

CURRICULUM VITAE - LEONE SLAVICH

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BIRTH 22/05/1984 Genova, Italy

CURRENT POSITION Associate Professor in Mathematics, Università di Genova, Italy (October 2025-)

Italian National Scientific Habilitation in Geometry and Algebra

Abilitazione Scientifica Nazionale di seconda fascia, Settore 01/A2 Geometria e Algebra

Valid until 01/02/2034

PREVIOUS POSITIONS

Associate Professor in Mathematics, Università di Pavia, Italy (March 2023-September 2025)

Researcher (RTDB) in Mathematics, Università di Pavia, Italy (March 2020-March 2023)

Researcher (RTDA) in Mathematics, Università di Pisa, Italy (June 2018 - February 2020)

Post-Doc in Mathematics at Università di Pisa, Italy

(February 2016 - January 2018)

Post-Doc in Mathematics at Università di Bologna, Italy

(February 2015 - January 2016)

EDUCATION

April 2014 PhD in Mathematics

- **Institution:** Università degli Studi di Firenze, Florence (Italy).
- **Thesis:** *Hyperbolic 4-manifolds and the 24-cell*
- **Advisor:** Bruno Martelli

2011-2014 PHD student in Mathematics at Università degli Studi di Firenze, Florence (Italy).

July 2010 Master thesis in Mathematics

- **Institution:** Università di Pisa, Pisa (Italy)
- **Thesis:** *Strutture algebriche e topologiche nella musica del ventesimo secolo*
- **Advisors** Moreno Andreatta, Francesca Acquistapace

2003-2010 Undergraduate student in Mathematics at Università di Pisa, Pisa (Italy).

RESEARCH PROJECTS

I have been part of the following research projects:

2012-2016 FIRB project: “Geometria e topologia delle varietà in dimensione bassa” (Geometry and topology of low-dimensional manifolds). National coordinator: prof. Bruno Martelli.

2017-2020 PRIN project: “Geometry, Topology and Harmonic analysis”. National coordinator prof. Filippo Bracci

2022- PRIN project: “Geometry and topology of manifolds”, project no. F53D23002800001

ATTENDED SEMINARS, CONFERENCES AND SCHOOLS

2011-2014 Cycle of PHD seminars, Università degli Studi di Firenze, Florence (Italy)
(organizer of the seminar cycle in 2012).

2011-2020 Cycle of Geometry seminars, Università degli Studi di Pisa, Pisa (Italy).

2012 Surface groups in Paris, IHP Paris (France).

2012 Summer school on automorphisms of free groups, CRM Bellaterra (Spain).

2012 Winter Braids III, Institut Fourier, Grenoble (France).

2013 Geometry master class, Research program on Teichmüller theory,
ESI Wien (Austria).

2013 Geometric topology in Cortona, Indam meeting, Cortona (Italy).

2013 Geometric Topology in New York, Columbia University, New York (USA).

2013 9th Rowan Hamilton Geometry Workshop, Trinity college, Dublin (Ireland).

2014 Intensive period on Teichmüller theory and surfaces in 3-manifolds,
Centro De Giorgi, Pisa (Italy).

- 2015** Curve conference, University Paris 6, Paris (France).
- 2016** Advanced School on Geometric Group Theory and Low-Dimensional Topology:
Recent Connections and Advances - ICTP, Trieste (Italy).
- 2017** Geometric topology in Cortona, Indam meeting, Cortona (Italy).
- 2017** Dynamics on representation varieties, Centre Henri Lebesgue, Rennes (France).
- 2019** Geometric structures in Nice, Université de Nice, Nice (France).
- 2019** Mini-workshop *Reflection groups in negative curvature*, MFO, Oberwolfach (Germany).
- 2019** CUSO Summer school *Géométrie, topologie et arithmétique de façon hyperbolique*, Les Diablerets (Switzerland).
- 2022** Arithmetic groups and 3-manifolds, Max Planck Institute for Mathematics, Bonn (Germany).
- 2020-** Cycle of Geometry seminars, Università degli Studi di Pavia, Pavia (Italy).

VISITING PERIODS

- 2009** October-December, Visiting Student at IRCAM, Paris (France).
- 2019** February 25-March 1, Department of Mathematics, Université de Neuchâtel, Neuchâtel (Switzerland).
- 2019** August 26-September 8, IMPA, Rio de Janeiro (Brazil).

CONFERENCE TALKS

- 2011** April 7: *Conference Rencontres mathematique/musique*, IRMA, Strasbourg (France)
- 2017** February 24: *Workshop 2017: Varietà reali e complesse: geometria, topologia e analisi armonica*, Scuola Normale Superiore, Pisa (Italy)
- 2019** April 12: Mini-workshop *Reflection groups in negative curvature*, MFO, Oberwolfach, Germany.
- 2023** March 24: Indam Day *Non-positive curvature in manifolds and groups*, Department of Mathematics, Università di Bologna, Bologna (Italy).
- 2023** September 5: *22nd congress of the Italian Mathematical Union (UMI)*, Section 17 (Topology and Differential Geometry) Department of Mathematics, Università di Pisa, Pisa (Italy).
- 2025** January 7: *Hyperbolic manifolds, their submanifolds and fundamental groups*, IMPA, Rio de Janeiro, Brazil.
- 2025** April 28: *Leaning towards higher rank*, Università di Pisa, Pisa (Italy).

INVITED TALKS

- 2014** May 28, Oberseminar Geometrie, Université de Fribourg, Fribourg (Switzerland)
- 2019** February 26, Geometry seminars, Université de Neuchâtel, Neuchâtel (Switzerland)
- 2019** September 29, Geometry seminars, IMPA, Rio de Janeiro (Brazil)
- 2020** December 8, Topology and Dynamics seminars, University of Florida, (USA) (online seminar)
- 2022** May 24, Algebra and Geometry Seminar, Università di Bologna, Bologna (Italy)
- 2023** May 25, Geometry and Topology seminar, Institute of Mathematics of Marseille (I2M), Marseille (France)
- 2025** February 6, Incontro Ricercatori in Matematica UniPV 2025, Pavia (Italy)

RESEARCH INTERESTS: Low-dimensional topology, geometric topology, hyperbolic geometry, Teichmüller theory, Kleinian group theory, hyperbolic manifolds in high dimensions, deformations of hyperbolic reflection groups, arithmetic group theory, Coxeter group theory

LANGUAGES

- Italian (Native language)
- English (Fluent)
- French (Basic)

PUBLICATIONS

- A geometrically bounding hyperbolic link complement, Algebraic & Geometric Topology 15-2 (2015) 1175-1197; doi: 10.2140/agt.2015.15.1175
- Some hyperbolic 4-manifolds with low volume and number of cusps, Topology and its Applications 191 (2015) 1-9; doi: 10.1016/j.topol.2015.05.004
- A. Kolpakov, L. Slavich: Symmetries of hyperbolic 4-manifolds, International Mathematics Research Notices, Volume 2016, Issue 9, 2677-2716; doi: 10.1093/imrn/rnv210
- A. Kolpakov, L. Slavich: Hyperbolic 4-manifolds, colorings and mutations, Proc. London Math. Soc. 113 (2) (2016): 163-184; doi: 10.1112/plms/pdw025
- The complement of the figure-eight knot geometrically bounds, Proceedings of the American Mathematical Society 145(3) (2017), 1275-1285; doi: 10.1090/proc/13272
- A. Kolpakov, A. Reid, L. Slavich, Embedding arithmetic hyperbolic manifolds, Math. Res. Lett. 25 (2018), 1305–1328; doi: 10.4310/MRL.2018.v25.n4.a12
- S. Riolo, L. Slavich: New hyperbolic 4-manifolds of low volume, Algebraic & Geometric Topology 19-5 (2019) 2653-2676; doi: 10.2140/agt.2019.19.2653
- B. Martelli, S. Riolo, L. Slavich: Compact hyperbolic manifolds without spin structures, Geometry & Topology 24, Issue 5 (2020), 2647-2674; doi: 10.2140/gt.2020.24.2647
- A. Kolpakov, S. Riolo, L. Slavich: Embedding non-arithmetic hyperbolic manifolds, Math. Res. Lett. Vol. 29, No. 1 (2022), 247-274; doi: 10.4310/MRL.2022.v29.n1.a7
- B. Martelli, S. Riolo, L. Slavich: Convex plumblings in closed hyperbolic 4-manifolds, Geometriae Dedicata 212 (2020), 243-259; doi: 10.1007/s10711-020-00557-z.
- L. Ferrari, A. Kolpakov, L. Slavich: Cusps of hyperbolic 4-manifolds and rational homology spheres, Proceedings of the London Mathematical Society 123 (2021), 636-648; doi: 10.1112/plms.12421.
- M. Belolipetski, N. Bogachev, A. Kolpakov, L. Slavich: Subspace stabilisers in hyperbolic lattices, preprint arXiv:2105.06897, to appear on the Journal of the Association for Mathematical Research.
- N. Bogachev, L. Slavich, H. Sun: Arithmetic trialitarian hyperbolic lattices are not LERF, International Mathematics Research Notices, Volume 2024, Issue 13, 10081-10087. doi: 10.1093/imrn/rnae053

TEACHING

- 2015** Minicourse: The geometry and topology of low-dimensional manifolds,
Department of Mathematics - Università di Bologna (10 hours)
- 2016** Geometria 1 (Linear algebra),
Department of Physics - Università di Pisa with prof. Mario Salvetti (10 hours)
- 2016** Geometria e algebra lineare (Linear algebra),
Department of Engineering - Università di Pisa with prof. Carlo Petronio (20 hours)
- 2017** Analisi 1 (Calculus),
Department of Engineering - Università di Pisa with prof.ssa Maria Stella Gelli (20 hours)
- 2018-2019** Geometria e algebra lineare (Linear algebra),
Department of Engineering - Università di Pisa with prof. Carlo Petronio (47 hours)
- 2018-2019** Matematica (General Mathematics),
Department of Pharmacy - Università di Pisa with prof. Marcello Mamino (10 hours)
- 2019-2020** Analisi Matematica (Calculus),
Department of Computer Science - Università di Pisa (60 hours)
- 2019-2020** Algebra lineare (Linear algebra),
Department of Engineering - Università di Pisa with prof. Roberto Dvornicich (12 hours)
- 2019-2020** Geometria 2,
Department of Mathematics - Università di Pavia with prof. Alessandro Ghigi (28 hours)
- 2019-2020** PHD course: Argomenti scelti di geometria iperbolica (Hyperbolic Geometry),
Department of Mathematics - Università di Pisa with prof. Bruno Martelli (20 hours)

- 2020-2021** Algebra lineare (linear algebra),
Department of Mathematics and Physics - Università di Pavia with prof. Giampietro Pirola
(28 hours)
- 2020-2021** Istituzioni di Geometria,
Department of Mathematics - Università di Pavia with prof. Francesco Bonsante (24 hours)
- 2020-2021** Complementi di Matematica per Scienze Chimiche (Mathematics),
Department of Chemistry - Università di Pavia with prof. Stefano Lisini (24 hours)<https://doi.org/10.1093/chemsci/2020001>
- 2021-2022** Geometria e Algebra (Linear Algebra),
Department of Engineering - Università di Pavia (60 hours)
- 2021-2022** PHD course: Gruppi di Lie e spazi (localmente) simmetrici (Lie groups and (locally) symmetric spaces), Department of Mathematics - Università di Pavia (26 hours)
- 2022-2023** Geometria e Algebra (Linear Algebra),
Department of Engineering - Università di Pavia (60 hours)
- 2022-2023** Geometria superiore,
Department of Mathematics - Università di Pavia with prof. Paola Frediani (24 hours)
- 2023-2024** Geometria e Algebra (Linear Algebra),
Department of Engineering - Università di Pavia (60 hours)
- 2023-2024** Algebra 1,
Department of Mathematics - Università di Pavia with prof. Alberto Canonaco (24 hours)
- 2023-2024** Geometria 1,
Department of Mathematics - Università di Pavia with prof. Pietro Pirola (36 hours)
- 2024-2025** Geometria e Algebra (Linear Algebra),
Department of Engineering - Università di Pavia (60 hours)
- 2024-2025** Geometria 2,
Department of Mathematics - Università di Pavia with prof. Lidia Stoppino (48 hours)
- 2024-2025** PHD course: An Introduction to hyperbolic Geometry,
Joint PHD program in Mathematics Milano Bicocca-Pavia-Cattolica del Sacro Cuore-INdAM
(24 hours)

STUDENTS SUPERVISED

Bachelor degree

- 2021 Alessia Greppi: Spazio di Teichmüller e coordinante di Fenchel-Nielsen.
- 2022 Elisa Caruso: Una dimostrazione geometrica dei teoremi di Bieberbach sui gruppi cristallografici.

Master's degree

- 2024 Serena Carrozzoli: Gruppi di Lie e reticolati: l'analisi di $\mathrm{SL}_n(\mathbb{Z})$ come reticolo in $\mathrm{SL}_n(\mathbb{R})$.

PHD students

- 2024- Mario Cajumi (ongoing)

Last update: 06/11/2025