

Jerónimo García-Mejía

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Research Interests

My research interests are in group theory and its interplay with topology and geometry. In particular, I have been thinking about:

- Filling functions of groups with particular interest in their Dehn functions
- Finiteness properties of groups
- Subgroups of hyperbolic and non-positively curved groups
- Automorphisms of right-angled Artin groups

Education

- 2020–current **Ph.D. Candidate in Mathematics**, *Karlsruhe Institute of Technology (KIT)*, Karlsruhe, Germany.
Supervisor: Jun.-Prof. Claudio Llosa Isenrich
- 2020 **M.Sc. in Mathematics (Grade 1.8)**, *University of Bonn*, Bonn, Germany.
Thesis: *Group actions on hyperbolic spaces* (Grade 1.0)
Supervisor: Prof. Ursula Hamenstädt
- 2018 **B.Sc. in Mathematics (Grade 9.3 out of 10)**, *Facultad de Ciencias, Universidad Nacional Autónoma de México (UNAM)*, Mexico City, Mexico.
Thesis: *Constructions of Classifying Spaces* (in Spanish)
Supervisor: Prof. Carlos Prieto.
Bachelor's Thesis Jury: Prof. Marcelo Aguilar, Prof. Omar Antolín Camarena, and Prof. José Luis Cisneros Molina

Awards and Scholarships

- October 2022–current **PhD Scholarship from the Research Training Group (RTG) "Asymptotic Invariants and Limits of Groups and Spaces"**, funded by the DFG (German Research Association), KIT.
- 2018–2020 **Scholarship from the Rosa Luxemburg Stiftung**, Germany.

Scientific Talks

- May 2023 **Lightning Talk**, *Conference Geometry of subgroups*, Centre de Recherches Mathématiques, Montréal.
- February 2023 **Lightning Talk**, *Young Geometric Group Theory XI*, Münster, Germany.
- October 2022 **The Geometry of the Word Problem**, *Baby Geometri Seminar*, University of Pisa - Scuola Normale Superiore, Pisa, Italy.
- January 2022 **Bestvina-Brady Morse theory**, *GCD Seminar*, Karlsruhe Institute of Technology, Karlsruhe, Germany.
- February 2021 **Group actions, hyperbolic spaces and small cancellation**, *AG Seminar Metric Geometry*, Karlsruhe Institute of Technology, Karlsruhe, Germany.
- May 2020 **Group actions on hyperbolic spaces**, *Junior Geometry Seminar*, Heidelberg University, Heidelberg, Germany.

Work containing original research

Group actions on hyperbolic spaces, Master Thesis (July 2020), University of Bonn, 53 pages, Unpublished.

Teaching Experience

My teaching experience covers preparing exercise-sheets, presenting solutions in front of the class, and grading. All of this in Spanish, English, and German.

Teacher's Assistant at the KIT, Karlsruhe, Germany

Winter 2021/22 **Elementare Geometrie (Elementary Geometry)**, Bachelor course in German.

Summer 2021 **Geometric Group Theory**, Master course in English.

Winter 2020/21 **Proseminar Geometrie: Knotentheorie (Knot theory)**, Bachelor Seminar in German.

Teacher's Assistant at the Science Faculty, UNAM, Mexico City, Mexico

Fall 2017 **Analytical Geometry I and Topology I**, (Bachelor's courses in Spanish).

Service

April 2022 **Organizer of the RTG "Asymptotic Invariants and Limits of Groups and Spaces" Seminar: Group (co)homology**, KIT and Heidelberg University, Germany.

October 2021 - September 2022 **Speaker of the RTG "Asymptotic Invariants and Limits of Groups and Spaces"**, KIT and Heidelberg University, Germany.

April 2014 **Co-organizer of "Day of π "**, Escuela Nacional Preparatoria 9, Universidad Nacional Autónoma de México, Mexico City.

Popularization event with interactive conferences and different activities to get students into mathematics

September 2014 **Co-organizer of the Mathematical Festival**, 8ª Jornada Estatal de Ciencia, Tecnología e Innovación, Cuernavaca, Morelos.

Popularization event with interactive conferences and different activities to get students into mathematics

Conference attendance

June 2023 **Cube complexes and combinatorial group theory**, Thematic program on Geometric group theory, Centre de Recherches Mathématiques, Montréal.

June 2023 **Groups around 3-manifolds**, Thematic program on Geometric group theory, Centre de Recherches Mathématiques, Montréal.

May 2023 **Geometry of subgroups**, Thematic program on Geometric group theory, Centre de Recherches Mathématiques, Montréal.

February 2023 **Young Geometric Group Theory XI**, WWU Münster, Münster, Germany.

July 2022 **MSRI-Oxford Summer Graduate School "Metric Geometry and Geometric Analysis"**, Oxford University, Oxford, Great Britain.

June 2022 **Hyperbolic groups and their generalizations**, Institut Henri Poincaré, Paris, France.

March 2022 **Topological and Homological Methods in Group Theory 2022**, Bielefeld University, Bielefeld, Germany.

February 2022 **Workshop on Finiteness properties**, Karlsruhe Institute of Technology, Karlsruhe, Germany.

2018 **Escuela de invierno en grupos y dinámica en México**, Instituto de Matemáticas, UNAM, Mexico City, México.

2017 **Workshop: Groups of Dynamical Origin**, Instituto de Matemáticas, UNAM, Mexico City, México.

Languages

Spanish **Mother tongue**
English **102 in the TOEFL-iBT**
German **B1 certificate**