

# Claudia García

## *Curriculum Vitae*

December 2021

### PERSONAL DETAILS

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Departament de Matemàtiques i Informàtica  
Universitat de Barcelona  
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08007 Barcelona, Spain

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Web page: [www.ub.edu/pde/claudiagarcia](http://www.ub.edu/pde/claudiagarcia)  
Nationality: Spanish

Current position: Postdoctoral researcher at Universitat de Barcelona associated to the ERC St-G CAPA led by Javier Gómez Serrano

### POSITIONS

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Postdoctoral Researcher March. 2021 –  
Universitat de Barcelona  
ERC St-G CAPA (PI Javier Gómez Serrano)

Postdoctoral Researcher Dec. 2020 – March 2021  
Universidad de Granada  
Supervisor: Juan Soler

FPU Predoctoral Researcher Oct. 2016 – Oct. 2020  
Université de Rennes 1 & Universidad de Granada  
PhD Advisors: Taoufik Hmidi & Juan Soler

### EDUCATION

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Ph.D in Physics and Mathematics Oct. 2016 – Oct. 2020  
Thesis title: Patterns in Partial Differential Equations Arising from Fluid Mechanics  
Institution: Université de Rennes 1 & Universidad de Granada  
PhD Advisors: Taoufik Hmidi & Juan Soler  
Duration: Oct. 2016 – Oct. 2020 (defended in 16/10/2020)  
Jury: Juan Calvo, Christophe Chevy, Diego Córdoba, Isabelle Gallagher, Joan Verdera  
References: Javier Gómez Serrano, Evelyne Miot

Master degree: “Física y Matemáticas (FisyMat)” Sept. 2015 – July 2016.  
Universidad de Granada

Degree in Mathematics Sept. 2011 – July 2015  
Universidad de Granada  
Award to the highest grade

### GRANTS AND FELLOWSHIPS

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FPU Travel Grant (2019).

Travel Grant by *Rennes Metropole* (2018).

*Formación de Personal Universitario* (FPU), Ph.D. fellowship  
Government of Spain  
Oct. 2016 – Oct. 2020  
Applied Mathematics Department (Universidad de Granada)

Collaboration with departments grant  
Universidad de Granada  
National grant of the Spanish government to introduce students into research  
September 2015 – July 2016  
Advisor: Juan Soler

Introduction to research grant  
Universidad de Granada  
Local grant to introduce students into research  
Sept. 2014 – July 2015  
Advisor: Antonio Rodríguez Garzón

#### AWARDS AND PRIZES

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Prix de thèse du laboratoire de mathématiques Blaise Pascal (2021)  
This price of 4000 euros is to recognize a phd thesis in France defended in 2019 or 2020.

#### ACCREDITATIONS

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Informe per a professorat lector: Accreditation to be hired as “Professor Lector” August 2021  
Generalitat de Catalunya.

Qualification: Accreditation to be hired as “Maître de Conférences” Feb. 2021  
Ministère de l’Enseignement supérieur et de la Recherche (France).

#### PARTICIPATION IN RESEARCH PROJECTS

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ERC-2019-STG CAPA: Global existence and Computer-Assisted Proofs of singularities in incompressible fluids, with Applications.  
Organism: European Research Council (ERC).  
Main researcher: Javier Gómez Serrano.  
Duration: 2021 – 2024.

Project P18-RT-2422: Modelos matemáticos en comunicación celular mediada por citonemas y dinámica de glioblastomas.  
Organism: Junta de Andalucía, PAIDI “Retos Consolidado”.  
Main researcher: Juan Soler and Juanjo Nieto.  
Duration: 2020 – 2022.

Project A-FQM-311-UGR18: Dispersión no lineal, comunicación celular y dinámica tumoral (NL-DISCOM).  
Organism: Junta de Andalucía, Prog. Operat. FEDER Andalucía “Frontera”.  
Main researcher: Juan Soler and Juan Calvo.  
Duration: 2019 – 2020.

Project RTI2018-098850-B-I00: Pattern Dynamics in Nonlinear Partial Differential Equations arising in Fluid and Cell Mechanics (PADY)

Organism: MICINN, Proyectos de I+D “Retos investigacin”.

Main researcher: Juan Soler and Juan Campos.

Duration: 2019 – 2023.

Project MTM2014-53403-R: Dinámica evolutiva, teoría cinética y descripciones hidrodinámicas en ciencias de la vida

Organism: MINECO (Proyectos de I+D+I: Retos de investigación).

Main researcher: Juan Soler.

Duration: 01/01/2015 – 31/12/2018.

Project FQP-954: Modelado matemático de sistemas complejos en Ciencias de la Vida: de la dinámica tumoral al comportamiento colectivo de especies (BIOMAT)

Organism: Junta de Andalucía (Proyecto de excelencia).

Main researcher: Juan Soler.

Duration: 01/01/2014 – 31/12/2017.

## PUBLICATIONS AND PREPRINTS

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J. Campos, C. García, J. Soler *Kinks and solitons in linear and nonlinear-diffusion Keller-Segel type models with logarithmic sensitivity.* arXiv:2102.13480, 2021.

C. García, T. Hmidi, J. Mateu, *Time periodic solutions for the 3D quasi-geostrophic model.* Accepted for publications in Comm. Math. Phys.

C. García, *Vortex patches choreography for active scalar equations.* J Nonlinear Sci **31**, 75 (2021). <https://doi.org/10.1007/s00332-021-09729-x>.

C. García, *Kármán Vortex Street in incompressible fluid models.* Nonlinearity **33** (2020), 1625–1676.

C. García, T. Hmidi, J. Soler, *Non uniform rotating vortices and periodic orbits for the two-dimensional Euler equations.* Arch. Ration. Mech. Anal. **238** (2020), 929–1086.

## TALKS AND SEMINARS

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Title: “Relative equilibria for incompressible fluids” Sept. 2021  
Event: PDE Seminar (ICERM, Brown University, USA)

Title: “Time periodic solutions for the 3D quasi-geostrophic model” May 2021  
Event: Conversaciones fluidas (IMUS, Sevilla, Spain)

Title: “Time periodic solutions for the 3D quasi-geostrophic model” April 2021  
Event: Seminari d’Anàlisi de Barcelona (Barcelona, Spain)

Title: “Relative equilibria for 2D Euler equations” Feb. 2021  
Event: Junior Analysis Seminar (Imperial College, London)

Title: “3D rotating patches for the 3D quasi-geostrophic model” Feb. 2021  
Event: Séminaire EDP–Analyse (Institut Camille Jordan, Lyon)

Title: “Time periodic solutions for 3D quasigeostrophic system” Dec. 2020  
Event: Bringing Young Mathematicians Together (BYMAT), Universitat de València and Uni-

versitat Politècnica de València (online due to covid-19)

Title: “Time periodic solutions for 3D quasigeostrophic system” Event: Mathematics of Planet Earth Webinars: Analysis and Modeling	May 2020
Title: “Time periodic solutions for 3D quasigeostrophic system” Event: Online PDE seminar, Rennes (France)	April 2020
Title: “Bifurcation theory in Fluid Mechanics” Event: V Congreso de Jóvenes Investigadores de la RSME, Castellón de la Plana (Spain)	Jan. 2020
Title: “Relative equilibria in the Euler equations” Event: PDE seminar, Rennes (France)	Dec. 2019
Title: “Relative equilibria in the Euler equations” Event: PDE seminar, Universidad Autónoma de Barcelona (Spain)	Oct. 2019
Title: “Relative equilibria in the Euler equations” Event: PDE seminar, Granada (Spain).	July 2019
Title: “Bifurcación en Mecánica de Fluidos” Event: Young researcher seminar, Granada (Spain).	Feb. 2019
Title: “Rotating solutions for the Euler equations” Event: Fluid seminar, ICMAT (Madrid, Spain).	Dec. 2018
Title: “Non uniform rotating vortices for the Euler equations” Event: PDE seminar, Université de Rennes 1 (France).	Nov. 2018
Title: “Non uniform rotating vortices for the Euler equations” Event: ACSIOM seminar, Université de Montpellier (France).	Nov. 2018
Title: “Exploring new solutions of the incompressible Euler equations” Event: CEDYA+CMA 2017, Cartagena (Spain).	June 2017

## RESEARCH STAYS

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ICERM (Brown University)	Sept. 2021 – Dec. 2021 (three months)
Instituto de Matemáticas Universidad de Sevilla Supervisor: Francisco Gancedo.	May 2021 (one week)
Universitat Autònoma de Barcelona (Spain) Supervisor: Joan Mateu.	Oct. 2019 (one week)
Université de Rennes 1 (France) Supervisor: Taoufik Hmidi.	Sept. 2019 – Dec. 2019 (three months)
Université de Rennes 1 (France) Supervisor: Taoufik Hmidi.	Sept. 2018 – Dec. 2018 (three months)
Université de Rennes 1 (France) Supervisor: Taoufik Hmidi.	Jan. 2018 – March 2018 (two months)

Université de Rennes 1 (France)  
Supervisor: Taoufik Hmidi.

Feb. 2017 – March 2017 (one month)

#### CONFERENCES AND WORKSHOPS

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Bringing Young Mathematicians Together (BYMAT) Universitat de València and Universitat Politècnica de València (online due to covid-19)	Dec. 2020
V Congreso de Jóvenes Investigadores de la RSME Castellón de la Plana (Spain)	Jan. 2020
PDE–MANS 2020 Universidad de Granada (Spain)	Jan. 2020
Inhomogeneous Flows: Asymptotic Models and Interfaces Evolution CIRM (Marseille, France)	Sept. 2019
BIOMAT 2019 Universidad de Granada (Granada, Spain)	June 2019
Les 60 ans de Jean-Yves Chemin Institut Henri Poincaré (Paris, France)	March 2019
RSME 2019 Universidad de Santander (Spain)	Feb. 2019
Colloque “Ondes dispersives et aléatoires” Université de Cergy–Pointoise (France)	Nov. 2018
International PhD School on Modeling Nature Universidad dd Granada (Granada, Spain)	Sept. 2018
Geometric Function Theory in Fluid Mechanics Universidad Autónoma de Barcelona (Barcelona, Spain)	July 2018
Biomat 2018: “Quantum biology” Universidad de Granada (Granada, Spain)	June 2018
Mathfluids: Mathematical Analysis of Incompressible Fluids Instituto de Matemáticas de la Universidad de Sevilla (Sevilla, Spain)	June 2018
Workshop on Partial Differential Equations Universidad de Granada (Granada, Spain)	April 2018
Journées Louis Antoine. Analyse asymptotique Institut de Recherche Mathématique de Rennes (Université de Rennes 1).	Feb. 2018
CEDYA+CMA 2017 Sociedad Española de Matemática Aplicada (Cartagena, Spain)	June 2017
Workshop on PDEs: Modeling, Analysis and Numerical Simulations Universidad de Granada (Granada, Spain)	June 2017

Biomat 2017: “Mathematical Models in Biomedical Imaging” Universidad de Granada (Spain)	June 2017
New trends in Partial Differential Equations Universidad de Granada (Granada, Spain)	May 2017
Local and global dynamics of concentrated vortices Université de Rennes 1 (Rennes, France)	May 2017
Spanish-French workshop on analysis of PDEs from fluid mechanics Instituto de Ciencias Matemáticas ICMAT (Madrid, Spain)	Sept. 2016
Biomat 2016: “Cell dynamics and polymerization” Universidad de Granada (Granada, Spain)	June 2016
Recent Advances in Fluid Mechanics Universidad de Granada (Granada, Spain)	Nov.–Oct. 2015
Centennial of the Royal Spanish Mathematical Society. Universidad de Granada (Granada, Spain)	Feb. 2015

#### ORGANIZATION ACTIVITIES

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- Co-organizer of PHD seminar, Universidad de Granada (2019–2020)
- Co-organizer of Biomat 2019 (Patterns in Life and Social Sciences)
- Co-organizer of MNAT 2019 (International PHD school on Modeling Nature)
- Co-organizer of Biomat 2018 (Quantum Biology)
- Co-organizer of Biomat 2017 (Mathematical Models in Biomedical Imaging)

#### TEACHING EXPERIENCE

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Mathematics (Universidad de Granada). Ecuaciones Diferenciales en Mecánica y Biología (15 hours)	2020–2021
Economics (Universidad de Granada). Matemáticas (20 hours)	2020–2021
Biology (Universidad de Granada). Matemáticas (25 hours)	2020–2021
Chemistry (Universidad de Granada). Matemáticas II (55 hours)	2019–2020
Electronic Engineering (Universidad de Granada). Matemáticas III (36 hours)	2018–2019
Civil Engineering and ADE (Universidad de Granada). Ampliación a las Matemáticas (24 hours)	2018–2019

## LANGUAGES

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Spanish, mother tongue.

English C1, Certificate in Advanced English, Cambridge University.

French, intermediate knowledge.