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POSITIONS	<b>ICREA &amp; Universitat de Barcelona</b> ICREA Research Professor & Catedràtic d'Universitat Departament de Matemàtiques i Informàtica  <b>Universität Zürich</b> Assistant Professor Institut für Mathematik  <b>University of Texas at Austin</b> R. H. Bing Instructor Department of Mathematics	09/2020 - present  09/2017 - 08/2020  08/2014 - 08/2017
EDUCATION	<b>Ph.D. in Mathematics</b> Universitat Politècnica de Catalunya Adviser: Xavier Cabré  <b>Master in Mathematics</b> Universitat Politècnica de Catalunya  <b>Degree in Mathematics</b> Universitat Politècnica de Catalunya Ranked 1st, finishing the 5 years degree in 4 years.	09/2011 - 06/2014  09/2010 - 06/2011  09/2006 - 06/2010
RESEARCH INTERESTS	My research focuses on <b>elliptic and parabolic PDE</b> . I study: <ul style="list-style-type: none"> <li>- Free boundary problems</li> <li>- Integro-differential equations</li> <li>- Calculus of Variations</li> <li>- Fully nonlinear equations</li> <li>- Evolution equations</li> <li>- Isoperimetric inequalities</li> </ul>	
HONORS AND AWARDS	<ul style="list-style-type: none"> <li>• ‘Académico Correspondiente’ of the Spanish <b>Royal Academy of Sciences</b> (Elected on October 2022. Youngest member of the Royal Academy of Sciences.)</li> <li>• Forbes Top 50 Awarded Spaniards 2021 (<i>Forbes Spain</i> made a list with the most awarded people from Spain in the last 5 years. The list includes artists, scientists, chefs, athletes, and CEOs.)</li> <li>• <b>Stampacchia Gold Medal 2021</b> (International prize awarded every three years to a mathematician whose age does not exceed 35 in recognition of outstanding contributions to the Calculus of Variations.)</li> <li>• <b>Premio Investigación Científica 2019</b> from the Fundación Princesa de Girona (Awarded annually to a young Spanish scientist under 35 years. The prize is given by the King of Spain, and comes with a monetary award of 20,000 €.)</li> </ul>	

- PI of the **ERC Starting Grant** ‘ELLIPTICPDE’ (2019 - 2024)  
(Awarded amount: 1,335,250 €)  
Youngest awardee of ERC Starting Grant 2018 (among all panels in all sciences)
- PI of SNSF Research Project (04/2018 - 08/2020)  
(Awarded amount: 200,000 CHF)
- **Antonio Valle Prize 2017** from the Spanish Society of Applied Mathematics  
(Awarded annually to the best researcher under 34 years. At age 29, I became the youngest winner of the award ever.)
- **J. L. Rubio de Francia Prize 2017**, Royal Spanish Mathematical Society (RSME)  
(Awarded annually to a young mathematician from Spain or residing in Spain. It is the highest distinction given by the RSME, and one of the most important prizes in Mathematics in Spain.)
- PI of the NSF Analysis Grant DMS-1565186 (07/2016 - 08/2017)  
(Awarded amount: \$103,617)
- Vicent Caselles Prize 2015 from the RSME and the BBVA Foundation  
(Spanish award to the best PhD theses in Mathematics)
- Extraordinary PhD Prize from the Universitat Politècnica de Catalunya
- Évariste Galois Prize 2012 from the Catalan Mathematical Society (SCM)  
(Best Master’s Thesis award)
- Silver Medals at the International Mathematical Competition for University students, 2007, 2008, and 2009
- Bronze Medal at the International Mathematical Olympiad (IMO), 2006

ARTICLES AND  
PREPRINTS

- [1] Optimal regularity and fine asymptotics for the porous medium equation in bounded domains,  
*T. Jin, X. Ros-Oton, J. Xiong,*  
preprint arXiv (2022).
- [2] Optimal regularity for the fully nonlinear thin obstacle problem,  
*M. Colombo, X. Fernandez-Real, X. Ros-Oton,*  
preprint arXiv (2021).
- [3] Optimal regularity for supercritical parabolic obstacle problems,  
*X. Ros-Oton, D. Torres-Latorre,*  
Comm. Pure Appl. Math. (2023), to appear.
- [4] Global Schauder theory for minimizers of the  $H^s(\Omega)$  energy,  
*M. M. Fall, X. Ros-Oton,*  
J. Funct. Anal. 283 (2022), 109523, 50pag.
- [5] The singular set in the Stefan problem,  
*A. Figalli, X. Ros-Oton, J. Serra,*  
preprint arXiv (2021).
- [6] Non-symmetric stable operators: regularity theory and integration by parts,  
*S. Dipierro, X. Ros-Oton, J. Serra, E. Valdinoci*  
Adv. Math. 401 (2022), 108321, 100pag.
- [7] New boundary Harnack inequalities with right hand side,  
*X. Ros-Oton, D. Torres-Latorre*  
J. Differential Equations 288 (2021), 204-249.

- [8] Stable cones in the thin one-phase problem,  
*X. Fernandez-Real, X. Ros-Oton*  
Amer. J. Math., in press (2022).
- [9] Sharp quantitative stability for isoperimetric inequalities with homogeneous weights,  
*E. Cinti, F. Glaudo, A. Pratelli, X. Ros-Oton, J. Serra,*  
Trans. Amer. Math. Soc. 375 (2022), 1509-1550.
- [10] Characterizing compact coincidence sets in the thin obstacle problem,  
*S. Eberle, X. Ros-Oton, G. Weiss,*  
Nonlinear Anal. 211 (2021), 112473.  
 Special issue on “Free boundary problems”.
- [11] The Neumann problem for the fractional Laplacian: regularity up to the boundary,  
*A. Audrito, J.-C. Felipe-Navarro, X. Ros-Oton,*  
Ann. Sc. Norm. Super. Pisa Cl. Sci., in press (2022).
- [12] Generic regularity of free boundaries for the obstacle problem,  
*A. Figalli, X. Ros-Oton, J. Serra,*  
Publ. Math. Inst. Hautes Études Sci. 132 (2020), 181-292.
- [13] Free boundary regularity for almost every solution to the Signorini problem,  
*X. Fernandez-Real, X. Ros-Oton,*  
Arch. Rat. Mech. Anal. 240 (2021), 419-466.
- [14] The Dirichlet problem for nonlocal elliptic operators with  $C^{0,\alpha}$  exterior data,  
*A. Audrito, X. Ros-Oton,*  
Proc. Amer. Math. Soc., 148 (2020), 4455-4470.
- [15] Obstacle problems for integro-differential operators: higher regularity of free boundaries,  
*N. Abatangelo, X. Ros-Oton,*  
Adv. Math. 360 (2020), 106931, 61pp.
- [16] Stable solutions to semilinear elliptic equations are smooth up to dimension 9,  
*X. Cabré, A. Figalli, X. Ros-Oton, J. Serra,*  
Acta Math. 224 (2020), 187-252.
- [17] On global solutions to semilinear elliptic equations related to the one-phase free boundary problem,  
*X. Fernandez-Real, X. Ros-Oton,*  
Discrete Contin. Dyn. Syst. A 39 (2019), 6945-6959.  
 Special issue Dedicated to Luis Caffarelli on the Occasion of his 70th Birthday.
- [18] Higher-order boundary regularity estimates for nonlocal parabolic equations,  
*X. Ros-Oton, H. Vivas*  
Calc. Var. Partial Differential Equations 57 (2018), 111.
- [19] Structure and regularity of the singular set in the obstacle problem for the fractional Laplacian,  
*N. Garofalo, X. Ros-Oton,*  
Rev. Mat. Iberoam. 35 (2019), 1309-1365.
- [20] The obstacle problem for the fractional Laplacian with critical drift,  
*X. Fernandez-Real, X. Ros-Oton,*  
Math. Ann. 371 (2018), 1683-1735.
- [21] The boundary Harnack principle for nonlocal elliptic equations in non-divergence form,  
*X. Ros-Oton, J. Serra,*  
Potential Anal. 51 (2019), 315-331.

- [22] Free boundary regularity in the parabolic fractional obstacle problem,  
*B. Barrios, A. Figalli, X. Ros-Oton,*  
Comm. Pure Appl. Math. 71 (2018), 2129-2159.
- [23] On the regularity of the free boundary for the  $p$ -Laplacian obstacle problem,  
*A. Figalli, B. Krummel, X. Ros-Oton,*  
J. Differential Equations 263 (2017), 1931-1945.
- [24] The structure of the free boundary in the fully nonlinear thin obstacle problem,  
*X. Ros-Oton, J. Serra,*  
Adv. Math. 316 (2017), 710-747.
- [25] Obstacle problems for integro-differential operators: regularity of solutions and free boundaries,  
*L. Caffarelli, X. Ros-Oton, J. Serra,*  
Invent. Math. 208 (2017), 1155-1211.
- [26] Boundary regularity estimates for nonlocal elliptic equations in  $C^1$  and  $C^{1,\alpha}$  domains,  
*X. Ros-Oton, J. Serra,*  
Ann. Mat. Pura Appl. 196 (2017), 1637-1668.
- [27] Regularity theory for general stable operators: parabolic equations,  
*X. Fernandez-Real, X. Ros-Oton,*  
J. Funct. Anal. 272 (2017), 4165-4221.
- [28] Infinite speed of propagation and regularity of solutions to the fractional porous medium equation in general domains,  
*M. Bonforte, A. Figalli, X. Ros-Oton,*  
Comm. Pure Appl. Math. 70 (2017), 1472-1508.
- [29] Global regularity for the free boundary in the obstacle problem for the fractional Laplacian,  
*B. Barrios, A. Figalli, X. Ros-Oton,*  
Amer. J. Math. 140 (2018), 415-447.
- [30] A one-dimensional symmetry result for a class of nonlocal semilinear equations in the plane,  
*F. Hamel, X. Ros-Oton, Y. Sire, E. Valdinoci,*  
Ann. Inst. H. Poincaré Anal. Non Linéaire 34 (2017), 469-482.
- [31] Pohozaev identities for anisotropic integro-differential operators,  
*X. Ros-Oton, J. Serra, E. Valdinoci,*  
Comm. Partial Differential Equations 42 (2017), 1290-1321.
- [32] The Dirichlet problem for nonlocal operators with singular kernels: convex and non-convex domains,  
*X. Ros-Oton, E. Valdinoci,*  
Adv. Math. 288 (2016), 732-790.
- [33] Regularity theory for general stable operators,  
*X. Ros-Oton, J. Serra,*  
J. Differential Equations 260 (2016), 8675-8715.
- [34] Boundary regularity for fully nonlinear integro-differential equations,  
*X. Ros-Oton, J. Serra,*  
Duke Math. J. 165 (2016), 2079-2154.
- [35] Nonlocal problems with Neumann boundary conditions,  
*S. Dipierro, X. Ros-Oton, E. Valdinoci,*  
Rev. Mat. Iberoam. 33 (2017), 377-416.

- [36] Boundary regularity for the fractional heat equation,  
*X. Fernández-Real, X. Ros-Oton,*  
Rev. Acad. Cienc. Ser. A Math. 101 (2016), 49-64.
- [37] Local integration by parts and Pohozaev identities for higher order fractional Laplacians,  
*X. Ros-Oton, J. Serra,*  
Discrete Contin. Dyn. Syst. A 35 (2015), 2131-2150.
- [38] Regularity for the fractional Gelfand problem up to dimension 7,  
*X. Ros-Oton,*  
J. Math. Anal. Appl. 419 (2014), 10-19.
- [39] Nonexistence results for nonlocal equations with critical and supercritical nonlinearities,  
*X. Ros-Oton, J. Serra,*  
Comm. Partial Differential Equations 40 (2015), 115-133.
- [40] The extremal solution for the fractional Laplacian,  
*X. Ros-Oton, J. Serra,*  
Calc. Var. Partial Differential Equations 50 (2014), 723-750.
- [41] Sharp isoperimetric inequalities via the ABP method,  
*X. Cabré, X. Ros-Oton, J. Serra,*  
J. Eur. Math. Soc. 18 (2016), 2971-2998.
- [42] The Pohozaev identity for the fractional Laplacian,  
*X. Ros-Oton, J. Serra,*  
Arch. Rat. Mech. Anal. 213 (2014), 587-628.
- [43] The Dirichlet problem for the fractional Laplacian: regularity up to the boundary,  
*X. Ros-Oton, J. Serra,*  
J. Math. Pures Appl. 101 (2014), 275-302.
- [44] Sobolev and isoperimetric inequalities with monomial weights,  
*X. Cabré, X. Ros-Oton,*  
J. Differential Equations 255 (2013), 4312-4336.
- [45] Regularity of stable solutions up to dimension 7 in domains of double revolution,  
*X. Cabré, X. Ros-Oton,*  
Comm. Partial Differential Equations 38 (2013), 135-154.
- [46] Existence of periodic solutions with nonconstant sign in a class of generalized Abel differential equations,  
*J. M. Olm, X. Ros-Oton,*  
Discrete Contin. Dyn. Syst. A 33 (2013), 1603-1614.
- [47] On a factorization of Riemann's  $\zeta$  function with respect to a quadratic field and its computation,  
*X. Ros-Oton,*  
Rev. Acad. Cienc. Ser. A Math. 106 (2012), 419-427.
- [48] Periodic solutions with nonconstant sign in Abel equations of second kind,  
*J. M. Olm, X. Ros-Oton, T. M. Seara,*  
J. Math. Anal. Appl. 381 (2011), 582-589.
- [49] Stable inversion of Abel equations: application to tracking control in DC-DC nonminimum phase boost converters,  
*J. M. Olm, X. Ros-Oton, Y. B. Shtessel,*  
Automatica J. IFAC 47 (2011), 221-226.

- [50] Approximate tracking of periodic references in a class of bilinear systems via stable inversion,  
*J. M. Olm, X. Ros-Oton,*  
Discrete Contin. Dyn. Syst. Ser. B 15 (2011), 197-215.
- BOOK [51] Regularity Theory for Elliptic PDEs,  
*X. Fernandez-Real, X. Ros-Oton,*  
 Zürich Lectures in Advanced Mathematics. EMS books (forthcoming, 2023).
- EXPOSITORY PAPERS,  
 SHORT NOTES,  
 BOOK CHAPTERS [52] Mirando hacia el futuro: Problemas de frontera libre,  
*X. Ros-Oton,*  
La Gaceta de la RSME 24 (2021), 399-416.
- [53] Regularitat i singularitats en problemes de frontera lliure,  
*X. Ros-Oton, J. Serra,*  
Butlletí de la SCM 35 (2020), 155-176.
- [54] Understanding singularities in free boundary problems,  
*X. Ros-Oton, J. Serra,*  
Matemática, Cultura e Societat 4 (2019), 107-118.  
 Special volume in honor of Alessio Figalli.
- [55] Free boundaries and obstacle problems: an overview,  
*X. Ros-Oton,*  
SeMA J. 75 (2018), 399-419.
- [56] Boundary regularity, Pohozaev identities, and nonexistence results,  
*X. Ros-Oton,*  
 Chapter 9 in 'Recent developments in the Nonlocal Theory', De Gruyter, 2018.
- [57] Nonlocal elliptic equations in bounded domains: a survey,  
*X. Ros-Oton,*  
Publ. Mat. 60 (2016), 3-26.
- [58] Euclidean balls solve some isoperimetric problems with nonradial weights,  
*X. Cabré, X. Ros-Oton, J. Serra,*  
C. R. Math. Acad. Sci. Paris 350 (2012), 945-947.
- [59] Fractional Laplacian: Pohozaev identity and nonexistence results,  
*X. Ros-Oton, J. Serra,*  
C. R. Math. Acad. Sci. Paris 350 (2012), 505-508.
- RESEARCH PROJECTS
- |  |                   |
|--|-------------------|
| AEI Generación de Conocimiento project (Spain)                     | 2022 - 2025       |
| Project: " <i>PDE and Fluid Mechanics</i> "                        |                   |
| PI: X. Ros-Oton  |                   |
| Awarded amount: 205,700 €  |                   |
| ERC Starting Grant 2018  | 01/2019 - 09/2024 |
| Project: " <i>Regularity and singularities in elliptic PDE's</i> " |                   |
| PI: X. Ros-Oton  |                   |
| Awarded amount: 1,335,250 €  |                   |
| SNSF Research Project (Switzerland)                                | 04/2018 - 08/2020 |

Project: “*Integro-differential elliptic equations*”  
PI: X. Ros-Oton  
Awarded amount: 200,000 CHF

Start-up Grant J. L. Rubio de Francia 10/2017-09/2020

BBVA Foundation  
PI: X. Ros-Oton  
Amount: 35,000€

NSF Analysis Grant DMS-1565186 (USA) 07/2016-08/2017

Project: “*Regularity theory for elliptic equations and free boundaries*”  
PI: X. Ros-Oton  
Awarded amount: \$103,617

- EDITORIAL WORK
- Editor for *Calc. Var. PDE* (2020 - present)
  - Editor for *Nonlinear Analysis* (2020 - present)
  - Editor for *Collectanea Math.* (2021 - present)
  - Scientific Committee for *Rev. Acad. Cienc. Ser. A Math.* (2022 - present)

- ORGANIZATION OF CONFERENCES
- *MFO–RIMS Tandem workshop: Nonlocality in Analysis, Probability and Statistics*  
Organizers: K. Bogdan, A. Kohatsu-Higa, X. Ros-Oton, R. Schilling.  
Oberwolfach–Kyoto, March 2022.
  - *PDE’s and Geometric Measure Theory*  
Organizers: A. Figalli, X. Ros-Oton, J. Serra.  
Zürich, October 2018.

MENTORING

**PhD students**

- *Damià Torres*, 2020-2024.
- *Teo Kukuljan*, 2019-2022.
- *Wiktoria Zatoń*, 2019-2020.

**Postdocs**

- *Marvin Weidner*, 2022-2024.
- *Bruno Vergara*, 2019-2022.
- *Alessandro Audrito*, 2019-2020.
- *Nicola Abatangelo*, 2018-2019.

**Other**

- *Jack Thompson*, visiting PhD student, Fall 2022.
- *Giorgio Tortone*, visiting postdoc, Spring 2020.
- *Juan Carlos Felipe*, visiting PhD student, Fall 2019.
- *Xavier Fernandez-Real*, Bachelor’s Degree Thesis 2014 and PhD Reading Courses 2015-2016.

## Undergraduate students

- *Maëlle Labeille*, visiting Master student (ENS Lyon), Spring 2022.
- *Gerard Castro*, introduction to research project, Summer 2022.
- *Matías Viner*, introduction to research project, Summer 2022.

## INVITED TALKS AT CONFERENCES

- *Geometric aspects of nonlinear PDE*  
Institut Mittag-Leffler (Stockholm), October 2022.
- *Partial differential equations and related functional inequalities*  
Accademia dei Lincei (Rome), September 2022.
- *BSM – BGSMath Junior Meeting*  
Plenary talk.  
Barcelona – Berlin, September 2022.
- *O. Ladyzhenskaya centennial conference on PDEs*  
Keynote speaker.  
St. Petersburg (online), July 2022.
- *Probability/PDE Interactions: Interface Models and Particle Systems*  
CIRM Marseille, April 2022.
- *Deterministic and stochastic fractional differential equations and jump processes*  
Isaac Newton Institute for Mathematical Sciences, UK, February 2022.
- *Workshop: PDE's in presence in Rome*  
Rome, February 2022.
- *Computation, Analysis and Applications of PDEs with Nonlocal and Singular Operators*  
National University of Singapore, February 2022.
- *15th International Conference on Free Boundary Problems*  
Plenary talk.  
Berlin, September 2021.
- *Regularity Theory for Free Boundary and Geometric Variational Problems*  
CIRM, Trento (Italy), September 2021.
- *New Trends in Nonlinear Diffusion: a Bridge between PDEs, Analysis, and Geometry*  
BIRS-CMO workshop in Oaxaca, September 2021.
- *SIAM Annual Meeting 2021*  
Minisymposium on Nonlocal Problems.  
Spokane (USA), July 2021.
- *Geometric and functional inequalities and recent topics in nonlinear PDEs*  
Online conference, March 2021.
- *2020 Fields Medal Symposium*  
The Fields Institute, Toronto, October 2020.
- *Recent Progress in Nonlocal Modeling, Analysis, and Computation (NMAC20)*  
Online conference, June 2020.
- *IMI Workshop in PDEs*  
UCM, Madrid, February 2020.
- *Workshop in Analysis & Probability*  
Plenary talk.  
Cardiff (Wales), December 2019.



- *Workshop in honor of Alessio Figalli*  
UPC, Barcelona, November 2019.
- *ICIAM 2019*  
Special session on “Analysis of nonlinear operators”.  
Valencia, July 2019.
- *ICIAM 2019*  
Special session on “Trends in nonlocal PDEs”.  
Valencia, July 2019.
- *Barcelona Analysis Conference 2019*  
Plenary talk.  
Universitat de Barcelona, June 2019.
- *Biennial Conference of the Royal Spanish Mathematical Society*  
Plenary talk.  
Santander (Spain), February 2019.
- *Winter meeting on nonlocal PDEs and applications*  
Universidad Autónoma de Madrid, December 2018.
- *Fields Medal day (Swiss Mathematical Society)*  
Colloquium talk on the work of Alessio Figalli.  
Bern, October 2018.
- *Nonlocal interactions: Dislocations and beyond*  
University of Bath, June 2018.
- *Maxwell Symposium in PDEs*  
International Centre for Mathematical Sciences (Edinburgh), December 2017.
- *Conference on Partial Differential Equations*  
KTH Stockholm, December 2017.
- *Mathematical approaches to complex systems: Statistical mechanics and PDEs*  
Convento da Arrábida (Portugal), July 2017.
- *XXV Congreso de Ecuaciones Diferenciales y Aplicaciones*  
Plenary talk on the occasion of the Antonio Valle Prize 2017.  
Cartagena (Spain), June 2017.
- *2016-17 Warwick EPSRC Symposium: Non-local equations and fractional diffusion*  
Warwick University, May 2017.
- *Fall Meeting of the American Mathematical Society*  
Special session on ‘New developments in the analysis of nonlocal operators’.  
Minneapolis, October 2016.
- *3rd Conference on Nonlocal Operators and PDEs*  
Plenary talk.  
Conference Center of the Polish Academy of Sciences (Będlewo, Poland), June 2016.
- *Nonlocal Variational Problems and PDEs*  
Pacific Institute of Mathematical Sciences (Vancouver), June 2016.
- *Recent trends on elliptic nonlocal equations*  
Fields Institute (Toronto), June 2016.
- *Spring Meeting of the American Mathematical Society*  
Special session on ‘Fractional calculus and nonlocal operators’.  
East Lansing (Michigan), March 2015.

- *10th AIMS Conference on Dynamical Systems, Differential Equations and Applications*  
Special session on ‘Geometric variational problems’.  
Madrid, July 2014.
- *10th AIMS Conference on Dynamical Systems, Differential Equations and Applications*  
Special session on ‘Nonlocal problems and related topics’.  
Madrid, July 2014.
- *Recent Advances in Nonlocal and Nonlinear Analysis, Theory and Applications*  
ETH Zürich, June 2014.
- *Meeting on PDEs and Applications*  
Girona, June 2014.
- *Workshop on Non-Standard Diffusions*  
Austin, May 2014.
- *Workshop on Partial Differential Equations and applications*  
Pisa, February 2014.
- *Workshop on Nonlinear equations*  
Universidad Carlos III Madrid, October 2013.
- *Congress of young researchers of the Real Sociedad Matemática Española*  
Special session on PDEs.  
Sevilla, September 2013.
- *Conference of young researchers of the Societat Catalana de Matemàtiques*  
Special session on Analysis and PDEs.  
Barcelona, October 2012.
- *Barcelona-Boston-Tokyo Number Theory Congress in Memory of Fumiyuki Momose*  
Barcelona, May 2012.

INVITED TALKS  
AT SEMINARS,  
COLLOQUIUMS

- *Paris-Lodron University Salzburg.* Colloquium, November 2022.
- *St. Petersburg State University.* V.I. Smirnov Seminar on Mathematical Physics, November 2022.
- *Hong Kong University of Science and Technology.* PDE seminar, October 2022.
- *ICREA Colloquium.* Barcelona, October 2022.
- *University of Helsinki.* Geometric and Functional Analysis seminar, March 2022.
- *Sapienza Università di Roma.* Analysis seminar, February 2022.
- *Corona Seminar: Inequalities on Function Spaces.* online seminar, February 2022.
- *Universidad de La Laguna.* Analysis seminar, December 2021.
- *ETH Zürich.* Analysis seminar, September 2021.
- *Indian Institute of Technology, Delhi.* PDE online seminar, June 2021.
- *Universidad de Valladolid.* Colloquium. March 2021.
- *PDE’s: Italia & España.* Online seminar, December 2020.
- *Stanford University.* Geometry seminar (online), December 2020.
- *University of Warwick.* Analysis Seminar. November 2020.
- *Indian Institute of Technology, Kanpur.* PDE webinar, November 2020.
- *University of Western Australia.* PDE Seminar (online), September 2020.
- *ShanghaiTech University.* PDE Seminar (via Zoom). April 2020.
- *Universidad Carlos III de Madrid.* Colloquium. February 2020.
- *École Polytechnique Fédérale de Lausanne.* Analysis Seminar. May 2019.

- *University of Washington*. Analysis Seminar. April 2019.
- *Universitat Autònoma de Barcelona*. Analysis Seminar. November 2018.
- *Universitat de Barcelona*. Colloquium IMUB. November 2018.
- *Universität Zürich*. Videoseminar Berkeley / Bonn / Paris-Nord / Zürich. October 2018.
- *Wuhan Institute of Physics & Mathematics, Chinese Academy of Sciences*. July 2018.
- *Wuhan University*. July 2018.
- *University of Texas at Austin*. Analysis seminar. May 2018.
- *University of Houston*. PDE seminar. April 2018.
- *Universitat Politècnica de Catalunya*. Colloquium FME-UPC. April 2018.
- *Universidad Autónoma de Madrid*. PDE seminar. March 2018.
- *Instituto de Ciencias Matemáticas*. PDE's & Fluid Mechanics seminar. March 2018.
- *ETH / Universität Zürich*. Zürich Graduate Colloquim. February 2018.
- *Institut des Hautes Études Scientifiques*. Séminaire *Laurent Schwartz*. January 2018.
- *Universität Basel*. Analysis seminar. December 2017.
- *Universidad Autónoma de Madrid*. Colloquium. October 2017.
- *Massachusetts Institute of Technology*. PDE/Analysis seminar. April 2017.
- *ETH Zürich*. Analysis seminar. March 2017.
- *École Polytechnique Fédérale de Lausanne*. Colloquium. March 2017.
- *Courant Institute, New York University*. Analysis seminar. February 2017.
- *Universitat Politècnica de Catalunya*. PDE Seminar. December 2016.
- *Hausdorff Center for Mathematics (Bonn)*. December 2016.
- *University of California Los Angeles*. Analysis seminar. December 2016.
- *Universität Zürich*. November 2016.
- *Rice University*. Colloquium. November 2016.
- *University of Texas at Austin*. Analysis seminar. October 2016.
- *Columbia University*. Analysis seminar. February 2016.
- *Michigan State University*. Analysis seminar. October 2015.
- *University of Copenhagen*. Analysis and Geometry seminar. June 2015.
- *African Institute of Mathematical Sciences (Senegal)*. PDE seminar. June 2015.
- *University of Chicago*. PDE seminar. February 2015.
- *Universidad del País Vasco (UPV/EHU)*. Analysis seminar. May 2014.
- *Universität Basel*. Analysis seminar. December 2013.
- *Università di Roma Tor Vergata*. PDE seminar. November 2013.
- *Universitat Politècnica de Catalunya*. PDE seminar. April 2013.
- *Basque Center for Applied Mathematics*. PDE seminar. February 2013.

#### MINICOURSES

- *Program on 'Elliptic Partial Differential Equations, Geometry, and the Calculus of Variations'* (Matrix Institute, Australia).  
Minicourse on 'Integro-differential equations'.  
January 2024.
- *Barcelona Introduction to Research Summer Program*.  
3h minicourse on 'Analysis and PDE'.  
July 2022.
- *Hypatia Summer School* (Barcelona).

6h minicourse on ‘Free boundary problems’.  
June 2022.

- *Summer School at the Hausdorff Institute* (Bonn).  
Minicourse on ‘Regularity of free boundaries’.  
June – July 2021.
- *Workshop on Nonlocal Operators with Applications to Jump Processes* (Dresden).  
8h online Minicourse on ‘Boundary regularity for nonlocal operators’.  
October 2020.
- *Concentration period on GMT and PDE* (Seattle).  
6h online Minicourse on ‘Regularity theory for free boundary problems’.  
August 2020.
- *CIME summer school “Geometric Measure Theory and Applications”* (Italy).  
6h Minicourse on ‘Regularity of free boundaries in obstacle problems’.  
September 2019.
- *African Institute for Mathematical Sciences* (Senegal).  
4h Minicourse on ‘Free boundary problems’.  
February 2019.
- *Huazhong University of Science and Technology* (China).  
16h Minicourse on ‘Nonlocal PDE’.  
July 2018.

SCIENTIFIC AND  
ADMINISTRATIVE  
RESPONSIBILITIES

- Scientific Committee member for the Biennial Conference of the Royal Spanish Mathematical Society 2021
- President of the committee of the Catalan Mathematical Olympiad (2020 - present)
- Co-Organizer of the U. Zürich Seminar on *PDE & Math. Physics* (2018 - 2020)
- Co-Organizer of the Basel-Zürich Seminar in Analysis (2019 - 2020)
- Reviewer of research proposals for different national science agencies: DFG (Germany); NCN (Poland); FONDECYT (Chile).
- Organizer of the *Barcelona Introduction to Research* Summer Program (UB-CRM), Summer 2022.

SCIENCE  
OUTREACH  
& MEDIA

- Public lecture at the BBVA Foundation.  
Title: ‘*Las ecuaciones que mueven el mundo*’  
Madrid, April 2018.
- Interview for the newspaper ‘El Español’ (April 2018)
- Video-Interview for ‘SwissInfo’ (August 2018)
- Interview for the newspaper ‘El Periódico’ (October 2019)
- Interview for the newspaper ‘elDiario.es’ (November 2019)
- Interview for the newspaper ‘El Punt Avui’ (December 2019)
- Interview for the newspaper ‘El País’ (January 2020)
- Public lecture for high school students.  
INS Joan Miró, Cornellà, January 2020.

- Interview for ‘Els Matins de TV3’ (October 2020)
- Interview for ‘BTV Notícies’ (July 2021)
- Interview for ‘Onda Cero’ (July 2021)
- Interview for the newspaper ‘La Vanguardia’ (August 2021)
- Interview for ‘Cadena SER’ (August 2021)
- Interview for ‘El Mundo’ (September 2021)
- Interview for ‘RAC1’ (September 2021)
- Interview for ‘Ona Mediterrània’ (October 2021)
- Inaugural Lecture of the 2021-22 academic year  
Facultat de Matemàtiques i Informàtica, UB (October 2021)
- *Quanta Magazine* has written an outreach article for the general public about our work on the Stefan problem (October 2021)  
[www.quantamagazine.org/mathematicians-prove-melting-ice-stays-smooth-20211006](http://www.quantamagazine.org/mathematicians-prove-melting-ice-stays-smooth-20211006)
- Commencement Speech for the ‘Batxillerat CiMs-Cellex’ (November 2021)
- Photo-Interview for ‘ABC – XLSemanal’ (December 2021)
- Interview for ‘ATRESMEDIA – Buscando Vocaciones’ (June 2022)
- Masterclass at #HACKSTEM22, organized by Siemens Gamesa and Spanish Startups, Bilbao (June 2022)

#### CITATIONS

- More than 1500 citations in *MathSciNet*; more than 3000 in *Google Scholar*.
- One of the most cited mathematicians of my generation.<sup>1</sup>
- The paper “*The Dirichlet problem for the fractional Laplacian: regularity up to the boundary*” is the most cited paper of the year 2014 in MathSciNet (among all papers in mathematics).

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<sup>1</sup>Source: MathSciNet and Math Genealogy Project; see <http://mathcitations.github.io>