Filippo Mazzoli *Curriculum Vitae*

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Anagraphics

Born 11/21/1992 in Firenze (Italy), Italian citizen.

Employment

Post-doctoral researcher, Aug 2023 – present
Max Planck Institute for Mathematics in the Sciences, Leipzig.
Mentor: Anna Wienhard.

Whyburn Research Associate and Lecturer, Aug 2020 – May 2023
University of Virginia, Department of Mathematics.
Mentor: Sara Maloni.

Education

Ph.D. in Mathematics, Oct 2016 – July 2020
Université du Luxembourg, Mathematics Research Unit.
Advisor: Jean-Marc Schlenker.
Thesis: "Constant curvature surfaces and volumes of convex co-compact hyperbolic manifolds" (available on OrbiLu).

Master in Mathematics, Sept 2014 – Sept 2016
Università di Pisa, Dipartimento di Matematica.
Grade: 110/110 summa cum laude.

Bachelor in Mathematics, Sept 2011 – Sept 2014
Università di Pisa, Dipartimento di Matematica.
Grade: 110/110 summa cum laude.

Research Interests

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

Publications and Preprints

10. S. Maloni, F. Mazzoli, G. Martone, T. Zhang, *Pleated surfaces in* $\mathrm{PSL}_d(\mathbb{C})$ *and their shear-bend coordinates)*, Preprint arXiv:2305.11780, *submitted.*

9. F. Mazzoli, G. Viaggi, *Length functions in Teichmüller and anti de Sitter geometry*, Preprint arXiv:2212.11106, *submitted.*

8. F. Mazzoli, G. Viaggi, $\mathrm{SO}_0(2, n+1)$*-maximal representations and hyperbolic surfaces*, Preprint arXiv:2206.06946, *submitted.*

7. D. Choudhury, F. Mazzoli, A. Seppi, *Quasi-Fuchsian manifolds close to the Fuchsian locus are foliated by constant mean curvature surfaces*, *Mathematische Annalen* (2023), DOI: 10.1007/s00208-023-02625-7, Preprint arXiv:2204.05736.

6. F. Mazzoli, A. Seppi, A. Tamburelli, *Para-hyperKähler geometry of the deformation space of maximal globally hyperbolic anti-de Sitter three-manifolds*, Preprint arXiv:2107.10363, accepted, to appear in *Memoirs of the American Mathematical Society.*

5. F. Mazzoli, *The infimum of the dual volume of convex co-compact hyperbolic 3-manifolds*, Preprint arXiv:2101.09380, accepted, to appear in *Geometry & Topology.*

4. F. Mazzoli, *Constant Gaussian curvature foliations and Schläfli formulas of hyperbolic 3-manifolds*, Preprint arXiv:1910.06203, accepted, to appear in *Annali della Scuola Normale Superiore di Pisa, Classe di Scienze.*

3. F. Mazzoli, *The dual volume of quasi-Fuchsian manifolds and the Weil-Petersson distance*, *Transactions of the American Mathematical Society* 375 (2022), 695-723, Preprint arXiv:1907.04754.

2. F. Mazzoli, *The dual Bonahon-Schläfli formula*, *Algebraic & Geometric Topology* 21-1 (2021), 279–315. Preprint arXiv:1808.08936.

1. F. Mazzoli, *Intertwining operators of the quantum Teichmüller space*, Preprint arXiv:1610.06056, *under revision*.

Awards and Grants

Excellent Thesis Award, Year 2020,
Université du Luxembourg.

Graduate Internship grant, Year 2020,
GEAR Network.

Travel grant for graduate students, Year 2019,
DPMA, Université du Luxembourg.

Premio di Studio "Benedetto Sciarra" Anni 2015-2016,
Scuola Normale Superiore, Pisa.

Long Research Visits

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

Teaching

University of Virginia,

MATH 8720 Hyperbolic geometry.	Spring 2023
MATH 8720 Differential Geometry.	Spring 2022
MATH 5700 Introduction to Geometry.	Spring 2022, Spring 2023
MATH 3310-100 Basic Real Analysis.	Fall 2021, Fall 2022
MATH 3350-001/002 Applied Linear Algebra.	Spring 2021
MATH 2310-101/201 Calculus III (TA).	Fall 2020

Université du Luxembourg,

BASI-313 Analyse 1 (TA).	Fall 2019
BASI-280 Analyse 1a & 1b (TA).	Fall 2018
BASI-10 Analyse 2a & 2b (TA).	Spring 2018
BASI-12 Analyse 3b (TA).	Fall 2017

Invited talks

Group actions and low-dimensional topology, ICMAT.	July 2023
Dynamics Seminar, University of Wisconsin-Madison.	Mar 6, 2023
Online workshop on "Geometry, topology, and their applications", Max Planck Institute at Leipzig.	Jan 27, 2023
Colloquium talk, UC Riverside.	Jan 13, 2023
Topology Seminar, UT Austin.	Nov 28, 2022
Geometry-Topology Seminar, UC Riverside.	Nov 18, 2022
Workshop "Minimal surfaces in symmetric spaces and Labourie's conjecture", Autrans.	Aug 22, 2022
AMS-EMS-SMF Meeting, Université Grenoble Alpes.	July 20, 2022
Geometry Seminar, University of Virginia.	Apr 4, 2022
55th Spring Topology and Dynamics Conference, Baylor University.	Mar 12, 2022
Geometry-Topology Seminar, University of Maryland.	Nov 29, 2021
Differential Geometry Seminar, Heidelberg University.	June 10, 2021
Nearly Carbon Neutral Geometric Topology Conference, virtual.	June 2021
Geometry Seminar, University of Virginia.	May 11, 2021

	Parole aux jeunes géomètres dynamiques, GDR Platon.	Dec 8, 2020
	Pangolin Seminar, virtual.	Nov 3, 2020
	Max Dehn Seminar, University of Utah.	Oct 14, 2020
	Topology Seminar, Texas A&M.	Febr 12, 2020
	Geometry & Topology Seminar, Boston College.	Jan 30, 2020
	Geometry & Topology Seminar, Yale University.	Jan 28, 2020
	Differential Geometry Seminar, Heidelberg University.	Jan 23, 2020
	Séminaire de Théorie Spectrale et Géométrie, Institut Fourier.	Dec 12, 2019
	Combinatorial and algebraic aspects of geometric structures, Chiang Mai University (Lightning talk).	Aug 2019
	Geometry Seminar, University of Virginia.	Febr 2019
	Young Mathematicians Symposium of the Greater Region, INRIA Nancy - Grand Est.	Sept 2018
	Structures on Surfaces, INRIA Nancy - Grand Est.	May 2018
Presentations	**Reading Seminar, University of Virginia**, *An introduction to Higgs bundles (with the Geometry group at UVA).*	Fall 2021
	Reading Seminar, University of Virginia, *Anosov representations (with S. Maloni & A. Traaseth).*	Fall 2020–Spring 2021
	Reading Seminar, Université du Luxembourg, *A hyper-Kähler extension of the Teichmüller space (with A. Seppi).*	Fall 2018
	PhD Seminar, Université du Luxembourg, *About the McShane identity.*	Apr 2018
	PhD Away Days, Université du Luxembourg, *Classical applications of the H-Cobordism theorem.*	Sept 2017
	Geometry & Topology Seminar, Université du Luxembourg, *Intertwining operators of the quantum Teichmüller space.*	Sept 2017
	PhD Seminar, Université du Luxembourg, *A parametrization of complex projective structures on surfaces.*	Apr 2017
	Seminari dei Baby Geometri, Università di Pisa, *Sulle Geometrie in dimensione 3.*	Sept 2015
Mentoring and Outreach	**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: Sara Maloni.	Fall 2022
	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.	Summer 2021
	Science Comic: Through the Looking Glass, Reflections of Science in Luxembourg. Contribution to *"Number theory in the past, present, and future".* Comic book available here.	2018-19
Organizing	**Workshop "Metrics on higher Teichmüller spaces", Fréjus**, *Co-organizers: Christian El Emam, Nathaniel Sagman.*	Aug-Sept 2023

Nearly Carbon Neutral Geometric Topology 2022, Sept 2022
(Session: Anosov representations.) *Co-organizer: Gabriele Viaggi.*

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

Service

Referee for *Journal of Topology*, *Algebraic & Geometric Topology*, *Geometry & Topology*, *Transactions of the American Mathematical Society.*

Languages and Skills

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

References

Research:

Francis Bonahon
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University of Southern California
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Teaching:

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