

# Eduardo Reyes

Max Planck Institute for Mathematics  
Office B15  
Vivatsgasse 7  
53111 Bonn

eoregon@mpim-bonn.mpg.de  
<https://reyes-eduardo.github.io>

## Employment

08/2023 - 07/2024    Postdoctoral Fellow at the Max Planck Max Planck Institute for Mathematics at Bonn.

## Education

08/2018 - 05/2023    *PhD in Mathematics*, University of California Berkeley.  
Advisor: Ian Agol.  
03/2017 - 07/2018    *MSc in Mathematics*, Pontifical Catholic University of Chile (PUC).  
Advisor: Jairo Bochi.  
03/2013 - 12/2016    *BSc in Mathematics*, Pontifical Catholic University of Chile (PUC).

## Prizes and Scholarships

Fall 2022    Graduate Student Researcher, UC Berkeley.  
Summer 2021    Math Department Grant Award, UC Berkeley.  
Fall 2019    Graduate Student Researcher, UC Berkeley.  
2017    Jorge Billeke award, Chilean Mathematical Society.  
2017-2018    “Beca CONICYT” Scholarship for Master studies, Chilean government.

## Scientific Work

7. *Marked length spectrum rigidity from rigidity on subsets* (with Stephen Cantrell). Preprint (2023), arXiv:2304.13209.
6. *Manhattan geodesics and the boundary of the space of metric structures on hyperbolic groups* (with Stephen Cantrell). Preprint (2022), arXiv:2210.07136.
5. *On cubulated relatively hyperbolic groups*. *Geometry & Topology*, **27**, 575-640 (2023).
4. *The space of metric structures on hyperbolic groups*. *Journal of the London Mathematical Society*, **107**, 914-942 (2023).
3. *A new inequality about matrix products and a Berger-Wang formula*. *Journal de l'École polytechnique - Mathématiques*, **7**, 185-200 (2020).
2. *The avalanche principle and negative curvature*. *Mathematische Zeitschrift*, **294**, 1397-1412 (2020).
1. *Properties of sets of isometries of Gromov hyperbolic spaces*. *Groups, Geometry, and Dynamics*, **12**(3), 889-910 (2018).

## Invited Talks

- Sep 7 2023 MPIM Oberseminar, *Deformation spaces of isometric group actions.*
- Jul 7 2023 PUCV Dynamical Systems Seminar, *Geodesic currents and the space of metric structures on hyperbolic groups.*
- Jun 7 2023 UCH Colloquium, *Grupos, topología en dimensioned bajas, y curvatura no positiva.*
- Jun 4 2023 GTiNY, New York, *The space of metric structures on hyperbolic groups.*
- May 1 2023 Chicago Dynamics Seminar, *Geodesic currents and the space of metric structures on hyperbolic groups.*
- Mar 28 2023 Penn State Dynamical Systems Working Seminar, *From matrix inequalities to marked length spectrum.*
- Feb 9 2023 KIT Topology and Geometric Group Theory Seminar, *The space of metric structures on hyperbolic groups.*
- Feb 3 2023 UC Riverside Geometry-Topology Seminar, *The space of metric structures on hyperbolic groups.*
- Dec 1 2022 Princeton Topology Seminar, *The space of metric structures on hyperbolic groups.*
- Nov 17 2022 UC Davis Geometry/Topology Seminar, *The space of metric structures on hyperbolic groups.*
- Nov 6 2022 Workshop in Dynamical Systems and Related Topics, Penn State, *Continuity of Bowen-Margulis measures for hyperbolic groups.*
- Aug 22 2022 PUC Dynamical Day, *Continuity of Bowen-Margulis measures for hyperbolic groups.*
- Apr 8 2022 Special Session on Geometric Group Theory, JMM, Online, *Cubulated relatively hyperbolic groups.*
- Apr 7 2022 ILAS Special Session on Matrix Analysis and Application, JMM, Online, *Matrix products inequalities, the Berger-Wang identity, and non-positive curvature.*
- Jun 21-25 2021 GGTwB II, Online, Minicourse, *Cubulated groups and virtual specialness.*
- May 19 2021 Matrix Equations, Matrix Inequalities, and Applications Session, SIAM-LA, Online, *Matrix products inequalities, the Berger-Wang identity, and non-positive curvature.*
- May 13 2021 GGT Session, STDC, *Cubulated relatively hyperbolic groups and virtual specialness.*
- Mar 24 2021 McGill GGT Seminar, *Cubulated relatively hyperbolic groups and virtual specialness.*
- Feb 23 2021 Yale Geometry and Topology Seminar, *Cubulated relatively hyperbolic groups and virtual specialness.*
- Sep 21 2020 UNR Matrix seminar, *Matrix products inequalities, the Berger-Wang identity, and non-positive curvature.*
- Jul 1 2019 PUC Dynamical Systems Seminar, *The Avalanche Principle and negative curvature.*
- Jun 28 2019 PUCV Dynamical Systems Seminar, *The Avalanche Principle and negative curvature.*

## Selected Meetings Attended

2-4 Jun 2023	Workshop: Geometric Topology in New York. Columbia University, US.
13-17 Feb 2023	Workshop: Young Geometric Group Theory XI. Münster, Germany.
3-6 Nov 2022	Workshop in Dynamical Systems and Related Topics. Penn State, US.
5-9 Sep 2022	Workshop: Modern advances in geometric group theory. University of Manchester, UK.
6-9 Apr 2022	Joint Mathematics Meetings. Online.
25-27 Feb 2022	Texas Geometry and Topology Conference. UT Dallas, US.
21 Jun-2 Jul 2021	School: Geometric Group Theory without Boundaries. Online.
17-21 May 2021	SIAM Conference on Applied Linear Algebra. Online.
12-15 May 2021	Spring Topology and Dynamical Systems Conference. Online.
6-10 Jul 2020	Topology Students Workshop. Online.
24-28 Feb 2020	Workshop: Young Geometric Group Theory IX. Saint-Jacut-de-la-Mer, France.
27-30 Aug 2019	School: Current Progress in Low Dimensions. Centre de Recherches Mathématiques, Canada.

## Academic Visits

27 Apr-4 May 2023	University of Chicago. Invited by Stephen Cantrell.
23-31 Mar 2023	Penn State University. Invited by Jairo Bochi.
8-11 Feb 2023	Karlsruhe Institute of Technology. Invited by Gabriel Pallier.
1-3 Feb 2023	University of California Riverside. Invited by Matthew Gentry Durham.
31 Nov-Dec 4 2022	Princeton University. Invited by Jean Pierre Mutanguha.
31 May-31 Jul 2019	Pontifical Catholic University of Chile. Invited by Jairo Bochi.

## Service

2021-present	Served as a referee for publication.
Fall 2021-Fall 2022	Coorganizer of the student 3-manifold seminar (with Chi Cheuk Tsang), UC Berkeley.
Dec 2017	Organizing committee for the First Conference of math graduate students of Chile (PostMat), UCH, USACH, and PUC.
2017-Spring 2018	Organizer of the graduate student seminar, PUC.

## Activities related to Mathematical Olympiads

2016-2018	Instructor of the Chilean Team for International Math Olympiads (International, Cono Sur, and Iberoamerican).
Oct 2017	Grader for the Chilean Math Olympiad.
Sep 2017	Deputy Leader of the Chilean Team at the Iberoamerican Math Olympiad, Argentina.
Aug 2017	Deputy Leader of the Chilean Team at the Cono Sur Math Olympiad, Ecuador.
Oct 2016	Grader for the Chilean Mathematical Olympiad.
Sep 2016	Grader for the Iberoamerican Mathematical Olympiad, Chile.

## Activities related to Outreach

- Nov 2018 Volunteer for Julia Robinson Mathematics Festival (JRMF).
- Jul 2017 *Double Pendulum*. Stand at Math Festival, Vicuña.
- Jun 2017 *Mathematical Research Workshop*. Talk for Teachers at Explora Program, CONICYT, Santiago.
- Mar 2017 *Fractals: The beautiful representation of Chaos*. Exhibition Monitor for Oh! Santiago event, PUC.
- Mar 2016 *II Math Camp* (CaMat). Member of Academic Team, Santiago.

## Teaching

Graduate Student Instructor (T.A.), UC Berkeley

- Spring 2023 Math 55, Discrete Mathematics.
- Spring 2022 Math 55, Discrete Mathematics.
- Fall 2021 Math 16A, Analytic Geometry and Calculus.
- Spring 2021 Math 55, Discrete Mathematics.
- Fall 2020 Math 1B, Calculus.
- Spring 2020 Math 55, Discrete Mathematics.
- Spring 2019 Math 1B, Calculus.
- Fall 2018 Math 1A, Calculus.

Tutoring, PUC

- 2017 - Spring 2018 Instructor of Mathematics Research Workshop (TIM). Course for Talented High School Students. Mathematics Department.
- 2017 Tutor of Mathematical Reasoning Program (PRM). Lectures given to High School Teachers of Primary Instruction Society (SIP). Mathematics Department.

T.A., PUC

- 2014-2017 T.A. for several courses in the Mathematics Department, including *Pre-Calculus, Calculus, Number Theory, Group and Ring Theory, Dynamical Systems, Real Analysis, Algebraic Geometry, Complex Variables*.