

List of publications, as of September 2017

a) monographs and textbooks:

1. P. Exner: *Open Quantum Systems and Feynman Integrals*; Fundamental Theories of Physics, vol. 6; *xix* + 356 p.; D. Reidel Publ. Co., Dordrecht 1985 (ISBN 90-277-1678-1).
2. J. Blank, P. Exner, M. Havlíček: *Linear Operators in Quantum Physics* (in Czech); 680p.; Karolinum, Prague 1993 (ISBN 80-7066-586-6).
3. J. Blank, P. Exner, M. Havlíček: *Hilbert–Space Operators in Quantum Physics*; *xiii* + 594 p.; American Institute of Physics, New York 1994 (ISBN 1-56396-142-3).
4. J. Blank, P. Exner, M. Havlíček: *Hilbert–Space Operators in Quantum Physics. Second edition (revised and extended)*; *xviii* + 666 p.; Springer, Dordrecht 2008 (ISBN 978-1-4020-8869-8).
5. P. Exner, H. Kovařík: *Quantum Waveguides*; *xvii* + 382 p.; Springer International, Heidelberg 2015 (ISBN 978-3-319-18575-0.)

b) inventions:

1. P. Exner, P. Šeba: *Quantum interference transistor*, Soviet Patent Certificate No. 1562959 issued on January 8, 1990; application No. 4423188/25 registered on May 11, 1988 and accepted by the Soviet Patent Office on March 29, 1989.

c) lecture notes:

1. J. Blank, P. Exner, M. Havlíček: *Selected Topics of Mathematical Physics: Theory of Linear Operators on Hilbert Space, vol. I* (in Czech); 324p.; State Pedagogical Publ. House, Prague 1975.
2. J. Blank, P. Exner: *Selected Topics of Mathematical Physics: Theory of Linear Operators on Hilbert Space, vol. II* (in Czech); 324p.; State Pedagogical Publ. House, Prague 1978.
3. J. Blank, P. Exner: *Selected Topics of Mathematical Physics: Theory of Linear Operators on Hilbert Space, vol. III/1* (in Czech); 268p.; State Pedagogical Publ. House, Prague 1980.
4. J. Blank, P. Exner: *Selected Topics of Mathematical Physics: Theory of Linear Operators on Hilbert Space, vol. III/2* (in Czech); 210p.; State Pedagogical Publ. House, Prague 1980.

d) edited volumes:

1. P. Exner, P. Šeba, eds.: *Applications of Self-Adjoint Extensions in Quantum Physics*, Proceedings of a Workshop held at Dubna, September 29 – October 1, 1987; 275p.; Lecture Notes in Physics, vol. 324, Springer, Berlin 1989.
2. P. Exner, P. Šeba, eds.: *Schrödinger Operators, Standard and Non-Standard*, Proceedings of a Workshop held at Dubna, September 6–10, 1988; 409 p.; World Scientific, Singapore 1989.
3. P. Exner, H. Neidhardt, eds.: *Order, Disorder and Chaos in Quantum Systems*, Proceedings of a Workshop held at Dubna, October 17–21, 1989; 360 p.; Operator Theory : Advances and Applications, vol. 46, Birkhäuser Verlag, Basel 1990.
4. J. Dittrich, P. Exner, eds.: *Rigorous Results in Quantum Dynamics*, Proceedings of a conference held at Liblice, June 11–15, 1990; 342p.; World Scientific, Singapore 1991.
5. M. Demuth, P. Exner, H. Neidhardt, V.A. Zagrebnov, eds.: *Mathematical Results in Quantum Mechanics*, Proceedings of a conference held at Blossin, May 17–21, 1993; 356 p.; Operator Theory: Advances and Applications, vol. 70, Birkhäuser Verlag, Basel 1994.
6. J. Dittrich, P. Exner, M. Tater, eds.: *Mathematical Results in Quantum Mechanics*, Proceedings of the QMath7 conference held in Prague, June 22–26, 1998; 393 p.; Operator Theory: Advances and Applications, vol. 108, Birkhäuser Verlag, Basel 1999
7. R. Weder, P. Exner, B. Grebert, eds.: *Mathematical Results in Quantum Mechanics*, Proceedings of the QMath8 conference held in Taxco, December 10–14, 2001; 350 p.; Contemporary Mathematics, vol. 307, AMS, Providence, R.I., 2002
8. P. Exner, J.P. Keating, P. Kuchment, T. Sunada, A. Teplyaev, eds.: *Analysis on Graphs and Applications*, Proceedings of a Isaac Newton Institute programme, January 8–June 29, 2007; 670 p.; AMS “Proceedings of Symposia in Pure Mathematics” Series, vol. 77, Providence, R.I., 2008
9. P. Exner, ed.: *XVIIth International Congress on Mathematical Physics*, Proceedings of the ICMP held in Prague, August 3–8, 2009; xvii+690 p.; World Scientific, Singapore 2010.
10. P. Exner, ed.: *Mathematical Results in Quantum Physics*, Proceedings of the QMath11 conference held in Hradec Králové, September 6–10, 2010; xi+274 p.; World Scientific, Singapore 2011.
11. P. Exner, ed.: *Mathematical Results in Quantum Mechanics*, Proceedings of the QMath12 conference held in Berlin, September 10–13, 2013; xi+383 p.; World Scientific, Singapore 2014.

e) reviews, book chapters:

1. J. Blank, P. Exner: *Remarks on tensor products and their applications in quantum theory, I. General considerations*, Acta Univ. Carolinae, Math. Phys. **17** (1976), 75–89.
2. J. Blank, P. Exner: *Remarks on tensor products and their applications in quantum theory, II. Spectral properties*, Acta Univ. Carolinae, Math. Phys. **18** (1977), 3–35.
3. P. Exner: *Unstable quantum systems and Feynman integrals* (in Russian), Sov. J. Phys. Elem. Part. Atom. Nucl. **15** (1984), 121–155.
4. P. Exner, P. Šeba: *Schrödinger operators on unusual manifolds*, in “Ideas and Methods in Quantum and Statistical Physics”, R. Høegh–Krohn’s Memorial, vol. 2, Cambridge University Press 1992; pp. 227–253.
5. P. Exner: *Seize ans après*, an appendix to the 2nd edition of the monograph “Solvable Models in Quantum Mechanics” by S. Albeverio, F. Gesztesy, R. Høegh–Krohn and H. Holden, AMS Chelsea Publishing, vol. 350, Providence, R.I., 2005; pp. 453–484.
6. P. Exner: *von Neumann way to treat systems of a mixed dimensionality*, Rep. Math. Phys. **55** (2005), 79–92.
7. P. Exner: *Unstable system dynamics: do we understand it fully?*, Rep. Math. Phys. **59** (2007), 351–363.
8. P. Exner: *Leaky quantum graphs: a review*, Proceedings of the Isaac Newton Institute programme “Analysis on Graphs and Applications”, AMS “Proceedings of Symposia in Pure Mathematics” Series, vol. 77, Providence, R.I., 2008; pp. 523–564.
9. P. Exner: *Solvable models of resonances and decays*, Proceedings of the Conference “Mathematical Physics, Spectral Theory and Stochastic Analysis” (Goslar 2011; M. Demuth, W. Kirsch, eds.), Birkhäuser, Basel 2013; pp. 165–227.
10. P. Exner: *Functional analysis*, in “Mathematical Tools for Physicists”, 2nd ed. (M. Grinfeld, ed.), Wiley, Weinheim 2015; pp. 449–474.

f) research papers:

1. P. Exner, J. Tolar: *On S -transformation in the strong coupling theory*, Czech. J. Phys. **B19** (1969), 1480–1485.
2. P. Exner: *Inelastic e–p scattering in the polarized case*, Nucl. Phys. **B19** (1970), 42–50.
3. M. Havlíček, P. Exner: *Note on the description of an unstable system*, Czech. J. Phys. **B23** (1973), 594–600.
4. M. Havlíček, P. Exner: *Remarks on two-component equations for massive leptons*, Physica Scripta **9** (1974), 161–162.
5. M. Havlíček, P. Exner: *On the minimal canonical realization of the Lie algebra $O_{\mathbb{C}}(n)$* , Ann. Inst. H. Poincaré **A23** (1975), 313–333.

6. M. Havlíček, P. Exner: *Matrix canonical realizations of the Lie algebra $o(m, n)$, I. Basic formulae and classification*, Ann. Inst. H. Poincaré **A23** (1975), 335–347.
7. P. Exner: *Remark on the decay of a mixed state*, Czech. J. Phys. **B26** (1976), 976–982.
8. P. Exner: *Remark on the energy spectrum of a decaying system*, Commun. Math. Phys. **50** (1976), 1–10.
9. P. Exner, M. Havlíček, W. Lassner: *Canonical realizations of classical Lie algebras*, Czech. J. Phys. **B26** (1976), 1213–1228.
10. P. Exner: *Unstable systems and repeated measurements, I. General considerations*, Czech. J. Phys. **B27** (1977), 117–126.
11. P. Exner: *Unstable systems and repeated measurements, II. Examples (exponential primary decay law, idealized spark chamber)*, Czech. J. Phys. **B27** (1977), 233–246.
12. P. Exner: *Unstable systems and repeated measurements, III. Example (homogeneous chamber), conjecture for the general case and discussion*, Czech. J. Phys. **B27** (1977), 361–372.
13. J. Dolejší, P. Exner: *Corrections to the exponential decay law: are they observable?*, Czech. J. Phys. **B27** (1977), 855–864.
14. M. Havlíček, P. Exner: *Matrix canonical realizations of the Lie algebra $o(m, n)$, II. Casimir operators*, Czech. J. Phys. **B28** (1978), 949–962.
15. J. Blank, P. Exner, M. Havlíček: *Quantum–mechanical pseudo–Hamiltonians*, Czech. J. Phys. **B29** (1979), 1325–1341.
16. P. Exner: *Bounded–energy approximation to an unstable quantum system*, Rep. Math. Phys. **17** (1980), 275–285.
17. Č. Burdík, P. Exner, M. Havlíček: *Highest–weight representations of the $sl(n+1, \mathbb{C})$ Lie algebras: maximal representations*, J. Phys. A: Math. Gen. **14** (1981), 1039–1054.
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20. P. Exner, G.I. Kolerov: *On Hilbert spaces of paths*, Czech. J. Phys. **B31** (1981), 470–474.
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41. P. Exner, A. Joye, H. Kovařík: *Magnetic transport along one-dimensional perturbations in the plane*, Proceedings of the Conference “Problems of Theoretical and Mathematical Physics” (Dubna 1999), Phys. Elem. Part. At. Nucl. **31** (2001), 177–183.
- 42.** P. Exner, T. Weidl: *Lieb-Thirring inequalities on trapped modes in quantum wires*, Proceedings of the XIII International Congress on Mathematical Physics (London 2000); International Press of Boston, 2001; pp. 437–443.
- 43.** P. Exner: *Spectral properties of Schrödinger operators with a strongly attractive δ interaction supported by a surface*, Proceedings of the NSF Summer Research Conference (Mt. Holyoke 2002); AMS “Contemporary Mathematics” Series, vol. 339, Providence, R.I., 2003; pp. 25–36.
- 44.* P. Exner, S. Kondej: *Leaky quantum wire and dots: a resonance model*, Proceedings of the XIV International Congress on Mathematical Physics (Lisbon 2003), World Scientific, Singapore 2005; pp. 593–600.
45. P. Exner, T. Ichinose: *Product formula for quantum Zeno dynamics*, Proceedings of the XIV International Congress on Mathematical Physics (Lisbon 2003), World Scientific, Singapore 2005; pp. 601–604.
46. P. Exner: *Spectral properties of Schrödinger operators with strongly attractive graph-type singular perturbations*, Proceedings of the Conference “Spectral and Scattering Theory and Related Topics” (Kyoto 2003), pp. 60–80
47. P. Exner, T. Ichinose: *On existence of quantum Zeno dynamics*, Proceedings of the Conference “Quantum Information and Computing” (Tokyo 2003), World Scientific, Singapore 2006; pp. 72–80
48. P. Exner: *von Neumann way to treat quantum systems of a mixed dimensionality*, Proceedings of the von Neumann Centennial Conference (Budapest 2003) – see the the review paper [6]

49. P. Exner: *Point interaction polygons: an isoperimetric problem*, in “Mathematical Physics of Quantum Mechanics, Selected and Refereed Lectures from QMath9” (proceedings, Giens 2004); Springer Lecture Notes, vol. 690, 2006; pp. 55–64.
- 50.** P. Exner, T. Ichinose, S. Kondej: *On relations between stable and Zeno dynamics in a leaky graph decay model*, Proceedings of the Conference “Operator Theory and Mathematical Physics” (Będlewo 2004); Operator Theory: Advances and Applications, vol. 174, Birkhäuser, Basel 2007; pp. 21–34.
- 51.** P. Exner: *Necklaces with interacting beads: isoperimetric problems*, Proceedings of the “International Conference on Differential Equations and Mathematical Physics” (Birmingham 2006), AMS “Contemporary Math” Series, vol. 412, Providence, R.I., 2006; pp. 141–149.
52. P. Exner, P. Hejčák, P. Šeba: *Approximations by graphs and emergence of global structures*, Proceedings of the 2nd Workshop on Quantum Chaos and Localization Phenomena (Warsaw 2005), Acta Phys. Polonica **A109** (2005), 23–31.
- 53.** P. Exner, O. Turek: *Approximations of permutation-symmetric vertex couplings in quantum graphs*, Proceedings of the Conference “Quantum Graphs and Their Applications” (Snowbird 2005); AMS “Contemporary Math” Series, vol. 415, pp. 109–120.
54. P. Exner: *Unstable system dynamics: do we understand it fully?*, Proceedings of the 21th Max Born Symposium on Theoretical Physics (Wrocław 2006) – see the the review paper [7]
- 55.** P. Exner, J. Lipovský: *Equivalence of resolvent and scattering resonances on quantum graphs*, in “Adventures in Mathematical Physics” (Cergy-Pontoise 2006; F. Germinet, P.D. Hislop, eds.); AMS “Contemporary Math” Series, vol. 447, pp. 73–81.
- 56.** P. Exner, O. Post: *Quantum networks modelled by graphs*, Proceedings of the Joint Physics/Mathematics Workshop on “Few-Body Quantum System” (Aarhus 2007), AIP Conf. Proc., vol. 998; Melville, NY, 2008, pp. 1–17.
57. P. Exner: *Leaky quantum graphs: a review*, Proceedings of the Isaac Newton Institute programme “Analysis on Graphs and Applications” (Cambridge 2007) – see the the review paper [8]
- 58.** P. Exner, M. Fraas: *Interlaced dense point and absolutely continuous spectra for Hamiltonians with concentric-shell singular interactions*, Proceedings of the QMath10 Conference (Moeciu 2007; I. Beltita, G. Nenciu, R. Purice, eds.), World Scientific, Singapore 2008; pp. 48–65.
59. P. Exner: *Vertex couplings in quantum graphs: approximations by scaled Schrödinger operators*, Proceedings of the ICM Satellite Conference “Mathematics in Science and Technology” (New Delhi 2010; A.H. Siddiqi, R.C. Singh, P. Manchanda, eds.), World Scientific, Singapore 2011, pp. 71–92.

60. P. Exner: *Solvable models of resonances and decays*, Proceedings of the Conference “Mathematical Physics, Spectral Theory and Stochastic Analysis” (Goslar 2011; M. Demuth, W. Kirsch, eds.) – see the the review paper [9]
- 61.** P. Exner: *Momentum operators on graphs*, in “Spectral Analysis, Differential Equations and Mathematical Physics: A Festschrift in Honor of Fritz Gesztesy’s 60th Birthday” (H. Holden, B. Simon, G. Teschl, eds.), Proc. Symp. Pure Math., vol. 87, AMS, Providence, R.I.; pp. 105–118.
62. P. Exner, D. Barseghyan: *Spectral analysis of Schrödinger operators with unusual semiclassical behavior*, Acta Polytechnica **53** (2013), 271–279.
63. J. Behrndt, P. Exner, V. Lotoreichik: *Essential spectrum of Schrödinger operators with δ -interactions on the union of compact Lipschitz hypersurfaces*, Proc. Appl. Math. Mech. (2013), 523–524.
64. P. Exner: *Resonances in quantum networks and their generalizations*, in “Non-linear Phenomena in Complex Systems: From Nano to Macro Scale”, Proceedings of the NATO Advanced Research Workshop “New Challenges in Complex System Physics: Disaster Forecasting, Crisis Modeling and Sustainable Development” (Samarkand 2013), Springer 2014; pp. 159–178.
65. P. Exner: *A regular analogue of Smilansky model*, Proc. Appl. Math. Mech. (2014), 985–986.
- 66.** P. Exner: *On the spectrum of leaky surfaces with a potential bias*, Festschrift in Honor of Helge Holden’s 60th Birthday”, to appear
- 67.** P. Exner, V. Lotoreichik: *Optimization of the lowest eigenvalue for leaky star graphs*, submitted to Proceedings of the conference “Mathematical Results in Quantum Physics” (QMath13, Atlanta 2016)

h) theses and other unpublished works:

1. P. Exner: *Inelastic ep scattering with production of the Δ_{33} resonance* (in Czech), 64p.; Charles University, Prague 1969.
2. P. Exner: *Description of unstable systems and the problem of repeated measurements* (in Czech), 75p.; Charles University, Prague 1974.
3. P. Exner: *Unstable quantum systems* (in Czech), 126p.; Charles University, Prague 1977.
4. P. Exner: *Unstable quantum systems and Feynman integrals* (in Russian), 146p.; JINR, Dubna 1982.
5. P. Exner: *Quantum systems with a reducible state space* (in Russian), 215p.; JINR, Dubna 1989.
6. P. Exner: *Bound states in quantum waveguides* (in Czech), 83p.; Dubna 1990.

i) conference talks and minicourses:

Here I list mostly invited talks at conferences and workshops, together with several

invited minicourses and contributed talks at the ICMPs. Other conference addresses, as well as colloquia and seminar talks given at different places, even if they were typically invited, are not included.

1. *Quantum waveguides modelled by graphs*, at the “24th Winter School on Stochastic Methods in Mathematics and Physics” (Karpacz, February 11–23, 1988 – see the proceedings contribution [20])
2. *Bound states in classical and quantum waveguides*, at the conference “Partial Differential Equations” (Holzhau, April 23–28, 1988 – see the proceedings contribution [21])
3. *Bound states and resonances in quantum wires*, at the summer school “Recent Developments in Quantum Mechanics” (Poiana Brasov, August 27 – September 12, 1989 – see the proceedings contribution [24])
4. *Geometrically induced spectral properties: example of quantum waveguides*, at the conference “Stochastic Processes, Physics, and Geometry” (Locarno, June 24–29, 1991 – see the proceedings contribution [29])
5. *A solvable model of two-channel scattering*, a contributed talk at the Xth International Congress of Math. Physics (Leipzig, July 29–August 8, 1991)
6. *Spectral and resonance properties of Dirichlet tubes*, at the “Operator Theory School” (Nizhni Novgorod, September 13–19, 1991)
7. *Contact interaction models of decays and resonances*, at the workshop “Contact Interactions” (Trieste, December 20–22, 1992)
8. *Resonance coupling of one-dimensional Schrödinger operators*, at the workshop “Schrödinger operators” (Vienna, December 8–12, 1993)
9. *Irregular spectra of point interaction systems*, at the conference “Chaos, Time and Resonance” (Les Treilles, June 18–July 3, 1994)
10. *Wannier–ladder slopes and hills have no absolutely continuous spectrum*, a contributed talk at the XIth International Congress of Mathematical Physics (Paris, July 18–23, 1994)
11. *Resonances in quantum wires*, at the conference “Nonlinear, Dissipative, Irreversible Quantum Systems — Foundations, Examples and Experiments” (Clausthal, August 15–19, 1994)
12. *Wannier–Stark systems with singular interactions*, at the workshop “Point Interactions” (Trieste, September 29 – October 1, 1994 – see the proceedings contribution [31])
13. *Irregular spectra of rectangular superlattices*, at the conference “Disordered Systems, Random Matrices, and Quantum Chaos” (Bad Honnef, May 14–17, 1995)
14. *Wannier–Stark systems with singular interactions*, at the conference “Schrödinger operators” (Oberwolfach, May 10–14, 1995)
15. *Band spectra of rectangular superlattices*, at the workshop “Transport Theory and Chaos” (Vienna, August 13–27, 1995)

16. *Discrete and continuous Schrödinger operators on graphs*, at the workshop “Discrete Geometry” (Vienna, October 23–27, 1995)
17. *Laterally coupled waveguides*, at the conference “Partial Differential Equations and Mathematical Physics” (Atlanta, March 23–28, 1997 – see the proceedings contribution [35])
18. *Narrow window coupling of quantum waveguides*, at the conference “Functional Analysis in Quantum Physics” (Clausthal, June 16–20, 1997)
19. *Spectra of quantum mechanical superlattices*, at the conference “Frontiers in Quantum Physics” (Kuala Lumpur, July 8–11, 1997 – see the proceedings contribution [35])
20. *Spectral and scattering properties of quantum wires and dots with a lateral coupling or an inhomogeneous boundary*, a contributed talk at the XIIth International Congress of Mathematical Physics (Brisbane, July 13–19, 1997)
21. *Point interactions, small scatterers and probability current singularities*, at the “Workshop on Schrödinger Operators” (Bonn, September 21–25, 1998)
22. *Schrödinger operators on graphs*, at the conference “Problems in spectral geometry” (Okayama, February 4–6, 1999)
23. *Magneto-resonances in open quantum dots*, at the conference “Days on Diffraction 99” (Sankt Petersburg, June 1–3, 1999 – see the proc. paper [40])
24. *Wannier-Stark systems with singular interactions*, at the “13th Conference of Slovak and Czech Physicists” (Zvolen, August 23–28, 1999 – see the proceedings contribution [39])
25. *Magnetic transport along one-dimensional perturbations in the plane*, at the “Bogoliubov 90” conference (Moscow, Dubna, and Kiev, September 27 – October 7, 1999 – see the proceedings contribution [41])
26. *Discrete spectrum of curved Dirichlet tubes and layers*, at the “Workshop in Spectral Geometry” (Bristol, July 11–15, 2000)
27. *Bound states of Pauli operator with anomalous magnetic moment*, a contributed talk at the XIIIth International Congress of Mathematical Physics (London, July 17–22, 2000 – see the proceedings contribution [42])
28. *Magneto-resonances in quantum-waveguide resonators*, at the conference “Partial Differential Equations” (Clausthal, July 24–28, 2000)
29. *Leaky quantum wires*, at the conference “Spectral and Transport Properties of Random Network Models” (Göttingen, December 4–8, 2000)
30. *Magnetic quantum transport without a classical analog*, at the conference “Days on Diffraction 01” (Sankt Petersburg, May 29–31, 2001)
31. *Curvature-induced discrete spectrum of quantum layers*, at the conference “Geometry, Integrability, and Quantization” (Varna, June 14–23, 2001)
32. *Discrete spectra of leaky quantum wires*, at XV Max Born Symposium “Schrödinger Operators, (Random) Potentials and Singular Perturbations” (Wrocław, June 26–30, 2001)
33. *Wannier, Stark, and inverse Klauder*, at the conference “Operator Algebras and Mathematical Physics” (Constanta, July 2–7, 2001)

34. *Generalized Schrödinger operators of the graph type*, at the conference “Mathematical Analysis of Quantum Systems” (Dublin, September 19–22, 2001)
35. *Generalized Schrödinger operators of the graph type*, at the “International Conference on Differential Equations and Mathematical Physics” (Birmingham, Alabama, March 26–30, 2002)
36. *Two strongly singular point-interaction problems*, at the “Conference on Operator Theory and its Applications in Mathematical Physics” (Będlewo, Poland, May 11–17, 2002)
37. *Magnetic transport in presence of perturbations*, at the conference “Waves in Periodic and Random Media” (Mt. Holyoke, Mass., June 23–27, 2002 – see the proceedings contribution [43])
38. *Transport in two-dimensional magnetic systems*, at the workshop “Quantum Hamiltonians with magnetic fields” (Bucharest, September 8–14, 2002)
39. *Curvature induced discrete spectrum in Dirichlet layers*, at the conference “Mathematical Analysis of Quantum Systems II” (Dublin, September 18–21, 2002)
40. *Semiclassical behaviour of the discrete spectrum for Schrödinger operators with interaction supported by manifolds of a lower dimension*, at the Conference “Semiclassical Meeting” (Nantes, January 8–10, 2003)
41. *Schrödinger operators with a graph-type singular interaction*, at the conference “Operator Algebras and Mathematical Physics 2” (Sinaia, June 26–July 4, 2003)
42. *Resonance effects in leaky quantum wires*, at the workshop “Time Asymmetric Quantum Theory: the Theory of Resonances” (Lisbon, July 23–26, 2003)
43. *Schrödinger operators with graph-type interactions*, an invited talk in the session “Quantum Mechanics and Spectral Theory” at the XIVth International Congress of Mathematical Physics (Lisbon, July 28–August 1, 2003 – see the proceedings contribution [44])
44. *Resonance effects in leaky nanostructures*, at the conference “Mathematical Analysis of Quantum Systems III” (Dublin, October 2–4, 2003)
45. *von Neumann way to treat quantum systems of a mixed dimensionality*, at the “von Neumann Centennial Conference” (Budapest, October 15–20, 2003 – see the the review paper [6])
46. *Resonance effects for Schrödinger operators with infinitely extended singular perturbations*, at the conference “Differential Equations and Mathematical Physics”, in honor of Professor Kuroda 70th birthday (Tokyo, October 22–24, 2003)
47. *Spectral properties of Schrödinger operators with strongly attractive graph-type singular perturbations*, at the workshop “Spectral and Scattering Theory and Related Topics” (Kyoto, October 27–29, 2003 – see the proceedings contribution [46])
48. *Resonance effects in leaky nanostructures*, at the conference “Quantum Information 2003” (Tokyo, November 1–3, 2003)

49. *Resonance effects in transport through leaky graphs*, at the international workshop “Resonances – from Physics to Mathematics and back” (Dresden, January 26–30, 2004)
50. *Approximations of graphs vertices*, at the conference “Operator Theory and its Applications in Mathematical Physics” (OTAMP2004) (Będlewo Poland, July 6–11, 2004)
51. *Quantum waveguides: mathematical problems*, at the conference “Mathematical Results in Quantum Mechanics” (QMath9) (Presque’Ile de Giens, France, September 12–16, 2004 – see the proceedings contribution [48])
52. *On the meaning of quantum graph models*, at the conference “Mathematical Analysis of Quantum Systems IV” (Dublin, September 29–October 1, 2004)
53. *Approximations for and by quantum graph Hamiltonians*, at the conference “Quantum Graphs and Their Applications” (Snowbird, Utah, June 18–24, 2005 – see the proceedings contribution [53])
54. *Isoperimetric problems for δ interactions and mean-chord inequalities*, at the workshop “Spectral Properties of Schrödinger Operators” (Sankt Petersburg, June 30, 2005)
55. *Scattering and resonances in leaky quantum wires*, at the conference “Days on Diffraction 05” (Sankt Petersburg, June 28–July 1, 2005)
56. *Reflections on Zeno and anti-Zeno*, at the conference “Operator Semigroups, Evolution Equations and Spectral Theory in Mathematical Physics” (Marseille–Luminy, October 3–7, 2005)
57. *Inequalities for means of chords, with applications to isoperimetric problems*, at the conference “Dynamics of Complex Quantum Systems” (Rehovot & Haifa, December 18–22, 2005)
58. *Quantum graphs: local and global approximation*, at the workshop “Operators, Spectra, and Mathematical Physics” (Chemnitz, May 12, 2006)
59. *Spectra of Laplacians in twisted tubes*, at the conference “Spectral Theory of Differential Operators”, in honour of Professor Mikhail Solomyak (Rehovot, May 29 – June 1, 2006)
60. *Unstable system dynamics: do we understand it fully?*, at the XXI Max Born Symposium “Mathematical Problems in Nonrelativistic Quantum Dynamics” (Wrocław, June 16–28, 2006)
61. *There are many ways to decay*, at the “International Workshop on Analysis and Probability in Quantum Physics” (Santiago de Chile, July 25 – August 4, 2006)
62. *Approximation results for quantum graphs*, at the conference “Transport and Spectral Problems in Quantum Mechanics Physics”, in honor of Jean-Michel Combes (Cergy–Pontoise, September 3–6, 2006 – see the proceedings contribution [55])
63. *Quantum waveguides: localized modes in twisted tubes*, at the “Second Czech-Catalan Conference in Mathematics” (Barcelona, September 21–23, 2006)

64. *Lectures on quantum graphs, ideal, leaky, and generalized*, a series of three lectures in the “New Zealand Institute of Mathematics” (University of Auckland, November 3–8, 2006)
65. *Quantum graphs and their applications*, a two-lecture part of a minicourse given, together with P. Kuchment, at the LMS short course, a satellite meeting of the INI “Analysis on Graphs and its Applications” Programme (Gregynog Hall, Wales, January 14–15, 2007)
66. *Quantum networks modelled by graphs*, at the workshop “Quantum Few-Body System” (Aarhus University, March 19–20, 2007)
67. *Inequalities for means of chords and related isoperimetric problems*, at “6th Congress of Romanian Mathematicians” (Bucharest, June 28 – July 4, 2007)
68. *Scattering and resonances in leaky quantum-wire systems*, at “4th Workshop Mathematical Models for Transport in Macroscopic and Mesoscopic Systems” (Berlin, February 7–10, 2008)
69. *Isoperimetric problems solved using inequalities for means of chords*, at “LUMS 2nd International Conference on Mathematics and its Applications in Information Technology” (Lahore, March 10–12, 2008)
70. *On quantum particles which change dimension*, at “Mathematical Physics and Spectral Theory, a Workshop in Memory of Vladimir Geyler” (Berlin, April 24–26, 2008)
71. *Quantum graphs modelling networks*, at “8ème Journée Equations aux Dérivées Partielles” (Monastir, May 14, 2008)
72. *Squeezing of tube networks and coupling in vertices of quantum graphs*, at “Spring Symposium 2008 in Honor of Ruedi Seiler” (Berlin, June 6, 2008)
73. *Nontrivial coupling from squeezing of Dirichlet networks: a bent tube example*, at ESF Research Conference “Operator Theory, Analysis and Mathematical Physics” (Będlewo, Poland, June 15–22, 2008)
74. *Quantum graphs and their vertex couplings*, at XXVII International Colloquium on Group Theoretical Methods in Physics (Yerevan, Armenia, August 13–19, 2008)
75. *Lectures on quantum graph models*, a minicourse given at the Student Colloquium and School on Mathematical Physics (Stará Lesná, August 23–29, 2008)
76. *On the spectrum coming from “bending” a chain quantum graph*, at the conference “A Canonical Realization”, in honor of M. Havlíček’s 70th birthday (Villa Lanna, Prague, October 21, 2008)
77. *Approximation of nontrivial quantum graphs by Schrödinger operators on Neumann networks*, at the workshop “Mathematical Aspects of Transport in Mesoscopic Systems” (Dublin, December 4–7, 2008)
78. *Approximation of quantum graphs by Schrödinger operators on Neumann networks*, at the conference “Disorder Effects on Quantum Dynamics: Some Recent Results” – in honor of Michael Aizenman (Université Cergy–Pontoise, January 26–27, 2009)

79. *Approximations by Schrödinger operators on networks collapsing to graphs*, at the “Fifth Wales Analysis Workshop” (University of Cardiff, February 11, 2009)
80. *Approximations of graph vertex coupling by scaled Schrödinger operators on manifolds*, at the conference “Quantization day 2”, in honor of J. Tolar’s 70th birthday (Masarykova kolej, Prague, March 24, 2009)
81. *Quantum graphs with general vertex coupling: approximation by scaled Schrödinger operators on manifolds*, at the Bogoliubov centenary conference (JINR Dubna, August 21–28, 2009)
81. *Quantum graphs with general vertex coupling: approximation by scaled Schrödinger operators on manifolds*, at the conference “Probabilistic and Analytical Methods in Mathematical Physics”, (Tsaghkadzor, Armenia, September 7–14, 2009)
82. *On the meaning of quantum graph Hamiltonians: approximations by Schrödinger operators on manifolds*, at the conference “Spectral Problems and Related Topics” (Moscow State University, November 18–21, 2009)
83. *Schrödinger operators on network manifolds approximating quantum graphs*, at the conference “Spectral and Dynamical Properties of Quantum Hamiltonians”, a conference dedicated to Arne Jensens 60th birthday (EPFL Lausanne, February 22–26, 2010)
84. *Lectures on quantum graphs, standard, leaky, and generalized*, a minicourse given at Université de Monastir (June 8–11, 2010)
85. *Loops and trees: spectral properties of quantum graphs*, at the “2nd St. Petersburg Conference in Spectral Theory”, dedicated to the memory of M.Sh. Birman (Euler Institute, St. Petersburg, July 12–16, 2010)
86. *Quantum graphs: geometric perturbations, resonances, and Weyl asymptotics*, at the “Fifth International Conference on Operator Theory Analysis and Mathematical Physics” (Będlewo, August 5–12, 2010)
87. *Vertex coupling in quantum graphs: approximation by Schrödinger operators on manifolds*, at the conference “Mathematics in Science and Technology” (Delhi, August 15–17, 2010 – see the proceedings contribution [59])
88. *Geometric perturbations and unusual spectral behavior of quantum graphs*, at the symposium dedicated to Takashi Ichinose 70th birthday (Kanazawa University, September 17, 2010)
89. *On the physical contents of quantum graph models*, at “Perspectives in Physics: a JPhysA showcase meeting” (Chongqing University, October 18–22, 2010)
90. *Resonances in quantum graphs*, at “Quantum Dynamics: a conference in memory of Pierre Duclos (1948-2010)” (CIRM, Marseille, November 25–27, 2010)
91. *Spectra of periodic quantum graphs*, at the workshop “Mathematical Challenges of Quantum Transport in Nano-Optoelectronic Systems” (WIAS Berlin, February 4–5, 2011)

92. *Periodic quantum graphs and their local perturbations*, at the workshop “Spectral and Scattering Theory and Related Topics” (RIMS Kyoto, February 16–18, 2011)
93. *On approximations of vertex coupling of quantum graphs*, at the workshop “Analysis on Graphs in Sendai 2011” (Tohoku University, February 21, 2011)
94. *Resonances in quantum graphs and their high-energy behaviour*, at the conference “Operator Theory & Boundary Value Problems” (Université Paris-Sud Orsay, May 25–27, 2011)
95. *Quantum graphs and their generalizations*, a minicourse given at the summer school “Mathematical Theory of Quantum Networks” (Les Diablerets, June 6–10, 2011)
96. *Approximations of vertex couplings in quantum graph models*, at the minisymposium “Differential Operators on Graphs and their Applications” within the ICIAM Congress (Vancouver, July 18–22, 2011)
97. *New thoughts on an old topic: unstable system dynamics*, at the conference “Mathematical Physics, Spectral Theory and Stochastic Analysis” (Goslar, September 11–16, 2011)
98. *Resonances in quantum graphs and their semiclassical behaviour*, at the conference “Bogoliubov Readings” (Dubna, October 12–15, 2011)
99. *Properties of resonances in quantum graphs and their generalizations*, at the workshop “Quantum Transport Days” (CPT Luminy, November 14–15, 2011)
100. *Resonances in quantum graphs and their generalizations*, at the conference “Spectral Analysis of Non-selfadjoint Operators” (CIRM, Luminy, December 12–16, 2011)
101. *Geometric properties of point-interaction Hamiltonians ground state*, at the workshop “Boundary Value Problems and Spectral Geometry” (Oberwolfach, January 1–7, 2012)
102. *Resonances in quantum graphs, their behavior and generalizations*, at the workshop “Mathematical Approach to Emerging Topics in Material Science 2012” (Tohoku University, February 18, 2012)
103. *There is more in quantum mechanics*, at the WPI-AIMR Annual Workshop “Cutting-edge Functional Materials for Green Innovation” (Tohoku University, February 21–23, 2012)
104. *Resonances in quantum graphs, their generalizations and magnetic field effects*, at the Leverulme Conference “Dissipative Spectral Theory: Operator Theory, PDEs and Numerics” (Cardiff University, May 8–11, 2012)
105. *Geometric properties of the ground state for Hamiltonians with singular interactions*, at the conference “Operator Theory, Analysis and Mathematical Physics” (OTAMP2012) (Barcelona, June 11–14, 2012)
106. *Spectral estimates for Schrödinger operators with unusual semiclassical behaviour*, at the conference “Spectral Theory and Differential Operators” (Graz, August 27–31, 2012)

107. *Squeezing networks to graphs*, at the conference “Trails in Quantum Mechanics and Surroundings”, on the occasion of Gianfausto Del’Antonio’s 80th birthday (Frascati, January 29 – February 2, 2013)
108. *Control of vertex coupling in quantum graphs*, at the conference “Mathematical Challenge of Quantum Transport in Nanosystems” (Sankt Petersburg, March 12–15, 2013)
109. *Resonances in quantum networks*, at the NATO Advanced Research Workshop “New Challenges in Complex System Physics: Disaster Forecasting, Crisis Modeling and Sustainable Development” (Samarkand, May 20–24, 2013 – see the proceedings contribution [64])
110. *The intriguing δ'* , at the conference “Quantum Spectra and Transport” (AvronFest, Hebrew University of Jerusalem, June 30 – July 4, 2013)
111. *Resonances in quantum graphs*, at the conference “Equadiff 13” (Prague, August 26–30, 2013)
112. *Resonances in quantum graphs and their generalizations*, at a conference in honor of M. Havlíček’s 75th birthday (Villa Lanna, Prague, November 2, 2013)
113. *Strong coupling asymptotics in leaky graphs*, at the conference “Mathematical Technology of Networks – QGraphs 2013” (Bielefeld, December 4–7, 2013)
114. *Understanding quantum graph vertices through network approximations*, at the workshop “Analysis on Graphs and Applications” (Royal Holloway, January 9–10, 2014)
115. *A regular version of Smilansky model*, at the GAMM Jahrestagung, section “Applied Operator Theory” (Friedrich-Alexander Universität Erlangen, March 10–14, 2014)
116. *Spectral asymptotics of singular Schrödinger operators with strong attractive coupling*, at the workshop “Spectral Problems on Shrinking Domains” (Gregynog Hall, Wales, May 26–30, 2014)
117. *Narrowing channels, or Schrödinger operators mixing different dimensions*, at the conference “Mathematical Aspects of Solid State Physics, Quantum Transport and Spectral Analysis”, in honor of Gheorghe Nenciu’s 70th birthday (Bucharest, July 1–3, 2014)
118. *Spectral properties of Schrödinger operators with narrowing channels*, at the conference “Operator Theory, Analysis and Mathematical Physics” (Stockholm, July 7–11, 2014)
119. *Strong coupling asymptotics for singular Schrödinger operators and Robin billiards*, at the conference “Mathematical Challenge of Quantum Transport in Nanosystems” (Sankt Petersburg, September 23–26, 2013)
120. *Strong coupling in leaky graphs and Robin billiards*, at the workshop “Spectral Theory and Weyl Functions” (Oberwolfach, January 4–10, 2015)
121. *Strong coupling in models of leaky wires and Robin domains*, at the conference “Waveguides: Asymptotic Methods and Numerical Analysis” (Naples, May 21–23, 2015)

122. *Strongly singular Schrödinger operators: geometry, spectra, time evolution*, at the conference “Topics in Analysis and Mathematical Physics” (Aalborg, May 29–30, 2015)
123. *Approximating quantum graphs by Schrödinger operators on thin networks*, at “8th Congress of Romanian Mathematicians” (Iași, June 26 – July 1, 2015)
124. *Spectral transitions of Schrödinger operators with below unbounded potential*, at the “7th St. Petersburg Conference in Spectral Theory”, dedicated to the memory of M.Sh. Birman (Euler Institute, St. Petersburg, July 3–6, 2015)
125. *Schrödinger operators exhibiting spectral transition*, a contributed talk at the XVIIIth International Congress of Mathematical Physics (Santiago de Chile, July 27–August 1, 2015)
126. *Schrödinger operators exhibiting parameter-dependent spectral transitions*, at “The fourth Najman Conference on Spectral Problems for Operators and Matrices” (Opatija, September 20–25, 2015)
127. *Quantum systems exhibiting parameter-dependent spectral transitions*, at “Kochi Quantum Week” (Tosa Yamada, October 12–14, 2015)
128. *Quantum systems changing abruptly their spectral properties*, at the winter school “Mathematical Challenges in Quantum Mechanics” (Bressanone, February 8–13, 2016)
129. *Asymptotic expansions for singular Schrödinger operators*, at the Nordic Mathematical Congress session “Spectral Theory and Applications” (Stockholm, March 16–20, 2016)
130. *Singular Schrödinger operators and Robin billiards: geometry, spectra and asymptotic expansions*, at the conference “Operators, Operator Families and Asymptotics” (Bath, May 16–19, 2016)
131. *Asymptotic expansions for singular Schrödinger operators and Robin billiards*, at the DI-CRM Workshop of the occasion of the 80th birthdays of Jiří Patera and Pavel Winternitz (Prague, May 30 – June 3, 2016)
132. *A small step for the coupling constant but a giant leap for the spectrum*, at the conference “Analytic and Algebraic Methods in Physics XIII”, in honor of Miloslav Znojil 70th birthday (Prague, June 6–9, 2016)
133. *Schrödinger operators with singular interactions on hypersurfaces*, at the conference “Non-linear PDEs, mathematical physics, and stochastic analysis”, in honor of Helge Holden 60th birthday (Trondheim, July 4–7, 2016)
134. *Singular Schrödinger operators and Robin billiards: spectral properties and strong coupling expansions*, at the workshop “New Methods in Extension Theory applied to Quantum Mechanics” (Berlin, July 14–15, 2016)
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136. *Spectral properties of Schrödinger operators with singular interactions on hypersurfaces*, at the conference “Stochastic and Analytic Methods in Mathematical Physics” (Yerevan, September 4–11, 2016)

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141. *Leaky graphs and Robin billiards: some open problems*, at the workshop “Schrödinger Operators and Boundary Value Problems” (Graz, April 24–28, 2017)
142. *Some unusual spectra of periodic quantum graphs*, at the conference “Chaos, and what it can reveal”, in honor of Petr Šeba’s 60th birthday (Hradec Králové, May 9–11, 2017)
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 ad proc 36: the same title, mp_arc 99-32; math-ph/9901022.
 ad 93: the same title, mp_arc 99-56; math-ph/9903030.
 ad 94: the same title, mp_arc 99-124; cond-mat/9904379.
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9. P. Exner, J. Tolar: *A miniconference "Doppler 200"* (in Czech), Czech. J. Phys. **54** (2004), 106.
10. P. Exner: *Annus mirabilis*, Newsletter of the EMS **56** (June 2005), 3.
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13. P. Exner: *Prague meeting of the ERC Scientific Council* (in Czech), Akademický Bulletin, No. 7–8 (July 2007), 4–5.
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28. P. Exner: *ERC on its fifth birthday – and what next?*, Newsletter of the EMS **83** (March 2012), 11.
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3. E.B. Davies: *Quantum Theory of Open Systems*, Academic Press 1976; Czech. J. Phys. **A28** (1978), 647–648.
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5. B. Simon: *Fifteen problems in mathematical physics* (English to Czech, problems 1–4,9,10 + introductory remarks), Czech. J. Phys. **A37** (1987), 157–161, 284–286, **A38** (1988), 69–75.
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Some statistics

a) **Coauthors:** 296 coauthors in 230 research papers, which means the average 1.29 coauthor per paper

b) **Journals:** the 225 research papers, together with 6 reviews and 3 proceedings contributions published in journals are distributed as follows:

<i>Journal of Physics A: Mathematical and Theoretical</i>	47
<i>Journal of Mathematical Physics</i>	32
<i>Czechoslovak Journal of Physics</i>	29
<i>Physics Letters A</i>	23
<i>Letters in Mathematical Physics</i>	16
<i>Reports on Mathematical Physics</i>	10
<i>Reviews in Mathematical Physics</i>	7
<i>Annales Henri Poincaré</i>	6
<i>Annales d'Institut Henri Poincaré: Physique Théorique</i>	5
<i>Communications in Mathematical Physics</i>	5
<i>Integral Equations and Operator Theory</i>	4
<i>Physical Review Letters</i>	4
<i>Physical Review B</i>	4
<i>Annals of Physics</i>	3
<i>Journal of Geometry and Physics</i>	3
<i>Acta Physica Polonica A</i>	2
<i>Acta Universitatis Carolinæ</i>	2
<i>Elementary Particles and Atomic Nuclei</i>	2
<i>Helvetica Physica Acta</i>	2
<i>Journal of Physical Society of Japan</i>	2
<i>Nanosystems: Physics, Chemistry, Mathematics</i>	2
<i>Physical Review D</i>	2

and a single paper in each of the following:

Acta Polytechnica, Annalen der Physik, Asymptotic Analysis, Doklady RAN, Communications in PDE, Foundations of Physics, Integral Equations and Operator Theory, International Journal of Theoretical Physics, Journal de Mathématiques Pures et Appliquées, Journal of Mathematical Analysis and Applications, Journal of Mathematical Society of Japan, Journal of Spectral Theory, Journal of Statistical Physics, Mathematische Nachrichten, Nuclear Physics B, Physica A, Physica Scripta, Physical Review A, Proceedings of the Royal Society A, Russian Journal of Mathematical Physics, Ukrainian Journal of Physics, Waves in Random Media