CV: Boris Gutkin

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Personal

Born in 1972 Riga, Latvia (USSR). Citizenship: Israeli. Married, 3 children.

Education

Ph.D. Physics, Weizmann Institute of Science, Israel Advisor: Prof. U. Smilansky, "Quantum and Classical Billiards on Surfaces of Constant Curvature"	1997- 2002
M.Sc. Physics, Weizmann Institute of Science, Israel Advisor: Prof. D. Gepner,"Modular Invariant Partition Functions of WZW Models"	1994- 1996
B.Sc. Physics, Technion - Israel Institute of Technology, Israel	1992- 1994
B.Sc. Mathematics, Latvian University, USSR	1989- 1991

Research Positions

Visiting professor, Center for Nonlinear Science Georgia Institute of Technology (USA)	2015- present
Head of the junior research group at Fakultät für Physik, Universität Duisburg-Essen (Germany), Funded by German Research Foundation (DFG) grant: Gu 1208/1-1	2010- present
Researcher at Fakultät für Physik, Universität Duisburg-Essen (Germany)	2008- 2010
Postdoctoral fellow at Mathematisches Institut, Universität Erlangen-Nürnberg (Germany)	2006- 2008
Postdoctoral fellow at Physics Department, Technion (Israel)	2004- 2006
Postdoctoral researcher at CEA-Saclay, Service de Physique Theorique, Gif-sur-Yvette (France)	2001- 2003

Teaching Experience

Group theory, Universität Duisburg-Essen (Lectures)	Spring 2015
Quantum Chaos, Universität Duisburg-Essen (Lectures)	Fall 2014
Quantum Chaos, Universität Duisburg-Essen (Lectures)	Fall 2013

Group theory, Universität Duisburg-Essen (Lectures)	Spring 2013
Quantum Chaos, Universität Duisburg-Essen (Lectures/Exercises)	Spring 2012
Group theory, Universität Duisburg-Essen (Lectures)	Fall 2011
Quantum Chaos, Universität Duisburg-Essen (Project/Exercises)	Spring 2010
Advanced course on "Hyperbolic dynamical systems", Four days of 3-hour lectures, Nuremberg-Erlangen University (Lectures)	Spring 2007
Advanced course on "Geometric theories in Physics", Four days of 3-hour lectures, Nuremberg-Erlangen University (Lectures)	Fall 2007
Linear algebra, Technion (Teaching Assistant)	Spring 1994
Analysis I, Latvian University (Teaching Assistant)	Fall 1991
Analysis II, Latvian University (Teaching Assistant)	Spring 1991

Supervision of Ph.D. Students

Maram Akila, 2013-present

Ruslan Yagufarov, 2010-2012

Sophia Schäfer, 2011-2012 (joint with Thomas Guhr)

Jens Hämmerling, 2008-2011 (joint with Thomas Guhr)

Supervision of M.Sc. Students

Maram Akila, 2012-2013 (joint with Thomas Guhr)

Johannes Freese, 2010-2011 (joint with Thomas Guhr)

Grants

Principle investigator: DFG grant "Semiclassical foundations of single particle and collective phenomena in quantum chaos." Volume: Funding for Principle investigator & one PhD position, conferences, extensive travel budget. Period: 2010-2015

Investigator: DFG collaborative research grant SFB/TR12 - "Symmetries and Universality in Mesoscopic Systems." Period: 2011-2015

Awards and Fellowships

Minerva Fellowship 2006-2008

Lady Davis Fellowship, Technion 2004-2006

Joe Ford Fellowship, Georgia Institute of Technology 2003 (not used)

First place in Mathematical Olympiad of the Republic of Latvia, 1989

Second place in Physics Olympiad of the Republic of Latvia, 1989

Conference organization

"Around scattering by obstacles and billiards", Aveiro, Portugal, 29 March- 2 April 2012 (Co-organizer)

Professional activities

Co-organizer of the Mathematical physics seminar at Physics Department of Duisburg-Essen University.

Referee for Communications in Mathematical Physics, Duke Mathematical Journal, Journal of Physics A: Mathematical and General, Nonlinearity, Physical Review Letters

Talks at Conferences

Quantum chaos through symbolic dynamics - From single particle to many-body systems
Martin Gutzwiller's scientific Universe: From Wavefunctions over periodic Orbits to Sun, Moon and Earth, (invited) Dresden, October (2015)

Classical foundations of many-particle quantum chaos
Quantum Correlated Matter and Chaos: A workshop in Honor of the Life and Work of Richard Prange, Dresden, June (2015)

String-like theory of many-particle Quantum Chaos
Quantum chaos: fundamentals and applications, (invited) Luchon, France, March (2015)

Universality in spectral statistics of open quantum graphs
Non-Hermitean Random Matrices: 50 Years After Ginibre, (invited) Yad Hashmona, Israel, October (2014)

Spectral universality of open quantum graphs
Informal Billiard Workshop, Darmstadt, Germany, September (2014)

Open quantum graphs and ensembles of truncated unitary matrices
Analysis on Graphs and Applications, (invited) Royal Holloway, England, January (2014)

Königsberg Bridges, Periodic Orbits and Ensembles of Truncated Unitary Matrices
Quantum Spectra and Transport, (invited) Jerusulem, Israel, June (2013)

Clustering of periodic orbits in chaotic systems
Billiard Meeting 2012, Regensburg, Germany (2012)

Quantum billiards of constant width
Around scattering by obstacles and billiards, (co-organizer) Aveiro, Portugal, April (2012)

On the spectral structure of "cellular" billiards
X. Billiard workshop, (invited) Riezlern, Austria (2011)

Spectral statistics of "cellular" billiards
Asymptotics, phases and chaos, Optical and Quantum Conference in Honour of Michael Berry, (invited) Cuernavaca, Mexico, September (2011)

Quantum ergodicity and entropic bounds on semiclassical measures
Universality and symmetries in mesoscopic systems, Gdansk, September (2009)

Time reversal symmetry breaking by purely geometric means
Symposium on the physics of billiard systems, (invited) Cuernavaca, August (2008)

Dynamical Breaking of Time-Reversal Invariance
Scattering Systems with Complex Dynamics, Regensburg (2008)

Entropic bounds on semiclassical measures
Mathematical aspects of quantum chaos, (invited) Montreal, Canada, June (2008)

Quantum ergodicity and entropic uncertainty relations
Geometry and complexity in information theory, Erlangen, Germany May (2007)

Topological swimming in a quantum sea
Dynamics of Complex Quantum Systems, Weizmann Institute of Science and Technion, Israel, December, (2005)

Breaking of interior-exterior duality
"Nodal days", Weizmann Institute of Science, Israel, March (2004)

Can billiard eigenstates be approximated by superpositions of plane waves?
Semiclassics, Quantum Chaos, and Mesoscopics, Dresden, Germany, February (2003)

On the plane waves approximation in quantum billiards
Mathematical Aspects of Quantum Chaos, Institute Poincare, Paris, France October (2002)

Spectral duality for billiards
Colloque Mathmatiques et Physique Quantique, Saclay, France, January (2002)

Hyperbolic billiards on surfaces of constant curvature
Dynamics of Complex Systems, Dresden, Germany, May (1999)

Billiards on surfaces of constant curvature
Workshop in mathematical physics, Technion, June (1998)