

Paul-Henry Leemann

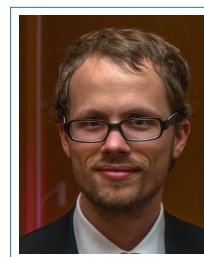
Researcher in Pure
Mathematics

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Personal Information

Date of Birth April 12, 1987

Citizenship Switzerland

Main areas of research

My research interests lie in geometric and combinatorial group theory. In particular, I am interested in limits and coverings of (Schreier) graphs, groups acting on rooted trees and (extensively) amenable actions.

Employment

Since 2016 **ENS-Lyon**, *Post.Doc.*, in Unité de mathématiques pures et appliquées, with Mikael de la Salle.

Education

2011–2016 **Université de Genève**, *Ph.D. in Mathematics*, PhD-thesis: “On Subgroups And Schreier Graphs Of Finitely Generated Groups”, advisor: Tatiana Smirnova-Nagnibeda.

2013–2015 **Université de Genève**, *Basic Certificate of Didactic in Mathematics and in Educational Science*.

2009–2011 **Université de Genève**, *M. Sc. in Mathematics*, Master-thesis: “Caractères irréductibles des groupes de Coxeter finis”, advisors: Pierre de la Harpe and Tatiana Smirnova-Nagnibeda.
grades: 6/6 (Master-thesis) and 5.7/6 (courses)

2006–2009 **Université de Genève**, *B. Sc. in Mathematics*.

Publications and Preprints

1. *Schreier graphs: Transitivity and Coverings*. Internat. J. Algebra Comput., Vol. 26, Issue 1 (2016). Published version: <http://dx.doi.org/10.1142/S021819671650003X> or preprint: <http://arxiv.org/pdf/1505.03433.pdf>.
2. *Weakly maximal subgroups in regular branch groups*, with K. Bou-Rabee and T. Nagnibeda. Journal of Algebra, Vol. 455 (2016). Published version: <http://authors.elsevier.com/a/1Sg4i4-F0pyqM> or preprint: <http://arxiv.org/pdf/1502.07283v2.pdf>.

3. *Lamplighter groups, de Bruijn graphs, spider-web graphs and their spectra*, with R. Grigorchuk and T. Nagnibeda. Journal of Physics A: Mathematical and Theoretical, Vol. 49, Number 20 (2016). Preprint: <http://arxiv.org/pdf/1502.06722.pdf>.
4. *Subgroups and Actions of Grigorchuk group*. Preprint: <http://www.unige.ch/~leemannp/GrigorchukSubgroups.pdf>.
5. *Limits of Rauzy graphs and horocyclic products of trees*. Preliminary version: <http://www.unige.ch/~leemannp/LimitsOfRauzyGraphs.pdf>.
6. *De Bruijn Graphs, Lamplighter Groups and Spectral Computations*, with T. Nagnibeda. In preparation. See: <http://www.unige.ch/~leemannp/Porto/DeBruijn.pdf>.

Invited Talks

Conferences:

- June 2015 Joint AMS-EMS-SPM Meeting, *Porto, Portugal*. Common work presented by T. Nagnibeda. Slides: <http://www.unige.ch/~leemannp/Porto/DeBruijn.pdf>
- November 2014 Paroles aux jeunes chercheurs en géométrie et dynamique, GDR Platon 3341 CNRS, *Université de Bordeaux, France*.
- June 2014 “Workshop in Algebra and Geometry”, *University of Bern, Switzerland*.

Seminars:

- October 2016 Séminaire de Géométrie, Groupes et Dynamiques, *ENS Lyon*
- September 2015 Graduate Seminar, *Université de Genève, Switzerland*.
- May 2015 Ergodic and Geometric Group Theory Seminar, *EPFL, Lausanne, Switzerland*.
- September 2014 Séminaire Groupes et Géométrie, *Université de Genève, Switzerland*.

Grants and Scientific Visits

- 2016–2018 Early Postdoc.Mobility grant supported by the Swiss National Science Foundation
- 07-12 2015 Semester “Analytic and Geometric Aspects of Probability on Graphs”, *EPFL, Lausanne, Switzerland*.
- 01-04 2014 IHP Semester “Marches aléatoires et géométrie asymptotique des groupes”, *CIRM, Marseille and IHP, Paris, France*.
- 04 2011 Topology and Geometric Group Theory, *Columbus, Ohio, USA*.

Teaching Experiences

- 2011–2016 Teaching assistant at the University of Geneva:
- Advanced course on Combinatorics (master class)
 - Algebra II: groups, rings, fields, Galois theory (2nd year class)
 - Algebra I: linear algebra (1st year class)
 - Analysis I: basics of logic and set theory, real analysis (1st year class)
 - Mathématiques générale: 1st year class for students of other departments
 - Tutoring for first year students
 - Scientific popularization: for students from high school
- 2006–2011 Private tutor in mathematics for high school to 3rd year students

Languages

French native
English fluent
German intermediate (comprehension)/basic (expression)

Others

Computer skills (L^AT_EX, Word, excel, HTML/CSS, Python, Maple, GAP
Summer camps I have been organizing and running summer camps for children. I have taken part in over thirty camps.
Civil duty 6 months in the physiotherapy's unit of HUG
Sports Telemark skiing (including ski touring), rock climbing, hiking.