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Academic career

- 2020-Now Post-doc at the Cluster of Excellence Mathematics Münster: Dynamics – Geometry – Structure
- 2018-2020 Post-doc at the Weizmann Institute of Science
- 2014-2018 PhD student at the University of Oxford, supervised by Prof C. Druţu
- 2009-2014 Allievo Ordinario at Scuola Normale Superiore (Diploma di licenza, 70/70)
- 2012-2014 Master student at Università di Pisa (master degree, 110/110 cum laude)
- 2009-2012 Bachelor student at Università di Pisa (bachelor degree, 110/110 cum laude)

PhD thesis

- title *Geometry of actions, expanders and warped cones*
- supervisor Prof C. Druţu

Conferences and research seminars co-organised

- SoSe 2021 *Geometric Group Theory Seminar*, seminar at WWU Münster
- 2-13 Aug '21 *Young Mathematicians in C*-Algebras*, Münster (Germany)
- 7-10 Jun '21 *Interactions between expanders, groups and operator algebras*, Münster (Germany)
- 5-8 Mar '20 *Connections to Random Walks, Equidistribution, and Rigidity*, Nir David (Israel)

List of publications and preprints

- (joint with A. Leitner) *An invitation to coarse groups*. Preprint (2021)
- (joint with K. Li and J. Zhang) *A Markovian and Roe-algebraic approach to asymptotic expansion in measure*. Preprint (2020)
- (joint with R. Kropholler) *A new construction of CAT(0) cube complexes*. Algebraic & Geometric Topology (to appear).
- (joint with R. Kropholler) *Embedding cube complexes into products of trees and fly maps*. Appendix to the paper: "Hyperbolic groups with almost finitely presented subgroups". Groups, Geometry, and Dynamics (to appear)
- (joint with A. Khukhro, K. Li and J. Zhang) *On the structure of asymptotic expanders*. Advances in Mathematics, **393**, 2021.
- (joint with K. Li and J. Zhang) *Asymptotic expansion in measure and strong ergodicity*. Journal of Topology and Analysis (2021)

- *Remarks on partitions into expanders*. *Aequationes Mathematicae*, **95**, 751–759, (2021).
- *Discrete fundamental groups of warped cones and expanders*. *Mathematische Annalen* **373**, no. 1-2, 355–396 (2019).
- (joint with T. de Laat) *Superexpanders from group actions on compact manifolds*. *Geometriae Dedicata* **200**, no. 1, 287–302 (2019).
- *Measure expanding actions, expanders and warped cones*. *Transactions of the American Mathematical Society* **371**, no. 3, 1951–1979 (2019).
- *Fundamental groups as limits of discrete fundamental groups*. *Bulletin of the London Mathematical Society* **50.5**: 801-810 (2018).

Minicourses delievered

- 25-29 Jul 22 *Expander graphs*, Graduate Student Concentration Week on Metric Geometry (Texas A&M)
- 20-31 Jul 20 *Expander graphs*, Geometric group theory without boundaries (Virtual)

Invited talks

- May 2022 *TBA*, Operator algebras and Group Dynamics Workshop (CIRM)
- Jan 2022 *TBA*, Focused Research Workshop: Higher-Dimensional Expanders (Bristol - Virtual)
- 22 Jul 2021 *Is high dimensional expansion invariant under coarse equivalence?* Online meeting: high-dimensional expanders, coarse geometry and infinite group theory (Bristol - Virtual)
- 1 Jun 2021 *Coupled-links cube complexes*, Tee Seminar (Münster - Virtual)
- 8 Jan 2021 *Expanders of dynamical origin*, (Heidelberg - Virtual)
- 1 Dec 2020 *Markov operators and ghost projections*, Oberseminar C*-Algebren (Münster - Virtual)
- 23 Nov 2020 *Coarse groups and their coarse actions*, GGT Seminar (Münster - Virtual)
- 17 Aug 2020 *Asymptotic expander graphs*, Symmetries in Newcastle (Newcastle Aus - Virtual)
- 1 Jul 2020 *Of measurable actions and finite graphs*, Online geometry seminar (ETH Zurich - Virtual)
- 27 May 2020 *From group actions to finite graphs and back*, Operator Algebras Seminar (Copenhagen - Virtual)
- ~~19 Mar 2020~~ (*TBA*), Géométrie et Topologie (Sorbonne, Paris) — cancelled
- ~~17 Mar 2020~~ *A geometric approach to an analytic characterization of strong ergodicity*, Action (UMPA, Lyon) — cancelled
- 18 Jul 2019 *On metrics, measures and dynamics: expanders via warped cones*, colloquim (Karlsruhe)
- 5 Jun 2019 *Geometry of actions on metric/measure spaces*, Simons Semester on Geometric and Analytic Group Theory (IMPAN)
- 10 May 2019 *Discrete fundamental group: the large and the small*, Junior Topology and Group Theory seminar (Oxford)

- 11 Apr 2019 *An introduction to warped cones*, Probability and Ergodic Theory seminar (Ben-Gurion University)
- 19 Mar 2019 *Discrete fundamental groups and warped cones*, (Indiana University Bloomington)
- 14 Mar 2019 *Proving hyperbolicity for cube complexes*, Spring Topology and Dynamics Conference (Birmingham, AL)
- 12 Mar 2019 *Cube complexes with coupled links*, Geometric Group Theory and Topology seminar (Tufts, Boston)
- 10 Jan 2019 *Cube complexes with coupled links*, Geometry and Topology seminar (Technion)
- 12 Oct 2018 *Expander graphs and how to find them*, Geometry Graduate Colloquium (ETH Zurich)
- 4 Oct 2018 *Expanders via actions on manifolds*, Geometry Tea (Cambridge)
- 23 Aug 2018 *Non-positively curved cube complexes with hyperbolic fundamental group*, (KAIST, Daejeon)
- 18 May 2018 *Geometric constructions of expanders*, Combinatorics Seminar (Warwick)
- 18 Apr 2018 *Coarse geometry of approximating graphs: discrete fundamental group*, Mini-Workshop on Superexpanders and Their Coarse Geometry (Oberwolfach)
- 26 Mar 2018 *Warped systems of actions on metric spaces*, Groups, Actions and von Neumann algebras seminar (Orsay)
- 29 Jan 2018 *A geometric construction of expanders*, Algebra, Combinatorics, Measure Seminar (Lancaster)
- 22 Jan 2018 *Coarse geometry of expanders*, Kleines Seminar (Münster)
- 30 Sep 2017 *Super-expanders via approximating graphs*, Workshop on Operator algebras, Geometry and Actions (Warsaw)
- 2 May 2017 *Approximating graphs: a geometric constructions of expanders*, Seminaire Groupes et Analyse (Neuchâtel)
- 27 Feb 2017 *An introduction to expanders and how to construct them*, Junior Geometry and Topology Seminar (Warwick)

Contributed talks

- 6 Sep 2021 *Coarse Groups*, Ventotene International Workshop (Ventotene)
- 15 Oct 2019 *Strong Property (T) in the proof of the Zimmer Conjecture*, Arbeitsgemeinschaft (Oberwolfach)
- 19 Jul 2018 *Constructing expanders by approximating geometric actions*, GAGTA (Seoul)
- 5 Jul 2018 *Warped cones: a coarse geometric invariant of actions*, workshop on Dynamical methods in Algebra, Geometry and Topology (Udine)
- 24 May 2018 *Cube Complexes with Coupled Links*, workshop on Nonpositively Curved Groups on the Mediterranean (Nahsholim)
- 29 Jun 2017 *Approximating graphs: a geometric constructions of expanders*, conference yGAGTA (Bilbao)

Positions awarded

- *Participant at the Simons Semester "Geometric and Analytic Group Theory"*, 2 Jun. - 7 Jul. 2019, Warsaw
- *Early career participant at the INI Programme "Non-positive curvature group actions and cohomology"*, 3 Jan. - 23 Jun. 2017, Cambridge
- *Programme associate at the MSRI Semester "Geometric Group Theory"*, 15 Aug. - 16 Dec. 2016, Berkeley

Funding

- I applied for the Emmy Noether Programm of the Deutsche Forschungsgemeinschaft. I am waiting to know the result of the application.
- In 2016 I applied and obtained funding from the GEAR Network in the form of a Graduate Internship.

Prizes and scholarships

- My graduate studies were funded by an EPSRC scholarship and the J.T.Hamilton scholarship.
- I earned scholarships at the following schools of excellence:
 - Scuola Normale Superiore (Pisa),
 - Scuola Galileiana di Studi Superiori (Padova), (declined)
 - IUSS (Pavia), (declined)
 - Scuola Superiore dell'Università di Udine (Udine). (declined)
- In 2009 I won a national competitive exam for an INDAM grant. (declined)

Reviewing service

I reviewed for the following journals:

- *Advances in Mathematics*
- *Annales Henri Lebesgue*
- *SIAM Journal on Discrete Mathematics*
- *Rocky Mountain Journal of Mathematics*

Outreach

From early 2013 to August 2014 I was volunteering for MaDE@DM: an outreach society that organises mathematical exhibitions in the surroundings of Pisa.