

Victor Ivrii' Vita

Victor Ivrii

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1 General

- Date of birth October 1, 1949
- Place of birth Sovetsk, USSR (Russia)
- Citizenship: Canadian
- Martial status Married, 2 adult children, 2 grandchildren.
- Present address:
 - 8, Leona Drive
 - North York, Ontario M2N 4V4
 - Home Phone: (416)221-9244
 - e-mail: ivrii@math.toronto.edu
 - Official website: <https://www.mathematics.utoronto.ca/people/directories/all-faculty/victor-ivrii>
 - Personal website:
<http://www.math.toronto.edu/ivrii/>
- Present position:
 - Professor of Department of Mathematics,
 - Member of the School of Graduate Studies,

- University of Toronto (from July 1992)
- Administrative duties:
 - Served as Associate Chair (July 1994 - June 97)
 - Served in many Committees

2 Education and Degrees

- 1982 Doctor of Physical and Mathematical Sciences of Leningrad Department of Mathematical Institute; validated by VAK (Supreme Attestation Commission) in 09.1983 (Second Doctor Degree; corresponds to Habilitation in International standards).
- 1973 Candidate(=PhD degree in Western standards) of Physical and Mathematical Sciences of Novosibirsk State University; supervisor S. L. Sobolev (the Great Sobolev).
- 1970-1973 Graduate student of Mathematical Department of Novosibirsk State University; supervisor S. L. Sobolev.
- 1970 Diploma of Mathematical Department of Novosibirsk State University (University Diploma in Russia corresponds to M.S. in North America).
- 1965-1970 Undergraduate student of Mathematical Department of Novosibirsk State University (5 years); supervisor S.L.Sobolev.
- 1964-1965 Student at Physical Mathematical School at Novosibirsk State University.

3 Positions

- From: Jan. 1993 Member of the School of the Graduate Studies, University of Toronto.
- From July 1992 Professor of the Department of Mathematics, University of Toronto.

- Oct. 1990-June 1992 Professeur de Centre de Mathematiques, École Polytechnique, France.
- 1985 Professor' Certificate of VAK (In Russia Docent and Professor are not only positions but also Academician Ranks. Available only for persons with docent or professor positions, candidate or doctor degrees respectively, and with large teaching experience).
- 01.1984-09.1990 Professor of Department of Computer Science and Applied Mathematics of Magnitogorsk Mining and Metallurgical Institute.
- 1977 Docent' Certificate of VAK.
- 09.1983-01.1984 Docent of Department of Computer Science and Applied Mathematics of Magnitogorsk Mining and Metallurgical Institute.
- 06.1975-06.1983 Docent (=Associated Professor) of Department of Mathematics of Magnitogorsk Mining and Metallurgical Institute.
- 06.1973-06.1975 Lecturer (=Assistant Professor) of Department of Mathematics of Magnitogorsk Mining and Metallurgical Institute.

4 Visiting Positions (incomplete list)

- March - July 1999, Visiting Professor (Lady Davies Fellowship) at Department of Mathematics, Technion, Haifa, Israel.
- January 1999, Visiting Professor, Department of Mathematics, University Paris-Sud, Orsay, France.
- Aug. 1991, Visiting Professor, Department of Mathematics of Weizmann Institute of Science, Rehovot, Israel.
- July 1991, Visiting Professor of Department of Mathematics of Bologna University, Bologna, Italy.
- Jan. 1990 Visiting Professor of of Universite Paris-Sud, Orsay, France.

- Nov.-Dec. 1989 Visiting Professor Department of Mathematics of Universite Paris 7, Paris, France.

5 Scientific Activity

- My first paper (1969) was devoted to exponential decay of energy.
- Well-posedness of the Cauchy problem for non-strictly hyperbolic equations (mainly 1970–1975).
- Propagation of singularities (mainly 1976–1980).
- Spectral asymptotics with accurate remainder estimates. I (mainly 1980–1992).
- Multiparticle Quantum Theory (mainly 1993–1997).
- Spectral asymptotics with accurate remainder estimates. II (mainly 1999–2007).
- *Sharp Spectral Asymptotics for Operators with Irregular Coefficients*
- *Further Advances*
- *Back to the Smooth Theory*
- MonsterBook (2007–2019) I finished my MonsterBook (3378 pp):

6 List of Research Contributions

Research Monographs

- [1] Victor Ivrii. *Precise spectral asymptotics for elliptic operators acting in fiberings over manifolds with boundary*, volume 1100 of *Lecture Notes in Mathematics*. Springer-Verlag, Berlin, 1984.
- [2] Victor Ivrii. *Microlocal analysis and precise spectral asymptotics* Springer Monographs in Mathematics. Springer-Verlag, Berlin, 1998.

- [3] Victor Ivrii. *Microlocal Analysis, Sharp Spectral Asymptotics and Applications*. Springer Monographs in Mathematics. Springer-Verlag, Berlin, 2019.
- *Volume I. Semiclassical Microlocal Analysis and Local and Microlocal Semiclassical Asymptotics*
 - *Volume II. Functional Methods and Eigenvalue Asymptotics*
 - *Volume III. Magnetic Schrödinger Operator 1*
 - *Volume IV. Magnetic Schrödinger Operator 2*
 - *Volume V. Applications to Quantum Theory and Miscellaneous Problems*

Also: *Microlocal Analysis, Sharp Spectral Asymptotics and Applications*. 3378pp.

Research Papers

- [1] Mikhail Bronstein and Victor Ivrii. Sharp spectral asymptotics for operators with irregular coefficients. I. Pushing the limits. *Comm. Partial Differential Equations*, 28(1-2):83–102, 2003.
- [2] C. L. Fefferman, V. Ja. Ivrii, L. A. Seco, and I. M. Sigal. The energy asymptotics of large Coulomb systems. In *Schrödinger operators (Aarhus, 1991)*, volume 403 of *Lecture Notes in Phys.*, pages 79–99. Springer, Berlin, 1992.
- [3] V. Ivrii. On the number of negative eigenvalues of Schrödinger operators with singular potentials. In *Hyperbolic equations (Padua, 1985)*, volume 158 of *Pitman Res. Notes Math. Ser.*, pages 74–81. Longman Sci. Tech., Harlow, 1987.
- [4] V. Ivrii. Spectral asymptotics with highly accurate remainder estimates. In *Séminaire sur les Équations aux Dérivées Partielles, 1989–1990*, pages Exp. No. VI, 18. École Polytech., Palaiseau, 1990.
- [5] V. Ivrii. Non-Weylian spectral asymptotics with accurate remainder estimate. In *Séminaire sur les Équations aux Dérivées Partielles, 1990–1991*, pages Exp. No. V, 10. École Polytech., Palaiseau, 1991.

- [6] V. Ivrii. Semiclassical asymptotics for exchange energy. In *Séminaire sur les Équations aux Dérivées Partielles, 1993–1994*, pages Exp. No. XX, 12. École Polytech., Palaiseau, 1994.
- [7] V. Ivrii. Semiclassical spectral asymptotics and multiparticle quantum theory. In *Partial differential operators and mathematical physics (Holzhau, 1994)*, volume 78 of *Oper. Theory Adv. Appl.*, pages 199–212. Birkhäuser, Basel, 1995.
- [8] V. Ivrii. Heavy molecules in a strong magnetic field. III. Estimates for ionization energy and excessive charge. *Russ. J. Math. Phys.*, 6(1):56–85, 1999.
- [9] V. Ivrii. Sharp spectral asymptotics for the magnetic Schrödinger operator with irregular potential. *Russ. J. Math. Phys.*, 11(4):415–428, 2004.
- [10] V. Ivrii and S. Fedorova. Asymptotics of the eigenvalues of spectral problems with singularities. In *Differential equations and applications, I, II (Russian) (Ruse, 1985)*, pages 163–166. ‘Angel Kanchev’ Tech. Univ., Ruse, 1987.
- [11] V. Ivrii, E. Filippov, and A. Kachalkina. Precise spectral asymptotics. In *Integral equations and inverse problems (Varna, 1989)*, volume 235 of *Pitman Res. Notes Math. Ser.*, pages 146–153. Longman Sci. Tech., Harlow, 1991.
- [12] V. Ivrii and A. Kachalkina. Spectral asymptotics with highly accurate remainder estimates. In *Order, disorder and chaos in quantum systems (Dubna, 1989)*, volume 46 of *Oper. Theory Adv. Appl.*, pages 61–63. Birkhäuser, Basel, 1990.
- [13] V. Ja. Ivrii. Exponential decay of the solution of the wave equation outside an almost star-shaped region. *Dokl. Akad. Nauk SSSR*, 189:938–940, 1969.
- [14] V. Ja. Ivrii. The Cauchy problem for not strictly hyperbolic equations. *Dokl. Akad. Nauk SSSR*, 197:517–519, 1971.
- [15] V. Ja. Ivrii. The Cauchy problem for not strictly hyperbolic second order equations. *Dokl. Akad. Nauk SSSR*, 201:778–781, 1971.

- [16] V. Ja. Ivrii. Differential equations, with multiple characteristics, that have no solutions. *Dokl. Akad. Nauk SSSR*, 198:279–282, 1971.
- [17] V. Ja. Ivrii. The Cauchy problem for nonstrictly hyperbolic equations. *Dokl. Akad. Nauk SSSR*, 207:1032–1034, 1972.
- [18] V. Ja. Ivrii. The Cauchy problem for not strictly hyperbolic equations with smooth roots. *Dokl. Akad. Nauk SSSR*, 204:1303–1304, 1972.
- [19] V. Ja. Ivrii. Cauchy problems for non-strictly hyperbolic equations. In *Application of functional methods to the boundary value problems of mathematical physics (Proc. Third Soviet-Czechoslovak Conf., Novosibirsk, 1971) (Russian)*, pages 82–89. Inst. Mat. Akad. Nauk SSSR Sibirsk. Otdel. Novosibirsk, 1972.
- [20] V. Ja. Ivrii. A certain class of nonstrictly hyperbolic operators. *Differencial'nye Uravnenija*, 9:299–306, 395, 1973.
- [21] V. Ja. Ivrii. Conditions for correctness in Gevrey classes of the Cauchy problem for hyperbolic operators with characteristics of variable multiplicity. *Dokl. Akad. Nauk SSSR*, 221(6):1253–1255, 1975.
- [22] V. Ja. Ivrii. Conditions for correctness in Gevrey classes of the Cauchy problem for nonstrictly hyperbolic operators. *Dokl. Akad. Nauk SSSR*, 221(4):775–777, 1975.
- [23] V. Ja. Ivrii. Correctness in Gevrey classes of the Cauchy problem for not strictly hyperbolic operators. *Uspehi Mat. Nauk*, 30(5(185)):209–210, 1975.
- [24] V. Ja. Ivrii. Correctness in projective Gevrey classes of the Cauchy problem for nonstrictly hyperbolic operators. *Dokl. Akad. Nauk SSSR*, 222(1):26–28, 1975.
- [25] V. Ja. Ivrii. The energy integral for nonstrictly hyperbolic operators. *Uspehi Mat. Nauk*, 30(6 (186)):169–170, 1975.
- [26] V. Ja. Ivrii. Sufficient conditions for regular and completely regular hyperbolicity. *Trudy Moskov. Mat. Obšč.*, 33:3–65 (1976), 1975.

- [27] V. Ja. Ivrii. Well-posedness in Gevrey classes of the Cauchy problem for non-strict hyperbolic operators. *Mat. Sb. (N.S.)*, 96(138):390–413, 503, 1975.
- [28] V. Ja. Ivrii. Conditions for correctness in Gevrey classes of the Cauchy problem for hyperbolic operators with characteristics of variable multiplicity. *Sibirsk. Mat. Ž.*, 17(6):1256–1270, 1437. (loose errata), 1976.
- [29] V. Ja. Ivrii. Conditions for correctness in Gevrey classes of the Cauchy problem for not strictly hyperbolic operators. *Sibirsk. Mat. Ž.*, 17(3):547–563, 716, 1976.
- [30] V. Ja. Ivrii. Wave fronts of the solutions of certain hyperbolic equations, and conical refraction. *Dokl. Akad. Nauk SSSR*, 226(6):1257–1259, 1976.
- [31] V. Ja. Ivrii. Wave fronts of the solutions of certain hyperbolic pseudodifferential equations. *Dokl. Akad. Nauk SSSR*, 229(2):280–283, 1976.
- [32] V. Ja. Ivrii. Wave fronts of the solutions of certain microlocally hyperbolic pseudodifferential equations. *Dokl. Akad. Nauk SSSR*, 226(5):1009–1011, 1976.
- [33] V. Ja. Ivrii. Wave fronts of the solutions of certain pseudodifferential equations. *Funkcional. Anal. i Priložen.*, 10(2):71–72, 1976.
- [34] V. Ivrii. Wave fronts of solutions of some pseudodifferential equations. *Proc. of All-Union Conf. in Partial Diff. Eq.*, Moscow State Univ. 1976, MGU (1978), 117–119.
- [35] V. Ja. Ivrii. Correctness of the Cauchy problem for nonstrictly hyperbolic operators. III. The energy integral. *Trudy Moskov. Mat. Obšč.*, 34:151–170, 1977.
- [36] V. Ja. Ivrii. Propagation of the singularities of solutions of the wave equation along the boundary of the domain. *Uspehi Mat. Nauk*, 32(5(197)):185–186, 1977.
- [37] V. Ja. Ivrii. Wave fronts of the solutions of boundary value problems for symmetric hyperbolic systems. *Dokl. Akad. Nauk SSR*, 235(5):1013–1016, 1977.

- [38] V. Ja. Ivrii. Wave fronts of the solutions of symmetric pseudodifferential systems. *Dokl. Akad. Nauk SSSR*, 233(6):1035–1038, 1977.
- [39] V. Ja. Ivrii. The wave fronts of the solutions of the system that describes crystal optics. *Dokl. Akad. Nauk SSSR*, 232(4):763–765, 1977.
- [40] V. Ja. Ivrii. Correctness in Gevrey classes of the Cauchy problem for certain nonstrictly hyperbolic operators. *Izv. Vysš. Učebn. Zaved. Matematika*, (2(189)):26–35, 1978.
- [41] V. Ja. Ivrii. Nonclassical propagation of singularities for the solution of a wave equation near the boundary. *Dokl. Akad. Nauk SSSR*, 241(5):1013–1015, 1978.
- [42] V. Ja. Ivrii. Propagation of the singularities of a solution of the wave equation near the boundary. *Dokl. Akad. Nauk SSSR*, 239(4):772–774, 1978.
- [43] V. Ja. Ivrii. Propagation of the singularities of the solution of a wave equation in a domain that contains corner points. *Dokl. Akad. Nauk SSSR*, 241(3):536–539, 1978.
- [44] V. Ivrii. Precise semi-classical spectral asymptotics for elliptic operators on manifolds with boundary. *Preprint Deposited VINITI*, 1987.
- [45] V. Ja. Ivrii. Propagation of singularities of solutions of nonclassical boundary value problems for the wave equation. *Funktsional. Anal. i Prilozhen.*, 13(3):85–86, 1979.
- [46] V. Ja. Ivrii. Wave fronts of solutions of boundary value problems for symmetric hyperbolic systems. I. The fundamental theorem. *Sibirsk. Mat. Zh.*, 20(4):741–751, 925, 1979.
- [47] V. Ja. Ivrii. Wave fronts of solutions of boundary value problems for symmetric hyperbolic systems. II. Systems with characteristics of constant multiplicity. *Sibirsk. Mat. Zh.*, 20(5):1022–1038, 1166, 1979.
- [48] V. Ja. Ivrii. Wave fronts of solutions of certain hyperbolic pseudodifferential equations. *Trudy Moskov. Mat. Obshch.*, 39:83–112, 235, 1979.

- [49] V. Ja. Ivrii. Wave fronts of solutions of certain pseudodifferential equations. *Trudy Moskov. Mat. Obshch.*, 39:49–82, 235, 1979.
- [50] V. Ja. Ivrii. Wave fronts of solutions of symmetric pseudodifferential systems. *Sibirsk. Mat. Zh.*, 20(3):557–578, 692, 1979.
- [51] V. Ja. Ivrii. The second term of the spectral asymptotics for a Laplace-Beltrami operator on manifolds with boundary. *Funktsional. Anal. i Prilozhen.*, 14(2):25–34, 1980.
- [52] V. Ja. Ivrii. The second term of the spectral asymptotics for the Laplace-Beltrami operator on manifolds with boundary and for elliptic operators acting in vector bundles. *Dokl. Akad. Nauk SSSR*, 250(6):1300–1302, 1980.
- [53] V. Ja. Ivrii. Wave fronts of solutions of boundary value problems for a class of symmetric hyperbolic systems. *Sibirsk. Mat. Zh.*, 21(4):62–71, 236, 1980.
- [54] V. Ja. Ivrii. Wave fronts of solutions of boundary value problems for symmetric hyperbolic systems. III. Systems with characteristics of variable multiplicity. *Sibirsk. Mat. Zh.*, 21(1):74–81, 236, 1980.
- [55] V. Ja. Ivrii. Exact spectral asymptotics for the Laplace-Beltrami operator under general elliptic boundary conditions. *Funktsional. Anal. i Prilozhen.*, 15(1):74–75, 1981.
- [56] V. Ja. Ivrii and V. M. Petkov. Necessary conditions for the correctness of the Cauchy problem for non-strictly hyperbolic equations. *Uspehi Mat. Nauk*, 29(5(179)):3–70, 1974. Collection of articles dedicated to the memory of Ivan Georgievič Petrovskii (1901–1973), III.
- [57] V. Ja. Ivrii and I. M. Sigal. Asymptotics of the ground state energies of large Coulomb systems. *Ann. of Math. (2)*, 138(2):243–335, 1993.
- [58] V. Ya. Ivrii. Propagation of singularities of solutions of symmetric hyperbolic systems. In *Proceedings of the International Congress of Mathematicians (Helsinki, 1978)*, pages 771–776, Helsinki, 1980. Acad. Sci. Fennica.

- [59] V. Ya. Ivrii. Propagation of the singularities of solutions of symmetric hyperbolic systems. In *Partial differential equations (Proc. Conf., Novosibirsk, 1978) (Russian)*, pages 122–128, 252. “Nauka” Sibirsk. Otdel., Novosibirsk, 1980.
- [60] V. Ya. Ivrii. The asymptotic behavior of eigenvalues for some elliptic operators acting in vector bundles over a manifold with boundary. *Dokl. Akad. Nauk SSSR*, 258(5):1045–1046, 1981.
- [61] V. Ya. Ivrii. Propagation of singularities of solutions of nonclassical boundary value problems for second-order hyperbolic equations. *Trudy Moskov. Mat. Obshch.*, 43:81–91, 1981.
- [62] V. Ya. Ivrii. Exact spectral asymptotics for elliptic operators acting in vector bundles. *Funktsional. Anal. i Prilozhen.*, 16(2):30–38, 96, 1982.
- [63] V. Ya. Ivrii. On the asymptotic behavior of eigenvalues for a class of elliptic operators acting in fiber bundles over a manifold with a boundary. *Dokl. Akad. Nauk SSSR*, 263(3):530–531, 1982.
- [64] V. Ya. Ivrii. Quasiclassical spectral asymptotics for the Schrödinger operator on manifolds with boundary and for h -pseudodifferential operators acting in vector bundles. *Dokl. Akad. Nauk SSSR*, 266(1):14–18, 1982.
- [65] V. Ya. Ivrii. The asymptotics of a spectral problem associated to the Laplace-Beltrami operator on a manifold with boundary. *Funktsional. Anal. i Prilozhen.*, 17(1):71–72, 1983.
- [66] V. Ya. Ivrii. Sharp quasiclassical spectral asymptotics for h -pseudodifferential operators acting in bundles. In *Imbedding theorems and their applications to problems of mathematical physics*, volume 1983 of *Trudy Sem. S. L. Soboleva, No. 1*, pages 30–54. Akad. Nauk SSSR Sibirsk. Otdel. Inst. Mat., Novosibirsk, 1983.
- [67] V. Ya. Ivrii. The asymptotic behavior of the discrete spectrum of the Schrödinger operator for a system of n particles. *Dokl. Akad. Nauk SSSR*, 277(4):785–788, 1984.

-
- [68] V. Ya. Ivrii. Exact classical and quasiclassical asymptotic behavior of eigenvalues for spectral problems on manifolds with boundary. *Dokl. Akad. Nauk SSSR*, 277(6):1307–1310, 1984.
 - [69] V. Ya. Ivrii. On precise asymptotics of the eigenvalues for two classes of differential operators in \mathbf{R}^d . *Dokl. Akad. Nauk SSSR*, 276(2):268–270, 1984.
 - [70] V. Ya. Ivrii. Asymptotics of the discrete spectrum for some operators in \mathbf{R}^d . *Funktsional. Anal. i Prilozhen.*, 19(1):73–74, 1985.
 - [71] V. Ya. Ivrii. Propagation of singularities of solutions of dissipative boundary value problems for symmetric hyperbolic systems. *Dokl. Akad. Nauk SSSR*, 287(6):1299–1301, 1986.
 - [72] V. Ya. Ivrii. Weyl's asymptotic formula for the Laplace-Beltrami operator in Riemannian polyhedra and in domains with conic singularities of the boundary. *Dokl. Akad. Nauk SSSR*, 288(1):35–38, 1986.
 - [73] V. Ya. Ivrii. Bounds for the number of negative eigenvalues of the Schrödinger operator with a strong magnetic field. *Dokl. Akad. Nauk SSSR*, 297(5):1043–1046, 1987.
 - [74] V. Ya. Ivrii. Estimates for the spectrum of the Dirac operator. *Dokl. Akad. Nauk SSSR*, 297(6):1298–1302, 1987.
 - [75] V. Ya. Ivrii. Exact spectral asymptotics for elliptic operators on manifolds with a boundary. *Sibirsk. Mat. Zh.*, 28(1):107–114, 225, 1987.
 - [76] V. Ya. Ivrii. Linear hyperbolic equations. In *Partial differential equations, 4 (Russian)*, Itogi Nauki i Tekhniki, pages 157–247, 254. Akad. Nauk SSSR Vsesoyuz. Inst. Nauchn. i Tekhn. Inform., Moscow, 1988.
 - [77] V. Ya. Ivrii. Sharp spectral asymptotics for the two-dimensional Schrödinger operator with a strong magnetic field. *Dokl. Akad. Nauk SSSR*, 306(1):31–34, 1989.
 - [78] V. Ya. Ivrii. Asymptotic behavior of eigenvalues for the two-dimensional Dirac operator with a strong magnetic field. *Dokl. Akad. Nauk SSSR*, 311(5):1102–1105, 1990.

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- [79] V. Ya. Ivrii. Exact spectral asymptotics for the Dirac operator with a strong magnetic field. *Dokl. Akad. Nauk SSSR*, 310(4):788–792, 1990.
 - [80] V. Ya. Ivrii and S. I. Fedorova. Dilations and asymptotic behavior of eigenvalues of spectral problems with singularities. *Funktsional. Anal. i Prilozhen.*, 20(4):29–34, 96, 1986.
 - [81] V. Ya. Ivrii and M. A. Shubin. Errata: “On the asymptotic behavior of the spectral shift function”. *Dokl. Akad. Nauk SSSR*, 265(5):1032, 1982.
 - [82] V. Ya. Ivrii and M. A. Shubin. On the asymptotic behavior of the spectral shift function. *Dokl. Akad. Nauk SSSR*, 263(2):283–284, 1982.
 - [83] Victor Ivrii. Global and partially global operators. Propagation of singularities and spectral asymptotics. In *Microlocal analysis (Boulder, Colo., 1983)*, volume 27 of *Contemp. Math.*, pages 119–125. Amer. Math. Soc., Providence, RI, 1984.
 - [84] Victor Ivrii. Estimations pour le nombre de valeurs propres négatives de l’opérateur de Schrödinger avec potentiels singuliers. *C. R. Acad. Sci. Paris Sér. I Math.*, 302(13):467–470, 1986.
 - [85] Victor Ivrii. Estimations pour le nombre de valeurs propres négatives de l’opérateur de Schrödinger avec potentiels singuliers et application au comportement asymptotique des grandes valeurs propres. *C. R. Acad. Sci. Paris Sér. I Math.*, 302(14):491–494, 1986.
 - [86] Victor Ivrii. Estimations pour le nombre de valeurs propres négatives de l’opérateur de Schrödinger avec potentiels singuliers et application au comportement asymptotique des valeurs propres s’accumulant vers -0 , aux asymptotiques à deux paramètres et à la densité des états. *C. R. Acad. Sci. Paris Sér. I Math.*, 302(15):535–538, 1986.
 - [87] Victor Ivrii. Precise eigenvalue asymptotics for transversally elliptic operators. In *Current topics in partial differential equations*, pages 55–62. Kinokuniya, Tokyo, 1986.

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- [88] Victor Ivrii. Three spectral problems revised. In *Hyperbolic equations and related topics (Katata/Kyoto, 1984)*, pages 85–88. Academic Press, Boston, MA, 1986.
 - [89] Victor Ivrii. Estimates for a number of negative eigenvalues of the Schrödinger operator with intensive magnetic field. In *Journées “Équations aux dérivées partielles” (Saint Jean de Monts, 1987)*, pages Exp. No. XX, 7. École Polytech., Palaiseau, 1987.
 - [90] Victor Ivrii. Estimates for a number of negative eigenvalues of the Schrödinger operator with singular potentials. In *Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986)*, pages 1084–1093, Providence, RI, 1987. Amer. Math. Soc.
 - [91] Victor Ivrii. Precise spectral asymptotics for Schrödinger and Dirac operators with strong magnetic field. In *Schrödinger operators, standard and nonstandard (Dubna, 1988)*, pages 258–270. World Sci. Publ., Teaneck, NJ, 1989.
 - [92] Victor Ivrii. Eigenvalue asymptotics for Schrödinger and Dirac operators with the constant magnetic field and with electric potential decreasing at infinity. In *Journées “Équations aux Dérivées Partielles” (Saint Jean de Monts, 1991)*, pages Exp. No. X, 5. École Polytech., Palaiseau, 1991.
 - [93] Victor Ivrii. Conjoint spectral asymptotics for the families of commuting operators and for operators with the periodic Hamiltonian flow. In *Séminaire sur les Équations aux Dérivées Partielles, 1991–1992*, pages Exp. No. XV, 13. École Polytech., Palaiseau, 1992.
 - [94] Victor Ivrii. Semiclassical spectral asymptotics. *Astérisque*, (207):5, 7–33, 1992. Méthodes semi-classiques, Vol. 1 (Nantes, 1991).
 - [95] Victor Ivrii. Spectral asymptotics for the family of commuting operators. In *Operator calculus and spectral theory (Lambrecht, 1991)*, volume 57 of *Oper. Theory Adv. Appl.*, pages 139–148. Birkhäuser, Basel, 1992.
 - [96] Victor Ivrii. Around Scott correction term(s). In *Journées “Équations aux Dérivées Partielles” (Saint-Jean-de-Monts, 1994)*, pages Exp. No. XII, 7. École Polytech., Palaiseau, 1994.

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- [97] Victor Ivrii. Asymptotics of the ground state energy of heavy molecules in a strong magnetic field. I. *Russian J. Math. Phys.*, 4(1):29–74, 1996.
 - [98] Victor Ivrii. Heavy molecules in the strong magnetic field. *Russian J. Math. Phys.*, 4(4):449–455, 1996.
 - [99] Victor Ivrii. Asymptotics of the ground state energy of heavy molecules in a strong magnetic field. II. *Russian J. Math. Phys.*, 5(3):321–354 (1998), 1997.
 - [100] Victor Ivrii. Asymptotics of the ground state energy of heavy molecules in the strong magnetic field. In *Quasiclassical methods (Minneapolis, MN, 1995)*, volume 95 of *IMA Vol. Math. Appl.*, pages 125–138. Springer, New York, 1997.
 - [101] Victor Ivrii. Heavy molecules in the strong magnetic field. In *Journées “Équations aux Dérivées Partielles” (Saint-Jean-de-Monts, 1997)*, pages Exp. No. IX, 8. École Polytech., Palaiseau, 1997.
 - [102] Victor Ivrii. Accurate spectral asymptotics for periodic operators. In *Journées “Équations aux Dérivées Partielles” (Saint-Jean-de-Monts, 1999)*, pages Exp. No. V, 11. Univ. Nantes, Nantes, 1999.
 - [103] Victor Ivrii. Eigenvalue asymptotics for Neumann Laplacian in domains with ultra-thin cusps. In *Seminaire: Équations aux Dérivées Partielles, 1998–1999*, Sémin. Équ. Dériv. Partielles, pages Exp. No. X, 8. École Polytech., Palaiseau, 1999.
 - [104] Victor Ivrii. Heavy atoms in a superstrong magnetic field. In *Differential operators and spectral theory*, volume 189 of *Amer. Math. Soc. Transl. Ser. 2*, pages 125–137. Amer. Math. Soc., Providence, RI, 1999.
 - [105] Victor Ivrii. Precise spectral asymptotics for Neumann Laplacian in domains with cusps. *Appl. Anal.*, 71(1-4):139–147, 1999.
 - [106] Victor Ivrii. Sharp spectral asymptotics for operators with irregular coefficients. *Internat. Math. Res. Notices*, (22):1155–1166, 2000.

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- [107] Victor Ivrii. Sharp spectral asymptotics for operators with irregular coefficients. II. Domains with boundaries and degenerations. *Comm. Partial Differential Equations*, 28(1-2):103–128, 2003.
 - [108] Victor Ivrii. Sharp spectral asymptotics for operators with irregular coefficients. III. Schrödinger operator with a strong magnetic field. [arXiv](#), [math.AP/0510326](#): 81pp, Aug. 2003; v 3: 101pp, Apr. 2011;
 - [109] Victor Ivrii. Sharp spectral asymptotics for operators with irregular coefficients. IV. multidimensional Schrödinger operator with a strong magnetic field. full-rank case. [arXiv](#), [math.AP/0510327](#): v.1 83pp, Aug. 2004; v2 119pp, May 2011.
 - [110] Victor Ivrii. Sharp spectral asymptotics for operators with irregular coefficients. V. multidimensional Schrödinger operator with a strong magnetic field. non-full-rank case. [arXiv](#), [math.AP/0510328](#) v1 78pp, Aug. 2004; v2 105pp, Aug 2011.
 - [111] Victor Ivrii. Sharp spectral asymptotics for 2-dimensional Schrödinger operator with a strong but degenerating magnetic field. II. [arXiv](#), [math.AP/0603117](#) 31pp, July 2005.
 - [112] Victor Ivrii. Sharp spectral asymptotics for two-dimensional Schrödinger operator with a strong degenerating magnetic field. [arXiv](#), [math.AP/0603114](#) 79pp, Feb. 2005.
 - [113] Victor Ivrii. Magnetic Schrödinger operator: Geometry, classical and quantum dynamics and spectral asymptotics. [arXiv](#), [math.AP/0603120](#) 23pp, Nov. 2006.
 - [114] Victor Ivrii. Sharp spectral asymptotics for 2-dimensional Schrödinger operator with a strong magnetic field. note about forgotten generic case. [arXiv](#), [math.AP/0603118](#) 6pp, Apr. 2006.
 - [115] Victor Ivrii. Sharp spectral asymptotics for four-dimensional Schrödinger operator with a strong magnetic field. II. [arXiv](#), [math.AP/0612252](#) 57pp, Dec. 2006.
 - [116] Victor Ivrii. Sharp spectral asymptotics for four-dimensional Schrödinger operator with a strong degenerating magnetic field. [arXiv](#), [math.AP/0605298](#) 93pp, May 2006.

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- [117] Victor Ivrii. Sharp Spectral Asymptotics for Dirac Energy. [arXiv](#), [math.AP/0708.3934](#) 25pp, Aug. 2007.
 - [118] Victor Ivrii. Sharp Spectral Asymptotics for Dirac Energy. II. Magnetic Schrödinger operator. [arXiv](#), [math.AP/0712.0494](#) 44pp, Dec 2007.
 - [119] Victor Ivrii. Local Spectral Asymptotics for 2D-Schrödinger Operator with Strong Magnetic Field near Boundary. (“Spectral Theory and Geometric Analysis”, Proc. Conf. in Honor of the 65th Birthday of Mikhail Shubin). Contemp. Math. 535 (2010), AMS, 95–108.
 - [120] Victor Ivrii. 2D- and 3D-Magnetic Schrödinger Operators: Short Loops, Pointwise Spectral Asymptotics and Asymptotics of Dirac Energy. [arXiv](#), [math.AP/1008.3587](#) 147pp, Dec. 2010.
 - [121] Victor Ivrii. Operators with Periodic Hamiltonian Flows in Domains with the Boundary. [arXiv](#), [math.AP/1005.0936](#) 22pp, May 2010.
 - [122] Victor Ivrii. Short Loops and Pointwise Spectral Asymptotics. [arXiv](#), [math.AP/1005.0713](#) 23pp, May 2010.
 - [123] Victor Ivrii. Schrödinger Operator with Strong Magnetic Field near Boundary. [arXiv](#), [math.AP/1005.0244](#) 100pp, May 2010.
 - [124] Victor Ivrii. Schrödinger Operator with Strong Magnetic Field: Propagation of singularities and sharper asymptotics. [arXiv](#), [math.AP/1005.0486](#) 19pp, May 2010.
 - [125] Victor Ivrii. Local trace asymptotics in the self-generated magnetic field. [arXiv](#), [math.AP/1108.4188](#) 24pp, Aug. 2011.
 - [126] Victor Ivrii. Global trace asymptotics in the self-generated magnetic field in the case of Coulomb-like singularities. [arXiv](#), [math.AP/1112.2487](#) 19pp, Dec. 2011.
 - [127] Victor Ivrii. Asymptotics of the ground state energy for atoms and molecules in the self-generated magnetic field. [arXiv](#), [math.AP/1112.5538](#) 11pp, Dec. 2011.

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- [128] Victor Ivrii. Asymptotics of the ground state energy of heavy molecules and related topics. [arXiv:math/1210.1132](#) 70pp, October 2012.
 - [129] Victor Ivrii. Asymptotics of the ground state energy of heavy molecules and related topics. II. [arXiv:math/1210.1329](#), 141pp, Jan. 2013.
 - [130] Victor Ivrii. Asymptotics of the ground state energy of heavy molecules in self-generated magnetic field. [arXiv:math/1303.4505](#) 81pp. Mar. 2013.
 - [131] Victor Ivrii. Asymptotics of the ground state energy of heavy molecules in combined magnetic field. [arXiv:math/1312.7533](#) 115pp Mar 2014.
 - [132] Andrew Hassel & Victor Ivrii. Spectral asymptotics for the semiclassical Dirichlet to Neumann operator Journal of Spectral Theory 7 (2017), 881–905 Doi 10.4171/JST/180. Also: [arXiv:math/1505.04894](#)
 - [133] Victor Ivrii. [100 years of Weyl's law](#). Bull. Math. Sci. 6:3, pp. 379–452 (2016).
 - [134] Victor Ivrii. Spectral asymptotics for magnetic Schrödinger operator. [arXiv:math/1610.01824](#), 144 pp, March 2017.
 - [135] Victor Ivrii. Asymptotics of the ground state energy in the relativistic settings. Algebra i Analiz (Saint Petersburg Math. J.) 29 no. 3, , 76—92 (2018). Also: [arXiv:1707.07014](#)
 - [136] Victor Ivrii. Asymptotics of the ground state energy in the relativistic settings and with self-generated magnetic field. [arXiv:1708.07737](#), 2017.
 - [137] Victor Ivrii. Spectral asymptotics for Dirichlet to Neumann operator. [arXiv:1802.07524](#), 2018.
 - [138] Victor Ivrii. Complete semiclassical spectral asymptotics for periodic and almost periodic perturbations of constant operators. [arXiv:1808.01619](#), 2018.

- [139] Victor Ivrii. Complete differentiable semiclassical spectral asymptotics. [arXiv:1809.07126](#), 2018.
- [140] Victor Ivrii. Bethe-Sommerfeld conjecture in semiclassical settings. [arXiv:1902.00335](#), 2019.
- [141] Spectral asymptotics for fractional Laplacians, Contemporary Mathematics, AMS, 733, 159–170 (2019).
- [142] Upper estimates for electronic density in heavy atoms and molecules, [arXiv:1906.00611](#), 19 pp, 2020.
- [143] *Strong Scott conjecture*, [arXiv:1908.05478](#), 42 pp, 2020.
- [144] Thomas-Fermi approximation to electronic density, [arXiv:1911.03510](#), 10pp, 2020.
- [145] Pointwise spectral asymptotics out of the diagonal near boundary, Pure Appl. Funct. Anal. 7:2 (2022), 655–689; also [arXiv: 2107.04807](#), 48pp, 2021.
- [146] Pointwise Spectral Asymptotics out of the diagonal near degeneration, Mat. Zametki, 112:4 (2022), 534–552, also [arXiv:2108.13675](#), 27 pp, 2021.
- [147] Pointwise spectral asymptotics out of the diagonal near singularity, [arXiv:2306.14213](#), 29pp, 2023.
- [148] O. V. Zaitseva and V. Ya. Ivrii. Correctness of the Cauchy problem for some hyperbolic operators with characteristics of high variable multiplicity. Uspekhi Mat. Nauk, 37(3(225)):187–188, 1982.
- [149] O. V. Zaitseva and V. Ya. Ivrii. Strict and nonstrict inequalities in conditions for well-posedness of the Cauchy problem. Uspekhi Mat. Nauk, 40(2(242)):179–180, 1985.

Textbooks and Lecture Notes

- [1] Victor Ivrii. [Online textbook “Partial Differential Equations”](#) (in permanent progress); see also at [AMS Open Math Notes ‘Partial Differential Equations’](#), updated August 2021.

- [2] Victor Ivrii. [AMS Open Math Notes “Complex Variables”](#), June 2021.
- [3] Victor Ivrii. [AMS Open Math Notes “Ordinary Differential Equations”](#), July 2021.
- [4] Victor Ivrii. [Online textbook “Asymptotic and Perturbational Methods”](#) (in suspended progress).

Note Working in Magnitogorsk Mining-Metallurgical Institute I published few tiny problem-brochures containing personalized home-works for students (which means that each problem had 30 variants): method of characteristics, Fourier method, integral transformations, variational methods, Green functions, self-similar solutions. All of them gone beyond recovery.

7 Talks

7.1 Talks. I

It is really difficult to recover the list of all my talks when I lived in Soviet Union. There is a list of conferences only:

- Methods of functional analysys in mathematical physics. Third Soviet-Czechoslovak Conf., Novosibirsk, 1971.
- Methods of functional analysys in mathematical physics, Ulan-Ude, 1973.
- I.G.Petrovski All-Union Conf. in Partial Diff. Eq., Moscow State Univ., 1976
- Partial Diff. Eq. Conf. Novosibirsk, 1978
- International Congress of Mathematicians, Helsinki, 1978.¹

¹ Due to exit restrictions from USSR I was not allowed to attend. Albeit my invited talk was printed in proceedings.

- Conference on Differential Geometry and Global Analysis (Garwitz, GDR) (First my visit abroad after a lot of rejections. Due to report submitted by KGB snitch the door was shut again after this conference).
- Microlocal Anal. Boulder, Colo., 1983.¹
- Partial Diff. Eq. Conf. Novosibirsk, 1983
- Hyperbolic Equat. and Related Topics. Katata/Kyoto, 1984.¹
- Conference Differ. Eqs. and Appl, Russe (Bulg.), 1985.¹
- Conference Hyperbolic Equat. Padua, 1985.¹
- International Congress of Mathematicians, Berkeley, 1986.²
- Journees "Equat. aux Deriv. Part., Saint Jean de Monts (June, 1987).¹
- International Conference "Schrödinger operators", October 1988, Dubna, USSR.
- Multiple talks at I.G.Petrovski workshops, at I.G.Petrovski seminars, Partial Differential Equation seminars at Moscow University, Partial Differential Equation seminars at Leningrad University and Leningrad Mathematical Institute, Novosibirsk University and Novosibirsk Mathematica Institute. Lecture cycles and talks at Voronezh Winter Math. School, at regular Summer School in Functional Analysis and Math. Physics (Minsk, Novosibirsk, Riga).

7.2 Talks. II

From this time the list is more complete. But some talks in Universite Paris 7, Universite Orsay seem to be absent.

- International Conference "Order, disorder and Chaos in Quantum Systems", October 1989, Dubna, USSR.

² Due to exit restrictions from USSR I was not allowed to attend. Albeit my invited talk was read by L. Hörmander and printed in proceedings.

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- International Conf. Integral Equat. and Inverse Problem. Varna, Sept. 1989, Bulgaria.
 - Seminar talk in Universite de Grenoble, 1989 (The iron curtain fell and I was the first time away from Warsaw Pact countries).
 - Seminar talk in Universite de Nantes, 1990.
 - Seminar “Equations aux Derivees Partielles”, Ecole Polytechnique, 1990.
 - “25 years of Microlocal Analysis”, July 1990, Irsee (Germany).
 - International Symposium in Honor S. Agmon, Jerusalem, June, 1990.
 - Seminar “Equations aux Derivees Partielles”, Ecole Polytechnique, 1991.
 - Mathematical Colloquium, Copenhagen University, 1991.
 - Mathematical Colloquium, Lunds University, 1991.
 - Mathematical Colloquium, University of Toronto, 1991.
 - Summer School in frames of CNRS scientific year “Semi-classical Analysis”, Nantes, June 1991.
 - Journees “Equat. aux Deriv. Part., Saint Jean de Monts, June, 1991.
 - International Symposium “Operator Calculus and Spectral Theory” at Lambrecht, December 1991.
 - Seminar “Analysis semi-classique” Ecole Normale Superiore, January 1992.
 - Seminar “Equations aux Derivees Partielles”, Ecole Polytechnique, April 1992.
 - Mathematical Physics Year, Mittag-Leffler Inst., The Swedish Royal Acad. of Sci., 1992-93.

- International Symposium on Spectral and Scattering Theory, Sanda (Hyogo) and Kyoto, Nov. 16-26, 1992 Missed due to visa problems: as a result of an error of an ill-performed visa officer from Canadian Consulate in Paris I held one-entry 4 month visa instead of multiple-entry one-year one.
- Talk at Workshop “Schrödinger Operators”, Vienna, Dec. 1993.
- Seminar “Geometry and Analysis”, Northeastern University, Feb. 1994.
- Seminar “Partial Differential Equations”, MIT, Feb. 1994.
- Conference “Differentialgeometrie und Quantumphysik”, Miedzyzdroje (Poland), March 1994.
- Colloquim talk at John Hopkins University, Apr. 1994.
- Seminar in PDE at John Hopkins University, Apr. 1994.
- Colloquim talk at UCLA, Apr. 1994.
- Seminar in PDE, UCLA, Apr. 1994.
- Seminar “Equations aux Derivees Partielles”, Ecole Polytechnique, May 1994.
- Journees “Equat. aux Deriv. Part., Saint Jean de Monts, June, 1994.
- Seminar in PDE at Augsburg University, Germany, June. 1994.
- Conference “Global Analysis and Partial Differential Equations”, Holzhau (Germany), July 1994.
- Talk at Workshop “Partial Differential Equations”, Potsdam (Germany), July 1994.
- Seminar at Princeton University, Nov. 1994.
- Colloquim Talk at Bar-Ilan University, Dec 1994.
- Seminar at University of Jerusalem, Dec 1994.
- Colloquim Talk at Technion, Dec 1994.

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- Colloquim Talk at Weizmann Inst. of Sci (3 h), Dec 1994.
 - International Symposium on Spectral and Scattering Theory, John Hopkins University, Apr 1995.
 - Conference “Quasiclassical methods”, Minneappolis, Minnesota, May. 1995.
 - Intern. Symposium in PDE. Kashikojima, Japan, Sept 1995.
 - Colloquium talk at Univ. of Ottawa, Mar 1996.
 - Symposium “Partial Differential Equations and Spectral Theory” Durham, UK, June, 1996
 - NATO ASI on Micro-analysis and Spectral Theory, Maratea, Italy, September 96 (skipped due to the poor shape of my Soviet passport at that time).
 - Seminar talk at McGill University (October, 1996)
 - Seminar talk at Caltech (February, 1997).
 - Seminar talk at UCLA (February, 1997).
 - Seminar talk at Oberwolfach (April 1997)
 - Seminar talk at Weizmann (May 1997)
 - Seminar talk at the Conference at Technion (May 1997)
 - Seminar talk at the Conference at St.Jean-de-Monts (June 1997)
 - Seminar talk at Weizmann (Dec 97)
 - Colloquim talk at Technion (Dec 97)
 - Conference talk at Stockholm (Jan 98)
 - Seminar talk at Courant (Mar 98)
 - Conference talk at Penn. State University (Apr 98)
 - Conference talk in Vienna (June 98)

- Yet another Conference talk in Vienna (June 98)
- Conference talk in Praga (June 98)
- Colloquium talk in Stanford (Feb 99)
- Seminar talk in Stanford (Feb 99)
- Seminar talk in Berkeley (Feb 99)
- Seminar talk at Weizmann Institute of Science, Rehovot, Israel (Apr 99)
- Colloquium talk at Weizmann Institute of Science, Rehovot, Israel (Apr 99)
- Colloquium talk at Bar Ilan University, Tel Aviv, Israel (May 99)
- Colloquium talk at Haifa University, Haifa, Israel (May 99)
- Colloquium talk at Technion, Haifa, Israel (May 99)
- Seminar talk at Technion, Haifa, Israel (May 99)
- Talk at Israel-German Workshop “Spectral and Scattering Theory”, Jerusalem, Israel (May 99)
- Seminar talk at EDP Conference, St. Jean de Monts, France (June 99)
- Talk at Workshop “Spectral Geometry”, Technion, Israel (June 99)
- Talk at Workshop “Coulomb Systems”, Oberwolfach, Germany (Jul 99)
- Plenary talk at Garding 80-th Birthday Conference, Lund, Sweden (together with M. Atiyah, P. Lax, etc) (Aug 99)
- Session talk, AMS, Salt Lake City (Sep 99)
- Session talk, AMS, Charlotte (Oct 99)
- Seminar talk at City PDE Seminar, POMI, St. Petersburg, Russia (Oct 99)

- Seminar talk at PDE Seminar, POMI, St. Petersburg, Russia (Oct 99)
- Seminar talk at City PDE Seminar, Moscow University, Moscow, Russia (Nov 99)
- Seminar talk at Moscow Mathematical Society, Moscow University, Moscow, Russia (Nov 99)
- Seminar talk at Arnold Seminar, Moscow University, Moscow, Russia (Nov 99)
- Seminar talk at PDE Seminar, Universite de Nantes, Nantes, France (Nov 99)
- Seminar talk at PDE Seminar, Universite de Rennes, Rennes, France (Dec 99)
- Seminar talk at Analysis Seminar, University of Toronto (Jan 00)
- Colloquium talk at McMaster University (Feb 00)
- Colloquium talk at Stanford University (Mar 00)
- Seminar talk at Berkeley University (Mar 00)
- Seminar talk at Independent University, Moscow, Russia (May 00)
- Seminar talk at Institute of Mathematics and Mechanics RAN,
- Seminar talk at “Math 2000” meeting at McMaster University (June 00)
- Colloquium talk at Weizmann Institute (June 00)
- Seminar talk at Euresco conference “Geometry, Analysis and Mathematical Physics: Analysis and Spectral Theory” San Feliu de Guixols, Spain, (Sep 00)
- Seminar talk at Gerard Friedlander Conference (Boston, September 00)
- Seminar talk at Appl. Math. Seminar, University of Toronto

- Talk at Conference “PDE and Mathematical Physics”, Apr 01, Toronto.
- Talk at Workshop “Schrödinger operators” Oberwolfach (May 01)
- Talk at Workshop 2, Programme in Scattering Theory, Erwin Schrödinger Institute, Vienna (May 01)
- Colloquium talk in Weizmann Inst of Sciences (July 01)
- Seminar talk at Weizmann Institute of Sciences (July 01)
- Seminar talk at QMath-8 “Mathematical Results in Quantum Mechanics” Taxco, Mexico, (December 01).
- Seminar talk at conference “Geometric Analysis in XXI century”. MIT (March 02)
- Seminar talk at Grad. Stud. Seminar, Univ. of Toronto (Feb 02)
- 2 Seminar talks at Universite Paris Nord, Villetaneuse (July 2002)
- Talk at Conference “Spectrum and Geometry” at Mittag-Leffler Institute, Djursholm (Aug 2002)
- Seminar talk at Mittag-Leffler Institute, Djursholm (Aug 2002)
- Colloquium talk at Weizmann Institute of Sciences (January 03) ; Seminar talk at Technion, Haifa (January 2003)
- Talk at Workshop “Scattering and Inverse Scattering”, BIRS (March 2003)
- Talk at Workshop “Semi-Classical Methods in Physics and Chemistry, MSRI (April 2003)

7.3 Talks. III.

- “Sharp spectral asymptotics for magnetic Schrödinger operator”, Workshop on Spectral Geometry, CRM, Montreal, March 4-6, 2004

- Talk “Sharp spectral asymptotics for magnetic Schrödinger operator”, Seminar in PDE, POMI, St. Petersburg, Russia, October 2003.
- Talk “Sharp spectral asymptotics for operators with irregular coefficients”, Seminar in PDE, POMI, St. Petersburg, Russia, October 2003.
- Talk “Sharp spectral asymptotics for magnetic Schrödinger operator”, Seminar in PDE, Moscow State University, Moscow, Russia, October 2003.
- Talk “Sharp spectral asymptotics for operators with irregular coefficients”, Colloquium, Moscow Independent University, Moscow, Russia, October 2003.
- “Introduction to Microlocal Analysis”, Graduate Crash Course (9 hours), Moscow Independent University, Moscow, Russia, October 2003.
- Talk “Sharp spectral asymptotics for magnetic Schrödinger operator”, Seminar in Analysis, Weizmann Institute of Science, Rehovot, Israel, November 2003.
- Talk “Sharp spectral asymptotics for magnetic Schrödinger operator”, Seminar in Analysis, Technion, Haifa, Israel, November 2003.
- Talk “Everything Started from Weyl”, Graduate Seminar, University of Toronto, December 2003.
- Talk “Sharp spectral asymptotics for operators with irregular coefficients”, Seminar in Appl. Math. & Analysis, University of Toronto & Fields Institute, January 2004.
- Talk “Sharp spectral asymptotics for magnetic Schrödinger operator”, Seminar in Appl. Math. & Analysis, University of Toronto & Fields Institute, January 2004.
- Talk “Sharp spectral asymptotics for operators with irregular coefficients”, Colloquium, CRM, Montreal, January 2004.
- Talk “Sharp spectral asymptotics for magnetic Schrödinger operator”, Seminar in Analysis, McGill University, January 2004.

- Talk “25 years after”, Atelier sur la theorie semi-classique des fonctions propres et equations aux derivees partielles, June 1-11, 2004, Montreal-Toronto.
- “25 years after”, Spectrum and Quantum Mechanics, SPECT Satellite conference to the 4ECM SPECT and EU IHP network “Analysis and Quantum” KTH, Stockholm, July 3-5, 2004
- “Spectral asymptotics for 2-dimensional Schrödinger operator with strong but degenerating magnetic field”, Technion, Haifa, Israel, December 14, 2004.
- “Spectral asymptotics for 2-dimensional Schrödinger operator with strong but degenerating magnetic field”, Weizmann Inst. Science, Rehovot, Israel, December 20, 2004.
- “Quantize!”, Graduate Students Seminar, September 2004
- “Spectral asymptotics for 2-dimensional Schrödinger operator with strong but degenerating magnetic field”, Applied Math/PDE/Analysis Seminar, University of Toronto, January 24, 2005.
- “Spectral asymptotics for 2-dimensional Schrödinger operator with strong but degenerating magnetic field”, Analysis Seminar, McGill, Montreal, February 17, 2005.
- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Aymptotics”, MIT, September 2006.
- “Everything started from Weyl, North-Eastern University”, September 2006.
- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Aymptotics”, North-Eastern University, September 2006.
- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Aymptotics”, University of Toronto, October 2006.

- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Aymptotics”, KTH, Stockholm, October 2006.
- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Aymptotics”, Lunds University, October 2006.
- “Everything started from Weyl”, University of Toronto, November 2006.
- “Everything started from Weyl”, Weizmann Institute of Science, January 2007.
- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Aymptotics”, Hebrew University at Jerusalem, January 2007.
- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Aymptotics”, Technion, Haifa, January 2007.
- “Everything started from Weyl”, Tel-Aviv University, January 2007.
- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Aymptotics”, Weizmann Institute of Science, January 2007.
- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Aymptotics”, Kings College, London, UK, February 2007.
- “Everything started from Weyl”, École Polytechnique, Palaiseau, March 2007.
- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Aymptotics”, École Polytechnique, Palaiseau, March 2007.
- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Aymptotics”, Institut Henry Poicare, Paris, March 2007.

- “Everything started from Weyl. I”, CEA Physique Theoretique, Saclay, France, April 2007.
- “Everything started from Weyl. II”, École Polytechnique, Palaiseau, April 2007.
- “Everything started from Weyl”, Stanford University, Stanford, May 2007.
- “Everything started from Weyl”, Institute of Advanced Studies, University of Bologna, June 2007.
- “Everything started from Weyl. I”, Department of Mathematics, University of Bologna, June 2007.
- “Everything started from Weyl. II”, Department of Mathematics, University of Bologna, July 2007.
- “Magnetic Schrödinger Operator: Geometry, Classical and Quantum Dynamics and Spectral Asymptotics”, Department of Mathematics, University of Bologna, July 2007.
- “Spectral Asymptotics and Dynamics” at Workshop “Spectrum and Dynamics” (CRM, Montreal), April 7-11 (2008)
- “Spectral Asymptotics and Dynamics” (Weizmann Institute of Science), April 29, 2008
- “Spectral Asymptotics and Dynamics” Conference “Théorie Spectrale et Théorie de la diffusion des Systèmes Quantiques Magnétiques”, Luminy, France, July 7–11, 2008.
- “Everything started from Weyl. I, II”, Department of Mathematics, Osaka University, August 2008.
- http://www.msri.org/communications/vmath/VMathVideos/VideoInfo/4031/show_video
Spectral Asymptotics and Dynamics Workshop “Elliptic and Hyperbolic Equations on Singular Spaces”, MSRI, October 31, 2008.
- “Spectral Asymptotics and Dynamics” (Pennsylvania State University), April 29, 2008.

- May 2009, Tel-Aviv University: Classical & Quantum Dynamics and Sharp Spectral Asymptotics
- May 2009, Weizmann Institute: Classical & Quantum Dynamics and Sharp Spectral Asymptotics
- August 2009, talk “Classical & Quantum Dynamics and Sharp Spectral Asymptotics” on the conference “Spectral Theory and Geometric Analysis”
- January 2010, University of Toronto : 2D Magnetic Schrödinger Operator Near Boundary: Classical & Quantum Dynamics and Sharp Spectral Asymptotics
- February 2010, MIT: 2D Magnetic Schrödinger Operator Near Boundary: Classical & Quantum Dynamics and Sharp Spectral Asymptotics
- February 2010, North-Eastern University 2D Magnetic Schrödinger Operator Near Boundary: Classical & Quantum Dynamics and Sharp Spectral Asymptotics
- April 2010, McGill: 2D Magnetic Schrödinger Operator Near Boundary: Classical & Quantum Dynamics and Sharp Spectral Asymptotics
- October 2010, Appl. Math. Sem. Univ. of Toronto: 2D- and 3D-Magnetic Schrödinger Operator: Short Loops and Pointwise Spectral Asymptotics
- December 2010, AMS-SoMaChi joint meeting (Pucon, Chile): 2D Magnetic Schrödinger Operator Near Boundary: Classical & Quantum Dynamics and Sharp Spectral Asymptotics
- May 2011, 2D- and 3D-Magnetic Schrödinger Operator: Short Loops and Pointwise Spectral Asymptotics (Universite Paris XIII)
- May 2011, 2D- and 3D-Magnetic Schrödinger Operator: Short Loops and Pointwise Spectral Asymptotics (Universite Grenoble)
- May 2011, 2D- and 3D-Magnetic Schrödinger Operator: Short Loops and Pointwise Spectral Asymptotics (Workshop “Spectral Gap in Dynamical Systems, Number Theory and PDEs”, Peyresq, France, May 30–June 3, 2011).

- September 2011, 2D- and 3D-Magnetic Schrödinger Operator: Short Loops and Pointwise Spectral Asymptotics (Workshop “Partial differential equations and spectral theory”, Imperial College, London, UK, September 5–8, 2011).
- February 2012, 100 years of Weyl' law, Colloquium talk at University of New York Albany.
- February 2012, 100 years of Weyl' law, Colloquium talk at North Eastern University.
- April 2012, 100 years of Weyl' law, (Workshop “Around scattering by obstacles and billiards”, Aveiro, Portugal, March 30–April 1, 2012).
- May 2012, 100 years of Weyl's law–Mathematical Analysis and Applications Seminar, Weizmann Institute of Science, May 8, 2012
- May 2012, 100 years of Weyl's law–Jerusalem Analysis and PDEs seminar, Hebrew University at Jerusalem, May 17, 2012
- May 2012, Asymptotics of the ground state energy and related topics for heavy atoms and molecules, Workshop on Quantum Many Body Systems, CRM, Montreal, May 28–June 1, 2012
- June 2012, 100 years of Weyl's law–Workshop on Geometry of Eigenvalues and Eigenfunctions, CRM, Montreal, June 4–8, 2012
- December 2012, Asymptotics of the ground state energy and related topics for heavy atoms and molecules, Mittag-Leffler Institute, December 12, 2012.
- June 2013, Asymptotics of the ground state energy and related topics for heavy atoms and molecules, Spectral Theory and Partial Differential Equations, A conference in honor of James Ralston, UCLA, June 17–21, 2013
- July 2013, Asymptotics of the ground state energy and related topics for heavy atoms and molecules, 5th St.Petersburg Conference in Spectral Theory dedicated to the memory of M.Sh.Birman, Euler Institute, Saint-Petersburg, July 2–6, 2013

- December 2013, Semiclassical theory with self-generated magnetic field Conference on Microlocal Analysis in Memory of Bernard Lascar, Institut de Mathématiques de Jussieu, Paris, December 3–4, 2013
- December 2013, Asymptotics of the ground state energy and related topics for heavy atoms and molecules, Séminaire: Problèmes Spectraux en Physique Mathématique, Institut Henri Poincaré, Paris, December 2, 2013
- April 2014, Asymptotics of the ground state energy and related topics for heavy atoms and molecules: Seminar at Australian National University, Canberra, April 8, 2014
- April 2014, 100 years of Weyl's law: Colloquium at Australian National University, Canberra, April 10, 2014
- April 2014, Some open problems, related to spectral theory of partial differential operators, Seminar at Australian National University, Canberra, April 22, 2014
- August 2014, 100 years of Weyl's Law, Seminar in Functional Analysis, Helsinki University, August 14, 2014.
- November 2014, Eigenvalue asymptotics for Dirichlet-to-Neumann operator, Analysis-Geometry Seminar, Northeastern University, November 14, 2014.
- Asymptotics of the ground state energy and related topics for heavy atoms and molecules. Seminar in Functional Analysis, Helsinki University, August 13, 2015.
- December 2015, Spectral asymptotics for fractional Laplacians, PDE and Applied Mathematics Seminar, Technion, Haifa, Israel, December 29, 2015.
- December 2015, Large atoms and molecules with magnetic field, including self-generated magnetic field (Results: old, new, in progress and in perspective), PDE & Analysis seminar, Hebrew University of Jerusalem, Jerusalem, Israel, December 31, 2015.

- January 2016, Eigenvalue asymptotics for Dirichlet-to-Neumann operator, Mathematical Analysis and Applications Seminar Weizmann Institute of Science, Rehovot, Israel, January 5, 2016
- May 2016, Spectral asymptotics for fractional Laplacians, Mathematical Analysis and Applications Seminar Weizmann Institute of Science, Rehovot, Israel, May 3, 2016
- August 2016, 100 years of Weyl's Law, Seminar "Globus", Moscow Independent University, Russia, August 4, 2016.
- August 2016, Spectral asymptotics for fractional Laplacians, Spectral and Scattering Theory Seminar, Purdue University, West Laffayette, USA, August 24, 2016.
- December 2016, 100 years of Weyl's law, Applied Math. Seminar, Claremont Graduate University, December 5, 2016.
- December 2016, Spectral asymptotics for fractional Laplacians, Math. Physics Seminar, California Institute of Technology, Pasadena, CA, USA, December 7, 2016.
- December 2016, Eigenvalue Asymptotics for Dirichlet-to-Neumann Operator, Math. Physics Seminar, University of California at Irvine, Irvine, CA, USA, December 8, 2016.
- December 2016, 100 years of Weyl's law, Analysis and PDE Seminar, University of California at Los Angeles, Los Angeles, CA, USA, December 8, 2016.
- February 2017, Spectral asymptotics for fractional Laplacians, Math. Physics Seminar, McGill University, Montreal, QC, February 22, 2017.
- April 2017, 100 years of Weyl's law. AMS, Spring Western Sectional Meeting, Pullman, WA, USA, April 22, 2017.
- June 2017, Asymptotics of the ground state energy for relativistic heavy atoms and molecules. Memorial conference on spectral theory of partial differential operators. Mittag-Leffler Institute, Djursholm, Sweden, June 19–22.

- July 2017, Spectral asymptotics for fractional Laplacian. 9th St. Petersburg Conference in Spectral Theory, The Euler International Mathematical Institute, St. Petersburg, Russia, 3–6 July, 2017.
- September 2017, 100 years of Weyl's law. Rapidly varying asymptotics in stationary and nonstationary problems of mathematical physics at Interdisciplinary Scientific Center J.-V. Poncelet, Independent University of Moscow, September 11–13, 2017.
- September 2017, Spectral asymptotics and dynamics. V .I. Smirnov seminar on Mathematical Physics (St Petersburg University/POMI, September 4, 2017)
- September 2017, Two spectral problems for Laplace operator. Seminar of the Department of Mathematics and Mathematical Physics (St. Petersburg University/POMI, September 6, 2017).
- September 2017, 100 years of Weyl's law. Colloquium talk at Chebyshev Laboratory (St. Petersburg University, September 7, 2017).
Video: <https://youtu.be/I58SQEhXJ5A>
- October 2017, Etudes of Spectral Theory. Claremont Graduate University Colloquium (October 18, 2017).
http://weyl.math.toronto.edu/victor_ivrii_Publications/preprints/Talk_15.pdf
- October 2017, Eigenvalue asymptotics for Dirichlet-to-Neumann operator. Joint UCLA/Caltech Analysis seminar (October 20, 2017).
http://weyl.math.toronto.edu/victor_ivrii_Publications/preprints/Talk_12.pdf
- November 2017, Spectral asymptotics for fractional Laplacians. PDEs and Analysis Seminar (Australian National University, November 7, 2017)
http://weyl.math.toronto.edu/victor_ivrii_Publications/preprints/Talk_13.pdf
- December 2017, Spectral asymptotic for Steklov's problem in domains with edges (work in progress). Mathematical Analysis and Applications Seminar (Weizmann Inst. Sci., December 5, 2017)
http://weyl.math.toronto.edu/victor_ivrii_Publications/preprints/Talk_16.pdf
- December 2017, Asymptotics of the ground state energy for relativistic heavy atoms and molecules. PDE & Analysis Seminar (Hebrew

University, December 6, 2017).

http://weyl.math.toronto.edu/victor_ivrii_Publications/preprints/Talk_14.pdf

- December 2017, Spectral asymptotic for Steklov's problem in domains with edges (work in progress). PDE and Applied Mathematics Seminar (Technion, December 12, 2017).
- January 2018, Spectral asymptotic for Steklov's problem in domains with edges (work in progress), Analysis Seminar (McGill University University, January 26, 2018).
- June 2018, [Eigenvalue asymptotics for Steklov's problem in the domain with edges](#), 10th St. Petersburg Conference in Spectral Theory, June 9–12, 2018.
- November 2018, [Complete semiclassical spectral asymptotics for periodic and almost periodic perturbations of constant operators](#), Conference on Partial Differential Equations and Applications in Memory of Professor B.Yu. Sternin, November 6–9, 2018.
- February 2019, [complete spectral asymptotics for periodic and almost periodic perturbations of constant coefficients operators and Bethe-Sommerfeld conjecture in semiclassical settings](#), Mittag-Leffler Institut, Program 'Spectral Methods in Mathematical Physics', 14 January - 26 April 2019.
- May 2019, [complete spectral asymptotics for periodic and almost periodic perturbations of constant coefficients operators and Bethe-Sommerfeld conjecture in semiclassical settings](#), Analysis and PDE Seminar, UCLA, May 24, 2019.
- November 2019, [complete spectral asymptotics for periodic and almost periodic perturbations of constant coefficients operators and Bethe-Sommerfeld conjecture in semiclassical settings](#), Analysis and PDE Seminar, UCLA, May 24, 2019.
- May 2019, [Complete spectral asymptotics for periodic and almost periodic perturbations of constant coefficients operators and Bethe-Sommerfeld conjecture in semiclassical settings](#), Analysis and PDE seminar, UCLA, May 24, 2019.

- November 2019, [Etudes of Spectral Theory](#). Math Physics Seminar, Tel-Aviv University, November 7, 2019.
- September, 2020, [Scott and Thomas-Fermi approximations to electronic density](#), IAMP One World Seminar, September 15, 2020.
- March, 2021, Complete Spectral Asymptotics for Periodic and Almost Periodic Perturbations of Constant Coefficients Operators and Bethe-Sommerfeld Conjecture in Semiclassical Settings, A. M. Il'in Ufa City Seminar in Differential Equations for Mathematical Physics, March 12, 2021.
- July 2021, [Pointwise Spectral Asymptotics out of the Diagonal](#), Spectral Geometry on the Cloud Seminar, July 26, 2021.
- February 2023, [Etudes of Spectral Theory](#). AAMP Seminar, Dalhousie University, February 10, 2023.
- November 2023, Pointwise Spectral Asymptotics near Singularity, McGill University.

7.4 T_EX Talks

- “e-Articles, e-Books and e-Talks too”, Graduate Students Seminar, February 2004 (and many times in many places, the talk itself and the list are growing and growing and growing)
- “T_EXFreak”, Graduate Students Seminar 2005 (and many times in many places, the talk itself and the list are growing and growing and growing)
- “Beamer All the Way”, Special Seminar 2008.
- “Welcome to TeXLive 2008, Special Seminar, September 2008”.

7.5 Lectures for High-School students

- “Crazy Billiards”, May, 2004 (and few times repeated)
- “What is more and what is less?” October 31, 2004 (and few times repeated)

8 Miscellaneous

8.1 Memberships

- Fellow of Royal Canadian Society;
- Fellow of American Mathematical Society;
- Member of Canadian Mathematical Society;
- Member of International Association of Mathematical Physics;
- Member of TUG T_EX User Group.

8.2 Honors

- Fellow of American Mathematical Society;
- Fellow of Royal Canadian Society;
- Lady Davies Fellow (Haifa, 1999);
- Killam Fellow (2002–2004).

Contribution to the Training of Highly Qualified Personnel

- Maria Zaretskaya (PhD 1988; Thesis “Spectral properties of the quadratic Hamiltonians”).

- Evgeni Filippov (Ph.D. 1991; Thesis “Spectral asymptotics of operators in domains with thick cusps”).

Further, two my graduate students achieved quite good results towards their PhD but due to family circumstances (scientific life is pretty hard in Russia, especially for females).

- Svetlana Fedorova-Fainshtein (“Spectral asymptotics for operators with singularities” (1989)).
- Alla Kachalkina (“Spectral asymptotics with highly accurate remainder estimates” (1990)).
- PDF Andrew Comech (1997/98) [with Maciej Zworski]
- PDF Emmanuelle Amar-Servat (2003/2004)
- PDF Ivana Alexandrova (2004/2006)
- PDF William Bordeaux Montrieux (2009/2010)