Curriculum Vitae

Pierre-Emmanuel Jabin
Director, CSCAMM
Professor, University of Maryland
Born March 24th 1975, French citizen, US permanent resident

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    University of Maryland, College Park, MD 20742-4015 USA
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Research Interests

– Partial differential equations arising in the Physical and Biological Sciences (Statistical Mechanics and Kinetic Theory, Ecology, Immunology...)

– Transport and advection equations in inhomogeneous or oscillating media

– Many-particle and multi-agent systems, complexity reduction of large systems, particles-fluid interactions

– Deep learning, analysis of artificial and biological neural networks

Academic Education

– Scholarship at Ecole Normale Supérieure in Paris   1995-1999

– B.Sc., Department of Mathematics, University Paris VI   1996

– B.Sc., Department of Physics, University Paris VI   1996

– M.Sc., Department of Mathematics, University Paris VI   1997

– "Agrégation" of Mathematics   1997

– Ph.D., Department of Mathematics, University Paris VI: 2000
Transport equations modeling particles interacting in a fluid and asymptotic behavior. Advisor: B. Perthame.

– Habilitation thesis, Department of Mathematics, University Paris VI: 2003
Kinetic models and formulations, derivation, regularity, limits. Defended in
December 2003 with the jury:
F. Béthuel, Y. Brenier, L. Caffarelli (reviewer), G. Métivier (chair), F. Otto
(reviewer), C. Villani (reviewer)

Appointments
1. Academic Appointments

– Professor, University of Maryland, College Park   2011-present

– Special Volunteer, National Cancer Institute, NHI,   2017-present

– Part time DR, Tosca team, Inria Sophia-Antipolis, France   2007-2011

– Professor, Lab. J-A Dieudonné, University of Nice   2004-2011

– Agrégé Préparateur (assistant professor), ENS , Paris   2000-2004

– Teaching Assistant University Paris VI,   1999-2000

2. Long visits, Visiting Appointments

– University Paris Diderot (Paris VII),   December 2018

– Ecole Polytechnique,   June 2016 and January 2017

– University of Chambéry-Savoie,   July 2016

– University Paris Dauphine, France,   June 2012

– University of Crete, Greece,   January 2012

– ICERM, Brown University, Providence, USA,   October 2011

– Newton Institute, Cambridge University, UK,   Oct. 2010

– University of Maryland, College Park,   Nov. 2009

– CRM, UAB, Barcelona, Spain,   Feb. and May 2009

– University of Maryland, College Park,   2005–2006

– University of Crete, Greece,   Summers 2003-2004

– University of Heidelberg, Germany   2003

– University of Bilbao, Spain,   Jan. 2002

– University of Granada, Spain,   October 2001

– Institut für Angewandte Mathematik, Bonn Germany,   Jan. 2001

– Schrödinger Institute, Vienna Austria,   Oct.-Nov. 1999

Awards, Grants and projects

– *NSF Grant DMS DMS 1908739 2019-2022*, Quantifying chaos, correlations and oscillations in multi-agent systems and advection equations. PI, total funding: $ 383,000.

– International Congress of Mathematicians 2018, Rio de Janeiro, in the sections: Partial Differential Equations and Mathematics of Science and Technology.

– Bourbaki seminar presented by L. Saint-Raymond on January 2018.

– *Laboratory of Telecommunication Science (LTS) Grant D00030014, 2019-2021*, New approaches to neural network-inspired feature extraction. PI, total funding: $ 300,127.

– *Laboratory of Telecommunication Science (LTS) Grant Do 0052, 2018-2019*, Neural-Network-Inspired Feature Extraction from Noisy Data. PI, total funding: $ 275,542.

– *Laboratory of Telecommunication Science (LTS) Grant Do 0050, 2017-2018*, Propagation of Malware on Computer Networks. PI, total funding: $ 60,600.

– *Laboratory of Telecommunication Science (LTS) Grant Do 0048, 2017-2018*, Fourier Scattering for HF Signal Classification. co-PI, total funding: $ 61,995.

– *Laboratory of Telecommunication Science (LTS) Grant Do 0049, 2017-2018*, Underwater Research Acoustics. co-PI, total funding: $ 60,600.

– *NSF Grant DMS 1614537 2016-2019*, A Novel Paradigm for Nonlinear Convection Models and Large Systems of Particles. PI, total funding: $ 400,000.

– *NSF Grant DMS 1312142 2013–2017*, Many Particles' Systems: Theory and Applications. PI, total funding: $ 341,270.

– *STEEP 2013–2017*, A Synergistic Training network on Energy Beam Processing: from modelling to industrial applications. Co-PI with D. Auroux at the University of Nice's node (roughly 500K euros). Main project led by MCM Group at University of Nottingham.

– *Ki-Net 2012–2017*, Kinetic description of emerging challenges in multiscale problems of natural sciences. Core participant, CSCAMM node, PI: E. Tadmor, NSF Grant: 1107444.

– *Monumentalg 2010–2013*, MOdélisation mathématique et simulations NUMériques pour la dégradation biologique des MONUMENTs et pour la prolifération des ALGues. Funded by the French research agency, ANR. Core participant, PI M. Ribot.

– *CBDif-Fr 2009–2012*, Collective behaviour and diffusion : mathematical models and simulations ANR-08-BLAN-0333-01. Funded by the French research agency, ANR. Core participant, PI J. Dolbeault.

– *GDR Mabem 2008–2013*, CNRS research group, Mathematical Modeling in Biology and Medicine. Core participant, PI: E. Grenier.

– *GDR Chant 2004–2013*, CNRS research group, Hyperbolic and Kinetic Equations. Core participant, PI: F. Castella (till 2008) and S. Labbé.

– *GDR GRIP 2004–2013*, CNRS research group, Interacting Particles. Core participant, PI: T. Goudon.

– *ACINIM 2003–2006*, "Lepoumonvousdisje", Mathematical and numerical modeling of the respiratory system by a hierarchy of *ad hoc* methods. Core participant, PI M. Briane.

– *ERCIM Workshop 2003–2006*, on Informatics and Mathematics Applied to Interventional Medicine. Core participant, PI: M. Thiriet.

– *Galileo project 2003*, between the ENS, Paris, and the Politecnico di Torino, Turin Italy. PI.

– *HYKE 2002-2005*, European project: Hyperbolic and kinetic equations: asymptotics, numerics, applications. Core participant, PI: N. Mauser.

– *CMCU project 2001–2004*, between the ENS, the ESPCI, Paris and The Polytechnique School of Tunis, Tunisia. PI.

Professional Activities

1. Editorial Board

Associate Editor, Communications in Mathematical Science, 2016-present.
Corresponding Editor, SIAM Journal of Mathematical Analysis, 2011-present.
Associate Editor, Journal of Dynamics and Games, 2018-present
Associate Editor, journal of Nonlinear Differential Equations and Applications, 2018-present
Associate Editor, KRM, Kinetic and Related Models, 2013-present.
Associate Editor, M3AS, Mathematical Models and Methods in Applied Sciences, 2014-present.
Editor in chief, NHM, Network and Heterogeneous Media, 2014-present.
Associate Editor, Probability and Mathematical Physics, 2019-present.

2. Panels/Referee for projects

Agence Nationale de la Recherche (France).
European Research Council, ERC.
National Science Foundation, NSF.
Engineering and Physical Sciences Research Council, UK.
Région Rhône-Alpes (France).
Emergence program from the Paris region (France).
Swiss National Science Foundation.

3. Referee for journals

Applied Math Journal Networks and Heterogeneous Media
Analysis and PDE
Annales de l'Institut Henri Poincaré Analyse Non Linéaire
Applied Mathematical Modeling
Archive for Rational Mechanics
Annals of Mathematics Studies series Princeton University Press
Calculus of Variations and Partial Differential Equations
Communications in Mathematical Physics
Communications in Mathematical Sciences
Communications in Partial Differential Equations
Communications in Pure and Applied Mathematics
Comptes Rendus Mathématiques de l'Académie des Sciences
Duke Mathematical Journal
ESAIM Control, Optimisation and Calculus of Variations
Indiana University Mathematics Journal
Inventiones Mathematicae

Journal of the American Mathematical Society
Journal of Computational Physics
Journal of Differential Equations
Journal of the European Mathematical Society
Journal of Functional Analysis
Journal of the London Mathematical Society
Journal of Mathematical Analysis and Applications
Journal de Mathématiques Pures et Appliquées
Journal of Mathematical Biology
Journal of Mathematical Physics
Journal of Nonlinear Science
Journal of Physics A
Journal of Statistical Physics
Journal of Theoretical Biology
Journal of Uncertainty Quantification
Lecture Notes in Mathematics, Spinger Verlag
Nonlinearity
Mathematical Modeling and Numerical Analysis
Mathematical Models and Methods in the Applied Sciences
Multiscale Modeling and Simulation: A SIAM Interdisciplinary Journal
Philosophical Transactions of the Royal Society of London A
Physica D
Physica Scripta
Publications de l'IHES
Rivista Matematica della Università di Parma
SIAM Journal of Mathematical Analysis
SIAM Journal on Numerical Analysis
SIAM Journal on Scientic Computing.
Transactions of the AMS.

4. University Service at the University of Maryland

– Acting Director, 2016–2019, and Director of CSCAMM, 2016–present.

– Associate Director of CSCAMM, 2014–2016.

– Chair of the hiring committee for the Michael and Eugenia Brin E-nnovate Chair position at the Department of Mathematics, 2017–2019.

– Chair of PDE/Applied Mathematics Field committee, 2013–2015.

- Member of the Department of Mathematics Hiring committee, 2012–2013, 2015–2016, 2019–2020.

- Member of the AMSC, Applied Mathematics and Scientic Computation Program, University of Maryland. Member of the AMSC graduate committee, 2012–present.

- Organizer of the PDE/Applied Mathematics seminar, 2012–2016.

- Organizer of the Applied Mathematics RIT (Student seminar), 2014–2016.

- Member of the Department of Mathematics Policy committee, 2011–2012, 2014–2015, 2016–2017, 2019–2020.

- Member of the PDE/Applied Mathematics field committee, 2011-present.

- Member of the Numerical Analysis field committee, 2011–present.

5. **University Service at the University of Nice**

- Member of the Department of Mathematics Hiring committee, 2005–2011.

- Coordinator for Nice of the Erasmus Mundus Master Mathmods, 2009–2011.

- Coordinator of the internship program (placement in companies) for the Master IMEA, 2007–2010.

- Co-responsible of the PDE and Numerical Analysis group, 2006–2011.

- Coordinator of the 3rd year B.Sc. degree in Mathematics in Nice, 2006–2010.

- Coordinator of the Modeling and Scientific Computing track of the Master of Mathematics, 2006–2008.

- Organizer of the Colloquium of the Department of Mathematics, 2005–2011.

6. **Service at the Ecole Normale Supérieure**

- Organizer of the PDE seminar (with O. Glass), 2003–2004.

- Member of the Department of Mathematics committee, 2001–2004.

- Co-coordinator of the "agrégation" preparation for students, 2001–2004.

- Grader and tester for the entrance examination, 2001–2004.

– Coordinator of the joint Math.-Physics track, 2000–2004.

Teaching

1. Advising

<u>Recent Undergraduate students</u>

   i Adam Brown, Maryland, 2012.

   ii Gabriel Vilarrubi, Maryland, 2013.

   iii Raymond Schram, Maryland, 2015.

   iv Cédric Balestra, Maryland, 2015.

   v Edward Nusinovich, Maryland, 2018.

   vi Jack Saylor, Maryland, 2018.

   vii Trevor Teolis, Maryland, 2018.

<u>Recent Master students</u>

   i Adi Louay (Nice), 2007.

   ii Blanche Buet (ENS Lyon), 2009.

   iii Jean-Michel Squarcini (Nice), 2009.

   iv Henrik Veelken (Mathmods, Nice), 2009.

   v Théau Cosseron (ENSTA, ParisTech), 2010.

   vi Uriel Moreles (Mathmods, Nice), 2010.

   vii Aleksandar Samardzija (Mathmods, Nice), 2011.

   viii Cyril Tata (Mathmods, Nice), 2011.

   ix Cédric Balestra (UMD), 2015.

<u>PhD students</u>

i Lobna Derbel, Univ. Paris VI, Carthage (Tunisia), 2006.
Thesis: Analysis of models of tumor-immune system competition.
Placement: Maître Assistant (associate professor) and head of the applied mathematics department, Institut Supérieur d'Informatique, Tunis Tunisia.

ii Damien Broizat, Univ. Nice 2013.
Thesis: Kinetic models for coagulation, fragmentation and traffic flows.
Placement: Professor in preparatory classes, Nice.

iii Zhenfu Wang, Univ. of Maryland, 2017.
Thesis: Mean Field Limit for Stochastic Particle Systems with Singular Forces.
Placement: Postdoctoral fellow, University of Pennsylvania.

iv Martin Molina Fructuoso, with A. Mellet, Univ. of Maryland, current.

v Hsin-Yi Lin, Univ. of Maryland, current.

PostDocs, full or partial advisor

i Fethi Ben Belgacem (Assistant professor, Monastir univ. Tunisia)

ii Ilaria Brazzoli (PostDoc Bristol, UK)

iii Juan Calvo (Assistant professor, Barcelona, Spain)

iv Dong Dong (Postdoc, Univ. of Maryland)

v Jean-François Jabir (Assistant Professor, Santiago, Chile)

vi Trygve Karper (Associate Professor, Trondheim, Norway)

vii Valérie Lemesle (Chargé de Recherche, CIRAD, Montpellier)

viii Sébastien Motsch (Assistant Professor, Arizona)

ix David Poyato (Univ. of Granada)

x Gael Raoul (Chargé de Recherche CNRS, CEFE, Montpellier, France)

xi Thomas Rey (Maître de Conférence, Lille France)

xii Magali Tournus (Maître de Conférence, Univ. of Aix-Marseille)

2. Dissertation committees, PhD and Habilitation

– Fayçal Abidi, PhD, Ecole Polytechnique of Tunis, Tunisia, Reviewer 2010.

– Aymeric Baradat, PhD, Paris France, Reviewer 2019.

– Julien Barré, Habilitation, Nice France, Reviewer 2010.

– Matthew Becker, preliminary oral exam, Maryland 2015.

– Mihai Bostan, Habilitation, Besançon, France, Reviewer 2006.

– Juan Calvo, PhD, Granada Spain, Reviewer 2010.

– José Alfredo Cañizo, PhD, Granada Spain, Reviewer 2006.

– Geoffrey Douglas Clapp, PhD, Maryland 2016.

– Maria Colombo, PhD, Scuola Normale Superiore di Pisa, 2015.

– Matias Delgadino, preliminary oral exam 2013 and PhD, Maryland 2016.

– Stefan Doboszczak, preliminary oral exam, Maryland 2014.

– Najoua El Ghani, PhD, Tunis Tunisia, Reviewer 2010.

– Ahmad El Hajj, PhD, Cermics Paris, 2007.

– Mouhamad El Safadi, PhD, Orléans France, Reviewer 2007.

– Amanda Galante, PhD, Maryland, 2012.

– James Greene, preliminary oral exam and PhD, Maryland 2012 and 2015.

– Daniel Han-Kwan, PhD, Paris France, 2011, and Habilitation, Paris France, 2017.

– Siming He, preliminary oral exam and PhD, Maryland 2015 and 2018.

– Mathieu Hillairet, PhD, ENS Lyon France, Reviewer 2005.

– Ryan Hunter, PhD, Maryland 2017.

– Elif Kuz, preliminary oral exam, Maryland 2013.

– Corentin Lacombe, PhD, University Pierre et Marie Curie, Reviewer 2017.

- Wenbo Li, preliminary oral exam and PhD, Maryland 2016 and 2019.

- Ioannis Markou, PhD, Maryland 2014.

- Sara Marino, PhD, Cambridge UK, External Examiner 2015.

- Amina Mecherbet, PhD, Montpellier France, Reviewer 2019.

- Evelyne Miot, Habilitation, Grenoble France, Reviewer 2019.

- Sepideh Mirrahimi, Habilitation, Toulouse France, Reviewer 2019.

- Ayman Moussa, Habilitation, Paris France, Reviewer 2018.

- Claudia Negulescu, PhD, Toulouse France, Reviewer 2005.

- Enrique Ortola, PhD, Maryland, 2014.

- Charlotte Perrin, PhD, Univ. de Chambéry-Savoie, 2016.

- Sam Punshon-Smith, preliminary oral exam, Maryland, 2013.

- Vincent Renault, PhD, University Paris VI, 2016.

- Delphine Salort, Habilitation, Paris France, Reviewer 2012.

- Hassib Selmi, PhD, Ecole Polytechnique of Tunis, Tunisia, Reviewer 2011.

- Siddharth Sharma, candidacy exam, Maryland 2018.

- Scott Smith, preliminary oral exam 2015 and PhD, Maryland, 2016.

- Changhui Tan, PhD, Maryland, 2014.

- Ignacio Tomas, PhD, Maryland, 2015.

- Hana Ueda, preliminary oral exam, Maryland, 2013.

- Dan Weinberg, preliminary oral exam, Maryland, 2012.

- Jake Lee Weissman, review committee and PhD, Maryland, 2016 and 2019.

- Shelby Wilson, PhD, Maryland, 2012.

- Dong Xin, preliminary oral exam, Maryland 2017.

- Ming Zhong, PhD, Maryland, 2016.

– Asia Wyatt, PhD, Maryland, 2019.

3. Courses taught

<u>a. Graduate courses</u>

- University of Maryland

  – Computer Organization and Programming for Scientific Computing AMSC/CMSC 662, 2017 and 2019.
  – Geometry and Analysis: Optimal Transport, 2016.
  – Partial Differential Equations I, 2012 and 2014.
  – Partial Differential Equations II, 2013.
  – Reading class on Harmonic Analysis, 2014.
  – Reading class on Geometric Measure Theory, 2015.

- University of Nice

  – Mathematical biology : An introduction, 2009-2010. Course developed.
  – Crash course on Analysis, 2009-2010. Course developed.
  – Finite Elements, 2009.
  – Introduction to plasmas, 2006 and 2007. Course developed.
  – Mathematics applied to Biology, 2006. Course developed.

- Other Institutions

  – Averaging Lemmas, 2009, at Granada, Spain. Course developed.
  – Tranport equations in biology, 2008, at L'Aquila, Italy. Course developed.
  – Introduction to Mathematics applied to biology, 2007, ENIT Tunis Tunisia. Course developed.
  – Mathematics applied to biology/models for chemotaxis, 2005–2007, at the Ecole Polytechnique of Tunis, Tunisia. Course developed.
  – Numerical methods for hyperbolic equations, 2001–2004, at the Ecole Polytechnique of Tunis, Tunisia.

<u>b. Undergraduate courses</u>

- University of Maryland

  - Introduction to Numerical Analysis I, AMSC 466, 2013, 2015 and 2019.
  - Applications of Linear Algebra, Math 401, 2012.
  - Advanced Calculus, Math 410, 2011 and 2014.

- University of Nice

  - Numerical Analysis, 2006–2009.
  - Advanced Numerical Analysis, 2007.
  - Courses for students preparing the "Agrégation" of Mathematics, 2004–2008.
  - Differential Geometry, 2004–2005.

- École Normale Supérieure

  - Analysis 2, 2000–2002.
  - Analysis, 2002–2004.

Selected Conferences organized

- Conference Formation of small scales in nonlinear PDEs. CSCAMM, University of Maryland, 2019.

- Conference Collective dynamics and self-organisation in biological sciences. International Centre for Mathematical Sciences (ICMS) in Edinburgh, 2018.

- Conference Multiscale problems in materials and biology. Fields Institute, Toronto, Canada 2018.

- Workshop Transport phenomena in mathematical biology. Warsaw, Poland 2018.

- Conference Frontiers in Mathematical Oncology: Young Investigators Conference. Maryland 2017.

- Conference Mixing and Mixtures in Geo- and Biophysical Flows: A Focus on Mathematical Theory and Numerical Methods, Maryland, 2016.

- SIAM Minisymposium on New Developments with Entropic Solutions to Nonlinear Conservation Laws, Baltimore, USA, 2014.

– Workshop "Quantum Systems: A Mathematical Journey from few to many Particles", Maryland 2013.

– Conference "Kinetic Description of Social Dynamics: From Consensus to Flocking", Maryland 2012.

– Conference "Frontiers in mathematical biology; Young investigators conference", Maryland 2012.

– Conference "Modèles mathématiques de la dynamique des populations", Tunisia, 2011.

– Session "Etats de la recherche de la SMF" on Mathematics applied to biology, IHP Paris, 2010.

– Conference "Modeling in Biology and Medicine-Application in Pharmacology", Nice 2008.

– F. Poupaud conferences 2006–2010.

Selected Invited Lectures

– Plenary speaker, SIAM Conference on Partial Differential Equations (PD19), Palm Spring, 2019.

– Conference Mathematical Frontiers in the Analysis of Many-particle Systems, Cambridge, UK, 2019.

– Patterns in Life and Social Sciences Biomat 2019, Granada, Spain.

– Summer School JEDP 2019, Obernai, France, 2019.

– Workshop "Mathematics of Living Matter", Penn State, 2018.

– Conference Nonlinear Partial Differential Equations, KAUST, 2018.

– International PhD School on Modeling Nature, Granada, Spain, 2018.

– International Congress of Mathematicians 2018, Rio de Janeiro, in the sections: Partial Differential Equations and Mathematics in Science and Technology.

– Plenary speaker, Stochastic Analysis satellite conference of the ICM 2018, Sao Paulo.

– The Mathematics of Games in the Applied Sciences, 2018 Rio de Janeiro.

- A "Conference in Mathematical Biology", Paris, 2018.

- Biology and Big Data, Penn State, 2018.

- Classical and Quantum Mechanical Models of Many-Particle Systems, Oberwolfach Germany 2017.

- Collisionless Boltzmann (Vlasov) Equation and Modeling of Self-Gravitating Systems and Plasmas, CIRM France, 2017.

- Analysis and Control of Fluid-Structure Interaction Systems, Bordeaux France, 2017.

- GSSI Summer School on Stochastic PDEs, Mean Field Games and Biology, L'Aquila, Italy, 2017.

- Mathematical Aspects of Fluid Flows, Kácov, Czech Republic, 2017.

- Workshop on Current Topics in Kinetic Theory, Warsaw, Poland, 2017.

- Mean-field dynamics of many particle systems, Wolfgang Pauli Institute, Vienna, Austria, 2016.

- Mean-field modeling and multiscale methods for complex physical and biological systems, UC Santa Barbara, 2016.

- New Trends in Quantum and Classical Kinetic Equations and Related PDEs. UW Madison, 2016.

- GSSI Summer School on Fluid Dynamics and Related Topics, L'Aquila, Italy, 2016.

- CIMPA Summer School "Mathematical Modeling in Biology and Medecine", Santiago de Cuba 2016.

- Workshop Analysis of PDE's of Fluid Mechanics, Rice Univ. 2016.

- Workshop Advances in kinetic and fluid dynamics transport: Analysis and approximations, UT Austin 2016.

- Workshop Compressible Fluids, Marseille France 2016.

- Workshop on "Vlasov-Poisson equations for plasmas and cosmology", Vienna 2015.

- Young Researchers Workshop: Kinetic theory with applications in physical sciences, Maryland 2015.

- Analysis and Computation in Kinetic Theory, Stanford 2015.

- Workshop Mathematical Methods and Modeling in Kinetic Theory, Rennes 2015.

- Joint Mathematical Meetings, San Antonio, USA, 2015.

- Modeling and Control in Social Dynamics. Rutgers University, Camden 2014.

- HYP14: International Conference on Hyperbolic Problems. Rio de Janeiro, Brazil, 2014.

- Collective Behavior: Macroscopic versus Kinetic Descriptions. Imperial College, London, UK, 2014.

- Microscopic descriptions and mean-field equations in physics and social sciences. University of Bath, UK, 2014.

- Modern Perspectives in Applied Mathematics: Theory and Numerics of PDES; in Honor of Eitan Tadmor. University of Maryland, USA, 2014.

- PDE in Social Sciences, Paris, France, 2014.

- Joint Mathematical Meetings, Baltimore, USA, 2014.

- SIAM Conference on Analysis of PDE, Lake Buena Vista, Florida, USA, 2013.

- Vlasov-Poisson: the numerical approach and its limits, IHP, Paris, 2013.

- The Second Pacific Rim Mathematical Association (PRIMA) Congress, Shanghai Jiao Tong University, China, 2013.

- Partial differential equations in the social and life science: emergent challenges in modeling, analysis, and computations, BANFF, Canada, 2013.

- Biological invasions and evolutionary biology, stochastic and deterministic models, Lyon, France, 2013.

- Transport Models for Collective Dynamics in Biological Systems, Raleigh, USA, 2013.

- 2012 Young Researchers Workshop: Kinetic Description of Multiscale Phenomena, Madison, USA 2012.

- Kinetic Theory and Related Fields: Theory and Numerics, Japan, 2012.

- Kinetic Description of Social Dynamics: From Consensus to Flocking, College Park, USA, 2012.

- The 9th AIMS Conference on Dynamical Systems, Differential Equations and Applications, Orlando, USA, 2012.

- SIAM Conference on Analysis of Partial Differential Equations, San Diego, USA, 2011.

- Vlasov Models in Kinetic Theory, Providence, USA 2011.

- Continuum and kinetic methods in the theory of shocks, fronts, dislocations and interfaces, in honor C. Dafermos, Crete, Greece, 2011.

- Applied Mathematics from Waves to Fluids, in honor C. Bardos, Nice, France, 2011.

- Perspectives in Mathematics and Life Sciences, BIOMAT 2011, Granada, Spain, 2011.

- PDEs in kinetic theories: kinetic description of biological models, Edinburgh, Scotland, 2010.

- Ficus Workshop, Bengalore, India, 2010.

- PDE-Normandy Workshop, Caen, France, 2010.

- DSPDE 2010, Barcelona, Spain, 2010.

- 2010 Annual Kinetic FRG Meeting, Brown University, USA, 2010.

- International Conference on Operations Research, La Habana, Cuba, 2010.

- Workshop Hyperbolic Conservation Laws and Fluid Dynamics, Parma, Italy, 2010.

- Conference on PDE and Probabilities, IHP Paris, France, 2009.

- Conference on Mathematical Biology: Modeling and Differential Equations, CRM Barcelona, Spain, 2009.

- Current Challenges of Mathematics in Biology and Cancer Medicine, CIRM, France, 2009.

- Dynamical Systems for the Biology of System, Les Houches France, 2009.

- Mathematical Models in Life and Social Sciences, L'Aquila, Italy, 2008.

- Sixth meeting on Hyperbolic Conservation Laws, L'Aquila, Italy, 2008.

- PDE2008 - Topics in PDE's and applications, Grenada, Spain, 2008.

- Methods and Models of Kinetic Theory, Porto Ercole, Italy, 2008.

- Many particles systems, Les Houches, France, 2008.

- Numerical methods and kinetic equations, Toulouse, France, 2007.

- Summer School "Multiscale Methods", Cargese, France, 2006.

- AIMS meeting, Poitiers, France, 2006.

- Conference Around HYperbolic and Kinetic Equations 3, Roma Italy, 2005.

- Particle Systems with Several Conservation Laws, Oberwolfach, Germany, 2005.

- Conference TamTam 2005, Tunis Tunisia, 2005.

- 6th Internarional Workshop on Mathematical Aspects of Fluid and Plasma Dynamics, Kyoto, Japan, 2004.

- 10th International Conference on Hyperbolic Problems, Theory, Numerics, Applications, Osaka, Japan, 2004.

- HYKE conference on Complex Flows, Barcelona, Spain 2004.

- Conference Around HYperbolic and Kinetic Equations, Vienna, Austria, 2003.

- Transport, Coagulation and Fragmentation processes, Madrid, Spain, 2003.

- Ninth conference on hyperbolic problems, theory and applications, Pasadena USA, 2002.

- Young researchers workshop, Hydrodynamic limits, IHP Paris, France, 2001.

- Asymptotic Methods and Applications in Kinetic and Quantum-Kinetic Theory, Grenada Spain, 2001.

- Workshop on flow problems, Darmstadt, Germany, 2001.

- Particles interacting through a Fluid, Ecole Polytechnique, Tunis, Tunisia, 2001.

– Nonlinear Analysis 2000, Courant Institute, USA, 2000.

– Coulombian interactions, Kinetic equations and Asymptotic analysis, CIRM, France, 2000.

– Nonlinear equations in many-particle systems, Oberwolfach, Germany, 1999.

– Kinetic equations and asymptotic theories, Vienna, Austria, 1998.

Seminars and Colloquia, 2012-present

– Courant Institute, November 2019.

– Georgia Tech, November 2019.

– Duke University, April 2019.

– UCLA, April 2019.

– Virginia Commonwealth University, February 2019.

– Drexel University, January 2019.

– Universite Paris Diderot, December 2018.

– University of Pennsylvania, October 2018.

– University of Chicago, April 2018.

– John Hopkins University, April 2018.

– North Carolina State University, April 2018.

– Joint seminar of the Universities of Basel and Zurich, November 2017.

– University of Pittsburgh, April 2017.

– Collège de France, Paris, January 2017.

– University of Chambéry-Savoie, July 2016.

– University of Maryland at Baltimore County, April 2016.

– Brown University, March 2016.

– Penn State University, February 2016.

- Inria Sophia-Antipolis, January 2016.

- UT Austin, October 2015.

- Georgia Tech, April 2015.

- Cornell University, March 2015.

- Ohio State University, March 2015.

- Courant Institute, March 2015.

- Princeton University, March 2015.

- Carnegie Mellon University, March 2014

- Duke University, September 2013.

- UMass Amherst, April 2013.

- University of Texas at Austin, February 2013.

- G. Washington University, November 2012.

- Georgetown University, September 2012.

- Courant Institute, New-York University, Mars 2012.

- University of Pennsylvania, Philadelphia, February 2012.

- Penn State University, February 2012.

- University of Crete, Greece, January 2012.

- University of Nice, France, January, 2012.

Publications

1. W. Czaja, D. Dong, P.-E. Jabin, Transport Model for Feature Extraction. Preprint.

2. P.-E. Jabin, A. Mellet, M. Molina, Optimal transportation in a discrete setting. Preprint.

3. D. Bresch, P.-E. Jabin, Z. Wang. On Mean Field Limit and Quantitative Estimates with a Large Class of Singular Kernels: Application to the Patlak-Keller-Segel Model. To appear *Comptes rendus - Mathématique*, DOI: 10.1016/j.crma.2019.09.007.

4. L. Berlyand, P.-E. Jabin, M. Potomkin, E. Ratajczyk. A kinetic approach to active rods dynamics in confined domains. Preprint.

5. D. Bresch, P.-E. Jabin, Viscous compressible flows under pressure. Fluids under Pressure, Birkhäuser Publishing Ltd.

6. J. Zhu, S. Teolis, N. Biassou, A. Tabb, P-E Jabin, O. Lavi. Tracking the adaptation and compensation processes of patients brain arterial network to an evolving glioblastoma. Preprint.

7. J. Calvo, P.-E. Jabin, J. Soler, Global weak solutions to the relativistic BGK equation. To appear *Comm. Partial Differential Equations*.

8. W. Cai, P.-E. Jabin, H. Liu, Time-asymptotic Convergence Rates towards discrete steady states of a nonlocal selection-mutation model. To appear M3AS.

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