

Emilio Corso

Curriculum Vitae

1984 Mathematics Road, V6T 1Z2,
Vancouver, BC, Canada
✉ corso@math.ubc.ca
🌐 www.emiliocorso.com

Biographical data

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

Education

- 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 Mother tongue
- 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 Zertifikat

Publications and preprints

Published/accepted

- 2020 **Large deviations for random walks on free products of finitely generated groups**, E. Corso, *Electron. J. Probab.* **26**, 1-22

Preprints

- 2023 **The distribution of dilating sets: a journey from Euclidean to hyperbolic geometry**, E. Corso, preprint, available at <https://www.emiliocorso.com/research/>
- 2022 **Large hyperbolic circles**, E. Corso, D. Ravotti, preprint, arXiv:2208.07771
- 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, to appear in Oberwolfach Rep.
- 2021 **Asymptotics and limit theorems for horocycle ergodic integrals à la Ratner**, D. Ravotti, with an appendix by E. Corso, arXiv:2107.02090

Talks and seminars

Research seminars

- 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

Participation in Schools and Conferences

- October 2021 **Arbeitsgemeinschaft: Thin Groups and Super-approximation**, *Mathematisches Forschungsinstitut Oberwolfach*, Oberwolfach, Germany
- September 2021 **Counting problems**, Ventotene, Italy
- August 2021 **Modern Aspects of Dynamical Systems**, *CIME*, Cetraro, Italy
- June 2021 **Dynamics and Geometry online summer school**, *CMI-HIMR*, Bristol, UK
- February 2020 **Transfer operators in number theory and quantum chaos**, *HIM*, Bonn, Germany
- January 2020 **Winter school on Dynamics: Topology and Numbers**, *HIM*, Bonn, Germany
- October 2019 **Dynamics, Geometry and Combinatorics**, *EPFL*, Losanne, Switzerland
- October 2019 **Arbeitsgemeinschaft: Zimmer's conjecture**, *Mathematisches Forschungsinstitut Oberwolfach*, Oberwolfach, Germany
- September 2019 **Smooth and Homogeneous Dynamics**, *ICTS*, Bangalore, India
- August 2019 **Symposium: Dynamical systems, pure and applied**, Bremen, Germany
- July 2019 **Dynamics of Parabolic Flows**, *UZH*, Zürich, Switzerland
- June 2019 **Arithmetic, geometry and modular forms: A conference in honour of Bill Duke**, *ETH*, Zürich, Switzerland
- May 2019 **Equidistribution, Invariant measures and Applications: A Tribute to the Legacy of Marina Ratner**, *Israel Institute for Advanced Studies*, Jerusalem, Israel
- March 2019 **Number theory and dynamics**, *Centre for Mathematical Sciences*, Cambridge, UK
- December 2018 **Journées de dynamique**, *Université Paris Diderot*, Paris, France
- July 2018 **Dynamics: topology and numbers**, *Max Planck Institute*, Bonn, Germany
- May 2018 **Random matrices and free probability theory**, *IPAM*, University of California, Los Angeles, USA

- November 2017 **Geometry, groups and dynamics**, *International Centre for Theoretical Sciences*, Bangalore, India
- September 2017 **Ergodic theory: numbers, fractals and geometry**, *Mathematical Institute*, Oxford, United Kingdom
- May 2017 **Mini-school on random maps and the Gaussian Free Field**, *École Normale Supérieure*, Lyon, France

Teaching and related activities

- 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