

Roberto Frigerio's Curriculum Vitae

Current position: Full professor in Geometry at the University of Pisa.

EDUCATION AND POSITIONS

2000 Degree in Mathematics at the University of Pisa. Approved cum laude.

2001 Diploma at Scuola Normale Superiore, approved cum laude.

2004-5 Post-doc position for research activity in Geometry at the University of Pisa.

2005 Ph.D. in Mathematics, Scuola Normale Superiore, Pisa. Approved cum laude.

2005 Non-permanent position as “Ricercatore” in “Geometria reale e complessa, sistemi dinamici e geometria diofantea” at Scuola Normale Superiore, Pisa.

2006-14 Permanent position (confirmed in 2009) as “Ricercatore” in Geometry at the University of Pisa.

2014-18 Associate Professor in Geometry at the University of Pisa.

2018-until now Full Professor in Geometry at the University of Pisa.

SELECTED TALKS

2003 “Dehn filling of cusped hyperbolic 3-manifolds with geodesic boundary” at the University of Melbourne.

2004 “A rigidity result for regular thickenable 2-polyhedra”, workshop on “Low-dimensional topology and combinatorial group theory” at the University of Frankfurt.

2005 “Uncountably many Kleinian groups and mapping class groups” at the “Conference on Geometry and Topology of 3-manifolds”, Trieste.

2006 “Rigidity theorems for hyperbolic manifolds with boundary” at the conference “Groups in Geometry and Topology”, Malaga.

2009 “Continuous cohomology and Gromov proportionality principle” at the University of Pavia and at the University of Bologna.

2010 “Characterizing hyperbolic spaces and real trees” at the conference “Teichmüller Theory and its Interactions in Mathematics and Physics”, Barcellona.

2011 “Rigidity of manifolds with(out) non positive curvature”, University of Oxford (UK).

2012 “Stable complexity and simplicial volume of hyperbolic manifolds”, Mittag-Leffler Institut, Stockholm.

“Rigidity of high dimensional graph manifolds” at the conference “Geometry and Topology in Samos (dedicated to T. F. Farrell’s 70th birthday)”, Karlovassi.

Simplicial volume of 3-manifolds with boundary, ETH, Zurich.

- 2013 *Bounded cohomology of graphs of groups*, University of Heidelberg.
- 2014 *Quasi-cocycles and bounded cohomology in higher degrees*, “First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI”, Bilbao.
- 2015 *Extension of quasi-cocycles and higher degree bounded cohomology*, workshop “Geometric Topology”, Oberwolfach (Germania).
Minicourse Hyperbolicity and bounded cohomology, University of Regensburg (Germania).
Quasi-cocycles and higher dimensional bounded cohomology, University of Varsavia.
Discrete approximations of Gromov’s simplicial volume, University of Tolosa.
- 2016 *Ergodic actions and integral approximations of Gromov’s simplicial volume*, First Joint Meeting Brazil–Italy in Mathematics, Rio de Janeiro.
- 2017 *Combinatorial volume forms and bounded cohomology*, workshop “Group actions and cohomology in non-positive curvature”, Isaac Newton Centre for Mathematical Sciences, Cambridge (UK).
- 2018 *Profinite completions of fundamental groups and discrete approximations of simplicial volume*, Conference “Structure of 3-manifold groups”, CIRM (Marseille Luminy).
The ideal simplicial volume of manifolds with boundary, University of Luxembourg.
- 2019 *Multicomplexes, diffusion of chains and simplicial volume of open manifolds*, Workshop “Riemmanian and simplicial volume”, KIT (Karlsruhe).
Gromov’s original approach to bounded cohomology, ETH, Zurich.
 ℓ^1 -homology and amenable covers, “Workshop on bounded cohomology”, Heidelberg.
- 2022 *Efficient cycles of cusped hyperbolic 3-manifolds*, Workshop “Recent Advances in Bounded Cohomology”, Regensburg.
Length functions on mapping class groups and simplicial volume of mapping tori, Conference “Groups in Madrid 2022”, Madrid.
- 2024 *Simplicial volume, triangulations and mapping class groups*, Karlsruhe Institute of Technology.
- 2025 *Cup products in bounded cohomology of hyperbolic manifolds*, conference “Hyperbolic Manifolds, Their Submanifolds and Fundamental Groups” at IMPA, Rio de Janeiro.

SCIENTIFIC COMMITTEE OF CONFERENCES

- 2007 “Braids and their ramifications”, Cortona.
- 2014 Intensive 4-week period on “Teichmüller theory and surfaces in 3-manifolds”, Centro De Giorgi, Pisa.
- 2015 “Manifolds and groups”, Ventotene (LT).
- 2017 “Moduli spaces”, Ventotene (LT).
- 2019 “Of coarse! Quasi-isometries and groups: rigidity and classification”, Ventotene (LT).

- 2020 “Simplicial volumes and bounded cohomology” (online, University of Regensburg).
- 2021 “Counting problems”, Ventotene (LT).
- 2023 President of the Organizing Committee of “XXII Congresso dell’Unione Matematica Italiana”, Pisa.
“GRAZP: Groups and Rigidity around the Zimmer Program”, Ventotene (LT).
- 2025 “Higher dimensional hyperbolic geometry”, Ventotene (LT).

PH. D. STUDENTS

- 2012 Cristina Pagliantini, *Relative (continuous) bounded cohomology and simplicial volume of hyperbolic manifolds with geodesic boundary* (University of Pisa).
- 2016 Federico Franceschini, *Simplicial volume and relative bounded cohomology* (University of Pisa).
- 2018 Kirill Kuzmin, *Quasi-Isometric Rigidity for Universal Covers of Manifolds with a Geometric Decomposition* (University of Pisa).
- 2018 Marco Moraschini, *On Gromov’s theory of multicomplexes: the original approach to bounded cohomology and simplicial volume* (University of Pisa).
- 2023 Domenico Marasco, *Efficient cycles for $\mathbb{H}^2 \times \mathbb{H}^2$ and products in bounded cohomology* (University of Pisa).
- 2024 Giuseppe Bargagnati, *The simplicial volume of open manifolds* (University of Pisa).
- 2025 Federica Bertolotti, *Filling Volumes and Simplicial Volume of Mapping Tori* (Scuola Normale Superiore, Pisa).
Francesco Milizia, *Weakly bounded cohomology classes and simplicial volume of Davis’ aspherical manifolds* (Scuola Normale Superiore, Pisa).

References

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- [3] R. FRIGERIO, B. MARTELLI, C. PETRONIO, *Complexity and Heegaard genus of an infinite class of compact 3-manifolds*, Pacific J. Math. **210** (2003), 283-297. ISSN: 0030-8730.
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- [7] R. FRIGERIO, *An infinite family of hyperbolic graph complements in S^3* , J. Knot Theory Ramifications **14** (2005), 479-496. ISSN: 0218-2165.
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- [12] R. FRIGERIO, B. MARTELLI, *Countable groups are mapping class groups of hyperbolic 3-manifolds*, Math. Res. Lett. **13** (2006), 897-910. ISSN: 1073-2780.
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- [15] R. FRIGERIO, *(Bounded) continuous cohomology and Gromov's proportionality principle*, Manuscripta Math. **134** (2011), 435-474. ISSN: 0025-2611.
- [16] R. FRIGERIO, C. PAGLIANTINI, *Relative measure homology and continuous bounded cohomology of topological pairs*, Pacific J. Math. **257** (2012), 91-130. ISSN: 0030-8730.
- [17] R. BENEDETTI, R. FRIGERIO, *Alexander quandle lower bounds for link genera*, J. Knot Theory Ramifications **21** (2012), no. 8, 1250076, 46 pp. ISSN: 0218-2165.
- [18] R. BENEDETTI, R. FRIGERIO, R. GHILONI, *The topology of Helmholtz domains*, Expo. Math. **30** (2012), 319-375. ISSN: 0723-0869.
- [19] S. FRANCAVIGLIA, R. FRIGERIO, B. MARTELLI, *Stable complexity and simplicial volume of manifolds*, J. Topology **5** (2012), 977-1010. ISSN: 1753-8416.
- [20] R. BENEDETTI, R. FRIGERIO, *Levels of knotting of spatial handlebodies*, Trans. Amer. Math. Soc. **365** (2013), 2099-2167. ISSN 0002-9947.
- [21] R. FRIGERIO, *A note on measure homology*, Glasgow Math. J. **56** (2014), 87-92. ISSN: 0017-0895.
- [22] M. BUCHER, M. BURGER, R. FRIGERIO, A. IOZZI, C. PAGLIANTINI, M. B. POZZETTI, *Isometric embeddings in bounded cohomology*, J. Topol. Anal. **6** (2014), no. 1, 1-25. ISSN: 1793-5253.
- [23] R. FRIGERIO, J.F. LAFONT, A. SISTO, *Rigidity of high dimensional graph manifolds*, Astérisque **372**, xxi + 177 pages. ISBN: 978-2-85629-809-1.

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