

Curriculum Vitae

Frank Trujillo

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Personal information

Name: Frank Alfonso Trujillo Amézquita
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Nationality: Colombian
Professional address: Centre de Recerca Matemàtica (CRM),
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Education

2016-2020 **Mathematics Ph.D.**, Université Paris Cité, Paris, France, under the supervision of Bassam Fayad and Hakan Eliasson
Thesis title: Exotic and tame behavior in quasi-periodic dynamics
Scholarship from: Fondation de sciences mathématiques de Paris (FSMP)

2013-2015 **Mathematics M.Sc.**, IMPA, Rio de Janeiro, Brazil
Scholarship from: Conselho nacional de desenvolvimento científico tecnológico (CNPQ) and Fundação de amparo à pesquisa do estado do Rio de Janeiro (FAPERJ)

2009-2012 **Mathematics B.Sc.**, Universidad Nacional de Colombia, Bogotá, Colombia

Current and previous positions

Fev 2026 - **Research Scientist (Chargé de recherche CNRS)**. Centre de Mathématiques Laurent Schwartz (CMLS), CNRS – École Polytechnique, France

May 2024 - Jan 2026 **Marie Skłodowska-Curie postdoctoral fellow** at Centre de Recerca Matemàtica (CRM), Barcelona, Spain

Jan 2024 - Apr 2024 **María de Maeztu postdoctoral fellow** at Centre de Recerca Matemàtica (CRM), Barcelona, Spain

Sep 2020 - Dec 2023 **Postdoctoral researcher** at University of Zurich, Switzerland

Qualifications

2025- **Acreditació de recerca – Agregat**, Research Accreditation for Associate Professor, AQU Catalunya, Spain

2024-2028 **Maître de Conférences qualification**, French Habilitation for Associate Professor, Section 26

2021-2025 **Maître de Conférences qualification**, French Habilitation for Associate Professor, Section 25

Publications

Published

- [1] Hausdorff Dimension of Invariant Measures of Multicritical Circle Maps
Annales Henri Poincaré, 2020
DOI: 10.1007/s00023-020-00940-2
Frank Trujillo
- [2] Uniqueness properties of the KAM curve
Discrete and Continuous Dynamical Systems, 2021
DOI: 10.3934/dcds.2021072
Frank Trujillo
- [3] Smooth, mixing transformations with loosely Bernoulli Cartesian square
Ergodic Theory and Dynamical Systems - Anatole Katok Memorial Issue, 2022
DOI: 10.1017/etds.2021.39
Frank Trujillo
- [4] Lyapunov instability in KAM stable Hamiltonians with two degrees of freedom
Journal of Modern Dynamics, 2023
DOI: 10.3934/jmd.2023010
Frank Trujillo
- [5] Affine interval exchange maps with a singular conjugacy to an IET
Annali Scuola Normale Superiore - Classe di Scienze, 2024
DOI: 10.2422/2036-2145.202305_001
Frank Trujillo and Corinna Ulcigrai
- [6] Rigidity for piecewise smooth circle homeomorphisms and certain GIETs
Advances in Mathematics, 2024
DOI: 10.1016/j.aim.2024.109560
Przemysław Berk and Frank Trujillo
- [7] On the Hausdorff dimension of invariant measures of piecewise smooth circle homeomorphisms
Ergodic Theory and Dynamical Systems, 2024
DOI: 10.1017/etds.2024.25
Frank Trujillo
- [8] Surviving lower-dimensional tori of an invariant resonant torus with any number of resonances
Transactions of the American Mathematical Society, 2025
DOI: 10.1090/tran/9380
Frank Trujillo
- [9] Ergodic properties of infinite extension of symmetric interval exchange transformations
Journal de l'École polytechnique — Mathématiques, 2025
DOI: 10.5802/jep.302
Przemysław Berk, Frank Trujillo, and Hao Wu
- [10] Ergodicity of explicit logarithmic cocycles over IETs
Mathematische Annalen, 2025
DOI: 10.1007/s00208-025-03246-y
P. Berk, F. Trujillo, and C. Ulcigrai
- [11] On the ergodicity of infinite antisymmetric extensions of symmetric IETs
Journal of the European Mathematical Society, 2025
DOI: 10.4171/jems/1635
Przemysław Berk and Frank Trujillo

Submitted

- [12] Ergodicity of skew-products over typical IETs
DOI: 10.48550/arXiv.2405.07645
Fernando Argentero, Przemysław Berk, and Frank Trujillo
- [13] On the ergodicity of anti-symmetric skew products with singularities and its applications
DOI: 10.48550/arXiv.2412.21067
Przemysław Berk, Krzysztof Frączek, and Frank Trujillo
- [14] On the uniqueness of affine IETs semi-conjugated to IETs
DOI: 10.48550/arXiv.2411.06419
Frank Trujillo

Papers in Conferences

- [15] Surviving lower dimensional tori from an invariant resonant torus
Conference paper in *Dynamische Systeme, Oberwolfach Reports*, 2021
DOI: 10.4171/owr/2021/33
Frank Trujillo. *Editors:* Marie-Claude Arnaud et al.

Supervising and mentoring

01/09/2022-31/08/2023	Master thesis co-supervisor of Yuliana Nor at University of Zurich <i>Thesis title:</i> Indifferent Fixed Points of Holomorphic Maps and Regularity Properties of Brjuno Functions
01/09/2021-31/08/2022	Master thesis co-supervisor of Stefan Kurz at University of Zurich <i>Thesis title:</i> Dual Birkhoff Sums for Interval Exchange Transformations

Teaching experience

Fall semester 2024	Instructor , Student seminar on dynamical systems through examples, University of Zurich
Spring semester 2023	Instructor , Qualitative theory of differential equations, University of Zurich
Spring semester 2022	Instructor , Student seminar on Hamiltonian dynamics, University of Zurich
Fall semester 2021/22	Instructor , Foundations of mathematics, University of Zurich
Spring semester 2021	Teaching assistant , Complex analysis, University of Zurich
Fall semester 2020/21	Instructor , Student seminar on circle dynamics, University of Zurich
Spring semester 2020	Teaching assistant , Calculus I, Université Paris Descartes
Fall semester 2019/20	Teaching assistant , Measure theory, Université Paris Descartes
Spring semester 2019	Teaching assistant , Probability, Université Paris Descartes
Fall semester 2018/19	Teaching assistant , Advanced analysis and algebra, Université Paris Diderot
Spring semester 2017	Teaching assistant , Elementary analysis and algebra, Université Paris Diderot
Fall semester 2016/17	Teaching assistant , Advanced analysis and algebra, Université Paris Diderot

Activities and Leadership

2025-	Co-organizer for the JISD 2026, <i>School on Interactions between Dynamical Systems and Partial Differential Equations</i> , CRM, Barcelona, Spain
Sep 2020 - Dec 2023	Co-organizer for the working group on Dynamical Systems at the University of Zurich, Switzerland
Sep 2021 - Dec 2023	Co-organizer for the Ergodic Theory and Dynamical Systems Seminar, ETHZ/University of Zurich, Switzerland

Individual scientific expert activities

Scientific referee for various journals: Annales Scientifiques de l'École Normale Supérieure, Advances in Mathematics, Transactions of the American Mathematical Society, Journal of Differential Equations, Proceedings of the London Mathematical Society.

Conferences, talks and presentations

Mini-courses and lecture series

May-Jun 2023	An Introduction to KAM Theory, Workshop on Ergodic theory and parabolic dynamics, IMPAN, Poland, Link to recordings
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Invited conference talks

Jul 2025	Brazilian Colloquium of mathematics, Rio de Janeiro, Brazil
Jun 2025	Blooming Beasts: A Conference on the Geometry, Topology, and Dynamics of Infinite-Type Surfaces, Oaxaca, Mexico
Nov 2024	Workshop on Spectral Rigidity for Billiards, Budapest, Hungary
Aug 2024	School and Workshop on Dynamical Systems at ICTP, Trieste, Italy
Jun 2024	BMS-BGSMATH Junior Meeting, Berlin, Germany
Jun 2024	IMJ-PRG Summer School 2024 - Stability and rigidity in dynamical systems, beyond classical KAM theory, Paris, France
Nov 2023	Barcelona Mathematical Days, Institut d'Estudis Catalans, Spain
Apr 2023	Workshop on two-dimensional maps, Institute Mittag-Leffler, Sweden
Dec 2022	Combinatorial and geometric approaches on dynamics, Universidad de Chile, Chile
Oct 2022	2nd Jangada dinâmica workshop on dynamical systems, ergodic theory and related areas, Universidade Federal do Ceará, Brazil
Nov 2021	Paraguayan colloquium on mathematics and related sciences, Universidad Nacional de Asunción, Paraguay
Sep 2021	8th SwissMAP general meeting, SwissMAP research station, Switzerland
Jul 2021	Oberwolfach workshop on dynamical systems, Mathematisches Forschungsinstitut Oberwolfach (MFO), Oberwolfach, Germany.
Nov 2020	Penn State workshop in dynamical systems and related topics, Pennsylvania State University, USA

Invited seminar talks

Sep 2025	One World Fractals seminar, online
May 2025	Séminaire "Géométrie dynamique", Université de Lille, France
Oct 2024	Toruń ergodic theory and dynamical systems seminar, Uniwersytet Mikołaja Kopernika, Poland

Feb 2024	Seminar in dynamical systems at IST (DynamIST), IST, Austria
Jun 2023	Dynamics and Group Geometry Early Researchers Seminar (DAGGER), University of Warwick, Warwick, United Kingdom
May 2023	Quasiworld (online) seminar
Mar 2023	UB-UPC (Universitat de Barcelona - Universitat Politècnica de Catalunya) Dynamical Systems Seminar, Spain
Apr 2023	Ergodic theory and dynamical systems seminar, University of Zurich, Switzerland
Nov 2022	Geometry and dynamical systems seminar, Université de Neuchâtel, Switzerland
Jun 2022	Seminar in dynamical systems at IST (DynamIST), IST, Austria
Mar 2022	Inter-institutional seminar on dynamical systems, ergodic theory and related areas (dinâmica arretada), Universidades do Nordeste, Brazil
Apr 2021	Toruń ergodic theory and dynamical systems seminar, Uniwersytet Mikołaja Kopernika, Poland
Feb 2021	Geometry, analysis and dynamical systems seminar, Université Nice Sophia Antipolis, France
Jul 2020	Dynamics and probability seminar, Université de Picardie Jules Verne, France
Oct 2020	Ergodic theory and dynamical systems seminar, University of Zurich, Switzerland
May 2020	Dynamical systems seminar, Institut de Mathématiques de Jussieu, France
Dec 2019	Ergodic theory and dynamical systems seminar, Université Paris Sud, France

Invitation to international programs

Mar-Jun 2023	Simons Semester: Topological, smooth and holomorphic dynamics, ergodic theory, fractals, IMPAN and MIMUW Warsaw, Poland (1 month)
Jan-Apr 2023	Two Dimensional Maps, Institut Mittag-Leffler, Sweden (3 weeks)

Research visits

Aug 2025	Universidade Federal do Ceará, Brazil (3 weeks) Host: Mauricio Poletti
Jul-Aug 2025	Universidade Federal Fluminense, Brazil (3 weeks) Host: Gabriela Estevez
May 2025	Université de Lille, France (1 week) Host: Davide Ravotti
Jan 2025	University of Zurich, Switzerland (1 week) Host: Corinna Ulcigrai
Nov-Dec 2024	Université Paris Dauphine, France (2 months) Host: Jacques Féjoz
Oct 2024	Uniwersytet Mikołaja Kopernika, Poland (3 weeks) Hosts: Przemysław Berk and Krzysztof Frączek
Jun 2024	University of Zurich, Switzerland (1 week) Host: Corinna Ulcigrai
Feb 2024	Institute of Science and Technology Austria (ISTA) (1 week) Host: Vadim Kaloshin
Dec 2023	Uniwersytet Mikołaja Kopernika, Poland (2 weeks) Host: Przemysław Berk
Aug 2022	Uniwersytet Mikołaja Kopernika, Poland (1 month) Host: Przemysław Berk

Participation in Academic Events

Additionally, I have attended over 20 academic events (conferences, schools, workshops) without giving talks.

Public engagement and outreach

Jan-Jun 2023	Tutor in the Directed Reading Program <i>Pares Ordenados</i> (online and in Spanish) for mathematics undergraduate students in Latin America
Apr 2022	Information and advice panel "Hanging on when your research is stuck," Zurich Graduate School in Mathematics Forum, ETHZ, Switzerland
May 2021	Public lecture "Dynamical systems: Models and mathematics", Universidad Manuela Beltrán, Colombia
Dec 2019	Mathematics popularization talk for high school, Collège Jean Jaurès, Saint Ouen, France, <u>Summary</u> (in French)

Prizes, awards, scholarships

2016	Scholarship for Ph.D studies in Mathematics, Foundation de sciences mathématiques de Paris, France
2014	Outstanding performance scholarship (Best first year Master's student), Fundação de Amparo à Pesquisa do Estado do Rio de Janeiro, Brazil
2012	First place in "Efi-Ciencias" test (Test for last year students), Universidad Nacional de Colombia
2009 - 2012	Outstanding performance scholarship (Top 10% each semester), Universidad Nacional de Colombia

Funding and Grants

Declined	Ramón y Cajal Research Fellowship 2024, Spanish Ministry of Science and Innovation
May 2024 - Apr 2026	Marie Skłodowska-Curie Action Postdoctoral Fellowship <i>Title:</i> Regular and Exotic behavior in Hamiltonian and low-dimensional dynamical systems (REXHALODYN). <i>Amount:</i> EUR 165,312.96
Sep-Dec 2023	UZH Postdoc Grant, <i>Project Grant</i> , Principal Investigator, <i>Title:</i> Hamiltonians and low-dimensional systems. <i>Amount:</i> CHF 57,638

Programming skills

C/C++, Python.

Language skills

Spanish (native), English (C1), French (C1), German (A2-B1), Portuguese (C1).