Daniela Paiva Peñuela

Curriculum Vitae

Instituto de Matematicas Pura e Aplicada - IMPA
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Colombian Citinzenship

Education

2021–2025 **PhD in Mathematics**, *Instituto de Matemática Pura e Aplicada, Rio de Janeiro, Brazil*.
Advisor: Prof. Carolina Araujo

2019–2021 **M.Sc. in Mathematics**, *Instituto de Matemática Pura e Aplicada, Rio de Janeiro, Brazil*.

2014–2018 **B.Sc. in Mathematics**, *Universidad del Tolima, Ibagué, Colombia*.
(Summa cum laude)

Employment

2025–present **Postdoctoral position**, *Instituto de Matemática Pura e Aplicada, Rio de Janeiro, Brazil*.
Mentor: Prof. Olivier Martin

Publications

2025 **Cremona transformations of P^3 stabilizing quartic surfaces**, to appear in Women in Mathematics Latin America - ICMAM 2024, Springer-Birkhäuser Trends in Mathematics.

2024 **On Gizatullin's problem for quartics of Picard rank 2**, *joint with Carolina Araujo and Sokratis Zikas*, to appear in Algebraic Geometry (arXiv:2410.08415).

2023 **Automorphisms of quartic surfaces and Cremona transformations**, *joint with Ana Quedo*, Journal of Pure and Applied Algebra (arXiv:2302.09014).

Talks

04/2025 **Universität Basel**, *Algebra and Geometry seminar*, Basel, Switzerland.
Birational geometry of Fano 3-folds and anticanonical surfaces

04/2025 **Università di Bologna**, *Algebra and Geometry seminar*, Bologna, Italy.
Cremona transformations of P^3 stabilizing quartic surfaces

09/2024 **Université Paris-Saclay**, *Algebraic geometry seminar*, Orsay, France.
On Gizatullin's problem

09/2024 **Università degli Studi di Milano**, *Algebraic geometry seminar*, Milan, Italy.
On Gizatullin's problem

09/2024 **Fano Varieties in Cetraro**, Cetraro, Italy.
Cremona transformations of P^3 stabilizing quartic surfaces

08/2024 **V ELGA** - **Latin American School of Algebraic Geometry**, *CIMPA School*, Cabo Frio, Brazil.
An application of the Sarkisov program

06/2024 **Foliation Theory and Algebraic Geometry**, *IMPA*, Rio de Janiero, Brazil.
Cremona transformations of P^3 stabilizing quartics

03/2024 **Liberdade em Geometria Algébrica** - **LEGAL**, *Universidade Federal Fluminense - UFF*, Teresópolis, Brazil.
Gizatullin's Problem and the Sarkisov program

12/2023 **8th Iberoamerican Congress on Geometry**, *Geometry at the Frontier Research Center*, Pucón, Chile.
Automorphisms of quartic surfaces with Picard number two and Cremona transformations

07/2023 **Universidad de Antioquia - UdeA**, *Seminario de Álgebra, Geometría y Topología*, Medellín, Colombia.
Superficies K3 y Teoria de Reticulados

07/2023 **Universidad del Tolima - UT**, *Seminario de Álgebra*, Ibagué, Colombia.
Introducción a la Geometría Algebraica y Superficies K3

02/2023 **Around Symmetries of K3 Surfaces**, *Banff International Research Station for Mathematical Innovation and Discovery - BIRS*, Banff, Canada.
Automorphisms of quartic surfaces and Cremona transformations

02/2023 **15th Commutative Algebra and Algebraic Geometry, ALGA**, *IMPA*, Rio de Janeiro, Brazil.
Automorphisms of quartic surfaces and Cremona transformations

12/2022 **Workshop Geometry at the Frontier III 1/2**, *Geometry at the Frontier Research Center*, Pucón, Chile.
A new example for Gizatullin's problem

11/2021 **Instituto de Matemática Pura e Aplicada - IMPA**, *Student Algebraic Geometry Seminar (online)*.
The Cremona group

10/2021 **Universidad del Tolima (Colombia)**, *Faculty Week Celebration - Science Faculty (online)*.
On the Cremona group

Grants

2021-2025 **Ph.D. fellowship**, *CAPES (Coordenação de Aperfeiçoamento de Pessoal de Nível Superior)*.

2019-2021 **Master degree fellowship**, *CNPq (Conselho Nacional de Desenvolvimento Científico e Tecnológico)*.

Co-organization of seminars and conferences

2022-2024 *Student's colloquium*. IMPA, Rio de Janeiro, Brazil.

2023 *3rd Women in Mathematics of IMPA Meeting - EMMI*. IMPA, Rio de Janeiro, Brazil.

2022 *2nd Women in Mathematics of IMPA Meeting - EMMI*. IMPA, Rio de Janeiro, Brazil.

2021 *1rt Women in Mathematics of IMPA Meeting - EMMI*. IMPA (Online).

Research visits

06.04.2025- **Universität Basel**, *Basel, Switzerland*, Visiting Prof. Susanna Zimmermann, Dr. Eduardo
13.04.2025 Alves da Silva and Dr Tiago Duarte Guerreiro.

30.03.2025- **Università di Bologna**, *Bologna, Italy*, Visiting Prof. Antonella Grassi and Dr. Ana Quedo.
05.04.2025

23.03.2025- **Università degli Studi di Milano**, *Milan, Italy*, Visiting Prof. Alice Garbagnati.
29.03.2025

19.09.2024- **Université Paris-Saclay**, *Orsay, France*, Visiting Prof. Susanna Zimmermann and Dr.
26.09.2024 Eduardo Alves da Silva.

16.09.2024- **Università degli Studi di Milano**, *Milan, Italy*, Visiting Prof. Alice Garbagnati.
18.09.2024

Selected participation in conferences

2024	*Trieste Algebraic Geometry Summer School (TAGSS)*. ICTP. Trieste, Italy.
2024	*Diversity in Finite Fields and Coding Theory*. IMPA. Rio de Janeiro, Brazil.
2022	*School of the Doctoral Program in Mathematics of the UdeC*. Universidad de Concepción. Concepción, Chile (Online).
2022	*AGRA IV (Arithmetic, Groups and Analysis) - Part 2*. Cabo Frio, Brazil.
2022	*Latin American and Caribbean Workshop on Mathematics and Gender*. Casa Matematica Oaxaca, Mexico (Online).
2021	*XXXIII Brazilian Colloquium of Mathematics*. IMPA. Rio de Janeiro, Brazil (Online)
2019	*1st Joint Meeting Brazil-France in Mathematics*. IMPA. Rio de Janeiro, Brazil.
2019	*XXXII Brazilian Colloquium of Mathematics*. IMPA. Rio de Janeiro, Brazil.
2019	*Brazilian Meeting of Women Mathematicians*. IMPA. Rio de Janeiro, Brazil.
2018	*IV Regional Seminar on Number Theory.* On untouchable numbers and their properties. Universidad del Cauca. Popayán, Colombia.

Teaching experience

2018	Teaching Assistant of Prof. Carolina Perdomo, *Fundamental Mathematics*. Universidad del Tolima.
2016-2017	Teaching Assistant of Prof. Leonardo Duvan Restrepo, *Univariate Calculus*. Universidad del Tolima.

Languages

Spanish	Native
Portuguese	Fluent
English	Fluent

Interests

Mathematical	Algebraic and Birational Geometry: Cremona group, Sarkisov program, K3 surfaces.
Other	Social work, mountain biking, dancing.