Gabriele Viaggi

Address:	Mathematical Institute, University of Pisa Largo Bruno Pontecorvo 5, 56127 Pisa, Italy
Email:	gabriele.viaggi@unipi.it
Homepage:	https://pagine.dm.unipi.it/~a058753/

Academic positions

Dec 2025 - present	**University of Pisa** https://www.dm.unipi.it/en Tenure-track researcher at the Mathematical Institute.
Mar 2023 - Nov 2025	**University of Rome (Sapienza)** https://www.mat.uniroma1.it/en Junior researcher at the Mathematical Institute.
Mar 2020 - Mar 2023	**University of Heidelberg** www.mathinf.uni-heidelberg.de Postdoc at the Mathematical Institute. Mentor: Prof. Beatrice Pozzetti

Education

Oct 2016 - Jan 2020	**University of Bonn** www.math.uni-bonn.de Ph.D. in Mathematics Advisor: Prof. Ursula Hamenstädt Graduate school: IMPRS https://www.mpim-bonn.mpg.de/node/78
2011 - 2016	**Scuola Normale Superiore (SNS)** wwweng.sns.it Diploma
2014 - 2016	**University of Pisa** www.dm.unipi.it/webnew/en Master degree in Mathematics, Advisor: Roberto Frigerio
2011 - 2014	Bachelor degree in Mathematics, Advisor: Riccardo Benedetti

Publications

2026 *Linear volume bounds for drilling and filling*
arXiv:2508.14842
To appear in International Mathematics Research Notices

Effective length-projection bounds for hyperbolic 3-manifolds diffeomorphic to $S \times \mathbb{R}$
Journal of Topology 19 (2026), e70096
https://doi.org/10.1112/topo.70096

2025 *Topological and geometric restrictions on hyperconvex representations*
with James Farre and Beatrice Pozzetti
Crelle's Journal (2025), 227-251
https://doi.org/10.1515/crelle-2025-0047

Volume, entropy, and diameter in $\mathrm{SO}(p, q+1)$*-higher Teichmüller spaces*
with Filippo Mazzoli
Commentarii Mathematici Helvetici 101 (2026), 555-596
https://doi.org/10.4171/cmh/608

2024 *Divisible convex sets with properly embedded cones*
with Pierre-Louis Blayac
Publications Mathématiques de l'IHÉS 141 (2025), 99-189
https://doi.org/10.1007/s10240-024-00152-y

Uniform models and short curves for random 3-manifolds
with Peter Feller and Alessandro Sisto
Compositio Mathematica, 161 (2025), 447-502
https://doi.org/10.1112/S0010437X24007565

2023 $\mathrm{SO}_0(2, n+1)$*-maximal representations and hyperbolic surfaces*
with Filippo Mazzoli
Memoirs of the AMS, 313 (2025)
https://doi.org/10.1090/memo/1587

Length functions in Teichmüller and anti de Sitter geometry
with Filippo Mazzoli
Forum of Mathematics, Sigma 11 (2023), e101 1-37
https://doi.org/10.1017/fms.2023.100

2022 *Small eigenvalues of random 3-manifolds*
with Ursula Hamenstädt
Transactions of the AMS 375 (2022), 3795-3840
https://doi.org/10.1090/tran/8564

2021 *Volumes of random 3-manifolds*
Journal of Topology 14 (2021), 504-537
https://doi.org/10.1112/topo.12190

Preprints

2026 *Distinguishing Gromov-Thurston manifolds using algebraic Dehn fillings*
with Alessandro Sisto arXiv:2606.27074

2025 *Geometric components of representation spaces via robust families of submanifolds*
arXiv:2508.14842

2024 *Effective hyperbolization and length bounds for Heegaard splittings*
with Peter Feller and Alessandro Sisto, arXiv:2408.06998

Geometry of hyperconvex representations of surface groups
with James Farre and Beatrice Pozzetti, arXiv:2407.20071

2023 *Hyperbolic Heegaard splittings and Dehn twists*
with Peter Feller and Alessandro Sisto, arXiv:2304.05990

PhD Thesis

2020 *Geometry of random 3-manifolds*
PhD Thesis, University of Bonn, 2020
available at https://nbn-resolving.org/urn:nbn:de:hbz:5-57316

Invited talks

Conferences

Dec 2025	Winter Meeting in Algebra and Geometry, Rome
Jun 2025	Workshop Low-dimensional phenomena: geometry and dynamics, IHP Paris
Jul 2024	AMS-UMI Joint Meeting, Palermo Special Session on Anosov Representations and Higher Teichmüller Theory
Apr 2024	Conference Submanifolds of locally symmetric spaces: geometric, analytic, and dynamical aspects, Autrans
Feb 2022	Conference Spectra and Dynamics on (Locally) Symmetric Spaces, University of Paderborn
Jun 2020	NCNGT 2020 conference, online
Jul 2019	Arbeitstagung on Geometry, MPIM Bonn

Seminars

Apr 2025	Algebra and Geometry Seminar, IRMA Strasbourg University
Dec 2024	Seminar (online), Tsinghua University
Aug 2024	Seminar (online), Tsinghua University
May 2024	Algebra and Geometry Seminar, Sapienza University of Rome
Feb 2024	Geometry Seminar, Pavia
Jan 2024	Geometry Seminar, MPIS Leipzig
May 2023	Geometry Seminar, University of Pisa
Apr 2023	Differential Geometry Seminar, University of Heidelberg
Mar 2023	Geometry Seminar, University of Bologna
Mar 2021	Geometry Seminar, University of Virginia, online
Jun 2020	International young seminar on bounded cohomology and simplicial volume, online
May 2020	Differential Geometry Seminar, University of Heidelberg
Nov 2019	Séminaire de géométrie et topologie, University Pierre et Marie Curie, Paris
Nov 2019	Séminaire de géométrie, University Paris-Est Créteil
Nov 2019	Geometry seminar, ETH Zurich
May 2019	Geometry seminar, LMU Munich

Organization

Conferences

September 18-25, 2022	Anosov representations Topic group of the NCNGT 2022 conference. Co-organized with Filippo Mazzoli.
July 25-26, 2024	Developments in Hyperbolic Geometry Special Session of the AMS-UMI Joint Meeting. Co-organized with Tommaso Cremaschi and Andrew Yarmola.

Seminars

2021-2023 Heidelberg	Differential Geometry Seminar (co-organizer).

Teaching

Summer 2026, Pisa	Lectures for *Geometry* (Aerospace Engineering, 40 hours)
Winter 2025, Rome	Lectures for *Geometry I* (Physics, 30 hours)
Winter 2024, Rome	Lectures for *Algebra* (Computer Science, 60 hours)
Winter 2023, Rome	Exercise classes for *Algebra* (Computer Science, 30 hours) Exercise classes for *Geometry* (Aerospace Engineering, 30 hours)
Winter 2020, Heidelberg	*Hyperbolic manifolds* (class, 60 hours)

Students supervised

Apr 2022, Heidelberg	Marcel Stoklasa, Bachelor Thesis, *Limit sets for once punctured torus groups acting discretely on the Riemann sphere* co-supervised with Prof. Beatrice Pozzetti.

Grants

2023, Rome	Project *Aspects of modular forms, moduli problems, applications to L-values* with Federico Pellarin (PI), Gabriele Mondello, and Riccardo Salvati Manni. Fundings of the Sapienza University of Rome

Service

Peer review Referee or quick opinionist for Geometric and Functional Analysis, Journal of Topology, International Mathematics Research Notices, Forum Mathematics Sigma, Algebraic and Geometric Topology, Journal of the London Mathematical Society, Geometriae Dedicata, Crelle's Journal.

Outreach Part of the team which organized in 2022 for the University of Heidelberg a series of events about the Poincaré Conjecture in the context of the initiative of German universities to celebrate the Millenium Problems. In the project I contributed to the ideation and development of the contents of the webpage dedicated to the events.

Languages

Italian	Native
English	Fluent