

List of Publications.

S. Wugalter

1. **Vugalter, S. A.; Zhislin, G. M.** Finiteness of a discrete spectrum of many-particle Hamiltonians in symmetry spaces (coordinate and momentum representations). (Russian) *Teoret. Mat. Fiz.* **32** (1977), no. **1**, 70–87.
2. **Vugalter, S. A.; Zhislin, G. M.** The discrete spectrum of the n -particle quantum system energy operator. (Russian) *Dokl. Akad. Nauk SSSR* **240** (1978), no. **4**, 817–820.
3. **Vugalter, S. A.** The discrete spectrum of many-particle systems which have no stable subsystems. (Russian) *Funktsional. Anal. i Prilozhen.* **12** (1978), no. **3**, 74–75.
4. **Vugalter, S. A.; Zhislin, G. M.** The discrete spectrum of many-particle quantum systems which have no stable subsystems. II. (Russian) *Funktsional. Anal. i Prilozhen.* **14** (1980), no. **3**, 69–70.
5. **Vugalter, S. A.; Zhislin, G. M.** On the absence of the Efimov effect in spaces of functions of a given symmetry. (Russian) *Dokl. Akad. Nauk SSSR* **257** (1981), no. **2**, 324–326.
6. **Vugalter, S. A.; Zhislin, G. M.** The symmetry and Efimov's effect in systems of three-quantum particles. *Comm. Math. Phys.* **87** (1982/83), no. **1**, 89–103.
7. **Vugalter, S. A.; Zhislin, G. M.** On the discrete spectrum of Schrödinger operators of multiparticle systems with two-particle virtual levels. (Russian) *Dokl. Akad. Nauk SSSR* **267** (1982), no. **4**, 784–786.
8. **Vugalter, S. A.; Zhislin, G. M.** On the finiteness of the discrete spectrum of energy operators of many-atom molecules. (Russian) *Teoret. Mat. Fiz.* **55** (1983), no. **1**, 66–77.
9. **Vugalter, S. A.; Zhislin, G. M.** The discrete spectrum of the energy operator of one-dimensional and two-dimensional quantum three-particle systems. (Russian) *Teoret. Mat. Fiz.* **55** (1983), no. **2**, 269–281.
10. **Vugalter, S. A.; Zhislin, G. M.** On the finiteness of discrete spectrum in the n -particle problem. *Rep. Math. Phys.* **19** (1984), no. **1**, 39–90.
11. **Vugalter, S. A.; Zhislin, G. M.** The spectrum of the Schrödinger operators of multiparticle systems with short-range potentials. (Russian) *Trudy Moskov. Mat. Obshch.* **49** (1986), 95–112, 239.
12. **Vugalter, S. A.; Zhislin, G. M.** Stability of N -particle systems. (Russian) *Teoret. Mat. Fiz.* **76** (1988), no. **1**, 132–142; translation in *Theoret. and Math. Phys.* **76** (1988), no. **1**, 757–766.
13. **Vugalter, S. A.; Zhislin, G. M.** On the discrete spectrum of atoms and molecules. *Schrödinger operators, standard and nonstandard (Dubna, 1988)*, 28–40, World Sci. Publishing, Teaneck, NJ, 1989.

14. **Vugalter, S. A.; Zhislin, G. M.** Asymptotics of the discrete spectrum of Hamiltonians of quantum systems with a homogeneous magnetic field. Order, disorder and chaos in quantum systems (Dubna, 1989), 33–53, *Oper. Theory Adv. Appl.*, **46**, Birkhäuser, Basel, 1990.
15. **Vugalter, S. A.** On the stability of positive molecular ions. *Rigorous results in quantum dynamics (Liblice, 1990)*, 71–74, World Sci. Publishing, River Edge, NJ, 1991.
16. **Vugalter, S. A.** On the asymptotic behavior of the eigenvalues of many-particle Hamiltonians on spaces of functions of a given symmetry. (Russian) *Teoret. Mat. Fiz.* **83** (1990), no. **2**, 236–246; translation in *Theoret. and Math. Phys.* **83** (1990), no. **2**, 502–510.
17. **Vugalter, S. A.; Zhislin, G. M.** Exact asymptotics of the discrete spectrum of an n -particle Schrödinger operator in symmetry spaces. (Russian) *Dokl. Akad. Nauk SSSR* **312** (1990), no. **2**, 339–342; translation in *Soviet Phys. Dokl.* **35** (1990), no. **5**, 416–418.
18. **Vugalter, S. A.** Asymptotics of eigenvalues for many-particle Hamiltonians at symmetry subspaces. Order, disorder and chaos in quantum systems (Dubna, 1989), 55–59, *Oper. Theory Adv. Appl.*, **46**, Birkhäuser, Basel, 1990.
19. **Vugalter, S. A.; Zhislin, G. M.** On the discrete spectrum of Hamiltonians of multi-particle systems in a homogeneous magnetic field. (Russian) *Dokl. Akad. Nauk SSSR* **317** (1991), no. **6**, 1365–1369; translation in *Soviet Phys. Dokl.* **36** (1991), no. **4**, 299–300.
20. **Vugalter, S. A.; Zhislin, G. M.** “On the discrete spectrum of Hamiltonians of multi-particle systems in a homogeneous magnetic field” *Dokl. Akad. Nauk SSSR* **317** (1991), no. **6**, 1365–1369; (Russian) *Dokl. Akad. Nauk SSSR* **318** (1991), no. **5**, 1032.
21. **Vugalter, S. A.; Zhislin, G. M.** The discrete spectrum of given $SO(2)$ symmetry of multiparticle systems in a potential and a homogeneous magnetic field. (Russian) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* **197** (1992), Kraev. Zadachi Mat. Fiz. Smezh. Voprosy Teor. Funktsii. **23**, 28–41, 179.
22. **Vugalter, S. A.; Zhislin, G. M.** On the discrete spectrum of given symmetry of the Schrödinger operator of a system of n -particles in a homogeneous magnetic field. (Russian) *Funktsional. Anal. i Prilozhen.* **25** (1991), no. **4**, 83–86; translation in *Functional Anal. Appl.* **25** (1991), no. **4**, 299–301 (1992).
23. **Vugalter, S. A.; Zhislin, G. M.** On the spectrum of the Schrödinger operator of a system of three pairwise nonbinding particles in a homogeneous magnetic field. (Russian) *Dokl. Akad. Nauk SSSR* **322** (1992), no. **2**, 281–283; translation in *Soviet Phys. Dokl.* **37** (1992), no. **1**, 25–26.
24. **Vugalter, S. A.; Zhislin, G. M.** Asymptotics of the discrete spectrum of Hamiltonians of many-particle quantum systems in a homogeneous magnetic field. (Russian) *Algebra i Analiz* **3** (1991), no. **6**, 119–154 (1992); translation in *St. Petersburg Math. J.* **3** (1992), no. **6**, 1313–1349.

25. **Vugalter, S. A.; Zhislin, G. M.** On the finiteness of the discrete spectrum of Hamiltonians for quantum systems of three one- or two-dimensional particles. *Lett. Math. Phys.* **25** (1992), no. 4, 299–306.
26. **Vugalter, S. A.** The limit of stability of positive molecular ions in magnetic fields. (Russian) *Dokl. Akad. Nauk* **328** (1993), no. 5, 562–563; translation in *Phys. Dokl.* **38** (1993), no. 2, 60–61.
27. **Vugalter, S. A.** On the absence of the discrete spectrum of Schrödinger operators of positive molecular ions. (Russian) *Teoret. Mat. Fiz.* **93** (1992), no. 1, 94–106; translation in *Theoret. and Math. Phys.* **93** (1992), no. 1, 1142–1150 (1993).
28. **Vugalter, S. A.; Zhislin, G. M.** Spectral asymptotics of N -particle Schrödinger operators with a homogeneous magnetic field on subspaces with fixed $SO(2)$ symmetry. (Russian) *Algebra i Analiz* **5** (1993), no. 2, 108–125.
29. **Vugalter, S. A.; Zhislin, G. M.** On the asymptotics of the discrete spectrum of given symmetry of multiparticle Hamiltonians. (Russian) *Trudy Moskov. Mat. Obshch.* **54** (1992), 186–212; translation in *Trans. Moscow Math. Soc.* **1993**, 165–189.
30. **Vugalter, S. A.; Zhislin, G. M.** On the discrete spectrum of the negative hydrogen ion with a homogeneous magnetic field. *Lett. Math. Phys.* **27** (1993), no. 3, 163–177.
31. **Vugalter, S. A.** On the finiteness of the discrete spectrum of the Schrödinger operator of a system of three pairwise nonbinding particles in a homogeneous magnetic field. (Russian) *Funktsional. Anal. i Prilozhen.* **27** (1993), no. 2, 83–84; translation in *Functional Anal. Appl.* **27** (1993), no. 2, 144–145
32. **Vugalter, S. A.; Zhislin, G. M.** On the localization of the essential spectrum of energy operators for n -particle quantum systems in a magnetic field. (Russian) *Teoret. Mat. Fiz.* **97** (1993), no. 1, 94–112; translation in *Theoret. and Math. Phys.* **97** (1993), no. 1, 1171–1185 (1994).
33. **Vugalter, Semen A.; Zhislin, G. M.** Extremal properties of resonances for two-particle systems in a magnetic field. *Russian J. Math. Phys.* **3** (1995), no. 4, 501–516.
34. **Vugalter, S.** Limits on stability of positive molecular ions in a homogeneous magnetic field. *Comm. Math. Phys.* **180** (1996), no. 3, 709–731.
35. **Exner, P.; Vugalter, S. A.** Asymptotic estimates for bound states in quantum waveguides coupled laterally through a narrow window. *Ann. Inst. H. Poincaré, Phys. Theor.* **65** (1996), no. 1, 109–123.
36. **Vugalter, S.** Absence of the Efimov effect in a homogeneous magnetic field. *Lett. Math. Phys.* **37** (1996), no. 1, 79–94.
37. **Vugalter, S.; Zhislin G.M.** Stability of systems of a large number of particles in magnetic fields. (Russian) *Funktsional. Anal. i Prilozhen.* **30** (1996), no. 2, 70–73; translation in *Functional Anal. Appl.* **30** (1996), no. 2, 129–131.

38. **Exner, P.; Vugalter, S. A.** Bound states in a locally deformed waveguide: the critical case. *Lett. Math. Phys.* **39** (1997), no. **1**, 59–68.
39. **Lewis, R. T.; Siedentop, H.; Vugalter, S.** The essential spectrum of relativistic multi-particle operators. *Ann. Inst. H. Poincaré Phys. Théor.* **67** (1997), no. **1**, 1–28.
40. **Exner, P.; Vugalter, S. A.** Bound-state asymptotic estimates for window-coupled Dirichlet strips and layers. *J. Phys. A* **30** (1997), no. **22**, 7863–7878.
41. **Vugalter, S. A.; Zhislin, G. M.** Spectral properties of Hamiltonians with a magnetic field under fixation of pseudomomentum. I. (Russian) *Teoret. Mat. Fiz.* **113** (1997), no. **3**, 413–431; translation in *Theoret. and Math. Phys.* **113** (1997), no. **3**, 1543–1558 (1998)
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44. **Vugalter, S. A.** Discrete spectrum of a three-particle Schrödinger operator with a homogeneous magnetic field. *J. London Math. Soc.* (2) **58** (1998), no. **2**, 497–512.
45. **Exner, P.; Vugalter, S. A.** On the number of particles that a curved quantum waveguide can bind. *J. Math. Phys.* **40** (1999), no. **10**, 4630–4638.
46. **Vugalter, S. A.; Zhislin, G. M.** Spectral properties of a pseudorelativistic system of two particles with finite masses. (Russian) *Teoret. Mat. Fiz.* **121** (1999), no. **2**, 297–306; translation in *Theoret. and Math. Phys.* **121** (1999), no. **2**, 1506–1515 (1999)
47. **Vugalter, S. A.; Zhislin, G. M.** On the discrete spectrum of Hamiltonians of atoms in a homogeneous magnetic field. (Russian) *Funktsional. Anal. i Prilozhen.* **34** (2000), no. **1**, 80–83.
48. **Vugalter, S.; Weidl T.** On The Discrete Spectrum of a Pseudo-Relativistic Two-Body Pair Operator. *Ann. Henry Poincaré*, **4**, (2003).
49. **Hainzl, Ch.; Vougalter, V.; Vugalter, S.** Enhanced Binding in non-relativistic QED. *Comm. Math. Phys.*, **233**, 13–26, (2003).
50. **Chen, Th.; Vougalter, V.; Vugalter, S.** The Increase of Binding Energy and Enhanced Binding in Non-Relativistic QED. *Journal of Mathematical Physics*, vol. **44**, **5**, (2003).
51. **Barbaroux J.-M.; Chen, Th.; Vugalter, S.** Binding conditions for atomic N-electron systems in non-relativistic QED. *Annales Henri Poincaré*, vol. **4**, **6**, 1101 – 1136, (2003).
52. **Benguria R; Vugalter, S.** Binding Threshold for the Pauli-Fierz Operator *Letters in Math. Phys.*, vol. **70**, **3**, 249-257, (2004).

53. **Vugalter, S.** Bound States of Atoms in a Homogeneous Magnetic Field. *Math.Nachr.*, vol. 278, **7-8**, 918-931, (2005).
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55. **Morozov, S.; Vugalter, S.** Stability of Atoms in the Brown-Ravenhall model. *Annales Henri Poincare*, vol. 7, **4**, 661-687, (2006).
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57. **Barbaroux, J.-M.; Chen, Th.; Vougalter, V.; Vugalter S.** The ground state energy of the translation invariant Pauli-Fierz model. *Proc. Amer. Math. Soc.*, vol.136, **3**, 1057-1064 (2008).
58. **Kovařík, H.; Vugalter, S.** Estimates on trapped modes in deformed quantum Layers. *Journal of Mathematical Anal. Appl.* vol.345, 566-572, (2008).
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60. **Barbaroux, J.-M.; Vugalter S.** Non-analyticity of the ground state energy of the Hamiltonian for Hydrogen atom in non-relativistic QED. *J. Phys. A. : Math. Theor.* vol. 43, 47404-47422, (2010).
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62. **Frank, R.; Morozov, S.; Vugalter, S.** Weakly coupled bound states of Pauli operators. *Calc. Var. Partial Diff. Equations* vol.40, **1-2**, 253-271 (2011).
63. **Barbaroux, J.-M.; Vugalter, S.** On the ground state energy of the translation invariant Pauli-Fierz model II. *Doc. Math.* vol.17, 401-415 (2012).
64. **Barbaroux, J.-M.; Vugalter, S.** Contribution of the spin-Zeeman term to the binding energy for hydrogen in non-relativistic QED. *Ann. Univ. Buchar. Math. Ser.* vol.4, **1**, 307-320 (2013).
65. **Barbaroux, J.-M.; Vugalter, S.** Quantative estimates on the hydrogen ground state energy in non-relativistic QED II, the spin case. *Rev. Math. Phys.* vol.26, **8**, 1450016-1450073 (2014).
66. **Exner, P.; Vugalter, S.** On the existence of bound states in asymmetric leaky wires. *J. Math. Phys.* vol.57, **2**, 022104-022119 (2016).

67. **Barbaroux, J.-M.; Vougalter, V.; Vugalter S.** Localization error estimate for the massless relativistic kinetic energy operator. *Math. Model. Nat. Phenom.* vol.11 , **2**, 3643 (2016).
68. **Barbaroux, J.-M.; Hundertmark, D.; Ried, T.; Vugalter, S.** Strong smoothing for the non-cutoff homogeneous Boltzmann equation for Maxwellian molecules with Debye-Yukawa type interaction. *Kinet. Relat. Models* vol.10, , **4**, 901924 (2017).
69. **Barbaroux, J.-M.; Hundertmark, D.; Ried, T.; Vugalter, S.** Gevrey smoothing for weak solutions of the fully nonlinear homogeneous Boltzmann and Kac equations without cutoff for Maxwellian molecules. *Arch. Ration. Mech. Anal.* vol.225 , **2**, 601661 (2017).