

Richard Medina Rodríguez

PH.D. IN MATHEMATICS

CEREMADE, Université Paris Dauphine - PSL, FRANCE

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Professional/Academic Appointments

- 2025-2026 **Teaching and Research Fellow**, Université Paris Dauphine - PSL.
2022 **Master Internship**, CEREMADE, Université Paris Dauphine - PSL.
2020 - 2021 **Assistant Professor**, Dept. of Mathematics, Universidad de La Habana.

Education

Université Paris Dauphine - PSL

Paris, France

PH.D. IN APPLIED MATHEMATICS

09/2022 - 12/2025

- Thesis: Hypocoercivity and geometric confinement
- Advisors: Kleber Carrapatoso & Stéphane Mischler

Université Paris Dauphine - PSL

Paris, France

MASTER DEGREE ON APPLIED AND THEORETICAL MATHEMATICS

09/2021 - 06/2022

- With Honors (Mention Bien)

Universidad de La Habana

La Habana, Cuba

BS MATHEMATICS

09/2016 - 07/2020

- Summa Cum Laude

Publications

SUBMITTED PAPERS

- The Boltzmann equation on smooth and cylindrical domains with Maxwell boundary conditions. 2025. Submitted to *Kinetic Related Models*.
- Existence and stability of a non equilibrium steady state for a weakly non-linear kinetic Fokker-Planck equation in a domain. 2025. *In collaboration with J. Evans*. Submitted to the *Journal of Statistical Physics*.
- Constructive Krein-Rutman result for kinetic Fokker-Planck equations in a domain. 2024. *In collaboration with K. Carrapatoso, P. Gabriel, and S. Mischler*. Submitted to *Analysis & PDEs*.

Selected Presentations & Invited Talks

- Feb. 2026. *The Boltzmann equation with non-isohermal Maxwell boundary conditions*. Presentation at the SPIKE Seminar at the Institut Henri Poincaré (IHP), France.
- Jan. 2025. *Brief introduction to the Boltzmann equation*. Presentation at the Young Researchers Seminar at Paris Dauphine-PSL, France.
- Nov. 2024. *Constructive Krein-Rutman result for kinetic Fokker-Planck equations in a domain (joint work with P. Gabriel, K. Carrapatoso and S. Mischler)*. Presentation at the Junior Analysis Seminar at Imperial College London, UK.
- Oct. 2024. *The Boltzmann equation on C^1 and cylindrical domains near the hydrodynamic limit*. Presentation at the Partial Differential Equations and their Applications Seminar at the University of Warwick, UK.
- Jul. 2024. *Constructive Krein-Rutman result for kinetic Fokker-Planck equations in a domain (joint work with P. Gabriel, K. Carrapatoso and S. Mischler)*. Poster presentation on the summer school “Collective behavior and Pattern formation”, at CIRM, Marseille, France.

Jun. 2024. *The Boltzmann equation in a cylinder near the hydrodynamic limit*. Conference “Analysis of PDEs in Mathematical Physics”, at University of Bath, UK.

Nov. 2023. *Introduction to the kinetic Fokker-Planck equation and its long-time behavior*. Young Researchers Seminar, at Université Paris Dauphine - PSL, Paris, France.

May. 2023. *Hypocoercivity estimates for some linearized kinetic operators*. Young Researchers Seminar, at Université de Lille, France.

Feb. 2023. *'Cause I'll L-ove you to **infinity** estimates for the Boltzmann equation*. MAFRAN Days, at King's College, Cambridge, UK.

Participation on Conferences, Workshops and Schools

Jul. 2024 **Summer school - Collective behavior and Pattern formation**, at CIRM, Marseille, France.

Jun. 2024 **Research school - Frontiers in Interacting Particle Systems**, at CIRM, Marseille, France.

Nov. 2022 **Research School - Kinetic Theory**, at CIRM, Marseille, France

Jul. 2022 **Conference - When Kinetic Theory Meets Fluid Mechanics**, at FIM, ETH Zürich, Switzerland.

Jun. 2019 **CIMPA Research Summer School**, at Universidad de La Habana, Cuba.

Awards, Fellowships & Grants

2022	MathInParis2020 COFUND Fellowship , Fondation de Sciences Mathématiques de Paris	<i>Ph.D. Grant</i>
2021	PSL PhD Track Grant 2021 , Université PSL	€ 10,000
2020	Prize to the Scientific Merit 2020 , Universidad de La Habana	

Editorial service

Referee for international journals (*Communications in Mathematical Physics*)

Teaching Experience

Spring 2026	Algebra 4 & Numerical methods , problem-solving sessions (2nd-year Mathematics)	<i>Paris Dauphine</i>
Fall 2025	Analysis 1 , lectures and problem-solving sessions (1st-year Mathematics)	<i>Paris Dauphine</i>
May 2025	Functional Analysis Summer School , problem-solving sessions (Mathematics master students)	<i>Univ. Habana</i>
Spring 2025	Analysis 2 , problem-solving sessions (1st-year Mathematics)	<i>Paris Dauphine</i>
Spring 2024	Analysis 2 , problem-solving sessions (1st-year Mathematics)	<i>Paris Dauphine</i>
Fall 2023	Mathematical Methods , lectures and problem-solving sessions (1st-year Economics)	<i>Paris Dauphine</i>
Spring 2021	Complex Analysis , problem-solving sessions (3rd-year Mathematics)	<i>Univ. Habana</i>
Fall 2020	Introduction to Mathematics , lectures and problem-solving sessions (1st-year Mathematics)	<i>Univ. Habana</i>

Skills

Languages. Español (native), English (bilingual proficiency), Français (bilingual proficiency)

Coding. \LaTeX (advanced), PYTHON (advanced), TikZ/Beamer (advanced), WOLFRAM MATHEMATICA (advanced), C# (intermediate), Matlab (intermediate), and HTML (intermediate)

Outreach activities

2024-2025	Young Researchers Seminar , Co-organizer	<i>Paris Dauphine</i>
May 2024	Salon Culture et Jeux Mathématiques , Volunteer Stand Animator	<i>Pl. Saint Sulpice</i>
March 2024	Math en Jeans 2024 , Volunteer Judge	<i>Paris Dauphine</i>