Ana Emilia de Orellana

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University of St Andrews
St Andrews ⋄ KY16 9SS ⋄ Room: 103

EDUCATION

St Andrews University   *Sep. 2023 - Present*
Ph.D. in Pure Mathematics (funded by the University of St Andrews)

Supervisor: Dr. Jonathan M. Fraser.
Co-supervisor: Dr. Kenneth J. Falconer.

Universidad Nacional del Litoral (UNL)   *Jan. 2018 - Mar. 2023*
Licenciate Degree in Mathematics (equivalent to M.Sc.)
GPA: 8.68 (on a 10 point scale), part of the honour board.

Degree Dissertation Title: *Homogeneous Type Spaces and Metrisation.*
Supervisor: Dr. Marisa Toschi.
Co-supervisor: Dr. Mauricio Ramseyer.
Dissertation date: March 2023.
Keywords: Muckenhoupt weights, spaces of homogeneous type, Hardy–Littlewood maximal operator.

TEACHING EXPERIENCE

University of St Andrews   *2024 - 2025*
· Tutor for MT1003: Pure and Applied Mathematics (3 Tutorials), Spring.
· Tutor for MT1002: Mathematics (3 Tutorials and 2 Example Classes), Spring.
· Tutor for MT2502: Analysis (3 Tutorials and 2 Example Classes), Autumn.
· Tutor for MT1001: Introductory Mathematics (3 Tutorials), Autumn.

University of St Andrews   *2023 - 2024*
· Tutor for MT1003: Pure and Applied Mathematics (2 Tutorials and 2 Example Classes), Spring.
· Tutor for MT2502: Analysis (2 Tutorials and 2 Example Classes), Autumn.

Chemical Engineering School (UNL)   *Feb. 2023*
· Mathematics Tutor for Chemistry Engineering and Food Engineering entrants.

Chemical Engineering School (UNL)[1]
· Teaching assistant in Mathematics A.   *2023*
· Teaching assistant in Basic Mathematics.   *2023*
· Teaching assistant in Calculus 1.   *2022*
· Teaching assistant in Discrete Mathematics 1.   *2022*

Chemical Engineering School (UNL)   *Mar. 2017 – Dec. 2018*
· Took part on the extracurricular activity "Pedagogical care in mathematics for people without access
to education".

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[1] The position was granted after a competition among several candidates

PUBLICATIONS

3. L^2 restriction estimates from the Fourier spectrum, with M. Carnovale and J. M. Fraser. 2024. 28 pages. arXiv: 2412.14896.

2. A Fourier analytic approach to exceptional set estimates for orthogonal projections, with J. M. Fraser. 23 pages. *Indiana University Mathematics Journal* (to appear). arXiv: 2404.11179.

1. Obtaining the Fourier spectrum via Fourier coefficients, with M. Carnovale and J. M. Fraser. 2024. 13 pages. arXiv: 2403.12603.

TALKS

· A new perspective on the Stein–Tomas Theorem. One World Fractals (online).	*Nov. 2024*
· Orthogonal projections and a continuum of dimensions. University of Birmingham Analysis Seminar, UK.	*Oct. 2024*
· Fourier analytic methods for orthogonal projections. Shenzhen Technology University Analysis Seminar, China (online talk).	*Oct. 2024*
· Orthogonal projections and a continuum of dimensions. University of Birmingham Analysis Seminar, UK.	*Oct. 2024*
· Dimension interpolation and exceptional set estimates. University of Edinburgh Analysis Seminar, UK.	*Sep. 2024*
· The continuity of exceptional estimates for orthogonal projections. Fractal Geometry and Stochastics 7, Chemnitz (Saxony), Germany.	*Sep. 2024*
· Orthogonal projections and the Fourier spectrum. Afternoon workshop on Fourier analysis, fractals, and finite fields, University of St Andrews, UK.	*Sep. 2024*
· Projection theorems for the Fourier spectrum. Workshop on the Geometry of Deterministic and Random Fractals II, Rényi Institute, Budapest, Hungary.	*Sep. 2024*
· Fourier analysis for fractal measures. Workshop on Ergodic Theory and Fractal Geometry. University of Loughborough.	*Jul. 2024*
· Exceptional projections and dimension interpolation. Geometry and Fractals under the Midnight Sun Conference, University of Oulu, Finland.	*Jun. 2024*
· The Fourier spectrum under orthogonal projections. University of St Andrews Analysis Seminar, UK.	*Feb. 2024*
· Knot Theory. Before Graduating Seminar, Universidad Nacional del Litoral, Argentina.	*May. 2019*

AWARDS

· St Leonard's College, University of St Andrews, £250 scholarship. To attend the "Workshop on Ergodic Theory and Fractal Geometry" at the University of Loughborough.	*Jul. 2024*
· Santander Development Fund, £250 scholarship. To attend the "Geometry and Fractals under the Midnight Sun Conference" at the University of Oulu.	*Jun. 2024*
· University of St Andrews - Fee scholarship for Ph.D. in Mathematics.	*2023*

· University of Minnesota - Fully funded scholarship for M.Sc. in Mathematics. *2023*

· CONICET Scholarship - Doctorate in Mathematics at UNL. *2023*

· Second place in the Monograph competition held by the Argentinian Mathematical Union. Title: "Knot Theory". *2019*

LANGUAGES

Spanish
Native.

English
TOEFL IBT Home Edition. Overall: 107; R: 28; L: 29; S: 27; W: 23. *2022*
Grade A in the Certificate of Advanced English (CAE). *2016*
Grade A in the First Certificate in English (FCE). *2015*

German
Course: Approximation to the German language from a cultural and professional perspective. *2021*