curriculum vitæ of

Filippo Mazzoli

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0000-0002-6609-915X Filippo-Mazzoli ArXiv eprints

Anagraphics

Born on November 21st, 1992 in Firenze (FI), Italy. Italian citizen. Pronouns: *he/him/his.*

Employment

July 2024 – **Assistant Professor** in Topology, UC Riverside
Department of Mathematics, University of California Riverside, Riverside CA, USA.
Tenure track position.

Aug 2023 – June 2024 **Postdoctoral researcher** in Mathematics, MPI for MiS
Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany.
Post-doc mentor: Prof. Anna Wienhard.

Aug 2020 – May 2023 **Whyburn Research Associate and Lecturer**, University of Virginia
Department of Mathematics, University of Virginia, Charlottesville VA, USA.
Post-doc mentor: Prof. Sara Maloni.

Education

Oct 2016 – July 2020 **Ph.D.** in Mathematics Université du Luxembourg
Thesis title: "Constant curvature surfaces and volumes of convex co-compact hyperbolic manifolds",
Advisor: Prof. Jean-Marc Schlenker. (.pdf file available here.)

Sept 2014 – Sept 2016 **M.Sc.** in Mathematics, 110/110, summa cum laude. Università di Pisa
Thesis advisor: Prof. Riccardo Benedetti.

Sept 2011 – Sept 2014 **B.Sc.** in Mathematics, 110/110, summa cum laude. Università di Pisa
Thesis advisor: Prof. Paolo Lisca.

Research interests

(Higher) Teichmüller Theory, Anti-de Sitter geometry, Hyperbolic geometry, Kleinian groups, Low-dimensional topology, quantum Teichmüller space, quantum hyperbolic invariants.

Papers

Published

1. D. Choudhury, F. Mazzoli, and A. Seppi. *Quasi-Fuchsian manifolds close to the Fuchsian locus are foliated by constant mean curvature surfaces*. Math. Ann. 2023. URL.
2. F. Mazzoli. *The infimum of the dual volume of convex co-compact hyperbolic* 3*-manifolds*. Geom. Topol. 27.6, 2023, pp. 2319–2346. URL.
3. F. Mazzoli and G. Viaggi. *Length functions in Teichmüller and anti-de Sitter geometry*. Forum Math. Sigma 11, 2023, Paper No. e101. URL.
4. F. Mazzoli. *The dual volume of quasi-Fuchsian manifolds and the Weil-Petersson distance*. Trans. Amer. Math. Soc. 375.1, 2022, pp. 695–723. URL.
5. F. Mazzoli. *The dual Bonahon-Schläfli formula*. Algebr. Geom. Topol. 21.1, 2021, pp. 279–315. URL.

Accepted

6. F. Mazzoli and G. Viaggi. $\mathrm{SO}_0(2, n+1)$*-maximal representations and hyperbolic surfaces*. to appear in Mem. Amer. Math. Soc. 2022. arXiv: `2206.06946 [math.GT]`.
7. F. Mazzoli, A. Seppi, and A. Tamburelli. *Para-hyperKähler geometry of the deformation space of maximal globally hyperbolic anti-de Sitter three-manifolds*. to appear in Mem. Amer. Math. Soc. 2021. arXiv: `2107.10363 [math.DG]`.
8. F. Mazzoli. *Constant Gaussian curvature foliations and Schläfli formulas of hyperbolic* 3*-manifolds*. to appear in Ann. Sc. norm. super. Pisa - Cl. sci. 2019. arXiv: `1910.06203 [math.DG]`.

Preprints

9. S. Maloni, G. Martone, F. Mazzoli, and T. Zhang. *d-pleated surfaces and their shear-bend coordinates*. submitted, 2023. arXiv: 2305.11780 [math.GT].
10. F. Mazzoli. *Intertwining operators of the quantum Teichmüller space*. under revision, 2016. arXiv: 1610.06056 [math.GT].

Awards and Grants

2020	Excellent Thesis Award, year 2020.	Université du Luxembourg
2020	Graduate Internship grant.	GEAR Network
2019	Travel grant for graduate students.	DPMA, Université du Luxembourg
2017	Premio di Studio "Benedetto Sciarra" Anni 2015-2016.	Scuola Normale Superiore, Pisa

Long Research Visit

Jan 2019 – March 2019	Supervised by Francis Bonahon.	University of Southern California

Teaching

Jan 2024 – Feb 2024	An introduction to anti-de Sitter geometry, mini-course.	MPI for MiS
Spring 2023	MATH 8720, Hyperbolic Geometry, graduate (topics) course.	University of Virginia
	MATH 5700, Introduction to Geometry, undergraduate course.	
Fall 2022	MATH 3310-100, Basic Real Analysis, undergraduate course.	
Spring 2022	MATH 8720, Differential Geometry, graduate course.	
	MATH 5700, Introduction to Geometry, undergraduate course.	
Fall 2021	MATH 3310-100, Basic Real Analysis, undergraduate course.	
Spring 2021	MATH 3350-001, Applied Linear Algebra, undergraduate course.	
	MATH 3350-002, Applied Linear Algebra, undergraduate course.	
Fall 2020	MATH 2310-101/201, Calculus III (TA), undergraduate course.	
Fall 2019	BASI-313, Analyse 1 (TA), undergraduate course.	Université du Luxembourg
Fall 2018	BASI-280, Analyse 1a & 1b (TA), undergraduate course.	
Spring 2018	BASI-10 Analyse 2a & 2b (TA), undergraduate course.	
Fall 2017	BASI-12, Analyse 3b (TA), undergraduate course.	

Invited Talks

Conferences and Workshops

July 2023	"Group actions and low-dimensional topology", conference.	ICMAT, El Barco de Ávila, Spain
Jan 27th, 2023	"Geometry, topology, and their applications", online workshop.	MPI for MiS, Leipzig, Germany
Aug 22nd-26th, 2022	"Minimal surfaces in symmetric spaces and Labourie's conjecture", workshop.	Autrans, France
July 20th, 2022	"AMS-EMS-SMF Meeting", conference.	Université Grenoble Alpes
Mar 12th, 2022	"55th Spring Topology and Dynamics Conference", conference.	Baylor University
June 2021	"Nearly Carbon Neutral Geometric Topology Conference", online conference.	Online
Aug 2019	"Combinatorial and algebraic aspects of geometric structures", conference.	Chiang Mai University
Dec 8th, 2020	"Parole aux jeunes géomètres dynamiques", , online workshop.	GDR Platon
Sep 2018	"Young Mathematicians Symposium of the Greater Region", conference.	INRIA Nancy - Grand Est
May 2018	"Structures on Surfaces", workshop.	INRIA Nancy - Grand Est

Seminars

Mar 6th, 2023	Dynamics Seminar.	University of Wisconsin-Madison
Jan 13th, 2023	Colloquium talk.	UC Riverside

Nov 28th, 2022	Topology Seminar.	UT Austin
Nov 18th, 2022	Geometry-Topology Seminar.	UC Riverside
Apr 4th, 2022	Geometry Seminar.	University of Virginia
Nov 29th, 2021	Geometry-Topology Seminar.	University of Maryland
June 10th, 2021	Differential Geometry Seminar, online.	Heidelberg University
May 11th, 2021	Geometry Seminar.	University of Virginia
Nov 3rd, 2020	Pangolin Seminar.	Online
Oct 14th, 2020	Max Dehn Seminar.	University of Utah
Feb 12th, 2020	Topology Seminar.	Texas A&M
Jan 30th, 2020	Geometry & Topology Seminar.	Boston College
Jan 28th, 2020	Geometry & Topology Seminar.	Yale University
Jan 23rd, 2020	Differential Geometry Seminar.	Heidelberg University
Dec 12th, 2019	Séminaire de Théorie Spectrale et Géométrie.	Institut Fourier, Grenoble
Feb 19th, 2019	Geometry Seminar.	University of Virginia

Mentoring and Outreach

Oct 2022 — Arbeitsgemeinschaft on Higher Teichmuller theory, — Oberwolfach
Mentee: Ferndando Camacho Cadena. Topic: "Symplectic structures on the Hitchin component".

Oct 2022 — Geometry Lab, — University of Virginia
Topic: "Hyperbolic geometry". Organizer: Prof. Sara Maloni.

Summer 2021 — Research Experience for Undergraduates (REU), — University of Virginia
Co-advisor: Sara Maloni. Students: K. Betts, T. Larsen, J. Utley, A. Vanis.
Project: "The tri-pants graph of the twice-punctured torus". Preprint arXiv:2111.07136.

2018-19 — Science Comic: Through the Looking Glass, Reflections of Science in Luxembourg, — Université du Luxemoburg
Title: *"Number theory in the past, present, and future"*. Comic book available here.

Organizing

Seminars

Sep 2023 - April 2024 — Geometry Seminar, — MPI for MiS, Leipzig, Germany
Co-organizers: Samantha Fairchild, James Farre, Konstantinos Tsouvalas.

Conferences and workshops

Aug-Sep 2023 — "Metrics on higher Teichmüller spaces", workshop. — Fréjus, France
Co-organizers: Christian El Emam, Nathaniel Sagman.

Aug-Sep 2023 — "Nearly Carbon Neutral Geometric Topology Conference 2022", online conference. — Online
Session: "Anosov representations". Co-organizers: Gabriele Viaggi.

Nov 2021 — "Virginia Topology Conference", conference. — University of Virginia
Co-organizers: Thomas Koberda, Sara Maloni, Mark Pengitore.

Presentations

Fall 2021 — Reading seminar, — University of Virginia
"An introduction to Higgs bundles", with the Geometry group at UVA.

Fall 2020-Spring 2021 — Reading seminar, — University of Virginia
"Anosov representations", with Sara Maloni and Alec Traaseth.

Fall 2018 Reading seminar, Université du Luxembourg
"A hyperKähler extension of the Teichmüller space", with Andrea Seppi

Apr 2018 Ph.D. Seminar, Université du Luxembourg
"About the McShane identity".

Sep 2017 Ph.D. Away Days, Université du Luxembourg
"Classical applications of the H-Cobordism theorem".

Sep 2017 Geometry and Topology seminar, Université du Luxembourg
"Intertwining operators of the quantum Teichmüller space".

Apr 2017 Ph.D. Seminar, Université du Luxembourg
"A parametrization of complex projective structures on surfaces".

Sep 2015 Seminari dei Baby Geometri, Universitá di Pisa
"Sulle Geometrie in dimensione 3".

Service

Referee for the acamedic jounals *Mathematische Annalen*, *Advances in Mathematics*, *International Mathematics Research Notices IMRN*, *Journal of Differential Geometry*, *Journal of Topology*, *Algebraic & Geometric Topology*, *Geometry & Topology*, *Transactions of the American Mathematical Society*.

Skills

Speaking Italian (native), English (fluent), French (intermediate).
Languages C Language, LaTeX, Matlab.

References

Research

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Teaching

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