Curriculum Vitae

Mohammed Ziane

Contact

Mathematics Department
University of Southern California
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Research interests

Applied Mathematics, Partial differential equations, Stochastic Partial Differential Equations, Fluid Dynamics, Geophysical dynamics, Optimal Control, Perturbation Theory, Infinite Dimensional Dynamical Systems.

Academic Experience

• Current position: Professor of Mathematics, University of Southern California.

• 2005-present: Director of the Center for Instruction of Mathematics to Engineering Students, University of Southern California.

• 2004-2010: Associate Professor of Mathematics, University of Southern California.

• 2001- 2004: Assistant Professor of Mathematics, University of Southern California.

• 1998- 2001: Assistant Professor, Texas A& M University, College Station, Texas.

• 1997-98: Research Postdoctoral Fellow, Stanford University.

Visiting positions

• June 2019: Institut Emile Cartan, Universite de Nancy, France.

• June 2014: Mathematics Department, Universite de Paris XI, Orsay, France.

• June 2013: Mathematics Department, Universite de Nancy, France.

• June 2012: Mathematics Department, Universite de Nancy, France.

• November 2011: Mathematics Department, Universite de Biskra, Algeria.

• June 2010: Mathematics Department, Universite de Rennes, France.

• June 2008-July 2008: Laboratory of Signals and Systems, Supelec, France.

- May 2008: Mathematics Department, University of Warwick, England.
- August 2007-December 2007: Mathematics Department, Indiana University, Indiana.
- February 2006: the American Institute of Mathematics, Paolo Alto, California.
- June 2005: Mathematics Department, University of Paris, Orsay, France.
- July 2004: Mathematics Department, the Univeristy of Paris, Orsay, France.
- 2003: the Center of Nonlinear Analysis, Los Alamos Laboratory, New Mexico.
- June 2002: Mathematics Department, University of Paris, Orsay, France.
- 2000: Mathematics Department at the University of California at Irvine.
- 2000: Systems and Control Department at the University of California at San Diego.
- 1998: The Center for Atmospheric Research, Boulder, Colorado.

Awards

- NSF Grant DMS 1109562, 08/15/ 2011-8/31/2015, Amount: $ 226086.
- NSF Grant DMS 0505974, 09/01/2005-08/31/2009, Amount: $ 130,000.
- The USC Fund for Innovative Undergraduate Teaching award, 2006-2007.
- NSF Grant DMS 0204863, 08/01/2002-07/31/2005, Amount: $ 114,552.
- 1991-1994: E. Hopf Applied Mathematics Research Fellowship, Indiana University.

Education

- May 1997: PhD in Mathematics at Indiana University, Bloomington, Indiana.
- January 1995: PhD in Applied Analysis, Université de Paris-Sud, Orsay, France.
- June 1991: Masters in Applied Analysis, Université de Paris-Sud, Orsay, France.
- June 1990: Diplôme d'ingénieur de l' Ecole Centrale de Paris, France.
- 1984-1987: Classes préparatoires. Lycée Louis-Le–Grand, Paris, France.

Professional Services

Editorial Boards

- AIMS Mathematics
- Asymptotic Analysis

Conferences and Seminars Organization

1. Co-organizer (with S. Friedlander and I. Kukavica) of the *Mathematics of Fluids* conference at USC, March 2008.

2. Special Session co-organizer at the *AIMS* Fifth International Conference on Dynamical Systems and Differential Equations. CalPoly, Pomona, June 16-19, 2004.

3. Special Session organizer at the *AMS* Sectional Conference, USC, Los Angeles, April 3-4, 2004.

4. Special Session co-organizer at the Fourth International Conference on Dynamical Systems and Differential Equations. Willmington, NC, May 2002. .

5. Mini-symposium co-organizer at the SIAM Conference on Applications of Dynamical Systems, Snowbird, UT, May 2003.

6. Organizer and co-organizer of Analysis Seminar, 2001-present.

7. Co-organizer of the Graduate Student Analysis Seminar, Spring 2005-present.

Reviewing and refereeing

• Annals of Mathematics, • Applied Math Letters, • Applied Mathematics and Computation, • Communications in Mathematical Physics, • Comptes Rendus de l'Académie des Sciences de Paris, • Indiana University Mathematics Journal, • Journal of Functional Analysis, • Journal of Mathematical Fluid Mechanics, •Journal of Mathematical Physics, • Journal of Differential Equations, • Archives of Rational Mechanics and Analysis, • Journal of Mathematical Analysis and Applications, • Journal of Nonlinear Analysis, • Physica D, • SIAM J.ournal of Mathematical Analysis, • SIAM Journal of Applied Mathematics, • SIAM Journal on Applied Dynamical Systems , • Nonlinearity, • Discrete and Continuous Dynamical Systems A, • Discrete and Continuous Dynamical Systems B, • Transaction of the American Mathematical Society, • Acta Appl. Math, • Mathematics Reviews, • NSF.

University Service at USC

• Differential Equations Qualifying Exam Committee, 2022-2023.
• Director: Center for Instruction of Mathematics to Engineering Students 2022-present.
• Differential Equations Qualifying Exam Committee, 2020-2021.
• Differential Equations Qualifying Exam Committee, 2019-2020.
• Differential Equations Qualifying Exam Committee, 2018-2019.
• Director of the Center for Instruction of Mathematics to Engineering Students 2018-2021.
• Differential Equations Qualifying Exam Committee, 2017-2018.
• Differential Equations Qualifying Exam Committee, 2015-2016.
• Colloquium Chair, Aug 2013-May 2014.
• Differential Equations Qualifying Exam Committee, 2013-2014.
• Member of the Mathematics Department Search and Hiring Committee (2012–2013).

• Director of the Center for Instruction of Mathematics to Engineering Students, Fall 2005–present.
• Associate Vice Chair, Fall 2006–Spring 2008.
• Member of the Mathematics Department Search and Hiring Committee (2003–2004).
• Differential Equations Qualifying Exam Committee, 2001–present.
• Member of the Department Merit Review committee, 2003-2004.
• Member of the Graduate student hiring committee, 2003-2004.
• Colloquium Chair, Aug 2001-May 2002.
• Member of the Mathematics Department web site design committee.
• Organizer and co-organizer of Analysis Seminar, 2001-present.
• Co-organizer of the Graduate Student Analysis Seminar, Spring 2005-present.
• Chair of the Committee on Calculus sequence reform.

Academic Advisement

Postdoctoral Associates Supervised:

• WeiWei Hu, 2011-2015 (Now Associate Professor, at University of Georgia)
• Walter Rusin, 2010-2013 (Now Full Professor, at Oklahoma State University)
• Amjad Tuffaha, 2007-2010 (Now Professor at Sharjah University, UAE)
• Seok Hwang, 2002-2005.

Graduate Students Supervised:

PhD Students:

• Nathan Glatt-Holtz (2008) Current position: Associate Professor, Tulane University.
• Kerem Uruglu (2016) Current position: Assistant Professor at Nazarbayev University, Kazakhstan.
• Zachary Wickham (2021) Current position: Lecturer, Math Department, Stanford University.
• Zhanerke Temirgaliyeva (2020) Current position: Lecturer, University of California, Davis.

Master Students:

• Shalini Amrita Reddy, Masters of Arts, USC Department of Mathematics, Graduation, August, 2005.

• PhD Committees

Mathematics: • D. Massat (2022) • Park, Y. (2022) • Weinan Wang (2020) • Guher Camliyurt (2018) • Fei Wang (2017) • Yuan Pei (2013) • Mihaela Ignatova (2011) • Ednei Reis (2011) • Jie Zhong (2011) • Vlad Vicol (2010) • John Mayberry (2008) • Juan J. Torres (2006) • Nilupa Sonnadara (2005) • Philip Seliger (2007).

External member: • Laura Cervino(UCSD Systems and Control, 2006), • Kamran Aslam (Mechanical Eng., Fall 2008), • Takahiro Sakai (Mechanical Eng., Fall 2007), • Houman Shokraneh (Mechanical Engineering 2007).

Teaching Experience

• 2022-2023-Spring: Partial differential equations, Math 555B.
• 2022-2023-Fall: Two sections of Engineering Calculus, Math 126.
• 2021-2022-Spring: Faculty Sabbatical Leave.
• 2021-2022-Fall: Faculty Sabbatical Leave.
• 2020-2021-Spring: Math 445, Mathematics of Physics and Engineering II.
• 2020-2021-Fall: Two sections of Math 245-Mathematics of Physics and Engineering I.
• 2020-2021-Summer: Math 625-Topics in Real Analysis.
• 2019-2020-Spring: Partial Differential Equations-Math-555B, and Calculus III-Math 229.
• 2019-2020-Fall: Math 555A-Partial Differential Equations I.
• 2018-2019-Spring: Two sections of Engineering Calculus, Math 126.
• 2018-2019-Fall: Functional Analysis, Graduate course, Math 580.
• 2017-2018-Spring: Two sections of Engineering Calculus, Math 126.
• 2017-2018-Fall: Functional Analysis, Graduate course, Math 580.
• 2016-2017-Spring: Calculus II-Math 226 and Partial differential equations-Math 555A.
• 2016-2017-Fall: Topics in Partial Differential Equation, Graduate course, Math 655.
• 2015-2016: Topics in Partial Differential Equation, Graduate course, Math 655.
• 2015-2016: Partial Differential Equation, Math 555A, Calculus I, Math 125.
• 2014-2015: Faculty Sabbatical Leave.
• 2013-2014: Partial Differential Equation, Graduate course, Math 555A, Math 555B.
• 2013-2014: Mathematics of Physics and Engineering, Part II, Math 445.
• 2012-2013: Partial Differential Equation, Graduate course, Math 555B.
• 2012-2013: Calculus II-Math 226 and Partial differential equations-Math 555A.
• 2012-2013: Real Analysis, Functional Analysis, Graduate courses.
• 2010-2011: Summer: Topics in Analysis.
• 2010-2011: Engineering Calculus and Graduate course in Partial differential equations.
• 2009-2010: Summer: Topics in Analysis.
• 2009-2010: Engineering Calculus and Graduate course in Partial differential equations.
• 2008-2009: Summer: Topics in Analysis.
• 2008-2009: Partial Differential Equation, Graduate course.
• 2007-2008: Summer: Topics in Analysis.
• 2007-2008: Ordinary Differential Equations-Math 565A. Graduate Analysis Seminar.
• 2007-2008: Fall (Sabbatical).
• 2006-2007: Summer: Topics in Analysis.
• 2006-2007: Partial Differential Equation-Math 555A and Calculus III-Math 226.
• 2005-2006: Engineering Calculus and Partial differential equations for engineering.
• 2004-2005: Partial Differential Equation, Graduate course, First year Graduate seminar.
• 2003-2004: Engineering Calculus and Graduate course in Partial differential equations.
• 2002-2003: Engineering Calculus and First Course in Probability.
• 2001-2002: Engineering Calculus and Graduate course in PDEs

Assistant Professor at Texas A & M University:

• 2000-2001: Engineering Calculus and Graduate course in Partial differential equations.
• 2000-2001: Engineering Calculus and Graduate course in Partial differential equations.
• 1999-2000: Engineering Calculus and Graduate course in Applied Functional Analysis.
• 1998-1999: Engineering Calculus.

Publications

Book Chapters

[1] Roger Temam and Mohammed Ziane, Some Mathematical Problems in Geophysical Dynamics. *Handbook of Mathematical Fluid Dynamics,* Vol. III, North-Holland, Amsterdam Elsevier. , 2004, pp. 535–657.

[2] Mohammed Ziane, Geophysical Dynamics, Encyclopedia of Mathematical Physics, Edited by JP Francoise, G Naber and S T Tsou, Elsevier, 2006, pp. 534–539.

[3] Madalina Petcu, Roger Temam, and Mohammed Ziane, Some mathematical problems in fluid dynamics, *Handbook of Numerical Analysis, Special volume on Computational Methods for the Ocean and the Atmosphere.* 2008, 567-741.

Published articles in refereed journals

[4] Mohammed Ziane, Regularity results for Stokes type systems related to climatology, *Applied Math. Letters* 8, 1995, pp. 53-58.

[5] Mohammed Ziane, Regularity results for a Stokes type system. *Applicable Analysis*, Vol. 58, 1995, pp. 263-293.

[6] Mohammed Ziane, Regularity results for the stationary primitive equations of the atmosphere and the ocean. *Nonlinear Analysis. Theory, Methods and Applications.*, Vol 28, No 2, 1997, pp. 289-313.

[7] Roger Temam and Mohammed Ziane, Navier-Stokes equations in three dimensional thin domains with various boundary conditions. *Advances in Differential Equations*, Vol. 1, 1996, pp. 499-546.

[8] Mohammed Ziane, Optimal bounds on the dimension of attractors for the Navier-Stokes equations. *Physica D.* Vol. 105, 1997, pp. 1-19.

[9] Mohammed Ziane, On the two-dimensional Navier-Stokes equations with the free boundary condition. *J. Appl. Math.* & *Optimization.* Vol. 38 - No 1, 1998, pp. 1-19.

[10] Roger Temam and Mohammed Ziane, Navier-Stokes equations in thin spherical shells. *Contemporary Mathematics, AMS.* Vol. 209, 1997, pp. 281-314.

[11] Alain Miranville and Mohammed Ziane, On the upper bound on the dimension of the attractor of the Bénard problem. *Russian Journal of Math. Phys., in honor of M. Vishik.* Vol 5, No 4, 1997, pp. 489-503.

[12] Ioana Moise Roger Temam, and Mohammed Ziane, Asymptotic analysis for the Navier-Stokes equations in thin domains. *Topological Methods in Nonlinear Analysis.* Vol. 10, 1997, pp. 249-282.

[13] David Hoff and Mohammed Ziane, Compact Attractors for the one dimensional compressible Navier-Stokes equation. *Comptes Rendues de l'Acad. Sci. Paris.* Vol. 328, 1999, pp. 239-244.

[14] Mohammed Ziane, On a certain renormalization group method. *Journal of Math Phys.* Vol 41, 2000, pp. 3290-3299.

[15] Ioana Moise, Eric Simmonnet Roger Temam, and Mohammed Ziane, Numerical investigations on stiff differential equations. *Journal of Engineering Mathematics.* Vol. 34, 1998, pp. 201-214.

[16] Ioana Moise and Mohammed Ziane, Renormalization group method Application to partial differential equations. *Journal of Dynamics and Diff. Equations.* Vol. 13, 2001, pp. 275-321.

[17] Thomas Bewley, Roger Temam, and Mohammed Ziane, A general framework for robust control in fluid mechanics. *Physica D*, Vol. 138, 2000, pp. 360-392.

[18] David Hoff and Mohammed Ziane, The Global attractor and finite determining nodes for the Navier-Stokes equations of compressible flow with singular initial data. *Indiana University Mathematics Journal.* Vol. 49, 2000, pp. 843-889.

[19] Thomas Bewley, Roger Temam, and Mohammed Ziane, Existence and Uniqueness of optimal control of the Navier-Stokes equations. *Comptes Rendues de l'Acad. Sci. Paris.* Vol. 330, 2000, pp. 1007-1011.

[20] David Hoff and Mohammed Ziane, Finite dimensional attractors and exponential attractors for the one dimensional compressible Navier-Stokes equations. *SIAM J. Math. Analysis.* Vol 34, 2003, pp. 1040-1063.

[21] Changbing Hu, Roger Temam, and Mohammed Ziane, Regularity results for linear elliptic problems related to the primitive equations. *Chinese Annals of Math.*, Vol. 23B, No 2, 2002, pp. 277-292.

[22] Changbing Hu, Roger Temam, and Mohammed Ziane, The primitive equations of the large scale ocean under the small depth hypothesis. *Discrete and Cont. Dyn. Syst.* Vol 9, N0 1, 2003, pp. 97–131.

[23] Chongsheng Cao, Edriss S Titi,and Mohammed Ziane, A "horizontal" hyper-diffusion 3-D thermocline planetary geostrophic model: Well-posedness and long time behavior, *Nonlinearity*, Vol 17, No 5, 2004, pp 1749–1776.

[24] Changbing Hu, Roger Temam, and Mohammed Ziane, Regularity results for linear elliptic problems related to the primitive equations. *Frontiers in mathematical analysis and numerical methods*, World Sci. Publishing, River Edge, NJ, 2004, pp. 149–170.

[25] Ciprian Foias, Luan Hoang, Eric Olson, and Mohammed Ziane, On the solutions to the normal form of the Navier-Stokes equations, *Indiana University Math Journal,* Vol 55, No 2, 2006, pp. 631–686.

[26] Igor Kukavica and Mohammed Ziane, One component regularity for the Navier-Stokes equation, *Nonlinearity,* Vol 16, No 2 2006, pp. 453–469. .

[27] Igor Kukavica and Mohammed Ziane, Regularity of the Navier-Stokes equation in a thin periodic with large data, Discrete and Continuous Dynamical Systems, Vol 16, No 1, 2006, pp. 67–86.

[28] Igor Kukavica and Mohammed Ziane, Navier-Stokes equation with regularity in one direction. Journal of Math. Phys. *Journal of Math. Phys.,* **48** , no. 6, 2007, 10 pages.

[29] Igor Kukavica and Mohammed Ziane, Régularité conditonnelle des équations de Navier-Stokes, *C. R. Math. Acad. Sci. Paris* Vol. 343, No 1, 2006, pp. 31–36.

[30] Igor Kukavica and Mohammed Ziane, Regularity of the Navier-Stokes equation in a thin periodic with large data, *Journal of Differential Equations.* **Vol 234** , 2007, 485-506.

[31] Thomas Bewley and Mohammed Ziane, A fundamental limit on the heat flux in the control of incompressible channel flow. *IEEE Transactions on Automatic Control*, **Vol 52**, (11), 2007, pp. 2118–2128.

[32] Igor Kukavica and Mohammed Ziane, Sur la régularité des solutions des équations de Navier-Stokes dans un domaine périodique de faible épaisseur, *C. R. Math. Acad. Sci. Paris.* C. R. Math. Acad. Sci. Paris 344 (2007), no. 2, 97-–102 .

[33] Igor Kukavica and Mohammed Ziane, The regularity of solutions of the primitive equations of the ocean in space dimension three. C. R. Math. Acad. Sci. Paris 345 (2007), no. 5, 257—260.

[34] Nathan Glatt-Holtz and Mohammed Ziane, The stochastic primitive equations in two space dimensions with multiplicative noise. *Discrete and Cont. Dyn. Sys. B* **10**, No. 4, 2008, pp. 801–822.

[35] Igor Kukavica and Mohammed Ziane, On the regularity of the primitive equation with the Dirichlet boundary condition *Nonlinearity.* **20** No 12, 2007, pp. 2739–2753.

[36] Theodore Tachim Medjo, Roger Temam, and Mohammed Ziane, Control of fluid flow. *Annual Mechanics Reviews,* **61**, 2008, 23 pages. .

[37] Igor Kukavica and Mohammed Ziane, Uniform bounds on the gradient of the velocity of solutions of the primitive equations. *Differential Equations and Integral Equations.* Vol. 21, No 9-10, 2008, pp. 837–849.

[38] Ciprian Foias, Luan Hoang, and Eric Olson, and Mohammed Ziane, The normal form of the Navier–Stokes equations in suitable normed Spaces, ıAnnales de l'Institut Henri Poincare (C) Non Linear Analysis, Vol. 26, No 5, 2009, pp. 1635–1673.

[39] Nathan Glatt-Holtz and Mohammed Ziane, Strong pathwise solutions in H^1 of the stochastic Navier-Stokes equation with multiplicative noise, *Advances in Differential Equations,* Vol. 14, No 5-6, 2009, pp. 567–600.

[40] Igor Kukavica, Amjad Tuffaha and Mohammed Ziane, Strong solutions to a nonlinear fluid structure interaction system. *J. Differential Equations* Vol. 247, No 5, 2009, pp. 1452–1478.

[41] Nathan Glatt-Holtz and Mohammed Ziane, Singular perturbation of stochastic differential equations. A renormalization group method approach, *Discrete and Continuous Dynamical Systems. Series A*, Vol. 26, No 4, 2010.

[42] Igor Kukavica, Roger Temam, Vlad Vicol and Mohammed Ziane, Existence and uniqueness of solutions for the hydrostatic Euler equations on a bounded domain with analytic data. *C.R. Acad. Sci. Paris* Vol. 348, no. 11-12, 2010, pp. 639–645.

[43] Igor Kukavica, Amjad Tuffaha, and Mohammed Ziane, Strong solutions to a fluid structure interaction system. *Advances in Differential Equations.* Vol. 15 (3-4), 2010 pp. 231–254.

[44] Igor Kukavica, Roger Temam, Vlad Vicol, and Mohammed Ziane, Local existence and uniqueness for the hydrostatic Euler equations on a bounded domain. J. Differential Equations 250 (2011), no. 3, 1719–1746.

[45] Igor Kukavica and Amjad Tuffaha, and Mohammed Ziane, Strong Solutions to a Navier-Stokes-Lamé System on a Domain with Non-Flat Boundaries. *Nonlinearity.* Vol. 24 no 1. (2011), pp. 159–176.

[46] Jean-Marie Bouteiller, Qui Yumei, Mohammed Ziane., M. Baudry. T.W. Berger. An Online Synaptic Modeling Platform, *Engineering in Medicine and Biology Society,* 2006, pp. 4155-4158.

[47] Arnaud Debussche, Nathan Glatt-Holtz, Roger Temam, and Mohammed Ziane, Global existence and regularity for the 3D stochastic primitive equations of the ocean and atmosphere with multiplicative white noise. Nonlinearity 25 (2012), no. 7, 2093–2118.

[48] Mihaela Ignatova, Igor Kukavica, Mohammed Ziane, Local existence of solutions to the free boundary value problem for the primitive equations of the ocean. J. Math. Phys. 53 (2012), no. 10, 103101, 17 pp.

[49] Aseel Farhat, Lee, R., Panetta, R. Edriss Titi, Mohammed Ziane, Long-time behavior of a two-layer model of baroclinic quasi-geostrophic turbulence. J. Math. Phys. 53 (2012), no. 11, 115603, 24 pp.

[50] Igor Kukavica, Walter Rusin, Mohammed Ziane, A class of solutions of the Navier-Stokes equations with large data. J. Differential Equations 255 (2013), no. 7, 1492–1514.

[51] Igor Kukavica, Walter Rusin, Mohammed Ziane, Solutions of the Navier-Stokes equations for large oscillatory data. Adv. Differential Equations 18 (2013), no. 5-6, 549–586.

[52] Weiwei Hu, Igor Kukavica, and Mohammed Ziane, On the regularity for the Boussinesq equations in a bounded domain, J. Math. Phys. 54, 081507 (2013), 10p.

[53] Igor Kukavica, Walter Rusin, and Mohammed Ziane, A class of large BMO^{-1} non-oscillatory data for the Navier-Stokes equations. J. Math. Fluid Mech. 16 (2014), no. 2, 293–305.

[54] Said Benachour, Igor Kukavica, Walter Rusin, and Mohammed Ziane, Anisotropic estimates for the two-dimensional Kuramoto-Sivashinsky equation. J. Dynam. Differential Equations 26 (2014), no. 3, 461–476.

[55] Igor Kukavica, Walter Rusin, Yuan Pei, and Mohammed Ziane, Primitive equations with continuous initial data, Nonlinearity 27 (2014), no. 6, 1135–1155.

[56] Nathan Glatt-Holtz, Igor Kukavica, Vlad Vicol, and Mohammed Ziane, Existence and Regularity of Invariant Measures for the Three Dimensional Stochastic Primitive Equations. J. Math. Phys. 55 (2014), no. 5, 051504, 34 pp.

[57] Weiwei Hu, Igor Kukavica, and Mohammed Ziane, Persistence of regularity for the viscous Boussinesq equations with zero diffusivity. Asymptot. Anal. 91 (2015), no. 2, 111–124.

[58] Weiwei Hu, Igor Kukavica, and Mohammed Ziane, Sur l'existence locale pour une équation de scalaires actifs. C. R. Math. Acad. Sci. Paris 353 (2015), no. 3, 241–245.

[59] Michele Coti Zelati, Aimin Huang, Igor Kukavica, Roger Temam, and Mohammed Ziane, The primitive equations of the atmosphere in presence of vapour saturation. Nonlinearity 28 (2015), no. 3, 625–668.

[60] Igor Kukavica, Fei Wang, and Mohammed Ziane, Persistence of regularity for the viscous Boussinesq equations in Sobolev spaces, Advances in differential equations 21 (2016), 85–108.

[61] Weiwei Hu, Igor Kukavica, Fei Wang, and Mohammed Ziane, Boussinesq Equations with Zero Viscosity or Zero Difusiivity: a Review, Recent Progress in the Theory of the Euler and Navier-Stokes Equations, Proceedings of the workshop Navier-Stokes equations in Venice", 2016.

[62] Igor Kukavica, Walter Rusin, and Mohammed Ziane, An anisotropic partial regularity criterion for the Navier-Stokes equations. J. Math. Fluid Mech. 19 (2017), no. 1, 123–133.

[63] Ibrahim Ekrem, Igor Kukavica, and Mohammed Ziane, Existence of invariant measures for some damped stochastic dispersive equations. C. R. Math. Acad. Sci. Paris 355 (2017), no. 6, 676–679.

[64] Ibrahim Ekrem, Igor Kukavica, and Mohammed Ziane, Existence of invariant measures for the stochastic damped Schrödinger equation. Stoch. Partial Differ. Equ. Anal. Comput. 5 (2017), no. 3, 343–367.

[65] Igor Kukavica, Walter Rusin, and Mohammed Ziane, Localized anisotropic regularity conditions for the Navier-Stokes equations. J. Nonlinear Sci. 27 (2017), no. 6, 1725–1742.

[66] Igor Kukavica, Kerem Ũgurlu, and Mohammed Ziane, On the Galerkin approximation and strong norm bounds for the stochastic Navier-Stokes equations with multiplicative noise. Differential Integral Equations 31 (2018), no. 3-4, 173–186.

[67] Ibrahim Ekrem, Igor Kukavica, and Mohammed Ziane, Existence of invariant measures for the stochastic damped KdV equation. Indiana Univ. Math. J. 67 (2018), no. 3, 1221—1254.

[68] Igor Kukavica, Walter Rusin, and Mohammed Ziane, On local regularity conditions for the Navier-Stokes equations. Nonlinearity 32 (2019), no. 6, 1905–1928.

[69] Igor Kukavica, David Massat, and Mohammed Ziane Asymptotic properties of the Boussinesq Equations with Dirichlet Boundary Conditions, Discrete Contin. Dyn. Syst. 43 (2023), no. 8, 3060–3081.

[70] Igor Kukavica, Fanhui Xu, and Mohammed Ziane, Global existence for the stochastic Navier-Stokes equations with small Lp data. Stoch. Partial Differ. Equ. Anal. Comput. 10 (2022), no. 1, 160–189.

Invited Lectures

• June 2019, Invited Speaker speaker, Mathematics Department, Supelec, Universite de Paris, France.
• May 22, 2018, Invited Speaker speaker, Mathematics Department, Nancy Universite, France.
• May 2017, Invited speaker Oberwolfach Workshop on Geophysical Dunamics. Oberwolfach, Germany.
• Nov 2016, Mathematics Department, Oklahoma State University.
• February 2016, CAMS colloquium, University of Southern California.
• Nov 2014, Invited Speaker speaker, Mathematics Department, Universite of Monaster, Tunisia.
• Nov 2014, Invited Speaker speaker, Mathematics Department, Universite of Tunis, Tunisia.
• June 2013, Invited Speaker speaker, Mathematics Department, Supelec, Universite de Paris, France.
• May 24, 2012, Invited Speaker speaker, Mathematics Department, Universite de Rennes, France.
• May 22, 2012, Invited Speaker speaker, Mathematics Department, Nancy Universite, France.
• June 19, 2012, Invited Speaker speaker, Mathematics Department, Universite d'Oran, Algeria.
• May 24, 2012, Invited Speaker speaker, Mathematics Department, Universite de Houari Boumediene, Algiers, Algeria.
• April 24, 2012, Invited Speaker speaker, Mathematics Department, Universite de Rennes, France.
• April 4, 2012, Invited Speaker speaker, Mathematics Department, Universite de Guelma, Algeria.
• March 7, 2012, First Congress of the Algerian Mathematical Society, Annaba, Algeria

• January 31, 2012, Journï¿œe Mathématique ï¿œ la mï¿œmoire de Seid Bahlali, Universite de Biskra, Algeria

• June 20-June 22, 2011, Second International Conference on Random Dynamical Systems, Nanjing Normal University, Nanjing, P. R. China.

• May 31-June 4, 2010, International Conference on Advances in Partial Differential Equations and Their Applications, Fudan University, Shanghai, China.
• June 21-June 24, 2010. The International Congress in Mathematical Fluid Dynamics and its Applications, Rennes, Brittany, France.
• June 2, 2011, Invited Speaker speaker, Mathematics Department, University of California, Irvine.

• February 12, 2011, Colloquium speaker, Mathematics Department, Arizona State University.

• February 22-26, 2010, Analysis and Computation of Incompressible Fluid Flow, Institute for Mathematics and Its Applications, University of Minnesota, Minneapolis
• November 10, 2009, Invited speaker at a special session of the AMS conference at the University of California, Riverside.

• March 7, 2009, Invited speaker at the The Second Southern California Conference on the Mathematics of Fluids at the University of California, Santa Barbara.
• June 10, 2008, Invited speaker at University of Paris, Orsay.

• April 14, 2008, Invited speaker at the Analysis seminar, USC.

• April 17, 2008, Invited speaker at the University of Wyoming, WY.

• April 4-5, 2008, Invited speaker at a special session of the AMS conference at Indiana University, Bloomington.

• November 13, 2007, Invited speaker at the University of Illinois at Urbana-Champagne.

• October 22, 2007, Invited speaker at Indiana University, Bloomington.

• February 14, 2006: Local existence results for the Primitive equations of the atmosphere and the ocean. American Institute of Mathematics, Palo Alto, California.

• November, 2006: Conditional regularity of the Navier-Stokes equations. Invited speaker at special session of the Central AMS meeting at the University of Arkansas.

• October, 2005: Remarks on the normal form of the Navier-Stokes equations, Invited speaker at the Analytical and Stochastic Fluid Dynamics workshop in MSRI. Berkeley.

• April 2004: Invited speaker at the Western AMS meeting at University of Southern California.

• June 2004: Invited speaker at a special session of the International Conference on Dynamical Systems and Differential Equations in Pomona, California.

• April 2003: Invited speaker at Oklahoma State University.

• April 2003: Invited speaker at the Central AMS meeting at Indiana University, Bloomington.

• May 2003: Invited speaker at a special session on Dynamical systems in SIAM Conference, Snowbird, Utah.

• June 2003: Invited speaker (gave two lectures) at the Center of Nonlinear Analysis, Los Alamos Laboratory, New Mexico.

• November 2002: Invited speaker at University of California, Santa Barbara.

• May 2002: Invited speaker at special session on "*Recent progress on the theory of exponential attractors*" at the Fourth International Conference on Dynamical Systems and Differential Equations in Willmington, North Carolina.

• May 2002: Invited speaker at special session on "*Mathematical Issues in Geophysical Dynamics* at the Fourth International Conference on Dynamical Systems and Differential Equations in Willmington, North Carolina.

• May 2002: Invited speaker at special session on "*Mathematical Fluid Dynamics*" at the Fourth International Conference on Dynamical Systems and Differential Equations in Willmington, North Carolina.

• October 2001: Invited speaker at special session of the AMS sectional meeting at U.C. Irvine.

• June 2001: Invited speaker at University of Paris, Orsay. France.

• May 2001: Invited speaker at a special session on Dynamical systems in SIAM Conference, Snowbird, Utah.

• March 2001: Invited speaker at University of Texas at Austin.

• March 2001: Invited speaker at University of Poitiers, France.

• January 2001: Invited speaker at University of Southern California

• February 2001: Invited speaker at University of Illinois at Chicago

• May 2000: Invited speaker at a special session on the Navier-Stokes equations in the International Conference on Dynamical Systems and Differential Equations. Kennesaw State University, Georgia.

• May 2000: Invited speaker at University of Southern California.

• May 2000: Invited speaker at University of California at Irvine.

• May 2000: Invited speaker at University of California at San Diego.

• April 2000: Invited speaker at University of Michigan, Ann Arbor.

• March 2000: Invited speaker at University of Texas at Austin.

• November 2000: Invited speaker at Indiana University.

• May 1999: Invited speaker at a workshop on Control of flows Models, Dynamic Analysis, Control Algorithms, and Computation, at University of California, San Diego.

• November 1999: Invited speaker at University of Texas, Austin.

• June 1999: Invited speaker at University of Poitiers, France.

• January 1999: Invited speaker at a special session on the Mathematics of the Navier-Stokes equations in the AMS meeting at San Antonio, Texas.

• November 1998: Invited speaker (three lecture series on the renormalization group method) at University of California at Irvine.

• February 1998: Invited speaker at the laboratory of Nonlinear Science, Los Alamos, NM

• January 1998: Invited speaker at the Center for Atmospheric Research, Boulder, Colorado

• January 1998: Invited speaker, Colloquium, University of California Davis

• January 1998: Invited speaker, Colloquium, Texas A&M University

• January 1998: Invited speaker, Colloquium, University of California San Diego

• December 1997: Invited speaker at the Applied Mathematics Seminar, Stanford University.

• October 1997: Invited Speaker at the IMA workshop on Multi-scale problems

• February 1997: Invited speaker at the Applied Mathematics Seminar, Stanford University.

• January 1996: Invited speaker at the University of Central Florida.

• May 1996: Invited speaker at the Nonlinear Analysis, PDE's Seminar, Université de Lyon, France.

• March 1996: Invited speaker at a special session on nonlinear partial differential equations in the AMS meeting at Iowa city, Iowa.

• February 1996: Invited speaker at, Université de Poitiers, France.

• February 1996: Invited speaker at , Université de Cergy Pontoise, France.

• February 1996: Invited speaker at, Université d'Amiens, France.

• November 1995: Invited speaker at the Nonlinear Analysis, PDE's Seminar, Rutgers University.

• October 1995: Invited speaker at a mini-symposium in the 1995 SIAM Annual Meeting in Charlotte, North Carolina.