Rubén Izquierdo-López, PhD student
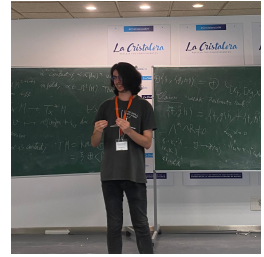
✉ ruben.izquierdolop@gmail.com   📞 On request   🌐 My personal webpage: rubenizquierdolopez.github.io

Last updated: September 24, 2025

Teaching experience

2024-now   🔖 **Professor** at UNIR (Universidad Internacional de la Rioja) teaching

- 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

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.

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.
- **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").

Talks and seminars (continued)

| 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

▮ Mediterranean Journal of Mathematics

▮ Geometric Mechanics

Links

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

Links (continued)

- **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