Curriculum Vitae
Alexander Kiselev

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EDUCATION

B.S., Physics, December 1992, St. Petersburg State University, Russia
Ph.D., Mathematics, September 1996, California Institute of Technology

RESEARCH EXPERIENCE

2018 – current	William T. Laprade Professor of Mathematics, Duke University
2017 – 2018	Professor, Duke University
2017	Edgar Odell Lovett Professor, Rice University
2014 – 2016	Professor, Rice University
2005 – 2014	Professor, University of Wisconsin, Madison
2002 – 2005	Associate Professor, University of Wisconsin, Madison
1999 – 2002	Assistant Professor, University of Chicago
1997 –1999	L.E. Dickson Instructor, University of Chicago
1996 – 1997	Postdoctoral Fellow, MSRI, Berkeley

SELECTED VISITING POSITIONS

May 2010, January 2012, February 2013	Stanford University
February - April 2005, April - May 2009	University of Chicago
January - May 2004	Institute for Advanced Study, Princeton
June 2001	Université des Sciences et Technologies de Lille, France
Summers 1997, 1999	California Institute of Technology
February 1996 – June 1997	IHES, Bures-sur-Yvette, France

AWARDS AND HONORS

12th Brooke Benjamin Lecture, Oxford University	2019
International Congress of Mathematicians, Invited Speaker (PDE section), Rio	2018
Langford Lecture, Duke University	2018
Avron Douglis Memorial Lecture, University of Maryland	2014
Guggenheim Fellowship	2012
Van Vleck Research Prize, UW-Madison	2011
UW Graduate School Research Award	2011
Plenary speaker at the AMS Central Section Meeting, Waco, TX	2009
Plenary speaker at 12th International Conference on Hyperbolic Problems, Maryland	2008
International Congress In Mathematical Physics, Invited Speaker, Rio	2006
Alfred P. Sloan Foundation Research Fellowship	2001
W.P.Carey Prize in Mathematics, Caltech	1996
Alfred P. Sloan Foundation Dissertational Fellowship	1995

RESEARCH INTERESTS

Partial Differential Equations, Fluid Dynamics, Mathematical Biology, Reaction-Diffusion Equations, Spectral and Dynamical Theory of Schrödinger Operators.

IN PRESS

• Work on the surface quasi-geostrophic equation (paper 34 below) was profiled as a fast moving front paper (highly cited) by Thomson Reuters in 2010
• Work on role of chemotaxis in life cycle of corals (papers 45, 47 below) has been profiled at the Institute for Mathematics and Its Applications web site
http://www.ima.umn.edu/impacts/coral
• Work on fluid mechanics has been profiled at Duke Today online magazine
https://today.duke.edu/2017/10/alexander-kiselev-mixing-it

EDITORSHIP

Dynamics of PDE, Associate Editor, 2017–current
Nonlinearity, Editorial board, 2017–current
Transactions of the AMS, Editorial board, 2013–current; Coordinating Editor 2019–current
Memoirs of the AMS, Editorial board, 2013–current; Coordinating Editor 2019–current
Communications in Mathematical Sciences, Associate Editor, 2011–current
Nanosystems: Physics, Chemistry, Mathematics, Editorial Board, 2011–current
Invited Editor for a special issue of the *Journal of Nonlinear Science* on generation of small scales and singularities in equations of fluid mechanics, 2015–2018.

GRANTS

NSF grant "Regularity, blow up and mixing in fluids"	2017–current
NSF grant "Topics in Applied PDE"	2014–2018
NSF FRG grant "Singularities, mixing, and long time behavior in nonlinear evolution", lead PI (with Caltech, Princeton, Stanford, and U. of Minnesota)	2012–2016
NSF RTG grant "Analysis and Applications", PI with two co-PIs	2012–2014
NSF grant "Topics in Applied PDE"	2011–2015
NSF grant "Topics in Reaction-Diffusion and Fluids"	2008–2011
NSF CAREER grant "Solutions, spectrum and dynamics of Schrödinger operators"	2002–2008
NSF grant "Enhancement and Quenching of Combustion by Fluid Flow"	2001–2005
NSF grant "Solutions and spectrum of Schrödinger operators"	1998–2001

JUNIOR RESEARCHERS MENTORED

Siming He, Postdoctoral Fellow, current
Yishu Gong, graduate student, current
Hang Yang, graduate student, current
Changhui Tan, Postdoctoral Fellow, 2015–2018, moved on as a tenure track Assistant Professor at University of South Carolina.
Chao Li, graduate student, 2014–2018, PhD 2018. First job after graduation: quant position at Goldman Sachs.
Vu Hoang, Postdoctoral Fellow, 2013–2017, moved on as a tenure track Assistant Professor at

University of Texas-San Antonio.

Tam Do, graduate student, 2013–2017, PhD 2017. First job after graduation: postdoc at USC.

Xiaoqian Xu, graduate student, 2012–2016, PhD 2016. During 2015–2016 advised jointly with Andrej Zlatos. First job after graduation: postdoc at Carnegie Mellon University.

Kyudong Choi, Van Vleck Assistant Professor, 2012–2015 (advised jointly with Sergei Denisov), moved on as a tenure track Assistant Professor at UNIST (Korea).

Yao Yao, Van Vleck Assistant Professor, 2012–2015 (in 2014–2015 advised jointly with Andrej Zlatos), moved on as a tenure track Assistant Professor at Georgia Tech.

Michael Dabkowski, graduate student, 2010–2011, PhD 2011. Advised jointly with Fedor Nazarov. First job after graduation: postdoc at University of Toronto.

Roman Shterenberg, Van Vleck Assistant Professor, 2005–2007. Moved on as a tenure track Assistant Professor at the University of Alabama, Birmingham. Currently tenured Associate Professor at University of Alabama, Birmingham. NSF PI.

Andrej Zlatos, Van Vleck Assistant Professor, 2003–2006. First job after leaving UW-Madison: Assistant Professor at the University of Chicago. Currently tenured Professor at UW-Madison. NSF PI, A.P. Sloan Research Fellow.

Ahyoung Kim, graduate student, 2003–2007, PhD 2007. First job after graduation: tenure track Assistant Professor at UW-Platteville.

Teaching Mentor to postdoctoral fellows
Christian Beck, 2014–2015
Kyle Kinneberg, 2014–2015

External referee for PhD defenses of
Antoine Pauthier, Université de Toulouse, 2016
Léonard Monsaingeon, Université de Toulouse, 2013
Yuri Kaluzhny, Hebrew University, Jerusalem, 2010

Participated in eight more PhD defense committees.

Co-organized (with Andrej Zlatos) Summer REU program at UW-Madison during May-July 2013. 20 undergraduate students participated, resulting in six manuscripts to be submitted for publication in undergraduate and professional research journals.

Undergraduate research projects resulting in publication:
Zichuan Gong, 2018
Donger Pan, 2018
Yirong Yang, 2018
Sam Goodchild, 2013 (moved on as an analyst at Accenture, Chicago).
Hang Yang, 2013 (moved on as a graduate student in Mathematics at Rice University).
Saad Khan, 2013 (moved on as a graduate student in Mathematics and Medicine at New York University).
Jay Johnson, 2013 (moved on as a graduate student in Engineering at UT-Austin).
Elliot Cartee, 2013 (moved on as a graduate student in Mathematics at Cornell).
Jeff Allen, 2009–2011 (moved on as a graduate student in mathematics, UW-Milwaukee).
Ben Seeger, 2010–2011 (moved on as a graduate student in mathematics, University of Chicago).
Debby Unger, 2010–2011 (moved on as an IT professional, Epic corporation, Madison WI).
Erick Butzlaff, 2006–2009 (moved on as a graduate student in aerospace engineering, University

of Maryland).
Raga Markely, 2005–2006 (moved on as a graduate student in Bioengineering, MIT; currently scientist at Biogen, Weston, MA).
David Andrzejewski, 2004–2006 (moved on to graduate studies in computer science, UW-Madison. Currently Data Science Engineer at Sumo Logic, Mountain View, CA).

Supervised six other undergraduate research projects.

SELECTED INVITED PRESENTATIONS

Conferences and other meetings:
82nd Midwest PDE seminar, plenary talk, Purdue University, October 2018
Banff International Research Station Workshop "Interacting Particles and Parabolic PDE", a series of 3 one hour invited talks, August 2018
International Congress Of Mathematicians, Rio de Janeiro, Invited talk (PDE session), August 2018
Workshop on Mathematical fine structures in fluid dynamics, Gran Sasso Science Institute, l'Aquila, Italy, June 2018
Summer Workshop in Math (SWiM), a program for female rising senior high school students, Duke University, June 2018
SIAM conference on Partial Differential Equations, Baltimore, plenary talk, December 2017
SIAM conference on Partial Differential Equations, Baltimore, Special Section talk, December 2017
Conference "Reaction-Diffusion, Propagation, Modelling", IHP, Paris, November 2017
Workshop "Irregular transport: analysis and applications", University of Basel, July 2017
Summer school: Various Aspects of Mathematical Physics, principal speaker, 90 minute lecture, July 2017
Summer School and Workshop: Mathematical Analysis of Water Waves and Related Models, Bodega Bay Marine Lab, four one hour talks, June 2017
Summer school on Partial Differential Equations, Jerusalem (one of the five principal lecturers, four 60 minute talks), September 2016
Summer school: Various Aspects of Mathematical Physics, principal speaker, 90 minute lecture, August 2016
Operator Theory, Analysis and Mathematical Physics (OTAMP) Conference, Euler Institute, St. Petersburg, Russia, August 2016
International Conference on Reaction-Diffusion Equations and their Applications to the Life, Social and Physical Sciences, Renmin University, Beijing, China, plenary speaker, May 2016
Conference in Harmonic Analysis in honor of Michael Christ, UW-Madison, May 2016
Workshop "Analysis and Computation in Kinetic Theory", Stanford, November 2015
Workshop "Water Waves and Related Fluid Models", Oxford, United Kingdom, September 2015
Workshop "Mathflows 2015", Porquerolles, France, September 2015
Workshop "Mathematical Aspects of Hydrodynamics", Oberwolvach, Germany, August 2015
Summer school "Transport, fluids and mixing", Levico Terme, Italy (one of the four plenary lecturers, four 90 minute talks), July 2015
Workshop on turbulent and coherent convection, UW-Madison, May 2015
San Antonio AMS-MAA joint meeting, Special section on mathematical fluid mechanics, January 2015
IPAM workshop on Turbulent Mixing, Los Angeles, October 2014

Analysis and numerical approximation of PDEs, Zurich, Switzerland, September 2014

Special Session on Fluid Mechanics, AIMS Conference, Madrid, Spain, July 2014

Birman's Conference on Spectral Theory, Euler Institute, St. Petersburg, July 2014

PDE Summer School, University of Chicago (one of the principal lecturers, five 60 minute talks), June-July 2014

KPP special week, International Center of Mathematics and Information Science, Toulouse, March 2014

Workshop associated with Clifford Lectures, Tulane University, November 2013

Texas Analysis and Mathematical Physics Workshop, Rice University, October 2013

Clay Institute Workshop on Navier-Stokes equations and related topics, Oxford, September 2013

Summer school on Recent Advances in Fluid Mechanics and PDE, Stanford, August 2013

Conference in Fluid Mechanics and PDE, Brown, May 2013

Workshop on Fronts and Invasions in Mathematical Biology, Banff, May 2013

Workshop on Two Dimensional Fluid Mechanics and Turbulence, Princeton, March 2013

Workshop on Mathematical Fluid Mechanics, Oberwolvach, August 2012

Conference on Spectral Theory, Euler Institute, St. Petersburg, July 2012

3rd PDE Workshop, Keynote speaker, Oklahoma State University, November 2011

Incompressible Fluids, Turbulence and Mixing, in honor of Peter Constantin's 60th birthday, Plenary speaker, Carnegie Mellon, October 2011

Nonlinear PDEs arising in mathematical biology, Edinburgh, September 2011

Abel Symposium, Oslo, Norway, September 2010

Workshop on Transport and Mixing in Complex Flows, IMA, Minneapolis, April 2010

Southern California Analysis and PDE Conference, November 2009

2009 Fall Central Section AMS Meeting, Plenary Address, October 2009

Conference on Spectral Theory, Euler Institute, St. Petersburg, Russia, August 2009

Workshop on Mathematical Aspects of Hydrodynamics, Oberwolvach, July 2009

Workshop on Selected Topics in Spectral Theory, ESI, Vienna, Austria, July 2009

Workshop on New Connections between Dynamical Systems and Hamiltonian PDEs, Maiori, Italy, June 2009

Workshop on Euler and SQG equations, AIM, Palo Alto, April 2009

Conference on Spectral theory of Operators and Applications, Marseille, CIRM, October 2008

12th International Conference on Hyperbolic Problems, University of Maryland, Plenary speaker, June 2008

SIAM Conference on Analysis of Partial Differential Equations, Phoenix, Arizona, Minisymposium speaker, December 2007

AMS meeting at De Paul University, Chicago, two special session talks, October 2007

Workshop on PDE in Fluid Dynamics, Warwick University, June 2007

Workshop on Analytical and Computational Challenges of Incompressible Flows at High Reynolds Number, University of Maryland, October 2006

International Congress in Mathematical Physics, Quantum Mechanics Section, Rio de Janeiro, August 2006

ICM Satellite Conference on Geometric Analysis with Applications to PDE, Seville, August 2006

Spectral Theory and Differential Operators Workshop, Newton Institute, Cambridge, July 2006

Workshop on reaction-diffusion and free boundary problems, Banff Research Center, March 2006

Mathematical Physics Conference devoted to Barry Simon 60th Birthday, Caltech, March 2006

Seminars and Colloquia:
University of South Carolina, Colloquium, February 2019
Brown University, PDE seminar, February 2019
12th Benjamin Lecture, University of Oxford, January 2019
Kent University, Analysis seminar, November 2018
University of Toronto, Colloquium, November 2018
University of California, San Diego, Colloquium, April 2018
University of North Carolina, Chapel Hill, PDE seminar, October 2017
Georgia Tech, PDE seminar, September 2017
Princeton University, Analysis seminar, September 2017
University of Miami, Colloquium, April 2017
University of Southern California, Applied Colloquium, March 2017
Duke University, Applied Mathematics seminar, October 2016
Penn State, Colloquium, April 2016
University of Central Florida, Colloquium, March 2016
Caltech, Colloquium, March 2016
Caltech, Mathematical Physics seminar, February 2016
Texas A&M University, PDE seminar, February 2016
University of Texas-Austin, PDE seminar, November 2015
University of Houston, Colloquium, October 2015
University of Houston, PDE seminar, October 2014
Rice University, Computational and Applied Mathematics Colloquium, September 2014
Rice University, Mathematics Colloquium, September 2014
University of Zurich, PDE seminar, May 2014
Avron Douglis Memorial Lecture, University of Maryland, April 2014
PDE seminar, University of Washington, Seattle, January 2014
Fluid Mechanics seminar, Princeton University, November 2013
PDE seminar, Mathematical Physics seminar, University of Minnesota, March 2013
Colloquium, Georgia Tech, February 2013
Applied PDE seminar, Stanford, January 2013 (2 talks)
Analysis seminar, Cornell University, November 2012
PDE seminar, Georgia Tech, October 2012
Applied Mathematics seminar, University of Chicago, April 2012
Department Colloquium, Princeton University, April 2012
PDE seminar, University of Texas-Austin, November 2011
Department Colloquium, Rice University, September 2011
Analysis and Geometry Seminar, Rice University, September 2011
Mathematical Physics Seminar, UC-Irvine, April 2011
Applied Mathematics Colloquium, UCLA, April 2011
Applied Mathematics Colloquium, Caltech, April 2011
Applied Mathematics Seminar, University of Chicago, April 2011
Applied Mathematics Seminar, UW-Madison, April 2011
Department Colloquium, University of Illinois-Chicago, March 2011
Analysis seminar, UW-Madison, February 2011
Mathematical Physics Seminar, Steklov Institute, St. Petersburg, August 2010
Mathematical Physics Seminar, St. Petersburg Institute of Information Technologies, June

2010
Applied Mathematics Seminar, Stanford University, May 2010
Department Colloquium, University of Alabama-Birmingham, March 2010
Mathematical Physics Seminar, Caltech, November 2009
Analysis Seminar, University of Chicago, May 2009
Applied Colloquia, USC, April 2009
Mathematical Physics Seminar, Steklov Institute, St. Petersburg, March 2009
Mathematical Physics seminar, Steklov Institute, St. Petersburg, July 2008
Mathematical Physics seminar, St. Petersburg Institute of Information Technologies, May 2008
Applied Mathematics Seminar, University of Chicago, January 2008
Applied Mathematics Seminar, UCLA, November 2007
Analysis Seminar, Princeton University, November 2006
Analysis Seminar, Michigan State University, October 2006
Department Colloquium, New Jersey Institute of Technology, September 2006
Analysis and PDE seminar, University of Edinburgh, January 2006

In earlier years, Colloquium talks at Brown University, Northwestern University, University of California-Irvine, University of Kentucky, University of Maryland, University of Missouri, University of Toronto and University of Wisconsin.
Seminar talks (some multiple) at Caltech, Cornell University, Courant Institute, Ecole Polytechnique (Palaiseau), IHES, Imperial College, Institute for Advanced Study, Institut Mittag-Leffler, KTH, King's College, MSRI, St. Petersburg Institute of Information Technologies, University of Alberta, University of California at Davis, Irvine, Los Angeles and San Diego, University of Illinois at Urbana-Champagne, University of Michigan, University of Chicago, University of Geneva, University of Paris-Sud 11 (Orsay), Université des Sciences et Technologies de Lille, University of Sussex, University of Paris VI (Jussieu), University of Texas A&M and University of Toulouse.

TEACHING EXPERIENCE

Professor, Duke University, 2017 –
Undergraduate courses: Vector calculus, Real Analysis.
Graduate courses: Partial Differential Equations, Topics in Mathematical Fluid Mechanics.
Professor, Rice University, 2014 – 2017
Undergraduate courses: Vector calculus.
Graduate courses: Partial Differential Equations, Topics in Partial Differential Equations.
Associate Professor, Professor, University of Wisconsin-Madison, 2002 – 2014
Undergraduate courses: Calculus, Ordinary Differential Equations, Introduction to Probability, Advanced calculus (with proofs), Topics course in Mathematical Biology.
In most of my undergraduate classes, I try to incorporate suitable material beyond the textbook - in particular problems and mini-projects developed in Russian mathematical community. My teaching evaluations have been significantly above average. Copies of evaluations for recent courses are available on request. I also regularly supervise undergraduate research projects.
Graduate courses: First year Graduate Analysis, Partial Differential Equations, Fourier analysis, several special topics courses on Mathematical Fluid Mechanics.
Instructor and Assistant Professor, University of Chicago, 1997 – 2002
Mathematical Methods in Physical Sciences, Calculus, Analysis in R^n, Graduate Analysis

CONFERENCES ORGANIZED

PDEs and Mathematical Hydrodynamics: in Honor of V. A. Solonnikov's 85'th Birthday, July 2018;
Workshop Analysis of PDEs of Fluid Mechanics at Rice University, May 2016;
Workshop and Mini-School on Analysis of PDEs of Fluid Mechanics and Related Models, Rice University, October 2015;
IPAM workshop on turbulent mixing, September 2014;
FRG Summer school on Mathematical Fluid Mechanics, Stanford, August 2013;
Madison Fall Analysis and PDE Workshop 2012;
Madison Springtime Analysis and PDE Workshop 2011;
Conference in honor of Barry Simon's 60th birthday, Caltech, 2006.

SERVICE AT HOME INSTITUTIONS

Duke University:
• Tenure-track hiring committee, Postdoctoral hiring committee.

Rice University:
• Tenure-track Hiring Committee (Chair), Colloquium committee (Chair), Postdoctoral hiring committee (Chair), Graduate program committee, Co-organizer of Geometry and Analysis seminar.

University of Wisconsin, Madison:
• Summer Chair, Hiring Committee, Graduate admissions committee, Budget committee, Fundraising committee (Chair), Math/Biology Liaison committee, Math/Business and Economics Liaison committee, Minors for non-math graduate students committee, Salary committee, Colloquium chair.
• Faculty supervisor to tenure track Assistant Professors Sergey Denisov (2005–2007), Andrej Zlatos (2010–2011) and Jun Yin (jointly with Timo Seppalainen, 2011–2014).

SERVICE TO PROFESSION

• Served as a panelist (12 times) and grant proposal reviewer for the National Science Foundation.
• Served as a grant proposal reviewer for CRDF, ERC, NSERC, Simons Foundation.
• Served as a reviewer for MathSciNet.
• In 2012-2013, member of the AMS Central Section Program Committee.
• Provided opinions and referee reports for the following journals: Acta Mathematica, Advances in Mathematics, American Journal of Mathematics, Annales de l'Institut Henri Poincaré, Annals of Mathematics, Archive for Rational Mechanics and Analysis, Communications in Mathematical Physics, Communications in Mathematical Sciences, Communication in Partial Differential Equations, Compte Rendu de l'Académie des Sciences, Differential and Integral Equations, Duke Mathematical Journal, Indiana University Journal of Mathematics, Inventiones Mathematicae, Journal of Approximation Theory, Journal of the AMS, Journal of the EMS, Journal of Differential Equations, Journal of Functional Analysis, Journal of Geometric Analysis, Journal of Mathematical Physics, Journal of Mathematical Analysis and Applications, Journal of Nonlinear Analysis: Theory and Applications, Journal of Operator Theory,

Letters in Mathematical Physics, Mathematical Physics, Analysis and Geometry, Mathematical Proceedings of Cambridge Philosophical Society, Mathematische Nachrichten, Nonlinearity, Osaka Mathematical Journal, Proceedings of the AMS, Proceedings of London Mathematical Society, The Royal Society of Edinburgh Proceedings A, Reviews in Mathematical Physics, Revista Matemática Iberoamericana, SIAM Journal on Applied Mathematics, SIAM Journal on Mathematical Analysis, Transactions of the AMS.

REFEREED JOURNAL PUBLICATIONS AND PREPRINTS

62. A. Kiselev and H. Yang, *Analysis of a singular Boussinesq model,* Research in Mathematical Sciences **6** (2019), no. 1, Paper No. 13, 16 pp

61. A. Kiselev and C. Li, *Global regularity and fast small scale formation for Euler patch equation in a smooth domain,* preprint arXiv:1806.07744, to appear at Communications in PDE

60. A. Kiselev and C. Tan, *Global regularity for 1D Eulerian dynamics with singular interaction forces,* SIAM J. Math. Anal. **50** (2018), no. 6, 6208–6229

59. T. Do, A. Kiselev, L. Ryzhik and C. Tan, *Global regularity for the fractional Euler alignment system,* Arch. Ration. Mech. Anal. **228** (2018), 1-37

58. A. Kiselev and C. Tan, *Finite time blow up in the hyperbolic Boussinesq system,* Adv. Math. **325** (2018), 34-55

57. T. Do, A. Kiselev, and X. Xu, *Stability of blow up for a 1D model of axi-symmetric 3D Euler equation,* Journal of Nonlinear Science **28** (2018), 2127–2152

56. A. Kiselev, L. Ryzhik, Y. Yao and A. Zlatos, *Finite time singularity for the modified SQG patch equation,* Ann. of Math. **184** (2016), no. 3, 909–948

55. A. Kiselev, Y. Yao and A. Zlatos, *Local regularity for the modified SQG patch equation,* Comm. Pure Appl. Math. **70** (2017), no. 7, 1253–1315

54. A. Kiselev and X. Xu, *Suppression of chemotactic explosion by mixing,* Arch. Ration. Mech. Anal. **222** (2016), no. 2, 1077–1112

53. K. Choi, T. Hou, A. Kiselev, G. Luo, V. Sverak and Y. Yao, *On the finite-time blowup of a 1D model for the 3D axi-symmetric Euler equations,* Commun. Pure Appl. Math. **70** (2017), no. 11, 2218-2243

52. A. Kiselev and A. Zlatos, *Blow up for the 2D Euler equation on some bounded domains,* Journal of Differential Equations **259** (2015), 3490-3494

51. K. Choi, A. Kiselev and Y. Yao, *Finite time blow up for a 1D model of 2D Boussinesq system,* Comm. Math. Phys. **334** (2015), no. 3, 1667-1679

50. A. Kiselev and V. Sverak, *Small scale creation for solutions of the incompressible two dimensional Euler equation,* Annals of Math. **180** (2014), 1205-1220

49. G. Iyer, A. Kiselev and X. Xu, *Lower bounds on the mix norm of passive scalars advected by incompressible enstrophy-constrained flows,* Nonlinearity **27** (2014), no. 5, 973-985

48. M. Dabkowski, A. Kiselev, L. Silvestre and V. Vicol, *Global well-posedness of slightly supercritical active scalar equations,* Anal. PDE **7** (2014), no. 1, 43-72

47. A. Kiselev and L. Ryzhik, *Biomixing by chemotaxis and efficiency of biological reactions: the critical reaction case,* J. Math. Phys. **53** (2012), no. 11, 115609

46. M. Dabkowski, A. Kiselev and V. Vicol, *Global well-posedness for a slightly supercritical surface quasi-geostrophic equation,* Nonlinearity **25** (2012), no. 5, 15251535.

45. A. Kiselev and L. Ryzhik, *Biomixing by chemotaxis and enhancement of biological reactions,* Communications in PDE **37** (2012), 298–318

44. A. Kiselev, *Nonlocal maximum principles for active scalars,* Advances in Mathematics **227** (2011), 1806–1826

43. A. Kiselev, *Regularity and blow up for active scalars,* Math. Model. Nat. Phenom. **5**

(2010), 225–255 (issue dedicated to memory of M. S. Birman)

42. A. Kiselev and L. Ryzhik, *A simple model for asset price bubble formation and collapse,* preprint arXiv:1009.0299

41. A. Kiselev and F. Nazarov, *Global regularity for the critical dispersive dissipative surface quasi-geostrophic equation,* Nonlinearity **23** (2010), 549–554

40. H. Berestycki, A. Kiselev, A. Novikov and L. Ryzhik, *The explosion problem in a flow,* J. d'Analyse Math. **110** (2010), 31–65

39. A. Kiselev and F. Nazarov, *A variation on a theme of Caffarelli and Vasseur,* Zap. Nauchn. Sem. S.-Peterburg. Otdel. Mat. Inst. Steklov. (POMI) **370** (2009), Kraevye Zadachi Matematicheskoi Fiziki i Smezhnye Voprosy Teorii Funktsii. **40**, 58-72

38. A. Kim and A. Kiselev, *Absolutely continuous spectrum of discrete Schrödinger operators with slowly oscillating potentials,* Math. Nachrichten **282** (2009), 552–568

37. A. Kiselev, F. Nazarov and R. Shterenberg, *On blow up and regularity in dissipative Burgers equation,* Dynamics of PDEs, **5** (2008), 211–240

36. A. Kiselev, R. Shterenberg and A. Zlatos, *Relaxation Enhancement by Time-Periodic Flows,* Indiana University Math. Journal, **57** (2008), 2137–2152

35. P. Constantin, A. Kiselev, L. Ryzhik and A. Zlatos, *Diffusion and mixing in fluid flow,* Annals of Math. **168** (2008), 211–240

34. A. Kiselev, F. Nazarov and A. Volberg, *Global well-posedness for the critical 2D dissipative quasi-geostrophic equation,* Inventiones Math. **167** (2007) 445–453

33. L.R. Markely, D. Andrzejewski, E. Butzlaff and A. Kiselev, *Enhancement of combustion by drift in a coupled reaction-diffusion model,* Commun. Math. Sci. **4** (2006), 213–225.

32. A. Kiselev and A. Zlatos, *Quenching of combustion by shear flows,* Duke Math. J. **132** (2006), 49–72

31. A. Fannjiang, A. Kiselev and L. Ryzhik, *Quenching of reaction by cellular flows,* GAFA **16** (2006), 40–69.

30. A. Kiselev and A. Zlatos, *On discrete models of the Euler equation,* IMRN, **38** (2005), 2315–2339

29. H. Berestycki, F. Hamel, A. Kiselev and L. Ryzhik, *Quenching and propagation in KPP reaction-diffusion equations with a heat loss,* Arch. Rat. Mech. Anal. **178** (2005), 57–80.

28. A. Kiselev, *Imbedded singular continuous spectrum for Schrödinger operators,* Journal of the AMS, **18** (2005), 571–603.

27. F. Germinet, A. Kiselev and S. Tcheremshantsev, *Transfer matrices and transport for 1D Schrödinger operators with singular spectrum,* Annales de l'Institut Fourier, **54** (2004), 787–830.

26. P. Constantin, A. Kiselev and L. Ryzhik, *Fronts in reactive convection: bounds, stability and instability,* Commun. Pure Appl. Math. **61** (2003), 1781–1803.

25. N. Vladimirova, P. Constantin, A. Kiselev, O. Ruchayskiy and L. Ryzhik, *Flame enhancement and quenching in fluid flows,* Combustion Theory and Modelling, **7** (2003), 487–508.

24. R. Killip, A. Kiselev and Y. Last, *Dynamical upper bounds on wavepacket spreading,* Amer. J. Math. **125** (2003) 1165–1198.

23. A. Kiselev, Y. Last and B. Simon, *Stability of singular spectral types under decaying perturbations,* J. Funct. Anal. **198** (2003), 1–27.

22. M. Christ and A. Kiselev, *Absolutely continuous spectrum of Stark operators*, Arkiv för Matematik **41** (2003), 1–29.

21. F. Gesztesy, A. Kiselev, and K. Makarov, *Uniqueness results for matrix-valued Schrödinger, Jacobi, and Dirac-type operators,* Math. Nachr. **239/240** (2002), 103–145.

20. M. Christ and A. Kiselev, *Scattering and wave operators for one-dimensional Schrödinger*

operators with slowly decaying nonsmooth potentials, GAFA **12** (2002), 1174–1234.

19. A. Kiselev and L. Ryzhik, *An upper bound for the bulk burning rate for systems*, Nonlinearity **14** (2001), 1297-1310.

18. P. Constantin, A. Kiselev and L. Ryzhik, *Quenching of flames by fluid advection*, Commun. Pure Appl. Math. **54** (2001), no. 11, 1320–1342

17. M. Christ and A. Kiselev, *WKB and spectral analysis of one-dimensional Schrödinger operators with slowly varying potentials*, Commun. Math. Phys. **218** (2001), no. 2, 245–262.

16. A. Kiselev and L. Ryzhik, *Enhancement of the travelling front speeds in reaction-diffusion equations with advection*, Ann. Inst. H. Poincaré Anal. Non Linéaire **18** (2001), no. 3, 309–358.

15. M. Christ and A. Kiselev, *WKB asymptotics of generalized eigenfunctions of one-dimensional Schrödinger operators*, J. Funct. Anal. **179** (2001), 426–447.

14. M. Christ and A. Kiselev, *Maximal functions associated to filtrations,* J. Funct. Anal. **179** (2001), 409–425.

13. P. Constantin, A. Kiselev, A. Oberman and L. Ryzhik, *Bulk burning rate in passive-reactive diffusion,* Arch. Rat. Mech. Anal. **154** (2000), 53–91.

12. A. Kiselev and Y. Last, *Solutions, spectrum and dynamics of Schrödinger operators on infinite domains*, Duke Math. Journal **102** (2000), 125–150.

11. A. Kiselev, *Absolutely continuous spectrum of perturbed Stark operators,* Transactions of AMS, **352** (2000), 243–256.

10. A. Kiselev, C. Remling and B. Simon, *Effective perturbation methods for one-dimensional Schrödinger operators,* J. Diff. Eq. **151** (1999), 290–312.

9. A. Kiselev, *An interpolation theorem related to a.e. convergence of integral operators,* Proceedings of AMS **127** (1999), 1781–1788.

8. M. Christ and A. Kiselev, *Absolutely continuous spectrum for one-dimensional Schrödinger operators with slowly decaying potentials: some optimal results,* Journal of AMS, **11**(1998), 771–797.

7. A. Kiselev, Y. Last and B. Simon, *Modified Prüfer and EFGP transforms and the spectral analysis of one-dimensional Schrödinger operators,* Commun. Math. Phys. **194**(1998), 1–45.

6. A. Kiselev, *Stability of the absolutely continuous spectrum of Schrödinger operators under slowly decaying perturbations and a.e. convergence of integral operators,* Duke Math. J. **94**(1998), 619–649.

5. M. Christ, A. Kiselev and C. Remling, *The absolutely continuous spectrum of one-dimensional Schrödinger operators with decaying potentials,* Math. Res. Lett. **4** (1997), 1-5.

4. A. Kiselev, *Some examples in one-dimensional "geometric" scattering on manifolds,* J. Math. Anal. Appl. **212** (1997), 263–280.

3. A. Kiselev, *Absolutely continuous spectrum for one-dimensional Schrödinger operators and Jacobi matrices with slowly decreasing potentials,* Commun. Math. Phys. **179** (1996), 377–400.

2. A. Kiselev and B. Simon, *Rank one perturbations in infinitesmal coupling,* J. Funct. Anal. **130(1)** (1995), 345–356.

1. A. A. Kiselev and B. S. Pavlov, *Eigenfrequences and eigenfunctions of the Laplacian with Neumann boundary conditions in a system of two coupled cavities,* Theor-math. **100** (1994), 1065–1074.

CONFERENCE PROCEEDINGS AND LECTURE NOTES

8. A. Kiselev, *Small scales and singularity formation in fluid dynamics,* preprint arXiv:1807.00184, Proceedings of the ICM 2018, to appear, 20 pages.

7. A. Kiselev, M. Chernobay, O. Lazar and C. Li, *Small scale creation in inviscid fluids,* Transport, fluids, and mixing, 95117, Partial Differ. Equ. Meas. Theory, De Gruyter Open, Warsaw, 2017, 23 pages.

6. A. Kiselev and F. Nazarov, *A simple energy pump for the surface quasi-geostrophic equation,* in Nonlinear partial differential equations, 175179, Abel Symp., 7, Springer, Heidelberg, 2012.

5. A. Kiselev, *Some recent results on the critical surface quasi-geostrophic equation: A review,* Proceedings of Symposia in Applied Math. **67.1** (2009), 105–121

4. S. Denisov and A. Kiselev, *Spectral properties of Schrödinger operators with decaying potentials,* Proc. Sympos. Pure Math., 76, Part 2 (2007), Amer. Math. Soc., Providence, RI

3. A. Kiselev, *Diffusion and mixing in fluid flow: a review,* Proceedings of ICMP 2006, Rio, 12 pages.

2. M. Christ and A. Kiselev, *One-dimensional Schrodinger operators with slowly decaying potentials: spectra and asymptotics,* Lecture notes for an IPAM tutorial.

1. M. Christ, A. Kiselev and Y. Last, *Approximate eigenvectors and spectral theory,* Proceedings of UAB-GIT'99 International Conference on Differential Equations and Mathematical Physics.