

# List of publications

## Evgeny Korotyaev

### Refereed Papers only

- [98] Korotyaev E. Hamiltonian and small action variables for dNLS on the circle, to be published in IMRN.
- [97] Korotyaev E. Sharp asymptotics of the quasimomentum, to be published in *Asymp. Anal.*
- [96] Korotyaev, E.; Schmidt, K. On the resonances and eigenvalues for a 1D half-crystal with localised impurity, *J. Reine Angew. Math.* 2012, Issue 670, 217-248.
- [95] Badanin, A.; Korotyaev, Spectral asymptotics for the third order operator with periodic coefficients, *J. Diff. Eq.*, 253 (2012), No 11, 3113-3146.
- [94] Isozaki, H. ; Korotyaev E. Inverse Problems, Trace Formulae for Discrete Schrödinger Operators, *Annales Henri Poincare*, 13(2012), No 4 , 751-788.
- [93] Badanin, A.; Korotyaev, Even order periodic operators on the real line, *IMRN*, 2012(2012), No 5, 1143-1194.
- [92] Iantchenko, A.; Korotyaev, E. Resonances for periodic Jacobi operators with finitely supported perturbations, *Journal of Mathematical Analysis and Applications*, 388( 2012), No 2, 1239–1253.
- [91] Iantchenko, A.; Korotyaev, E. Periodic Jacobi operator with finitely supported perturbations: the inverse resonance problem, *J. Diff. Eq.* 252(2012), No 3, 2823–2844.
- [90] Isozaki, H.; Korotyaev, E. Trace formulas for Schrödinger operators, from the view point of complex analysis, *Proceeding of RIMS Symposium Febr. 16-18, 2011 (Kyoto, Japan), 2011*, p. 16-32.
- [89] Iantchenko, A.; Korotyaev, E. Periodic Jacobi operator with finitely supported perturbation on the half-lattice, *Inverse Problems*, 27(2011), No 11, 26 pp.
- [88] E. Korotyaev, Inverse resonance scattering for Jacobi operators, *Rus. J. Math. Phys.* 18(2011), No. 4, pp. 427-439.
- [87] Korotyaev, E. Resonance theory for perturbed Hill operator, *Asymp. Anal.* 74(2011), No 3-4, 199–227.
- [86] Korotyaev, E. Estimates for solutions of KDV on the phase space of periodic distributions in terms of action variables, *Discrete Contin. Dyn. Syst.* 30(2011), no. 1, 219-225.
- [85] Korotyaev, E.; Kargaev, P., Estimates for periodic Zakharov-Shabat operators, *J. Diff. Eq.* 249(2010), 76-93.
- [84] Korotyaev, E.; Kutsenko, A., Zigzag nanoribbons in external electric and magnetic fields. *Int. J. Comput. Sci. Math.* 3 (2010), no. 1-2, 168-191.
- [83] Badanin, A.; Korotyaev, E. . A magnetic Schrödinger operator on a periodic graph. *Mat. Sb.* 201 (2010), no. 10, 3–46.
- [82] Badanin, A.; Korotyaev, E. Spectral estimates for a periodic fourth-order operator. *St. Petersburg Math. J.* 22 (2011) 703–736.
- [81] Iantchenko, A.; Korotyaev, E. Schrödinger operator on the zigzag half-nanotube in magnetic field. *Math. Model. Nat. Phenom.* 5(2010), No. 4, 175–197.
- [80] Korotyaev, E.; Kutsenko, A. Zigzag nanoribbons in external electric Fields, *Asympt. Anal.* 66(2010), no 3-4, 187–206.
- [79] Korotyaev, E.; Kutsenko, A., Zigzag and armchair nanotubes in external fields, "Differential Equations: Advances in Mathematics Research, Volume 10 (2010) Nova Science Publishers, Inc.
- [78] Korotyaev, E. Conformal spectral theory for the monodromy matrix, *Trans. Amer. Math. Soc.* 362 (2010), 3435–3462.
- [77] Chelkak, D.; Korotyaev, E. Weyl-Titchmarsh functions of vector-valued Sturm-Liouville operators on the unit interval, *Jour. Func. Anal.*, 257 (2009), 1546-1588.
- [76] Korotyaev, E.; Kutsenko, A., Borg-type uniqueness Theorems for periodic Jacobi operators with matrix-valued coefficients, *Proc. Amer. Math. Soc.* 137 (2009), No 6, 1989–1996.
- [75] Chelkak, D.; Korotyaev, E. The inverse Sturm-Liouville problem with mixed boundary conditions, *St. Petersburg Math. Journal.* 21(2009), no 5, 114-137.

- [74] Korotyaev, E. Remark on estimate of a potential in terms of eigenvalues of the Sturm-Liouville operator, *Modern Physics Letters B.*, 22(2008), No. 23, 2177–2180.
- [73] Korotyaev, E. Spectral estimates for matrix-valued periodic Dirac operators, *Asymptotic Analysis*, 59(2008), no. 3-4, 195–225.
- [72] Korotyaev, E. A priori estimates for the Hill and Dirac operators, *Russ. J. Math. Phys.*, 15(2008), No. 3, pp. 320–331.
- [71] Korotyaev, E.; Kutsenko, A. Lyapunov functions of periodic matrix-valued Jacobi operators, *Spectral theory of differential operators*, 117–131, *Amer. Math. Soc. Transl. Ser. 2*, 225, Amer. Math. Soc., Providence, RI, 2008.
- [70] Korotyaev, E. Effective masses for zigzag nanotubes in magnetic fields, *Lett. Math. Phys.*, 83 (2008), No 1, 83–95.
- [69] Korotyaev, E.; Kutsenko, A. Marchenko-Ostrovski mappings for periodic Jacobi matrices, *Russ. J. Math. Phys.* 14(2007), no 4, 448–452.
- [68] Korotyaev, E.; Lobanov, I., *Schrodinger Operators on Zigzag Nanotubes*, *Annales Henri Poincare*, 8(2007), no.6, 1151–1176.
- [67] Chelkak, D.; Korotyaev, E. The inverse problem for perturbed harmonic oscillator on the half-line with Dirichlet boundary conditions, *Annales Henri Poincare*, 8(2007), no.6, 1115–1150.
- [66] Chelkak, D.; Korotyaev, E. Parametrization of the isospectral set for the vector-valued Sturm-Liouville problem, *J. Funct. Anal.*, 241(2006), 359–373.
- [65] Korotyaev, E. Gap-length mapping for periodic Jacobi matrices, *Russ. J. Math. Phys.* 13(2006), no.1, 64–69.
- [64] Chelkak, D.; Korotyaev, E. Spectral estimates for Schrodinger operators with periodic matrix potentials on the real line. *Int. Math. Res. Not.* 2006, Art. ID 60314, 41 pp.
- [63] Korotyaev, E. Estimates for the Hill operator. II. *J. Differential Equations* 223 (2006), no. 2, 229–260.
- [62] Badanin, A.; Bruning, J.; Korotyaev, E. The Lyapunov function for Schrodinger operators with a periodic 2x2 matrix potential. *J. Funct. Anal.* 234 (2006), no. 1, 106–126.
- [61] Korotyaev, E.; Kutsenko, A. Inverse problem for the discrete 1D Schrödinger operator with small periodic potentials. *Comm. Math. Phys.* 261 (2006), no. 3, 673–692.
- [60] Klein, M.; Korotyaev, E.; Pokrovski, A. Spectral asymptotics of the harmonic oscillator perturbed by bounded potentials. *Ann. Henri Poincaré* 6(2005), no. 4, 747–789.
- [59] Badanin, A.; Korotyaev, E. Spectral asymptotics for periodic fourth-order operators. *Int. Math. Res. Not.* 2005, no. 45, 2775–2814.
- [58] Korotyaev, E. Schrödinger operator with a junction of two 1-dimensional periodic potentials. *Asymptot. Anal.* 45 (2005), no. 1-2, 73–97.
- [57] Korotyaev, E. Inverse problem and estimates for periodic Zakharov-Shabat systems. *J. Reine Angew. Math.* 583 (2005), 87–115.
- [56] Korotyaev, E. Inverse resonance scattering on the real line. *Inverse Problems* 21 (2005), no. 1, 325–341.
- [55] Kargaev, P.; Korotyaev, E. Identities for the Dirichlet integral of subharmonic functions from the Cartright class. *Complex Var. Theory Appl.* 50 (2005), no. 1, 35–50.
- [54] Korotyaev, E.; Kutsenko, A. An inverse problem for the discrete periodic Schrödinger operator. (Russian) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* 315 (2004), Issled. po Linein. Oper. i Teor. Funkts. 32, 96–101, 157
- [53] Korotyaev, E. Stability for inverse resonance problem. *Int. Math. Res. Not.* 2004, no. 73, 3927–3936.
- [52] Korotyaev, E. Inverse spectral problem for the periodic Camassa-Holm equation. *J. Nonlinear Math. Phys.* 11 (2004), no. 4, 499–507.
- [51] Korotyaev, E.; Pushnitski, A. A trace formula and high-energy spectral asymptotics for the perturbed Landau Hamiltonian. *J. Funct. Anal.* 217 (2004), no. 1, 221–248.
- [50] Chelkak, D.; Kargaev, P.; Korotyaev, E. Inverse problem for harmonic oscillator perturbed by potential, characterization. *Comm. Math. Phys.* 249 (2004), no. 1, 133–196.
- [49] Chelkak, D.; Kargaev, P.; Korotyaev, E. Inverse problem for harmonic oscillator perturbed by potential. *Inverse problems and spectral theory*, 93–102, *Contemp. Math.*, 348, Amer. Math. Soc., Providence, RI, 2004.

- [48] Korotyaev, E. Inverse resonance scattering on the half line. *Asymptot. Anal.* 37 (2004), no. 3-4, 215–226.
- [47] Badanin, A.; Klein, M.; Korotyaev, E. The Marchenko-Ostrovski mapping and the trace formula for the Camassa-Holm equation. *J. Funct. Anal.* 203 (2003), no. 2, 494–518.
- [46] Korotyaev, E.; Pushnitski, A. On the high-energy asymptotics of the integrated density of states. *Bull. London Math. Soc.* 35 (2003), no. 6, 770–776.
- [45] Chelkak, Dmitri; Kargaev, Pavel; Korotyaev, Evgeni An inverse problem for an harmonic oscillator perturbed by potential: uniqueness. *Lett. Math. Phys.* 64 (2003), no. 1, 7–21.
- [44] Korotyaev, E. Characterization of the spectrum of Schrödinger operators with periodic distributions. *Int. Math. Res. Not.* 2003, no. 37, 2019–2031.
- [43] Korotyaev, E.; Pushnitski, A. Trace formulae and high energy asymptotics for the Stark operator. *Comm. Partial Differential Equations* 28 (2003), no. 3-4, 817–842.
- [42] Korotyaev, E.; Krasovsky, I. V. Spectral estimates for periodic Jacobi matrices. *Comm. Math. Phys.* 234 (2003), no. 3, 517–532.
- [41] Korotyaev, E. Periodic "weighted" operators. *J. Differential Equations* 189 (2003), no. 2, 461–486.
- [40] Korotyaev, E. Invariance principle for inverse problems. *Int. Math. Res. Not.* 2002, no. 38, 2007–2020.
- [39] Korotyaev, E. Marchenko-Ostrovski mapping for periodic Zakharov-Shabat systems. *J. Differential Equations* 175 (2001), no. 2, 244–274.
- [38] Klein, M.; Korotyaev, E. Parametrization of periodic weighted operators in terms of gap lengths. *Inverse Problems* 16 (2000), no. 6, 1839–1860.
- [37] Korotyaev, E. Lattice dislocations in a 1-dimensional model. *Comm. Math. Phys.* 213 (2000), no. 2, 471–489.
- [36] Korotyaev, E. Estimates for the Hill operator. I. *J. Differential Equations* 162 (2000), no. 1, 1–26.
- [35] Korotyaev, E. Inverse problem for periodic "weighted" operators. *J. Funct. Anal.* 170 (2000), no. 1, 188–218.
- [34] Korotyaev, E. Correction to: "The inverse problem for the Hill operator. I" [*Internat. Math. Res. Notices* 1997, no. 3, 113–125] *Internat. Math. Res. Notices* 1999, no. 22, 1253.
- [33] Kargaev, P.; Korotyaev, E. Erratum: "The inverse problem for the Hill operator, a direct approach" [*Invent. Math.* 129 (1997), no. 3, 567–593], *Invent. Math.* 138 (1999), no. 1, 227.
- [32] Korotyaev, E. L. Inverse problems for the Hill and Dirac operators. (Russian) *Dokl. Akad. Nauk* 365 (1999), no. 6, 730–733.
- [31] Korotyaev, E. Inverse problem and the trace formula for the Hill operator. II. *Math. Z.* 231 (1999), no. 2, 345–368.
- [30] Korotyaev, Evgeni Estimates of periodic potentials in terms of gap lengths. *Comm. Math. Phys.* 197 (1998), no. 3, 521–526.
- [29] Korotyaev, E. L. Uniform estimates for the Hill operator. (Russian) *Dokl. Akad. Nauk* 356 (1997), no. 6, 740–743.
- [28] Korotyaev, E. L. Estimates for the periodic potential in terms of effective masses. (Russian) *Dokl. Akad. Nauk* 356 (1997), no. 5, 588–591.
- [27] Korotyaev, Evgeni The propagation of the waves in periodic media at large time. *Asymptot. Anal.* 15 (1997), no. 1, 1–24.
- [26] Kargaev, Pavel; Korotyaev, Evgeni The inverse problem for the Hill operator, a direct approach. *Invent. Math.* 129 (1997), no. 3, 567–593.
- [25] Korotyaev, E. The estimates of periodic potentials in terms of effective masses. *Comm. Math. Phys.* 183 (1997), no. 2, 383–400.
- [24] Korotyaev, Evgeni The inverse problem for the Hill operator. I. *Internat. Math. Res. Notices* 1997, no. 3, 113–125.
- [23] Kargaev, P. P.; Korotyaev, E. L. Inverse problems for the Hill operator, the direct approach. (Russian) *Dokl. Akad. Nauk* 351 (1996), no. 2, 158–160.
- [22] Korotyaev, Evgeni Metric properties of conformal mappings on the complex plane with parallel slits. *Internat. Math. Res. Notices* 1996, no. 10, 493–503.

- [21] Korotyaev, E. L.; Pushnitski, A. B. Scattering by an anisotropic potential in a constant electric field. (Russian) *Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI)* 230 (1995), *Mat. Vopr. Teor. Rasprostr. Voln.* 25, 103–114, 295–296
- [20] Kargaev, P.; Korotyaev, E. Effective masses and conformal mappings. *Comm. Math. Phys.* 169 (1995), no. 3, 597–625.
- [19] Korotyaev, E. L.; Firsova, N. E. Diffusion in layered media for large time values. (Russian) *Teoret. Mat. Fiz.* 98 (1994), no. 1, 106–148.
- [18] Kargaev, P. P.; Korotyaev, E. L. Effective masses for the Hill operator, and conformal mappings. (Russian) *Dokl. Akad. Nauk* 336 (1994), no. 3, 312–315.
- [17] Korotyaev, E. L. Wave propagation in a one-dimensional periodic medium. (Russian) *Dokl. Akad. Nauk* 336 (1994), no. 2, 171–174.
- [16] Korotyaev, E. L. The Enss method taking into account anisotropy. (Russian) *Dokl. Akad. Nauk* 324 (1992), no. 5, 923–927.
- [15] Korotyaev, E. L. Some properties of the quasimomentum of the one-dimensional Hill operator. (Russian) *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 195 (1991), *Mat. Vopr. Teor. Rasprostr. Voln.* 21, 48–57.
- [14] Korotyaev, E. L. The dynamical Stark effect in a system of three particles. (Russian) *Teoret. Mat. Fiz.* 79 (1989), no. 1, 102–116.
- [13] Korotyaev, E. L. On scattering in an exterior homogeneous and time-periodic magnetic field. (Russian) *Mat. Sb.* 180 (1989), no. 4, 491–512.
- [12] Korotyaev, E. L. On resonance scattering in a pair of spaces. (Russian) *Teoret. Mat. Fiz.* 70 (1987), no. 3, 432–442.
- [11] Korotyaev, E. L. On the theory of multiparticle scattering in an external electric field. (Russian) *Mat. Sb. (N.S.)* 132(174) (1987), no. 2, 182–201.
- [10] Korotyaev, E. L. Scattering of many particles in an external electric field. (Russian) *Dokl. Akad. Nauk SSSR* 284 (1985), no. 1, 107–110.
- [9] Korotyaev, E. L. Factorization of a three-particle  $S$ -matrix at high energies. (Russian) *Teoret. Mat. Fiz.* 63 (1985), no. 3, 388–393.
- [8] Korotyaev, E. L. Scattering theory for three-particle systems with time-periodic pair interactions. (Russian) *Teoret. Mat. Fiz.* 62 (1985), no. 2, 242–252.
- [7] Korotyaev, E. L. Eigenfunctions of the monodromy operator of the Schrodinger operator with a potential that is periodic with respect to time. (Russian) *Mat. Sb. (N.S.)* 124(166) (1984), no. 3, 431–446.
- [6] Korotyaev, E. L. Scattering theory for three particles with pair potentials that are periodic in time. (Russian) *Dokl. Akad. Nauk SSSR* 255 (1980), no. 4, 836–839.
- [5] Korotjaev, E. L. On the spectrum of the monodromy operator of the Schrodinger operator with a potential which is periodic with respect to time. (Russian) *Boundary value problems of mathematical physics and related questions in the theory of functions*, 12. *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 96 (1980), 101–104.
- [4] Korotjaev, E. L. The scattering problem for a slowly decreasing potential that is periodically dependent on time. (Russian) *Boundary value problems of mathematical physics and related questions in the theory of functions*, 11. *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 84 (1979), 114–116.
- [3] Deich, V. G.; Korotjaev, E. L.; Jafaev, D. R. The theory of potential scattering with account taken of spatial anisotropy. (Russian) *Investigations on linear operators and the theory of functions*, VIII. *Zap. Nauchn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 73 (1977), 35–51.
- [2] Deich, V. G.; Korotjaev, E. L.; Jafaev, D. R. Potential scattering with allowance for spatial anisotropy. (Russian) *Dokl. Akad. Nauk SSSR* 235 (1977), no. 4, 749–752.
- [1] Korotjaev, E. L.; Jafaev, D. R. Traces on surfaces in function classes with dominating mixed derivatives. (Russian) *Boundary value problems of mathematical physics and related questions in the theory of functions*, 10. *Zap. Naučn. Sem. Leningrad. Otdel. Mat. Inst. Steklov. (LOMI)* 69 (1977), 106–123.