JOSÉ ANTONIO CARRILLO DE LA PLATA

EDUCATION

Bachelor in Mathematics	University of Granada	June 1992
Bachelor in Computer Science	University of Granada	June 1992
Ph.D. in Mathematics	University of Granada	May 1996

CURRENT POSITION

Chair in Applied and Numerical Analysis, Department of Mathematics, Imperial College London

EXTERNAL POSITION

Chairman	Applied Mathematics Committee European Mathematical Society	2014 - 2017

PREVIOUS POSITIONS

Prof. Asociado Tipo I	University of Granada	October 1992 - October 1994
Prof. Asociado Tipo II	University of Granada	October 1994 - October 1996
Prof. Asociado Tipo III	University of Granada	October 1996 - April 1999
Prof. Titular Interino	University of Granada	April 1999 - January 2000
Lecturer	University of Texas at Austin	September 1998 - May 2000
Prof. Titular	University of Granada	January 2000 - March 2003
ICREA Research Prof.	Univ. Autònoma de Barcelona	March 2003 - September 2012

VISITING AND RESEARCH POSITIONS

Visiting Professorship	Université du Nice	May 2001
Visiting Professorship	Institut de Mathématiques Élie Cartan Université Henri Poincaré, Nancy	June 2004
Visiting Professorship	Centre de Mathématiques et de Leurs Applications École Normale Supérieure de Cachan, Paris	May 2005
Visiting Professorship	INRIA Futurs, Université des Sciences et Technologies, Lille 1	Nov. 2006 and June 2007
Visiting Professorship	Mathématiques et Applications, Physique Mathématique d'Orléans, Université d'Orléans, Orléans	March 2006
Core participant	Program on Optimal Transport IPAM, UCLA	Jan. 2008 - June 2008
Visiting Professorship	CAS (Center for Advanced Studies) Norwegian Academy of Science and Letters, Oslo Program on Partial Differential Equations	Sept.-Oct. 2008

Visiting Professorship	Mathématiques Pour l'Industrie et la Physique Université Paul Sabatier, Toulouse	December 2007
Visiting Professorship	National University of Singapore	August 1-31, 2009
Visiting Professorship	CEREMADE, Université Paris-Dauphine, Paris	February 2010
Visiting Professorship	Newton Institute for the Mathematical Sciences Cambridge, United Kingdom	August-December 2010
Visiting Professorship	Department de Mathématiques Université Paris-Orsay	June 2012
Visiting Professorship	Department de Mathématiques, Université Nice	December 2012
Visiting Professorship	Department de Mathématiques, Université Paris-Dauphine	June 2013
Program Participant/ Visiting Professor	MSRI, University of California at Berkeley	August-October 2013
Visiting Professor	Tsinghua University, Beijing	July-August 2015
Visiting Professor	KAUST, Thuwal, Saudi Arabia	April 2016
Visiting Scholar	Mittag-Leffler Institute, Sweden	September-December 2016

AWARDS AND PRIZES

- Academy of Sciences of Granada award, 1992.
- Postdoctoral fellowship, Department of Mathematics, University of Texas at Austin, 1998-2000.
- SeMA (Sociadad Española de Matemática Aplicada) Young Researcher Prize, 2003.
- Richard von Mises Prize of the International Association of Applied Mathematics and Mechanics (GAMM), 2006.
- Royal Society Wolfson Research Merit Award 2012.
- 2016 SACA Award to the best PhD supervision at Imperial College London.

RESEARCH INTERESTS

- Kinetic equations: asymptotic behavior, modelling and numerical simulation
- Nonlinear diffusion equations: asymptotic behavior and qualitative properties
- Kinetic and Diffusive Models in Mathematical Biology: chemotaxis, swarming and flocking, computational neuroscience
- Other applications of kinetic equations: charged particles transport in semiconductors and plasmas, rarefied gas dynamics, granular gases
- Numerical methods for nonlinear conservation laws

TEACHING

Since 1993, Prof. Carrillo has taught a wide range of mathematics courses for various undergraduate majors—architecture, biology, business administration, chemistry, computer science, economics, engineering, and mathematics—as well as mathematics graduate level courses in partial differential equations.

Summer Schools/Conferences (recent)

- 2016 “Nonlocal and nonlinear diffusions and interactions”, CIME, July 4th-8th 2016, Cetraro, Italy. 5 lectures.
- 2016 Particle Systems and PDE's V, University of Minho, November 27-30, 2016. 3 lectures.
- 2015 L’Aquila Summer School: “Collective Behavior: Derivation, Model Hierarchies and Pattern Stability,” 5 lectures.
- 2014 RICAM Winter School: “Gradient Flows: Qualitative Properties & Numerical Schemes,” 3 lectures.
- 2013 Ravello Summer School: “Swarming Models with Repulsive-Attractive Effects: Derivation, Model Hierarchies and Pattern Stability,” 5 lectures.

MENTORING

Ph.D. Students Supervised

- J. M. Mantas Ruiz, co-supervised with Julio Ortega Lopera, January 2003. He is currently a professor at the Software Engineering department of the Universidad de Granada, Spain.
- M. J.Cáceres Granado, September 2003. She is currently a professor at the Applied Mathematics department of the Universidad de Granada, Spain.
- Lucas Catão de Freitas Ferreira, co-supervised with Helena J. Nussenzveig-Lopes, March 2005. He is currently a professor at the Mathematics department of the Universidade de Campinas, Brazil.
- Francesco Vecil, co-supervised with Naoufel Ben Abdallah, December 2007. He is currently a maître de conferences at the Mathematics department of the Université de Clermont-Ferrand, France.
- Jesús Rosado Linares, July 2010. He is currently a professor at the Applied Mathematics department of the Universidad de Buenos Aires, Argentina.
- Daniel Balagué Guardia, co-supervised with José Alfredo Cañizo Rincón, June 2013. He is at the ICT department of the Case Western University, USA.
- Matheus Santos, co-supervised with Lucas C. Ferreira y Marcelo da Silva, February 2015. He is currently a professor at the Mathematics department of the Universidade Rio Grande do Sul, Brazil.
- Thomas James Holding, co-supervised with Clément Mouhot, August 2016. He is currently a postodoc within the ERC project of Martin Hairer in University of Warwick.
- Francesco Pattachini, he is expected to defend in May 2017. He will go for a three year postdoc at Canergie Mellon University, USA. He got offers from Simon Fraser, Vancouver and Arizona State University among others.
- Franca Hoffman, she is expected to defend in May 2017. She has accepted an offer for a postdoc at Caltech in the USA. She had offers from Pennsylvania State University and Rutgers University. She was awarded a 2016 Student Award for Outstanding Achievement, one out of six across the university.

Postdoctoral Fellows Supervised

- S. Labrunie, Institut Élie Cartan (Mathématiques), Université Henri Poincaré Nancy 1, France. 3 months 2002-2003. He is currently a maître de conferences at the Université Henri Poincaré Nancy 1, France.
- F. Salvarani, Dipartimento di Matematica, Università di Pavia, Italy, 1 month 2002. He is currently a professor at the Mathematics department of the Università di Pavia, Italy.

- K. Fellner, Institut für Angewandte und Numerische Mathematik, TU Wien, Austria, 3 months 2003. He is currently a professor at the Mathematics department of the University of Graz, Austria.
- M. P. Gualdani, Fachbereich Mathematik, Universität Mainz, Germany, 3 months 2003-2004. She is currently a professor at the Mathematics department of the George Washington University, USA.
- M. di Francesco, Dipartimento di Matematica, Università di L'Aquila, Italy, 3 months 2004. He is currently a professor at the Mathematics department of the Università di L'Aquila, Italy.
- C. Simeoni, Departament de Mathématiques, Université de Nice Sophia-Antipolis, France, 2 months 2005. She is currently a professor at the Mathematics department of the Université de Nice Sophia-Antipolis, France.
- Lucas Catão, IMECC, UNICAMP, Brasil, June 2005-May 2006. He is currently a professor at the Mathematics department of the Universidade de Campinas, Brazil.
- Juliana Precioso, Instituto de Matemática, Estadística e Computacão Científica, UNICAMP, Brasil, January-June 2006. She is currently a professor at the Mathematics department of the Universidade de Rio Preto, Brazil.
- Adrien Blanchet, Université Paris-Dauphine, France, September 2006-May 2007, He is currently a professor at the Mathematics department of the Université de Toulouse I, France.
- José Alfredo Canĩzo Rincón, Universitat Autònoma de Barcelona, September 2008-May 2011. He is currently a professor at the Applied Mathematics department of the Universidad de Granada, Spain.
- Young-Pil Choi, Imperial College London, November 2012-November 2013. He is currently a professor at the Mathematics department of the Inha University, Seoul, South Korea.
- Yanghong Huang, Imperial College London. Funded by the EPSRC Grant EP/K008404/1 and the Chapman Fellowship, October 2012-June 2015. He is currently a lecturer at the Mathematics department of the University of Manchester, UK.
- Stephan Martin, Imperial College London. Funded by the EPSRC Grant EP/K008404/1, January 2014-September 2014. He is currently a Data Scientist at SAP, Germany.
- Young-Pil Choi, Imperial College London. Funded by the EPSRC Grant EP/K008404/1, December 2013-January 2016. He is currently a professor at the Mathematics department of the Inha University, Seoul, South Korea.

PUBLICATIONS

Journals

1. M. Bostan, J. A. Carrillo, Reduced fluid models for self-propelled particles interacting through alignment, Preprint.
2. J. Barré, J. A. Carrillo, P. Degond, D. Peurichard, E. Zatorska, Particle interactions mediated by dynamical networks: assessment of macroscopic descriptions, Preprint.
3. V. Calvez, J. A. Carrillo, F. Hoffmann, the geometry of diffusing and self-attracting particles in a one-dimensional fair-competition regime, Preprint.
4. J. A. Carrillo, Y. Sugiyama, Compactly supported stationary states of the degenerate Keller-Segel system in the diffusion-dominated regime, Preprint.
5. J. A. Carrillo, K. Grunert, H. Holden, A Lipschitz metric for the Hunter-Saxton equation, Preprint
6. J. A. Carrillo, A. Jüngel, M. C. Santos, Displacement convexity for the entropy in semidiscrete nonlinear Fokker-Planck equations, preprint.
7. V. Calvez, J. A. Carrillo, F. Hoffmann, Equilibria of homogeneous functionals in the fair-competition regime, preprint.
8. J. A. Carrillo, Y.-P. Choi, P. B. Mucha, J. Peszek, Sharp conditions to avoid collisions in singular Cucker-Smale interactions, preprint.
9. J. A. Carrillo, A. Figalli, F. S. Patacchini, Geometry of minimizers for the interaction energy with mildly repulsive potentials, to appear in Ann. IHP.
10. J. A. Carrillo, F. S. Patacchini, P. Sternberg, G. Wolansky, Convergence of a particle method for diffusive gradient flows in one dimension, SIAM J. Math. Analysis 48, 3708-3741, 2016.
11. J. A. Carrillo, H. Ranetbauer, M.-T. Wolfram, Numerical simulation of nonlinear continuity equations by evolving diffeomorphisms, J. Comp. Phys. 327, 186-202, 2016.
12. J. A. Carrillo, Y.-P. Choi, E. Zatorska, On the pressureless damped Euler-Poisson equations with non-local forces: Critical thresholds and large-time behavior, Mathematical Models and Methods in the Applied Sciences 26, 2311-2340, 2016.
13. J. A. Carrillo, S. Hittmeir, B. Volzone, Y. Yao, Nonlinear Aggregation-Diffusion Equations: Radial Symmetry and Long Time Asymptotics, preprint.
14. J. A. Carrillo, S. Mancini, M. B. Tran, On the exponential convergence rate for a non-gradient Fokker-Planck equation in Computational Neuroscience, JEPE 1, 271-279, 2015.
15. J. A. Carrillo, Y. Huang, Explicit Equilibrium Solutions For the Aggregation Equation with Power-Law Potentials, Kinetic Rel. Mod. 10, 171-192, 2017.
16. J. A. Carrillo, Y.-P. Choi, C. Totzeck, O. Tse, An analytical framework for a consensus-based global optimization method, preprint.
17. J. A. Carrillo, E. Feireisl, P. Gwiazda, A. Świerczewska-Gwiazda, Weak solutions for Euler systems with non-local interactions, preprint.
18. J. A. Carrillo, Y. Huang, F. S. Patacchini, G. Wolansky, Numerical Study of a Particle Method for Gradient Flows, to appear in Kinetic Rel. Mod.
19. A. B. T. Barbaro, J. A. Cañizo, J. A. Carrillo, P. Degond, Phase Transitions in a kinetic flocking model of Cucker-Smale type, Multiscale Model. Simul. 14, 1063-1088, 2016.
20. J. A. Carrillo, Y.-P. Choi, M. Hauray, S. Salem, Mean-field limit for collective behavior models with sharp sensitivity regions, to appear in J. European Math. Soc.
21. M. Campos-Pinto, J. A. Carrillo, F. Charles, Y.-P. Choi, Convergence of a Linearly Transformed Particle Method for Aggregation Equations, preprint.
22. J. A. Cañizo, J. A. Carrillo, P. Laurençot, J. Rosado, The Fokker-Planck equation for bosons in 2D: well-posedness and asymptotic behavior, Nonlinear Analysis: TMA 137, 291-305, 2016.

23. V. Bonnaillie-Noël, J.A. Carrillo, T. Goudon, G. Pavliotis, Efficient numerical calculation of drift and diffusion coefficients in the diffusion approximation of kinetic equations, to appear in IMA Journal of Numerical Analysis.
24. J. A. Carrillo, S. Martin, M.-T. Wolfram, A local version of the Hughes model for pedestrian flow, Mathematical Models and Methods in the Applied Sciences 26, 671-697, 2016.
25. J. A. Carrillo, J. L. Vázquez, Some Free Boundary Problems involving Nonlocal Diffusion and Aggregation, Phil. Trans. R. Soc. A 373, 20140275, 2015.
26. J. A. Carrillo, Y.-P. Choi, E. Tadmor, C. Tan, Critical thresholds in 1D Euler equations with nonlocal forces, Mathematical Models and Methods in the Applied Sciences 26, 185-206, 2016.
27. J. A. Carrillo, B. Perthame, D. Salort, D. Smets, Qualitative Properties of Solutions for the Noisy Integrate & Fire model in Computational Neuroscience, Nonlinearity 28, 3365-3388, 2015.
28. J. A. Carrillo, F. James, F. Lagoutière, N. Vauchelet, The Filippov characteristic flow for the aggregation equation with mildly singular potentials, J. Differential Equations 260, 304-338, 2016.
29. A. Blanchet, J. A. Carrillo, D. Kinderlehrer, M. Kowalczyk, P. Laurençot, S. Lisini, A hybrid variational principle for the Keller-Segel system in R2, M2AN 49, 1553-1576, 2015.
30. J. A. Carrillo, A. Klar, A. Roth, Single to Double Mill Small Noise Transition via Semi-Lagrangian Finite Volume Methods, Comm. Math. Sci. 14, 1111-1136, 2016.
31. J. A. Carrillo, Y. Huang, M. C. Santos, J. L. Vázquez, Exponential Convergence Towards Stationary States for the 1D Porous Medium Equation with Fractional Pressure, J. Differential Equations 258, 736-763, 2015.
32. J. A. Carrillo, R. Eftimie, F. K. O. Hoffmann, Non-local kinetic and macroscopic models for self-organised animal aggregations, Kinetic and Related Models 8, 413-441, 2015.
33. J. A. Carrillo, M. G. Delgadino, A. Mellet, Regularity of local minimizers of the interaction energy via obstacle problems, Comm. Math. Phys. 343, 747-781, 2016.
34. J. A. Cañizo, J. A. Carrillo, F. S. Patacchini, Existence of Compactly Supported Global Minimisers for the Interaction Energy, Arch. Rat. Mech. Anal. 217, 1197-1217, 2015.
35. J. A. Carrillo, D. Slepčev, L. Wu, Nonlocal-interaction equations on uniformly prox-regular sets, Discrete and Continuous Dynamical Systems-A 36, 1209-1247, 2016.
36. J. A. Carrillo, M. Chipot, Y. Huang, On global minimizers of repulsive-attractive power-law interaction energies, Philosophical Transactions of the Royal Society A 372, 20130399, 2014.
37. J. A. Carrillo, G. Toscani, Renyi entropy and improved equilibration rates to self-similarity for nonlinear diffusion equations, Nonlinearity 27, 3159-3177, 2014.
38. J. A. Carrillo, A. Chertock, Y. Huang, A Finite-Volume Method for Nonlinear Nonlocal Equations with a Gradient Flow Structure, Comm. in Comp. Phys. 17, 233-258, 2015.
39. J. A. Carrillo, D. Castorina, B. Volzone, Ground States for Diffusion Dominated Free Energies with Logarithmic Interaction, SIAM J. Math. Anal. 47, 1-25, 2015.
40. J. A. Carrillo, Y.-P. Choi, T. K. Karper, On the analysis of a coupled kinetic-fluid model with local alignment forces, Ann. IHP 33, 273-307, 2016.
41. G. A. Bonaschi, J. A. Carrillo, M. DiFrancesco, M. A. Peletier, Equivalence of gradient flows and entropy solutions for singular nonlocal interaction equations in 1D, Control, Optimization and Calculus of Variations 21, 414-441, 2015.
42. J. A. Carrillo, Y. Huang, S. Martin, Nonlinear stability of flock solutions in second-order swarming models, Nonlinear Analysis: Real World Applications 17, 332-343, 2014.
43. F. Bolley, J. A. Carrillo, Nonlinear diffusion: Geodesic Convexity is equivalent to Wasserstein Contraction, Comm. PDEs 39, 1860-1869, 2014.
44. J. A. Carrillo, Y. Huang, S. Martin, Explicit Flock Solutions for Quasi-Morse potentials, European Journal of Applied Mathematics 25, 553-578, 2014.
45. J. A. Carrillo, S. Cordier, G. Deco, S. Mancini, Complexity Reduction of Rate-Equations Models for Two-Choice Decision-Making, PLoS ONE 8(12), e80820, 2013.
46. J. A. Carrillo, M. DiFrancesco, G. Toscani, Condensation phenomena in nonlinear drift equations, Annali della Scuola Normale Superiore di Pisa XV, 145-171, 2016.

47. J. A. Carrillo, P. Gwiazda, A. Ulikowska, Splitting-Particle Methods for Structured Population Models: Convergence and Applications, Mathematical Models and Methods in the Applied Sciences 24, 2171, 2014.
48. G. Albi, D. Balagué, J. A. Carrillo, J. von Brecht, Stability Analysis of Flock and Mill Rings for 2nd Order Models in Swarming, SIAM J. Appl. Math. 74, 794-818, 2014.
49. J. A. Carrillo, Y.-P. Choi, S.-Y. Ha, M.-J. Kang, Y. Kim, Contractivity of the Wasserstein metric for the kinetic Kuramoto equation, J. Stat. Phys. 156, 395-415, 2014.
50. J. A. Carrillo, S. Lisini, E. Mainini, Uniqueness for Keller-Segel-type chemotaxis models, Discrete and Continuous Dynamical Systems-A 34, 1319-1338, 2014.
51. J.A. Carrillo, V. Caselles, S. Moll, On the relativistic heat equation in one space dimension, Proc. London Math. Soc. 107, 1395-1423, 2013.
52. D. Balagué, J. A. Carrillo, T. Laurent, G. Raoul, Dimensionality of Local Minimizers of the Interaction Energy, Archive for Rational Mechanics and Analysis 209, 1055-1088, 2013.
53. D. Balagué, J. A. Carrillo, Y. Yao, Confinement for Repulsive-Attractive Kernels, Discrete and Continuous Dynamical Systems-B 19, 1227-1248, 2014.
54. J. A. Carrillo, S. Lisini, E. Mainini, Gradient flows for non-smooth interaction potentials, Nonlinear Analysis TMA 100, 122-147, 2014.
55. L. Almazán, J. A. Carrillo, C. Salueña, V. Garzó, T. Pöschel, Role of kinetic transport coefficients for hydrodynamic simulations of granular flow, New J. Phys. 15, 043044, 2013.
56. J. A. Carrillo, S. Martin, V. Panferov, A new interaction potential for swarming models, Physica D 260, 112-126, 2013.
57. M. Bostan, J. A. Carrillo, Asymptotic Fixed-Speed Reduced Dynamics for Kinetic Equations in Swarming, Math. Mod. Meth. in the Appl. Sci. 23, 2353, 2013.
58. J. A. Carrillo, S. Cordier, S. Mancini, One dimensional Fokker-Planck reduced dynamics of decision making models in Computational Neuroscience, Communications in Mathematical Sciences 11, 523-540, 2013.
59. J. A. Cañizo, J. A. Carrillo, S. Cuadrado, Measure solutions for some models in population dynamics, Acta Applicandae Mathematicae 123, 141-156, 2013.
60. J. A. Carrillo, L. C. F. Ferreira, J. C. Precioso, A mass-transportation approach to a one dimensional fluid mechanics model with nonlocal velocity, Advances in Mathematics 231, 306-327, 2012.
61. J. A. Carrillo, B. Yan, An Asymptotic Preserving Scheme for the Diffusive Limit of Kinetic Systems for Chemotaxis, Multiscale Model. Simul. 11, 336-361, 2013.
62. J. A. Carrillo, S. Hittmeir, A. Jüngel, Cross diffusion and nonlinear diffusion preventing blow up in the Keller-Segel model, Math. Mod. Meth. Appl Sci. 22, 1250041, 2012.
63. D. Balagué, J. A. Carrillo, T. Laurent, G. Raoul, Nonlocal interactions by repulsive-attractive potentials: radial ins/stability, Physica D 260, 5-25, 2013.
64. J. A. Carrillo, M. d. M. González, M. P. Gualdani, and M. E. Schonbek, Classical Solutions for a nonlinear Fokker-Planck equation arising in Computational Neuroscience, Comm. in PDEs 38, 385-409, 2013.
65. J. A. Carrillo, L. Chen, J.-G. Liu, and J. Wang, A note on the subcritical two dimensional Keller-Segel System, Acta Applicandae Mathematicae 119, 43-55, 2012.
66. J. A. Cañizo, J. A. Carrillo, M. E. Schonbek, Decay rates for a class of diffusive-dominated interaction equations, J. Math. Anal. Appl. 389, 541-557, 2012.
67. F. Bolley, J. A. Cañizo, J. A. Carrillo, Mean-field limit for the stochastic Vicsek model, Appl. Math. Letters 25, 339-343, 2012.
68. J. A. Carrillo, R. M. Colombo, P. Gwiazda, A. Ulikowska, Structured populations, cell growth and measure valued balance laws, J. Diff. Eqns. 252, 3245-3277, 2012.
69. M. J. Cáceres, J. A. Carrillo, B. Perthame, Analysis of Nonlinear Noisy Integrate & Fire Neuron Models: blow-up and steady states, Journal of Mathematical Neuroscience 1, 7, 2011.
70. F. Bolley, J. A. Cañizo, J. A. Carrillo, Stochastic Mean-Field Limit: Non-Lipschitz Forces & Swarming, Math. Mod. Meth. Appl. Sci. 21, 2179-2210, 2011.

71. B. Ayuso de Dios, J. A. Carrillo, C.-W. Shu, Discontinuous Galerkin methods for the multi-dimensional Vlasov-Poisson problem, Math. Mod. Meth. Appl Sci. 22, 1250042, 2012.
72. A. Blanchet, E. A. Carlen, J. A. Carrillo, Functional inequalities, thick tails and asymptotics for the critical mass Patlak-Keller-Segel model, J. Func. Anal. 262, 2142-2230, 2012.
73. V. Calvez, J. A. Carrillo, Refined asymptotics for the subcritical Keller-Segel system and related functional inequalities, Proc. AMS. 140, 3515-3530, 2012.
74. J. A. Carrillo, T. Karper, K. Trivisa, On the dynamics of a fluid-particle interaction model: The Bubbling Regime, Nonlinear Analysis TMA 74, 2778-2801, 2011.
75. E. A. Carlen, J. A. Carrillo, M. Loss, Hardy-Littlewood-Sobolev inequalities via fast diffusion flows, Proc. Nat. Acad. USA 107 (46), 19696-19701, 2010.
76. J. A. Carrillo, R. Duan, A. Moussa, Global Classical Solutions Close to Equilibrium to the Vlasov-Euler-Fokker-Planck System, Kinetic and Related Models 4, 227-258, 2011.
77. J. A. Carrillo, M. J. Cáceres, L. Tao, A numerical solver for a nonlinear Fokker-Planck equation representation of neuronal network dynamics, J. Comp. Phys. 230, 1084-1099, 2011.
78. J. A. Carrillo, A. Klar, S. Martin, S. Tiwari, Self-propelled interacting particle systems with roosting force, Math. Mod. Meth. Appl. Sci. 20, 1533-1552, 2010.
79. J. A. Carrillo, S. Cordier, S. Mancini, A decision-making Fokker-Planck model in Computational Neuroscience, J. Math. Biology 63, 801-830, 2011.
80. B. Ayuso, J. A. Carrillo, C.-W. Shu, Discontinuous Galerkin Methods for the one-dimensional Vlasov-Poisson System, Kinetic and Related Models 4, 955-989, 2011.
81. M. Burger, J. A. Carrillo, M.-T. Wolfram, A Mixed Finite Element Method for Nonlinear Diffusion Equations, Kinetic and Related Models 3, 59-83, 2010.
82. J. A. Carrillo, S. Lisini, On the asymptotic behavior of the gradient flow of a polyconvex functional, Contemporary Mathematics series 526, 37-51, 2010.
83. J. A. Cañizo, J. A. Carrillo, J. Rosado, A well-posedness theory in measures for some kinetic models of collective motion, Math. Mod. Meth. Appl. Sci. 21, 515-539, 2011.
84. M. Bisi, J. A. Carrillo, G. Spiga, Some alternative methods for hydrodynamic closures to dissipative kinetic models, Eur. Phys. J. Special Topics 179, 165-178, 2009.
85. A. Arnold, J. A. Carrillo, C. Manzini, Refined long-time asymptotics for some polymeric fluid flow models, Comm. Math. Sci. 8, 763-782, 2010.
86. J. A. Carrillo, M. Fornasier, J. Rosado, G. Toscani, Asymptotic Flocking Dynamics for the kinetic Cucker-Smale model, SIAM J. Math. Anal. 42, 218-236, 2010.
87. J. A. Carrillo, M. DiFrancesco, A. Figalli, T. Laurent, D. Slepcev, Confinement in nonlocal interaction equations, Nonlinear Analysis TMA 75, 550-558, 2012.
88. J. A. Carrillo, M. DiFrancesco, A. Figalli, T. Laurent, D. Slepcev, Global-in-time weak measure solutions and finite-time aggregation for nonlocal interaction equations, Duke Math. J. 156, 229-271, 2011.
89. N. Ben Abdallah, M. J. Cáceres, J. A. Carrillo, F. Vecil, A deterministic solver for a hybrid quantum-classical transport model in nanoMOSFETs, J. Comp. Phys. 228, 6553-6571, 2009.
90. M. Agueh, A. Blanchet, J. A. Carrillo, Large time asymptotics of the doubly nonlinear equation in the non-displacement convexity regime, J. Evol. Equations 10, 59-84, 2010.
91. J. A. Carrillo, S. Lisini, G. Savare, D. Slepcev, Nonlinear mobility continuity equations and generalized displacement convexity, J. Functional Anal. 258, 1273-1309, 2010.
92. J. A. Carrillo, J. S. Moll, Numerical simulation of diffusive and aggregation phenomena in nonlinear continuity equations by evolving diffeomorphisms, SIAM J. Sci. Comput. 31, 4305-4329, 2009.
93. J. A. Carrillo, L. Desvillettes, K. Fellner, Rigorous derivation of a nonlinear diffusion equation as fast-reaction limit of a continuous coagulation-fragmentation model with diffusion, Comm. in PDEs 34, 1338-1351, 2009.
94. J. A. Carrillo, D. Slepcev, Example of a first order displacement convex functional, Calculus of Variations and PDES 36, 547-564, 2009.

95. J. A. Carrillo, M. R. D'Orsogna, V. Panferov, Double milling in self-propelled swarms from kinetic theory, Kinetic and Related Models 2, 363-378, 2009.
96. A. L. Bertozzi, J. A. Carrillo, T. Laurent, Blowup in multidimensional aggregation equations with mildly singular interaction kernels, Nonlinearity 22, 683-710, 2009.
97. J. A. Carrillo, L. Ni, Sharp logarithmic Sobolev inequalities on gradient solitons and applications, Communications in Analysis and Geometry 17, 721-753, 2009.
98. M. Bisi, J. A. Carrillo, B. Lods, Equilibrium solution to the inelastic Boltzmann equation driven by a particles thermal bath, J. Stat. Phys. 133, 841-870, 2008.
99. E. A. Carlen, J. A. Carrillo, M. C. Carvalho, Strong convergence towards homogeneous cooling states for dissipative Maxwell models, Annales de l'IHP-ANL 26, 1675-1700, 2009.
100. J. A. Carrillo, P. Laurençot, J. Rosado, Fermi-Dirac-Fokker-Planck Equation: Well-posedness & Long-time Asymptotics, J. Differential Equations 247, 2209-2234, 2009.
101. A. Blanchet, J. A. Carrillo, P. Laurençot, Critical mass for a Patlak-Keller-Segel model with degenerate diffusion in higher dimensions, Calculus of Variations and PDEs 35, 133-168, 2009.
102. J.A. Carrillo, T. Goudon, P. Lafitte, Simulation of Fluid & Particles Flows: Asymptotic Preserving Schemes for Bubbling and Flowing Regimes, J. Comp. Phys. 227, 7929-7951, 2008.
103. Y. Hyon, J. A. Carrillo, Q. Du, C. Liu, A Macroscopic Closure Approximation to the Micro-Macro FENE Models with Maximum Entropy Principle for Polymeric Materials, Kinetic and Related Models 2, 171-184, 2008.
104. J.A. Carrillo, L. Desvillettes, K. Fellner, Fast-Reaction Limit for the Inhomogeneous Aizenman-Bak Model, Kinetic and Related Models 1, 127-137, 2008.
105. M. Bostan, J. A. Carrillo, Global solutions for the one dimensional Water Bag model, Comm. Math. Sci 7, 129-141, 2009.
106. J. A. Carrillo, M. P. Gualdani, A. Jüngel, Convergence of an entropic semi-discretization for nonlinear Fokker-Planck equations in Rd, Pub. Mat. 52, 413-433, 2008.
107. J.A. Carrillo, S. Cordier, G. Toscani, Over-populated Tails for conservative-in-the-mean Inelastic Maxwell Models, Discrete and Continuous Dynamical Systems A 24, 59-81, 2009.
108. A. Arnold, J. A. Carrillo, C. Klapproth, Improved entropy decay estimates for the heat equation, J. Mathematical Analysis and Applications 343, 190-206, 2008.
109. J.A. Carrillo, M. Di Francesco, C. Lattanzio, Contractivity and asymptotics in Wasserstein metrics for viscous nonlinear scalar conservation laws, Bollettino UMI 10-B, 277-292, 2007.
110. A. Blanchet, V. Calvez, J. A. Carrillo, Convergence of the mass-transport steepest descent scheme for the sub-critical Patlak-Keller-Segel model, SIAM J. Numer. Anal. 46, 691-721, 2008.
111. J. A. Carrillo, G. Toscani, Contractive Probability Metrics and Asymptotic Behavior of Dissipative Kinetic Equations, Notes of the 2006 Porto Ercole Summer School, Rivista Matemàtica di Parma 6, 75-198, 2007.
112. A. Blanchet, J. A. Carrillo, N. Masmoudi, Infinite Time Aggregation for the Critical PKS model in R2, Comm. Pure and Applied Mathematics 61, 1449-1481, 2008.
113. J.A. Carrillo, T. Goudon, P. Lafitte, F. Vecil, Numerical Schemes of Diffusion Asymptotics and Moment Closures for Kinetic Equations, J. Sci. Comp. 35, 113-149, 2008.
114. J. A. Carrillo, T. Pöschel, C. Salueña, Granular Hydrodynamics and Pattern Formation in Vertically Oscillated Granular Disks Layers, J. Fluid Mechanics 597, 119-144, 2008.
115. J.A. Carrillo, A. Majorana, F. Vecil, A Semi-lagrangian deterministic solver for the semiconductor Boltzmann-Poisson system, Commun. Comput. Phys. 2, 1027-1054, 2007.
116. J.A. Carrillo, L. Desvillettes, K. Fellner, Exponential Decay Towards Equilibrium for the Inhomogeneous Aizenman-Bak Model, Comm. Math. Phys. 278, 433-451, 2008.
117. J.A. Carrillo, L.C.F. Ferreira, Asymptotic Behavior for the Sub-critical Dissipative Quasi-Geostrophic Equations, Nonlinearity 21, 1001-1018, 2008.
118. J.A. Carrillo, J. L. Vázquez, Asymptotic Complexity in Filtration Equations, Journal of Evolution Equations 7, 471-495, 2007.

119. F. Bolley, J.A. Carrillo, Tanaka Theorem for Inelastic Maxwell Models, Comm. Math. Phys. 276, 287-314, 2007.
120. J.A. Carrillo, J. Rosado, F. Salvarani, 1D Nonlinear Fokker-Planck equations for Fermions and Bosons, Applied Mathematics Letters 21, 148-154, 2008.
121. J.A. Carrillo, S. Cuadrado, B. Perthame, Adaptive dynamics via Hamilton-Jacobi approach and entropy methods for a juvenile-adult model, Mathematical Biosciences 205, 137-161, 2007.
122. J.A. Carrillo, L.C.F. Ferreira, Convergence towards Self-similar Asymptotic Behavior for the Dissipative Quasi-Geostrophic Equations, Banach Center Publ. 74, 95-115, 2006.
123. J.A. Carrillo, M. Di Francesco, C. Lattanzio, Contractivity of Wasserstein metrics and asymptotic profiles for scalar conservation laws, J. Diff. Equations 231, 425-458, 2006.
124. J.A. Carrillo, F. Vecil, Non oscillatory interpolation methods applied to Vlasov-based models, SIAM Journal of Scientific Computing 29, 1179-1206, 2007.
125. M. Bisi, J.A. Carrillo, G. Toscani, Decay rates in probability metrics towards homogeneous cooling states for the inelastic Maxwell model, J. Stat. Phys. 124, 625-653, 2006.
126. J.A. Carrillo, J. Dolbeault, I. Gentil, A. Jüngel, Entropy-Energy inequalities and improved convergence rates for nonlinear parabolic equations, Discrete Cont. Dynamical Systems B 6, 1027-1050, 2006.
127. J.A. Carrillo, M. DiFrancesco, G. Toscani, Strict Contractivity of the 2-Wasserstein distance for the porous medium equation by mass-centering, Proc. Amer. Math. Soc. 135, 353-363, 2007.
128. V. Calvez, J.A. Carrillo, Volume effects in the Keller-Segel model: energy estimates preventing blow-up, Journal Mathématiques Pures et Appliquées 86, 155-175, 2006.
129. J.A. Carrillo, M. DiFrancesco, M. P. Gualdani, Semidiscretization and long-time asymptotics of nonlinear diffusion equations, Comm. Math. Sci. 1, Supplemental issue, 21-53, 2007.
130. J. A. Carrillo, I. Gamba, A. Majorana, C. W. Shu, 2D semiconductor device simulations by WENO-Boltzmann schemes: efficiency, boundary conditions and comparison to Monte Carlo methods, Journal of Computational Physics 214, 55-80, 2006.
131. J.A. Carrillo, T. Goudon, Stability and Asymptotic Analysis of a Fluid-Particle Interaction Model, Comm. PDE 31, 1349-1379, 2006.
132. J.A. Carrillo, L.C.F. Ferreira, Self-similar solutions and large time asymptotics for the dissipative quasi-geostrophic equations, Monatshefte für Mathematik 151, 111-142, 2007.
133. J.A. Carrillo, S. Labrunie, Global solutions for the one-dimensional Vlasov-Maxwell system for Laser-plasma interaction, Math. Mod. Meth. Appl. Sci. 16, 19-57, 2006.
134. J.A. Carillo, M. DiFrancesco, G. Toscani, Intermediate asymptotics beyond homogeneity and self-similarity: long time behavior for $u_t = \Delta\varphi\,(u)$, Archive for Rational Mechanics and Analysis 180, 127-149, 2006.
135. M. Bisi, J.A. Carrillo, G. Toscani, Contractive Metrics for a Boltzmann equation for granular gases: Diffusive equilibria, J. Stat. Phys. 118, 301-331, 2005.
136. M.J. Cáceres, J.A. Carrillo, A. Majorana, Deterministic simulation of the Boltzmann-Poisson system in GaAs-based semiconductors, SIAM Journal of Scientific Computing 27, 1981-2009, 2006.
137. J.A. Carrillo, EDPs de difusión y transporte óptimo de masa, Bol. Soc. Mat. Apl. 28, 129-154, 2004.
138. J.A. Carrillo, R.J. McCann, C. Villani, Contractions in the 2-Wasserstein length space and thermalization of granular media, Archive for Rational Mechanics and Analysis 179, 217-263, 2006.
139. A. Jungel, A. Arnold, J.A. Carrillo, L. Desvillettes, J. Dolbeault, C. Villani, G. Toscani, C. Lederman, P.A. Markowich, Entropies and equilibria of many-particle systems: An essay on recent research, Monat. Mathematik. 142, 35-43, 2004.
140. J.A. Carrillo, K. Fellner, Long-time Asymptotics via Entropy Methods for Diffusion Dominated Equations, Asymptotic Analysis 42, 29-54, 2005.

141. S. Labrunie, J.A. Carrillo, P. Bertrand, Numerical study on hydrodynamic and quasi-neutral approximations for collisionless two-species plasmas, Journal of Computational Physics 200, 267-298, 2004.
142. J.A. Carrillo, M. P. Gualdani, G. Toscani, Finite speed of propagation in porous media by mass transportation methods, C. R. Acad. Sci. Paris Ser. I 338, 815-818, 2004.
143. J. M. Mantas-Ruiz, L. Pareschi, J. A. Carrillo, J. Ortega-Lopera, Parallel Integration of Hydrodynamical Approximations of the Boltzmann Equation for rarefied gases on a Cluster of Computers, J. of Computational Methods in Science and Engineering 4, 33-41, 2004.
144. M.J. Caceres, J.A. Carrillo, G. Toscani, Long-time behavior for a nonlinear fourth order parabolic equation, Trans. Amer. Math. Soc. 357, 1161-1175, 2005.
145. J.A. Carrillo, J. L. Vázquez, Fine asymptotics for fast diffusion equations, Comm. in PDE. 28, 1023-1056, 2003.
146. M.J. Caceres, J.A. Carrillo, P. Degond, The Child-Langmuir limit for semiconductors: a numerical validation, Mathematical Modelling and Numerical Analysis 36, 1161-1176, 2002.
147. C. Sparber, J. A. Carrillo, J. Dolbeault, P.A. Markowich, On the Long Time Behavior of the Quantum Fokker-Planck equation, Monatshefte Mathematik 141, 237-257, 2004.
148. J. A. Carrillo, I. Gamba, A. Majorana, C. W. Shu, A WENO-solver for the transients of Boltzmann-Poisson for semiconductor devices. Performance and comparisons with Monte Carlo methods, Journal of Computational Physics 184, 498-525, 2003.
149. A. Arnold, J. A. Carrillo, E. Dhamo, On the periodic Wigner-Poisson-Fokker-Planck system, Journal of Mathematical Analysis and Applications 275, 263-276, 2002.
150. A. Arnold, J. A. Carrillo, M. Tidriri, Large-time behavior of discrete kinetic equations with non-symmetric interactions, Mathematical Models and Methods in the Applied Sciences 12, 1555-1564, 2002.
151. M.J. Cáceres, J.A. Carrillo, T. Goudon, Equilibration rate for the linear inhomogeneous relaxation-time Boltzmann equation for charged particles, Comm. in PDE. 28, 969-989, 2003.
152. M.J. Caceres, J.A. Carrillo, J. Dolbeault, Nonlinear stability in L^p for solutions of the Vlasov-Poisson system for charged particles, SIAM J. Math. Anal. 34, 478-494, 2002.
153. J.A. Carrillo, T. Goudon, A numerical study on large-time asymptotics of the Lifshitz-Slyozov system, Journal of Scientific Computing 20, 69-113, 2004.
154. J.A. Carrillo, A. Jungel, S. Tang, Positive Entropic Schemes for a Nonlinear Fourth-order Parabolic Equation, Discrete and Continuous Dynamical Systems B 3, 1-20, 2003.
155. J.A. Carrillo, R.J. McCann, C. Villani, Kinetic equilibration rates for granular media and related equations: entropy dissipation and mass transportation estimates, Revista Matemática Iberoamericana 19, 1-48, 2003.
156. J. A. Carrillo, C. Lederman, P.A. Markowich, G. Toscani, Poincaré Inequalities for Linearization of Very Fast Diffusion Equations, Nonlinearity 15, 565-580, 2002.
157. J. A. Carrillo, G. Toscani, Intermediate asymptotics for strong solutions of the thin film equation, Comm. Math. Phys. 225, 551-571, 2002.
158. J. M. Mantas-Ruiz, J. Ortega-Lopera, J. A. Carrillo, Component-based derivation of a parallel stiff ODE solver implemented in a cluster of computers, International Journal of Parallel Programing, 30, 99-148, 2002.
159. J. A. Carrillo, C. Cercignani, I. Gamba, Steady states of a Boltzmann equation for driven granular media, Phys. Rev. E., 62, 7700-7707, 2000.
160. J. A. Carrillo, A. Jungel, P.A. Markowich, G. Toscani, A.Unterreiter, Entropy dissipation methods for degenerate parabolic problems and generalized Sobolev inequalities, Monatshefte für Mathematik, 133, 1-82, 2001.
161. J. A. Carrillo, I. Gamba, C. W. Shu, Computational macroscopic approximations to the 1-D relaxation-time kinetic system for semiconductors, Physica D, 146, 289-306, 2000.
162. A. Arnold, J. A. Carrillo, I. Gamba, C. Shu, Low and High Field Scaling Limits for the Vlasov- and Wigner-Poisson-Fokker-Planck Systems, Transp. Theory Stat. Phys., 30, 121-153, 2001.

163. A. V. Bobylev, J. A. Carrillo, I. Gamba, On some properties of kinetic and hydrodynamic equations for inelastic interactions, J. Stat. Phys., 98, 743-773, 2000.
164. J. A. Carrillo, G. Toscani, Asymptotic L^1-decay of solutions of the porous medium equation to self-similarity, Indiana University Mathematics Journal, 49, 113-141, 2000.
165. J. A. Carrillo, J. Soler, On the evolution of an angle in a vortex patch, J. Nonlinear Sci., 10, 23-47, 2000.
166. D. Benedetto, E. Caglioti, J. A. Carrillo, M. Pulvirenti, A non-maxwellian steady distribution for one-dimensional granular media, J. Stat. Phys., 91, 979-990, 1998.
167. J. A. Carrillo, G. Toscani, Exponential convergence toward equilibrium for homogeneous Fokker-Planck-type equations, Math. Meth. Appl. Sci., 21, 1269-1286, 1998.
168. J.A. Carrillo, Global weak solutions for the initial-boundary value problems to the Vlasov-Poisson-Fokker-Planck system, Math. Meth. Appl. Sci., 21, 907-938, 1998.
169. J.A. Carrillo, On a non-local elliptic equation with decreasing nonlinearity arising in plasma physics, Nonlinear Analysis 32, 97-115, 1998.
170. J.A. Carrillo, J. Soler, On functional solutions for the three dimensional kinetic equations of Vlasov-type with bounded measures as initial data, Nonlinear Analysis 32, 235-259, 1998.
171. J.A. Carrillo, J. Soler, Functional solutions for the Vlasov-Poisson system, Appl. Math. Lett. 10, 45-50, 1997.
172. J.A. Carrillo, J. Soler, On the Vlasov-Poisson-Fokker-Planck equations with measures in Morrey spaces as initial data, J. Math. Anal. Appl. 207, 475-495, 1997.
173. L.L. Bonilla, J.A. Carrillo, J. Soler, Asymptotic behaviour of the initial boundary value problem for the three-dimensional Vlasov-Poisson-Fokker-Planck system, SIAM J. Appl. Math. 57, 1343-1372, 1997.
174. L.L. Bonilla, J.A. Carrillo, J. Soler, An H-theorem for electrostatic and self-gravitating Vlasov-Poisson-Fokker-Planck systems, Physics Letters A 212, 55-59, 1996.
175. J.A. Carrillo, J. Soler, J.L. Vázquez, Asymptotic behaviour and selfsimilarity for the three dimensional Vlasov-Poisson-Fokker-Planck system, J. Functional Analysis 141, 99-132, 1996.
176. J.A. Carrillo, J. Soler, On the initial value problem for the Vlasov-Poisson-Fokker-Planck system with initial data in L^p-spaces, Math. Meth. Appl. Sci. 18, 825-839, 1995.
177. J.A. Carrillo, J. Soler, J.L. Vázquez, Asymptotic behaviour for the frictionless Vlasov-Poisson-Fokker-Planck system, C.R. Acad. Sci. Paris 321, 1195-1200, 1995.

Refereed Proceedings and Book Chapters

1. J. A. Carrillo, Y.-P. Choi, S. Pérez, A review on attractive-repulsive hydrodynamics for consensus in collective behavior, preprint.
2. M. Pájaro, A. A. Alonso, J. A. Carrillo, C. Vázquez, Stability of stochastic gene regulatory networks using entropy methods, 2th IFAC Workshop on Thermodynamic Foundations for a Mathematical Systems Theory TFMST 2016 — Vigo, Spain, 28-30 September 2016, IFAC-PapersOnLine 49, 1-5, 2016.
3. J. A. Carrillo, Y.-P. Choi, M. Hauray, Local well-posedness of the generalized Cucker-Smale model with singular kernels, ESAIM: Proceedings and Surveys 47, 17-35, 2014.
4. T. Kolokolnikov, J. A. Carrillo, A. Bertozzi, R. Fetecau, M. Lewis, Emergent behaviour in multi-particle systems with non-local interactions, Phys. D 260, 1-4, 2013.
5. J. A. Carrillo, Y.-P. Choi, M. Hauray, The derivation of Swarming models: Mean-Field Limit and Wasserstein distances, Collective Dynamics from Bacteria to Crowds: An Excursion Through Modeling, Analysis and Simulation Series, CISM International Centre for Mechanical Sciences, Vol. 553, 1-46, 2014.
6. L. Almazán, C. Salueña, V. Garzó, J. A. Carrillo, T. Pöschel, Hydrodynamics at the Navier-Stokes level applied to fast, transient, supersonic granular flows, AIP Conf. Proc. 1501, 993-1000, 2012.

7. D. Balagué, J. A. Carrillo, Aggregation equation with growing at infinity attractive-repulsive potential, Proceedings of the 13th International Conference on Hyperbolic Problems, Series in Contemporary Applied Mathematics CAM 17, Higher Education Press, Volume 1, 136-147, 2012.
8. J. A. Cañizo, J. A. Carrillo, J. Rosado, Collective Behavior of Animals: Swarming and Complex Patterns, Arbor 186, 1035-1049, 2010.
9. J. A. Carrillo, M. Fornasier, G. Toscani, F. Vecil, Particle, Kinetic, and Hydrodynamic Models of Swarming, in Naldi, G., Pareschi, L., Toscani, G. (eds.) Mathematical Modeling of Collective Behavior in Socio-Economic and Life Sciences, Series: Modelling and Simulation in Science and Technology, Birkhauser, (2010), 297-336.
10. J. A. Carrillo, J. Rosado, Uniqueness of Bounded Solutions to Aggregation Equations by Optimal Transport Methods, Proceedings of the 5th European Congress of Mathematicians, 3-16, Eur. Math. Soc., Zurich, 2010.
11. M.J. Cáceres, J. A. Carrillo, I. Gamba, A. Majorana, C. W. Shu, DSMC versus WENO-BTE: A double gate MOSFET example, Journal of Computational Electronics 5, 471-474, 2006.
12. M.J. Cáceres, J. A. Carrillo, I. Gamba, A. Majorana, C. W. Shu, Deterministic kinetic solvers for charged particle transport in semiconductor devices, in Cercignani, C., Gabetta, E. (eds.) Transport Phenomena and Kinetic Theory: Applications to Gases, Semiconductors, Photons and Biological Systems, Series: Modelling and Simulation in Science and Technology, Birkhäuser, 151-171.
13. J. M. Mantas, P. González, J. A. Carrillo, Parallelization of Implicit-Explicit Runge-Kutta Methods for Cluster of PCs, Proceedings of the Euro-Par 2005 Parallel Processing: 11th International Euro-Par Conference, Editors: José C. Cunha, Pedro D. Medeiros, pp. 815-825, Lecture Notes in Computer Science 3648, Springer-Verlag 2005.
14. C. Salueña, J. A. Carrillo, Numerical simulation of hydrodynamic equations for granular media, Powders & Grains 2005: Garcia-Rojo, Hermann and McNamara eds. pp. 481-484. A.A. Balkema, London (2005).
15. J. A. Carrillo, C. Salueña, Modelling of Shock Waves and Clustering in Hydrodynamic Simulations of Granular Gases, Modelling and Numerics of Kinetic Dissipative Systems, 175-189, Nova Science Publishers NY, 2006.
16. P. González, A. Godoy, F. Gámiz, J. A. Carrillo, Accurate Deterministic Numerical Simulation of p-n Junctions, Journal of Computational Electronics 3, 235-238, 2004.
17. J. M. Mantas, J. A. Carrillo, A. Majorana, Parallelization of WENO-Boltzmann schemes for kinetic descriptions of 2D semiconductor devices, in Anile, A.M., Ali, G.; Mascali, G. (eds.) Scientific Computing in Electrical Engineering, Series: Mathematics in Industry Subseries: The European Consortium for Mathematics in Industry , Vol. 9 Springer, Berlin, (2006), 357-362.
18. P. González, J. A. Carrillo, F. Gámiz, Deterministic Numerical Simulation of 1D kinetic descriptions of Bipolar Electron Devices, in Anile, A.M., Ali, G.; Mascali, G. (eds.) Scientific Computing in Electrical Engineering, Series: Mathematics in Industry Subseries: The European Consortium for Mathematics in Industry, Vol. 9 Springer, Berlin, (2006), 339-344.
19. J.A. Carrillo, G. Toscani, Wasserstein metric and large-time asymptotics of nonlinear diffusion equations, New Trends in Mathematical Physics (In Honour of the Salvatore Rionero 70th Birthday), 234-244, 2005.
20. J. A. Carrillo, I. M. Gamba, A. Majorana, C.W. Shu, A direct solver for 2D non-stationary Boltzmann-Poisson Systems for Semiconductor Devices: A MESFET simulation by WENO-Boltzmann schemes, Journal of Computational Electronics 2, 375-380, 2003.
21. J. A. Carrillo, I. M. Gamba, A. Majorana, C.W. Shu, A WENO-solver for the 1D non-stationary Boltzmann-Poisson system for semiconductor devices, Journal of Computational Electronics 1, 365-370, 2002.
22. J. A. Carrillo, I. M. Gamba, O. Muscato, C.W.Shu, Comparison of Monte Carlo and deterministic simulations of a silicon diode, IMA Volume Series 135, 75-84, 2003.
23. A. M. Anile, J.A. Carrillo, I. M. Gamba, C.W. Shu, Approximation of the BTE by a relaxation-time operator: simulations for a 50nm-channel Si diode, VLSI design Journal 13, 349-354, 2001.

24. J. A. Carrillo, P.A. Markowich, A.Unterreiter, Large-Time Asymptotics of Porous-Medium Type Equations, Gakuto International Series Mathematical Sciences and Applications 13, 24-36, 2000.
25. J. A. Carrillo, On a 1-D granular media immersed in a fluid, Fields Institute Communications, 27, 43-56, 2000.
26. J. A. Carrillo, J. Soler, On the evolution of a singular vortex patch in a two-dimensional incompressible fluid flow, Computer Physics Communications, 121-122, 244-250, 1999.
27. L.L. Bonilla, J.A. Carrillo, J. Soler, Asymptotic behavior of the Vlasov-Poisson-Fokker-Planck system in bounded domains, Z. Angew. Math. Mech. 76, 485-486, 1996.
28. J.A. Carrillo, J. Soler, Global existence of functional solutions for the Vlasov-Poisson-Fokker-Planck system in 3-D with bounded measures as initial data, Pitman Research Notes in Mathematics, 326, 1994.

Citations in Scientific Databases

- Highly Cited Researcher 2015 and 2016.
- ResearchID (Web of Science) Database: C-7048-2008. 3221 citations for 152 publications with an average of 21.33 citations per item and an h-index of 30 at 15/01/2017.
- MathSciNet Database: 3057 citations for 170 publications cited by 1413 authors.
- Essential Science Indicators (Web of Science) Database: Position 75 in Mathematics with 1478 citations for 88 papers and 16.80 citations per paper.
- Google Scholar Database: 6973 citations and 4045 since 2012, h-index of 44 (33 from 2012).

INVITED LECTURES

Seminar and Colloquium Talks:

More than 160 seminars in universities and research centers worldwide, among others:

University of Texas at Austin, The Fields Institute, Brown University, Iowa State University, Arizona State University, University of Toronto, Technische Universitat Darmstadt, Université du Nice, Universidad Autónoma de Madrid, MIP-Toulouse, Universität des Saarlandes, University of Victoria, Università di Pavia, Universitat Wien, Université de Paris-Dauphine, College de France-Paris, Université d'Orléans, Courant Institute for Mathematical Sciences, Université de Franche-Comté, Penn State University, DAMTP-University of Cambridge, University of California at San Diego, Rutgers University, UCLA (applied math colloquium and Analysis and PDEs seminars), UCSB, UC-Davis, Stanford University, California State University at Northridge, Carnegie Mellon University, University of Wisconsin, IAS-Princeton University, University of Maryland, École des Ponts et Chausées de Paris, Kyoto University, Meiji University, University of Warwick, OCIAM-OCCAM-OxPDE Oxford, University College London, Université Paris-VI, King's College, MPI-Leipzig, University of Zürich, École Polytechnique Paris, University of Warsaw, MSRI-Berkeley, University of Bristol, University of Dundee, University of Southampton, Edinburgh Mathematical Society meetings, TU-Munich, Isaac Newton Institute for the Mathematical Sciences-University of Cambridge, KAUST, Technion, TU-Eindhoven, Peking University, Xi'an, Beijing Academy of Sciences, Purdue University, Kyushu University, Munster University, Uppsala University, KTH, NCSU, Duke University.

Conference Talks (selected)

1. Simulation of Transport in Transition Regimes, Minneapolis, Minnesota (USA), May 2000. Organized by Institute for Mathematics and its Applications.
2. Nonlinear Analysis 2000, New York, New York (USA), May 2000. Organized by Courant Institute for Mathematical Sciences.
3. Advances in Mathematical Semiconductor Modeling, Pavia (Italy), September 2000. Organized by Dipartimento di Matematica and Istituto di Analisi Numerica di Pavia.
4. Numerical Methods for Hyperbolic and Kinetic Equations, Catania (Italy), February 2001. Organized by Dipartimento di Matematica e Informatica della Universita di Catania.
5. Asymptotic and Numerical Methods in Kinetic Theory, Oberwolfach (Alemania), April 2001. Organized by Mathematisches Forschunginstitut Oberwolfach.
6. Concentration Period on Measure Transportation and Geometric Inequalities, Vancouver (Canada), July 2002. Organized by Pacific Institute for the Mathematical Sciences.
7. Perspectives in Kinetic Theory, Sestri-Levante (Italy), October 2002.
8. Recent Advances in Calculus of Variations and PDE's, A Young Researchers Meeting, Pisa (Italy), November 2002.
9. New Challenges in Applied Mathematics, Castro Urdiales (Espanã), September 2003.
10. Optimal Transport Theory and Applications, Pisa (Italy), October 2003.
11. Classical and Quantum Mechanical Models of Many-Particle Systems, Oberwolfach (Germany), November 2003.
12. Second annual meeting of the HYKE network: Around HYperbolic and Kinetic Equations 2, Paris (France), April 2004.
13. Workshop on Optimal Transportation, Transport Equations and Hydrodynamics, Edinburgh (United Kingdom), July 2005.
14. Boltzmann Equation and Fluidodynamic Limits, Trieste (Italy), June 2006.
15. Mathematics and its Applications, Torino (Italy), July 2006.
16. Classical and Quantum Mechanical Models of Many-Particle Systems, Oberwolfach (Germany), 2006.

17. Iberian Mathematical Meeting, Lisbon (Portugal), February 2007.
18. Symposium on Kinetic Equations and Methods, Victoria (Canada), April 2007.
19. Optimal Transportation, and Applications to Geophysics and Geometry, Edinburgh (UK), July 2007.
20. Mathematical Issues in Complex Fluids, Beijing, October 15-19, 2007.
21. Workshop on Biomechanics and Chemotaxis, Linz, December 10-14, 2007.
22. Second Workshop of Harmonic Analysis and Partial Differential Equations (WHAPDE), Mérida, Yucatán, Mexico, February 4-8, 2008.
23. Invited Speaker at the 5th European Congress of Mathematicians, Amsterdam, July 14-18, 2008.
24. Invited Speaker at the 13th International Conference on Hyperbolic Problems: Theory, Numerics and Applications (HYP2010), Beijing, China, June 15-19, 2010.
25. Invited Speaker at the ERC Workshop on Optimal Transportation and Applications, Pisa, October 12-16, 2010.
26. Invited Speaker at the Workshop on Conservation Laws, Plasma and Related Fields, Seoul, South Korea, October 21-23, 2010.
27. Invited Speaker at the PDEs in Kinetic Theories: Kinetic Description of Biological Models, Edinburgh, November 8-12, 2010.
28. Invited Speaker at the Colloque en l'honneur de Cédric Villani, Lyon, November 23-24, 2010.
29. Invited Speaker at the Boltzmann Equation: Mathematics, Modeling and Simulations, in memory of Carlo Cercignani, Paris, February 9-11, 2011.
30. Invited Speaker at the Dynamics of the Ocean Environment, Reykjavík, Iceland, April 17, 2011.
31. Invited Speaker at the Conference on Kinetic Theory and Related Fields, Pohang, South Korea, June 22-24, 2011.
32. Invited Speaker at a minisymposium of the 8th European Conference on Mathematical and Theoretical Biology, Kraków, Poland, June 28 - July 2, 2011.
33. Invited Speaker at a minisymposium of the ICIAM 2011, Vancouver, Canada, July 18-22, 2011.
34. Invited Speaker at the ICERM 2011, Providence, USA, September 19-23, 2011.
35. Invited Speaker at the ICMS 2011, Edinburgh, United Kingdom, September 26-28, 2011.
36. Invited Speaker at the CIRM 2011, Marseille, France, October 3-7, 2011.
37. Invited Speaker at the Variational Methods for Evolution, Oberwolfach, December 5-9, 2011.
38. Invited Speaker at the Nonlocal PDEs, Variational Problems and their Applications, Los Angeles, February 27 - March 2, 2012.
39. Invited Speaker at the 2nd Math-Days at King Saud University, Riyadh, Saudi Arabia, March 15, 2012.
40. Invited Speaker at the Symposium: Aggregation Models in Biology, Graduate Center, CUNY, New York, USA, March 22, 2012.
41. Invited Speaker at the International Conference on Applied Mathematics, Shanghai, China, April 16-20, 2012.
42. Invited Speaker at the WORKSHOP in Asymptotic-Preserving schemes, Ile de Porquerolles, May 20-26, 2012.
43. Invited Speaker at the Scale transitions in chemistry and biology, ICMS, Edinburgh, UK, June 4-8, 2012.
44. Invited Speaker at the Optimal Transport (to) Orsay, Orsay, France, June 18-22, 2012.
45. Invited Speaker at the Recent Trends in Nonlinear Diffusion, Pisa, Italy, July 1-6, 2012.
46. Invited Speaker at the PDEs for Multiphase Advanced Materials, Cortona (Arezzo), Italy, September 17-21, 2012.
47. Invited Speaker at the Kinetic Description of Social Dynamics: From Consensus to Flocking, CSCAMM, University of Maryland, College Park, USA, November 5-9, 2012.
48. Invited Speaker at the conference: Partial Differential Equations in the Social and Life Sciences: Emergent Challenges in Modeling, Analysis, and Computations, BIRS, Banff, Canada, March 31 -

April 5, 2013.

49. Plenary Speaker at the conference: Canadian Mathematical Society Summer Meeting, Halifax, Canada, June 4-7, 2013.
50. Invited Speaker at the Conference on Mathematical Topics in Kinetic Theory, Cambridge, UK, June 17-21, 2013.
51. Invited Speaker at the conference: Nonlinear Elliptic and Parabolic Partial Differential Equations, Milano, Italy, June 19-21, 2013.
52. Invited Speaker at the conference: Kinetic Description of Multiscale Phenomena, Heraklion, Crete, Greece, June 17-28, 2013.
53. Invited Speaker at the conference: Energy/Entropy-Driven Systems and Applications, WIAS, Berlin, Germany, October 9-11, 2013.
54. Invited Speaker at the conference: Classical and Quantum Mechanical Models of Many-Particle Systems, Oberwolfach, Germany, December 1-5, 2013.
55. Invited Speaker at the conference: Mathematical Modelling of Complex Systems, Paris, France, December 11-13, 2013.
56. Invited Speaker at the conference: Programme Mathématiques et biologie, systèmes de particules et réaction-diffusion, Toulouse, France, March 17-21, 2014.
57. Invited Speaker at the conference: Calculus of Variations, Geometric Analysis & Partial Differential Equations, Sussex, UK, March 24-28, 2014.
58. Invited Speaker at the conference: Modern Perspectives in Applied Mathematics: Theory and Numerics of PDEs, Washington, USA, April 28 - May 2, 2014.
59. Invited Speaker at the conference: Microscopic descriptions and mean-field equations in physics and social sciences, Bath, UK, May 12-16, 2014.
60. Invited Speaker at the conference: 8th European Conference on Elliptic and Parabolic Problems, Gaeta, Italy, May 26-30, 2014.
61. Invited Speaker at the conference: Entropy Methods, PDEs, Functional Inequalities, and Applications, BIRS, Banff, Canada, June 29 - July 4, 2014.
62. Invited Speaker at the conference: XV International Conference on Hyperbolic Problems: Theory, Numerics and Applications, HYP2014, IMPA, July 28 - August 1, 2014, Rio de Janeiro, Brazil.
63. Invited Speaker at the conference: ERC Workshop on Optimal Transportation and Applications, Pisa, Italy, October 27-31, 2014.
64. Invited Speaker at the conference: Kinetic equations, November 10-14, 2014, Marseille, France.
65. Invited Course Speaker at the Special Semester on New Trends in Calculus of Variations, School on Optimal Transport in the Applied Sciences, Linz, Austria, December 2-5, 2014.
66. Invited Speaker at the conference: Variational Methods for Evolution, Oberwolfach, Germany, December 14-20, 2014.
67. Invited Speaker at the conference: Gradient flows: from Theory to Application, Edinburgh, UK, April 20-24, 2015.
68. Invited Speaker at the conference: Workshop on Asymptotic Preserving and Multiscale Methods for Kinetic and Hyperbolic Problems, University of Wisconsin-Madison, USA, May 4-8, 2015.
69. Invited Speaker at the conference: Numerical probabilistic methods for non-linear PDEs, London, UK, June 29 - July 1, 2015.
70. Invited Speaker at the conference: BCAM Workshop on Harmonic Analysis and PDEs, Bilbao, Spain, July 6-17, 2015.
71. Invited Speaker at the conference: Workshop on Kinetic Theory and Gas Dynamics, Shanghai, China, July 4-7, 2015.
72. Invited Minisymposium Speaker at the conference: ICIAM-2015, Beijing, China.
73. Invited Speaker at the conference: Workshop in Nonlinear PDEs Brussels, September 7-11, 2015.
74. Invited Speaker at the conference: Self-assembly and Self-organization in Computer Science and Biology, Dagstuhl Seminar 15402, September 27 - October 2, 2015.
75. Invited Speaker at the conference: Charlas Abiertas del IEMath-GR, Granada, November 20, 2015.
76. Invited Speaker at the conference: New Mathematical and Computational Problems Involved in Cell Motility, Morphogenesis and Pattern Formation, INI, December 7-11, 2015.

77. Mini Workshop on Modeling, Analysis, Computation and Application of Kinetic Problems, Brown University, February 5-6, 2016.
78. Stochastic Modelling of Transport Processes in Biology, 30-31 March 2016, University of Manchester, UK.
79. International Conference on Nonlinear Partial Differential Equations: theories, numerics and applications, 20th-23rd May 2016, Hong Kong.
80. Young Applied Analysts in the UK, University of Bath, 26-27 May 2016.
81. 5 hours course in Nonlocal and nonlinear diffusions and interactions, CIME, July 4th-8th 2016, Cetraro, Italy.
82. Topics in Applied Nonlinear Analysis: Recent Advances and New Trends, Conference in honor of David Kinderlehrer's 75th birthday, Carnegie Mellon University, July 18-20, 2016.
83. Transport phenomena in collective dynamics: from micro to social hydrodynamics, ETH-Zurich, November 1-4, 2016.
84. Mini-course of 3 hours in Particle Systems and PDE's V, University of Minho, November 27-30, 2016.
85. PDE Models for multi-agent phenomena, INDAM Rome, November 28th - December 2nd, 2016.
86. Forefront of PDEs: Modelling, Analysis and Numerics, Vienna, December 12-14, 2016.

FUNDING

Professor Carrillo's research projects have been funded throughout his career by agencies in Spain and other nations. Listed below are some recent United Kingdom grants.

Royal Society Wolfson Research Merit Award
Principal Investigator: Dr. José A. Carrillo de la Plata
Amount: £85.000 for 5 years, Oct. 2012-Oct. 2017

Engineering and Physical Sciences Research Council grant number EP/K008404/1
Principal Investigator: Dr. José A. Carrillo de la Plata
Amount: £514.248 for 3 years, Jan. 2013-Dec. 2015

Platform Grants from Imperial College London
Principal Investigator: Dr. José A. Carrillo de la Plata
RI049JC: £568 Raluca Eftimie Visit; RI056JC: £690 Yoshie Sugiyama Visit; RI069JC: £804 Marie-Therese Wolfram Visit; RS017JC: £3,000 Academic Visitor - Young-Pil Choi; RI073YH: £450 Jacob Bedrossian Visit; RI074JC: £600 Alina Chertock; NF001MC: £3,500 Michel Chipot - Nelder fellowship; RI108JC: £600 Alethea Barbaro; RI092JC: £600 Frederic Lagoutière; W016JC: £10,000 for the organization of the workshop Collective Behaviour: Macroscopic versus Kinetic Descriptions, at Imperial College, May 2014; RS033JC: £2,000 Academic Visitor - Frédérique Charles; RI184JC: £1000 Mihai Bostan; RI185JC: £900 Marco Fontelos; RI186JC: £800 Katy Craig; RI202JC: £1050 Julian Fisher; RI212JC: £550 Aneta Wroblewska-Kaminska; RI213JC: £1000 Ewelina Zatorska; RS044JC: £1750 academic visitor Daniel Matthes; NF015LP: £5,000 Lorenzo Pareschi - Nelder fellowship; NF018FF: £5,000 Francis Filbet - Nelder fellowship.

International Exchanges Scheme with CNRS of the Royal Society
Principal Investigators: Dr. José A. Carrillo de la Plata and Gael Raoul
Amount: £12,000 for 2 years, April 2014-April 2016

NSF Research Network in Mathematical Sciences
Project title: Kinetic description of emerging challenges in multiscale problems of natural sciences
Node: University of Cambridge.
Principal Investigator: Dr. Eitan Tadmor
2012-2016

International Exchanges Scheme with Japan of the Royal Society
Principal Investigators: Dr. José A. Carrillo de la Plata and Yoshie Sugiyama
Amount: £12,000 for 2 years, August 2015-August 2017

PROFESSIONAL ACTIVITIES AND SERVICE

Committee Participation

- Executive Committee SEMA (Sociedad Española de Matemática Aplicada), 2004-2010
- Local Program Committee, International Congress of Mathematics Madrid, 2006
- European Consortium for Mathematics in Industry Council, September 2005 - July 2012
- Organizing committee of EMS-SCM Joint Mathematical Weekend, Barcelona, Sept. 16-18, 2005
- Applied Mathematics Committee, European Mathematical Society, 2010-2013. Chair 2014-2017
- Member of the ECMI Council, 2005 - October 2012.

Editorial Work

- Recent Trends in Partial Differential Equations, UIMP-RSME Santaló Summer School, UIMP, Santander, Spain, J.L. Vázquez, X. Cabré, J.A. Carrillo, eds., Contemporary Mathematics 409, AMS, 2006.

Editorial Boards

- Kinetic and Related Models, 2008-
- Publicacions Matemàtiques, 2009-
- Rivista Matematica della Università di Parma, 2010-
- Acta Applicandae Mathematicae, 2010-
- SIAM Journal on Mathematical Analysis (SIMA), 2010-
- AIMS Book Series in Applied Mathematics, 2011-
- Discrete and Continuous Dynamical Systems - Series A (DCDS-A), 2013-
- Mathematics, 2013-2014
- Journal of the London Mathematical Society, 2013-
- Proceedings of the London Mathematical Society, 2013-
- Bulletin of the London Mathematical Society, 2013-
- Interfaces and Free Boundaries: Mathematical Analysis, Computation and Applications, 2014-
- Journal of Elliptic and Parabolic Equations, 2014-
- Advances in Differential Equations, 2015-
- Nonlinear Analysis and Differential Equations, 2015-
- Communications in Contemporary Mathematics, 2016-
- SeMA Journal, 2016-
- Royal Society Open Science, 2016-
- Transactions of Mathematics and its Applications: A Journal of the IMA, 2017-
- Multiscale Modeling and Simulation: A SIAM Interdisciplinary Journal, 2017-.

Conferences Organized

- European Workshop on kinetic equations, secretary of the organizing committee, University of Granada, April 1996.
- Co-organizer together with Andrew Lacey of Minisymposium "Nonlocal Elliptic-Parabolic Problems in Reaction-Diffusion Equations," ICIAM99, Edinburgh (UK), July 5-9, 1999.
- Co-organizer together with Irene Gamba of the Special Session "Mathematical Problems in Transport Phenomena," AMS Sectional Meeting, Austin, Texas (USA), October 8-10, 1999.
- Local organizer of the Euroconference on Asymptotic methods and applications in kinetic and quantum-kinetic theory, University of Granada, September 2001.
- Co-organizer together with Antonio Marquina of the Special Session Computational Methods for nonlinear conservation laws and applications, CMMSE2002, Alicante (Spain), September 20-25, 2002.
- Co-organizer together with Irene Gamba of the Special Session "Mathematical Aspects of Semiconductor Modeling and Nanotechnology," AMS International Meeting, Seville (Spain), 18-21 June 2003.
- Co-organizer together with Reinhard Illner of the Special Session "Kinetic theory of gases" in 18th ICTT, Rio de Janeiro (Brasil), July 20-25, 2003.
- Organizer of the minisimposium "Scientific computing perspectives in Micro and Nano-Electronics," 13th European Conference on Mathematics for Industry, June 21-25, 2004, Eindhoven, The Netherlands.
- Co-organizer together with Juan Luis Vázquez and Xavier Cabré of the summer school in Universidad Internacional Menéndez Pelayo: UIMP - RSME Santaló Summer School "Recent Trends in Partial Differential Equations," Santander, July 12-16, 2004.
- Supervisor of a working group in 18th ECMI (European Consortium for Mathematics in Industry) Modelling Week 2004, Lappeenranta, Finland, August, 13-21, 2004.

- Co-organizer together with Antonio Marquina of the "HYKE Conference on Complex Flows: Analytical and Numerical Methods for Hydrodynamic and Kinetic Models," CRM Barcelona, October 6-9, 2004.
- Co-organizer together with F. Utzet, A. Alabert and X. Mora of the 19th ECMI Modelling Week, UAB, Barcelona, September 1-11, 2005.
- Co-organizer together with Xavier Cabré and Giuseppe Toscani of the session "Evolution PDEs and Calculus of Variations," EMS-SCM Joint Mathematical Weekend, Barcelona, September 16-18, 2005.
- Co-organizer together with E. Carlen, J. Dolbeault, P.A. Markowich and R.J. McCann of the workshop "Non-linear diffusions: entropies, asymptotic behavior and applications," Banff International Research Station, Banff (Canada), April 2006.
- Co-organizer together with D. Arcoya, D. Córdoba, R. Donat, C. Parés and L. Vega of the workshop "Las Ecuaciones en Derivadas Parciales como herramienta: Modelización, Análisis y Simulación," CIEM (Centro Internacional de Encuentros Matemáticos), Castro Urdiales, April 2007.
- Co-organizer with M. DiFrancesco of the thematic program "Optimal transportation structures, gradient flows and entropy methods for Applied PDEs," Wolfgang Pauli Institute, Vienna, Austria, May-September 2007.
- Co-organizer with R. Donat, C. Parés and Y. Vidal of the "Advanced School on Numerical Solutions of Partial Differential Equations: New Trend and Applications," Centre de Recerca Matemàtica, Barcelona, November 15-21, 2007.
- Co-organizer with A. Bertozzi, Y. Brenier, W. Gangbo, P.A. Markowich and J.M. Morel of the thematic program "Optimal Transport," IPAM, UCLA, March-June 2008.
- Co-organizer with W. Gangbo, L. Ambrosio, Y. Brenier and C. Evans of the "Workshop I: Aspects of Optimal Transport in Geometry and Calculus of Variations" thematic program "Optimal Transport," IPAM, UCLA, March-June 2008.
- Chair of the organizing committee for the "Optimal Transport: Tutorials" thematic program "Optimal Transport," IPAM, UCLA, March-June 2008.
- Coordinator with A. Calsina and A. Guillamon of the thematic program "Mathematical Biology: Modelling and Differential Equations," Centre de Recerca Matemàtica, Barcelona, January-June 2009.
- Co-organizer with M. Burger, M. DiFrancesco and P.A. Markowich of the workshop "Kinetic and Mean-field models in the Socio-Economic Sciences," ICMS, Edinburgh, July 2009.
- Co-organizer with J. Dolbeault of the workshop "Concentration en vitesse et en espace dans les modéles cinétiques et diffusifs (chemotaxis, gravitation, swarming)," from the project ANR CBDif, IHP, Paris, October 6-7, 2009.
- Co-organizer with E. Carlen, J. Dolbeault and D. Slepcev of the workshop "Nonlinear Diffusions and Entropy Dissipation: From Geometry to Biology," Banff International Research Station, Banff (Canada) May 9-14, 2010.
- Chair of the organizing committee of the congress "Emerging Topics in Dynamical Systems and Partial Differential Equations," joint meeting of the SIAM/RSME-SCM-SEMA, Barcelona, May 30-June 4, 2010.
- Co-organizer with P. A. Markowich and S. Jin of the thematic program "Partial Differential Equations in Kinetic Theories," Isaac Newton Institute for Mathematical Sciences, Cambridge (United Kingdom), August to December 2010. Approved Budget: £300.000.
- Co-organizer with A. Juengel of the workshop "Partial Differential Equations in Kinetic Theories," Isaac Newton Institute for Mathematical Sciences, Cambridge (United Kingdom), September 6-10, 2010.
- Co-organizer with Y. Guo and H.J. Hwang of the workshop "Conference on Kinetic Theory and Related Fields," POSTECH, Pohang (South Korea), June 20-24, 2011.
- Co-organizer with A. Bertozzi, R. Fetecau, T. Kolokolnikov and M. Lewis of the workshop

"Emergent behaviour in multi-particle systems with non-local interactions," Banff International Research Station, Banff (Canada), January 22-27, 2012.

- Co-organizer together with M. DiFrancesco and P.A. Markowich of the workshop "ESF/EMS/ERCOM Research Conference on Applied Partial Differential Equations in Physics, Biology and Social Sciences: Classical and Modern Perspectives," CRM (Spain), September 2-7, 2012.
- Co-organizer together with A. Chertock, P. Degond, M. DiFrancesco and E. Tadmor of the workshop "Collective Behavior: Macroscopic versus Kinetic Descriptions" co-funded by the NSF-network KI-Net and Imperial College London, May 19-23, 2014.
- Co-organizer together with I. Gentil, H. Holden, C. Villani and B. Zegarlinski of the thematic program "Interactions between PDEs & Functional Inequalities," Institut Mittag-Leffler, Fall 2016.
- Co-organizer together with R. Illner, H.-J. Hwang and B. Wennberg of the workshop "Kinetic and Related Equations" BIRS-Casa Matemática Oaxaca, Oaxaca, Mexico, July 4-10, 2015.
- Co-organizer together with B. Volzone of the workshop "Nonlocal Nonlinear Partial Differential Equations and Applications," Anacapri, Italy, September 14-18, 2015.
- Co-organizer together with H. Berestycki, A. Blanchet, P. Degond and S. Merino of the workshop "Mathematics and Social Sciences Workshop," London, UK, November 16-17, 2015
- Co-organizer together with A. Barbaro, B. Piccoli, A. Seyfried, and M.-T. Wolfram of the workshop "Pedestrian Dynamics: Modeling, Validation and Calibration," ICERM, Brown University, August 21-25, 2017.
- Co-organizer together with L. Bergues of the CIMPA course ``Mathematical modeling in Biology and Medicine", Santiago de Cuba, 8-17 June, 2016.
- Co-organizer together with I. Gentil, H. Holden, C. Villani and B. Zegarlinski of the thematic program ``Interactions between PDEs & Functional Inequalities", Institut Mittag-Leffler, Fall 2016.
- Co-organizer together with M. deGunst, M. Gyllenberg, T. Lundh, A. Marciniak-Czochra, R. Merks, M. Niezgodka and G. Raoul of the ``Year of Mathematical Biology", 2018. It is joint venture of ESMTB and EMS.

Referee for Journals, Societies, and Funding Agencies

Communications on PDEs; IMA Journal of Applied Mathematics; Indiana University Mathematical Journal; SIAM Journal of Mathematical Analysis; Advances in Differential Equations; Nonlinearity; London Mathematical Society; European Consortium for Mathematics in Industry Proceedings; SIAM Journal Numerical Analysis; Mathematische Annalen; Transport Theory and Statistical Physics; Journal of Computational Physics; SIAM Journal of Applied Mathematics; Archive for Rational Mechanics and Analysis; Maghreb Mathematical Journal; Monatshefte für Mathematik; European Journal of Applied Mathematics; Communications in Mathematical Sciences; Discrete and Continuous Dynamical Systems-B; Mathematical Models and Methods in the Applied Sciences; SIAM Journal of Scientific Computing; Journal of Statistical Physics; Journal of Applied Mathematics; Journal of Applied and Numerical Mathematics; Journal of Differential Equations; Journal of Scientific Computing; Scientific Computation in Electrical Engineering; Multiscale Modeling and Simulation; Publicacions Matemàtiques; Communications in Mathematical Physics; Advances in Mathematics; Mathematical Modelling and Numerical Analysis; Networks and Heterogeneous Media; SIAM Journal on Control and Optimization; FONDECYT (Chile); NSERC (Canada); Austrian Science Fund - Prizes START; Proyectos de Investigación Castilla-La Mancha 2006; Proyectos Blanche de la ANR, Francia Comisión de Expertos para la Evaluación de los Proyectos MEC del Plan Nacional de Matemáticas 2006, 2009, 2010, 2014 and 2016; ANEP-MEC (Spain) 2007-; Agaur (Catalunya) 2007-; Vici Grants, Netherlands Organization for Scientific Research, 2010; PRIN, Italy, 2012-; EPSRC, United Kingdom, 2013-; Leverhulme Trust, United Kingdom, 2013-; FNRS, Belgium, 2015-; Russian Science Foundation, Russia, 2015-; Promotion Committee Evaluation, University of Kuwait; National Center for Educational Quality Enhancement of Georgia, Republic of Georgia, 2016-; Narodowe Centrum Nauki - NCN, Poland, 2017-.

European Research Council, Committee awarding Starting Grants in Mathematics, 2010-2011.
European Research Council, Committee awarding Consolidator Grants in Mathematics, Call 2012-2017.