

curriculum vitae of  
Filippo Mazzoli

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## ANAGRAPHS

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

## EMPLOYMENT

Aug 2024 – present	<b>Assistant Professor</b> in Topology, Department of Mathematics, University of California Riverside, Riverside CA, USA. Tenure track position.	UC RIVERSIDE
Aug 2023 – Jul 2024	<b>Postdoctoral researcher</b> in Mathematics, Max Planck Institute for Mathematics in the Sciences, Leipzig, Germany. Post-doc mentor: Anna Wienhard.	MPI FOR MIS
Aug 2020 – May 2023	<b>Whyburn Research Associate and Lecturer</b> , Department of Mathematics, University of Virginia, Charlottesville VA, USA. Post-doc mentor: Sara Maloni.	UNIVERSITY OF VIRGINIA

## EDUCATION

Oct 2016 – Jul 2020	<b>Ph.D.</b> in Mathematics, Thesis title: <i>Constant curvature surfaces and volumes of convex co-compact hyperbolic manifolds</i> , Advisor: Jean-Marc Schlenker. (pdf file available <a href="#">here</a> .)	UNIVERSITÉ DU LUXEMBOURG
Sept 2014 – Sept 2016	<b>M.Sc.</b> in Mathematics, 110/110, summa cum laude. Thesis advisor: Riccardo Benedetti.	UNIVERSITÀ DI PISA
Sep 2011 – Sep 2014	<b>B.Sc.</b> in Mathematics, 110/110, summa cum laude. Thesis advisor: Paolo Lisca.	UNIVERSITÀ DI PISA

## RESEARCH INTERESTS

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

## PAPERS

Published	<ol style="list-style-type: none"><li>1. F. Mazzoli and G. Viaggi. <i>Length functions in Teichmüller and anti-de Sitter geometry</i>. Forum Math. Sigma 11, 2023, Paper No. e101. <a href="#">URL</a>.</li><li>2. F. Mazzoli. <i>The infimum of the dual volume of convex co-compact hyperbolic 3-manifolds</i>. Geom. Topol. 27.6, 2023, pp. 2319–2346. <a href="#">URL</a>.</li><li>3. D. Choudhury, F. Mazzoli, and A. Seppi. <i>Quasi-Fuchsian manifolds close to the Fuchsian locus are foliated by constant mean curvature surfaces</i>. Math. Ann. 2023. <a href="#">URL</a>.</li><li>4. F. Mazzoli. <i>The dual volume of quasi-Fuchsian manifolds and the Weil-Petersson distance</i>. Trans. Amer. Math. Soc. 375.1, 2022, pp. 695–723. <a href="#">URL</a>.</li><li>5. F. Mazzoli. <i>The dual Bonahon-Schläfli formula</i>. Algebr. Geom. Topol. 21.1, 2021, pp. 279–315. <a href="#">URL</a>.</li></ol>
Accepted	<ol style="list-style-type: none"><li>6. F. Mazzoli and G. Viaggi. <i><math>SO_0(2, n+1)</math>-maximal representations and hyperbolic surfaces</i>. to appear in Mem. Amer. Math. Soc. 2022. arXiv: <a href="#">2206.06946 [math.GT]</a>.</li></ol>

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. F. Mazzoli and G. Viaggi. *Volume, entropy, and diameter in  $SO(p, q + 1)$ -higher Teichmüller spaces*. submitted, 2023. arXiv: [2312.17137 \[math.DG\]](#).
  10. S. Maloni, G. Martone, F. Mazzoli, and T. Zhang. *d-pleated surfaces and their shear-bend coordinates*. submitted, 2023. arXiv: [2305.11780 \[math.GT\]](#).
  11. 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 <i>Benedetto Sciarra</i> , anni 2015-2016.	SCUOLA NORMALE SUPERIORE, PISA

## LONG RESEARCH VISIT

Jan 2019 – Mar 2019	Supervised by Prof. Francis Bonahon.	UNIVERSITY OF SOUTHERN CALIFORNIA
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## INVITED TALKS

### CONFERENCES AND WORKSHOPS

Apr 15 <sup>th</sup> -19 <sup>th</sup> , 2024	<i>Submanifolds of locally symmetric spaces: geometric, analytic and dynamical aspects</i> , workshop.	AUTRANS, FRANCE
Feb 21 <sup>st</sup> -23 <sup>rd</sup> , 2024	<i>Mini-workshop on pseudo-Riemannian geometry</i> , workshop.	UNIVERSITÀ DEGLI STUDI DI PAVIA
Jul 2023	<i>Group actions and low-dimensional topology</i> , conference.	ICMAT, EL BARCO DE ÁVILA, SPAIN
Jan 27 <sup>th</sup> , 2023	<i>Geometry, topology, and their applications</i> , online workshop.	MPI FOR MiS, LEIPZIG, GERMANY
Aug 22 <sup>nd</sup> -26 <sup>th</sup> , 2022	<i>Minimal surfaces in symmetric spaces and Labourie's conjecture</i> , workshop.	AUTRANS, FRANCE
Jul 20 <sup>th</sup> , 2022	<i>AMS-EMS-SMF Meeting</i> , conference.	UNIVERSITÉ GRENOBLE ALPES
Mar 12 <sup>th</sup> , 2022	<i>55<sup>th</sup> Spring Topology and Dynamics Conference</i> , conference.	BAYLOR UNIVERSITY
Jun 2021	<i>Nearly Carbon Neutral Geometric Topology Conference</i> , online conference.	ONLINE
Aug 2019	<i>Combinatorial and algebraic aspects of geometric structures</i> , conference.	CHIANG MAI UNIVERSITY
Dec 8 <sup>th</sup> , 2020	<i>Parole aux jeunes géomètres dynamiques</i> , online workshop.	GDR PLATON
Sep 2018	<i>Young Mathematicians Symposium of the Greater Region</i> , conference.	INRIA NANCY - GRAND EST
May 2018	<i>Structures on Surfaces</i> , workshop.	INRIA NANCY - GRAND EST

### SEMINARS

Mar 18 <sup>th</sup> , 2024	Discrete groups and geometry.	IHES
Mar 12 <sup>th</sup> , 2024	Geometry and Topology Seminar.	UNIVERSITÉ DU LUXEMBOURG
Feb 15 <sup>th</sup> , 2024	Séminaire de Théorie Spectrale et Géométrie.	INSTITUT FOURIER, GRENOBLE
Oct 10 <sup>th</sup> , 2023	Geometry Seminar.	MPI FOR MiS
Mar 6 <sup>th</sup> , 2023	Dynamics Seminar.	UNIVERSITY OF WISCONSIN-MADISON
Jan 13 <sup>th</sup> , 2023	Colloquium talk.	UC RIVERSIDE
Nov 28 <sup>th</sup> , 2022	Topology Seminar.	UT AUSTIN
Nov 18 <sup>th</sup> , 2022	Geometry-Topology Seminar.	UC RIVERSIDE
Apr 4 <sup>th</sup> , 2022	Geometry Seminar.	UNIVERSITY OF VIRGINIA
Nov 29 <sup>th</sup> , 2021	Geometry-Topology Seminar.	UNIVERSITY OF MARYLAND
Jun 10 <sup>th</sup> , 2021	Differential Geometry Seminar (online).	HEIDELBERG UNIVERSITY

May 11 <sup>th</sup> , 2021	Geometry Seminar.	UNIVERSITY OF VIRGINIA
Nov 3 <sup>rd</sup> , 2020	Pangolin Seminar.	ONLINE
Oct 14 <sup>th</sup> , 2020	Max Dehn Seminar.	UNIVERSITY OF UTAH
Feb 12 <sup>th</sup> , 2020	Topology Seminar.	TEXAS A&M
Jan 30 <sup>th</sup> , 2020	Geometry & Topology Seminar.	BOSTON COLLEGE
Jan 28 <sup>th</sup> , 2020	Geometry & Topology Seminar.	YALE UNIVERSITY
Jan 23 <sup>rd</sup> , 2020	Differential Geometry Seminar.	HEIDELBERG UNIVERSITY
Dec 12 <sup>th</sup> , 2019	Séminaire de Théorie Spectrale et Géométrie.	INSTITUT FOURIER, GRENOBLE
Feb 19 <sup>th</sup> , 2019	Geometry Seminar.	UNIVERSITY OF VIRGINIA

## TEACHING

Jan 2024 – Feb 2024	An introduction to anti-de Sitter geometry, mini-course.	MPI FOR MiS
Spring 2023	MATH 8720, Hyperbolic Geometry, 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.	

## MENTORING AND OUTREACH

Oct 2022	Arbeitsgemeinschaft on Higher Teichmüller theory, Mentee: Fernando Camacho Cadena. Topic: <i>Symplectic structures on the Hitchin component</i> .	OBERWOLFACH
Oct 2022	Geometry Lab, Topic: <i>Hyperbolic geometry</i> . Organizer: Sara Maloni.	UNIVERSITY OF VIRGINIA
Summer 2021	Research Experience for Undergraduates (REU), Co-advisor: Sara Maloni. Students: K. Betts, T. Larsen, J. Utley, A. Vanis. Project: <i>The tri-pants graph of the twice-punctured torus</i> . Preprint <a href="#">arXiv:2111.07136</a> .	UNIVERSITY OF VIRGINIA
2018-19	Science Comic: Through the Looking Glass, Reflections of Science in Luxembourg, Title: <i>Number theory in the past, present, and future</i> . Comic book available <a href="#">here</a> .	UNIVERSITÉ DU LUXEMBOURG

## ORGANIZING

### SEMINARS

Sep 2023 - Apr 2024	Geometry Seminar, Co-organizers: Samantha Fairchild, James Farre, Konstantinos Tsouvalas.	MPI FOR MiS, LEIPZIG, GERMANY
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### CONFERENCES AND WORKSHOPS

Oct 2024	2024 Fall Western Sectional Meeting, conference. Session: <i>Geometry, topology and dynamics of character varieties</i> . Co-organizers: Brian Collier.	UC RIVERSIDE, RIVERSIDE, USA
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Jul 2024	2 <sup>nd</sup> AMS-UMI International Joint Meeting 2024, conference. Session: Anosov representations and higher Teichmüller theory. Co-organizers: Sara Maloni, Andrea Tamburelli.	PALERMO, ITALY
Aug-Sep 2023	Metrics on higher Teichmüller spaces, workshop. Co-organizers: Christian El Emam, Nathaniel Sagman.	FRÉJUS, FRANCE
Aug-Sep 2023	Nearly Carbon Neutral Geometric Topology Conference 2022, online conference. Session: Anosov representations. Co-organizers: Gabriele Viaggi.	ONLINE
Nov 2021	Virginia Topology Conference, conference. Co-organizers: Thomas Koberda, Sara Maloni, Mark Pengitore.	UNIVERSITY OF VIRGINIA

## PRESENTATIONS

Fall 2021	Reading seminar, <i>An introduction to Higgs bundles</i> , with the Geometry group at UVA.	UNIVERSITY OF VIRGINIA
Fall 2020-Spring 2021	Reading seminar, <i>Anosov representations</i> , with Sara Maloni and Alec Traaseth.	UNIVERSITY OF VIRGINIA
Fall 2018	Reading seminar, <i>A hyperKähler extension of the Teichmüller space</i> , with Andrea Seppi	UNIVERSITÉ DU LUXEMBOURG
Apr 2018	Ph.D. Seminar, <i>About the McShane identity</i> .	UNIVERSITÉ DU LUXEMBOURG
Sep 2017	Ph.D. Away Days, <i>Classical applications of the H-Cobordism theorem</i> .	UNIVERSITÉ DU LUXEMBOURG
Sep 2017	Geometry and Topology seminar, <i>Intertwining operators of the quantum Teichmüller space</i> .	UNIVERSITÉ DU LUXEMBOURG
Apr 2017	Ph.D. Seminar, <i>A parametrization of complex projective structures on surfaces</i> .	UNIVERSITÉ DU LUXEMBOURG
Sep 2015	Seminari dei Baby Geometri, <i>Sulle Geometrie in dimensione 3</i> .	UNIVERSITÀ DI PISA

## SERVICE

Referee for the academic journals *Geometric and Functional Analysis*, *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, L <sup>A</sup> T <sub>E</sub> X, Matlab.

## REFERENCES

### RESEARCH

#### Francis Bonahon

Department of Mathematics  
University of Southern California  
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#### Francesco Bonsante

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#### Martin Bridgeman

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#### Sara Maloni

Department of Mathematics  
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✉ [sm4cw@virginia.edu](mailto:sm4cw@virginia.edu)  
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#### Jean-Marc Schlenker

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## TEACHING

Thomas Koberda

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