

June 2021

Personal details

Name Eduardo García-Juárez
 Date of birth February 20, 1989
 Nationality Spanish
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 Current Position **ERC Postdoc at Universitat de Barcelona**
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Positions

01/09/2021- **MSCA-IF-2020**, *Universitat de Barcelona*, Spain
 07/2020-09/2021 **Post-doctoral researcher**, *Universitat de Barcelona*, Spain
 ERC St-G CAPA (PI Javier Gómez-Serrano)
 08/2018-06/2020 **Hans Rademacher Instructor of Mathematics**, *University of Pennsylvania*, USA
 06/2018-07/2018 **Post-doctoral researcher**, *Universidad de Sevilla*, Spain
 ERC St-G Fluid-Interface (PI Francisco Gancedo)
 09/2015-06/2018 **FPU Predoctoral Fellow**, *Universidad de Sevilla*, Spain
 04/2018-05/2018 **Visiting Student Research Collaborator**, *Princeton University*, USA
 06/2017-07/2017 **Visiting Research Scholar**, *University of Pennsylvania*, USA
 11/2014-06/2018 **PhD candidate**, *Universidad de Sevilla*, Spain

Education

11/2014-06/2018 **Mathematics PhD**, *Universidad de Sevilla*, Spain
 09/2007-09/2012* **Industrial Engineering** (five-year degree), *Universidad de Sevilla*, Spain
 09/2014 Final Project
 11/2010-12/2013* **Mathematics** (four-year degree), *Universidad de Sevilla*, Spain
 07/2014 Final Project

PhD Thesis

Title Global Regularity for Incompressible Fluid Interfaces
 Advisor Francisco Gancedo

Defense June 11, 2018, at *Instituto de Matemáticas de la Universidad de Sevilla* (IMUS), Spain
Committee Peter Constantin (Princeton University), Diego Córdoba (ICMAT), Raphaël Danchin (Université Paris-Est Créteil), Luis Escauriaza (UPV/EHU), Pedro Marín (Universidad de Sevilla).

Publications

2020 The Peskin Problem with Viscosity Contrast, with Y. Mori, R. Strain. *Submitted*, *arXiv:2009.03360*, (2020).
2019 Global Regularity for Gravity Unstable Muskat Bubbles, with F. Gancedo, N. Patel, R. Strain. *Accepted for publication in **Memoirs of the AMS***, *arXiv:1902.02318*, (2019).
2020 Regularity Results for Viscous 3D Boussinesq Temperature Fronts, with F. Gancedo. *Communication in Mathematical Physics*. 376, 1705-1736, (2020).
2019 On the Muskat problem with viscosity jump: Global in time results, with F. Gancedo, N. Patel, R. Strain. *Advances in Mathematics*, 345, p. 552-597, (2019).
2018 Global Regularity of 2D Density Patches for Inhomogeneous Navier-Stokes, with F. Gancedo. *Archive for Rational Mechanics and Analysis*, 229, 339-360, (2018)
2017 Global Regularity for 2D Boussinesq Temperature Patches with No Diffusion, with F. Gancedo. *Annals of PDE*, 3:14, (2017).

Fellowships and awards

06-2021 *Extraordinary Doctorate Award*, Universidad de Sevilla (Provisional resolution)
09/2021-08/2023 *MSCA-IF-2020 – Individual Fellowship*, Horizon 2020 Framework Programme Project 101031111 CAMINFLOW (160 932.48 eur)
07/2019-07/2021 *AMS-Simons Travel Grant*, American Mathematical and Simons Foundations, \$4000.
03/2018-06/2018 *FPU Travel Grant*, Government of Spain
03/2018-06/2018 *Travel Grant PP2018-9421*, Plan Propio de la Universidad de Sevilla
09/2015-06/2018 *Formación de Personal Universitario*, FPU, PhD Fellowship, Government of Spain
07/2012-09/2012 *Introduction to research scholarship*, Plan Propio de Investigación, Universidad de Sevilla
09/2011-06/2012 *Collaboration scholarship*, Government of Spain

Invited Presentations

21/06/2021	Seminari d'Anàlisi de Barcelona, <i>Universitat Autònoma de Barcelona and Universitat de Barcelona</i> , Spain.
17/06/2021	One World Meeting of Young Mathematicians in Fluid Dynamics, Online.
23/01/2020	MathBio seminar, <i>University of Pennsylvania</i> , Philadelphia, USA
10/05/2019	Partial Differential Equations seminar, <i>Brown University</i> , Providence, USA
28/03/2019	Differential Equations seminar, <i>University of Michigan</i> , Ann Arbor, USA
21/02/2019	Analysis of Fluids and Related Topics seminar, <i>Princeton University</i> , Princeton, USA
18/01/2019	Special Session on Math. Anal. In Fluid Dynamics, <i>Joint Mathematics Meetings 2019</i> of the American Mathematical Society, Baltimore, USA
10/01/2019	Conversaciones Fluidas seminar, <i>IMUS</i> , Sevilla, Spain
11/10/2018	Analysis seminar, <i>University of Pennsylvania</i> , Philadelphia, USA
20/11/2017	Ecuaciones Diferenciales seminar, <i>IEMATH-Granada</i> , Granada, Spain
07/09/2017	IV Young Researchers Meeting, <i>RSME</i> , Valencia, Spain
25/05/2017	Conversaciones Fluidas seminar, <i>IMUS</i> , Sevilla, Spain
10/05/2017	PDEs and fluid mechanics seminar, <i>ICMAT</i> , Madrid, Spain
23/05/2015	PHD seminar, <i>IMUS</i> , Sevilla, Spain
29/05/2015	Workshop on Mathematics and its Applications, <i>BCAM</i> , Bilbao, Spain

Organization experience

13/12/2019-14/12/2019	Co-organizer of the sessions Recent Results in Incompressible Fluid Mechanics, Part I, II, III, at <i>2019 SIAM Conference on Analysis of Partial Differential Equations</i> , La Quinta, USA
Sept. 2018-May 2020	Co-organizer of the <i>Analysis seminar</i> , University of Pennsylvania, Philadelphia, USA
12/06/2018-15/06/2018	Co-organizer of the workshop Mathematical Analysis in Incompressible Fluids (<i>MathFluids Workshop</i>), <i>IMUS</i> , Sevilla, Spain
Sept. 2017-May 2018	Co-organizer of the <i>Conversaciones Fluidas seminar</i> , <i>IMUS</i> , Sevilla, Spain
Sept. 2017-June 2018	Co-organizer of the <i>PHD seminar</i> , <i>IMUS</i> , Sevilla, Spain

Teaching Experience

Jan. 2021-June 2021	Equacions Diferencials (6 ECTS), 3 rd year BSc (Mathematics degree), <i>Universitat de Barcelona</i> , Spain
Jan. 2020-May 2020	Partial Differential Equations (Math 425), 4 th year BSc, <i>University of Pennsylvania</i> , USA
Jan. 2020-May 2020	Calculus IV, PDE (Math 241), 2 nd year BSc, <i>University of Pennsylvania</i> , USA
Aug. 2019-Dec. 2019	Multivariate Calculus, with Probability and Matrices (Math 115), 1 st year BSc, <i>University of Pennsylvania</i> , USA
Jan. 2019-May 2019	Partial Differential Equations (Math 425), 4 th year BSc, <i>University of Pennsylvania</i> , USA
Jan. 2019-May 2019	Linear Algebra (Math 312), 3 rd year BSc, <i>University of Pennsylvania</i> , USA
Aug. 2018-Dec. 2018	Linear Algebra (Math 312), 3 rd year BSc, <i>University of Pennsylvania</i> , USA
Sept. 2017-Feb. 2018	Infinitesimal Calculus (1 ECTS), 1 st year BSc (Mathematics degree), <i>Universidad de Sevilla</i> , Spain
Sept. 2017-Feb. 2018	Mathematical Analysis (2.25 ECTS), 1st year BSc (Physics degree), <i>Universidad de Sevilla</i> , Spain
Sept. 2017-Feb. 2018	Mathematics (1.6 ECTS), 1 st year BSc (Chemistry degree), <i>Universidad de Sevilla</i> , Spain
Sept. 2016-Feb. 2017	Mathematical Analysis (2.25 ECTS), 1st year BSc (Physics degree), <i>Universidad de Sevilla</i> , Spain
Sept. 2016-Feb. 2017	Mathematics (2.4 ECTS), 1 st year BSc (Chemistry degree), <i>Universidad de Sevilla</i> , Spain
Sept. 2016-Feb. 2017	Differentiation of functions in R^n (0.4 ECTS), 2 nd year BSc, <i>Universidad de Sevilla</i> , Spain
Sept. 2016-Feb. 2017	Integration of functions in R^n (0.4 ECTS), 2 nd year BSc, <i>Universidad de Sevilla</i> , Spain

Participation in funded projects

07/2020-	Title: <i>Global existence and Computer-Assisted Proofs of singularities in incompressible fluids, with Applications</i> European Research Council, Starting Grant CAPA-852741, 2020-2025 Principal Investigator: Javier Gómez-Serrano
09/2015-	Title: <i>Analysis of moving incompressible fluid interfaces</i> European Research Council, Starting Grant Fluid-Interface-2251-0791 Principal Investigator: Francisco Gancedo
09/2018-08/2021	Title: Formación de singularidades en fluidos incompresibles Ministerio de Ciencia e Innovación (Spain), MTM-2017-88976-P Principal Investigator: Diego Córdoba

01/2014-02/2019 Title: Formación de singularidades en interfaces de flujos incompresibles
Junta de Andalucía, P12-FQM-2466
Principal Investigator: Francisco Gancedo

Conferences attended

11/12/2019-14/12/2019 SIAM Conference on Analysis of Partial Differential Equations, La Quinta, USA
24/06/2019-28/06/2019 Summer School on Fluids Mechanics, ICMAT, Madrid, Spain
02/07/2018-20/07/2018 Summer School and Workshop: Geometric Function Theory in Fluid Mechanics, BGSMATH, Barcelona, Spain
12/06/2018-15/06/2018 Workshop Mathematical Analysis in Incompressible Fluids, IMUS, Sevilla, Spain
04/09/2017-08/09/2017 IV Young Researchers Meeting, RSME, Valencia, Spain
05/06/2017-09/06/2017 Summer School and Workshop: Mathematical Analysis of Water Waves and Related Models, Bodega Marine Laboratory, UC Davis, Bodega Bay, USA
25/01/2017-27/01/2017 Workshop Recent Advances in PDEs: Analysis, Numerics, and Control, IMUS, Sevilla, Spain
19/09/2016-21/09/2016 Spanish-French Workshop on Analysis of PDEs from fluid Mechanics, ICMAT, Madrid, Spain
11/07/2016-15/07/2016 International Summer School on Evolution Equations, Charles University and Institute of Mathematics of the Czech Academy of Sciences, Prague, Czech Republic
10/10/2015-13/10/2015 Mini-School and workshop Analysis of PDEs of Fluid Mechanics and Related Models, Rice University, Houston, USA
27/07/2015-07/08/2015 Summer Graduate School Incompressible Fluid Flows at High Reynolds Number, Mathematical Sciences Research Institute (MSRI), Berkeley, USA

Other activities

19/11/2019 Dinner Chat at Kings Court English College House, University of Pennsylvania.
Sept. 2018-May 2020 Member of the Library Committee at University of Pennsylvania.
Sept. 2019-May 2020 Math Major Advisor at University of Pennsylvania.
Reviewer Indiana University Mathematics Journal, Nonlinearity, Communications in Mathematical Sciences, Journal of Mathematical Physics, Mathematical Modeling of Natural Phenomena, Nonlinear Analysis Series B: Real World Applications.

Languages

Spanish	Native
English	Advanced – C1/C2
French	Intermediate – B1/B2 (Spain National Language School, 2007)
German, Italian	Beginner – A1/A2 (Universidad de Sevilla, 2008)

References

Francisco Gancedo	fgancedo@us.es
Robert M. Strain	strain@math.upenn.edu
Yoichiro Mori	y1mori@sas.upenn.edu
Javier Gómez-Serrano	jgomez-serrano@ub.edu
Diego Córdoba	dgc@icmat.es