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 Fraser.
Co-supervisor: Dr. Kenneth 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 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".

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

PUBLICATIONS

2. A Fourier analytic approach to exceptional set estimates for orthogonal projections, with J. M. Fraser. 2024. 19 pages. 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

- 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.
  St Andrews Analysis Seminar, University of St Andrews, 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 *2021*
Course: Approximation to the German language from a cultural and professional perspective.

PROGRAMMING LANGUAGES

JavaScript/ReactJS/NextJS
Advanced.

R/Shiny-r
Advanced.

Python
Basic.

MatLab
Basic.