

## Curriculum Vitae SVETLANA JITOMIRSKAYA

### 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 2018- Distinguished Professor, UC Irvine  
July 2000 - Professor, UC Irvine.  
January-March 2003 Research Professor, MSRI  
1997-2000 Associate Professor, UC Irvine.  
1996 (Fall) Visiting Assistant Professor, Caltech.  
1994-97 Assistant Professor, UC Irvine.  
1992-94 Visiting Assistant Professor, UC Irvine.  
1991-92 Lecturer (part-time), UC Irvine.

### RESEARCH DIRECTIONS AND FIELDS OF PUBLICATIONS:

Spectral theory of quasiperiodic Schrödinger operators  
Spectral theory of periodic and magnetic operators  
Quantum dynamics  
Fractal properties of singular continuous spectra  
Spectral theory of random operators  
Diophantine approximation  
Spectral theory of Laplacians on noncompact Riemannian manifolds

### AWARDS:

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|---|----------------------|
| Member, American Academy of Arts and Sciences                         | 2018                 |
| Aisenstadt Chair, CRM, Montreal                                       | 2018                 |
| Chancellor's Award for Excellence in Fostering Undergraduate Research | 2018                 |
| Simons Fellow   | 2014-2015            |
| UCI Chancellor's Fellow   | 2012-2015            |
| Named the Most Influential UCI Faculty by an Honors graduate,         | 2005, 2012, and 2018 |
| 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-current  
BSF: 2003-2011

## SELECTED PUBLICATIONS:

[78] Anderson localization for multi-frequency quasiperiodic operators on  $Z^d$ . (with W.Liu, Y.Shi) <https://arxiv.org/abs/1908.03805>

[76] Critical almost Mathieu operator: hidden singularity, gap continuity, and the Hausdorff dimension of the spectrum (with I. Krasovsky) <https://www.dropbox.com/s/7bkm4f17emsj4w5/hausdorff19.pdf?dl=1>

[71] Universal reflective-hierarchical structure of quasiperiodic eigenfunctions and sharp spectral transitions in phase (with W. Liu). <https://arxiv.org/abs/1802.00781>

[69] Cantor spectrum of graphene in magnetic fields. *Inventiones Math.*, to appear (with S. Becker and R. Han). <https://arxiv.org/abs/1803.00988>

[61] Universal hierarchical structure of quasiperiodic eigenfunctions. (with W. Liu), *Annals of Math.* **187** no. 3, 721-776 (2018)

[60] Quantitative continuity of singular continuous spectral measures and arithmetic criteria for quasiperiodic Schrödinger operators (with S. Zhang), 44pp, submitted. <https://arxiv.org/abs/1510.07086>

[58] Spectral theory of extended Harper's model and a question by Erdős and Szekeres, (with A. Avila and C. Marx) *Inventiones Math.* **210**, no. 1, 283–339. (2017)

[39] The Ten Martini problem. *Annals of Math* **170** no. 1, 303-342. (2009) (with A. Avila)

[27] Absolutely continuous spectrum for 1D quasiperiodic operators *Inventiones Math.* 148 (2002), no. 3, 453–463, (with J. Bourgain).

[22] 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)

[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).

## FURTHER SELECTED PUBLICATIONS:

[73] Noncompact complete Riemannian manifolds with dense eigenvalues embedded in the essential spectrum of the Laplacian. *GAFSA*, **29** 238-257 (2019) (with W. Liu)

[70] Inhomogeneous Diophantine approximation in the coprime setting (with W. Liu). *Advances*, to appear. <https://arxiv.org/abs/1802.04384>

[68] Discrete Bethe-Sommerfeld Conjecture. *Comm. Math. Phys.*, 361, 205-216 (2018) (with R. Han)

[56] All couplings localization for quasiperiodic operators with monotone potentials. *J.Eur. Math.Soc.*, **21** 777-795 (2019) (with I Kachkovskii)

[54] Arithmetic spectral transitions for the Maryland model. (with W. Liu), *Comm. Pure Appl. Math.* 70 (2017), no. 6, 1025-1051.

[52] Complex one-frequency cocycles, *J. Eur. Math. Soc. (JEMS)*, **16**, 1915-1935 (2014) (with A. Avila and C. Sadel).

- [46] Analytic quasi-periodic Schrodinger operators and rational frequency approximants, *Gafa* 22 (2012), 1407-1443. (with C. Marx)
- [40] Almost Reducibility and Almost Localization. *JEMS* 12 (2010), 93-131. (with A. Avila)
- [30] Delocalization in random polymer chains, *Comm. Math. Phys.* 233 (2003), 27-48 (with H. Schulz-Baldes and G. Stolz).
- [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).
- [16] Dimensional Hausdorff Properties of Singular Continuous Spectra. *Phys. Rev. Lett.* 76, 1765-1769 (1996) (with Y. Last).
- [15] What is Localization? *PRL* 75, 117-119 (1995) (with R. del Rio, Y. Last and B. Simon).
- [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).
- [11] Operators with Singular Continuous Spectrum, III. Almost Periodic Schrodinger Operators. *Comm. Math. Phys.* 165, 201-206 (1994) (with B. Simon).
- [10] Singular Continuous Spectrum is Generic. *Bull. AMS* 31, 208-212 (1994) (with R. del Rio, N. Makarov and B. Simon)
- [9] Anderson Localization for the Almost Mathieu Equation: A Nonperturbative Proof. *Comm. Math. Phys.* 165, 49-58 (1994)

## **SELECTED PLENARY LECTURES**

- 2019 CDM Conference, Harvard/MIT, to be held November 2019
- Distinguished lecture, Tel Aviv University, January 2017
- QMath 13, Atlanta, Oct. 2016
- Frontiers in Mathematical Physics, Montreal, Aug. 2016
- Bullitt Lecture, April 2016
- 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
- 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 MINI-COURSES:**

Aisenstadt lectures, CRM, Montreal, November 2018

2018 PCMI program on Harmonic Analysis, Park City, July 2018

Summer school in mathematical physics, UNAM, June 2017

Nanjing University, 6 lectures, June 2015

Informal Analysis Seminar, Kent State University (4 lectures), March 2014

Recent Advances in Harmonic Analysis and Spectral Theory 08/12, Texas A&M

Workshop on Spectral Theory of Schrödinger Operators, Montreal, July 2004

### **GRADUATE STUDENTS:**

Michael Landrigan (Ph.D. 2001, UBS, Associate Director)

Melinda Schulteis (Ph.D. 2004, Concordia University, Irvine, Associate Prof.)

Deborah Koslover (Ph.D. 2005, UT Tyler, Associate Professor)

Martin Gartner (MS 2007, US Navy)

Yi Sun (MS 2011, Facebook)

Chris Marx (Ph.D. 2012, Bateman at Caltech, now Oberlin, Tenure Track Asst Prof)

Rajinder Mavi (Ph.D. 2012, Whyburn at U of Virginia; now University of Cincinnati)

Mustafa Said (Ph.D. 2014, College of the Canyons)

Wencai Liu (Ph. D. 2015 (Fudan University), visiting long-term in 2014, 2015; Tenure track assistant professor, Texas A&M )

Shiwen Zhang (Ph.D. 2016, U Minnesota, Visiting Assistant Professor)

Rui Han (PhD 2017, IAS, member; now Georgia Tech, Vis. Assistant Professor)

Fan Yang (visiting 2014-2016, PhD 2016 (Ocean University), Researcher, IAS; now at GaTech

Simon Becker (MS 2017, TU Munich & LMU; PhD student at University of Cambridge )

I directed 1/2 of Simon's MS thesis

Yunfeng Shi (PhD 2018 Fudan; visiting long-term in 2017-18; Postdoc at Peking University)

Xiaowen Zhu (current)

Nishant Rangamani (current)

Matthew Powell (current)

Xin Zhao (visiting long-term 2019-2021).

**POSTDOCTORAL SCHOLARS:**

J. Sahbani (WS 1999; Paris VII, Maitre-de-Conference)  
F. Germinet (Fall 1999; U Cergy-Pontoise, President),  
I. Krasovsky (Fall 2000; Imperial College, London, Reader),  
H. Schulz-Baldes (1999-01, Erlangen, Professor)  
D. Damanik (2000-01, Rice, Wiess Career Development Chair Professor)  
S. Klein (2006-2009, Tenure Track Assist. Prof., PUC Rio de Janeiro).  
C. Sadel (2009-2012, joint w. A. Klein; Tenure Track Assist. Prof., Universidad de Chile)  
I. Kachkovkiy (2013-2016, Tenure Track Assistant professor, MSU )  
Q. Zhou (2015, Full Professor, Nanjing University)  
F. Yang (2017, Researcher, Georgia Tech)  
W. Liu (2015-2019, Tenure Track Assistant professor, Texas A&M )  
L. Ge (2019-current)

**UNDERGRADUATE RESEARCH:**

Matthew Powell (2017-18; graduate student, UCI), Honors Thesis.

**EDITOR:**

GAFA (2018- )

PAFA special issue on Dynamical Systems, Ergodic Theory and Mathematical Physics dedicated to Yakov Sinai on the occasion of his 85th birthday (2019-)

Pure and Applied Functional Analysis (2018-)

CRM Short Course Series (2016- )

IMRN (2014 - )

Journal of Fractal Geometry (2013 - )

Journal of Spectral Theory (2009- );

JMP (2006-2009);

**INTERNATIONAL ASSOCIATION OF MATHEMATICAL PHYSICS (IAMP)**

IAMP, Vice-President (2012-2014);

IAMP, Executive committee (2009-2014);

ICMP 09 International Advisory Committee;

IAMP Early Career Award Committee, 2009;

## CONFERENCE ORGANIZATION:

Summer School on periodic, almost periodic and random operators, Montreal, to be held 07/21, organizer.

New trends in Lyapunov Exponent, Lisbon, to be held 07/20, advisory board member

Almost-Periodic Spectral Problems, BIRS workshop, Banff, to be held April 2020, organizer.

A. Klein's 75th birthday conference, U Cergy-Pontoise, Paris, to be held 06/2020, organizer

37th Western States Mathematical Physics Meeting, UCI, to be held February 2020, organizer.

Fields Symposium, Toronto, to be held Nov. 2019, organizing committee member

Non-self adjoint and magnetic operators in mathematical physics. Nantes, April 2019, scientific committee member

ICMP 2018, July 2018, Montreal, local organizing committee member

36th Western States Mathematical Physics Meeting, UCI, February 2018, organizer.

Second USA-Uzbekistan conference; Organizer, section on mathematical physics and PDE; scientific committee member, Aug 2017, Urgent, Uzbekistan

Fields Institute Young Researchers Symposium, Toronto, August 2016. Organizer and moderator of "Spectral theory of quasi-periodic operators".

Barry Simon's 70th Birthday Conference, Montreal, August 2016, Scientific Committee

Analysis and beyond: celebrating Jean Bourgain's work and its impact, Princeton, May 2016, Organizer

Ya. Sinai's 80s Birthday Conference, Princeton, December 2015, Organizer

Spectral Theory of Ergodic Schrödinger Operators and related models, AMS Fall Western Sec. meeting, Fullerton, October 2015, Organizer

Almost-periodic and Other Ergodic Problems, INI, Cambridge, April 2015, Organizer

USA-Uzbekistan Conference on Analysis and Mathematical Physics, session on Schrödinger operators and related problems, CSUF, May 2014, Organizer

Arbeitsgemeinschaft on Quasip. Schrödinger operators, Oberwolfach, 04/12, Organizer.

SCAPDE meeting, UCI, Dec. 2011, Organizer

SCAPDE meeting, UCSD, April 2011 (committee member)

SCAPDE meeting, UCI, Nov. 2009 (main organizer)

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

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

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

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

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

AMS Session “Schrödinger-type Operators”, Santa-Barbara, 03/00 (main organizer)

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

#### **OTHER INTERNATIONAL SERVICE:**

European Research Council Advanced Grant Panel (2009-2017);

Scientific committee of the GDR CNRS dynqua (French research network), 2016-

EMS/EWM scientific committee, 2014 -

Expert evaluator, KTH, 2019

Newton Institute, Cambridge, Periodic and Ergodic Spectral Problems Program, 2012-15, Organizer

Advanced Studies Institutes in Uzbekistan (2018 -), organizing committee member.

#### **AMS:**

AMS Centennial Fellowship Committee, 2016-2018. Chair 2017-18

AMS Satter Prize Committee, 2012-2016

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

AMS Editorial Boards Committee, 2002-05; CPUB representative, 2003;

#### **OTHER US/CANADA SERVICE:**

American Academy of Arts and Sciences Mathematics Membership Panel, 2019-20

CRM-Fields-PIMS Prize committee, 2018

UC Davis Mathematics Program, External Reviewer, 2018

Mathematical Physics Thematic Program, CRM, 2018, Org. Committee member

ICMP US travel grant (Committee member), 2000 & 2018

Random physical systems US travel grant (Committee member), 2018

Probabilistic methods in geometry, topology, and spectral theory, CRM, Montreal, Scientific Committee member, 2014-2016

Simons Foundation Collaboration Grants Review Committee member (2014)

Luther Marion Defoe Distinguished Professor Selection Committee 2012

Fields Institute, Toronto, Program on Dynamics and Transport in Disordered Systems, Scientific Committee (2011);

### **RECENT INVITED SEMINARS/COLLOQUIA:**

Colloquium, U Toronto, to be held Spring 2020

Operator Algebras seminar, U Toronto, to be held Spring 2020

Colloquium, Baylor University, to be held April 2020

Colloquium, UCSD, to be held Fall 2019

Caltech/UCLA joint analysis seminar, to be held October 2019

Applied Math Seminar, Stanford, May 2019

Math-physics seminar, PUC Chile, Santiago, Chile, April 2019

Colloquium, UMD, April 2019

Quebec Math Colloquium, November 2018

Mini-course (5 lectures), University College London, July 2018

Colloquium, UC Santa Cruz, May 2018

Colloquium, Queen's University, Canada, January 2018

Noncommutative geometry seminar, Caltech, April 2017

TWIM Distinguished lecture, Tel Aviv University, January 2017

Analysis and PDE seminar, Hebrew University, December 2016

Berkeley Analysis and PDE seminar, May 2016

Applied Math seminar, CAS, Beijing, July 2015

Department of Mathematics, Nanjing University, a series of six lectures, June-July 2015

Mathematical Physics seminar, University of Bristol, May 2015

Colloquium, Open University, Milton Keynes, UK, April 2015



Paris-London Analysis seminar, March 2015  
Dep. Colloquium, Indiana University-Purdue University Indianapolis, November 2014  
Dynamical Systems seminar, Courant Institute, October 2014  
Mathematical Physics seminar, IAS, October 2014  
Current Topics in Mathematical Physics seminar, McGill, Montreal, July 2014  
Department Colloquium, U Wisconsin, February 2014  
Applied Math seminar, Stanford University, October 2013  
CRM-ISM Mathematics Colloquium, Montreal, September 2013  
Mathematical Physics Working Seminar, McGill University, Montreal, September 2013  
Sinai's seminar, IITP Moscow, July 2013  
Math Physics seminar, Caltech, May 2013  
Analysis seminar, University College London, February 2013  
Sinai's seminar, IITP Moscow, July 2012  
Mathematical Physics seminar, UCD, May 2012  
Analysis seminar, Imperial College, London, November 2011  
Department Seminar, University College London, November 2011  
Analysis seminar, University College London, July 2011  
Mathematical Physics seminar, Caltech, June 2011  
Colloquium, Stony Brook, March 2011  
Dynamical Systems seminar, Stony Brook, March 2011  
MASS colloquium, UPenn, Oct. 2010  
Colloquium, Virginia Tech, Dec. 2010  
Analysis seminar, Hebrew University, Oct. 2010  
Math analysis and applications seminar, Weizmann Institute, Oct. 2010  
Analysis and PDE seminar, Technion, Sep. 2010  
Colloquium, U Maryland, April 2010

**RECENT INVITED CONFERENCE TALKS:**

ECM Satellite conference in Analysis, plenary, to be held July 2020  
New trends in Lyapunov Exponents, to be held July 2020, Lisbon  
Workshop "Random Schroedinger operators and related topics", Florence, to be held 02/20

Workshop “Many faces of renormalization”, Stony Brook, to be held June 2020

Workshop ”Mathematics of topological insulators”, Columbia University, to be held 03/20

2019 Current Developments in Mathematics Conference, Harvard/MIT, to be held Nov. 2019

Fields Symposium, Toronto, to be held November 2019

Random matrix products and Anderson localization, BIRS, to be held September 2019

Workshop on Conservative dynamics and its interactions, Lausanne, August 2019

QMath14, Aarhus, Denmark, August 2019

Honoring the Life and Work of Jean Bourgain, Princeton, May 2019

Mathematical Physics at the Crossings, Virginia Tech, May 2019

Quasiperiodicity and Fractality in Quantum Statistical Physics, Rutgers, May 2019

Maryland Dynamical Systems Conference, April 2019

Aisenstadt lectures, CRM, Montreal, November 2018

Conference on quasi-periodic dynamics and Schrödinger operators, Nanjing, Sep 2018

2018 PCMI program on Harmonic Analysis, Park City, July 2018 (mini-course)

Transport and localization in random media, Columbia University, May 2018

Classical and Quantum motion in disordered environment QMUL, London, December 2017

Summer school in mathematical physics, UNAM, June 2017 (mini-course)

Western States Meeting, Caltech, February 2017

Harmonic Analysis, January 2017, MSRI, Berkeley, California

Distinguished lecture, Tel Aviv University, January 2017

Workshop in Dynamical Systems and Related Topics, October 2016, PennState

QMath 13, Atlanta, plenary, Oct. 2016

Barry Simon 70th birthday conference, CRM, Aug 2016

Mathematics, Theoretical Physics and Data Science 2016, dedicated to anniversaries of Yakov Sinai and Grigory Margulis, Moscow, July 2016

Spectral Theory of Periodic, Quasi-periodic, and random problems, London, June 2016

Workshop “Interplay between dynamical systems and spectral theory”, Simons Center, Stony Brook, June 2016

Analysis and beyond: celebrating Jean Bourgain’s work and its impact, Princeton, May 2016

114th Statistical Mechanics conference (celebrating 80th birthdays of D. Ruelle and Y. Sinai), Rutgers, December 2015

SCAPDE, San Diego, May 2015  
Periodic and other ergodic spectral problems, Cambridge INI, March 2015  
ORAM 5, Cincinnati Ohio, February 2015  
Fourth Abel Conference, IMA, October 2014  
Spectral Days 2014, Marseille, June 2014  
USA-Uzbekistan Conference on Analysis and Mathematical Physics, Plenary, May 2014  
Informal Analysis Seminar, Kent State University (4 lectures), March 2014  
Western States Meeting, Caltech, February 2014  
TexAMP 2013, Rice University, October 2013  
Avronfest, July 2013, Jerusalem Israel  
Mathematics and Physics of disordered systems, Cambridge, UK, 9/12  
3-lecture mini-course, "Recent Advances in Harmonic Analysis and Spectral Theory", 08/12, Texas A&M  
Birman 2012, July 2012, St. Petersburg, Russia  
Fractal Geometry and Dynamical Systems: IAMIS, June 2012, Riverside  
Spectral Days 2012, April 2012, Munich, Germany  
Western States mathematical physics meeting, Feb. 2012, Caltech

## **COMMUNITY**

Russian Cultural Association, UCI, (founding) Chair (2003 - ); Since 2016 I am the main organizer of cultural events for the Orange County's Russian community, such as lectures by D. Bykov, V. Shenderovich, concerts by Y. Kim, T. Shaov.

UCI Math Circle, founder (2007); advisor, 2007-;

Euler winter math camp by S. Rubinstein-Salzedo, UCI, local organizer (2017-18)

Mathcounts coach, 2008-2011 and 2015-2017

Russian school "Karandash", founding organizer, board member, and teacher of math circle and literature circle, 2003-2015

Advisor to 3 research projects by high-schoolers with Intel/Siemens honors 2003-2005;

Cosmos Summer program for gifted high-schoolers, 2003;

JSHS reviewer;

## 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*, Academic Press, 2006
35. 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.
36. Treating small denominators without KAM, 33-36, Proceedings of “The legacy of Ladyzhenskaya and Oleinik”, MSRI, 2007.
37. Upper bounds on wavepacket spreading for random polymer models. *Comm. Math. Phys.*, **273** (2007) (with H. Schulz-Baldes)
38. Continuity of the Lyapunov Exponent for analytic quasiperiodic cocycles. *Erg. Theory. Dyn. Syst.*, 29 (2009), 1881-1905 (with D. Koslover and M. Schulteis).
39. The Ten Martini problem. *Annals of Math.*, **170** no. 1, 303-342. (2009) (with A. Avila)
40. Almost localization and almost reducibility. *J. Eur. Math. Soc. (JEMS)* 12 (2010), no. 1, 93-131. (with A. Avila)
41. Hölder continuity of absolutely continuous spectral measures for one-frequency quasiperiodic Schrödinger operators. *Comm. Math. Phys.*, 301 (2011), 563-581 (with A. Avila)
42. Continuity of the Lyapunov exponents for analytic quasiperiodic cocycles with singularities. *JFPTA*, 10 (2011), no. 1, 129-146, Special issue dedicated to the 80th birthday of R. Palais (with C. Marx)
43. Arbeitsgemeinschaft: Quasiperiodic Schrödinger Operators, Oberwolfach Report 17/12, p.1-69 (with A. Avila and D. Damanik)
44. Arbeitsgemeinschaft mit aktuellem Thema: Quasiperiodic Schrödinger Operators, p. 1-26 (with A. Avila and D. Damanik)
45. Analytic Quasi-Periodic Cocycles with Singularities and the Lyapunov Exponent of Extended Harper's model. *Commun. Math. Phys.* **316** 237-267, 2012 (with C. Marx)
46. Analytic quasi-periodic Schrödinger operators and rational frequency approximants. *GAF*, **22** 1407-1443, 2012 (with C. Marx)
47. Erratum to: Analytic quasi-periodic cocycles with singularities and the Lyapunov exponent of extended Harper's model. *Comm. Math. Phys.* 317 (2013), no. 1, 269-271 (with C. Marx)
48. Exponential dynamical localization for the Almost Mathieu operator, *Comm. Math. Phys.* **322** 877-882, 2013 (with H. Krueger)

49. Continuity of the measure of the spectrum for quasiperiodic Schrödinger operators with rough potentials, *Comm. Math. Phys.* **325** 585-601, 2014 (with R. Mavi)
50. On the ground state calculation of a many-body system using a self-consistent basis and quasi-Monte Carlo. An application to water hexamer. *J. Chem. Phys.* **139**, 204104 (2013) (with I. Georgesku and V. Mandelshtam)
51. Complex one-frequency cocycles, *J.Eur. Math.Soc.*, **16**, 1915-1935, (2014) (with A. Avila and C. Sadel).
52. Spectral Theory of Extended Harper's Model. Preprint 2013 (with C. Marx)
53. Dynamical localization bounds for quasiperiodic Schrödinger operators with rough potentials, (with R. Mavi) *Int. Math. Res. Not.* **2017** 96120 (2017)
54. Arithmetic spectral transitions for the Maryland model. (with W. Liu), *Comm. Pure Appl. Math.* **70** (2017), no. 6, 1025-1051.
55. Dynamics and spectral theory of quasiperiodic Schrödinger type operators. 41pp, *Ergod.Th.& Dynam.Sys.*, **37** 2353-2393 (2017) (with C. Marx)
56. All couplings localization for quasiperiodic operators with monotone potentials. *J.Eur. Math.Soc.*, **21** 777795 (2019) (with I Kachkovskii)
57.  $L^2$ -reducibility and localization for quasiperiodic operators. (with I Kachkovskii), *Mathematical Research Letters*, Vol. 23, No. 2 (2016), pp. 431-444.
58. Spectral Theory of Extended Harper's Model and a question by Erdős and Szekeres. (with A. Avila and C. Marx) *Invent. Math.* **210** (2017), no. 1, 283-339.
59. A lower bound on the Lyapunov exponent for the generalized Harper's model. *J Stat.Phys.*, **166** 609-617 (2017) (with W. Liu)
60. Quantitative continuity of singular continuous spectral measures and arithmetic criteria for quasiperiodic Schrödinger operators. preprint 2015, 44pp (with S. Zhang), submitted. <https://arxiv.org/abs/1510.07086>
61. Universal hierarchical structure of quasiperiodic eigenfunctions. (with W. Liu), *Annals of Math.* **187** 3, 721-776 (2018)
62. Pure point spectrum for the Maryland model: A constructive proof. (with F. Yang). *ETDS*, to appear.
63. Second phase transition line. (with A. Avila and Q. Zhou), *Math. Ann.*, **370** 271-285 (2018)
64. Full measure reducibility and localization for quasiperiodic Jacobi operators: a topological criterion. (with R. Han), *Adv. Math.* **319** (2017), 224250.
65. Quantum dynamical bounds for ergodic potentials with underlying dynamics of zero topological entropy. (with R. Han), *Analysis and PDE*, **12** 867-902 (2019).

66. Singular continuous spectrum for singular potentials. (with F. Yang), *Comm. Math. Phys.* 351 (2017), no. 3, 11271135.
67. Quasiperiodic Schrödinger Operators. *Notices AMS*, September 2016
68. Discrete Bethe-Sommerfeld Conjecture. *Comm. Math. Phys.*, 361, 205-216 (2018) (with R. Han)
69. Cantor spectrum of graphene in magnetic fields. *Inventiones*, to appear (with S. Becker and R. Han) <https://arxiv.org/abs/1803.00988>
70. Inhomogeneous Diophantine approximation in the coprime setting (with W. Liu). *Advances*, to appear. <https://arxiv.org/abs/1802.04384>
71. Universal reflective-hierarchical structure of quasiperiodic eigenfunctions and sharp spectral transitions in phase. Submitted (with W. Liu) <https://arxiv.org/abs/1802.00781>
72. Large deviations of the Lyapunov exponent and localization for the 1D Anderson model. (with X. Zhu) *Comm. Math. Phys.*, to appear. <https://arxiv.org/abs/1803.10697>
73. Noncompact complete Riemannian manifolds with dense eigenvalues embedded in the essential spectrum of the Laplacian. *GAFA*, **29** 238-257 (2019) <https://arxiv.org/abs/1805.01072>
74. Exact dynamical decay rate for the almost Mathieu operator. *Math. Res. Lett.*, to appear (with H. Krüeger and W. Liu) <https://arxiv.org/abs/1812.02860>
75. Arithmetic spectral transitions. To appear in *AMS/PCMI, Harmonic Analysis, 2018* . (with W. Liu and S. Zhang)
76. Critical almost Mathieu operator: hidden singularity, gap continuity, and the Hausdorff dimension of the spectrum, submitted (with I. Krasovsky) <https://www.dropbox.com/s/7bkm4f17emsj4w5/hausdorff19.pdf?dl=0>
77. Spectral theory of Schrödinger operators over circle diffeomorphisms (with S. Kocic) <https://www.dropbox.com/s/8g2gcj0excghdgz/jk-cocycles-94.pdf?dl=0>
78. Anderson localization for multi-frequency quasi-periodic operators on  $Z^d$ . (with W Liu and Y. Shi) arXiv:1908.03805
79. Noncompact complete Riemannian manifolds with singular continuous spectrum embedded in the essential spectrum of the Laplacian, I. The hyperbolic case. (with W. Liu) arXiv:1908.03808

**Preprints in the final stages of preparation. Available upon request**

80. Second phase transition line. A constructive proof. Preprint (with F. Yang and Q. Zhou)
81. Spectral transition line in phase for the almost Mathieu operator, Preprint (with F. Yang)



82. Universal hierarchical structure of eigenfunctions for the Maryland model (with R. Han and F. Yang, working title)
83. Upper bounds on the fractal spectral dimensions and singular continuous spectrum near the arithmetic transition. (with W. Liu and S. Tcheremchantsev; working title).
84. Localization and delocalization for interacting quasiperiodic particles at large energies (with J. Bourgain and I. Kachkovskiy)