

Curriculum Vitae

SVETLANA JITOMIRSKAYA

PERSONAL: born in Kharkov, Ukraine; three children; dual US/Russian citizen.

EDUCATION AND DEGREES:

- 1991 Ph.D. in Mathematics. Moscow State University
Thesis: Spectral and Statistical Properties of Lattice Hamiltonians
Advisor: Ya. G. Sinai
- 1987 Honors M.S. and B.S. (Summa Cum Laude) in Mathematics. Moscow State University
Thesis: Localization Problems in the Kicked Rotor Model
Advisor: Ya. G. Sinai.

PROFESSIONAL EXPERIENCE:

- July 2000 - Professor, UC Irvine.
January-March 2003 Research Professor, MSRI
1997-2000 Associate Professor, UC Irvine.
June-July 1998 Invited Professor, CPT, CNRS, Marseille.
1996 (Fall) Visiting Assistant Professor, Caltech.
1994-97 Assistant Professor, UC Irvine.
1992-94 Visiting Assistant Professor, UC Irvine.
1991-92 Lecturer, UC Irvine.
1990-2006 Researcher, International Institute of Earthquake
Prediction Theory and Mathematical Geophysics, Moscow.

RESEARCH DIRECTIONS AND FIELDS OF PUBLICATIONS:

Mathematical Physics and Dynamical Systems.

AWARDS:

- | | |
|---|-----------|
| EPSRC Fellowship, Cambridge University | Fall 2008 |
| AMS Satter prize | 2005 |
| UCI Distinguished Faculty Midcareer Award | 2004 |
| UCI School of Physical Sciences Outstanding
Contributions to Undergraduate Education | 2003 |
| A.P.Sloan Research Fellowship | 1996-2000 |

RESEARCH GRANTS:

NSF:1994-2011

BSF: 2003-2011

SELECTED PLENARY LECTURES:

- XV International Congress of Mathematical Physics, Rio de Janeiro, Aug. 06
- Joint AMS-MAA address, San Antonio, January 2006
- QMath 9, Marseille, France, September 2004
- Workshop on Spectral Theory of Schrödinger Operatrs (mini-course), Montreal, July 2004
- Fractal Geometry and Applications, Satell. Conference to ICM 2002, Nanjing, 08/02
- IX ICDEMP, UAB, March 2002
- AMS Meeting, Santa-Barbara, one hour address, March 2000
- VII ICDEMP, GATECH, March 1997

SELECTED SECTIONAL LECTURES:

- ICM 2002, Beijing, August 2002
- XIII International Congress of Mathematical Physics, London, July 2000
- XI International Congress of Mathematical Physics, Paris, July 1994

SELECTED PUBLICATIONS:

1. Almost Reducibility and Almost Localization. To appear in JEMS. (with A. Avila)
2. The Ten Martini problem. To appear in the Annals of Math (with A. Avila)
3. Absolutely continuous spectrum for 1D quasiperiodic operators with J. Bourgain. *Invent. Math.* 148 (2002), no. 3, 453–463.
4. Power-Law Subordinacy and Singular Spectra, I. Half-line Operators. *Acta Math.*, 183 (1999), no. 2, 171–189. (with Y. Last).
5. Metal-Insulator Transition for the Almost Mathieu Operator. *Annals of Math.*, 150, 1159-1175 (1999)
6. Duality and Singular Continuous Spectrum in the Almost Mathieu Equation. *Acta Math.* 178, 169-183 (1997) (with A. Gordon, Y. Last and B. Simon).
7. Dimensional Hausdorff Properties of Singular Continuous Spectra. *Phys. Rev. Lett.* 76, 1765-1769 (1996) (with Y. Last).
8. What is Localization? *Phys. Rev. Lett.* 75, 117-119 (1995) (with R. del Rio, Y. Last and B. Simon).
9. Singular Continuous Spectrum is Generic. *Bull. AMS* 31, 208-212 (1994) (with R. del Rio Castillo, N. Makarov and B. Simon).

REFEREE (REVIEWER) FOR:

NSF, ISF, Chilean Research Fund, Birkhauser, Bulletin AMS
Acta Mathematica
American Journal of Mathematics
Annals of Mathematics
Annales Scientifiques de l'Ecole Normale Supérieure
Annals de l'Institut Henri Poincare, Physique Theorique
Communications in Mathematical Physics
Communications in PDE
Discrete and Continuous Dynamical Systems
Duke Math Journal
Experimental Mathematics
GAFA
International Math. Research Notices
Inventiones
Journal d'Analyse
Journal of AMS
Journal of Applied Mathematics
Journal of Functional Analysis
Journal of Mathematical Analysis and Applications
Journal of Statistical Physics
Letters in Mathematical Physics
Math. Res. Letters
Mathematical Physics, Analysis and Geometry
Moscow Math Journal
Nonlinearity
Pacific Journal of Mathematics
Proceedings of AMS
Reports on Mathematical Physics
Reviews in Mathematical Physics
Transactions of AMS
Barry Simon's Festschrift
Proceedings of: QMATH7, SRC "Waves in Periodic and Random Media"
Math. Reviews (including Featured Reviews)

GRADUATE STUDENTS: Michael Landrigan (Ph.D. 2001, UCSB), Melinda Schulteis (Ph.D. 2004, Concordia University, Irvine, Associate Prof.), Deborah Koslover (Ph.D. 2005, UT Tyler, Assist. Prof., tenure-track), Martin Gartner (current), Chris Marx (current), Rajinder Mavi (current)

POSTDOCTORAL SCHOLARS: J. Sahbani (Winter-Spring 1999; Paris VII, Maitre-de-Conference), I. Krasovsky (Fall 2000; Brunel University, London, Lecturer), H. Schulz-Baldes (1999-01, Erlangen, Professor), D. Damanik (2000-01, Rice, Assoc. Prof.), S. Klein (2006-2009).

CONFERENCE ORGANIZATION:

AMS Conference on Wave Phenomena in Complex Media. Univ. of Colorado (Boulder), June 1999 (committee member)

AMS Session “Schrödinger-type Operators”, Santa-Barbara, March 2000 (main organizer)

AMS Session “Random and Deterministic Schrödinger Operators”, Irvine, November 2001 (main organizer)

Fractal Geometry and Applications, Satellite Conference to ICM02, Nanjing, China, August 2002, (Scientific Committee member)

AMS-IMS-SIAM Summer Research Conference on Spectral and inverse spectral theory for Jacobi operators, Snowbird, Utah, June 2003 (committee member);

QMath 9, Marseille, France, Sept. 2004, Session “Spectral theory”, Organizer;

Spectral theory and Math. Physics, Caltech, March 2006 (committee member);

COMMITTEES:

JMP, Editorial Board member (2006-2009);

ICMP09 International Advisory Committee;

AMS Western Section Program Committee, 2004-2006, chair 2005-2006

AMS Editorial Boards Committee, 2002-05;

AMS EBC CPUB representative, 2003;

NSF Block grant for travel to ICMP 2000 (Committee member)

COMMUNITY AND OUTREACH:

Russian Cultural Association, UCI, (founding) Chair (2003 -);

Cosmos Summer program for gifted high-schoolers, 2003;

UCI Math Circle, 2007- ;

Advisor to 3 research projects by high-schoolers, 2003-2005;

JSHS reviewer;

RECENT INVITED LECTURES:

BIRS workshop "Random Schrodinger Operators", to be held April 2009

BIRS workshop "Dynamics and Statistics of Spatially Extended Systems", January 2009

Workshop "Classical and Quantum transport in the presence of disorder", Newton Institute, Cambridge, UK, to be held December 2008

Colloquium, U Chicago, to be held November 2008

London Analysis and Probability seminar, October 2008

Analysis seminar, Cardiff University, October 2008,

Mathematical Physics seminar, Brunel University, September 2008

MPA seminar, Newton Institute, Cambridge, September 2008

Dynamical Systems seminar, KTH, Stockholm, September 2008

Mathematical Physics seminar, Caltech, May 2008

Western States Math-Physics conference, February 2008

Mathematical Physics seminar, Brunel University, July 2007

Mathematical Physics seminar, Caltech, May 2007

Applied Math Colloquium, MIT, March 2007

Paris Nord - Berkeley - Bonn analysis seminar, March 2007

Agmonfest, Hebrew university, January 2007

XV International Congress of Mathematical Physics (plenary), Rio de Janeiro, Aug. 2006

The legacy of Ladyzhenskaya and Oleinik, MSRI, May 2006

Historical roundtable about 2 Olgas, MSRI, May 2006

AMS meeting, section "Non-uniform hyperbolicity and Lyapunov exponents", April 2006

Spectral theory and Math. Physics, Caltech, March 2006

Analysis and PDE seminar, MIT, March 2006

Workshop on dynamical systems and related topics, UMD, March 2006

Joint UCLA-Caltech analysis seminar, March 2006

Joint AMS-MAA plenary address, San-Antonio, January 2006

"Dynamics of Complex Quantum Systems", December 2005, Israel

Oberwolfach meeting on "Dynamics of quasiperiodic co-cycles", November 2005

Colloquium, Erlangen University, November 2005
CAMP seminar, U Chicago, November 2005
Math. Physics seminar, CPT, CNRS, Marseille, July 2005
Random Matrices Workshop, Warwick, UK, April 2005
Riviere-Fabes Symposium, Minnesota, April 2005
Colloquium, U Wisconsin Madison, March 2005
Analysis seminar, U Wisconsin Madison, March 2005
Western States Mathematical Physics Meeting, March 2005
UCI distinguished lecture, October 2004
QMath 9, Marseille, France, September 2004 (plenary)
Workshop "Spectral Theory of Schroedinger Operators," CRM, Montreal, Canada, July 2004 (plenary mini-course)
Show-Me Conference, UMC, Missouri, June 2004
Mathematical Physics seminar, Caltech, May 2004
Analysis seminar, UCLA, May 2004
Mathematical Physics seminar, Caltech, May 2003
Analysis seminar, Stanford, March 2003
Mathematical Physics seminar, UCD, March 2003
Semi-classical analysis seminar, MSRI, February 2003
Conference on Spectral Analysis in Geometry and Physics, UCSD, January 2003;
SCAPDE meeting, UCLA, November 2002;
ICM 2002, Beijing, August 2002;
Fractal Geometry and Applications, Satellite Conference to ICM02, Nanjing, China, August 2002 (plenary);
Intern. Conf. on Differential, Functional Differential Equations, Moscow, Aug. 2002;
Mathematical Physics seminar, ITP, Technion, July 2002;
IX Intern. Conf. on Diff. Equations and Math. Physics, UAB, March 2002, (plenary);
Analysis Seminar, JHU, January 2002
Mathematics Colloquium, UC Berkeley, October 2001;
AMS session "Random and Deterministic Schrödinger Operators", Irvine, November 2001;

Mathematical Physics seminar, Caltech, November 2001;
Mathematical Physics meeting, Mambucaba, Brazil, August 2001;
Mathematical Physics seminar, Paris-7 University, July 2001;
Analysis seminar, Johns Hopkins University, March 2001;
Mathematics Colloquium, USC, January 2001;
Mathematics Colloquium, Caltech, November 2000;
Southwest Regional Dynamics Workshop, USC, November 2000;
Mathematical Physics seminar, Caltech, October 2000;
XIII International Congress of Mathematical Physics, London, July 2000.
AMS Meeting, Santa-Barbara, 1 hour address, March 2000.
Workshop on "Quant. Spectra and Dynamics," Israel, June - July , 2000
Workshop on Localization and Lyapunov Exponents , IAS, April 2000;
Western States Math. Physics Conference, CALTECH, Feb. 2000
Mathematical Physics seminar, TECHNION, December 1999.
Mathematical Physics seminar, Caltech, December 1999;
Southern California Analysis/PDE meeting, November 1999.
Dynamical Systems/Analysis seminar, USC, November 1999.
Applied Math. Seminar, University of Chicago, October 1999.
AMS session "Spectral Theory of Diff. Operators and Applications", Charlotte, Oct. 1999.
Summer Research Conference on Wave Phenomena in Complex Media. University of Colorado (Boulder), June 1999
Mini-conference on Spectral Theory, Hebrew University, Jerusalem, December 1998;
Mathematical Physics seminar, Technion, December 1998;
Mathematical Physics seminar, Caltech, November 1998;
Mathematical Physics seminar, Paris-7 University, July 1998;
Math. Physics seminar, CPT, CNRS, Marseille, July 1998 (a series of 3 lectures);
Colloquium, CPT, CNRS, Marseille, July 1998;
Colloquium, Department of Mathematics, Wayne State, March 98;
PDE and Applied Math Seminar, TECHNION, January 1998

PUBLICATIONS:

1. Singular spectrum and scaling for Schrodinger operator with binary quasiperiodic potential. *Rus. Math. Surveys* 45, No.5, 179 (1990).
2. Aharonov-Bohm Problem on a Square Lattice. *Theor. Math. Phys.* 86, 241-251 (1991) (with V. A. Mandelshtam).
3. Spectral properties of one dimensional quasiperiodic operators, *Rus. Math. Surveys*, 91, No. 2 (1991).
4. Singular spectral properties of a one dimensional discrete Schrodinger operator with quasiperiodic potential. *Adv. of Sov. Math.* v.3, 215-254 (1991).
5. 1D-Quasiperiodic Operators. Latent Symmetries. *Comm. Math. Phys.* 139, 589 -604 (1991) (with V. A. Mandelshtam).
6. Anyon Gas on a Lattice in the Low Density Regime -Sov. Phys. *JETP Lett.* (*Pis'ma Zh. Eksp. Teor. Fis.*) 52, 767-768 (1990) (with A. A. Belov, Yu. E. Lozovik, and V. A. Mandelshtam).
7. Anyon Gas on a Lattice. *Sov. Phys. JETP* 73, 188-192 (1991) (with A. A. Belov, Yu. E. Lozovik, and V. A. Mandelshtam).
8. Ising Model In a Quasi-periodic Transverse Field and Percolation and Contact Processes in Quasi-periodic Environments. *J. Stat. Phys.* V73 N1-2:319-344. (1993) (with A. Klein).
9. Anderson Localization for the Almost Mathieu Equation: A Nonperturbative Proof. *Comm. Math. Phys.* 165, 49-58 (1994)
10. Singular Continuous Spectrum is Generic. *Bull. AMS* 31, 208-212 (1994) (with R. del Rio Castillo, N. Makarov and B. Simon).
11. Operators with Singular Continuous Spectrum, III. Almost Periodic Schrodinger Operators. *Comm. Math. Phys.* 165, 201-206 (1994) (with B. Simon).
12. Anderson Localization for the Almost Mathieu Equation, II: Point Spectrum for $\lambda > 2$. *Comm. Math. Phys.* 168, 563-570 (1995).
13. Operators with Singular Continuous Spectrum, IV. Hausdorff Dimensions, Rank One Perturbations and Localization. *J.D'Analyse Math.* 69, 153-200 (1996) (with R. del Rio, Y. Last and B.Simon).
14. Almost Everything About the Almost Mathieu Operator, II. "Proceedings of XI International Congress of Mathematical Physics", *Int. Press*, 373-382 (1995).
15. What is Localization? *Phys. Rev. Lett.* 75, 117-119 (1995) (with R. del Rio, Y. Last and B. Simon).

16. Dimensional Hausdorff Properties of Singular Continuous Spectra. *Phys. Rev. Lett.* 76, 1765-1769 (1996) (with Y. Last).
17. Duality and Singular Continuous Spectrum in the Almost Mathieu Equation. *Acta Math.* 178, 169-183 (1997) (with A. Gordon, Y. Last and B. Simon).
18. Continuous Spectrum and Uniform Localization for Ergodic Schrodinger Operators. *J. Funct. Anal.* 145, 312-322 (1997).
19. Anderson Localization for the Almost Mathieu Equation, III. Uniform Localization, Continuity of Gaps, and Measure of the Spectrum. *Comm. Math. Phys.* 195, 1-14 (1998) (with Y. Last).
20. Power-Law Subordinacy and Singular Spectra, I. Half-line Operators. *Acta Math.*, 183 (1999), no. 2, 171-189. (with Y. Last).
21. Metal-Insulator Transition for the Almost Mathieu Operator. *Annals of Math.*, 150, 1159-1175 (1999)
22. Power-Law Subordinacy and Singular Spectra, II. Line Operators. *Comm. Math. Phys.*, 211 (2000) 643-658. (with Y. Last).
23. Zero-dimensional spectrum for quasiperiodic operators with analytic potential. *J. Stat. Phys.*, 100, 791-796. (2000) (with M. Landrigan).
24. Strong dynamical localization for the almost Mathieu model. *Rev. Math. Phys.*, 13 (2001), no. 6, 755-765 (with F. Germinet).
25. Nonperturbative analysis of quasiperiodic operators. *Proceedings of XIIIth International Congress on Mathematical Physics (London, 2000)*, 423-424, Int. Press, Boston, (2001).
26. Anderson localization for the band model. *Geometric aspects of functional analysis*, 67-79, *Lecture Notes in Math.*, 1745, Springer, Berlin, 2000. (with J. Bourgain).
27. Absolutely continuous spectrum for 1D quasiperiodic operators with J. Bourgain. *Invent. Math.* 148 (2002), no. 3, 453-463.
28. Continuity of the measure of the spectrum for discrete quasiperiodic operators, *Math. Res. Letters* 9 (2002), no. 4, 413-421 (with I. Krasovsky).
29. Continuity of the Lyapunov exponent for quasiperiodic operators with analytic potential. *JSP* 108(5): 1203-1218; Sep 2002, special issue dedicated to D. Ruelle and Ya. Sinai in honor of their 65th birthday anniversaries (with J. Bourgain).
30. Delocalization in random polymer chains, *Comm. Math. Phys.* 233 (2003), 27-48 (with H. Schulz-Baldes and G. Stolz).
31. Nonperturbative localization. *Proceedings of the ICM 2002, Vol III*, 445-457, Higher Ed. Press, Beijing 2002.

32. Localization for a family of one dimensional quasiperiodic operators of magnetic origin, *Annales Henri Poincare.* **6**, 103-121 (2005) (with D. Koslover, M. Schulteis)
33. Solving the Ten Martini problem. *Mathematical Physics of quantum mechanics*, 5-16, *Lecture Notes in Physics*, 690, Springer, Berlin, 2006 (with A. Avila)
34. Localization for quasiperiodic potentials, *Encyclopedia of Mathematical Physics*, to appear
35. Continuity of the Lyapunov Exponent for analytic quasiperiodic cocycles. *Erg. Theory. Dyn. Syst.*, to appear (with D. Koslover and M. Schulteis).
36. Ergodic Schrödinger operators (on one foot). *Spectral theory and mathematical physics: a Festschrift in honor of Barry Simon's 60th birthday*, 613-647, *Proc. Sympos. Pure Math.*, 76, Part 2, Amer. Math. Soc., Providence, RI, 2007.
37. Treating small denominators without KAM, *Proceedings of "The legacy of Ladyzhenskaya and Oleinik"*, to appear.
38. Upper bounds on wavepacket spreading for random polymer models. *Comm. Math. Phys.*, **273** (2007) (with H. Schulz-Baldes)
39. The Ten Martini problem. *Annals of Math.*, to appear (with A. Avila)
40. Almost localization and almost reducibility. *JEMS*, to appear (with A. Avila)