Xavier Cabré
ICREA Research Professor

Universitat Politècnica de Catalunya
Departament de Matemàtiques
Av. Diagonal, 647
08028 Barcelona
Spain

Tel: +34 93 401 09 74
xavier.cabre@upc.edu
https://web.mat.upc.edu/xavier.cabre/
https://www.icrea.cat/en

Web of Science ID: L-2727-2014
Scopus ID: 6602151573
ORCID ID: 0000-0001-5682-3135

Born 18/07/1966
Citizenship Spain

Research interests

Partial Differential Equations, Calculus of Variations, Nonlinear Analysis, Dynamical Systems

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Positions

From 10/2003	Institució Catalana de Recerca i Estudis Avançats **ICREA Research Professor** at the Universitat Politècnica de Catalunya, Barcelona, Spain
From 06/2008	**Catedrático de Universidad** **Universitat Politècnica de Catalunya**, Barcelona, Spain
09/2002–09/2003	**Tenure Associate Professor** of Mathematics at **The University of Texas at Austin**, USA
09/2001–06/2002	**Harrington Faculty Fellow at** **The University of Texas at Austin**, USA
09/1998–09/2003	Profesor Titular de Universidad Associate Professor of Mathematics at the Universitat Politècnica de Catalunya, Barcelona, Spain
01/1996–08/1998	**Postdoctoral Fellow at the Laboratoire d'Analyse Numérique** (currently Laboratoire Jacques-Louis Lions) Université Pierre et Marie Curie (Paris VI), France
09/1994–06/1995	**Postdoctoral Member of the Institute for Advanced Study**, Princeton, USA

Education

09/1990–08/1994	**Doctorate Thesis** in Mathematics, May 1994 **Courant Institute of Mathematical Sciences**, New York University, USA Adviser: Professor Louis Nirenberg
09/1984–06/1989	Bachelor in Mathematics, June 1989 Universitat de Barcelona, Spain

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Other Academic Degrees

03/2000–03/2004	**"Qualification aux fonctions de Professeur des universités en sections 25 et 26"**. Degree authorizing to apply for Full Professorships in France, in Mathematics and Applied Mathematics
06/1998	**"Habilitation à diriger des recherches"**, Université Paris VI. Degree authorizing to be Director of Doctorate Theses in France

Prizes and Honors

01/2025	**Nominated as Academician of the l'Institut d'Estudis Catalans**
07/2023	**Frontiers of Science Award, first edition**, awarded by the Chinese government at "The inaugural International Congress of Basic Science (ICBS)", Beijing. Joint award with Alessio Figalli, Xavier Ros-Otón, and Joaquim Serra for our article "Stable solutions to semilinear elliptic equations are smooth up to dimension 9" published in "Acta Mathematica" 224 (2020), 187-252
11/2012	**Fellow of the American Mathematical Society (inaugural class of 2013)** for "outstanding contributions to the creation, exposition, advancement, communication, and utilization of mathematics"
05/1995	**Kurt O. Friedrichs Prize** for excellence of Doctorate Thesis in 1994 at Courant Institute, New York University
04/1993	Harold Grad Memorial Prize for outstanding performance and promise as a graduate student at Courant Institute, New York University

Editorial Boards

From 05/2022	Editorial Advisory Board of PNLDE (Book series Progress in Nonlinear Differential Equations and Their Applications), Springer
From 11/2002	Publicacions Matemàtiques
01/2019-05/2020	Calculus of Variations and Partial Differential Equations
06/2014-10/2017	**Journal of the European Mathematical Society**
05/2006–05/2010	Potential Analysis
02/2006-09/2015	Annales de la Faculté des Sciences de Toulouse
09/2002–12/2014	Communications on Pure and Applied Analysis

Visiting Professorships and most relevant Research stays

09/2025	Three weeks research collaboration with Alessio Figalli and Joaquim Serra. ETH Zurich, Switzerland
09/2024	Two weeks research collaboration with Fanghua Lin. Courant Institute, NYU. New York, USA
09/2023	One week research collaboration with Alessio Figalli and Joaquim Serra. ETH Zurich, Switzerland

10/2022	Visiting Professorship for one month at **Beijing Normal University**, China
10/2019	One week research collaboration with Professors Scott Armstrong and Sylvia Serfaty at the Courant Institute, New York University, USA
09/2019	One week research collaboration with Professors Luis Caffarelli and Francesco Maggi at The University of Texas at Austin, USA
09/2019	One week research collaboration with Professor Henri Berestycki at the EHESS, Paris, France
07/2019	Ten days research collaboration with Professors Manuel del Pino and Matteo Cozzi at the University of Bath, UK
10-11/2018	Two weeks research collaboration with Professors Alessio Figalli and Joaquim Serra at ETH Zurich, Switzerland
09-10/2016	Two weeks research collaboration with Professors Alessio Figalli, Tristan Riviere and Joaquim Serra at ETH Zurich, Switzerland
10/2014	**J.T. Oden Faculty Fellow** for one month at The University of Texas at Austin, Texas, USA
09-10/2013	"Professeur invité" for two months at the Centre d'analyse et de mathématique sociales. **EHESS** - École des Hautes Études en Sciences Sociales, Paris, France
06-07/2011	"Professeur invité" for one month at the Laboratoire de Math. R. Salem, Rouen, France
10/2006	Visiting Professorship for one month at the **University of Chicago**, Department of Mathematics, USA
09/2006	"Professeur invité" for one month at Laboratoire MIP, Toulouse, Université Paul Sabatier, France
02/2004	"Professeur invité" for one month at the **Laboratoire Jacques-Louis Lions**, Université Paris VI, France
06/2000	"Professeur invité" for one month at Université Cergy-Pontoise, France
05/2000	"Professeur invité" for one month at **Ceremade, Université Paris-Dauphine**, France

Research Grants

01/2022–12/2024: UPC coordinator of the Generalitat de Catalunya grant 2021 SGR 00087 with PI C. Cascante (UB). Amount: 60.000 EUR

09/2022–08/2026: **PI of the Spain MICINN grant PID2021-123903NB-I00. 16 participating researchers. 137.800 EUR**

01/2020–12/2022: **PI of the Spain MICINN grant "Red de Investigación"** RED2018-102650-T (Red de ecuaciones en derivadas parciales no locales y aplicaciones). 8 participating institutions. 12.000 EUR

01/2018–09/2022: PI of the Spain MICINN **grant MTM2017-84214-C2-1-P. 14 participating researchers. 101.761 EUR**

07/2015–06/2019: **Research guarantor** for the "Unidad de Excelencia María de Maeztu" MDM-2014-0445 given to the Barcelona Graduate School of Mathematics. 2.000.000 EUR

01/2015–12/2017: PI of the Spain MINECO **grant MTM2014-52402-C3-1-P. 15 participating researchers. 95.711 EUR**

01/2012–12/2015: PI of the Spain MICINN **grant MTM2011-27739-C04-01. 14 participating researchers. 192.995 EUR**

10/2009–12/2013: UPC coordinator of the Generalitat de Catalunya grant 2009 SGR 345 with PI J. A. Carrillo (UAB) . Amount: 83.200 EUR

01/2009–12/2011: PI of the Spain MICINN **grant MTM2008-06349-C03-01. 15 participating researchers. 250.228 EUR**

10/2005–10/2008: PI of the Spain MEC **grant MTM2005-07660-C02-01. 13 participating researchers. 104.482 EUR**

06/2004–06/2009: Steering Committee of the European Science Foundation PESC Programme "Global and geometrical aspects of nonlinear partial differential equations" with PI H. Shahgholian. 480.437 EUR

12/2000–12/2003: PI of the Spain DGI MCYT **grant BFM2000-0962-C02-02. 2 participating researchers. 10.120 EUR**

1998–2002: European Union TMR Contract ERBFMRX-CT98-0201 "Nonlinear parabolic partial differential equations: methods and applications" with PI A. Tesei. Amount to the UPC: 33.315 EUR

Direction of Doctoral Thesis

07/2023: **Iñigo Urtiaga Erneta**. Universitat Politècnica de Catalunya.

07/2021: **Juan-Carlos Felipe-Navarro**. Universitat Politècnica de Catalunya.

01/2020: **Pietro Miraglio**. Universitat Politècnica de Catalunya and Università degli Studi di Milano (codirected with Prof. Enrico Valdinoci).

06/2019: **Tomás Sanz-Perela**. Universitat Politècnica de Catalunya.

07/2014: **Anne-Charline Coulon**. Universitat Politècnica de Catalunya and Université Paul Sabatier (Toulouse) (codirected with Prof. Jean-Michel Roquejoffre).

06/2014: **Xavier Ros-Oton**. Universitat Politècnica de Catalunya.

06/2014: **Joaquim Serra**. Universitat Politècnica de Catalunya.

07/2010: **Eleonora Cinti**. Universitat Politècnica de Catalunya and Universita di Bologna (codirected with Prof. Bruno Franchi).

07/2008: **Jinggang Tan**. Universitat Politècnica de Catalunya and Universidad de Chile (codirected with Prof. Patricio Felmer).

06/2008: **Joana Terra**. Universitat Politècnica de Catalunya.

09/2005: **Antonio Capella**. Universitat Politècnica de Catalunya.

Publications: Books

[**1**] L.A. Caffarelli, X. Cabré. *Fully Nonlinear Elliptic Equations*, Colloquium Publications 43, American Mathematical Society, Providence, RI, 1995.

Publications: Articles

[**2**] X. Cabré, *Estimates controlling a function by only its radial derivative and applications to stable solutions of elliptic equations*, To appear in <u>American Journal of Mathematics</u>. arXiv:2211.13033.

[**3**] X. Cabré, *Hölder regularity of stable solutions to semilinear elliptic equations up to $\mathbb{R}^9$: full quantitative proofs*, <u>Bulletin of the American Mathematical Society</u>, 63 (2026).

[**4**] X. Cabré, E. Cinti, J. Serra. *Stable solutions to the fractional Allen-Cahn equation in the nonlocal perimeter regime*, <u>American Journal of Mathematics</u>, 147 (2025), 957-1024.

[**5**] X. Cabré, I.U. Erneta, J.C. Felipe-Navarro. *Null-Lagrangians and calibrations for general nonlocal functionals and an application to the viscosity theory*, <u>Journal of Functional Analysis</u>, 289 (2025).

[**6**] X. Cabré, G. Csató, A. Mas. *Periodic solutions to integro-differential equations: variational formulation, symmetry, and regularity*, <u>Communications in Partial Differential Equations</u>, 50 (2025). 162-210.

[**7**] X. Cabré, I.U. Erneta, J.-C. Felipe-Navarro. *A Weierstrass extremal field theory for the fractional Laplacian*, <u>Adv. Calc. Var.</u>, 17 (2024), 1067-1093.

[**8**] X. Cabré, G. Csató, A. Mas. *Existence and symmetry of periodic nonlocal-CMC surfaces via variational methods*, <u>J. Reine Angew. Math.</u>, 804 (2023), 11-40.

[**9**] X. Cabré, M. Cozzi, G. Csató. *A fractional Michael-Simon Sobolev inequality on convex hypersurfaces*, <u>Ann. Inst. H. Poincaré Anal. Non Linéaire</u>, 40 (2023), 185-214.

[**10**] X. Cabré, P. Miraglio, M. Sanchón. *Optimal regularity of stable solutions to nonlinear equations involving the p-Laplacian*, <u>Adv. Calc. Var.</u> 15 (2022), 749-785.

[**11**] X. Cabré, P. Miraglio. *Universal Hardy-Sobolev inequalities on hypersurfaces of Euclidean space*, <u>Commun. Contemp. Math.</u> 24 (2022), no. 5, Paper no. 2150063 (25 pages).

[**12**] X. Cabré, S. Dipierro, E. Valdinoci. *The Bernstein technique for integro-differential equations*, <u>Arch. Ration. Mech. Anal.</u> 243 (2022), 1597-1652.

[**13**] X. Cabré, T. Sanz-Perela. *A universal Hölder estimate up to dimension 4 for stable solutions to half-Laplacian semilinear equations*, <u>J. Differential Equations</u> 317 (2022), 153-195.

[**14**] X. Cabré, F. Charro. *The optimal exponent in the embedding into the Lebesgue spaces for functions with gradient in the Morrey space*, <u>Adv. Math.</u> 380 (2021), Paper no. 107592 (36 pages).

[**15**] X. Cabré. *Calibrations and null-Lagrangians for nonlocal perimeters and an application to the viscosity theory*, <u>Ann. Mat. Pura Appl.</u> 199 (2020), 1979-1995.

[**16**] X. Cabré, A. Figalli, X. Ros-Oton, J. Serra. *Stable solutions to semilinear elliptic equations are smooth up to dimension 9*, <u>Acta Math.</u> 224 (2020), 187-252.

[**17**] X. Cabré, E. Cinti, J. Serra. *Stable s-minimal cones in $\mathbb{R}^3$ are flat for s~1*, <u>J. Reine Angew. Math.</u> 764 (2020), 157-180.

[**18**] X. Cabré. *A new proof of the boundedness results for stable solutions to semilinear elliptic equations*, <u>Discrete Contin. Dyn. Syst.</u> 39 (2019), 7249-7264.

[**19**] X. Cabré, M. Cozzi. *A gradient estimate for nonlocal minimal graphs*, <u>Duke Math. J.</u> 168 (2019), 775-848.

[**20**] X. Cabré, M.M. Fall, J. Solà-Morales, T. Weth. *Curves and surfaces with constant nonlocal mean curvature: meeting Alexandrov and Delaunay*, J. Reine Angew. Math. 745 (2018), 253-280.

[**21**] X. Cabré, G. Poggesi. *Stable solutions to some elliptic problems: minimal cones, the Allen-Cahn equation, and blow-up solutions*, Geometry of PDEs and related problems, 1-45, Lecture Notes in Math., 2220, Fond. CIME/CIME Found. Subser., Springer, Cham, 2018.

[**22**] X. Cabré, M. Lucia, M. Sanchón, S. Villegas. *Antisymmetry of solutions for some weighted elliptic problems*, Comm. Partial Differential Equations 43 (2018), 506-547.

[**23**] X. Cabré, M.M. Fall, T. Weth. *Near-sphere lattices with constant nonlocal mean curvature*, Math. Ann. 370 (2018), 1513-1569.

[**24**] X. Cabré, M.M. Fall, T. Weth. *Delaunay hypersurfaces with constant nonlocal mean curvature*, J. Math. Pures Appl. 110 (2018), 32-70.

[**25**] X. Cabré. *Boundedness of stable solutions to semilinear elliptic equations: a survey*, Adv. Nonlinear Stud. 17 (2017), 355-368.

[**26**] X. Cabré. *Isoperimetric, Sobolev, and eigenvalue inequalities via the Alexandroff-Bakelman-Pucci method: a survey*, Chin. Ann. Math. Ser. B 38 (2017), 201-214.

[**27**] X. Cabré, X. Ros-Oton, J. Serra. *Sharp isoperimetric inequalities via the ABP method*, J. Eur. Math. Soc. 18 (2016), 2971-2998.

[**28**] X. Cabré, J. Serra. *An extension problem for sums of fractional Laplacians and 1-D symmetry of phase transitions*, Nonlinear Anal. 137 (2016), 246-265.

[**29**] X. Cabré, M. Sanchón, J. Spruck. *A priori estimates for semistable solutions of semilinear elliptic equations*, Discrete Contin. Dyn. Syst. 36 (2016), 601-609.

[**30**] X. Cabré, N. Consul, J.V. Mandé. *Traveling wave solutions in a half-space for boundary reactions*, Anal. PDE 8 (2015), 333-364.

[**31**] X. Cabré, Y. Sire. *Nonlinear equations for fractional Laplacians II: existence, uniqueness, and qualitative properties of solutions*, Trans. Amer. Math. Soc. 367 (2015), 911-941.

[**32**] X. Cabré, Y. Sire. *Nonlinear equations for fractional Laplacians I: Regularity, maximum principles, and Hamiltonian estimates*, Ann. Inst. H. Poincaré Anal. Non Linéaire 31 (2014), 23-53.

[**33**] X. Cabré, E. Cinti. *Sharp energy estimates for nonlinear fractional diffusion equations*, Calc. Var. Partial Differential Equations 49 (2014), 233-269.

[**34**] X. Cabré, X. Ros-Oton. *Sobolev and isoperimetric inequalities with monomial weights*, J. Differential Equations 255 (2013), 4312-4336.

[**35**] X. Cabré, J.-M. Roquejoffre. *The influence of fractional diffusion in Fisher-KPP equations.* Comm. Math. Phys. 320 (2013), 679-722.

[**36**] X. Cabré, X. Ros-Oton. *Regularity of stable solutions up to dimension 7 in domains of double revolution*, Comm. Partial Differential Equations 38 (2013), 135-154.

[**37**] X. Cabré, M. Sanchón. *Geometric-type Sobolev inequalities and applications to the regularity of minimizers*, J. Funct. Analysis 264 (2013), 303-325.

[**38**] X. Cabré, X. Ros-Oton, J. Serra. *Euclidean balls solve some isoperimetric problems with nonradial weights*, C. R. Math. Acad. Sci. Paris 350 (2012), 945-947.

[**39**] X. Cabré, A.-C. Coulon, J.-M. Roquejoffre. *Propagation in Fisher-KPP type equations with fractional diffusion in periodic media*, <u>C. R. Math. Acad. Sci. Paris</u> 350 (2012), 885-890.

[**40**] X. Cabré. *Uniqueness and stability of saddle-shaped solutions to the Allen-Cahn equation*, <u>J. Math. Pures Appl.</u> 98 (2012), 239-256.

[**41**] X. Cabré, J. Terra. *Qualitative properties of saddle-shaped solutions to bistable diffusion equations*, <u>Comm. Partial Differential Equations</u> 35 (2010), 1923-1957.

[**42**] X. Cabré. *Regularity of minimizers of semilinear elliptic problems up to dimension 4*, <u>Comm. Pure Appl. Math.</u> 63 (2010), 1362-1380.

[**43**] X. Cabré, J. Tan. *Positive solutions of nonlinear problems involving the square root of the Laplacian*, <u>Adv. Math.</u> 224 (2010), 2052-2093.

[**44**] X. Cabré, E. Cinti. *Energy estimates and 1-D symmetry for nonlinear equations involving the half-Laplacian*, <u>Discrete Contin. Dyn. Syst.</u> 28 (2010), 1179-1206.

[**45**] X. Cabré, J.-M. Roquejoffre. *Front propagation in Fisher-KPP equations with fractional diffusion*, <u>C. R. Math. Acad. Sci. Paris</u>, Mathematique 347 (2009), 1361-1366.

[**46**] X. Cabré, J. Terra. *Saddle-shaped solutions of bistable diffusion equations in all of* $\mathbb{R}^{2m}$, <u>J. Eur. Math. Soc.</u> 11 (2009), 819-843.

[**47**] X. Cabré, A. Capella, M. Sanchón. *Regularity of radial minimizers of reaction equations involving the p-Laplacian*, <u>Calc. Var. Partial Differential Equations</u> 34 (2009), 475-494.

[**48**] X. Cabré. *Elliptic PDE's in Probability and Geometry: summetry and regularity of solutions*, <u>Discrete Contin. Dyn. Syst.</u> 20 (2008), 425-457.

[**49**] X. Cabré. *Extremal solutions and instantaneous complete blow-up for elliptic and parabolic problems*, Perspectives in nonlinear partial differential equations, 159-174, <u>Contemp. Math.</u> 446, Amer. Math. Soc., Providence, RI, 2007.

[**50**] X. Cabré, A. Capella. *Regularity of minimizers for three elliptic problems: minimal cones, harmonic maps, and semilinear equations*, <u>Pure Appl. Math. Q.</u> 3 (2007), 801-825.

[**51**] X. Cabré, M. Sanchón. *Semi-stable and extremal solutions of reaction equations involving the p-Laplacian*, <u>Comm. Pure Appl. Anal.</u> 6 (2007), 43-67.

[**52**] X. Cabré, A. Capella. *Regularity of radial minimizers and extremal solutions of semilinear elliptic equations*, <u>J. Funct. Anal.</u> 238 (2006), 709-733.

[**53**] X. Cabré, E. Fontich, R. de la Llave. *The parameterization method for invariant manifolds III: overview and applications*, <u>J. Differential Equations</u> 218 (2005), 444-515.

[**54**] X. Cabré, J. Solà-Morales. *Layer solutions in a half-space for boundary reactions*, <u>Comm. Pure Appl. Math.</u> 58 (2005), 1678-1732.

[**55**] X. Cabré, M. Lucia, M. Sanchón. *A mean field equation on a torus: one-dimensional symmetry of solutions*, <u>Comm. Partial Differential Equations</u> 30 (2005), 1315-1330.

[**56**] X. Cabré, A. Capella. *On the stability of radial solutions of semilinear elliptic equations in all of* R^n, <u>C. R. Acad. Sci. Paris</u> 338 (2004), 769-774.

[**57**] X. Cabré, L.A. Caffarelli. *Interior* $C^{2,\alpha}$ *regularity theory for a class of nonconvex fully nonlinear elliptic equations*, <u>J. Math. Pures Appl.</u> 82 (2003), 573-612.

[**58**] X. Cabré, E. Fontich, R. de la Llave. *The parameterization method for invariant manifolds II: regularity with respect to parameters*, <u>Indiana Univ. Math. J.</u> 52 (2003), 329-360.

[**59**] X. Cabré, E. Fontich, R. de la Llave. *The parameterization method for invariant manifolds I: manifolds associated to non-resonant subspaces*, <u>Indiana Univ. Math. J.</u> 52 (2003), 283-328.

[**60**] X. Cabré. *Topics in regularity and qualitative properties of solutions of nonlinear elliptic equations*, <u>Discrete Contin. Dyn. Syst.</u> 8 (2002), 331-359.

[**61**] X. Cabré. *A conjecture of De Giorgi on symmetry for elliptic equations in R^n*, European Congress of Mathematics, Vol. I (Barcelona, 2000), 259-265, <u>Progr. Math.</u> 201, Birkhäuser, 2001.

[**62**] G. Alberti, L. Ambrosio, X. Cabré. *On a long-standing conjecture of E. De Giorgi: symmetry in 3D for general nonlinearities and a local minimality property*, <u>Acta Appl. Math.</u> 65 (2001), 9-33.

[**63**] X. Cabré. *Partial differential equations, geometry and stochastic control* (Catalan), <u>Butl. Soc. Catalana Mat.</u> 15 (2000), 7-27.

[**64**] L. Ambrosio, X. Cabré. *Entire solutions of semilinear elliptic equations in R^3 and a conjecture of De Giorgi*, <u>J. Amer. Math. Soc.</u> 13 (2000), 725-739.

[**65**] X. Cabré, Y. Martel. *Existence versus instantaneous blow-up for linear heat equations with singular potentials*, <u>C. R. Acad. Sci. Paris Sér I Math.</u> 329 (1999), 973-978.

[**66**] X. Cabré, S. Chanillo. *Stable solutions of semilinear elliptic problems in convex domains*, <u>Selecta Math. (N. S.)</u> 4 (1998), 1-10.

[**67**] H. Brezis, X. Cabré. *Some simple nonlinear PDE's without solutions*, <u>Boll. Unione Mat. Ital. Sez. B Artic. Ric. Mat.</u> (1998), 223-262.

[**68**] X. Cabré, Y. Martel. *Weak eigenfunctions for the linearization of extremal elliptic problems*, <u>J. Funct. Anal.</u> 156 (1998), 30-56.

[**69**] X. Cabré. *Nondivergent elliptic equations on manifolds with nonnegative curvature*, <u>Comm. Pure Appl. Math.</u> 50 (1997), 623-665.

[**70**] X. Cabré, P. Majer. *Truncation of nonlinearities in some supercritical elliptic problems*, <u>C. R. Acad. Sci. Paris Sér I Math.</u> 322 (1996), 1157-1162.

[**71**] X. Cabré, L.A. Caffarelli. *Regularity for viscosity solutions of fully nonlinear equations $F(D^2u) = 0$*, <u>Topol. Methods Nonlinear Anal.</u> 6 (1995), 31-48.

[**72**] X. Cabré. *On the Alexandroff-Bakelman-Pucci estimate and the reversed Hölder inequality for solutions of elliptic and parabolic equations*, <u>Comm. Pure Appl. Math.</u> 48 (1995), 539-570.

Publications: Proceedings

[**73**] X. Cabré. *Regularity of stable solutions to reaction-diffusion elliptic equations*, Proceedings of the 8th European Congress of Math. (Plenary talk), DOI 10.4171/8ECM/13.

[**74**] X. Cabré. *Regularity of radial extremal solutions of semilinear elliptic equations*, Bol. Soc. Esp. Mat. Apl. SeMA 34 (2006), 92-98.

[75] X. Cabré. *Interior $C^{2,\alpha}$ regularity for fully nonlinear elliptic equations*, RIMS Kôkyû-roku 1481 (2006), 79-87, Japan. Proceedings of "Viscosity Solution Theory of Differential Equations and its Developments", Kyoto University, 2005.

[76] X. Cabré. *Regularity of radial extremal solutions of semilinear elliptic equations*, Bol. Soc. Esp. Mat. Apl. 34 (2006), 92-98. Proceedings of the "XIX CEDYA", Universidad Carlos III, Madrid, 2005.

[77] X. Cabré, L.A. Caffarelli. *Regularity theory for a class of nonconvex fully nonlinear elliptic equations*, Actas del XVII CEDYA, Congress on Differential Equations and Applications, Salamanca 2001, 57-62.

[78] X. Cabré. *Regularity for viscosity solutions of fully nonlinear equations $F(D^2u) = 0$*, Actas XIV CEDYA, Congreso de Ecuaciones Diferenciales y Aplicaciones, Vic 1995, 15-16.

Publications: Reviews

[79] C. Sormani, X. Cabré. *Recent applications of Nirenberg's classical ideas*, Notices of the American Mathematical Society 63, no. 2 (2016), 126-128.

Publications: Editor

[80] *LlaveFest: A Broad Perspective on Finite and Infinite Dimensional Dynamical Systems*. Held at the University of Barcelona, June 12-16, 2017. Discrete Contin. Dyn. Syst. 38 (2018), no. 12. Editors: X. Cabré, A. Delshams, M. Gidea, C. Zeng.

[81] *Nonlinear Partial Differential Equations*. Papers from the CRM-FISYMAT School "Topics in PDE's" held in Granada (April 7-11) and Barcelona (May 5-9), 2008. Advanced Courses in Mathematics - CRM Barcelona, Springer 2012. Editors: X. Cabré, C. Casacuberta, J. Soler. Articles authors: L.A. Caffarelli, F. Golse, Y. Guo, C.E. Kenig, A. Vasseur.

[82] *Recent Trends in Partial Differential Equations*. Papers from the UIMP-RSME Lluis A. Santaló Summer School held in Santander, July 12-16, 2004. Contemporary Math. 409, American Mathematical Society and Real Sociedad Matemática Española, 2006. Editors: J.L. Vázquez, X. Cabré, and J.A. Carrillo. Articles authors: L. Ambrosio, L. Desvillettes, H. Koch and E. Zuazua, A. Aftalion, M. Escobedo, S. Mischler.

Invited Addresses

07/2026 : **International Congress of Mathematicians, Philadelphia (USA). Invited talk.**

01/2026 : Congreso bienal de la Real Sociedad Matemática Española, Alicante (Spain). Plenary talk.

06/2025 : Fisymat series of talks, Universidad de Granada (Spain).

10/2024 : Workshop PDE days in Maremma. Maremma (Italy).

10/2024 : Nonlinear Partial Differential Equations in Salzburg 2024. Salzburg (Austria).

09/2024 : 16 hours Master minicourse. Jilin University (China).

07/2024 : Summer School UIMP (Universidad Internacional Menéndez Pelayo). 3 hours minicourse at the congress "The Laplacian and Beyond Celebrating the Mathematics of Luis Caffarelli". Santander (Spain).

04/2024 : Journées de lancement de la fédération OcciMath. Perpignan (France).

12/2023 : 16 hours Master minicourse. Jilin University (China).

12/2023 : Coloquio del Departamento de Matemáticas de la Universidad Autónoma de Madrid (Spain).

11/2023 : 4 1/2 hours minicourse. Universidad Autonoma de Madrid (Spain).

11/2023 : Coloquio del BCAM-Universidad País Vasco. Bilbao (Spain).

10/2023 : Nonlinear Partial Differential Equations 2023. Valencia (Spain).

07/2023 : Nonlinear Analysis and its Applications in Geometry, 2023. Chinese Academy of Sciences in Beijing (China).

07/2023 : **The inaugural International Congress of Basic Science (ICBS). Beijing (China). Invited prize talk.**

06/2023 : International Doctoral Summer School in Conformal Geometry and Non-local Operators. 4 1/2 hours minicourse. Granada (Spain).

06/2023. Calculus of Variations and Geometric Measure Theory. Pisa (Italy).

11/2022 : 6 hours online minicourse. Jilin University (China).

10/2022 : Analysis Autumn School 2022. 6 hours online minicourse. Chinese Academy of Science and Beijing Normal University (China).

09/2022 : Geometric aspects of nonlinear partial differential equations. 5 hours minicourse. Institute Mittag-Leffler (Sweden).

06/2022 : 20 years of Summer Schools on CalcVar in Rome. Department of Mathematics, Sapienza, Rome (Italy).

06/2022 : Mostly Maximum Principle 4th edition. Cortona (Italy).

11/2021: Conference to honour the memory of Luciano Modica. Universita di Pisa (Italy).

10/2021: International Conference on nonlinear PDE theory and applications. Shanghai Jiao Tong University (China).

09/2021: Conference "Recent Progress in Geometric Analysis and PDEs". Universita di Bologna (Italy).

09/2021: Conference "Nonlinear Potential Theoretic Methods in Partial Differential Equations (Online) (21w5100)". Banff International Research Station (Canada).

07/2021: International Conference on Geometric Analysis and Partial Differential Equations. Shanghai Jiao Tong University (China).

06/2021: **8th European Congress of Mathematics. Portoroz (Slovenia). Plenary talk.**

06/2021: 8th European Congress of Mathematics. Invited talk at the Session Nonlocal operators and related topics (MS - ID 55). Portoroz (Slovenia).

10/2020: Fields Medal Symposium. Online. The Fields Institute. Toronto (Canada). Plenary talk.

02/2020: XXX Convegno Nazionale di Calcolo delle Variazioni, Levico Terme (Trento, Italy).

11/2019: Workshop in honor of Alessio Figalli's Doctor Honoris Causa at UPC. FME, UPC, Barcelona (Spain).

05/2019: Analytic and Geometric Aspects of PDEs. Politecnico di Milano (Italy).

01/2019: Geometry and PDE in front of the Alhambra. Granada (Spain).

12/2018: Winter meeting on nonlocal PDEs and applications. Univ. Autonoma Madrid (Spain).

10/2018: PDEs and Geometric Measure Theory. ETH Zurich (Switzerland).

09/2018: Workshop From Optimal Control to Maximum Principle in the occasion of Italo Capuzzo Dolcetta's birthday. Agropoli (Italy).

06/2018: Analysis of singular patterns in variational models. Institut de Mathématiques de Toulouse (France).

06/2018: Recent advances in Geometric Analysis. Centro di Ricerca Matematica Ennio De Giorgi, Pisa (Italy).

01/2018: Lectures on PDEs and Geometry. 6 hours minicourse. Universidad Autónoma de Madrid (Spain).

12/2017: **SIAM Conference on Analysis of Partial Differential Equations (PD17). Baltimore, Maryland (USA). Plenary talk.**

11/2017: ERC ReaDi workshop. Institut Henri Poincaré, Paris (France).

11/2017: First Belgium-Chile-Italy conference in PDEs. Université Libre de Bruxelles (Belgium).

11/2017: Fractional Calculus, Probability and Non-Local Operators. BCAM, Bilbao (Spain).

09/2017: Clay Research Conference. Radcliffe Observatory Quarter, Oxford (UK). Plenary talk.

06/2017: CIME summer school Geometry of PDE's and related problems. 5 hours minicourse. Cetraro (Italy).

05/2017: Advanced School & Workshop on Nonlocal Partial Differential Equations and Applications to Geometry, Physics and Probability. ICTP, Trieste (Italy).

05/2017: New trends in Partial Differential Equations. Un homenaje a Ireneo Peral. Granada (Spain).

05/2017: Nonlinear diffusion and free boundary problems. A conference on the occasion of the 70th anniversary of Juan Luis Vázquez. UAM Madrid (Spain).

04/2017: Mostly Maximum Principle. BIRS, Banff, Canada.

01/2017: Journées ANR Nonlocal. Institut de Mathématiques de Toulouse (France).

09/2016: A Mathematical Tribute to Ennio De Giorgi. Centro De Giorgi, Pisa (Italy).

07/2016: Novos Talentos Em Matematica. 5 hours mini-course. Gulbenkian Foundation, Lisboa (Portugal).

05/2016: Calculus of Variations and Nonlinear Partial Differential Equations, week two: conference. Columbia University (USA). Plenary talk.

05/2016: Calculus of Variations and Nonlinear Partial Differential Equations week one: minicourses. 5 hours minicourse. Columbia University (USA).

03/2016: Kawai Hall inauguration 25 Anniversary, Matsutsuru mathematics Kokyu. 6 1/2 hours mini-course. Tohoku University (Japan).

01/2016: Giornata sulle Equazioni Ellittiche Nonlineari. Perugia (Italy).

12/2015: BDSM15, Barcelona Dynamical Systems meeting 2015. UB, Barcelona (Spain).

11/2015: PDE 2015, Theory and Applications of Partial Differential Equations. Weierstrass Institute, Berlin (Germany).

11/2015: Acte conjunt Soc. Catalana d'Economia i Soc. Catalana de Matemàtiques. Institut d'Estudis Catalans, Barcelona (Spain).

10/2015: Workshop Analysis in Lyon (France).

09/2015: Workshop on Nonlocal Nonlinear Partial Differential Equations and Applications. Anacapri (Italy).

08/2015: BIRS Workshop 15w5004 New Trends in Nonlinear Elliptic Equations. Banff (Canada).

07/2015: Summer School on Nonlinear PDE's and applications to image analysis. 6h minicourse. CRM Bellaterra (Spain).

07/2015: Math Summer Camp. FME-UPC, Barcelona (Spain).

06/2015: An afternoon of Mathematics at Tor Vergata with Louis Nirenberg. Rome (Italy).

06/2015: Geometric measure theory, optimal mass transportation and PDEs. 4 1/4 hours minicourse. Sant Feliu de Guixols, Barcelona (Spain).

05/2015: Louis Nirenberg, 2015 Abel Prize for his contributions to the theory of PDEs. FME-UPC, Barcelona (Spain).

12/2014: Nonlocal days in Basel. Basel (Switzerland).

11/2014: Singularities arising in nonlinear problems (SNP2014). Kyoto (Japan).

07/2014: **First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI. Bilbao (Spain). Plenary talk.**

05/2014: Geometric Aspects of Semilinear Elliptic and Parabolic Equations (14w5017). Banff (Canada).

01/2014: School on Nonlinear Elliptic Problems. Milano (Italy).

11/2013: Recent developments of nonlinear PDEs. Canberra (Australia).

09/2013: Journées ERC ReaDi. EHESS Paris (France).

07/2013: 29 Coloquio Brasileiro de Matematica. IMPA, Rio de Janeiro (Brazil).

07/2013: Analysis and Partial Differential Equations. Vancouver (Canada).

07/2013: Nonlinear Partial Differential Equations. On the occasion of J. Mazón's 60th birthday. Burjassot, Valencia (Spain).

05/2013: Mini-courses and Conference on Nonlinear Elliptic Equations. New Brunswick and New York (USA).

01/2013: Congreso de la Real Sociedad Matemática Española 2013. Santiago de Compostela (Spain).

11/2012: Nonlocal Models and Peridynamics. Berlin (Germany).

09/2012: Nonlinear PDE's from Geometry and Physics. Rome (Italy).

09/2012: Mostly Maximum Principle. Rome (Italy).

09/2012: ERC Workshop on Geometric Partial Differential Equations. Pisa (Italy).

08/2012: Frontiers of Mathematics and Applications - 2012. Summer Course UIMP. Santander (Spain). Plenary course.

06/2012: New Trends in Nonlinear PDEs. Pisa (Italy).

06/2012: Progress in Nonlinear Partial Differential Equations. Hangzhou (China).

05/2012: Concentration month on nonlinear elliptic PDEs. Chicago (USA).

03/2012: Trends in Mathematical Analysis. Milano (Italy).

01/2012: A week on Fractional Diffusion. Milano (Italy).

09/2011: Recent Trends in Nonlinear PDE. The Graduate Center, CUNY. New York (USA).

09/2011: Nonlinear PDEs and Functional Inequalities, Workshop UAM. Madrid (Spain).

08/2011: IV EBED - Brazilian School of Differential Equations. 3 hours mini-course. Joao Pessoa (Brazil).

07/2011: Geometric properties of solutions of nonlinear PDEs and their applications. Banff (Canada).

06/2011: Fronts et EDP non linéaires. Colloque en l'honneur de Henri Berestycki. Paris (France).

04/2011: International Conference on Surface Theory. Sevilla (Spain).

06/2010: Nonlinear Evolution Equations, Palermo (Italy).

05/2010: **Joint SIAM/RSME-SCM-SEMA Meeting and DSPDEs'10, Barcelona (Spain). Plenary talk.**

01/2010: Nonlinear PDE Days. Liouville theorems and applications. Frankfurt-Giessen-Karlsruhe (Germany).

12/2009: Journées 40 ans du LJLL. Laboratoire J.L. Lions, Univ. Paris 6. Paris (France).

12/2009: SIAM Conference on Analysis of Partial Differential Equations. Miami (United States).

06/2009: Workshop on Non-local Equations. Univ. Carlos III (Leganés), Madrid (Spain). Plenary talk.

06/2009: The Poetry of Analysis. Conference in honour of Antonio Córdoba on the occasion of his 60th birthday. Madrid (Spain). Plenary talk.

05/2009: Nonlinear Partial Differential Equations. An international conference in memoriam Fuentesanta Andreu. Burjassot, Valencia (Spain).

05/2009: Indam School on symmetry for elliptic PDEs. Roma (Italy).

04/2009: Jornada Interconsolider I-math + Nanoselect. Bellaterra, Barcelona (Spain).

03/2009: IV International Symposium on Nonlinear PDEs & Free Boundary Problems, in honor of Professor Luis Caffarelli. Mar del Plata (Argentina). Plenary talk.

03/2009: Aspects géométriques des équations aux dérivées partielles, Marseille (France).

02/2009: Congreso de la Real Sociedad Matemática Española, Oviedo (Spain).

12/2008: "Jornadas de EDPs y Aplicaciones", Granada (Spain).

06/2008: **Nolineal 2008. Barcelona (Spain). Plenary talk.**

03/2008: Workshop on Variational Methods for Nonlinear PDE and their Applications, Technion, Haifa (Israel).

02/2008: 8th International Conference on Operations Research, Capitolio, Habana (Cuba).

01/2008: ICMC Summer Meeting on Differential Equations, Universidade de Sao Paulo, Sao Carlos (Brazil).

09/2007: Primer Encuentro de la Red de Ecuaciones Parabólicas y Elípticas No Lineales, San José - Níjar, Almería (Spain).

07/2007: **First French-Spanish Mathematical Congress, Zaragoza (Spain). Plenary talk.**

06/2007: Workshop/Summer School in Saariselkä. Qualitative Properties of Solutions to Elliptic and Parabolic Equations, Saariselkä (Finland).

04/2007: Workshop on Patterns: Models and Applications, IMUB (Institut de Matemàtica, UB), Barcelona (Spain).

03/2007: "Evolución de estructuras geométricas mediante flujos parabólicos e hiperbóli-cos". 2 hours of an intensive course FisYmat, Granada (Spain).

02/2007: Recent Trends in Nonlinear Partial Differential Equations. A celebration of the 60th birthday of Prof. Ireneo Peral. Salamanca (Spain).

09/2006: Barcelona Analysis Conference. Universitat de Barcelona (Spain).

06/2006: ESPALIA 2006, "Encuentro España-Italia de EDPs". Universita di Roma 1, Rome (Italy).

06/2006: Optimal transport and geometric PDE's. Nice (France).

06/2006: Euroconferences in Crete: Discontinuous change in behavior issues in partial differential equations. Anogia (Greece).

06/2006: UAM Spring Concentration Period on PDE, Nonlinear Elliptic Equations and Related Topics. UAM, Madrid (Spain).

03/2006: Reaction-diffusion and Free Boundary Problems. Banff International Research Station, Banff (Canada). 2 invited conferences.

10/2005: Workshop on "Recent Results in Nonlinear Elliptic Equations and their Interactions with Geometry", Math. Sciences Research Institute, MSRI, Berkeley (USA).

09/2005: XIX CEDYA (Congreso de Ecuaciones Diferenciales y Aplicaciones) and IX Congreso de la Sociedad Española de Matemática Aplicada. Universidad Carlos III de Madrid (Spain). Invited talk.

09/2005: Workshop on "Partial Differential Equations, Optimal Design and Numerics". Benasque (Spain).

07/2005: III International Symposium on Nonlinear PDEs and Free Boundary Problems. Buenos Aires (Argentina).

07/2005: Symposium of Nonlinear Elliptic Equations and Variational Methods. Beijing Normal University. Beijing (China).

06/2005: Viscosity Solution Theory of Differential Equations and its Developments. Research Institute of Mathematical Sciences, Kyoto University. Kyoto (Japan).

06/2005: International Conference on Calculus of Variations and Partial Differential Equations. The Center of Mathematical Sciences at the Zhejiang University. HangZhou (China).

06/2005: Nonlinear Partial Differential Equations and Applications. Conference in honor of Jim Serrin on the occasion of the awarding of the title of Doctor Honoris Causa of Université François Rabelais de Tours (France).

04/2005: International Workshop on Variational Methods in Nonlinear Analysis. Dedicated to Professors Louis Nirenberg and Giovanni Prodi on the occasion of their 80th birthday. Erice, Sicily (Italy).

12/2004: Une journée a Marseille, Université de Provence, Marseille (France).

11/2004: Nonlinear PDEs describing Front Propagation and other Singular Phenomena, Lorentz Center, Leiden (Netherlands).

10/2004: Workshop "Global and Geometric Aspects in Nonlinear PDE", Yerevan (Armenia).

10/2004: Jornada en honor de Soshana Kamin, UAM, Madrid (Spain).

09/2004: Fabes Lectures 2004, Bilbao (Spain).

06/2004: Conference in honor of Haim Brezis, "Nonlinear Analysis". On the occasion of his 60th birthday. Le Carré des Sciences, Paris. Plenary talk.

09/2003: XVIII CEDYA (Congreso de Ecuaciones Diferenciales y Aplicaciones), Tarragona (Spain).

06/2003: **First joint meeting of the AMS and the Real Sociedad Matemática Española, Sevilla (Spain). Plenary talk**.

06/2003: A Workshop in Geometric and Global Properties in PDE with Applications, Stockholm (Sweden).

07/2002: Conference on Harmonic maps, minimal surfaces and geometric flows, Brest (France).

06/2002: First joint meeting of the AMS and the Unione Matematica Italiana, Pisa (Italy).

05/2002: Conference on Heat Kernels and Analysis on Manifolds, Institut H. Poincaré, Paris (France).

09/2001: XVII CEDYA, Congreso de Ecuaciones Diferenciales y Aplicaciones, Salamanca (Spain). Plenary talk.

07/2001: PIMS Thematic Program in Nonlinear PDEs, Vancouver (Canada).

07/2001: Fabes Lectures 2001, Bologna (Italy).

06/2001: Fourth European Conference on Elliptic and Parabolic Problems, Rolduc (Netherlands). Plenary talk.

05/2001: INDAM-EU TMR Workshop on Singularity in Nonlinear Elliptic Problems, Rome (Italy).

03/2001: Workshop on Geometric Evolutions and Nonlinear Elliptic Equations, Isaac Newton Institute, Cambridge (England).

03/2001: TMR Workshop on Viscosity Solutions and Applications, Palma de Mallorca (Spain).

12/2000: First Joint International Meeting between the American Mathematical Society and the Hong Kong Mathematical Society, Hong-Kong (China).

09/2000: Singularities in nonlinear parabolic problems, Cortona (Italy).

07/2000: **3rd European Congress of Mathematics, Barcelona (Spain). Invited talk**.

07/2000: II Simposio internacional en ecuaciones no lineales y problemas de frontera libre, Buenos Aires (Argentina).

06/2000: European TMR Workshop on nonlinear parabolic PDE: methods and applications, Tel Aviv (Israel).

10/1999: American Mathematical Society 947 th meeting, Providence, R.I. (USA).

06/1999: Nonlinear PDE: an International Conference in memory of S.N. Kruzhkov, Besançon (France).

05/1999: Canum'99: 31ème Congrès d'Analyse Numérique, Ax-Bonascre, Ariège (France). Plenary talk.

01/1999: International School in Partial Differential Equations, Temuco (Chile).

12/1998: Differential problems having solutions of infinite energy; week on fully nonlinear PDE's, Instituto Nazionale di Alta Matematica, Rome (Italy).

07/1998: Euroconferences in Mathematics, Front Propagation: Theory and Applications, Anogia, Crete (Greece).

02/1998: European Union Workshop on Variational Methods and PDE's of Mathematical Physics, Scuola Normale Superiore di Pisa (Italy).

01/1998: Workshop on Geometric Questions in Partial Differential Equations, Oberwolfach (Germany).

05/1997: European Union Workshop on Nonlinear Partial Differential Equations and Related Topics, Institut Henri Poincaré, Paris (France).

05/1997: Workshop on Positive Solutions of Elliptic and Parabolic Differential Equations, Technion, Haifa (Israel).

07/1996: Recent Trends in Elliptic Equations, Universidad Internacional Menéndez Pelayo, Santander (Spain).

09/1995: XIV CEDYA - IV Congreso de Matemática Aplicada, Vic, Barcelona (Spain).

04/1994: American Mathematical Society 892nd meeting, Brooklyn, New York (USA).

More Relevant Invited Talks at Seminars

2025: ETH Zurich.

2024: Rutgers University. Universitat Autónoma de Barcelona.

2023: Séminaire d'Analyse Non Linéaire et EDP of ENS-PSL, Sorbonne Université-Université Paris Cité.

2022: Seminar at Beijing Normal University (China), Seminar at Jilin University (China)

2021: Séminaire de la Chair Gabriel Lamé (Saint Petersbourg), Nonlinear Analysis Seminar of Rutgers University, Online Seminar "Geometric Analysis" https://researchseminars. org/seminar/OSGA (Germany), One World PDE Seminar (UK).

2020: Analysis and PDE's seminar at the ICMAT (Madrid), APDE Webinar Bilbao Analysis and PDE, Geometric and functional inequalities and applications online seminar (University of Connecticut), Differential Geometry & Geometric Analysis online seminar (Princeton University).

2019: Colloquio dil Dipartimento di Matematica (Universita di Bologna), Seminario di Analisi (Universita di Bologna), Séminaire du CAMS (EHESS, Paris), Analysis Seminar of The University of Texas at Austin, Analysis Seminar (Courant Institute, New York University), Columbia Geometry & Analysis Seminar (Columbia University, New York), Analysis seminar of the ETH Zurich.

2018: Seminari d'Anàlisi UAB-UB, Barcelona.

2017: Courant Institute of Mathematical Sciences (New York University), Séminaire Laurent Schwartz at the École Polytechnique (Paris), Joint King's & UCL Geometry seminar at King's College London, Colloquium of the Department of Mathematics and Statistics (University of Calgary).

2016: Instituto Superior Técnico (Lisboa), ETH Zurich, Università degli Studi di Napoli Federico II.

2015: Politecnico di Bari, Complutense Madrid, Weierstrass Institute (Berlin).

2014: The University of Tokyo (Japan).

2013: Institut Henri Poincaré (Paris).

2011: Colloquia Universidad Carlos III de Madrid, Colloquium du Laboratoire de Math. R. Salem (Rouen, France), Columbia University (New York), Courant Institute (New York University).

2010: Courant Institute (New York University, United States), Princeton University (United States), Analysis Seminar (Warwick Mathematics Institute, UK).

2009: Analyse Non Lineaire (Laboratoire Jacques-Louis Lions, Univ. Paris VI, France), Coloquio del Instituto de Matemáticas de la Universidad Nacional Autonoma de Mexico.

2008: Università Politecnica delle Marche (Ancona, Italy), Università Tor Vegata Roma2 (Roma, Italy).

2007: Seminaire MIP (Univ. Paul-Sabatier, Toulouse), Analysis Seminar (Univ. Texas, Austin, Unitetd States), Courant Institute (New York University, United States), Mathematics Dep. Colloquium at Rutgers University (New Brunswick, United States).

2006: Analyse non linéaire (Laboratoire J.L. Lions, Université Paris VI), Laboratoire MIP (Université Paul Sabatier, Toulouse), PDE seminar of the Department of Mathematics (University of Chicago), Math. Dep. Analysis seminar at The University of Texas at Austin, Col.loqui del Dep. Matemàtica Aplicada 1 (Universitat Politècnica de Catalunya), Colloquium de l'Institut de Mathématiques de Toulouse.

2005: Col.loqui de la Facultat de Matemàtiques (Universitat de Barcelona), Universitat Autònoma de Barcelona, Institute of Applied Mathematics (Academia Sinica Beijing, China).

2004: Analyse non linéaire (Laboratoire Jacques-Louis Lions, Université Paris VI), Université Paris Sud-Orsay, Le Séminaire du Laboratoire Jacques-Louis Lions (Université Paris VI), Laboratoire d'Analyse et de Mathématiques Appliquées (Université Paris 12), Fis y Mat (Doctorate program at the Universidad de Granada), Universidad Complutense de Madrid, The University of Texas at Austin, Seminario de Probabilidades (Universitat de Barcelona), Séminaire Nord-Sud (Université de Provence, Marseille), Séminaire d'Analyse Appliquée (Centre de Mathématiques et Informatique, Université de Provence, Marseille).

2003: Centro Ricerca Matematica Ennio De Giorgi (Pisa).

2002: Laboratoire d'Analyse Numérique (Université Paris VI), CEREMADE Université Paris IX-Dauphine, University of Chicago, Houston University, Rice University.

2001: The University of Texas at Austin, Courant Institute (New York University), Rutgers University, Universitat de Barcelona, Laboratoire d'Analyse Numérique (Université Paris VI), Math. Colloquium at Courant Institute (New York University).

2000: Università di Firenze, University of Texas at Austin, Università di Bologna, Laboratoire d'Analyse Numérique (Université Paris VI), Université de Cergy-Pontoise, Université d'Orleans, Université de Picardie Jules Verne - Amiens, Université de Tours.

1999: University of Texas at Austin, Laboratoire d'Analyse Numérique (Université Paris VI), CMLA École Normale Sup. de Cachan (Paris), Societat Catalana de Matemàtiques, Universitat Autònoma de Barcelona, Max-Planck Institute for Mathematics in the Sciences (Leipzig), Rutgers University, Universidad del País Vasco (Bilbao).

1998: Università di Bologna, University of Bath, Universitat Autònoma de Barcelona, Universitat Politècnica de Catalunya (Barcelona).

1997: Collège de France (Paris), Laboratoire d'Analyse Numérique (Université Paris VI), Universidad Autónoma de Madrid, École Normale Supérieure d'Ulm (Paris), Université de Cergy-Pontoise, Université de Versailles, Université de Picardie Jules Verne - Amiens, Laboratoire d'Analyse Numérique (Université Paris VI).

1996: École Normale Supérieure d'Ulm (Paris), Universidad de Grana-da, ETH Zürich, Rutgers University.

1995: University of Chicago, University of California at Berkeley, Università di Bologna, Scuola Normale Superiore di Pisa.

1994: Brown University, University of Pennsylvania, Universidad Complutense de Madrid, Rutgers University, Cornell University, Institute for Advanced Study (Princeton).

1992-93: Università di Firenze, Rutgers University, Universitat de Barcelona.

Organizing and Scientific Committees

30/06-04/07/2025: Coordinator and organizer of the Summer School "20th Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2025**. CRM, Barcelona (Spain).

08/07-12/07/2024: Coordinator and organizer of the Summer School "20th Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2024**. CRM, Barcelona (Spain). Financial support from the European Mathematical Society of 6.000 EUR and from Compositio Mathematica of 2.000 EUR..

03/07-07/07/2023: Coordinator and organizer of the Summer School "19th Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2023**. CRM, Barcelona (Spain). Financial support from the Clay Mathematics Institute of US$ 8.000.

26/10-28/10/2022: Conference/workshops Coordinator. "Young Researcher's Workshop on Nonlocal PDEs and Applications". Universidad de Granada. This event is part of the Red de EDPs No Locales y Aplicaciones (MICINN) RED2018-102650-T, for which I was the PI.

27/06-01/07/2022: Coordinator and organizer of the Summer School "18th Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2022**. CRM, Barcelona (Spain). Financial support from the Clay Mathematics Institute of US$ 8.000.

21/06-25/06/2021: Organizing Committee of the Conference "Calculus of Variations and PDEs: recent developments and future directions", ETH, FIM, Zurich (Switzerland).

10/12-11/12/2020: Organizing Committeee of the Online Workshop on Nonlocal PDEs and Applications, within the Red de EDPs No Locales y Aplicaciones. Spain.

17/06-21/06/2019: Coordinator and organizer of the Summer School "17th Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2019**. CRM, Barcelona (Spain). Financial support from the Clay Mathematics Institute of US$ 10.000.

06/06/2019: Scientific Committee. Closing Workshop of the BGSMath Maria de Maeztu Unit of Excellence 2015-2019. Barcelona (Spain).

02/07-20/07/2018: Scientific Committee member. Research program "Geometric Function Theory in Fluid Mechanics". UAB-UB Barcelona (Spain).

25/06-29/06/2018: Coordinator and organizer of the Summer School "16th Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2018**. CRM, Barcelona (Spain). Financial support from the European Mathematical Society (6.000 EUR).

26/06-30/06/2017: Coordinator and organizer of the Summer School "15th Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2017**. CRM, Barcelona (Spain). Financial support from the Alfred P. Sloan Foundation and the European Mathematical Society (6.000 EUR).

12/06-16/06/2017: Scientific Committee member. "Llavefest: A broad perspective on finite and infinite dimensional Dynamical Systems". UB Barcelona (Spain).

27/04-28/04/2017: Organizer of a Thematic Session in the Barcelona Mathematical Days 2017. Congress of the Societat Catalana de Matematiques. IEC, Barcelona (Spain).

11/07-15/07/2016: Coordinator and organizer of the Summer School "Fourteen Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2016**. Universitat Politècnica de Catalunya, Barcelona (Spain). Financial support from the European Mathematical Society (6.000 EUR).

27/06-01/07/2016: Scientific Committee member. "The 3rd Conference on Nonlocal Operators and Partial Differential Equations". Bedlewo (Poland).

07/09-11/09/2015: Scientif committee member for the "Workshop in Nonlinear PDEs". Université Libre de Bruxelles (Belgium).

01/06-05/06/2015: Coordinator and organizer of the Summer School "Thirteen Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2015**. Universitat Politècnica de Catalunya, Barcelona (Spain).

16/06-20/06/2014: Coordinator and organizer of the EMS Summer School "Twelfth Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2014**. Universitat Politècnica de Catalunya, Barcelona (Spain).

02/09-06/09/2013: Organizer of the "Conference on qualitative and geometric aspects of elliptic PDE'S". CRM Bellaterra, Barcelona (Spain).

15/07-19/07/2013: Coordinator and organizer of the Summer School "Eleventh Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2013**. Universitat Politècnica de Catalunya, Barcelona (Spain).

28/05-1/06/2012: Coordinator and organizer of the Summer School "Tenth Workshop on Interactions between Dynamical systems and Partial Differential Equations", **JISD2012**. Universitat Politècnica de Catalunya, Barcelona (Spain).

27/06-1/07/2011: Coordinator and organizer of the Master School "Jornades d'Interacció entre Sistemes Dinàmics i Equacions en Derivades Parcials", **JISD2011**. Universitat Politècnica de Catalunya, Barcelona (Spain).

2-3/06/2011: Conference Coordinator of "Trobada d'edps i aplicacions". Universitat de Girona, Spain.

05/11/2010: Organizing Committee of "Jornada de recerca de Joves Investigadors". Societat Catalana de Matemàtiques. Barcelona, Spain.

14-23/06/2010: Coordinator and organizer of the Master School "Jornades d'Introducció als Sistemes Dinàmics i a les EDPs", **JISD2010**. Universitat Politècnica de Catalunya, Barcelona (Spain).

21-26/03/2010: Coorganizer of the workshop "Deterministic and stochastic front propagation". Banff International Research Station, Banff (Canada).

5-9/05/2008: Coordinator and Organizing Committee of the **Advanced Courses "Topics in PDE's and applications 2008, 2nd edition"**. CRM (Bellaterra), Barcelona (Spain).

7-11/04/2008: Coordinator and Organizing Committee of the **Advanced Courses "Topics in PDE's and applications 2008, 1st edition"**. Fisymat, Granada (Spain).

18-22/02/2008: Organizing Committee of the Summer Doctorate School "Fifth Jornades d'Introducció als Sistemes Dinàmics i a les EDP's", **JISD2008**. Universitat Politècnica de Catalunya, Barcelona (Spain).

11-22/07/2007: Organizing Committee of the European Science Foundation ESF "GLOBAL School on PDEs: layers and dislocations", within the Summer Doctorate School "Sixth Jornades d'Introducció als Sistemes Dinàmics i a les EDP's", **JISD2007**. , organized jointly with A. Delshams and T.M. Seara. Universitat Politècnica de Catalunya, Barcelona (Spain).

10-14/07/2006: Organizing Committee (jointly with A. Delshams and T.M. Seara) of the Summer Doctorate School "Fifth Jornades d'Introducció als Sistemes Dinàmics i a les EDP's", **JISD2006**. Universitat Politècnica de Catalunya, Barcelona (Spain).

19-21/06/2006: Organizing Committee (jointly with L. Boccardo). ESPALIA 2006 ("Encuentro España-Italia de EDPs"). Universita di Roma 1 (Italy).

8/05–15/06/2006: Organizing Committee (jointly with J. García Azorero, I. Peral, and J.D. Rossi). Spring concentration period on PDE's 2006. Universidad Autónoma de Madrid (Spain).

5-7/04/2006: Organizing Committee (jointly with F. Quirós, H. Shahgholian, and J.L. Vázquez). SPRING WORKSHOP Nonlinear Diffusion Equations and related PDEs. Universidad Autónoma de Madrid (Spain).

16-18/09/2005: Organizing Committee (jointly with M. Sanz, J. Amorós, J.A. Carrillo, C. Casacuberta, D. Herbera, T.M. Seara, R.M. Miró-Roig, and M. Noy). EMS-SCM (European Math. Soc. and Soc. Catalana Matemàtiques) Joint Mathematical Weekend. Universitat de Barcelona (Spain).

15/09/2005: Organizer (jointly with A. Avinyó, J. Solà-Morales, V. Caselles, and J.A. Carrillo). Segona trobada d'equacions en derivades parcials i aplicacions. Facultat de Naútica, Universitat Politècnica de Catalunya, Barcelona (Spain).

15/07–16/12/2005: Organizing Committee (jointly with L. Caffarelli, L.C. Evans, C. Gutiérrez, L. Wang, and P. Yang). "Nonlinear Elliptic Equations and Its Applications" **One semester Program at the Mathematical Sciences Research Institute at Berkeley, USA**.

31/01–04/02/2005: Organizing Committee (jointly with Juan Luis Vázquez). Special session "Interacción entre ecuaciones elípticas no lineales, parabólicas y cinéticas" in the "Primer Congreso Conjunto de Matemáticas RSME-SCM-SEIO-SEMA", MAT.ES 2005, Universidad de Valencia (Spain).

12-16/07/2004: Organizing Committee (jointly with Juan Luis Vázquez and José Antonio Carrillo). **UIMP - RSME Santaló Summer School** "Recent Trends in Partial Differential Equations", Universidad Internacional Menéndez Pelayo, Santander, Spain.

17-20/04/2002: Organizer (jointly with Luis Caffarelli) of the Workshop on Variational and Viscosity Methods in Partial Differential Equations. The University of Texas at Austin.

1997-98: Weekly seminar "Analyse non linéaire". Lab. d'Analyse Numérique, Université Paris VI. Organized jointly with H. Brezis, T. Ca-zenave and S. Klainerman.

21-23/05/1997: Organizing Committee (jointly with A. Ambrosetti, H. Brezis, I. Ekeland and M. Esteban). European Union Workshop on Nonlinear Partial Differential Equations and Related Topics, Institut Henri Poincaré, Paris (France).

Teaching

2010-11, 2011-12, 2012-13, 2013-14, 2014-15, 2015-16, 2016-17, 2017-18, 2018-19, 2019-20, 2020-21, 2021-22, 2022-23, 2023-24, 2024-25: 45 hours in the 75 hours course (7,5 ECTS) **"Partial Differential Equations" for third year undergraduate students in Mathematics. FME-UPC**, Universitat Politècnica de Catalunya (Barcelona, Spain).

2016-17, 2019-20, 2020-21: 7 hours in the 60 hours course (7,5 ECTS) "Mathematical Modelling with Partial Differential Equations" for Master students in Applied Mathematics. MAMME-FME-UPC, Universitat Politècnica de Catalunya (Barcelona, Spain).

2009-10, 2010-11, 2011-12, 2012-13, 2015-16, 2016-17, 2017-18, 2018-19: 30 hours in the 60 hours course (7,5 ECTS) **"Advanced Course in Partial Differential Equations" for Master students in Applied Mathematics. MAMME-FME-UPC**, Universitat Politècnica de Catalunya (Barcelona, Spain).

2013-14: 60 hours (6 ECTS) Graduate course in "Partial Differential Equations", Barcelona Graduate School of Mathematics (Barcelona. Spain).

2004-05, 2005-06, 2006-07, 2007-08, 2008-09, 2009-10, 2010-11: 30 hours course in "Ampliació d'Anàlisi" for fourth year students in Mathematics. Universitat Politècnica de Catalunya (Barcelona, Spain).

2002-03: 15 hours of a doctorate course (30 hours total) "Equacions en derivades parcials, processos estocàstics i models matemàtics en finances". Universitat Pompeu Fabra, Programa de Doctorat en Informàtica i Comunicació Digital (Barcelona, Spain).

Spring 2003: 45 hours course "M427K Advanced Calculus for Applications I: Introduction to Differential Equations". The University of Texas at Austin, USA.

Fall 2002: 30 hours Graduate course in "Partial Differential Equations". The University of Texas at Austin, USA.

2000-01: 10 hours of a docotorate course (30 hours total) "Equacions en derivades parcials i aplicacions al processament d'imatges". Universitat Pompeu Fabra, Programa de Doctorat en Informàtica i Comunicació Digital (Barcelona, Spain).

2000-01: Two 45 hours courses in "Calculus I" for first year students in Industrial Engineering. Universitat Politècnica de Catalunya (Barcelona, Spain).

1999-00 and 2000-01: 45 hours course in "Complex Analysis" for fourth year students in Mathematics. Universitat Politècnica de Catalunya (Barcelona, Spain).

1998-99, 1999-00, 2000-01: Several "problem session" courses in Calculus I, Calculus II, Algebra and Geometry, for first and second year students in Industrial Engineering. Universitat Politècnica de Catalunya (Barcelona, Spain).

1998-99, 1999-00, 2000-01, 2003-04, 2005-06, 2006-07, 2007-08: 30 hours doctorate course in "Functional Analysis and Applications". Universitat Politècnica de Catalunya (Barcelona, Spain).

1989-90: 45 hours course in "Probability and Statistics" for first year students in Chemistry. Universitat de Barcelona (Spain).