Eduardo Reyes

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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

8. *Rigidity phenomena and the statistical properties of group actions on* CAT(0) *cube complexes* (with Stephen Cantrell). Preprint (2023), arXiv:2310.10595.

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

Jan 23 2024	Vienna Geometry and Analysis on Groups Seminar, *Comparing group actions on CAT(0) cube complexes.*
Jan 10 2024	Topolodías en Santiago, *Topología profinita en grupos infinitos.*
Dec 19 2023	Dynamical Systems Session, XCI Meeting of SOMACHI, *Comparación estadística de actiones en complejos cúbicos CAT(0).*
Dec 5 2023	MPI MiS Geometry Seminar, *Approximating hyperbolic lattices by cubulations.*
Nov 17 2023	Cambridge Geometric Group Theory Seminar, *Approximating hyperbolic lattices by cubulations.*
Oct 30 2023	Luxembourg Geometry & Topology Seminar, *Approximating hyperbolic lattices by cubulations.*
Oct 26 2023	Oberseminar Differentialgeometrie, *Approximating hyperbolic lattices by cubulations.*
Oct 18 2023	Bonn GGT Seminar, *Comparing group actions on CAT(0) cube complexes.*
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 curvature 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.*

Selected Meetings Attended

8-10 Jan 2024	Meeting: Topolodías en Santiago. PUC, Chile.
18-21 Dec 2023	XCI Meeting of the Chilean Mathematical Society. UCH, Chile.
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.

Academic Visits

21-25 Jan 2024	University of Vienna. Invited by Christopher Cashen.
3-9 Dec 2023	Max Planck Institute for the Mathematics in the Sciences. Invited by Fernando Al Assal.
14-19 Nov 2023	University of Cambridge. Invited by Macarena Arenas.
28 Oct-5 Nov 2023	University of Luxembourg. Invited by Dídac Martínez-Granado.
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 Institue 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.

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.*