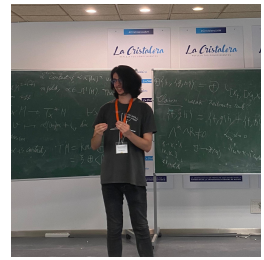# Rubén Izquierdo-López, PhD student

✉ ruben.izquierdo@icmat.es
📞 On request
🌐 My personal webpage: rubenizquierdolopez.xyz
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Teaching experience

December 2025-now — 🔖 **Teaching assistant** at UAM (Universidad Autónoma de Madrid) teaching

- Linear Geometry (2025–2026) for second year students of Mathematics and Computer Science.
- Linear Geometry (2025–2026) for first year students of Mathematics.

September 2024-December2025 — 🔖 **Professor** at UNIR (Universidad Internacional de la Rioja) teaching

- Differential Equations (2025–2026) for 2nd year students of Physics.
- Adavanced Algorithms (2025–2026) as an optative course for students of Computer Science.
- Advanced Algorithms (2025–2026) for 3rd year students of Computational Mathematics.
- Dynamical Systems (2024–2025) for 4th year students of Computational Mathematics
- Computational Logic (2024–2025) for 1st year students of Computational Mathematics.
- Complex Variables (2024–2025) for 3rd year students of Physics.
- Numerical Analysis (2024–2025) for 2nd year students of Physics.
- Differential Equations (2024–2025) for 2nd year students of Physics.

2022-2023 — 🔖 **Teaching assistant** in "Matemáticas Básicas" at Universidad Complutense de Madrid.

2020-2022 — 🔖 **Support Teacher** at Savannah SLC in Torrejón de Ardoz.

Research experience

December 2025-now — 🔖 **FPU2024 fellowship** for developing my PhD in CSIC (Instituto de Ciencias Matemáticas).

2023-2024 — 🔖 **Severo Ochoa contract for Master students** in CSIC (Instituto de Ciencias Matemáticas) supervised by Prof. Manuel de León.

2023 — 🔖 **JAE Intro research grant** supervised by Prof. Manuel de León.

Education

2024– *now* — I am currently a PhD student in Mathematics under the supervision of prof. Manuel de León in Universidad Autónoma de Madrid.

2023–2024 — **Master's degree in Advanced Mathematics, (average of 9.77/10)** in Universidad Complutense de Madrid.
Thesis title: *Coisotropic reduction in Multisymplectic Geometry*. Advisor: *Manuel de León Rodríguez*. **Grade**: 10.

2019–2023 — **Bachelor's degree in Mathematics, (average of 9.44/10)** in Universidad Complutense de Madrid. I was awarded with "premio excelencia UCM", for one of the best academic records in Mathematics.
Thesis title: *Simplicial and Cellular Homology*. **Advisor**: *Manuel Alonso Morón*. **Grade**: 9.7/10.

Languages

- **Spanish:** Native
- **English:** C1, 100/120 on TOEFL.

Grants

- **Severo Ochoa grant for Master students** in academic year 2023-2024.
- **"Excellence grant" of Comunidad de Madrid** in academic years 2020-2021, 2021-2022, 2022-2023.
- **JAE Intro research grant**.

Schools and conferences

September 2025 — **XXXIII International Fall Workshop on Geometry and Physics** in Universidad de Córdoba (Plenary talk on "Graded brackets in classical field theories: Conservative and dissipative").

June 2025 — **Summer School GDFT 2025** in Miraflores de la Sierra, Madrid (talk on "Extensions of brackets in classical field theories").

— **Geometry and Topology for the Future III** in Universidad Complutense de Madrid, España (talk on "Recent Developments in the Theory of Brackets in Classical Field Theories").

January 2025 — **XIX Young Researchers Workshop in Geometry Dynamics and Field Theory** in University of Verona, Verona, Italy (talk on "Graded structures of classical field theories").

— **VII Congreso de Jóvenes Investigadores de la RSME** in Universidad del País Vasco, Bilbao, Spain (talk on "Graded brackets in classical field theories").

November 2024 — **New Advances in Contact and Symplectic Hamiltonian Dynamics** in Great Bay University, Dongguan, Guangdong, China (talk on "Poisson and Dirac structures in Classical Field Theories").

September 2024 — **Workshop de Jóvenes Investigadores** in UCM, Madrid (talk on "Coisotropic reduction in Classical Field Theories").

August 2024 — **Workshop on Geometric Aspects of Material Modelling** in UNED, Madrid (talk on "The Multisympelctic framework of Field Theories").

June 2024 — **XVI International ICMAT Summer School on Geometry, Dynamics and Field theory** in Miraflores de la Sierra, Madrid.

Schools and conferences (continued)

	The Geometry of Field Theories in Real Colegio de Santa Cristina, Madrid (short talk on "Coisotropic reduction in Multisymplectic Geometry").
February 2024	**XVIII International Young researchers Workshop in Geometry, Dynamics and Field Theory** in Warsaw University (short talk on "Coisotropic reduction in different phase spaces").
January 2024	**XXV Winter Meeting on Geometry, Dynamics and Field Theory** in Universidad de Zaragoza.
December 2023	**de León fest** in ICMAT.
November 2023	**BYMAT** in ICMAT (short talk on "Coisotropic reduction in symplectic, cosymplectic, contact and cocontact geometry").
July 2023	**JAE summer School** in ICMAT.

Talks and seminars

May 2025	**Coloquio Junior de matemáticas**, ICMAT, Madrid (talk on "Natural operations in differential geometry").
February 2025	**Q-math seminar**, Universidad Carlos III de Madrid (talk on ""Graded Poisson brackets in classical field theories").
September 2024	**Seminario de doctorandos** in UCM, Madrid (talk on "Geometría multisimpléctica, el marco para teoría clásicas de campos").
June 2024	**Gamma Seminar**, online (talk on "Coisotropic reduction in Multisymplectic Geometry").

Volunteering

July 2024	**Assistant in ECM (European Congress of Mathematics)** at Universidad de Sevilla.
April 2023	**Assistant in "Concurso de Primavera"** at Universidad Complutense de Madrid.

Research Publications

Journal Articles

1. M. de León and R. Izquierdo-López, "Graded poisson and graded dirac structures," *Journal of Mathematical Physics*, vol. 66, no. 2, p. 022 901, 2025, ISSN: 0022-2488. DOI: 10.1063/5.0243128.

2. M. de León and R. Izquierdo-López, "A review on coisotropic reduction in symplectic, cosymplectic, contact and co-contact hamiltonian systems," *Journal of Physics A: Mathematical and Theoretical*, vol. 57, no. 16, p. 163 001, 2024. DOI: 10.1088/1751-8121/ad37b2.

3. M. de León and R. Izquierdo-López, "Coisotropic reduction in multisymplectic geometry," *Geometric Mechanics*, vol. 01, no. 03, pp. 209–244, 2024. DOI: 10.1142/S2972458924500096.

Preprints

1. R. Izquierdo-López, M. de León, L. Schiavone, and P. Soto, *A zoo of coisotropic embeddings*, 2025. arXiv: 2509.19039 [math.DG]. URL: https://arxiv.org/abs/2509.19039.

2. M. de León and R. Izquierdo-López, *A description of classical field equations using extensions of graded poisson brackets*, 2025. arXiv: 2507.04743 [math-ph]. URL: https://arxiv.org/abs/2507.04743.

3. M. de León and R. Izquierdo-López, *Relationship between the observables in the space of solutions and the multisymplectic framework*, In preparation, 2025.

4 M. de León, R. Izquierdo-López, and M. Laínz, *The multisymplectic group*, In preparation, 2025.

5 M. de León, R. Izquierdo-López, and X. Rivas, *Brackets in multicontact geometry and multisymplectization*, 2025. arXiv: 2505.13224 [math.DG]. 🔗 URL: https://arxiv.org/abs/2505.13224.

6 M. de León, R. Izquierdo-López, and X. Rivas, *The split spacetime formalism in multicontact field theories*, In preparation, 2025.

Peer review

🔖 Journal of Nonlinear Science

🔖 Mediterranean Journal of Mathematics

🔖 Geometric Mechanics

Links

🔖 **Google Scholar**: https://scholar.google.es/citations?user=vQKgf6sAAAAJ&hl=es. **Citations**: 18

🔖 **Mathscinet**: https://mathscinet.ams.org/mathscinet/author?authorId=1609833. **Citations**: 3 citations by 8 different authors.

🔖 **Scopus**: https://www.scopus.com/authid/detail.uri?authorId=58553020100. **Citations**: 5