

Corentin Pierre Edgar Fierobe

Via della Ricerca Scientifica 1, 00133 Roma, Italy

E-mail: cpef@gmx.de · Website: cpefierobe.github.io · ORCID: 0000-0003-0174-8638

Date of birth: 23 March 1993

Nationality: French

Current and Previous Positions

- Postdoctoral Researcher** — *University of Rome “Tor Vergata”* 01/09/2024 – ongoing
Rome, Italy.
Mentorship of Prof. Alfonso Sorrentino
- Postdoctoral Researcher** — *Institute of Science and Technology Austria (ISTA)* 01/09/2021 – 31/08/2024
Klosterneuburg/Vienna, Austria.
Mentorship of Prof. Vadim Kaloshin

Qualifications

Maître de Conférences qualification (2023–2027)
French Habilitation for Associate Professor positions, Section 25.

Education

- Ph.D. in Mathematics** — *École Normale Supérieure de Lyon (ÉNS Lyon)* 01/09/2018 – 15/05/2021
Lyon, France
- **Supervisor:** Prof. Alexey Glutsyuk
 - **Thesis Title:** Projective and Complex Billiards, Periodic Orbits and Pfaffian Systems
 - **Manuscript:** <https://theses.fr/2021LYSEN014>
 - **Funding:** Contrat Doctoral Spécifique Normalien (CDSN)
 - **Defense date:** 15/05/2021
- M.S. in Mathematics** — *École Normale Supérieure de Lyon* 01/09/2017 – 31/08/2018
Lyon, France
- **Specialization:** Geometry and Dynamical Systems
- Agrégation in Mathematics** — *National Competitive Examination* 01/09/2016 – 31/08/2017
France
- National qualification for higher degree teaching.
 - **Rank:** 9th.

Publications

Published

1. C. Fierobe, Le théorème de Lindemann-Weierstrass, *Journal de mathématiques des élèves de l'É.N.S. de Lyon*, 2015.
2. C. Fierobe, On the circumcenters of triangular orbits in elliptic billiards, *Journal of Dynamical and Control Systems*, 2021. DOI: [10.1007/s10883-021-09537-2](https://doi.org/10.1007/s10883-021-09537-2)
3. C. Fierobe, Complex caustics of the elliptic billiard, *Arnold Mathematical Journal*, 2021. DOI: [10.1007/s40598-020-00152-w](https://doi.org/10.1007/s40598-020-00152-w)
4. M. Bialy, C. Fierobe, A. Glutsyuk, M. Levi, A. Plakhov, S. Tabachnikov, Open Problems on Billiards and Geometric Optics, *Arnold Mathematical Journal*, 2022. DOI: [10.1007/s40598-022-00198-y](https://doi.org/10.1007/s40598-022-00198-y)
5. C. Fierobe, Examples of reflective projective billiards, *Discrete and Continuous Dynamical Systems A*, 2024. DOI: [10.3934/dcds.2024059](https://doi.org/10.3934/dcds.2024059)
6. C. Fierobe, V. Kaloshin, A. Sorrentino, *Lecture Notes on Birkhoff Billiards: Dynamics, Integrability and Spectral Rigidity*, Chapter in: Modern Aspects of Dynamical Systems, Springer, 2024. DOI: [10.1007/978-3-031-62014-0_1](https://doi.org/10.1007/978-3-031-62014-0_1)

7. C. Fierobe, On projective billiards with open subsets of triangular orbits, *Israel Journal of Mathematics*, 2024. DOI: [10.1007/s11856-024-2712-z](https://doi.org/10.1007/s11856-024-2712-z)
8. L. Baracco, O. Bernardi, C. Fierobe, Starting the study of outer length billiards, *Pacific Journal of Mathematics*, 2025. DOI: [10.2140/pjm.2025.339.201](https://doi.org/10.2140/pjm.2025.339.201)
9. C. Fierobe, A. Sorrentino, A. Vig, Deformational spectral rigidity of axially symmetric symplectic billiards, *Nonlinearity*, 2025. DOI: [10.1088/1361-6544/ae0c4f](https://doi.org/10.1088/1361-6544/ae0c4f)
10. C. Fierobe, Only quadrics have pseudo-caustics, on caustics of Riemannian, pseudo-Euclidean and projective billiards in higher dimensions, *Mathematische Zeitschrift*, 2026. DOI: [10.1007/s00209-026-03939-3](https://doi.org/10.1007/s00209-026-03939-3)
11. C. Fierobe, A. Sorrentino, On the existence of periodic invariant curves for analytic families of twist maps and billiards, *Revista Matemática Iberoamericana*, 2026. DOI: [10.4171/RMI/1595](https://doi.org/10.4171/RMI/1595)
12. C. Fierobe, Lazutkin coordinates and the conjugation problem for billiard maps, accepted for publication in *Czechoslovak Mathematical Journal*, 2026. [arXiv:2503.19550](https://arxiv.org/abs/2503.19550).
13. C. Fierobe, V. Kaloshin, A. Sorrentino, A billiard table close to an ellipse is deformationally spectrally rigid among dihedrally symmetric domains, accepted for publication in *Geometric And Functional Analysis*. [arXiv:2511.20062](https://arxiv.org/abs/2511.20062)

Submitted Preprints

14. C. Fierobe, D. Tsodikovitch, *Rigidity of the Suris potentials in the Frenkel-Kontorova model*, [arXiv:2601.15058](https://arxiv.org/abs/2601.15058), 2025.
15. C. Fierobe, *Spectral rigidity among ellipses, Bialy's conjecture and local extrema of Mather's beta function*, [arXiv:2603.09439](https://arxiv.org/abs/2603.09439), 2026.
16. C. Fierobe, V. Kaloshin, F. Trujillo, *Rigidity of Mather's β -function on a KAM set for analytic billiards-like maps and unique quasi-analytic continuation*, [arXiv:2608.15401](https://arxiv.org/abs/2608.15401), 2026.

Books

1. *Annales corrigées des Problèmes posés aux Concours 2018*, H&K Editions.
2. *Annales corrigées des Problèmes posés aux Concours 2019*, H&K Editions.
3. *Annales corrigées des Problèmes posés aux Concours 2023*, H&K Editions.

Description: Solved exam papers for entrance examinations of France's Écoles Normales Supérieures, Polytechnique, Mines-Ponts, Centrale-Supélec, etc. <https://www.h-k.fr/adc>

Teaching Experience

Co-instructor — ISTA Vienna, Austria	Fall 2023
Description: <i>Conservative Dynamical Systems</i> . Course for PhD students, with Vadim Kaloshin. Duration: 10 sessions of 2 hours.	
Teaching Assistant — École Normale Supérieure de Lyon Lyon, France	Fall 2021
Description: <i>Complex Analysis</i> Duration: 12 sessions of 2 hours.	
Instructor — École Normale Supérieure de Lyon Lyon, France	Spring 2021
Description: Preparation for the agrégation oral examinations Duration: 12 sessions of 2 hours).	
Instructor — École Normale Supérieure de Lyon Lyon, France	Spring 2018, 2019, 2020
Description: <i>Differential Calculus</i> Duration: 12 lectures of 2 hours each year.	

Institutional Tasks & Scientific Service

Institutional Tasks

- **Co-organizer**, Seminar of Dynamical Systems, ISTA, Vienna (15/01/2022 – 31/06/2024).

- **Co-organizer**, BudWieSer Seminar (Joint Seminar between ISTA, University of Vienna, and Rényi Institute Budapest) (15/01/2022 – 31/06/2024).
- **Co-organizer**, PhD Students Seminar, É.N.S. de Lyon (01/09/2019 – 31/06/2021).

Scientific Expert Activities

- **Referee** for mathematical journals including: *Nonlinearity*, *Communications in Mathematical Physics*, *Discrete and Continuous Dynamical Systems*, and *Arnold Mathematical Journal*.

Conferences, Talks, and Presentations

Mini-course

- **Techniques of Analytic Geometry in Projective Billiards** February 2020
High School of Economics, Nizhny Novgorod, Russia

Invited Conferences Talks

- **Workshop "Stability in Hamiltonian Dynamics III"** January 2026
University of Padua, Padua, France
- **Workshop "Stability in Hamiltonian Dynamics II"** January 2025
University of Turin, Turin, France
- **Workshop on Billiard Rigidity** November 2024
Rényi Institute, Budapest, Hungary
- **Journées Dynamiques** October 2024
Université Paris-Cité, Paris, France
- **Conference on Billiard Dynamics** November 2023
É.N.S. de Lyon, Lyon, France (by train)
- **"Young Mathematicians" Conference** October 2021
CIRM, Marseille, France (by train)
- **"Dynamics in Siberia" Conference** March 2020
Sobolev Institute of Mathematics, Novosibirsk, Russia (by train)
- **Spring Mathematics Conference** February 2020
Higher School of Economics, Nizhny Novgorod, Russia (by train)
- **International Conference "Real and Complex Dynamical Systems"** November 2018
On the occasion of the 75th birthday of Prof. Yulij Ilyashenko, Higher School of Economics, Moscow, Russia

Invited Seminars Talks

- **BOM Billiards Seminar** February 2026
Online seminar: <https://sites.google.com/view/bombilliards/>
- **Seminar** December 2025
Institute of Mathematics of the Polish Academy of Sciences, Gdańsk, Poland
- **Seminar** December 2025
Gdańsk University of Technology, Gdańsk, Poland
- **Seminar** December 2025
IMPAN, Warsaw, Poland
Seminar's video: <http://www.youtube.com/watch?v=kweg5Yz98SE>
- **"Geometry, Groups and Dynamics" Seminar** November 2025
É.N.S. de Lyon, Lyon, France
- **Seminar** February 2025
University of Padua, Padua, Italy
- **Dynamics Seminar** September 2024
University of Maryland, Maryland, United States
- **Seminar** April 2024
University of Barcelona, Barcelona, Spain
- **DynamIST Seminar** October 2023
ISTA, Klosterneuburg-Vienna, Austria
- **BudWieSer Seminar** January 2023
Rényi Institute of Mathematics, Budapest, Hungary (by train)

- **DynamIST Seminar** March 2022
ISTA, Klosterneuburg, Austria
- **Differential Geometry Seminar** February 2022
TU Wien, Vienna, Austria (online)
- **“Geometry, Groups and Dynamics” Seminar** November 2020
É.N.S. de Lyon, Lyon, France (online)
- **Seminar of Prof. Dmitry Treschev** March 2020
Steklov Mathematical Institute, Moscow, Russia (by train)
- **Several Complex Variables Seminar of Prof. Vitushkin** March 2020
Lomonosov Moscow State University, Moscow, Russia (by train)
- **Dynamical Systems Seminar of Prof. Ilyashenko** April 2019
Higher School of Economics, Moscow, Russia (by train)

Research Visits

- **Research visit to the Department of Mathematics** January 2027 (planned)
University of Padua, Padua, Italy
- **Research visit to the Department of Mathematics** December 2025
Gdańsk University of Technology, Gdańsk, Poland
- **Research visit to the Department of Mathematics** February 2025
University of Padua, Padua, Italy
- **Workshop on rigidity in billiard dynamics** November 2024
Rényi Institute of Mathematics, Budapest, Hungary
- **Research visit to the University of Maryland** September 2024
Maryland, United States
- **Research visit to UB-UPC** April 2024
Universitat de Barcelona – Universitat Politècnica de Catalunya, Barcelona, Spain (by train)
- **Program and workshop** October–November 2023
Simons Center, Stony Brook, United States

Skills

- **Programming:** C/C++, CoCalc, HTML/CSS, JavaScript & p5.js, PHP, SQL.
- **Languages:** French (Native), Czech (B1-B2), English (C1), German (C1), Italian (B2), Russian (A2).