

Maria J. ESTEBAN

Born at Alonsotegi (Basque Country) on April 6th, 1956.

CEREMADE

University of Paris-Dauphine
Place du Maréchal de Lattre de Tassigny
75775 PARIS CEDEX 16 (France)
Tél : + 33 1 44 05 46 79
fax : +33 1 44 05 45 99
esteban@ceremade.dauphine.fr
<http://www.ceremade.dauphine.fr/~esteban>

Present and previous positions :

- Emerita senior researcher at CNRS from April 2023.
- CNRS Senior researcher (directrice de recherche) of *classe exceptionnelle* between 2011 and 2023 (First class director between 2002 and 2011).
- CNRS Senior researcher (directrice de recherche) since October 1991.
- CNRS Junior researcher (chargée de recherche) from October 1981 to September 1991.

Studies and doctoral degrees :

- 1978** : Spanish "Licenciatura de Matemáticas", (M.A. Level). University of Bilbao.
- 1979** : French D.E.A. in Numerical Analysis, University Pierre et Marie Curie, Paris.
- 1981** : French Doctorat of 3è cycle at the University P. et M. Curie, Paris.
- 1987** : "Doctorat d'Etat" at the University P. et M. Curie, Paris.

Awards and distinctions :

- 2022 : Fellow du Conseil international de la Science (ISC).
- 2022 : Corresponding member abroad of the Austrian Academy of Sciences.
- 2021 : Foreign member of the Royal Spanish Academy of Sciences.
- 2021 : Blaise Pascal Medal of the European Academy of Sciences (EURASC).
- 2019 : Jacques-Louis Lions Prize (French Academy of Sciences).
- 2019 : Member of the Academia Europaea.
- 2019 : SIAM Prize for distinguished service to the Profession.
- 2019 : Honorary graduate of Heriot-Watt University (Edinburgh, UK).
- 2018 : Honorary member of the London Mathematical Society.
- 2018 : Invited speaker at ICM 2018 (Rio de Janeiro).
- 2017 : Corresponding Member of *Academia Cearense de Matemática*.
- 2017 : Member of the European Academy of Sciences (EURASC).
- 2017 : Honorary Degree, University of Valencia.
- 2017 : CAF-Elhuyar "Merezimendu saria" (Merrit Prize).
- 2016 : Honorary Degree, University of the Basque Country.
- 2016 : SIAM Fellow.
- 2015 : Member of Jakiunde, Basque Academy of Sciences, Arts and Letters.
- 2015 : Mary Cartwright Lecture (LMS) 2015.
- 2015 : Honorary member of RSME (Real Sociedad Matemática Española).
- 2013-14 : Eisele Stiftung Fellow.
- 2012 : Chevalière de l'Ordre National du Mérite (Knight of the Merrit National Order).

2008 : Conference 'Ladyzhenskaya' at Leipzig University.

2008 : Invited speaker at the European Congress of Mathematics, Amsterdam.

2003 : Plenary speaker at the International Congress of Mathematics Physics (Lisbonne).

Administration and management activities and responsibilities (current or recent) :

2023 - 2027 : Member of the EMS Press Scientific Advisory Board.

2023 - 2026 : Member of the Scientific Advisory Board of the Oberwolfach Mathematisches Forschungsinstitut.

2022 - : Chair of the ICMS Board (Edinburgh, UK).

2022-2023 : Member of the "Nominating Committee" of SIAM (Society for Industrial and Applied Mathematics).

2021 - : Member of the Scientific Board of the Ile de France Region.

2021 - : Member of the "Comité de prospective scientifique" of Sorbonne Université.

2020- : Member of the Scientific Advisory Board of the MATH+, the Berlin Mathematics Research Center.

2020 - 2021 : Member of the Scientific Advisory Board of the *Banff International Research Station* (Canada).

2019 : Participation in the creation of the Standing Committee for Gender Equality in Science (whose members are international unions affiliated with the International Science Council).

2019 - 2022 : Member of Scientific (and Program) Committee of the 'Sirius Mathematical Centre', Sochi, Russia.

2019 - 2021 : Past-president of ICIAM (member of its executive committee).

2019 - : Chair of the ISC committee (International Science Council) of ICIAM.

2015-19 : President of ICIAM (International Council for Industrial and Applied Mathematics). President-elect and member and of the executive committee between 2013 and 2015.

2016 - 2023 : Member of the Scientific Board of the City of Paris.

2013 - : Member of the Scientific Board of Institute for Science and Technology, IST-Austria.

2012 - 2021 : President of the Scientific Board of the Basque Center for Applied Mathematics (BCAM), Bilbao. 2015 - : Member of the International Advisory Board of Charles University (Prague).

2017 : Member of the search committee for the director of INSMI (CNRS).

2019 - : Member of the International Scientific Committee of the *Centro de modelamiento matemático* (CMM), Santiago, Chile.

2018 : Member of the French delegation at the IMU GA (Sao Paulo).

2014 - 2018 : Member of the team in charge of the bid "ICM 2022 in Paris".

2014 - 2018 : Member of the Advisory Board of the Basque Government concerning its Science-Technology-Innovation program.

2014 - : Member of the French delegation at the IMU GA (Gyeongjou).

2014 - 2018 : Member of the Scientific Board of CNRS.

2013 - 2016 : Founder and member of the Board of EU-MATHS-IN.

2013 : Chair of the search committees for the directors of INSMI (CNRS) and AMIES (French agency for industrial mathematics).

Participation in evaluation, expert and hiring committees (current or recent) :

2022 : Evaluation for ICREA, the Catalan research agency.

2021-2022 : Member of the DFG panel (Allemagne) for a CRC network proposal in mathematical physics (2021-2022).

2021 : Member of the search committee for the next president of ISTA (Institut of Science and Technology, Austria).

2021 : Member of the jury of the research projects funded by the Fondation Serrapilheira (Brazil).
 2020 : Jury for the endowed chair professors at Indian Institute of Science, Bangalore, India.
 2018-2019 : President of the scientific program committee of the 8th *European Congress of Mathematics (8ECM)*.
 2019 : Member of the evaluation committee of the Dublin Institute for Advanced Studies (Ireland).
 2019 : Member of the evaluation panel of Natural Sciences in Helsinki University.
 2018-2019 : Chair of the program committee for the 8th European Congress of Mathematics (8ECM).
 2018 : Chair of the search committee for the next director of BCAM (Bilbao).
 2017 : Jury for the endowed chair professors at Indian Institute of Science, Bangalore, India.
 2017 : Member of the jury for the Italian program of excellence centers.
 2017 : SIMAI Young researcher Prize.
 2017 : Evaluation ICREA applications (Catalonia).
 2017, 2015 : Evaluation of several centers for the Severo Ochoa and Maria de Maeztu Spanish excellence programs.
 2014 : President of the ERC (European Research Council) PE1 panel (Advanced grants).
 2012, 2010, 2008 : Member of the ERC (European Research Council) PE1 panel (Advanced grants).
 2013-15 : Member of the Advisory Committee of the Faculty of Mathematics, University of Vienne.
 2013 : Member of the evaluation committee of the Einstein Center in Mathematics in Berlin.
 2013 : Member of the evaluation committee of the Norwegian Research Agency.
 2012-2013 : Member of the "Mathematics and Computer Science" Committee of the ANVUR evaluation of the Italian research.
 2010 : Member of the evaluation committee of Swedish Mathematics between 2002 and 2006.
 2007-2010 : Member of the programme committee of the ECOS-Nord French-Central American scientific exchanges.
 Member of recruiting committees in Mathematics and Mathematical Physics at KTH (Stockholm), University of Oslo, University of Trondheim (2010), Ikerbasque (Bilbao) in 2009, Ecole Polytechnique (Applied Mathematics) (since 2010), University of Aalborg (Denemark) (2012), University of Gotheborg (2017) and University of Munich (2017).

Editorial work (current or recent) :

- Until March 2022, co-editor in chief (with E. Séré) of the *Annales de l'Institut Henri Poincaré - Analyse non-linéaire*.
- Member of the editorial boards of *NoDeA*, of the *Journal de l'Ecole Polytechnique- Mathématiques*, of the *Bulletin of the Brazilian Mathematical Society*, *Revista de la R.A.C.*, *ICIAM Dianoia*, *MADDMaths* and of the SEMA Journal.
- Referee for various mathematical journals (Communications in Partial Differential Equations, Transactions of the AMS, Calculus of Variations, Inventiones Math., Acta Math., Annales de l'Institut Henri Poincaré, Journal of Differential Equations, Nonlinear Analysis T.M.A., Communications on Pure and Applied mathematics, Journal des Mathématiques pures et appliquées, Applicable Analysis, Annales de l'Institut Fourier, Zeitschrift, Applicable Analysis, Nonlinearity, Archive Rat. Mech. Anal., J. Func. Anal., J. Math. Physics, J. Phys. A, etc.)

Popular science, general audience activities, round tables and other conferences (current or recent) :

- Public lecture about the impact of mathematics in our societies for the science students at the University of the Basque Country (Bilbao, April 2023).
- Opening speech of the 2022 General Assembly of APMEP. Jonzac, October 2022.
- Public conference about the applications of mathematics (ENS de Bretagne à Rennes, October 2021).

- Conference for high school students in Bilbao, on the applications of mathematics (December 2021).
- Participation in the movie/documentary “La matemàtica de les coses”, Apunt TV, Spain.
- Member of the publishing committee of the mathematics outreach website “Florilège des mathématiques” (since 2016).
- Debate about Women and Science, organized by the French Parliament. June 2018.
- Participation in the round table “Mathematicians and planetary sciences”, ICM 2018, Rio de Janeiro.
- Participation at the Round table ”Mathematics and planetary challenges”, ICM 2018, Rio de Janeiro, August 2018.
- Video interview ICM TV, Rio de Janeiro, August 2018.
- Video interviews LMS and ”Plus magazine”. (<http://plus.maths.org>), Rio de Janeiro, August 2018. <https://plus.maths.org/content/interview-maria-esteban>
- Video interview Fondation Sciences mathématiques de Paris, August 2018.
- Articles in the newsletters *MATAPLI* and *La Gazette des mathématiciens*.
- Round table discussion about the origine of ideas. ENS Paris, 2019.
- Long interview at the *La Recherche* magazine.

Scientific or program committees of conferences, schools and scientific events (current or recent) :

- 2018-2019 : Chair of the program committee for the 8th European Congress of Mathematics (8ECM).
- Member of the program committee of the conference ”Analysis of relativistic and non-relativistic models in Quantum Mechanics”, Roma (Italy), 14-18 April 2014.
- Member of the program committee of the conferences Second Caucasian Mathematics Conference 2017, RSME 2017, ICMP 2015, 2013 SIAM conference on materials’ science, ICIAM 2011, CEDYA 2009, CEDYA 2011, QMath11 (Hradec Kralove, Czech Republic, 2010), Abel Symposium 2010, 10th “Forum des jeunes mathématiciennes” (femmes et maths - Mission pour la place des femmes du CNRS), of the ”Euskadi-Kyushu Workshop on Applied Mathematics” (Euskadi-Kyushu 2011), of the “Forum des jeunes mathématiciennes” 2010, EMS-RSME joint Mathematical Weekend in 2011 (Bilbao) and of the International Conference of Women mathematicians (Seoul, 2014).

Organization of conferences, schools and scientific events (current recent) :

- Co-organiser of the IPAM long program “Advancing Quantum Mechanics with Mathematics and Statistics” , IPAM, Los Angeles, March 7 - June 10, 2022
- ”ICIAM 2014 Scientific Workshop” (Columbus, Ohio, USA, 15-16 May 2014).
- “Consensus Conference” of the Forward Look de l’ESF “Mathematics and industry”, Madrid, Avril 2010.
- Workshop ”Optimal Constants in the Theory of Sobolev Spaces and PDEs”, Oberwolfach (Allemagne), February 2010 (with B. Kawohl and A. Cianchi).
- Mini-symposium SIMAI-SMAI on the modelling of cancer in the Euroscience Open Forum (ESOF 2010), Torino, 2010 (with N. Bellomo).
- Member of the organizing committee of the Transfer and Industrial Mathematics Day of RSME - Santiago de Compostela, Spain.
- Thematic program “Spectral theory of relativistic operators” at the Newton Institute, Cambridge, 2012 (with M. Brown, K. Schmidt and H. Siedentop).
- Thematic quarter “Variational and spectral methods in Quantum Mechanics” at the Institut Henri Poincaré, Paris, 2013 (with M. Lewin).
- Co-organization of the workshops : “Numerical challenges in relativistic quantum mechanics”, “Variational and spectral methods in quantum field theory” , “Mathematical challenges in Quantum Electrodynamics” (April 2013).

- Co-organization of the workshops : “The mathematics of interacting quantum systems in a random environment”, “Mathematical properties of large quantum systems” and “Mathematical and numerical challenges in quantum chemistry” (June 2013).
- Co-organization of a summerschool at CIRM (Marseille) on “Variational & Spectral Methods in Quantum Mechanics”, September 2013.

Prize committees (current or recent) :

- 2021 : SBM Prize of the Sociedade Brasileira de Matematica.
- 2021 : Stevin Prize (Netherlands)
- 2017-2021 : SIAM Reid Prize.
- 2017-19 : Member of the SIAM Fellows selection committee.
- 2017 : SIMAI (Italy) young researcher Prize.
- 2016, 2014 : Euskadi Prize.
- 2014 and 2015 : Abel Prize.
- 2015, 2014 : AWM-SIAM Sonia Kovalevsky Lecture Prize.
- 2013 : ”La recherche” Prize.
- 2012 : European Prizes of the EMS.
- 2009 : SEMA Prize for a young researcher.
- 2009, 2010 : Audin Prize.
- 2010 : Rubio de Francia Prize (RSME).

Participation in funded projects (current or recent) :

- 2017-2021 : ANR MolQED.
- 2010-2014 : ANR NONAP.
- 2009-2012 : MathAmSud project “Nonlinear Analysis and Partial Differential Equations” (NAPDE), with main groups at University Paris-Dauphine, INRIA, Santiago (Chile), IMPA (Brésil) and Buenos Aires (Argentina) .
- 2004-2009 : ANR ACCQUAREL.
- 2002-2005 : ECOS-Sud projects “EQUATIONS AUX DERIVEES PARTIELLES DE LA PHYSIQUE MATHEMATIQUE” (Contract ECOS no. C02E0) et “LIMITES SINGULIERES ET EQUATIONS ELLIPTIQUES” (Contract ECOS no. C02E08).

Invited lectures in international conferences and other events :

- July 1981 : ”University Basque d’été (U.E.U.)”. Pamplona-Iruinea, Spain.
- December 1981 : ”Colloque franco-espagnol sur les équations aux dérivées partielles non-linéaires”. University Complutense, Madrid.
- July 1983 : ”Nonlinear functional analysis and its applications”. University of Berkeley.
- December 1985 : ”Second Colloque franco-espagnol sur les équations aux dérivées partielles non-linéaires”. University Paris-Dauphine.
- September 1986 : ”Nonlinear variational problems”. Organisé par l’University of Pise at Elba Island.
- December 1986 : ”Journées d’analyse non linéaire de Villetaneuse”. University of Paris Nord.
- July 1987 : ”Nonlinear fields”. Bielefeld.
- January 1988 : ”College on variational problems”. International Center of Theoretical Physics, Trieste.
- June 1988 : ”Problèmes variationnels”. Paris.
- November 1989 : ”Seminario de otoño de E.D.P. no lineales”. University Autonoma of Madrid.
- December 1989 : ”Problèmes variationnels”. University of Metz.

May 1989 : Rencontre franco-Italienne sur "Equations aux dérivées partielles non linéaires", University of Rome 1.

June 1991 : First European Conference on Elliptic and Parabolic Equations, Pont-à-Mousson.

October 1992 : Second French-Taiwanese conference on Nonlinear PDEs and Applications, Paris.

April 1993 : Paris-Pisa-Roma PDE meeting, Paris.

September 1993 : Exotic applications for kinetic equations. Kaiserslautern, Germany.

December 1993 : AMS-SMM joint meeting, Merida, Mexico.

March 1994 : The UAB-GT International conference on Differential equations and Mathematical Physics, Birmingham, Alabama.

June et juillet 1994 : French-Indian conference on Partial Differential Equations, Bangalore and Pondicherry, India.

June 1995 : PDE Workshop, Annual meeting of the Canadian math society, Toronto.

August 1995 : Nonlinear PDE and Geometry. I.C.T.P. Trieste.

July 1996 : Recent Developments in Calculus of Variations. Oberwolfach

September 1996 : Second Brazilian conference on PDE and Numerical Analysis, Rio de Janeiro.

December 1996 : Problèmes d'EDP non-linéaires et Théorie de la bifurcation. Oberwolfach

March 1997 : 1997 GATECH-UAB International conference on differential equations and mathematical physics. Atlanta.

November 1997 : Second European meeting on Partial differential equations and applications in Quantum Mechanics. Regensburg.

November 1997 : Journée "Equations aux dérivées partielles non linéaires et applications à l'environnement", Toulouse.

February 1998 : Workshop on Variational methods and Differential equations of Mathematical Physics, Pisa.

June 1998 : Conference on Nonlinear Equations and Continuum Mechanics, Minneapolis.

October 1998 : Conference on Quantum Mechanics and PDE, Regensburg, Germany.

January 1999 : International school in P.D.E. (Ecole d'été CIMPA). Temuco, Chili.

February 1999 : Topological and Variational Methods in Nonlinear Analysis, Cuernavaca, Mexico.

March 1999 : 1999 GATECH-UAB International conference on differential equations and mathematical physics. Birmingham, USA.

June 1999 : Effets relativistes dans la Chimie et la Physique des éléments lourds. Kassel, Germany.

July 1999 : ICIAM 99 (The Fourth International Congress on Industrial and Applied Mathematics), Edinburgh, Grande-Bretagne.

August 1999 : Large Coulomb Systems. Oberwolfach, Germany.

October 1999 : Calculus of Variations and Partial Differential Equations, Elbea Island, Italy.

January 2000 : USA-Chili Workshop on nonlinear analysis, Viña del Mar, Chili.

February 2000 : Variational and Topological Methods in the Study of Nonlinear Phenomena, Pisa, Italy.

September 2000 : Analysis and spectral theory. "Geometry, Analysis and Mathematical Physics" ESF Conference Series, San Feliu de Guixols, Spain.

November 2000 : Journées d'E.D.P. non-linéaires, Lyon.

July 2001 : Workshop in Nonlinear differential equations, Bergamo, Italy.

August 2001 : Variational methods and PDE, Vancouver, Canada.

September 2001 : Asymptotic Methods and Applications in Kinetic and Quantum-Kinetic Theory, Granada, Spain.

Décembre 2001 : French-Chilean Conference on Applied Mathematics, Santiago de Chile.

March 2002 : Swedish Mathematical Society Day. University of Umeaa.

March 2002 : Journées EDP d'Orléans.

April 2002 : Variational and viscosity methods in partial Differential equations, Austin, USA.

May 2002 : Workshop on nonlinear models and Analysis, Vienna.

August 2002 : Conférence in nonlinear analysis, Wuhan, China.

August 2002 : ICM2002, Satellite Conference on the Nonlinear Functional Analysis, Taiyuan, China.

September 2002 : Spectral analysis and PDE. Stockholm.

June 2003 : First joint AMS-RMSE meeting, Sevilla.

July 2003 : Plenary talk in the international Congress of Mathematical Physics (ICMP2003), Lisbon.

September 2003 : New Challenges in Applied Mathematics, Castro Urdiales, Spain.

December 2003 : Multiscale problems in quantum mechanics and averaging techniques, Leipzig, Germany.

January 2004 : Ecole EDF-CEA-INRIA sur "Nonlinear Processes in Molecules and Lasers. Theory, Numerics and Applications"

February 2004 : 'Variational Methods and the Nonlinear Schrödinger Equation'. Bernoulli Center, Lausanne, Switzerland.

May 2004 : BIRS Workshop on 'New developments on variational methods and their applications'. Banff, Canada.

June 2004 : WEDP, Campinas, Brazil.

December 2004 : International Workshop on Nonlinear PDEs – Teheran, Iran.

January 2005 : Symposium on Variational Methods and Nonlinear Differential Equations, Rome (Italy).

January 2005 : Fourth Indo-French workshop on Partial Differential Equations and Applications, Bangalore (India).

February 2005 : "Two weeks in Global Analysis", Pisa (Italy).

April 2005 : Workshop on Spectral Theory, Warwick (UK).

April 2005 : Variational methods in nonlinear analysis, Erice (Italy).

June 2005 : Classics in PDE, Stockholm (Sweden).

June 2005 : Global Methods for Nonlinear Differential Equations, Lausanne (Switzerland).

July 2005 : "Taiwan-France Joint Conference on Nonlinear Partial Differential Equations and Related Topics", Taipei (Taiwan).

August 2005 : High dimensional PDEs, Montréal (Quebec).

September 2005 : EMS-SCM Joint Mathematical Weekend, Barcelona.

December 2005 : Topological and variational methods in PDE, Guanajuato (Mexico).

March 2006 : "Analysis & Quantum" 5th Network meeting, Vienna.

June 2006 : "Current trends in Nonlinear Analysis", Otranto (Italy).

July 2006 : First Joint Meeting SIMAI-SMAI-SMF-UMI on "Mathematics and its Applications" July 2006 : VII Girona Seminar "On the nature of the chemical bond"

September 2006 : Workshop on "Nonlinear Differential Equations", Como (Italy)

September 2006 : "Mathematical problems for kinetic equations and applications", Cartagena de Indias (Colombia)

October 2006 : Organization (avec C. Le Bris and G. Scuseria) du workshop "Mathematical and Numerical Aspects of Quantum Chemistry Problems", Oberwolfach (Germany).

March 2007 : "Modélisation, asymptotique, dynamique non-linéaire", Journées du GDR CNRS 2948.

July 2007 : "Des equations aux derivees partielles au calcul scientifique", Congrès en l'honneur de Luc Tartar, Paris.

July 2007 : ICIAM 2007, Minisymposium 'Computational issues in relativistic quantum chemistry', Zürich.

July 2007 : "VII Conferencia de las Américas en Ecuaciones Diferenciales y Análisis no lineal", Cartagena de Indias, Colombia.

September 2007 : "10th Quantum Mathematics International Conference", Moeciu (Rumania).

Décembre 2007 : "Spectral Theory and Partial Differential Equations" Vienna (Autria).

February 2008 : "Ecuaciones en Derivadas Parciales y Aplicaciones", La Havana (Cuba).

March 2008 : "Variational Methods for Nonlinear PDE and their Applications", Haifa (Israel).

May 2008 : Colloque en l'honneur de Mikel Bilbao, Bilbao.

June 2008 : 2ème Congrès franco-canadien de Mathématiques (session EDP), Montreal (Canada).

June 2008 : Geometric Analysis, Elasticity and PDE, Edinburgh, Grande Bretagne.

June 2008 : Equations de la Mécanique des fluides. Analyse, analyse spectrale, méthodes numériques, Paris.

July 2008 : Spectral and Scattering Theory for Quantum Magnetic Systems, CIRM, Luminy.

July 2008 : 5ème Congrès Européen de Mathématiques , minisymposium "théorie spectrale" , Amsterdam (The Netherlands).

August 2008 : Workshop on Nonlinear Waves and Hyperbolic Equations, Oslo, Norway.

December 2008 : Congrès franco-indien de mathématiques, Chennai, India.

January 2009 : Ecole CIMPA "Développements récents en théorie des EDP elliptiques", Alexandrie, Egypt.

September 2009 : Mathematics of Complex Quantum Systems, Oberwolfach, Germany.

September 2009 : Equations aux Dérivées Partielles et Physique Mathématique. Colloque en l'honneur de Bernard Helffer. Orsay.

September 2009 : International Conference Variational and Topological Methods in Nonlinear Analysis. San Antonio, U.S.A.

October 2009 : "Loss of compactness in nonlinear problems : new trends and applications", CIRM, Luminy, France.

October 2009 : "VIII Americas Conference on Differential Equations", Veracruz, Mexico.

February 2010 : "Complex Quantum Systems", Singapore National University, Singapour.

July 2010 : 2nd St.Petersburg Conference in Spectral Theory, dedicated to the memory of M.Sh.Birman. St. Petersburg, Russie.

September-October 2010 : The Abel Symposium 2010, Oslo, Norway.

October 2010 : Workshop on Variational Methods in Nonlinear Differential Equations, Oaxaca, Mexico.

January 2011 : Nonlinear Partial Differential Equations, Valparaiso, Chili.

January 2011 : Density Functional Theory : Fundamentals and Applications in Condensed Matter Physics, Banff (round table coordination).

April 2011 : Jornada Científica RSME-RSEQ, Matemática y Química, Sevilla, Spain.

June 2011 : Fronts et EDP non linéaires, Paris

- July 2011 : RSME Conference on Industrial Mathematics and technological transfer, Santiago de Compostela
- September 2011 : Workshop to mark the 80th anniversary of M. Solomyak, Londres
- October 2011 : Plenary talk at the EMS-RSME joint Mathematical Weekend in Bilbao, 7-9 octobre, 2011
- November 2011 : Workshop on Nonlinear Differential Equations, Pienza (Italy).
- January 2012 : Nonlinear functional analysis, Chennai, India.
- April 2012 : Spectral days 2012, Munich, Germany.
- May 2012 : "International Conference on Partial Differential Equations : Theory, Control and Approximation", Shanghai, China.
- June 2012 : "Workshop on Mathematics and Numerical Analysis of Electronic Structure Models", Beijing, China.
- July 2012 : "Advances in Mathematical Analysis of Partial Differential Equations", Institut Mittag-Leffler, Stockholm, Sweden.
- May 2013, "Worskhop in industrial and applied mathematics", Pekin, China.
- May 2013 : "Concentration phenomena and compactness issues in nonlinear PDE", IML, Sweden.
- July 2013 : "Analysis and PDE", Vancouver (Canada).
- September 2013 : International Conference on Nonlinear and Multiscale Partial Differential Equations : Theory, Numerics and Applications, Shanghai, Chine.
- October 2013 : EDP-Normandie 2013, Caen, France.
- January 2014 : Keynote speaker at the opening of the Mathematical Year 2014.
- February 2014 : ICMC Summer meeting on differential equations, Sao Carlos (Brazil).
- July 2014 : Effective equations in Mathematical Physics, Institut Mittag-Leffler (Sweden).
- May 2015 : "Numerical Algebra, Matrix Theory, Differential-Algebraic Equations, and Control Theory", TU Berlin, Berlin (Germany).
- June 2015 : Nonlinear Meeting in Turin 2015", Turin, Italy.
- June 2015 : "Méthodes variationnelles et topologiques dans l'étude de problèmes non linéaires", University of Besançon, France.
- June 2015 : "An afternoon of Mathematics at Tor Vergata with Louis Nirenberg", University of Tor Vergata, Rome, Italy.
- July 2015 : "Science in Georgie, perspectives of development and the role of the Humboldt foundation", Tbilissi, Georgia.
- July 2015 : "IWOTA 2015", Tbilissi, Georgia.
- October 2015 : "Complex Analysis and Differential Equations", St Petersburg (Russia).
- December 2015 : First Joint meeting of Sociedade brasileira de Matematica and RSME (Espagne). Fortaleza (Brazil).
- January 2016 : "International Conference on the occasion of Silver Jubilee of the Indian Society of Industrial & Applied Mathematics (ISIAM)". Greater Noida, Inde.
- March 2016 : "7th Nordic Congress of mathematicians", Stockholm, Suède.
- June 2016 : "Achievements and Perspectives in Nonlinear Analysis. A tribute to Donato Fortunato" Bari, Italy.
- June 2016 : "Nonlinear Partial Differential Equations and Applications", Paris.
- July 2016 : "Non-linear PDEs, mathematical physics, and stochastic analysis", Trondheim (Norway).

August 2016 : Mathematical Analysis for Stability in Nonlinear Dynamics, Sapporo (Japan).

September 2016 : Interactions between Partial Differential Equations & Functional Inequalities, Stockholm (Sweden).

December 2016 : Nonlinear Partial Differential Equations and Mathematical Physics, Sanya (China).

December 2016 : Analysis, Probability, and their Applications. Qhyn Nhon (Vietnam).

May 2017 : TWSIAM annual meeting, Taipei (Taiwan)

May 2017 : Meeting of the Catalan, Spanish and Swedish societies, Umea (Sweden).

June 2017 : CEDYA 2017, Cartagena (Spain)

July 2017 : Summer School "Various aspects of mathematical physics", Saint Petersburg (Russia).

September 2017 : X Workshop on Nonlinear Differential Equations, Brasilia (Brazil).

January 2018 : Public lecture on the applications of Mathematics to the development on new technologies. University of Bombay.

January 2018 : International Conference in Mathematics "Celebrating Centenary Year of Professor S.S. Shrikhande", Mumbai (India).

Avril 2018 : "Entropies, the Geometry of Nonlinear Flows, and their Applications" Banff, Canada.

May 2018 : "Mathematics and Science : In Honour of Sir John Ball", Oxford, UK.

May 2018 : Nonlinear analysis and the physical and biological sciences (in honour of Jack Carr), Edinburgh, UK.

July 2018 : World meeting of women in mathematics, Rio de Janeiro, Brazil.

August 2018 : Invited talk at ICM 2018 (International congress of mathematicians), Rio de Janeiro, Brasil.

September 2018 : Plenary talk at the UMI-SIMAI-PTM Meeting 2018. Wroclaw, Poland.

September 2018 : Session talk (variational problems and nonlinear PDEs) at the UMI-SIMAI-PTM Meeting 2018. Wroclaw, Poland.

October-November 2018 : PDEs and Geometric Measure Theory. Zürich, Switzerland.

December 2018 : PDEs in Valparaiso, Valparaiso, Chile.

December 2018 : Results in Contemporary Mathematical Physics, Santiago de Chile, Chile.

March 2019 : Many-body theory, effective equations & PDE's, Institut Mittag-Leffler, Sweden.

May 2019 : Analytic-Geometric Inequalities and Related Topics, Institut Mittag-Leffler, Sweden.

June 2019 : Mini-course "Functional inequalities, flows, symmetry and symmetry breaking", 4 heures, Heriott-Watt University, UK (june 2019). May 2019 : Analytic-Geometric Inequalities and Related Topics, Institut Mittag-Leffler, Sweden.

July 2019 : 30 years of SIMAI, Milan, Italy.

July 2019 : "Dirac Hamiltonians with critical singularities", ICIAM 2019 congress.

August 2019 : "27th International Conference on Finite or Infinite Dimensional Complex Analysis and Applications" (ICFIDCAA), Krasnoyarsk (Russia).

Septembre 2019 : "Advances and Challenges in Nonlinear Analysis and Beyond!", Bari (Italy).

November 2019 : "Modélisation, Analyse et Simulation", Sorbonne Université (Paris).

January 2020 : Journée des 50 ans du CEREMADE, Université Paris-Dauphine (Paris).

August 2020 : Ari Laptev's 70th birthday conference. Online.

October 2021 : "Nonlinear Elliptic and Parabolic Partial Differential Equations", Levico Terme, Italy.

April 2022 : "Model reduction in Quantum Mechanics". IPAM, Los Angeles (USA).

October 2022 : Opening address at the GA of the APMEP association.

- June 2023 : “Correlations in Mathematical Quantum Mechanics”, Copenhagen, Denmark.
- August 2023 : Talk in the ICIAM 2023 mini-symposium “Various Methods for the Analysis of PDEs”, Tokyo, Japan.
- August 2023 : Talk in the ICIAM 2023 mini-symposium “Gender Equality in Mathematics : A Global Perspective”, Tokyo, Japan.
- August 2023 : Talk in the “Forum ”Math-for-Industry” 2023 - MfI 2.0 -”, (online). Kiushu, Japan.
- September 2023 : ”Harmonic Analysis and Differential Equations : new questions and challenges”, Bilbao, Spain.
- September 2023 : Analysis & beyond : a conference in honour of Luigi Ambrosio ?s 60th birthday, Zürich, Switzerland.
- November 2023 : Presentation during the celebration of the tenth anniversary of the EU-MATHS-IN Foundation.

Seminar and colloquium talks :

- 1981 : E.N.S. (Paris).
- 1984 : IMPA (Rio de Janeiro), LCC (Rio de Janeiro), University of Brasilia (Brasilia), MRC (Madison), University of Michigan (Ann Arbor).
- 1985 : University of Rome I, MRC (Madison), ENS (Paris), University Autonoma of Madrid, Collège de France.
- 1986 : CMAF (Lisbon), University of Naples.
- 1987 : University of the Basque Country (Bilbao), University Autonoma of Barcelona, University of Iles Balears (Palma de Majorque), University Paris VI.
- 1988 : ICTP (Trieste), University of Orléans, University of Rome I, CMAF (Lisbon).
- 1989 : University of California at Santa Barbara, University du Wisconsin (Madison), Brown University (Providence), Courant Institute (New York).
- 1990 : Tata Institute (Bangalore), Ecole Polytechnique (Palaiseau), Collège de France, University of Nancy, Heriot-Watt University (Edinburgh), University of Paris-Sud, CMAF (Lisbon). Faculté de Sciences de Tunis, Ecole Polytechnique de Lausanne.
- 1991 : E. N. S. (Paris), University of Paris-Sud, University of the Basque Country (Bilbao), University Complutense of Madrid, University of Grenade, University of Bonn, Carnegie-Mellon University (Pittsburgh), Brown University (Providence), Courant Institute (New York).
- 1992 : University of the Basque Country, Bilbao. Academia Sinica, Taipei, Taiwan. University Chiao Tung, Hsinchu, Taiwan. University Cheng Kung, Tainan, Taiwan. University Tsing Hua, Hsinchu, Taiwan. Heriot-Watt University, Edinburgh. IMAG, University of Grenoble 2, Grenoble. CMAF, Lisbon. University of Palma, Spain.
- 1993 : University Paul Sabatier, Toulouse. Ecole Normale Supérieure de Lyon. University Paris 6. University of the Basque Country, Bilbao. University of Santa Barbara, USA. University of Minneapolis, USA. University of Madison, USA. Faculté de Sciences de Rabat, Maroc. Ecole Normale Supérieure de Cachan. Ecole Normale Supérieure, Paris.
- 1994 : University Blaise Pascal, Clermont-Ferrand. ETH Zentrum, Zürich. University of Cergy-Pontoise, France. Ecole Polytechnique, Paris. University of Bordeaux 1, University du Pays Basque (Bilbao), Princeton University, University of Naples, University Paris-Dauphine, University d’Orléans.
- 1995 : Collège de France. University of Vancouver. University of Madison-Wisconsin. Ecole Polytechnique de Lausanne.

1996 : Scuola Normale Superiore di Pise (conference series), University of Toulouse III, University of Lisbon, University of Paris-Sud, Annual congress of the 'Maths en jeans' association. University of Campinas (Brazil).

1997 : University Paris-Nord. University of Madison-Wisconsin. Courant Institute, New York.

1998 : University Paris VI. University Claude Bernard (Lyon I). Universidad del Pais Vasco. The Chinese University of Hong Kong. Ecole Normale Supérieure.

1999 : Institut Henri Poincaré, University of Sussex, University d'Oxford, University of Besançon, TU Berlin. University of Wroclaw (Pologne). University of the Beque Country (Bilbao).

2000 : University of Rennes, Technion (Haifa), University Hébraïque de Jérusalem, Polytechnic University of Barcelona. University of Pondicherry. T.I.F.R. Bangalore. University P. et M. Curie. University du Texas at Austin. Ecole Polytechnique de Lausanne, University of the Basque Country (in Physics and Mathematics).

2001 : University of Versailles, University of Grenoble (IMAG), University of Nantes, University of Mainz (Germany), University of Paris VI, Ecole Polytechnique (CMAX), University of the Basque Country, University Paris VII.

2002 : Ecole Polytechnique (Séminaire EDP, Centre de Mathématiques). University of Santa Barbara (USA), Tata Institute (Bangalore, India), University of Pondicherry (India), Académie des Sciences de China (Beijing).

2003 : Séminaire CRESPO (ENSTA et INRIA), University Paris VI, CERMICS (ENPC), UNAM (Mexico), Georgia Tech (Atlanta, US), University du Texas at Austin, Courant Institute (NYU), Ecole Normale de Lyon, CMAF (Lisbon), University of Toulouse III.

2004 : University of Strasbourg, University of Lille.

2005 : University Paris VI, Mathematical Institute (Chennai, India).

2006 : Collège de France ; University of Nantes, University of Paris-Dauphine ; KTH, Stockholm ; University of Bogota, Colombia ; University of Copenhagen.

2007 : University of Cergy-Pontoise ; Ecole Normale Supérieure de Paris ; University of Medellin (Colombia) ; CPT, Luminy.

2008 : University de Leipzig. University of Minneapolis (2).

2009 : University of Paris-Dauphine. University of Chambéry, University Paris VI, University of Franche-Comté.

2010 : University of Rennes.

2011 : Georgia Tech (Atlanta, USA), BCAM (Bilbao, Pays Basque), Uppsala (Sweden), University Paris-Dauphine, Colloquium Lorrain of Mathematics (Metz), Clermont-Ferrand.

2012 : Nice, IHES-Ecole Polytechnique, Paris-London seminar (Paris), I. Newton Institute (Cambridge, UK), Institute Mittag-Leffler (Sweden), Uppsala University (Sweden), TIFR Center Bangalore (India).

2013 : University Paris-Sud. Presentation FEM 2013 on math jobs outside France. University P. et M. Curie, Laboratoire J.-L. Lions. Institut Fourier, Grenoble. University of Rabat (Morocco).

2014 : University of Munich (Mathematical Physics seminar + Colloquium).

2015 : LMS-Mary Cartwright-Lecture-2015 (LMS, London). University of Nantes. BICMR, Peking University, China. TIFR Centre, Bangalore (India). Université de Krasnoyarsk (Russia).

2016 : UNICAMP, Campinas (Brazil). IMBM, Istanbul (Turkey). University of Vienna (Austria) (colloquium). University P. M. Curie (Paris).

2017 : NCTS Lakeside distinguished lecture, Taipei (Taiwan), University of Valencia (Spain), Chinese Academy of Sciences, Beijing.

2018 : T.I.F.R. Centre (Bombay). Joint Analysis seminar, Aachen (Germany). CMM, Universidad de Chile.

2019 : IIT Bombay (India). University Paris-Dauphine. BCAM, Bilbao (Basque Country). Universities of Ljubljana and Koper (Slovenia). Université de Lyon I (colloquium).

2020 : University La Sapienza (Rome, Italy), University Tor Vergata (Rome, Italy) (colloquium), Imperial College London (UK) (colloquium). Online Aarhus-Munich-Santiago Math-Physics seminar. Rio de Janeiro webinar on analysis and PDE. Rutgers Analysis seminar (USA). Bath, 'Asymptotics, Operators, and Functionals Seminar' (Grande Bretagne), Université Paris-Dauphine (groupe de travail ERC MDFT).

2021 : Tbilisi Analysis & PDE Seminar (Tbilisi, Georgia). ETH & University of Zurich Colloquium. Seminario RSME online.

2022 : Friday Colloquium MATH+, Berlin (Germany). Spanish Academy of Sciences, Madrid (Spain). IMSAC Distinguished Lecture (Miami, USA). Keynote presentation in the 'Advanced Innovation powered by Mathematics Platform' (AIMaP), Japan. IMSA, Miami, Distinguished lectures series (2 talks). MCQM Seminar, Naples, Italy. Analysis seminar of the EPFL Lausanne. BCAM-EHU Colloquium (Bilbao).

2023 : PDE and applied Mathematics seminar, Universidade Fluminense (Brazil). Applied Mathematics seminar, Heriot-Watt University (UK). Public lecture for science students at the University of the Basque Country (Bilbao). Colloquium talk at University of Toulouse.

2024 : Colloquium talk at CMAP, Ecole Polytechnique, Palaiseau.

Visits to other universities as invited lecturer and teacher :

1984 : I.M.P.A., Rio de Janeiro (6 months). M.R.C. et University of Wisconsin, Madison (3 months). University du Michigan, Ann Arbor (1 week).

1985 : University of Rome I (1 week). M.R.C. et University du Wisconsin, Madison (2 weeks), University Autonoma of Madrid (1 week).

1986 : C.M.A.F. , Lisbon (1 week). University of Naples (1 week).

1987 : University of the Basque Country, Bilbao (1 week). Centre de recerca, University Autonoma of Barcelona (1 month). University des Iles Baléares, Palma de Majorque (1 week). University of Rome I (1 week).

1988 : C.M.A.F., Lisbon (1 week).

1989 : University of California at Santa Barbara (3 months). Brown University, Providence (1 month). Courant Institute, New York University. (3 weeks).

1990 : Tata Institute, Bangalore (6 weeks). Heriot-Watt University, Edinburgh (1 week). CMAF, Lisbon (1 week). Faculté de Sciences de Tunis (1 week). Ecole Polytechnique de Lausanne (1 week).

1991 : University of the Basque Country (Bilbao) (1 week). University Complutense of Madrid (1 week). University of Grenade (1 week). University of Bonn (1 week). Carnegie-Mellon University, Pittsburgh (2 weeks). Brown University, Providence (2 weeks). Courant Institute, New York (1 week).

1992 : University of the Basque Country (Bilbao) (1 week). University Tsing Hua, Hsinchu, Taiwan (2 weeks). Heriot-Watt University, Edinburgh (1 week). CMAF, Lisbon (1 week). University of Palma, Spain (2 weeks)

1993 : University of Santa Barbara (1 week). University of Minneapolis (1 week). University of Madison (1 week). Faculté de Sciences de Rabat, Maroc (1 week). Universidad Autonoma of Madrid (1 week).

1994 : ETH Zentrum, Zürich (1 week). University of the Basque Country (1 week). Princeton University (1 week). Ecole polytechnique de Lausanne (1 week).

1995 : University of the Basque Country (1 week). Toronto university (2 weeks). University of Madison (1 week). University of Vancouver (1 week).

1996 : Scuola Normale Superiore di Pisa (1 week), University of Lisbon (1 week). UFRJ (Rio de Janeiro) (2 weeks).

1998 : The Chinese University of Hong Kong (1 week).

1999 : Universidad of Chili (1 week), TU Berlin (1 week). University of Wroclaw, Pologne (1 week). University of the Basque Country (1 month).

2000 : Universidad of Chili (1 week). University du Pays Basque (2 months), Polytechnic University of Barcelona (1 week), Hebraic University of Jérusalem et Technion (Haifa) (10 days). T.I.F.R. Bangalore (3 weeks).

2001 : Pacific Institute of Mathematical Sciences, Vancouver, Canada (5 weeks), University of the Basque Country (10 days).

2002 : Federal University of Rio de Janeiro (15 days), Tata Institute, India (1 month), Chinese Academy of Sciences (Beijing) (7 days), University of Wuhan, China (7 days), University of Pays Basque (8 days). University of Milan 2 (1 week).

2003 : UNAM (Mexico) (1 week). Georgia Inst. of Technology (3 weeks). University of Texas (Austin) (1 week). Courant Institute (NYU) (1 week).

2003 : Tata Institute (Bangalore) (10 days).

2005 : Tata Institute (Bangalore) and Mathematical Institute (Chennai) (10 days).

2006 : University Libanaise, Beyrouth (15 days). University du Chili (Santiago) (15 days).

2007 : Georgia Tech, Atlanta (15 days).

2008 : IMA, University of Minneapolis (2 months) ; Georgia Tech, Atlanta (15 days).

2009 : E. Schrödinger Institute, Vienna (12 days).

2012 : I. Newton Institute, Cambridge, UK (1 month) ; Institute Mittag-Leffler, Sweden (1 month) ; TIFR Center, Bangalore, India (15 days). I. Newton Institute, Cambridge, UK (1 month) ; Institute Mittag-Leffler, Sweden (1 month) ; TIFR Center, Bangalore,

2014 : Georgia Tech, Atlanta (15 days). Institut Mittag-Leffler, Sweden (15 days). University of Stuttgart, doctoral course (5 days).

2015 : BICMR, Peking University, China (1 week). Siberian Federal University (Krasnoyarsk, Russia) (1 week).

2016 : Institut Mittag-Leffler (Suède) (3 months).

2017 : National Taiwan University (Taipei) (1 week).

2019 : Institut Mittag-Leffler, Sweden (3 weeks).

2022 : Imperial College, London, UK (4 weeks).

2022 : IPAM, UCLA, USA (4 weeks).

List of mathematical publications

- [1] M. J. Esteban. "Espazio topologikoak" (en collaboration, en Basque). Udako Euskal Unibertsitatea, Iruinea, 1978.
- [2] M. J. Esteban."Neurria eta integrazioa" (en collaboration, en Basque). Udako Euskal Unibertsitatea, Iruinea, 1981.
- [3] M. J. Esteban. "Matematika Hiztegia" (en collaboration, en Basque). U.Z.E.I., 1982.

- [4] M. J. Esteban. Existence d'une infinité d'ondes solitaires pour des équations de champs non linéaires dans le plan. *Ann. Fac. Toulouse, II* (1980), p. 181-191.
- [5] M. J. Esteban et P.-L. Lions. Non-existence de solutions non-nulles pour des problèmes semi-linéaires dans des ouverts non bornés. *CRAS, Série A*, **290** (1980), p. 1083-1085.
- [6] M. J. Esteban et P.-L. Lions. Existence and non-existence results for semilinear elliptic problems in unbounded domains. *Proc. R.S. Edinburgh*, **93 A** (1982), p. 1-12.
- [7] M. J. Esteban. Compactness results and existence of many solutions of nonlinear problems in strip-like domains. Dans "Contributions to Nonlinear partial differential equations", ed. C. Bardos et al. (1983), Ed. Pitman.
- [8] M. J. Esteban et P.-L. Lions. A compactness lemma. *Nonlinear Analysis TMA*, **7(4)** (1983), p. 381-385.
- [9] M. J. Esteban. Nonlinear elliptic problems in strip-like domains. Symmetry of positive vortex rings. *Nonlinear Analysis TMA* **7(4)** (1983), p. 365-379.
- [10] M. J. Esteban. Problèmes semilinéaires dans des ouverts non bornés. Thèse 3è cycle (1981), Université Pierre et Marie Curie (Paris 6).
- [11] M. J. Esteban. Multiple solutions of semilinear elliptic problems in a ball. *J. Diff. Equations* **57(1)** (1985), p. 112-137.
- [12] M. J. Esteban. On periodic solutions of nonlinear parabolic equations. *Trans. A.M.S.* **293(1)** (1986), p. 171-189.
- [13] M. J. Esteban. A direct variational approach to Skyrme's model for meson fields. *Comm. Math. Phys.* **105** (1986), p. 571-591.
- [14] M. J. Esteban. An isoperimetric inequality in \mathbf{R}^3 . *Anal. non lin. Ann. Inst. H. Poincaré* **4(4)** (1987), p. 297-305.
- [15] M. J. Esteban. Existence of symmetric solutions for the Skyrme's problem. *Ann. Mat. Pura Appl., IV* **147** (1987), p. 187-195.
- [16] M. J. Esteban. A remark on the existence of positive periodic solutions of superlinear parabolic problems. *Proc. A. M. S.* **102(1)** (1988), p. 131-136.
- [17] M. J. Esteban. Variational approach to the existence of skyrmions. Dans "Contributions to Nonlinear Partial Differential Equations II". ed. J.I. Diaz, P.L. Lions, Pitman, 1987.
- [18] M. J. Esteban et P.-L. Lions. Γ -convergence and the concentration-compactness method for some variational problems with lack of compactness. *Ricerche di Matematica* **36(1)** (1987), p. 73-101.
- [19] M. J. Esteban et P.-L. Lions. Skyrmions and symmetry. *Asymptotic Analysis* **1** (1988), p. 187-192.
- [20] M. J. Esteban et P.-L. Lions. Stationary solutions of nonlinear Schrödinger equations with an external magnetic field. Dans "Partial Differential Equations and the Calculus of Variations", vol. 1, ed. Colombini et al., Birkhäuser 1989.
- [21] Th. Cazenave et M. J. Esteban. On the stability of stationary states for nonlinear Schrödinger equations with an external magnetic field. *Mat. Aplic. Comput.* **7(3)** (1988), p. 155-168.
- [22] M. J. Esteban. Rupture de symétrie pour des problèmes de Neumann sur-linéaires dans des ouverts extérieurs. *C.R.A.S.* **308**, série I (1989), p. 281-286.
- [23] M. J. Esteban. A new setting for Skyrme's Problem. Dans "Progress in Nonlinear Differential Equations and Their Applications", vol. 4. Ed. Berestycki et al., Birkhäuser 1990.
- [24] V. Coti Zelati et M. J. Esteban. Symmetry breaking and multiple solutions for a Neumann problem in an exterior domain. *Proc. Roy. Soc. Edinburgh* **116A** (1990), p. 327-339. Ê
- [25] M. J. Esteban et B. Perthame. Solutions globales de l'équation d'Enskog modifiée avec collisions élastiques ou inélastiques. *C.R.A.S* **309**, série I (1989), p. 897-902. Ê
- [26] M. J. Esteban. Nonsymmetric ground states of symmetric variational problems. *Comm. Pure Appl. Math.* **44** (1991), p. 259-274.
- [27] M. J. Esteban et B. Perthame. On the modified Enskog equation with elastic and inelastic collisions. Spin models. *Anal. nonlinéaire, Ann. Inst. H. Poincaré* **8(3-4)** (1991), p. 289-308.

- [28] M. J. Esteban. About the symmetry of positive solutions of nonlinear elliptic problems in symmetric domains. Dans "Progress in partial differential equations : the Metz surveys", ed. Chipot et al., Longman 1991. Ê
- [29] M. J. Esteban et S. Müller. Sobolev maps with integer degree and applications to Skyrme's problem. Proc. Roy. Soc. London **A436** (1992), p. 197-201.
- [30] H. Berestycki, J.-P. Dias, M. J. Esteban et M. Figueira. Eigenvalue problems for some nonlinear Wheeler-Dewitt operators). J. Math. Pures Appl. **72** (1993), p. 493-515.
- [31] M. J. Esteban et W. Strauss. Nonlinear bound states outside an insulated sphere. Comm. PDE **19(1-2)** (1994), p. 177-197.
- [32] H. Berestycki et M. J. Esteban. Sur la structure des solutions pour un problème elliptique dégénéré. C.R.A.S. **315**, série I (1992), p. 1375-1380.
- [33] D. Errate, M. J. Esteban et Y. Maday. Couplage fluide-structure. Un modèle simplifié en dimension 1. C.R.A.S. **318**, série I (1994), p. 275-281.
- [34] H. Berestycki et M. J. Esteban. Existence and bifurcation of solutions for an elliptic degenerate problem. J. Diff. Eq. **134(1)** (1997), p. 1-25.
- [35] M. J. Esteban et E. Séré. Stationary states of the nonlinear Dirac equation : a variational approach. Comm. Math. Phys. **171** (1995), p. 323-350.
- [36] M. J. Esteban et E. Séré. Existence de solutions stationnaires pour l'équation de Dirac non linéaire et le système de Dirac-Poisson. C.R.A.S. **319**, série I (1994), p. 1213-1218.
- [37] M. J. Esteban et M. Ramaswamy. Nonexistence result for positive solutions of nonlinear elliptic generate problems. Nonlinear Analysis T.M.A. **26(4)** (1996), p. 835-843.
- [38] M. J. Esteban, V. Georgiev et E. Séré. Stationnary solutions of the Maxwell-Dirac and the Klein-Gordon-Dirac equations. Cal. Var. **4** (1996), p. 265-281.
- [39] N. Bellomo, M. J. Esteban et M. Lachowicz. Kinetic equations with dissipative collisions. Appl. Math. Letters **8(5)**(1995), p. 47-52.
- [40] M. J. Esteban. Quelques exemples de travaux de recherche en mathématiques appliquées. Dans *Maths en jeans*. Actes colloque "Maths en jeans" 1996.
- [41] M. J. Esteban et E. Séré. Existence and multiplicity of solutions for linear and nonlinear Dirac problems. In *Partial Differential Equations and Their Applications*. P. C. Greiner, V. Ivrii, L. A. Seco, and C. Sulem editors, AMS, 1997.
- [42] M. J. Esteban. Ebazpen egonkorrak Maxwell-Dirac-en ekuaziotarako. Ekaia, 1995.
- [43] M. J. Esteban, V. Georgiev et E. Séré. Bound-State Solutions of the Maxwell-Dirac and the Klein-Gordon Dirac systems. Lett. Math Phys. **38**(1996), p. 217-220.
- [44] M. J. Esteban. A priori estimates for solutions to highly indefinite problems. *Proc. II Jornada de EDP e análise numérica*, Publ. Universidade federal do Rio de Janeiro. Rio de Janeiro 1996.
- [45] M. J. Esteban et J. Giacomoni. Existence of global branches of positive solutions for semilinear elliptic degenerate problems. J. Math. Pures Appl. **79(7)** (2000), p. 715-740.
- [46] M. J. Esteban et E. Séré. Solutions of the Dirac-Fock equations for atoms and molecules. Comm. Math. Phys. **203** (1999), p. 499-530.
- [47] B. Desjardins et M. J. Esteban. Existence of weak solutions for a model of fluid-rigid structure interaction. Arch. Rat. Mech. Anal. **146** (1999), p. 59-71.
- [48] M. J. Esteban et E. Séré. An overview on linear and nonlinear Dirac equations. Discrete and Continuous Dynamical Systems **8 (2)** (2002), p. 381-397.
- [49] M. J. Esteban et E. Séré. Les équations de Dirac-Fock. Séminaire E.D.P., Ecole Polytechnique, 1997-1998.
- [50] J. Dolbeault, M. J. Esteban et E. Séré. Variational characterization for eigenvalues of Dirac operators. Cal. Var. **10** (2000), p. 321-347.

- [51] B. Desjardins et M. J. Esteban. On weak solutions of fluid-rigid structure interaction : compressible and incompressible models. *Comm. P.D.E.* **25(7-8)** (2000), p. 1399-1413.
- [52] J. Dolbeault, M. J. Esteban et E. Séré. On the eigenvalues of operators with gaps. Application to Dirac operators. *J. Funct. Anal.* **174** (2000), p. 208-226.
- [53] R. Benguria, J. Dolbeault et M. J. Esteban. Classification of the solutions of semilinear elliptic problems in a ball. *J. Diff. Eq.* **167** (2000), p. 438-466.
- [54] M.J. Esteban. Claude Le Bris, Prix Blaise Pascal 1999. *Matapli* No. 62 (2000), p. 10-11.
- [55] B. Desjardins, M. J. Esteban, C. Grandmont et P. Le Tallec. Weak solutions for a fluid-elastic structure interaction model. *Revista Matemática U.C.M.* **14(2)** (2001), p. 523-538.
- [56] M. J. Esteban. Colonne mensuelle dans la rubrique 'Science et société' du journal 'Euskaldunen Egunkaria' (journal publié au Pays Basque, nord et sud (Bayonne, Bilbao, Saint-Sébastien, Pampelune, Vitoria)) N₁ 1 : 'Dibulgazio ausarta'. N₁ 2 : 'Hegazkin berriak eta iker- kuntza'. N₁ 3 : 'Zientzilarien erantzunkizuna'. N₁ 4 : 'Interneteko segurtasunaz bueltaka'. N. 5 : 'Bankuak eta konputazio zientifkoa'. N. 6 : 'Nuklearraren arrisku ezberdinak'. N. 7 : 'Klima, eguraldia eta zientzia'. N. 8 : 'Energia desberdinak, zein hobe?' N. 9 : '2000. urtea = Matematikarena'.
- [57] J. Dolbeault, M. J. Esteban et E. 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*, Lecture Notes in Chemistry, C. Le Bris, M. De Franceschi ed., Springer Berlin Heidelberg (2000),
- [58] M. J. Esteban et E. Séré. Nonrelativistic limit of the Dirac-Fock equations. *Ann. H. Poincaré* **2** (2001), p. 941-961.
- [59] J. Dolbeault, M. J. Esteban, E. Séré et M. Vanbreugel. Minimization methods for the one-particle Dirac equation. *Phys. Rev. Letters* **85(19)** (2000), p. 4020-4023
- [60] B. Desjardins et M. J. Esteban. Solutions faibles pour des problèmes d'interaction fluide-structure. *Sém. E.D.P., Ecole Polytechnique*, 1999-2000.
- [61] P. Biler, J. Dolbeault, M. J. Esteban et G. Karch. Stationary solutions, intermediate asymptotics and large-time behaviour of type II Streater's models. *Advances in Diff. Eq.* **6(4)** (2001)
- [62] P. Biler, J. Dolbeault et M. J. Esteban. Intermediate asymptotics in L^1 for general nonlinear diffusion equations. *Appl. Math. Lett.* **15** (2002), p. 101-107.
- [63] P. Biler, J. Dolbeault, M. J. Esteban, P. Markowich et T. Nadzieja. Steady states for Streater's energy-transport models of self-gravitating particles. In *Transport in transition regimes (Minneapolis, MN, 2000)*, p. 37-56, IMA Vol. Math. Appl., **135**, Springer, New York, 2004.
- [64] J. Dolbeault, M. J. Esteban et M. Ramaswamy. Radial Singular Solutions of a Critical Problem in a Ball. *Diff. Int. Eqs* **15(12)** (2002), p. 1459-1474 .
- [65] M. J. Esteban et E. Séré. On some linear and nonlinear eigenvalue problems in relativistic quantum chemistry. In *Variational and topological methods in the study of nonlinear phenomena (Pisa, 2000)*. *Progr. Nonlinear Differential Equations Appl.*, **49**, Birkhäuser Boston, Boston, MA, 2002.
- [66] M. J. Esteban et E. Séré. A max-min principle for the ground state of the Dirac-Fock functional. *Contemp. mathem.* **307** (2002), p. 135-139.
- [67] J. Dolbeault, M.J. Esteban et E. Séré. About a non-homogeneous Hardy inequality and its relation with the spectrum of Dirac operators. *Sém. E.D.P., Ecole Polytechnique*, 2001-2002.
- [68] J. Dolbeault, M. J. Esteban et E. Séré. A variational method for relativistic computations in atomic and molecular physics. *Int. J. Quantum. Chemistry* **93** (2003), p. 149-155.
- [69] J.-P. Desclaux, J. Dolbeault, M. J. Esteban, P. Indelicato et E. Séré. Computational approaches of relativistic models in quantum chemistry. In *Handb. Numer. Anal.*, X, p. 453-483, North-Holland, Amsterdam, 2003.
- [70] Adimurthi et M. J. Esteban. An improved Hardy-Sobolev inequality in $W^{1,p}$ and its application to the Schrodinger operator. *NoDEA* **12** (2005), p. 243-263.
- [71] A. Chambolle, B. Desjardins, M. J. Esteban et C. Grandmont. Existence of weak solutions for an unsteady Fluid-Plate Interaction Problem. *J. Math. Fluid Mech.* **7(3)** (2005), p. 368-404.

- [72] J. Dolbeault, M. J. Esteban, M. Loss et L. Vega. An analytical proof of Hardy-like inequalities related to the Dirac operator. *J. Funct. Anal.* **216** (2004), p. 1-21.
- [73] M. J. Esteban et E. Séré. Dirac-Fock models for atoms and molecules and related topics. XIVth International Congress on Mathematical Physics, p. 21-28, World Sci. Publ., Hackensack, NJ, 2005.
- [74] J. Busca, M. J. Esteban et A. Quaas. Nonlinear Eigenvalues and Bifurcation Problems for Pucci's Operator. *Ann. I. H. Poincaré, AN* **22** (2005), p. 187-206.
- [75] J.-M. Barbaroux, M. J. Esteban et E. Séré. Some connections between Dirac-Fock and Electron-Positron Hartree-Fock. *Ann. Henri Poincaré* **6(1)** (2005), p. 85-102.
- [76] M. J. Esteban. Existence of 3D skyrmions (Erratum). *Comm. Math. Phys.* **251** (2004), p. 209-210.
- [77] M. J. Esteban, P.-L. Felmer et A. Quaas. Large critical exponents for some second order uniformly elliptic operators. *Comm. P.D.E.* **32**, No. 4 (2007), p. 543-556.
- [78] J. Dolbeault, M. J. Esteban et E. 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)** (2006), p. 243-251.
- [79] B. Buffoni, M. J. Esteban et E. Séré. Normalized solutions to strongly indefinite semilinear equations. *Adv. Nonlin. Stud.* **6(2)** (2006), p. 323-347.
- [80] M.J. Esteban. A short review on computational issues arising in relativistic atomic and molecular physics. CRM Proceedings and Lectures Notes, Vol. **41** (2006), p. 105-116.
- [81] J. Dolbeault, M. J. Esteban, M. Loss. Relativistic hydrogenic atoms in strong magnetic fields. *Ann. H. Poincaré* **8(4)** (2007), p. 749-779.
- [82] J. Dolbeault, J. Duoandikoetxea, M. J. Esteban, L. Vega. Hardy-type estimates for Dirac operators. *Ann. Sci. Ecole Normale Sup.* **40 (6)** (2007), p. 885-900.
- [83] *Mathematical and Numerical Aspects of Quantum Chemistry Problems*. Oberwolfach reports **3(4)**, 2006. M.J. Esteban, C. Le Bris, G. Scuseria editors. EMS Publishing House, 2006.
- [84] M. J. Esteban, M. Loss. Self-adjointness for Dirac operators via Hardy-Dirac inequalities. *J. Math. Phys.* **48(11)** (2007), 112107.
- [85] R. Bosi, J. Dolbeault, M. J. Esteban. Estimates for the optimal constants in multipolar Hardy inequalities for Schrödinger and Dirac operators. *Commun. Pure Appl. Anal.* **7** (2008), no. 3, p. 533-562.
- [86] J. Dolbeault, M. J. Esteban, G. Tarantello. The role of Onofri type inequalities in the symmetry properties of extremals for Caffarelli-Kohn-Nirenberg inequalities, in two space dimensions. *Ann. Sc. Nor. Sup. Pisa. Serie V (7)* (2008), p. 313-341.
- [87] M. J. Esteban, M. Lewin et E. Séré. Variational methods in relativistic quantum mechanics. *Bull. Amer. Math. Soc.* **45** (2008), p. 535-593.
- [88] M.J. Esteban, P. Felmer, A. Quaas. Superlinear elliptic equation for the Pucci operator without growth restrictions for the data. *Proc. Edinb. Math. Soc. (2)* **53** (2010), no. 1, p. 125-141.
- [89] J. Dolbeault, M.J. Esteban, M. Loss. Characterization of the critical magnetic field in the Dirac-Coulomb equation. *J. Phys. A* **41** (2008), no. 18, p. 185303-185315.
- [90] M. J. Esteban, M. Loss. Self-adjointness via Hardy-like inequalities. In *Mathematical results in quantum mechanics*, p. 41-47, World Sci. Publ., Hackensack, NJ, 2008.
- [91] Maria J. Esteban. Some mathematical and numerical problems in relativistic quantum mechanics. *Boll. Unione Mat. Ital. (9) 1* (2008), no. 3, p. 683-693.
- [92] J. Dolbeault, M.J. Esteban, G. Tarantello. Multiplicity results for the assigned Gauss curvature problem in \mathbb{R}^2 . *Nonlinear Analysis* **70** (2009), p. 2870-2881.
- [93] J. Dolbeault, M.J. Esteban, M. Loss, G. Tarantello. On the symmetry of extremals for the Caffarelli-Kohn-Nirenberg inequalities. *Advanced Nonlinear Studies* **9(4)** (2009), p. 713-726.
- [94] M.J. Esteban, P. Felmer, A. Quaas. Eigenvalues for radially symmetric non-variational fully nonlinear operators. *Comm. Part. Diff. Equations.* **35** (9) (2010), p. 1716-1737.
- [95] M.J. Esteban, M. Lewin, A. Savin. Symmetry breaking in atomic multi-configuration calculations. Oberwolfach Report No. 40/2009.

- [96] M.J. Esteban, M. Lewin, A. Savin. Symmetry breaking of relativistic multiconfiguration methods in the nonrelativistic limit. *Nonlinearity* **23** (2010), p. 767-791.
- [97] J. Dolbeault, M.J. Esteban. Extremal functions for Caffarelli-Kohn-Nirenberg and logarithmic Hardy inequalities. *Proc Roy. Soc. Edinburgh A* **142** (2012), p. 1-23.
- [98] J. Dolbeault, M.J. Esteban, G. Tarantello, A. Tertikas. Radial symmetry and symmetry breaking for some interpolation inequalities. *Calculus of Variations and PDE*, **42**(3) (2011), p. 461-485.
- [99] J. Dolbeault, M.J. Esteban. Extremal functions in some interpolation inequalities : symmetry, symmetry breaking and estimates of the best constants. In *Mathematical results in quantum physics*, 178-182, World Sci. Publ., Hackensack, NJ, 2011.
- [100] Optimal constants in the theory of Sobolev spaces and PDEs. Abstracts from the workshop held February 7-13, 2010. Organized by Andrea Cianchi, Maria J. Esteban and Bernd Kawohl. Oberwolfach Reports. Vol. 7, no. 1. Oberwolfach Rep. 7 (2010), no. 1, p. 325-371.
- [101] RSME2011 - Transfer and Industrial Mathematics. Edited by P. Quintela, M.J. Esteban, W. Gonzalez, M.C. Muñiz, J. Rubio, J.J. Salazar. Univ. Santiago de Compostela publicaciones, 2011.
- [102] J. Dolbeault, M.J. Esteban. About Existence, Symmetry and Symmetry Breaking for Extremal Functions of Some Interpolation Functional Inequalities. In *Nonlinear Partial Differential Equations. The Abel Symposium 2010*, H. Holden and K.H. Karlsen editors. Springer-Verlag Berlin-Heidelberg 2012.
- [103] M.J. Esteban. Une revue sur quelques inégalités fonctionnelles et les propriétés de symétrie pour leurs fonctions extrémales. Séminaire Laurent Schwartz - EDP et applications, 2011-2012, Exp. No. 29, 13 p.
- [104] J. Dolbeault, M.J. Esteban, M. Loss. Symmetry of extremal of functional inequalities via spectral estimates for linear operators. *J. Math. Phys.* 53, 095204 (2012).
- [105] M.J. Esteban, S. Rota Nodari. Symmetric ground states for a stationary relativistic mean-field model for nucleons in the nonrelativistic limit. *Reviews in Mathematical Physics* Vol. 24, No. 10 (2012) 1250025 (30 pages).
- [106] J. Dolbeault, M.J. Esteban. A scenario for symmetry breaking in Caffarelli-Kohn-Nirenberg inequalities. *J. Num. Math.* **20**(3-4) (2012), p. 233-250.
- [107] J. Dolbeault, M.J. Esteban, M. Kowalczyk, M. Loss. Sharp interpolation inequalities on the sphere : new methods and consequences. *Chinese Annals of Math.* **34** (1), 2013, p. 99-112.
- [108] M.J. Esteban, S. Rota Nodari. Ground states for a stationary mean-field model for a nucleon. *Ann. H. Poincaré*, **14** (5) (2013), p. 1287-1303.
- [109] J. Dolbeault, M.J. Esteban, A. Laptev, M. Loss. Spectral properties of Schrödinger operators on compact manifolds : rigidity, flows, interpolation and spectral estimates. *C. R. Math. Acad. Sci. Paris* 351 (2013), no. 11-12, p. 437-440.
- [110] J. Dolbeault, M.J. Esteban, A. Laptev. Spectral estimates on the sphere. *Analysis & PDE* **7-2** (2014), p. 435-460.
- [111] J. Dolbeault, M.J. Esteban, M. Loss. Nonlinear flows and rigidity results on compact manifolds. *J. Funct. Anal.* 267 (5) (2014), p. 1338 - 1363.
- [112] J. Dolbeault, M.J. Esteban, A. Laptev, M. Loss. One-dimensional Gagliardo-Nirenberg-Sobolev inequalities : Remarks on duality and flows. *Journal of the London Mathematical Society* **90** (2) (2014), p. 525-550.
- [113] J. Dolbeault, M.J. Esteban, M. Kowalczyk, M. Loss. Improved interpolation inequalities on the sphere. *Discr. Cont. Dyn. Sys., Series S*, **7** (4) (2014), p. 695-724.
- [114] J. Dolbeault, M.J. Esteban. Branches of non-symmetric critical points and symmetry breaking in nonlinear elliptic partial differential equations. *Nonlinearity* **27** (2014), p. 435-465.
- [115] J. Dolbeault, M.J. Esteban, G. Jankowiak. The Moser-Trudinger-Onofri inequality. *Chin. Ann. Math. Ser. B* 36 (2015), no. 5, p. 777-802.
- [116] J. Dolbeault, M.J. Esteban, S. Filippas, A. Tertikas. Rigidity results with applications to best constants and symmetry of Caffarelli-Kohn-Nirenberg and logarithmic Hardy inequalities. *Cal. var. PDE.* **54**(3) (2015), p. 2465-2481.
- [117] J. Dolbeault, M.J. Esteban, M. Loss. Keller-Lieb-Thirring inequalities for Schrödinger operators on cylinders. *Comptes rendus - Mathématique* 353 (2015) p. 813-818.
- [118] J. Dolbeault, M.J. Esteban, M. Loss. Rigidity versus symmetry breaking via nonlinear flows on cylinders and Euclidean spaces. *Invent. Math.* **206**(2) (2016), p. 397-440.
- [119] J. Dolbeault, M. J. Esteban, M. Loss. Interpolation inequalities, nonlinear flows, boundary terms, optimality and linearization. *Journal of Elliptic and Parabolic Equations*, 2016, 2, p. 267-295
- [120] J. Dolbeault, M.J. Esteban, G. Jankowiak. Onofri inequalities and rigidity results. *Discrete and Continuous Dynamical Systems*, 2017, 37 (6), p. 3059-3078.

- [121] J. Dolbeault, M.J. Esteban, M. Loss. Interpolation inequalities on the sphere : linear vs. nonlinear flows. *Annales de la faculté des sciences de Toulouse Sér. 6*, 26 no. 2 (2017), p. 351-379, doi : 10.5802/afst.1536
- [122] J. Dolbeault, M. J. Esteban, M. Loss, M. Muratori. Symmetry for extremal functions in subcritical Caffarelli-Kohn-Nirenberg inequalities. *C. R. Acad. Sci. Paris, Ser. I* (2017) 355 (2), p. 133-154.
- [123] Maria J. Esteban. Nonlinear flows and optimality for functional inequalities : an extended abstract. *Industrial mathematics and complex systems*, 21-26, Ind. Appl. Math., Springer, Singapore, 2017.
- [124] J. Dolbeault, M. J. Esteban, M. Loss. Symmetry of optimizers of the Caffarelli-Kohn-Nirenberg inequalities. To appear dans *Proceedings ICMP 2015*.
- [125] M. J. Esteban, M. Lewin, E. Séré. Domains for Dirac-Coulomb min-max levels. *Domains for Dirac-Coulomb min-max levels. Rev. Mat. Iberoam.* 35 (2019), no. 3, p. 877-924.
- [126] J. Dolbeault, M.J. Esteban, A. Laptev, M. Loss. Interpolation Inequalities and Spectral Estimates for Magnetic Operators. *Annales Henri Poincaré*, **19**(5), (2018), p. 1439-1463, DOI 10.1007/s00023-018-0663-9.
- [127] J. Dolbeault, M.J. Esteban, A. Laptev, M. Loss. Magnetic rings. *J. Math. Phys.* **59**, 051504 (2018); <https://doi.org/10.1063/1.5022121>.
- [128] M. Chupin, J. Dolbeault, M.J. Esteban, M. Lewin. Une cartographie de la communauté mathématique française. *Matapli* **115**, p. 51-72 (2018) and *La Gazette des Mathématiciens* **156**, p. 49-61 (2018).
- [129] J. Dolbeault, M.J. Esteban, M. Loss. Symmetry and symmetry breaking : rigidity and flows in elliptic PDEs. *Proceedings of the International Congress of Mathematicians - Rio de Janeiro 2018. Vol. III. Invited lectures, 2261-2285, World Sci. Publ., Hackensack, NJ, 2018*.
- [130] M.J. Esteban. How Mathematics Is Changing the World. *World Women in Mathematics 2018*, Springer, 2019.
- [131] D. Bonheure, J. Dolbeault, M.J. Esteban, A. Laptev, M. Loss. Symmetry results in two-dimensional inequalities for Aharonov-Bohm magnetic fields. *Comm. in Math. Phys.* 375(3), p. 2071-2087 (2020).
- [132] D. Bonheure, J. Dolbeault, M. J. Esteban, A. Laptev, and M. Loss. Inequalities involving Aharonov-Bohm magnetic potentials in dimensions 2 and 3. *Reviews in Mathematical Physics*, 33, p. 1-29 (2021). (DOI 10.1142/S0129055X21500069).
- [133] J. Dolbeault, M.J. Esteban. Improved interpolation inequalities and stability. *Adv. Nonlinear Stud.* 20 (2020), no. 2, p. 277-291.
- [134] M. J. Esteban, M. Lewin, E. Séré. Dirac-Coulomb operators with general charge distribution. I Distinguished extension and min-max formulas. *Annal. Henri Lebesgue*, 4 (2021), p. 1421-1456 (DOI 10.5802/ahl.106).
- [135] M. J. Esteban, M. Lewin, E. Séré. Dirac-Coulomb operators with general charge distribution. II The lowest eigenvalue. *Proc. London Math. Soc.* (3) 123 (2021) p. 345-383 (DOI 10.1112/plms.12396).
- [136] M. J. Esteban. Mathematical questions about the computation of eigenvalues of Dirac operators with critical potentials in atomic and molecular physics. *Comptes Rendus Physique, Centre Mersenne, Tome 21* (2020) no. 2, pp. 177-183.
- [137] J. Dolbeault, M. J. Esteban, and M. Loss. Critical magnetic field for 2d magnetic Dirac-Coulomb operators and Hardy inequalities. In *Partial Differential Equations, Spectral Theory, and Mathematical Physics. The Ari Laptev Anniversary Volume. EMS Series of Congress Reports Vol. 18 (2021)*, pp. 41-63.
- [138] Maria J. Esteban. Gagliardo-Nirenberg-Sobolev inequalities on planar graphs. *Commun. Pure Appl. Anal.* 21 (2022), no. 6, pp. 2101-2114.
- [139] J. Dolbeault, M. J. Esteban. Hardy-Littlewood-Sobolev and related inequalities : stability. In "The Physics and Mathematics of Elliott Lieb. The 90th anniversary volume". Editors : R. Frank, A. Laptev, M. Lewin, R. Seiringer. EMS Press, 2022.
- [140] Esteban, M.J., Lewin, M., Séré, É. (2023). Which Nuclear Shape Generates the Strongest Attraction on a Relativistic Electron ? An Open Problem in Relativistic Quantum Mechanics. In : Morel, JM., Teissier, B. (eds) *Mathematics Going Forward . Lecture Notes in Mathematics*, vol 2313. Springer, Cham. <https://doi.org/10.1007/978-3-031-12244-6-34>.
- [141] J. Dolbeault, M. J. Esteban, E. Séré. Corrigendum to : "On the eigenvalues of operators with gaps. Application to Dirac operators" [*J. Funct. Anal.* 174 (1) (2000) 208-226]. *J. Funct. Anal.* 284 (2023), no. 1, Paper No. 109651, 6 pp.
- [142] J. Dolbeault, M. J. Esteban, E. Séré. Distinguished self-adjoint extension and eigenvalues of operators with gaps. Application to Dirac-Coulomb operators. Submitted. To appear in *J. Spectral Th.*
- [143] J. Dolbeault, M. J. Esteban, A. Figalli, R. Frank and M. Loss. Sharp stability for Sobolev and Log-Sobolev inequalities, with optimal dimensional dependence. Submitted.
- [144] S. Dabo, M.J. Esteban, C. Guillopé, M.-F. Roy. Article 'Aspects of the gender gap in Mathematics'. To appear in *EMS Magazine*.
- [145] S. Dabo, M.J. Esteban, C. Guillopé, M.-F. Roy. An analysis of the gender gap among African scientists. Submitted.
- [146] M.J. Esteban. A short review on Improvements and stability of some interpolation inequalities. Submitted.

Popular science, interviews and other publications.

- [1] Participation of my profile in the itinerant exhibition “Emakumea Teknologian” (Women in Technology), organized by the ITELAZPI association in the Basque Country.
- [2] Article “Is the gender gap worse among mathematicians than in other scientific communities? And what about Africa compared to other continents?” . ICIAM Dianoia, Volume 12, Issue 1, January 2024.
- [3] Article “A Session at ICIAM 2023 : Gender Equality in Mathematics” . ICIAM Dianoia. Volume 11, Issue 4 October 2023.
- [4] Article “Opération Postes” , MATAPLI 129, p. 67-68, November 2022.
- [5] Article “Le lancement de l’OpenDesk d’EU-MATHS-IN” , MATAPLI 129, p. 45-49, November 2022.
- [6] Article about the “Kick-off of the EU-MATHS-IN OpenDesk” , ICIAM Dianoia, October 2022.
- [7] Interview for the “Witnesses” (“Lekukoak”) section of the scientific journal in Basque language ELHUYAR, December 2022.
- [8] Participation - interview in “Voices of Women in Mathematical Physics” . IAMP Newsletter, March 2022.
- [9] Grégoire Allaire, Sylvie Benzoni-Gavage, Maria J. Esteban “Quand deux revues de l’IHP prennent la direction de l’Open Access...” . Matapli 127, p. 83-88. November 2021.
- [10] Maria J. Esteban. “Some thoughts on 8ECM scientific programme” . 8ECM Newsletter, number 03, May 2021.
- [11] Maria J. Esteban. “Creation of the Standing Committee for Gender Equality in Science”, EMS Newsletter No. 118, December 2020.
- [12] Maria J. Esteban. “Creation of the Standing Committee for Gender Equality in Science (SCGES)” . ICIAM Dianoia, Volume 8, Issue 3 July 2020.
- [13] “Interview de Maria J. Esteban” by Th. Horsin, president of SMAI. MATAPLI 121, March 2020, p. 29-34.
- [14] Maria J. Esteban. “Impresiones sobre el congreso ICIAM 2019” , Boletín electrónico de la SEMA, 23, October 2019.
- [15] Interview in ‘La Recherche’, Dossier n° 31, September-October 2019, by M.-L. Théodule.
- [16] Interview in the “Journal du CNRS” : “Mathématiques et industrie, le compte est bon”, par Anaïs Culot. Journal du CNRS, n° 297, September 2019.
- [17] Maria J. Esteban. Introduction of the *Valencia Intelligencer* (ICIAM 2019). Springer.
- [18] Maria J. Esteban. “Las matemáticas en la era del Big Data”, “El Cultural”, weekly cultural supplement of “El Mundo” newspaper, 26 June 2019.
- [19] M. Chaleyat-Maurel, S. Cordier, M. Darche, M.J. Esteban. “Le Florilège de la popularisation des mathématiques”, La Gazette des mathématiciens n° 160, Avril 2019.
- [20] M. Chaleyat-Maurel, S. Cordier, M. Darche, M.J. Esteban. “Florilège de la popularisation des mathématiques” : de la création au lancement du site. MATAPLI n° 117, November 2018.
- [21] Maria J. Esteban and Gabriella Puppo. “The New International Science Council - A Global Voice for Science”, EMS Newsletter, September 2018, p. 49.
- [22] Maxime Chupin, Jean Dolbeault, Maria J. Esteban, Mathieu Lewin. “Une cartographie de la communauté mathématique française”, Matapli 2018, and La Gazette des mathématiciens 2018.
- [23] Long interview in the journal “Administrazioa euskeraz”, number 98, October 2017 (in Basque).
- [24] J. Dolbeault, M.J. Esteban. “Briser la symétrie”. Dauphine Recherches 1. November 2016.
- [25] M.J. Esteban. “An interview of Patrice Hauret, Prix Felix Klein 2016”. Dianoia (ICIAM Newsletter), vol. 4, n° 4 (October 2016).
- [26] Entrevista a María Jesús Esteban, presidenta del ICIAM. La Gaceta de la RSME, Vol. 19 (2016), Num. 2, p. 267-274.
- [27] M.J. Esteban. About the relation of mathematicians with the outer world A contribution to the round table organized during the celebration of the EMS 25th anniversary. EMS Newsletter n° 100 (2016).
- [28] “Teoria matematiko berriak aurkitu behar dira erronka berriei aurre egin ahal izateko”. Elhuyar, 2016.
- [29] “Entrevista a la matemática M.J. Esteban”, Teknopolis, Télévision Basque, January 2016. In Basque and in Spanish.
- [30] “Europa tiene que seguir invirtiendo en materia gris”, Activa tu neurona, EHU, Bilbao (Basque Country).
- [31] “Les mathématiques, c’est comme un jeu”, Forum Sibérien, septembre 2015, Krasnoyarsk, Russia.
- [32] M.J. Esteban. Mathematics and policy. Dans *The Princeton Companion to Applied Mathematics*. N. J. Higham et al, editors. Princeton Univ. Press, 2015.

- [33] M.J. Esteban. “Les mathématiques, un outil indispensable pour l’innovation et les nouvelles technologies”, Mediapart, 26 February 2014.
- [34] S. Cordier, E. Godlewski, M.J. Esteban, M. Postel, A. Samson. Math Jobs Forum in France. EMS Newsletter No. 88, June 2013.
- [35] M.J. Esteban. Prosperity by numbers. Public Service, 25, March 2013.
- [36] M.J. Esteban. About the final event of the ESF-EMS Forward Look Project on Mathematics and Industry : A new road for industrial mathematics in Europe is now open. Newsletter of the EMS, 79, (2011), p. 11-12.
- [37] M.J. Esteban. About the final event of the ESF-EMS Forward Look Project on Mathematics and Industry : A new road for industrial mathematics in Europe is now open. ECMI Newsletter, 49, (2011), p. 8-9.
- [38] *RSME 2011 - Transfer and Industrial Mathematics*. P. Quintela, M. J. Esteban, W. González, M. C. Muñiz, J. Rubio and J. J. Salazar editors. Universidad de Santiago de Compostela, publicaciones, 2011.
- [39] *European Success Stories in Industrial Mathematics*. M.J. Esteban et al. éditeurs. Springer, 2011.
- [40] Patrick Lascaux : hommage à sa mémoire. (French) [In memoriam Patrick Lascaux] With obituaries by Maria J. Esteban, Yvon Maday and Denis Talay, Philippe Destuynder and Gérard Meurant. Matapli No. 92 (2010), p. 21-25.