

*LSU Conference on Evolution Equations*, Dept. of Mathematics, Louisiana State University, Baton Rouge, USA, on “New trace formulas for Schrödinger operators”, January 1993.

*12th Annual Western States Mathematical Physics Meeting*, Dept. of Mathematics, California Institute of Technology, Pasadena, USA, on “New trace formulas for Schrödinger operators with applications to the KdV hierarchy”, February 1993.

*Conference on Differential Equations*, Department of Mathematics, Ohio University, Athens, OH, USA, on “New trace formulas for Schrödinger operators with applications to inverse spectral problems”, August 1993.

*International Conference on Applications of Operator Theory*, Institute of Industrial Mathematical Sciences (IIMS), University of Manitoba, Winnipeg, Canada, on “Trace formulas and inverse spectral theory for Schrödinger operators”, October 1994.

*14th Annual Western States Mathematical Physics Meeting*, Dept. of Mathematics, California Institute of Technology, Pasadena, USA, on “Spectral deformations of one-dimensional Schrödinger operators”, February 1995.

*IMA Workshop on Multiparticle Quantum Scattering with Applications to Nuclear, Atomic and Molecular Physics*, Institute of Mathematics and its Applications (IMA), University of Minnesota, Minneapolis, USA, on “Trace formulas and inverse spectral problems for Schrödinger operators”, June 1995.

*Conference on Schrödingeroperatoren*, Mathematical Research Institute at Oberwolfach, Germany, on “Isospectral deformations”, July 1995.

Invited One Hour Address at the *AMS Meeting at the Louisiana State University*, Baton Rouge, LA, USA, “Variations on a theme of Picard”, April 1996.

Plenary lecture at the conference on *Aspects of Spectral Theory*, University and Technical University of Vienna, Austria, “Trace formulas and inverse spectral theory”, July 1996.

*17th Annual Western States Mathematical Physics Meeting*, Dept. of Mathematics, California Institute of Technology, Pasadena, USA, on “Some applications of operator-valued Herglotz functions”, February 1998.

Plenary lecture at the conference, *Mathematical Results in Quantum Mechanics*, Technical University of Prague, Czech Republic, “Uniqueness Theorems for Schrödinger Operators”, June 1998.

*International Conference on Mathematical Physics and Stochastic Analysis*, Instituto Superior Técnico, Lisbon, Portugal, “The spectral shift operator”, October 1998.

*International Conference on Operator Theory and its Applications to Scientific and Industrial Problems*, Institute of Industrial Mathematical Sciences (IIMS), University of Manitoba, Winnipeg, Canada, on “The spectral shift operator”, October 1998.

*International Conference on Infinite Dimensional (Stochastic) Analysis and Quantum Physics*, Max Planck Institute for Mathematics in the Sciences in Leipzig, Germany, on “Completely Integrable Systems in the Infinite Genus Limit”, January 1999.

*North British Functional Analysis Seminar*, University of Edinburgh, Scotland, on “Applications of Herglotz operators”, May 1999.

*Workshop: Singular Integrals and Complex Analysis*, Department of Mathematics, University of Trondheim, Norway, on “On Integrable Systems in the Infinite Genus Limit”, June 2000.

*Soliton Equations: Applications and Theory*, University of Colorado, Colorado Springs, on “On algebro-geometric matrix-valued KdV solutions”, August 2001.

*m-Function and Related Topics Conference*, Cardiff University, UK, on “Weyl–Titchmarsh matrices, trace formulas, and Borg-type theorems”, July 2004.

*Operator Theory, Analysis and Mathematical Physics*, OTAMP 2006, Technical University of Lund, Sweden, on “Some applications of (modified) Fredholm determinants, or, variations on a theme of Jost and Pais”, June 2006.

*21st Max Born Symposium on Theoretical Physics*, University of Wrocław, Poland, on “Some applications of (modified) Fredholm determinants, or, variations on a theme of Jost and Pais”, June 2006.

*Modern Analysis and Applications (MAA 07)*, dedicated to the Mark Krein centenary, Odessa, Ukraine, on “Some applications of Dirichlet-to-Neumann maps”, April 2007.

*Operator Theory, Analysis and Mathematical Physics* OTAMP 2008, Institute of Mathematics of the Polish Academy of Sciences, Bedlewo, Poland, on “Robin-to-Dirichlet maps and Krein-type resolvent formulas for Schrödinger operators on bounded Lipschitz domains”, June 2008.

*14th International Conference on Difference Equations and Applications*, Istanbul, Turkey, on “Borg–Marchenko-type uniqueness results for CMV operators with matrix-valued coefficients”, July 2008.

*27th Annual Western States Mathematical Physics Meeting*, Dept. of Mathematics, California Institute of Technology, Pasadena, USA, on “Spectral theory and Weyl asymptotics for perturbed Krein Laplacians”, February 2009.

*CAS Lecture Series on Nonlinear Partial Differential Equations*, at the Centre for Advanced Study (CAS) at the Norwegian Academy of Science and Letters, Oslo, Norway,

on “Spectral theory and Weyl-type asymptotics for perturbed Krein Laplacians” (two hours), June 2009.

*CAS Lecture Series on Nonlinear Partial Differential Equations*, at the Centre for Advanced Study (CAS) at the Norwegian Academy of Science and Letters, Oslo, Norway, on “Fredholm indices, the spectral shift function, and relative trace class perturbations” (two hours), June 2009.

*Workshop on “Quanta and Geometry”*, Erwin Schrödinger International Institute for Mathematical Physics (ESI), on “Fredholm indices, the spectral shift function, and relative trace class perturbations”, October, 2009.

### **COLLOQUIA and SEMINARS at the following UNIVERSITIES and RESEARCH INSTITUTIONS**

University of Bielefeld (Germany)

University of Bochum (Germany)

University of Bonn (Germany)

University of Braunschweig (Germany)

California Institute of Technology (Pasadena, CA, USA)

University of Colorado (Boulder, CO, USA)

University of Colorado (Colorado Springs, CO, USA)

Erwin Schrödinger Institute (ESI) (Vienna, Austria)

Georgia Institute of Technology (Atlanta, GA, USA)

University of Göttingen (Germany)

University of Graz (Austria)

Technical University of Graz (Austria)

Kansas State University (Manhattan, KS USA),

University of Kentucky (Lexington, KY, USA)

Karpacz (Poland)

University of Leuven (Belgium)

University of Louvain-la-Neuve (Belgium)

Louisiana State University (Baton Rouge, LA, USA)

University of Marseille, Luminy (France)

IMA, University of Minnesota (Minneapolis, MN, USA)

Mittag-Leffler Institute (Djursholm, Sweden)

University of Nantes (France)

Oberwolfach Mathematical Institute (Oberwolfach–Walke, Germany)

Ohio State University (Columbus, OH, USA)

Université Paris-Sud, LPTHE-Orsay, Paris (France),

University of Oslo (Norway)

Centre for Advanced Study (CAS), Norwegian Academy of Science and Letters, Oslo (Norway)

University of Osnabrück (Germany)

Charles University Prague (Czech Republic)

Doppler Institute, Prague (Czech Republic)

Rice University (Houston, TX, USA)

Missouri University of Science and Technology (Rolla, MO, USA)

University of Stuttgart (Germany)

University of Trondheim (Norway)

Tulane University (New Orleans, LA, USA)

University of California at Irvine (Irvine, CA, USA)

University of Michigan (Ann Arbor, MI, USA)

University of Vienna (Austria)

Technical University of Vienna (Austria)

Virginia Polytechnic Institute (Blacksburg, VA, USA)

University of Wrocław (Poland)

Yale University (New Haven, CT, USA)

## Publications

- [1] “Energiedichten und Renormierung im Modell einer Feldtheorie mit quadratischer Wechselwirkung”. Dissertation, University of Graz, Austria, 1976.

### 1978:

- [2] “Renormalization, Nelson’s symmetry and energy densities in a field theory with quadratic interaction”; with H. Latal. *Rep. Math. Phys.* **14**, 215–224 (1978).
- [3] “Electrons in logarithmic potentials I. Solution of the Schrödinger equation”; with L. Pittner. *J. Phys.* **11**, 679–686 (1978).
- [4] “Electrons in logarithmic potentials II. Solution of the Dirac equation”; with L. Pittner. *J. Phys. A* **11**, 687–695 (1978).
- [5] “On the commutation relation  $[A,B]=-i\mathbf{I}$ ”; with L. Pittner. *Lett. Nuovo Cim.* **22**, 332–335 (1978).
- [6] “Uncertainty relations and quadratic forms”; with L. Pittner. *J. Phys. A* **11**, 1765–1770 (1978).

### 1979:

- [7] “On the Friedrichs extension of ordinary differential operators with strongly singular potentials”; with L. Pittner. *Acta Phys. Austriaca* **51**, 259–268 (1979).
- [8] “Diffraction of non-relativistic electron waves by a cylindrical capacitor”; with L. Pittner. *J. Phys. A* **12**, 1091–1104 (1979).
- [9] “Diffraction of relativistic electron waves by a cylindrical capacitor”; with L. Pittner. *J. Phys. A* **12**, 2247–2254 (1979).
- [10] “On systems of periodic differential equations”; with W. Becker and H. Mitter. *Lett. Math. Phys.* **3**, 249–253 (1979).

### 1980:

- [11] “A generalization of the virial theorem for strongly singular potentials”; with L. Pittner. *Rep. Math. Phys.* **18**, 149–162 (1980).
- [12] “On the one-dimensional Coulomb Hamiltonian”. *J. Phys. A* **13**, 867–875 (1980).
- [13] “An efficient method for the summation of partial wave amplitudes for long-range potentials”; with C. B. Lang. *Phys. Lett.* **79A**, 295–297 (1980).
- [14] “On the high-energy behavior of scattering phase shifts for Coulomb-like potentials”; with W. Plessas and B. Thaller. *J. Phys.* **A13**, 2659–2671 (1980).

**1981:**

- [15] “On the Abel-summability of partial wave amplitudes for Coulomb-type interactions”; with C. B. Lang. *J. Math. Phys.* **22**, 312–319 (1981).
- [16] “Born expansions for Coulomb-type interactions”; with B. Thaller. *J. Phys.* **A14**, 639–657 (1981).
- [17] “A note on quasiperiodic states”; with H. Mitter. *J. Phys.* **A14**, L79–L83 (1981).
- [18] “On the universal low energy limit in nonrelativistic scattering theory”; with S. Albeverio and R. Høegh-Krohn. *Acta Phys. Austriaca Suppl.* **23**, 577–585 (1981).

**1982:**

- [19] “On the structure of Coulomb-type scattering amplitudes”. *J. Math. Phys.* **23**, 74–82 (1982).
- [20] “The low energy expansion in nonrelativistic scattering theory”; with S. Albeverio and R. Høegh-Krohn. *Ann. Inst. H. Poincaré A* **37**, 1–28 (1982).
- [21] “Spectral concentration in the nonrelativistic limit”; with H. Grosse and B. Thaller. *Phys. Lett.* **116B**, 155–157 (1982).

**1983:**

- [22] “Continuity of wave and scattering operators with respect to interactions”; with E. Brüning. *J. Math. Phys.* **24**, 1516–1528 (1983).
- [23] “Time delay for long-range interactions”; with D. Bollé and H. Grosse. *J. Math. Phys.* **24**, 1529–1541 (1983).
- [24] “Charged particles with short-range interactions”; with S. Albeverio, R. Høegh-Krohn, and L. Streit. *Ann. Inst. H. Poincaré A* **38**, 263–293 (1983).
- [25] “Low-energy parameters in nonrelativistic scattering theory”; with S. Albeverio, D. Bollé, R. Høegh-Krohn, and L. Streit. *Ann. Phys.* **148**, 308–326 (1983).
- [26] “Efficient method for calculating relativistic corrections for spin-1/2 particles”; with H. Grosse and B. Thaller. *Phys. Rev. Lett.* **50**, 625–628 (1983).
- [27] “On averaged angular time delay for two-body scattering”; with D. Bollé. *Helv. Phys. Acta* **56**, 1064–1069 (1983).
- [28] “New results for scattering on the line”; with D. Bollé and S. F. J. Wilk. *Phys. Lett.* **97A**, 30–34 (1983).

**1984:**

- [29] “On non-degenerate ground states for Schrödinger operators”. *Rep. Math. Phys.* **20**, 93–109 (1984).

- [30] “Two-body scattering for Schrödinger operators involving zero-range interactions”; with L. Pittner. Rep. Math. Phys. **19**, 143–154 (1984).
- [31] “Model dependence of Coulomb corrected scattering lengths”; with S. Albeverio, L. S. Ferreira, R. Høegh-Krohn, and L. Streit. Phys. Rev. C **29**, 680–683 (1984).
- [32] “On point interactions in one dimension”; with S. Albeverio, R. Høegh-Krohn, and W. Kirsch. J. Operator Theory **12**, 101–126 (1984).
- [33] “A rigorous approach to relativistic corrections of bound state energies for spin-1/2 particles”; with H. Grosse and B. Thaller. Ann. Inst. H. Poincaré **A40**, 159–174 (1984).
- [34] “On relativistic corrections to bound state energies for two-fermion systems”; with H. Grosse and B. Thaller. Phys. Rev. **D30**, 2189–2193 (1984).
- [35] “Low-energy parametrization of scattering observables in n-dimensional quantum systems”; with D. Bollé. Phys. Rev. Lett. **52**, 1469–1472 (1984).
- [36] “Some exactly solvable models in quantum mechanics and the low-energy expansions”; with S. Albeverio, H. Holden, and R. Høegh-Krohn. Proceedings of the Second International Conference on Operator Algebras, Ideals, and Their Applications in Theoretical Physics, Leipzig, September 25 - October 2, 1983; edited by H. Baumgärtel, G. Laβner, A. Pietsch, and A. Uhlmann. Teubner-Texte zur Mathematik, Vol. 67, Teubner, Leipzig, 1984, p. 12–28.
- [37] “Scattering observables in arbitrary dimension  $n \geq 2$ ”; with D. Bollé. Phys. Rev. **A30**, 1279–1293 (1984).
- [38] “Perturbation theory for resonances in terms of Fredholm determinants”. In *Resonances-Models and Phenomena*, Proceedings, ZiF, Univ. Bielefeld, FRG, Lecture Notes in Physics, Vol. 211, Springer, 1984, S. Albeverio, L. S. Ferreira, and L. Streit (eds.), p. 78–103.
- [39] “Scattering lengths in nonrelativistic three-body systems”; with G. Karner. In *Few-Body Problems in Physics*, Vol. II, B. Zeitnitz (ed.), Elsevier Science Publishers B. V., 1984, p. 375–376.

**1985:**

- [40] “First order relativistic corrections and spectral concentration”; with H. Grosse and B. Thaller. Adv. Appl. Math. **6**, 159–176 (1985).
- [41] “A complete treatment of low-energy scattering in one dimension”; with D. Bollé and S. F. J. Wilk. J. Operator Theory **13**, 3–31 (1985).
- [42] “Scattering theory for time-dependent Hamiltonians asymptotically constant in time”; with H. Mitter and M. Perusch. J. Math. Anal. Appl. **110**, 265–282 (1985).
- [43] “One-dimensional Schrödinger operators with interactions singular on a discrete set”; with W. Kirsch. J. reine angew. Math. **362**, 28–50 (1985).
- [44] “On the self-adjointness of Dirac operators with anomalous magnetic moment”; with B. Simon and B. Thaller. Proc. Amer. Math. Soc. **94**, 115–118 (1985).

- [45] “On the connection between Dirichlet and Schrödinger forms”; with S. Albeverio, W. Karwowski, and L. Streit. *J. Math. Phys.* **26**, 2546–2553 (1985).
- [46] “Scattering theory for long-range interactions at threshold”; with D. Bollé and W. Schweiger. *J. Math. Phys.* **26**, 1661–1674 (1985).
- [47] “Quantum mechanical low energy scattering in terms of diffusion processes”; with S. Albeverio, Ph. Blanchard, and L. Streit. In *Stochastic Aspects of Classical and Quantum Systems*, Proceedings of the 2nd French-German Encounter in Mathematics and Physics, Marseille, France, Lecture Notes in Mathematics, Vol. 1109, Springer, 1985, S. Albeverio, Ph. Combe, and M. Sirugue-Collin (eds.), p. 207–226.
- [48] “On essential spectra of hard core type Schrödinger operators”; with E. Brüning. *J. Phys.* **A18**, L7–L11 (1985).
- [49] “Deficiency indices and singular boundary conditions in quantum mechanics”; with W. Bulla. *J. Math. Phys.* **26**, 2520–2528 (1985).
- [50] “An exactly solvable periodic Schrödinger operator”; with C. Macedo and L. Streit. *J. Phys.* **A18**, L503–L507 (1985).

**1986:**

- [51] “Threshold behavior and Levinson’s theorem for two-dimensional scattering systems: A surprise”; with D. Bollé, C. Danneels, and S. F. J. Wilk. *Phys. Rev. Lett.* **56**, 900–903 (1986).
- [52] “Scattering theory for general, non-local interactions: Threshold behavior and sum rules”; with D. Bollé, C. Nessmann, and L. Streit. *Rep. Math. Phys.* **23**, 373–408 (1986).
- [53] “Scattering observables in arbitrary dimensions  $n \geq 2$ : An Addendum”; with D. Bollé. *Phys. Rev.* **A33**, 3517–3518 (1986).
- [54] “Scattering theory for one-dimensional systems with nontrivial spatial asymptotics”. In *Schrödinger operators*, Lecture Notes in Mathematics, Vol. 1218, Springer, 1986, E. Balslev (ed.), p. 93–122.
- [55] “The Schrödinger operator for a particle in a solid with deterministic and stochastic point interactions”; with S. Albeverio, R. Høegh-Krohn, H. Holden, and W. Kirsch. In *Schrödinger Operators*, Lecture Notes in Mathematics, Vol. 1218, Springer, 1986, E. Balslev (ed.), p. 1–38.
- [56] “Charged particles with a short-range force: Perturbation theory with respect to the range and to additional effects”; with G. Karner and L. Streit. *J. Math. Phys.* **27**, 249–261 (1986).

**1987:**

- [57] “A unified approach to eigenvalues and resonances of Schrödinger operators using Fredholm determinants”; with H. Holden. *J. Math. Anal. Appl.* **123**, 181–198 (1987).
- [58] “Scattering theory for one-dimensional systems with  $\int dxV(x) = 0$ ”; with D. Bollé and M. Klaus. *J. Math. Anal. Appl.* **122**, 496–518 (1987).
- [59] “On three-body scattering near thresholds”; with G. Karner. *SIAM J. Math. Anal.* **18**, 1064–1086 (1987).
- [60] “Point interactions in two dimensions. Basic properties and applications to solid state physics”; with S. Albeverio, R. Høegh-Krohn, and H. Holden. *J. reine angew. Math.* **308**, 87–107 (1987).
- [61] “Krein’s spectral shift function and Fredholm determinants as efficient methods to study supersymmetric quantum mechanics”; with D. Bollé, H. Grosse, and B. Simon. *Lett. Math. Phys.* **13**, 127–133 (1987).
- [62] “Witten index, axial anomaly and Krein’s spectral shift function in supersymmetric quantum mechanics”; with D. Bollé, H. Grosse, W. Schweiger, and B. Simon. *J. Math. Phys.* **28**, 1512–1525 (1987).
- [63] “Invariance of the essential spectra for perturbations with unbounded hard cores”; with E. Brüning and M. Demuth. *Lett. Math. Phys.* **13**, 69–77 (1987).
- [64] “Exactly solvable models of sphere interactions in quantum mechanics”; with J.-P. Antoine and J. Shabani. *J. Phys.* **A20**, 3687–3712 (1987).
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