

Loreno Heer

Institut für Mathematik, Universität Zürich
Winterthurerstrasse 190, CH-8057 Zürich, Switzerland

Dr. sc. nat.

loreno-heer.github.io
loreno.heer@math.uzh.ch
(Pronouns: he/him/his)
Citizenship: Swiss

Research interest

Analysis in metric spaces, in particular quasiconformal, quasi-symmetric and quasi-Möbius geometry. (Gromov-)hyperbolic geometry and geometric group theory. Furthermore geometric analysis in general and low-dimensional topology. Besides pure mathematics I am interested in mathematical physics, in particular the geometry of space-time and string theory. Further interests are the connections between mathematics and computer science and neuroscience.

Education

- 11/2015 – 01/2021 **PhD in Mathematics**, University of Zurich.
Thesis: *The Boundary at Infinity of Gromov-Hyperbolic Spaces*, supervised by Prof. Dr. Viktor Schroeder, defended January 27, 2021.
- 09/2012 – 09/2015 **Master of Science ETH in Mathematics**, ETH Zurich.
Thesis: *Undistortedness of Lipschitz n -connected closed subsets in quasi-convex metric spaces of finite Assouad-Nagata dimension*, supervised by Prof. Dr. Urs Lang.
- 09/2008 – 09/2012 **Bachelor of Science in Mathematics**
(with minor Physics and Computer Science), University of Bern.
Thesis: *Low-dimensional linear representations of mapping class groups and their triviality in certain cases*, supervised by Prof. Dr. Sebastian Baader.
- 09/2000 – 09/2004 **EFZ Computer Science**

Appointments

- 11/2015 – 01/2021 **PhD Student and Teaching Assistant**, University of Zurich.
- 09/2004 – 06/2006 **Java Software-Engineer**, Swisscom IT-Services.
- 02/2003 – 02/2004 **Internship**, Swisscom IT-Services.
- 02/2002 – 07/2002 **Internship**, Swisscom IT-Services.

Publications and Preprints

- [1] Loreno Heer. “Some Invariant Properties of Quasi-Möbius Maps”. In: *Analysis and Geometry in Metric Spaces* 5.1 (28 Aug. 2017), pp. 69–77. DOI: <https://doi.org/10.1515/agms-2017-0004>. URL: <https://www.degruyter.com/view/journals/agms/5/1/article-p69.xml>.
- [2] Loreno Heer. “The Boundary at Infinity of Gromov Hyperbolic Spaces”. PhD thesis. University of Zurich, 2021. DOI: <https://doi.org/10.5167/uzh-217863>. URL: <https://doi.org/10.5167/uzh-217863>.

Workshops and Conferences

- *Reading Seminar: Teichmüller Theory*, University of Fribourg, Switzerland (Fall 2021).
- *going the MATH way (goMATH 2019)*, Symposium, Zurich, Switzerland (12 to 14 March 2019).
- *Groups, geometries, and spaces in honour of Alessandra Iozzi*, ETH Zurich, Switzerland (22 to 25 January 2019).
- *Young Geometric Group Theory VII*, Les Diablerets, Switzerland (12 to 16 March 2018).
- *23rd Rolf Nevanlinna Colloquium*, ETH Zurich, Switzerland (12 to 16 June 2017).

Talks given

September 2016 Informal Seminar on Topics of Möbius Geometry
University of Zürich
9 October 2019 Geometric Analysis Seminar / Oberseminar Geometrie
Möbius maps and the boundary at infinity of metric spaces
University of Fribourg

Professional memberships and refereeing

since 2022 Reviewer for Journal of Mathematical Analysis and Applications.
since 2021 American Mathematical Society.
since 2017 Reviewer for MathSciNet (Mathematical Reviews).
since 2014 Reviewer for zbMATH.
since 2014 Swiss Mathematical Society.

Teaching experience

As an assistant / teaching assistant at University of Zurich

(Responsible for discussion sections, grading, and partly for creating homework assignments, supervising projects.)

| | | |
|------|--------|---|
| FS16 | MAT151 | Grundbegriffe der Mathematik |
| FS16 | MAT153 | Zahlentheorie |
| HS16 | MAT101 | Programming |
| FS17 | MAT112 | Lineare Algebra II |
| HS17 | MAT101 | Programming |
| FS18 | MAT823 | Introduction to Computability and Complexity Theory |
| HS18 | MAT101 | Programming |
| FS19 | MAT184 | Analysis für die Chemie |
| HS19 | MAT101 | Programming |
| FS20 | MAT184 | Analysis für die Chemie |
| HS20 | MAT101 | Programming |

MSc Thesis Co-Advisor

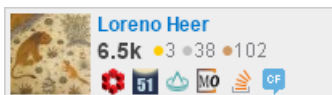
FS18 Andresen, Silke Berit Low-dimensional Boundaries of $CAT(0)$ Spaces

Additional tasks

FS16 Correction MAT183
FS17 Correction MAT183
HS18 Correction MAT182

Other activities and outreach

Active on mathoverflow.com and math.stackexchange.com to help answer mathematics questions:



Solving puzzles on <https://projecteuler.net/> and similar websites.

Other skills

| | |
|--------------------|---|
| Languages | German / Swiss German (native). English (proficient). Persian (beginner). |
| Software | \LaTeX , C, C++, Python, R, Linux, Bash, emacs, vim, PARI/GP, SageMath, Lean. |
| Leisure activities | Playing piano and church organ, in particular the works of Bach. |

References

Prof. Dr. Viktor Schroeder
Institut für Mathematik
Universität Zürich
Winterthurerstrasse 190
8057 Zürich - Switzerland
viktor.schroeder@math.uzh.ch

Prof. Dr. Stefan Wenger
Department of Mathematics
Universität Freiburg
PER 11 bu. 2.103
Ch. du Musée 23
1700 Fribourg - Switzerland
stefan.wenger@unifr.ch

Prof. Dr. Urs Lang
Department of Mathematics
ETH Zurich, HG G 27.3
Rämistrasse 101
8092 Zurich - Switzerland
lang@math.ethz.ch

Prof. David Matthew Freeman, PhD
University of Cincinnati Blue Ash
College
Muntz Hall 355C
9555 Plainfield Rd
Blue Ash, OH 45236 - USA
freemadd@ucmail.uc.edu

Reference concerning teaching:
Prof. Dr. Asieh Parsania
Bernern Fachhochschule
School of Engineering and Com-
puter Science
Abt MNG Allgemeinbildung
Pestalozzistrasse 20
3400 Burgdorf - Switzerland
asieh.parsania@gmail.com