Emilio Corso
Curriculum Vitae

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Biographical data

Place of birth	Trebisacce, Italy
Date of birth	23 April 1994

Education

2023-present	**Chowla Research Assistant Professor**, *Pennsylvania State University*, University Park, State College (PA), United States
2022-2023	**Postdoctoral Fellow**, *University of British Columbia*, Vancouver, Canada
2017-2022	**PhD in Mathematics**, *ETH*, Zürich, Switzerland
2016-2017	**Master 2 Mathématiques Fondamentales**, *Université Paris 13*, Paris, France, Mention Très Bien
2015-2016	**Master 1 Mathématiques Fondamentales**, *Université Paris 13*, Paris, France, Mention Très Bien
2012-2015	**Laurea Triennale in Matematica**, *Università degli Studi*, Padova, Italy, 110/110 cum laude
2007-2012	**Maturità scientifica**, *Liceo Scientifico "Enrico Fermi"*, Padova, Italy, 100/100 cum laude

Languages

Italian	Mothertongue
English	Proficient, scored 113/120 in TOEFL test
French	Proficient, learned during the two-years stay in France
German	Upper intermediate, attained B2 level in Goethe Zertificat

Publications and preprints

Published/accepted

2024	**Large hyperbolic circles**, E. Corso, D. Ravotti, Boll. Unione Mat. Ital., https://doi.org/10.1007/s40574-024-00425-8.
2024	**The distribution of dilating sets: a journey from Euclidean to hyperbolic geometry**, E. Corso, Ergodic theory and dynamical systems, 57-97. De Gruyter Proc. Math. De Gruyter, Berlin, 2024.
2020	**Large deviations for random walks on free products of finitely generated groups**, E. Corso, Electron. J. Probab. **26**, 1-22.

Preprints

2024	**Dynamical self-similarity, L^q-dimensions and Furstenberg slicing in $\mathbb{R}^d$**, E. Corso, P. Shmerkin, arXiv:2409.04608 (2024).

| 2021 | **Disjointness of higher rank diagonalizable actions on semisimple and solvable quotients**, E. Corso, M. W. Luethi, preprint, available at https://www.emiliocorso.com/research/ |
| 2021 | **Large deviations for irreducible random walks on relatively hyperbolic groups**, E. Corso, preprint, arXiv:2107.02090 |

Other publications

| 2021 | **Uniform exponential mixing: the case of convex cocompact manifolds**, E. Corso, in Alireza Salehi Golsefidy, Alex Kontorovich, Hee Oh, Arbeitsgemeinschaft: Thin Groups and Super-approximation. Oberwolfach Rep. **18** (2021), no. 4, pp. 2721–2790 |
| 2021 | **Asymptotics and limit theorems for horocycle ergodic integrals à la Ratner**, D. Ravotti, with an appendix by E. Corso, J. Éc. polytech. Math. **10** (2023), 305-334 |

Talks and seminars

Research seminars

March 2024	L^q-spectra of dynamically driven self-similar measures: the multi-dimensional case, *Northwestern University*, Evanston (IL), United States Dynamics Seminar
February 2024	**Statistical limit theorems for geodesic and horocycle flows on negatively curved surfaces**, *Pennsylvania State University*, University Park (PA), United States Dynamical Systems Seminar
November 2023	L^q-spectra of dynamically driven self-similar measures: the multi-dimensional case, *University of Maryland (MA)*, College Park, United States Dynamics Seminar
October 2023	L^q-spectra of dynamically driven self-similar measures: the multi-dimensional case., *Pennsylvania State University*, University Park (PA), United States Dynamical Systems Seminar
September 2023	**The L^q-spectrum of dynamically driven self-similar measures in arbitrary dimension**, One World Fractals (online meeting)
March 2023	**Randomness of flows in negative curvature**, University of Victoria, Victoria, Canada Probability and Dynamics seminar
March 2023	**Asymptotic behaviour of expanding circles on compact hyperbolic surfaces**, University of California San Diego Group Actions Seminar (online seminar)
March 2023	**Randomness of deterministic processes in negative curvature**, *University of British Columbia*, Vancouver, Canada, UBC Probability Seminar
February 2023	**Harmonic analysis and equidistribution: recent instances of a long-standing connection**, *University of British Columbia*, Vancouver, Canada, Harmonic Analysis and Fractal Geometry Seminar
November 2022	**Expanding homogeneous curves on compact surfaces: the exact equidistribution rate**, *Pennsylvania State University*, State College, US, Semi-annual workshop in Dynamical Systems and Related Topics, Fall meeting. Dedicated to 75th birthdays of Michael Brin and Yakov Pesin
September 2022	**Ergodic properties of large circles: from Euclidean to hyperbolic geometry**, *University of British Columbia*, Vancouver, Canada, Ergodic Theory Seminar
June 2022	**Folding dilating shapes: a journey from Euclidean to hyperbolic geometry**, *The Riemann International School of Mathematics*, Varese, Italy, DinAmici VII

April 2022	**Asymptotics of the equidistribution rate of expanding circles on compact hyperbolic quotients and applications**, New England Dynamics and Number Theory Seminar (online seminar)
March 2022	**Asymptotics of the equidistribution rate of expanding circles on compact hyperbolic surfaces and applications**, *Scuola Normale Superiore, Centro Ennio de Giorgi*, Pisa, Italy, Dynamics Seminar
February 2022	**A single-orbit central limit theorem for horocycle flows on compact hyperbolic surfaces**, *Queen's University*, Kingston, Canada, Dynamics, Geometry and Groups (online seminar)
December 2021	**Distributional limit theorems for geodesic and horocycle flows on compact hyperbolic surfaces**, *Imperial College*, London, UK, DynamIC Seminar (online seminar)
October 2021	**Uniform exponential mixing for congruence covers of convex cocompact hyperbolic manifolds**, *Mathematisches Forschungsinstitut Oberwolfach*, Oberwolfach, Germany, Arbeitsgemeinschaft: Thin Groups and Super-approximation
October 2021	**Asymptotics and limit theorems for horocycle ergodic integrals à la Ratner**, *University of Zürich*, Zürich, Switzerland, Ergodic theory and dynamical systems seminar
June 2021	**Spatial and temporal central limit theorems for flows on negatively curved hyperbolic surfaces**, *Universität Potsdam*, Potsdam, Germany, Probability and Mathematical Statistic Research Seminar

Colloquia and graduate seminars

May 2021	**Statistical properties of geodesic and horocycle orbits for negatively curved surfaces**, *ETH*, Zürich, Switzerland, Geometry Graduate Colloquium
May 2021	**Large deviations of random walks on finitely generated groups**, *ETH*, Zürich, Switzerland, Zürich Graduate Seminar in Probability Theory
May 2020	**On the unreasonable effectiveness of ergodic theory in combinatorial number theory**, *ETH*, Zürich, Switzerland, Zürich Graduate Seminar in Probability Theory
December 2019	**What is...measure rigidity?**, *ETH*, Zürich, Switzerland, Zürich Graduate Colloquium
October 2019	**Thin groups and super approximation: local-to-global principles in circle packings and diophantine approximation**, *ETH*, Zürich, Switzerland, Geometry Graduate Colloquium
December 2018	**Fourier decay of stationary measures**, *ETH*, Zürich, Switzerland, Morning seminar "Ergodic theory and dynamical systems"
May 2018	**Rigidity of higher-rank actions on tori and solenoids**, *ETH*, Zürich, Switzerland, Seminar "Homogeneous dynamics and applications"
June 2016	**On self-similar sets with overlaps and inverse theorems for entropy**, *École Normale Supérieure*, Paris, France

Teaching and related activities

2024-2025	**Dynamical Systems Seminar, Dynamical Systems Working Seminar, Center for Dynamics and Geometry Colloquium**, *Anatole Katok Center for Dynamical Systems and Geometry, Pennsylvania State University*, University Park, State College, United States Organizer

Fall semester, 2024-2025	**Ordinary and Partial Differential Equations**, *Pennsylvania State University*, University Park, State College, United States Instructor
Spring semester, 2023-2024	**Multivariable calculus**, *Pennsylvania State University*, University Park, State College, United States Instructor
Fall semester, 2023-2024	**Calculus with Analytic Geometry II**, *Pennsylvania State University*, University Park, State College, United States Instructor
Spring semester, 2022-2023	**Integral Calculus with Applications**, *University of British Columbia*, Vancouver, Canada Instructor
Fall semester, 2021-2022	**Geometry Graduate Colloquium**, *ETH*, Zürich, Switzerland Organizer
Fall semester, 2021-2022	**Student seminar: Elementary Number Theory**, *ETH*, Zürich, Switzerland Organizer
Fall semester, 2020-2021	**Algebraic Geometry I**, *ETH*, Zürich, Switzerland Teaching Assistant
Fall semester, 2020-2021	**Differential Geometry I**, *ETH*, Zürich, Switzerland Teaching Assistant
Fall semester, 2019-2020	**Student seminar: homogeneous dynamics and counting problems**, *ETH*, Zürich, Switzerland Organizer
Fall semester, 2019-2020	**Analysis III: Partial Differential Equations**, *ETH*, Zürich, Switzerland Organizer
Spring semester, 2018-2019	**Functional Analysis II**, *ETH*, Zürich, Switzerland Teaching Assistant
Fall semester, 2018-2019	**Commutative algebra**, *ETH*, Zürich, Switzerland Organizer
Fall semester, 2018-2019	**Functional analysis I**, *ETH*, Zürich, Switzerland Teaching Assistant
Fall semester, 2017-2018	**Linear algebra I**, *ETH*, Zürich, Switzerland Teaching Assistant

Fellowships and awards

2016-2017	**Master 2**, Paris Graduate School of Mathematics Fellowship
2015-2016	**Master 1**, "Laboratoire d'Analyse, Géométrie et Applications, Université de Paris 13" Fellowship

Other activities

2012	**Participation in "Spheres: Zero Robotics competition 2012"**, I was the mentor of my school-team, we reached 1st place in Europe

2011   **Participation in "Spheres: Zero Robotics competition 2011"**, international educational competition in aerospace engineering organised by National American Space Agency and Massachussets Institute of Technology: my school- team reached 2nd place in Europe

2011   **Participation in a one-week university guidance course for talented high-school**, *Scuola Normale Superiore*, Pisa, Italy