

CURRICULUM VITAE

JEAN DOLBEAULT

Born on June 8, 1966 in Poitiers, France
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ACADEMIC DEGREES

- ENS Ulm (1985-1989), Magistère (Mathématiques, Informatique), Paris VI, 1988
- DEA de Physique Théorique, Paris VI, 1987
- Doctorat en Mathématiques Appliquées, Paris IX - Dauphine, 1991 (Dir. P.-L. Lions)
- Habilitation à Diriger des Recherches, Université Paris IX - Dauphine (2000)
- *Qualified as Professeur des Universités in section 25 (pure mathematics) and section 26 (applied mathematics) in 2000*

POSITIONS

- 1982-1983: Baccalauréat C, TB. 1983-1985: Classes préparatoires (Louis-le-Grand). 1985: Accepted at Ecole Normale Supérieure and Ecole Polytechnique. 1985-1989: Elève fonctionnaire stagiaire, Ecole Normale Supérieure (rue d'Ulm), then BFR-MRT researcher (1989-1990).
- 1990-1993: Researcher (Chargé de Recherches 2ème classe, CNRS), in the Group of Theoretical Physics of the Laboratoire de Physique Quantique (URA 505), Institut de Recherche sur les Structures Atomiques et Moléculaires Complexes (IRSAMC), Université Paul Sabatier, Toulouse.
- 1993-2003: Researcher (Chargé de Recherches 1ère classe, CNRS), at Ceremade (Centre de Recherche en MATHématiques de la DEcision), UMR CNRS no. 7534.
- 2003- : Researcher (Directeur de Recherches, CNRS), section 01 (Mathematics).
- September 2010- : Director of the Ceremade, UMR CNRS no. 7534.
- March 2011- : Vice-président of Paris-Dauphine University, in charge of Research.

LONG TERMS VISITS

- 1998: Courant Institute, New York University, USA (3 months).
- 2001: Centro de Modelamiento Matemático (CMM, UMR CNRS no. 2071) and Departamento de Ingeniería Matemática, Universidad de Chile, Santiago, Chili (4 months).
- 2004: University of Victoria and PIMS, University of British Columbia, Canada (2,5 months).
- 2007: Centro de Modelamiento Matemático (CMM, UMR CNRS no. 2071) and Departamento de Ingeniería Matemática, Universidad de Chile, Santiago, Chili (2 months).

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PUBLICATIONS

- [1] Jean Dolbeault and Maria J. Esteban. A scenario for symmetry breaking in Caffarelli-Kohn-Nirenberg inequalities. Technical report, Preprint Ceremade no. 1203, 2012.

- [2] Jean Dolbeault, Axel Klar, Clément Mouhot, and Christian Schmeiser. Exponential rate of convergence to equilibrium for a model describing fiber lay-down processes. Technical report, Preprint Ceremade no. 1202, 2012.
- [3] Manuel del Pino and Jean Dolbeault. The Euclidean Onofri inequality in higher dimensions. Technical report, Preprint Ceremade no. 1201, 2012.
- [4] *Free energies, nonlinear flows and functional inequalities*. Oberwolfach Report 55/2011, 2011.
- [5] Jean Dolbeault and Bruno Volzone. Improved Poincaré inequalities. Technical report, Preprint Ceremade no. 1105, 2011.
- [6] Jean Dolbeault and Giuseppe Toscani. Improved Sobolev’s inequalities, relative entropy and fast diffusion equations. Technical report, Preprint Ceremade no. 1104, 2011.
- [7] Jean Dolbeault, Maria J. Esteban, and Michael Loss. Symmetry of extremals of functional inequalities via spectral estimates for linear operators. *J. Math. Phys.*, 53(P):095204, 2012.
- [8] Jean Dolbeault, Bruno Nazaret, and Giuseppe Savaré. From Poincaré to logarithmic Sobolev inequalities: a gradient flow approach. Technical report, Preprint Ceremade no. 1102, 2011.
- [9] Jean Dolbeault. Sobolev and Hardy-Littlewood-Sobolev inequalities: duality and fast diffusion. *Math. Res. Lett.*, 18(06):1037–1050, 2011.
- [10] Jean Dolbeault. Relative equilibria in continuous stellar dynamics. In Oberwolfach reports 54/2010, editor, *Classical and Quantum Mechanical Models of Many-Particle Systems*, volume 7, pages 3181–3183. Organised by Anton Arnold, Wien Eric Carlen, Piscataway Laurent Desvillettes, European Mathematical Society, 2010.
- [11] Jean Dolbeault and Maria J. Esteban. About existence, symmetry and symmetry breaking for extremal functions of some interpolation functional inequalities. In Helge Holden and Kenneth H. Karlsen, editors, *Nonlinear Partial Differential Equations*, volume 7 of *Abel Symposia*, pages 117–130. Springer Berlin Heidelberg, 2012. 10.1007/978-3-642-25361-4-6.
- [12] Jean Dolbeault and Maria J. Esteban. *Extremal functions in some interpolation inequalities: Symmetry, symmetry breaking and estimates of the best constants*, pages 178–182. Proceedings of the QMath11 Conference Mathematical Results in Quantum Physics, World Scientific, 2011.
- [13] Jean Dolbeault, Maria Esteban, Gabriella Tarantello, and Achilles Tertikas. Radial symmetry and symmetry breaking for some interpolation inequalities. *Calculus of Variations and Partial Differential Equations*, 42:461–485, 2011.
- [14] Gonca Aki, Jean Dolbeault, and Christof Sparber. Thermal effects in gravitational Hartree systems. *Annales Henri Poincaré*, 12:1055–1079, 2011.
- [15] Jean Dolbeault and Maria J. Esteban. Extremal functions for Caffarelli-Kohn-Nirenberg and logarithmic Hardy inequalities. Technical report, Preprint Ceremade no. 1005, 2010.
- [16] Jean Dolbeault and Giuseppe Toscani. Fast diffusion equations: matching large time asymptotics by relative entropy methods. *Kinetic and Related Models*, 4(3):701–716, 2011.
- [17] Jean Dolbeault, Clément Mouhot and Christian Schmeiser. Hypocoercivity for linear kinetic equations conserving mass. Technical report, Preprint Ceremade no. 1003, 2010.
- [18] Jean Dolbeault. Extremal functions and symmetry breaking in Caffarelli-Kohn-Nirenberg inequalities. In Oberwolfach reports 08/2010, editor, *Optimal Constants in the Theory of Sobolev Spaces and PDEs*, volume 7, pages 330–334. Organised by Andrea Cianchi, Firenze Maria J. Esteban, Paris Bernd Kawohl, Köln, European Mathematical Society, 2010.
- [19] Juan Campos, Manuel del Pino, and Jean Dolbeault. Relative equilibria in continuous stellar dynamics. *Communications in Mathematical Physics*, 300:765–788, 2010. 10.1007/s00220-010-1128-2.
- [20] Manuel del Pino, Jean Dolbeault, Stathis Filippas, and Achilles Tertikas. A logarithmic Hardy inequality. *Journal of Functional Analysis*, 259(8):2045 – 2072, 2010.
- [21] Piotr Biler, Lucilla Corrias, and Jean Dolbeault. Large mass self-similar solutions of the parabolic-parabolic keller-segel model of chemotaxis. *Journal of Mathematical Biology*, 63:1–32, 2011. 10.1007/s00285-010-0357-5.
- [22] Jean-Philippe Bartier, Adrien Blanchet, Jean Dolbeault, and Miguel Escobedo. Improved intermediate asymptotics for the heat equation. *Applied Mathematics Letters*, 24(1):76 – 81, 2011.
- [23] M. Bonforte, J. Dolbeault, G. Grillo, and J. L. Vázquez. Sharp rates of decay of solutions to the nonlinear fast diffusion equation via functional inequalities. *Proceedings of the National Academy of Sciences*, 107(38):16459–16464, 2010.
- [24] Jean Dolbeault, Maria J. Esteban, Michael Loss, and Gabriella Tarantello. On the symmetry of extremals for the Caffarelli-Kohn-Nirenberg inequalities. *Advanced Nonlinear Studies*, 9:713–727, 2009.
- [25] Jean Dolbeault and Robert Stańczy. Non-existence and uniqueness results for supercritical semilinear elliptic equations. *Annales Henri Poincaré*, 10(7):1311–1333, 02 2010.
- [26] Adrien Blanchet, Jean Dolbeault, Miguel Escobedo, and Javier Fernández. Asymptotic behaviour for small mass in the two-dimensional parabolic-elliptic Keller-Segel model. *J. Math. Anal. Appl.*, 361(2):533–542, 2010.
- [27] Jean Dolbeault, Clément Mouhot, and Christian Schmeiser. Hypocoercivity for kinetic equations with linear relaxation terms. *Comptes Rendus Mathématique*, 347(9-10):511 – 516, 2009.
- [28] Jean Dolbeault, Maria J. Esteban, and Gabriella Tarantello. Multiplicity results for the assigned Gauss curvature problem in R^2 . *Nonlinear Analysis: Theory, Methods & Applications*, 70(8):2870 – 2881, 2009. Liouville Theorems and Detours.
- [29] Adrien Blanchet, Jean Dolbeault, and Michal Kowalczyk. Travelling fronts in stochastic Stokes’ drifts. *Physica A: Statistical Mechanics and its Applications*, 387(23):5741–5751, 2008.
- [30] Adrien Blanchet, Jean Dolbeault, and Michał Kowalczyk. Stochastic Stokes’ drift, homogenized functional inequalities, and large time behavior of brownian ratchets. *SIAM Journal on Mathematical Analysis*, 41(1):46–76, 2009.
- [31] R. Benguria, J. Dolbeault, and R. Monneau. Harnack inequalities and discrete—continuous error estimates for a chain of atoms with two—body interactions. *Journal of Statistical Physics*, 134(1):27–51, 01 2009.
- [32] Jean Dolbeault, Bruno Nazaret, and Giuseppe Savaré. A new class of transport distances between measures. *Calc. Var. Partial Differential Equations*, 34(2):193–231, 2009.

- [33] Jean Dolbeault, Patricio Felmer, and Mathieu Lewin. Orbitally stable states in generalized Hartree-Fock theory. *Mathematical Models and Methods in Applied Sciences*, 19(3):347–367, 2009.
- [34] J Dolbeault, M Esteban, and M Loss. Characterization of the critical magnetic field in the Dirac-Coulomb equation. *Journal of Physics A: Mathematical and Theoretical*, 41(18):185303 (13pp), 2008.
- [35] J. Dolbeault, B. Nazaret, and G. Savaré. On the Bakry-Emery criterion for linear diffusions and weighted porous media equations. *Commun. Math. Sci.*, 6(2):477–494, 2008.
- [36] Jean Dolbeault, Ari Laptev, and Michael Loss. Lieb-Thirring inequalities with improved constants. *J. Eur. Math. Soc. (JEMS)*, 10:1121–1126, 2008.
- [37] Jean Dolbeault and Christian Schmeiser. The two-dimensional Keller-Segel model after blow-up. *Discrete and Continuous Dynamical Systems*, 25(1):109–121, 2009.
- [38] Adrien Blanchet, Matteo Bonforte, Jean Dolbeault, Gabriele Grillo, and Juan Vázquez. Asymptotics of the fast diffusion equation via entropy estimates. *Archive for Rational Mechanics and Analysis*, 191(2):347–385, 02 2009.
- [39] Jean Dolbeault, Maria J. Esteban, and Gabriella Tarantello. The role of Onofri type inequalities in the symmetry properties of extremals for Caffarelli-Kohn-Nirenberg inequalities, in two space dimensions. *Ann. Sc. Norm. Super. Pisa Cl. Sci. (5)*, 7(2):313–341, 2008.
- [40] Jean Dolbeault, Ivan Gentil, Arnaud Guillin, and Feng-Yu Wang. L^q -functional inequalities and weighted porous media equations. *Potential Anal.*, 28(1):35–59, 2008.
- [41] Roberta Bosi, Jean Dolbeault, and Maria J. Esteban. Estimates for the optimal constants in multipolar Hardy inequalities for Schrödinger and Dirac operators. *Commun. Pure Appl. Anal.*, 7(3):533–562, 2008.
- [42] Jean Dolbeault, Maria J. Esteban, Javier Duoandikoetxea, and Luis Vega. Hardy-type estimates for Dirac operators. *Annales Scientifiques de l'École Normale Supérieure*, 40(6):885–900, 2007.
- [43] Jean Dolbeault and Javier Fernández. Localized minimizers of flat rotating gravitational systems. *Annales de l'Institut Henri Poincaré (C) Non Linear Analysis*, 25(6):1043–1071, 2008.
- [44] Adrien Blanchet, Matteo Bonforte, Jean Dolbeault, Gabriele Grillo, and Juan-Luis Vázquez. Hardy-Poincaré inequalities and applications to nonlinear diffusions. *C. R. Math. Acad. Sci. Paris*, 344(7):431–436, 2007.
- [45] J. Dolbeault, P. Felmer, and J. Mayorga-Zambrano. Compactness properties for trace-class operators and applications to quantum mechanics. *Monatshefte für Mathematik*, 155(1):43–66, 2008.
- [46] Jean Dolbeault, Maria J. Esteban, and Michael Loss. Relativistic hydrogenic atoms in strong magnetic fields. *Ann. Henri Poincaré*, 8(4):749–779, 2007.
- [47] Jean Dolbeault and Grzegorz Karch. Large time behaviour of solutions to nonhomogeneous diffusion equations. *Banach Center Publ.*, 74:133–147, 2006.
- [48] Adrien Blanchet, Jean Dolbeault, and Benoît Perthame. Two-dimensional Keller-Segel model: optimal critical mass and qualitative properties of the solutions. *Electron. J. Differential Equations*, pages No. 44, 32 pp. (electronic), 2006.
- [49] Jean-Philippe Bartier, Jean Dolbeault, Reinhard Illner, and Michał Kowalczyk. A qualitative study of linear drift-diffusion equations with time-dependent or degenerate coefficients. *Math. Models Methods Appl. Sci.*, 17(3):327–362, 2007.
- [50] Jean Dolbeault, Maria J. Esteban, and Eric Séré. General results on the eigenvalues of operators with gaps, arising from both ends of the gaps. Application to Dirac operators. *J. Eur. Math. Soc. (JEMS)*, 8(2):243–251, 2006.
- [51] Jose A. Carrillo, Jean Dolbeault, Ivan Gentil, Ansgar Jüngel. Erratum on "Entropy-energy inequalities and improved convergence rates for nonlinear parabolic equations". Technical report, Preprint Ceremade no. 050b, 2005.
- [52] José A. Carrillo, Jean Dolbeault, Ivan Gentil, and Ansgar Jüngel. Entropy-energy inequalities and improved convergence rates for nonlinear parabolic equations. *Discrete Contin. Dyn. Syst. Ser. B*, 6(5):1027–1050 (electronic), 2006.
- [53] Jean Dolbeault, Peter Markowich, Dietmar Oelz, and Christian Schmeiser. Non linear diffusions as limit of kinetic equations with relaxation collision kernels. *Archive for Rational Mechanics and Analysis*, 186(1):133–158, 2007.
- [54] Anton Arnold, Jean-Philippe Bartier, and Jean Dolbeault. Interpolation between logarithmic Sobolev and Poincaré inequalities. *Communications in Mathematical Sciences*, 5(4):971–979, December 2007.
- [55] J. Dolbeault, P. Felmer, M. Loss, and E. Paturel. Lieb-Thirring type inequalities and Gagliardo-Nirenberg inequalities for systems. *J. Funct. Anal.*, 238(1):193–220, 2006.
- [56] Jean Dolbeault, Javier Fernández, and Óscar Sánchez. Stability for the gravitational Vlasov-Poisson system in dimension two. *Communications in Partial Differential Equations*, 31:1425–1449, 2006.
- [57] Jean-Philippe Bartier and Jean Dolbeault. Convex Sobolev inequalities and spectral gap. *C. R. Math. Acad. Sci. Paris*, 342(5):307–312, 2006.
- [58] Adrien Blanchet, Jean Dolbeault, and Régis Monneau. Erratum to *On the continuity of the time derivative of the solution to the parabolic obstacle problem with variable coefficients*: [J. Math. Pures Appl. 85 (3) (2006) 371-414]. *Journal de Mathématiques Pures et Appliquées*, 94:447–449, 2010.
- [59] Adrien Blanchet, Jean Dolbeault, and Régis Monneau. On the continuity of the time derivative of the solution to the parabolic obstacle problem with variable coefficients. *J. Math. Pures Appl. (9)*, 85(3):371–414, 2006.
- [60] A. Blanchet, J. Dolbeault, and R. Monneau. On the one-dimensional parabolic obstacle problem with variable coefficients. In *Elliptic and parabolic problems*, volume 63 of *Progr. Nonlinear Differential Equations Appl.*, pages 59–66. Birkhäuser, Basel, 2005.
- [61] Jean Dolbeault and Benoît Perthame. Optimal critical mass in the two-dimensional Keller-Segel model in \mathbb{R}^2 . *C. R. Math. Acad. Sci. Paris*, 339(9):611–616, 2004.
- [62] Jean Dolbeault, Ivan Gentil, and Ansgar Jüngel. A logarithmic fourth-order parabolic equation and related logarithmic Sobolev inequalities. *Commun. Math. Sci.*, 4(2):275–290, 2006.

- [63] Anton Arnold and Jean Dolbeault. Refined convex Sobolev inequalities. *J. Funct. Anal.*, 225(2):337–351, 2005.
- [64] Jean Dolbeault, Patricio Felmer, and Régis Monneau. Symmetry and nonuniformly elliptic operators. *Differential Integral Equations*, 18(2):141–154, 2005.
- [65] Jean Dolbeault and Isabel Flores. Geometry of phase space and solutions of semilinear elliptic equations in a ball. *Trans. Amer. Math. Soc.*, 359:4073–4087, 2007.
- [66] Manuel del Pino, Jean Dolbeault, and Monica Musso. Duality in sub-supercritical bubbling in the Brezis-Nirenberg problem near the critical exponent. In *Partial differential equations and inverse problems*, volume 362 of *Contemp. Math.*, pages 339–350. Amer. Math. Soc., Providence, RI, 2004.
- [67] A. Arnold, J. A. Carrillo, L. Desvillettes, J. Dolbeault, A. Jüngel, C. Lederman, P. A. Markowich, G. Toscani, and C. Villani. Entropies and equilibria of many-particle systems: an essay on recent research. *Monatsh. Math.*, 142(1-2):35–43, 2004.
- [68] Manuel del Pino, Jean Dolbeault, and Monica Musso. Multiple bubbling for the exponential nonlinearity in the slightly supercritical case. *Commun. Pure Appl. Anal.*, 5(3):463–482, 2006.
- [69] Jean Dolbeault, David Kinderlehrer, and Michał Kowalczyk. Remarks about the flashing ratchet. In *Partial differential equations and inverse problems*, volume 362 of *Contemp. Math.*, pages 167–175. Amer. Math. Soc., Providence, RI, 2004.
- [70] Manuel del Pino, Jean Dolbeault, and Monica Musso. The Brezis-Nirenberg problem near criticality in dimension 3. *J. Math. Pures Appl. (9)*, 83(12):1405–1456, 2004.
- [71] Rafael D. Benguria, Isabelle Catto, Jean Dolbeault, and Régis Monneau. Oscillating minimizers of a fourth-order problem invariant under scaling. *J. Differential Equations*, 205(1):253–269, 2004.
- [72] Jean Dolbeault, Maria J. Esteban, Michael Loss, and Luis Vega. An analytical proof of Hardy-like inequalities related to the Dirac operator. *J. Funct. Anal.*, 216(1):1–21, 2004.
- [73] Manuel del Pino, Jean Dolbeault, and Monica Musso. A phase plane analysis of the “multi-bubbling” phenomenon in some slightly supercritical equations. *Monatsh. Math.*, 142(1-2):57–79, 2004.
- [74] Jean Dolbeault, Óscar Sánchez, and Juan Soler. Asymptotic behaviour for the Vlasov-Poisson system in the stellar-dynamics case. *Arch. Ration. Mech. Anal.*, 171(3):301–327, 2004.
- [75] Jean Dolbeault and Miguel Escobedo. L^1 and L^∞ intermediate asymptotics for scalar conservation laws. *Asymptot. Anal.*, 41(3-4):189–213, 2005.
- [76] Jean Dolbeault, David Kinderlehrer, and Michał Kowalczyk. The flashing ratchet: long time behavior and dynamical systems interpretation. Technical report, Ceremade no. 0244, 2002.
- [77] Manuel Del Pino, Jean Dolbeault, and Ivan Gentil. Nonlinear diffusions, hypercontractivity and the optimal L^p -Euclidean logarithmic Sobolev inequality. *J. Math. Anal. Appl.*, 293(2):375–388, 2004.
- [78] Jean Dolbeault and Reinhard Illner. Entropy methods for kinetic models of traffic flow. *Commun. Math. Sci.*, 1(3):409–421, 2003.
- [79] Jean Dolbeault, Maria J. Esteban, and Eric Séré. About a non-homogeneous Hardy inequality and its relation with the spectrum of Dirac operators. Technical report, Séminaire Equations aux Dérivées Partielles de l’Ecole Polytechnique no. XVIII, 2002.
- [80] Manuel Del Pino, Jean Dolbeault, and Monica Musso. “Bubble-tower” radial solutions in the slightly supercritical Brezis-Nirenberg problem. *J. Differential Equations*, 193(2):280–306, 2003.
- [81] Jean Dolbeault and Régis Monneau. On a Liouville type theorem for isotropic homogeneous fully nonlinear elliptic equations in dimension two. *Ann. Sc. Norm. Super. Pisa Cl. Sci. (5)*, 2(1):181–197, 2003.
- [82] J. A. Carrillo, J. Dolbeault, P. A. Markowich, and C. Sparber. On the long-time behavior of the quantum Fokker-Planck equation. *Monatsh. Math.*, 141(3):237–257, 2004.
- [83] Jean Dolbeault, Maria J. Esteban, and Eric Séré. A variational method for relativistic computations in atomic and molecular physics. *International Journal of Quantum Chemistry*, 93:149–155, 2003.
- [84] J. P. Desclaux, J. Dolbeault, M. J. Esteban, P. Indelicato, and E. Séré. Computational approaches of relativistic models in quantum chemistry. In *Handbook of numerical analysis, Vol. X*, Handb. Numer. Anal., X, pages 453–483. North-Holland, Amsterdam, 2003.
- [85] Naoufel Ben Abdallah and Jean Dolbeault. Relative entropies for kinetic equations in bounded domains (irreversibility, stationary solutions, uniqueness). *Arch. Ration. Mech. Anal.*, 168(4):253–298, 2003.
- [86] María J. Cáceres, José A. Carrillo, and Jean Dolbeault. Nonlinear stability in L^p for a confined system of charged particles. *SIAM J. Math. Anal.*, 34(2):478–494 (electronic), 2002.
- [87] Manuel Del Pino and Jean Dolbeault. Nonlinear diffusions and optimal constants in Sobolev type inequalities: asymptotic behaviour of equations involving the p -Laplacian. *C. R. Math. Acad. Sci. Paris*, 334(5):365–370, 2002.
- [88] Carlos Cid and Jean Dolbeault. Defocusing nonlinear Schrödinger equation: confinement, stability and asymptotic stability. Technical report, Ceremade no. 010a, 2001.
- [89] Manuel Del Pino and Jean Dolbeault. Asymptotic behavior of nonlinear diffusions. *Math. Res. Lett.*, 10(4):551–557, 2003.
- [90] Manuel Del Pino and Jean Dolbeault. The optimal Euclidean L^p -Sobolev logarithmic inequality. *J. Funct. Anal.*, 197(1):151–161, 2003.
- [91] Manuel Del Pino and Jean Dolbeault. Best constants for Gagliardo-Nirenberg inequalities and applications to nonlinear diffusions. *J. Math. Pures Appl. (9)*, 81(9):847–875, 2002.
- [92] Jean Dolbeault and Régis Monneau. Convexity estimates for nonlinear elliptic equations and application to free boundary problems. *Ann. Inst. H. Poincaré Anal. Non Linéaire*, 19(6):903–926, 2002.
- [93] Mikhaël Balabane, Jean Dolbeault, and Hichem Ounaies. Nodal solutions for a sublinear elliptic equation. *Nonlinear Anal.*, 52(1):219–237, 2003.

- [94] Jean Dolbeault, Maria J. Esteban, and Mythily Ramaswamy. Radial singular solutions of a critical problem in a ball. *Differential Integral Equations*, 15(12):1459–1474, 2002.
- [95] Piotr Biler, Jean Dolbeault, Maria J. Esteban, Peter A. Markowich, and Tadeusz Nadzieja. Steady states for Streater’s energy-transport models of self-gravitating particles. *IMA Vol. Math. Appl.*, 135:37–56, 2004.
- [96] Jean Dolbeault, Peter A. Markowich, and Andreas Unterreiter. On singular limits of mean-field equations. *Arch. Ration. Mech. Anal.*, 158(4):319–351, 2001.
- [97] Jean Dolbeault and Régis Monneau. Convexity estimates for nonlinear elliptic equations and application to free boundary problem. *C. R. Acad. Sci. Paris Sér. I Math.*, 331(10):771–776, 2000.
- [98] P. Biler, J. Dolbeault, and M. J. Esteban. Intermediate asymptotics in L^1 for general nonlinear diffusion equations. *Appl. Math. Lett.*, 15(1):101–107, 2002.
- [99] Piotr Biler, Jean Dolbeault, Maria J. Esteban, and Grzegorz Karch. Stationary solutions, intermediate asymptotics and large-time behaviour of type II Streater’s models. *Adv. Differential Equations*, 6(4):461–480, 2001.
- [100] Jean Dolbeault and Patricio Felmer. Monotonicity up to radially symmetric cores of positive solutions to nonlinear elliptic equations: local moving planes and unique continuation in a non-Lipschitz case. *Nonlinear Anal.*, 58(3-4):299–317, 2004.
- [101] Jean Dolbeault, Maria J. Esteban, Eric Séré, and Michel Vanbreugel. Minimization methods for the one-particle dirac equation. *Physical Review Letters*, 85(19):4020–4023, November 2000.
- [102] Jean Dolbeault, Maria J. Esteban, and Eric Séré. Variational methods in relativistic quantum mechanics: new approach to the computation of Dirac eigenvalues. In *Mathematical models and methods for ab initio quantum chemistry*, volume 74 of *Lecture Notes in Chem.*, pages 211–226. Springer, Berlin, 2000.
- [103] Jean Dolbeault and Régis Monneau. Convexity properties of the free boundary and gradient estimates for quasi-linear elliptic equations. Technical report, Ceremade no. 9947, 1999.
- [104] J. Dolbeault and G. Rein. Time-dependent rescalings and Lyapunov functionals for the Vlasov-Poisson and Euler-Poisson systems, and for related models of kinetic equations, fluid dynamics and quantum physics. *Math. Models Methods Appl. Sci.*, 11:407–432, 2001.
- [105] Luis Caffarelli, Jean Dolbeault, Peter A. Markowich, and Christian Schmeiser. On Maxwellian equilibria of insulated semiconductors. *Interfaces Free Bound.*, 2(3):331–339, 2000.
- [106] J. Dolbeault, R. Illner, and H. Lange. On asymmetric quasiperiodic solutions of Hartree-Fock systems. *J. Differential Equations*, 178(2):314–324, 2002.
- [107] Piotr Biler, Jean Dolbeault, and Peter A. Markowich. Large time asymptotics of nonlinear drift-diffusion systems with Poisson coupling. *Transport Theory Statist. Phys.*, 30(4-6):521–536, 2001. The Sixteenth International Conference on Transport Theory, Part II (Atlanta, GA, 1999).
- [108] Jean Dolbeault and Patricio Felmer. Symétrie des solutions d’équations semi-linéaires elliptiques. *C. R. Acad. Sci. Paris Sér. I Math.*, 329(8):677–682, 1999.
- [109] Naoufel Ben Abdallah and Jean Dolbeault. Relative entropies for the Vlasov-Poisson system in bounded domains. *C. R. Acad. Sci. Paris Sér. I Math.*, 330(10):867–872, 2000.
- [110] Jean Dolbeault, Maria J. Esteban, and Eric Séré. On the eigenvalues of operators with gaps. Application to Dirac operators. *J. Funct. Anal.*, 174(1):208–226, 2000.
- [111] Rafael D. Benguria, Jean Dolbeault, and Maria J. Esteban. Classification of the solutions of semilinear elliptic problems in a ball. *J. Differential Equations*, 167(2):438–466, 2000.
- [112] Jean Dolbeault. An introduction to kinetic equations: the Vlasov-Poisson system and the Boltzmann equation. *Discrete Contin. Dyn. Syst.*, 8(2):361–380, 2002. Current developments in partial differential equations (Temuco, 1999).
- [113] Piotr Biler and Jean Dolbeault. Long time behavior of solutions of Nernst-Planck and Debye-Hückel drift-diffusion systems. *Ann. Henri Poincaré*, 1(3):461–472, 2000.
- [114] Manuel del Pino and Jean Dolbeault. Generalized Sobolev inequalities and asymptotic behaviour in fast diffusion and porous medium problems. Technical report, Ceremade no. 9905, 1999.
- [115] Jean Dolbeault and Patricio Felmer. Symmetry and monotonicity properties for positive solutions of semi-linear elliptic PDE’s. *Comm. Partial Differential Equations*, 25(5-6):1153–1169, 2000.
- [116] Jean Dolbeault. Time-dependent rescalings and Lyapunov functionals for some kinetic and fluid models. In *Proceedings of the Fifth International Workshop on Mathematical Aspects of Fluid and Plasma Dynamics (Maui, HI, 1998)*, volume 29, pages 537–549, 2000.
- [117] Jean Dolbeault. Time-dependent rescalings and dispersion for the Boltzmann equation. Technical report, Ceremade no. 9845, 1998.
- [118] Jean Dolbeault, Maria J. Esteban, and Eric Séré. Variational characterization for eigenvalues of Dirac operators. *Calc. Var. Partial Differential Equations*, 10(4):321–347, 2000.
- [119] J. Dolbeault. Monokinetic charged particle beams: qualitative behavior of the solutions of the Cauchy problem and 2d time-periodic solutions of the Vlasov-Poisson system. *Comm. Partial Differential Equations*, 25(9-10):1567–1647, 2000.
- [120] J. Dolbeault. Free energy and solutions of the Vlasov-Poisson-Fokker-Planck system: external potential and confinement (large time behavior and steady states). *J. Math. Pures Appl. (9)*, 78(2):121–157, 1999.
- [121] L. Desvillettes and J. Dolbeault. On long time asymptotics of the Vlasov-Poisson-Boltzmann equation. *Comm. Partial Differential Equations*, 16(2-3):451–489, 1991.
- [122] J. Dolbeault. Kinetic models and quantum effects: a modified Boltzmann equation for Fermi-Dirac particles. *Arch. Rational Mech. Anal.*, 127(2):101–131, 1994.

- [123] J. Dolbeault. On long time asymptotics of the Vlasov-Poisson-Boltzmann system. In *Nonlinear kinetic theory and mathematical aspects of hyperbolic systems (Rapallo, 1992)*, volume 9 of *Ser. Adv. Math. Appl. Sci.*, pages 115–123. World Sci. Publ., River Edge, NJ, 1992.
- [124] J. Dolbeault and F. Poupaud. A remark on the critical explosion parameter for a semilinear elliptic equation in a generic domain using an explosion time of an ordinary differential equation. *Nonlinear Anal.*, 24(8):1149–1162, 1995.
- [125] Jean Dolbeault. Existence de solutions symétriques pour un modèle de champs de mésons: le modèle d’Adkins et Nappi. *Comm. Partial Differential Equations*, 15(12):1743–1786, 1990.
- [126] F. Bouchut and J. Dolbeault. On long time asymptotics of the Vlasov-Fokker-Planck equation and of the Vlasov-Poisson-Fokker-Planck system with Coulombic and Newtonian potentials. *Differential Integral Equations*, 8(3):487–514, 1995.
- [127] J. Dolbeault. Stationary states in plasma physics: Maxwellian solutions of the Vlasov-Poisson system. *Math. Models Methods Appl. Sci.*, 1(2):183–208, 1991.
- [128] Jean Dolbeault. Solutions stationnaires de masse finie pour l’équation de Vlasov avec potentiel central en dimension trois: une démonstration du théorème de Jeans. Technical report, Ceremade, 1996.

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