

Luis Martinez Zoroa

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EMPLOYMENT

Assistant Professor in Tenure Track, Dept. of Mathematics, CUNEF Universidad,
2025-present.

Postdoctoral researcher in the University of Basel in the SNF project FLUTURA,
2023-2025.

Doctoral researcher in ICMAT in the ERC Advanced Grant project NONFLU, 2019-2023.

EDUCATION

PhD in Mathematics in Universidad Autónoma de Madrid, 2023.

Master in Mathematics from University of Bonn, 2019.

Double bachelor in Mathematics and Physical Engineering from Universidad Politécnica de Cataluña, 2017.

FIELDS OF INTEREST

Fluid dynamics, with a special interest in singularity formation for incompressible fluids.

PUBLICATIONS

Cordoba Gazolaz, Diego; Martinez Zoroa, Luis. "Global unique solutions with instantaneous loss of regularity for SQG with fractional diffusion". *Annals of PDE*, 10, 21 (2024). <https://doi.org/10.1007/s40818-024-00186-9>.

Cordoba Gazolaz, Diego; Martinez Zoroa, Luis; Ozanski, Wojciech. "Instantaneous gap loss of Sobolev regularity for the 2D incompressible Euler equations" *Duke Mathematical Journal*, 173(10): 1931-1971 (15 July 2024). DOI: 10.1215/00127094-2023-0052.

Cordoba Gazolaz, Diego; Martinez Zoroa, Luis. , "Non-existence and strong ill-posedness in $C^{k,\beta}$ for the generalized Surface Quasi-geostrophic equation" *Communication in Mathematical Physics*, 405, 170 (2024). <https://doi.org/10.1007/s00220-024-05049-9>.

Cordoba Gazolaz, Diego; Martinez Zoroa, Luis. "Non existence and strong ill-posedness in C^k and Sobolev spaces for SQG" October 2022 *Advances in Mathematics*, 407(1):108570 DOI: 10.1016/j.aim.2022.108570.

Cordoba Gazolaz, Diego; Martinez Zoroa, Luis; Zheng, Fan. "Finite time singularities to the 3D incompressible Euler equations for solutions in $C^\infty(\mathbb{R}^3 \setminus \{0\}) \cap C^1, \alpha \cap L^2$ " *Annals of PDE* 11 (2), 19.

Bianchini, Roberta; Cordoba Gazolaz, Diego; Martinez Zoroa. Non Existence and Strong Ill-Posedness in H^2 for the Stable IPM Equation. *Journal of Functional analysis* 2025.

SELECTED PRESENTATIONS

CONFERENCES

Lightning talk in summer school and congress "Recent Advances in Mathematical Fluid Dynamics", Duke University, May 2023.

SEMINARS

"Analysis seminar" at Max Planck Institute for Mathematics in the Sciences in Leipzig in July 2025, "Analysis seminar" at Courant Institute of Mathematical Sciences in New York in April 2025, "ETH analysis seminar" in November 2024, "Analysis of Fluids and Related Topics seminar" at Princeton University in November 2023, "Applied Math and Analysis seminar" at Duke University in October 2023, "Junior Analysis Seminar" at Imperial College in London in March 2023, "Fluid Conversations" Seminar session in Instituto Universitario de Investigacion de Matematicas de la Universidad de Sevilla (IMUS) in February 2023, "Applied Math and Analysis" at Duke University in November 2022, Seminar at Florida State University in November 2022, "Young Researchers Workshop on Probability and PDEs" at Universidad de Granada in May 2022, Seminar on PDEs and Fluid Mechanics at ICMAT in April 2022