CURRICULUM VITAE

Personal

Name	Igor Wigman
Date of Birth	13.03.1980
Place of Birth	Moscow, USSR
Citizenship	Israeli
Address	Alstromergatan 29, Stockholm 11247, Sweden
e-mail address	wigman@kth.se
Web page	http://www.math.kth.se/~wigman/
Phone (mobile)	+46-76-1360686

Education

1996-1999: B.Sc., Magna Cum Laude Tel-Aviv University, double B.Sc. in Mathematics and Computer Sciences.

1999-2002: M.Sc., Summa Cum Laude Tel-Aviv University, master of sciences (M.Sc) degree in mathematics
Supervisor: Prof. Zeev Rudnick
Thesis title: "Counting singular matrices with primitive row vectors".

2003-2006: Ph.D., Tel-Aviv University, mathematics
Supervisor: Prof. Zeev Rudnick.
Thesis title: "The distribution of lattice points in thin elliptic annuli".

Awards and Prizes

2009-2011: Newton International Fellowship (declined)
2009-2011: Wallenberg Postdoctoral Fellowship, KTH, Stockholm
2007-2009: CRM-ISM Postdoctoral Fellowship
2005: PhD student award (5000 NIS).
2002: Excellence award for M.Sc student (5000 NIS).
2001: Excellence award for M.Sc student (5000 NIS).
1996-1999: Dean's undergraduate prizes.

Academic Positions

2009-2011: Wallenberg postdoctoral fellow, Stockholm, Sweden.
2007-2009: CRM ISM postdoctoral fellow, Montreal, Canada.
2006-2007: CRM analysis laboratory postdoctoral fellow, Montreal, Canada.

Teaching Experience

2006-2008: Instructor for the courses "Calculus A for engineers", "Linear Algebra and Probability for Management Students", "Advanced Calculus for Science Students", McGill University, Montreal, Canada.

2005-2006: Teaching assistant for the course "Linear Algebra 2", Tel-Aviv University, Israel.

2001-2002: Teaching assistant for the course "Operating Systems Principles", Open University, Israel.

Work Experience

2005-2006: IAI Elta, a leading company within the aircraft industry field. Worked in two long-term projects as an applied mathematician and algorithms designer.

1999-2004: IDF (Israeli Defense Forces), intelligence service. Worked as an applied mathematician on complex mathematical algorithms. Responsible for long-term projects as well as professionally instructing others.

Academic Interests

(1) Analytic number theory including the geometry of numbers, counting problems, equidistribution. Applications in mathematical physics, especially quantum chaos.
(2) Nodal lines and zeros of random functions.
(3) Probability and stochastic processes.

Selected Talks and Colloquia

(1) "The Distribution of Lattice Points in Elliptic Annuli", Workshop: "Quantum Chaos, Random Matrices and their Applications", Bielefeld University, Germany, May 23-25, 2005
(2) "The Distribution of Lattice Points in Elliptic Annuli", Québec-Vermont Number Theory Seminar, September 28, 2006, Montreal, Canada.
(3) "The Distribution of Lattice Points in Thin Elliptic Annuli", Workshop: "Number Theory and Random Phenomena", March 26-30, 2007, Bristol, UK.
(4) "On the Volume of Nodal Sets for Eigenfunctions of the Laplacian on the Torus", April 21, 2008, Calderón-Zygmund analysis seminar, University of Chicago.
(5) "Nodal Lines for Random Eigenfunctions of the Laplacian on the Torus", Workshop: "Mathematical Aspects of Quantum Chaos", June 2-6, 2008, CRM, Montreal, Canada.

(6) "Nodal lines of random eigenfunctions of the Laplacian", Colloquium, November 6, 2008, Dartmouth College, Hanover NH, USA.
(7) "Nodal lines of random eigenfunctions of the Laplacian", CRM Workshop: "Random functions, random surfaces and interfaces", January 4-9, 2009, Hotel Mont Gabriel, Sainte-Adèle QC, Canada
(8) "Nodal lines for random eigeinfunctions of the Laplacian on the torus and the sphere", Workshop: "Random Fields and Stochastic Geometry", February 22-27, Banff, Alberta, Canada.
(9) "The distribution of zeros of random trigonometric polynomials", Complex Geometry Seminar, John Hopkins University, March 4, 2009, Baltimore, USA.
(10) "Nodal lines of random Laplace eigenfunctions", Analysis and Dynamical Systems Seminar, September 16, 2009, KTH.
(11) "Nodal lines of random Laplace eigenfunctions", Differential Equations Seminar, November 25, 2009, University of Rome Tor Vergata.

Undergraduate Summer Research Students Supervised

Phil Sosoe (mathematics) – The distribution of the zeros of random trigonometric polynomials, 2007, McGill University, Montreal, Canada

Rachel Kidd (co-supervised with Dmitry Jakobson; mathematics and violin) – The connected components of nodal lines on the sphere, 2007, McGill University, Montreal, Canada

Alan Regis (mathematics) – The distribution of the nodal lines of random eigenfunctions of the Laplacian, 2009, McGill University, Montreal, Canada.

Service

Journal referee for: "Algebra and Number Theory", "Transactions of the AMS", "Mathematica", "Monatshefte für Mathematik", "Linear Algebra and Applications", "Journal of Mathematical Physics".

Reviewer for the MathSciNet.

Coaching the KTH team in the "Nordic University-level Mathematics team-competition" (NMC) (placed second)

Co-organizing the Finnish-Swedish Number Theory Conference (with Pär Kurlberg and Anne-Maria Ernvall-Hytönen)

References

Zeev Rudnick, Tel-Aviv University
e-mail: rudnick@post.tau.ac.il Office Phone: 1 – 609 – 734 8324

Andrew Granville, Universite de Montreal e-mail: andrew@dms.umontreal.ca Office Phone: 1 – 514 – 343 6583

Dmitry Jakobson, McGill University e-mail: jakobson@math.mcgill.ca Office Phone: 1 – 514 – 398 3828

John Toth, McGill University e-mail: toth@math.mcgill.ca Office Phone: 1 – 514 – 398 3847

Iosif Polterovich, Universite de Montreal e-mail: iossif@dms.umontreal.ca Office Phone: 1 – 514 – 343 5899

David Soudry, Tel-Aviv University (teaching) e-mail: soudry@post.tau.ac.il Office Phone: 972 – 3 – 640 6351

Languages

Russian (mother tongue), Hebrew (mother tongue level), English (fluent), French (basic), Swedish (basic).

List Of Publications

Refereed Full Research Papers.

(1) "Counting singular matrices with primitive row vectors", Monatsh. Math. 144 (2005), no. 1, 71–84.
(2) "The distribution of lattice points in elliptic annuli", Q. J. Math. 57 (2006), no. 3, 395–423.
(3) "Statistics of lattice points in thin annuli for generic lattice", Doc. Math. 11 (2006), 1–23 (electronic).
(4) "The Leray measure of nodal sets for random eigenfunctions on the torus" (joint with Ferenc Oravecz and Zeev Rudnick), Ann. Inst. Fourier (Grenoble) 58 (2008), no. 1, 299–335.
(5) "On the volume of nodal sets for eigenfunctions of the Laplacian on the torus" (joint with Zeev Rudnick), Ann. Henri Poincaré 9 (2008), no. 1, 109–130.
(6) "On the distribution of the nodal sets of random spherical harmonics", J. Math. Phys. 50 (2009), no. 1, 013521.
(7) "Counting nodal lines of random waves on planar domains" (joint with John Toth), Int. Math. Res. Not. IMRN 2009, no. 18, 3337–3365.
(8) "Fluctuations of the nodal length of random spherical harmonics", Comm. Math. Phys., to appear (2010), available online

http://arxiv.org/abs/1003.2223

(9) "The distribution of the zeroes of random trigonometric polynomials" (joint with Andrew Granville), Amer. Jour. Math., to appear (2010), available online
http://arxiv.org/abs/0809.1848

Submitted Research Papers.

(1) "Scalar curvature and Q-curvature for random metrics" (joint with Yaiza Canzani and Dmitry Jakobson) available online
http://arxiv.org/abs/1002.0030
(2) "Gaussian point count statistics for families of curves over a fixed finite field" (joint with Pär Kurlberg) available online
http://arxiv.org/abs/

Research Papers in Preparation.

(1) "The distribution of nodal lines of random eigenfunctions of the Laplacian on the torus" (joint with Manjunath Krishnapur).
(2) "Fluctuations of the nodal length of random Gaussian subordinated spherical harmonics".
(3) "The empirical measure of Gaussian spherical eigenfunctions" (joint with Domenico Marinucci)
(4) "The distribution of generic functional of random spherical harmonics" (joint with Domenico Marinucci)

Research in Progress.

(1) "Universality of length distribution of nodal lines of random waves on generic surfaces" (joint with John Toth)
(2) "Distribution of critical values of random spherical harmonics"