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*
Project in collaboration with Josephine Evans *Oct. & Nov. 2024*

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

Submitted

- 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 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 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), PYTHON (advanced level), **C**# (intermediate level), WOLFRAM MATHEMATICA (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*