

DIEGO FERNANDO CORREA CASTANEDA

Rio de Janeiro, Brazil

+55 21965929634 ◊ diego.castaneda@impa.br

RESEARCH INTERESTS

Nonlinear dispersive equations and Harmonic Analysis. My research focuses on well-posedness in low-regularity spaces and long-time behavior of solutions.

EDUCATION

PhD in Mathematics (Current)

Instituto de Matemática Pura e Aplicada (IMPA), Rio de Janeiro, Brazil

Expected Thesis Title: Well-posedness and long-time behavior of a non-integrable coupled system of dispersive equations.

Advisor: Felipe Linares

MSc. in Mathematics 2023

Universidad Nacional de Colombia, Bogotá, Colombia

Thesis: The Cauchy problem associated with a fifth-order dispersive perturbation of the Benjamin equation (Original title in Spanish).

Advisor: Ricardo Pastrán.

B.S. in Mathematics 2021

Universidad Nacional de Colombia, Bogotá, Colombia

Thesis: On some uncertainty principles (Original title in Spanish).

Advisor: Ricardo Pastrán.

TEACHING EXPERIENCE

Graduate Teaching Assistant March 2024 - July 2025

Instituto Nacional de Matemática Pura e Aplicada, IMPA

Supported the primary instructor, led problem-solving sessions and delivered guest lectures of the following courses:

- Spectral Theory (PhD level).
- Partial Differential Equations (Master's level).

Graduate Fellow and Instructor (Master's Fellowship) March 2022 - December 2022

Universidad Nacional de Colombia

- Awarded a fellowship for graduate studies, which included a **full teaching load** responsibility for the following undergraduate mathematics courses: Differential Calculus and Differential Equations.

Lecturer July 2021 - December 2021

Universidad Nacional de Colombia

- Appointed as the lead instructor for core undergraduate mathematics modules: Linear Algebra and Differential Equations.

SEMINAR TALKS

- The Radon Transform - Seminário de Análise e Equações Diferenciais Parciais - Instituto de Matemática Pura e Aplicada (IMPA) - Rio de Janeiro/Brazil, May/2025
- Well-posedness of the Benjamin-Ono equation in L^2 - Seminário de Análise e Equações Diferenciais Parciais - Instituto de Matemática Pura e Aplicada (IMPA) - Rio de Janeiro/Brazil, May-June/2024
- A Schrödinger equation with a derivative nonlinearity- Seminário de Análise dos Alunos - Instituto de Matemática Pura e Aplicada (IMPA) - Rio de Janeiro/Brazil, October/2023

- A fifth-order perturbation of the Benjamin equation- Seminário de Análise e Equações Diferenciais Parciais - Instituto de Matemática Pura e Aplicada (IMPA) - Rio de Janeiro/Brazil, June/2023
- Interpolation - Semillero de Análisis Armónico y Ecuaciones Diferenciales Parciales - Universidad Nacional de Colombia - Bogota/Colombia, August/2022
- Tempered distributions - Semillero de Análisis Armónico y Ecuaciones Diferenciales Parciales - Universidad Nacional de Colombia - Bogota/Colombia, March/2022
- Hardy's Uncertainty Theorem - Semillero de Análisis Armónico y Ecuaciones Diferenciales Parciales - Universidad Nacional de Colombia - Bogota/Colombia, June/2021
- Benedick's Uncertainty Principle - Semillero de Análisis Armónico y Ecuaciones Diferenciales Parciales - Universidad Nacional de Colombia - Bogota/Colombia, March/2021
- Paley-Wiener Theorem - Semillero de Análisis Armónico y Ecuaciones Diferenciales Parciales - Universidad Nacional de Colombia - Bogota/Colombia, November/2020
- Heisenberg's Uncertainty Principle - Semillero de Análisis Armónico y Ecuaciones Diferenciales Parciales - Universidad Nacional de Colombia - Bogota/Colombia, November/2020
- The Poisson formula - Semillero de Análisis Armónico y Ecuaciones Diferenciales Parciales - Universidad Nacional de Colombia - Bogota/Colombia, October/2020
- Convolution and some applications - Semillero de Análisis Armónico y Ecuaciones Diferenciales Parciales - Universidad Nacional de Colombia - Bogota/Colombia, September/2019

LANGUAGES

- **Spanish:** Native.
- **Portuguese:** Full Professional Proficiency.
- **English:** Professional Working Proficiency.

DECLARATION

I hereby declare that all the details furnished above are true to the best of my knowledge and belief.