Fernando V. Costa Jr.

Curriculum Vitae

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About me

Formed with focus on Analysis, I have a particular sympathy for Algebra, Number Theory and Logic. In my undergraduate project, I studied a number of integration theories and their interrelation with the aim to investigate the evolution process over time, from Newton and Cauchy to Lebesgue, Henstock-Kurzweil and its generalizations. In my Master's project I studied the extreme points of the closed unit ball in the space of multilinear forms and its applications to the inequalities of Bohnenblust-Hille and Grothendieck. During my doctoral studies, I've joined the exciting world of Linear Dynamics and worked on many topics related to hypercyclicity. This is my current main research topic. I am currently a FNRS postdoctoral fellow at the Mathematics Department of the University of Mons, Belgium.

Education

2018
à 2021

Ph.D. in Mathematics, *Université Clermont Auvergne.*
- Title: « Vecteurs et algèbres hypercycliques ».
- Advisor: Frédéric Bayart.

2016
à 2018

M.Sc in Mathematics, *Universidade Federal da Paraíba.*
- Title: « A geometria de L(mRn) e aplicações ».
- Advisor: Daniel Pellegrino.

2012
à 2015

Lic. in Mathemathics, *Universidade Federal de Alagoas.*
- Title: « Teorias de Integração ».
- Advisor: Ornan Oliveira.

Languages

English (fluent)
French (fluent)
Portuguese (native speaker)

Teaching

2021-2023

ATER *at Université d'Avignon, member of the Dynamical Systems and Geometry group of the Laboratoire de Mathématiques d'Avignon. Currently teaching:* General Algebra 1 *for last year undergraduate students of Mathematics;* Analysis 1 *and* 2, Algebra 2 *and* Methodology *for first year undergrad. students in Mathematics/Physics/Informatics; Math II for first yeah undergrad students in Physics/ Chemistry;* Mathematics for primary education *for last year undergrad. students of Humanities.*

2019-2021	**Teacher** *of the course* Common Core in Mathematics *during the first semester and of the course* Mathematics Applied to the Other Sciences *during the second semester at Clermont-Auvergne University in France. I integrated the same teaching program for two years, 64 hours per year.*
2016	**Monitor** *of the course* Algebraic Structures I *for third year students of mathematics at the Federal University of Alagoas in Brazil.*
2015	**Monitor** *of the course* Introduction to Number Theory *for second year students of mathematics at the Federal University of Alagoas in Brazil.*
2014	**Monitor** *of the courses* Analytical Geometry *and* Linear Algebra I *for first and second year students in mathematics at the Federal University of Alagoas in Brazil.*
2013-2015	**Internships** *in public schools of the city I lived in Brazil (two months per year as the teacher) during the last three years of my undergraduate course.*

Publications

Preprint [0] "Self-similar fractals and common hypercyclicity".

[1] "Common hypercyclic algebras for families of products of backward shifts." Journal of Mathematical Analysis and Applications 507.1 (2022): 125768.

[2] "Common hypercyclic vectors and dimension of the parameter set." Indiana University Mathematics Journal 71.4 (2022): 1763-1795. In collaboration with F. Bayart and Q. Menet.

[3] "Disjoint and common hypercyclic algebras." Israel Journal of Mathematics 250.1 (2022): 211-264. In collaboration with F. Bayart and D. Papathanasiou.

[4] Bayart, Frédéric, Fernando Costa Júnior, and Dimitris Papathanasiou. "Baire theorem and hypercyclic algebras." Advances in Mathematics 376 (2021): 107419. In collaboration with F. Bayart and D. Papathanasiou.

[5] "The optimal multilinear Bohnenblust–Hille constants: a computational solution for the real case." Numerical Functional Analysis and Optimization 39.15 (2018): 1656-1668.

Talks

October 2023	"Introduction to hypercyclic algebras" In: Seminar of the group ADA, Laboratory of pure and applied mathematics Joseph Liouville, Calais, France.
October 2023	"Simultaneous hypercyclicity in 2D" In: Seminar of Lille's Functional Analysis group, Lille, France.
June 2023	"Fractals and common hypercyclicity" In: Advanced courses in Operator Theory and Complex Analysis, Thessaloniki, Greece.
June 2023	"Self-similar fractals and common hypercyclicity" In: 45th Summer Symposium in Real Analysis, Caserta, Italy.
June 2023	"Self-similar fractals and common hypercyclicity" In: Annual meetings of the FNRS group - Functional Analysis, Mathematics Department of the University of Mons, Mons, Belgium.
Sep. 2022	"Common hypercyclicity in several dimensions." In: Analysis and Geometry Seminar, I2M, Marseille, France.
June 2022	"The origins of Linear Dynamics." In: Rauzy Seminar (FRUMAM), I2M, Marseille, France.
Dec. 2021	"Hypercyclic algebras: what we do and do not know" In: Frontiers of Operator Theory, CIRM, Marseille, France (poster).
Nov. 2021	"In the search of a closed hypercyclic algebra." In: Seminar of Lille's Fonctional Analysis Group, Lille, France.

Nov. 2021 "Hypercyclic vectors and algebras." In: Dynamical Systems and Geometry group's seminar, Avignon, France.

June 2021 "Hypercyclic algebras for convolution operators." In: Seminar of Lille's Fonctional Analysis Group, Lille, France (online talk).

May 2021 Thesis defense, "Vecteurs et algèbres hypercycliques." In: Laboratoire de Mathématiques Blaise Pascal, Aubière, France.

Sep. 2019 "Disjoint hypercyclic algebras." In: ANR Front Workshop, Clermont-Ferrand.

June 2019 "Common hypercyclic algebras." In: Advanced Courses in Operators Theory and Complex Analysis, Paris.

May 2019 "L'hypercyclicité et la théorie du Chaos." In: Séminaire des doctorants, Clermont-Ferrand.