

Pablo Isaac Alex ZÚÑIGA RODRÍGUEZ-PEÑA

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About me

PhD student at the Laboratoire de Probabilités, Statistique et Modélisation of the Sorbonne Université, interested in mathematical research in probability theory and stochastic processes.

Education

- PhD in Mathematics, Sorbonne Université, Currently.
Advisors: Nicolas Broutin and Armand Riera
- Master M2 Mathématiques de l'Aléatoire, Université Paris-Saclay, 2025.
Mémoire: *Hausdorff dimension of geodesic stars in random geometry* ([pdf](#))
Advisor: Armand Riera
- Master in Engineering Sciences, minor Applied Mathematics, University of Chile, 2024.
Title: *Explorable sets and exit sets of the Gaussian Free Field* ([pdf](#))
Advisor: Avelio Sepúlveda
- Mathematical Engineering, University of Chile, 2024.
Degree jointly obtained with the Master.
- B.S. in Engineering Sciences, Mention in Mathematics, University of Chile, 2022.
Including advanced courses of probability theory and its applications, such as Stochastic Calculus, Stochastic Control and Random Matrices.

Professional Experience

- Internship, Center for Mathematical Modelling, Santiago, Chile, January 2022
Generalization of a principal-agent based model for pollution regulation in the electric market.
- Internship, Tesorería General de la República, Santiago, Chile, January 2020
Dashboards design with Google Data Studio for data visualization of the TGR intern processes.

Certificates & Awards

Fondation Mathématique Jacques Hadamard, Orsay, France

- Sophie Germain Master Scholarship, 2024-2025.

Faculty of Physical and Mathematical Sciences, University of Chile

- Outstanding student 2017, 2018, 2020, 2021, 2022.

A2IC, Faculty of Physical and Mathematical Sciences, University of Chile

- Certificate of the course *Training of Correction Assistants in Massive Courses*, April 2019.
- Certificate of the course *Training of Teaching Assistants*, September 2018.

Talks

- **YMCN** Summer School. *Explorable sets and exit sets of the GFF*. (Flash talk + [Poster](#)). June 2025.
- DIM's Master Seminar. *Conjuntos explorables* ([Slides](#)). October 2023.
- **tarK1**. *Conjuntos de parada del Campo Libre Gaussiano* ([Slides](#)). July 2023.
- DIM's Master Seminar. *Conjuntos de salida del Campo Libre Gaussiano en \mathbb{R}^d* ([Slides](#)). June 2023.

Teaching Experience

Faculty of Sciences and Engineering, Sorbonne University

Graduate and undergraduate courses on mathematics for bachelor and master.

TD Assistant

Jump processes (M1), Mathematics for scientific studies II (L1).

Faculty of Physical and Mathematical Sciences, University of Chile

Graduate and undergraduate courses of Mathematical Engineering and the Engineering Common Plan.

Teaching Assistant

Stochastic Calculus, Markov Processes, Stochastic Simulation, Ordinary Differential Equations, Single Variable Calculus, Introduction to Algebra, Introduction to Newtonian Physics.

Grading Assistants Coordinator

Advanced Calculus, Multivariate Calculus, Linear Algebra.

Grading Assistant

Probability, Introduction to Calculus, Ordinary Differential Equations.

EdV, University of Chile

Basic courses on mathematics, engineering and sciences for school students.

Teaching and Grading Assistant

Real Functions, Linear Algebra Basics, Introduction to Theoretical Mathematics.

Selected Attended Conferences & Summer Schools

- YMCN Summer School in Interacting Random Systems, Münster, Germany, June 2025.
- Summer School in Local Limits of Random Graphs, Orsay, France, June 2025.
- Probability in South America, March 2024.
- BioStochastic Summer School, January 2024.
- VI Summer School in Probabilities and Stochastic Processes, January 2024.
- XCI Encuentro Anual de la Sociedad de Matemática de Chile, December 2023.
- VII Encuentro Nacional de Ingeniería Matemática, November 2023.
- V Summer School in Probabilities and Stochastic Processes, January 2023.
- Integrative Think Tank Chile (CMM & University of Bath), December 2022.

Skills

Code: Python, \LaTeX .

Mathematical Software: Matlab, BOCOP, Excel.

Languages: Spanish (native), English, French.

Extracurricular Activities

- Organizer of the [DIM's Master Seminar](#) during 2023-2024.
- Staff in the [VI Summer School in Probabilities and Stochastic Processes](#), 2024.
- Staff in the [WoMaths Congress](#), 2023.
- Director of the [DIM's Student Council CEIMAT](#), 2021.

Some Links

- [My personal website.](#)
- [DIM's Master Seminar website.](#)
- [My YouTube channel.](#)