

Richard Medina Rodríguez

PH.D. IN MATHEMATICS

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Education

Université Paris Dauphine - PSL

Paris, France

PH.D. IN 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

Professional Experience

- 2025-2026 **Temporary Teaching and Research Fellow (ATER)**, Université Paris Dauphine - PSL.
- 2022 **Master Internship**, CEREMADE, Université Paris Dauphine - PSL.
- 2020 - 2021 **Assistant Professor**, Dept. of Mathematics, Universidad de La Habana.
- 2020 **Research Internship**, CEREMADE, Université Paris Dauphine - PSL.
- 2017 - 2019 **Undergraduate Instructor**, Dept. of Mathematics, Universidad de La Habana.

Research Experience

Warwick Mathematics Institute - University of Warwick

Coventry CV4 7AL

PROJECT IN COLLABORATION WITH JOSEPHINE EVANS

Oct. 2024 - Nov. 2024

- We studied and generalized previously known results on some classes of non-equilibrium non-linear kinetic Fokker-Planck equations culminating in a research paper.

Awards, Fellowships & Grants

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

Publications

UNDER REVIEW

- The Boltzmann equation on C^1 and cylindrical domains near the hydrodynamic limit. 2025
- 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.*
- Constructive Krein-Rutman result for kinetic Fokker-Planck equations in a domain. 2024. *In collaboration with K. Carrapatoso, P. Gabriel, and S. Mischler.*

Selected Presentations

- 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 behaviour*. Young Researchers Seminar, At Université Paris Dauphine - PSL, Paris, France.
- May. 2023. *Hypoocoercivity 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 on 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.

Skills

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

Coding. \LaTeX (advanced level), C# (intermediate level), WOLFRAM MATHEMATICA (advanced level), PYTHON (advanced level), and Matlab (intermediate level)

Teaching Experience

Spring 2025	Analysis 1 , Lectures and exercise sessions for first-year students of Mathematics	Paris Dauphine
Spring 2025	Analysis 2 , Exercise sessions for first-year students of Mathematics	Paris Dauphine
Spring 2024	Analysis 2 , Exercise sessions for first-year students of Mathematics	Paris Dauphine
Fall 2024	Mathematical Methods , Lectures and exercise sessions for first-year students of Economy	Paris Dauphine
Spring 2021	Complex Analysis , Exercise sessions for third-year students of Mathematics	Univ. Habana
Fall 2020	Introduction to Mathematics , Exercise sessions for first-year students of Mathematics	Univ. Habana

Outreach activities

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