

# Jerónimo García Mejía

Karlsruhe Institut für Technologie  
Karlsruhe, Germany  
jeronimo.garcia@kit.edu  
www.math.kit.edu/iag2/~garcia/en

## 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**Group actions on hyperbolic spaces**, Master Thesis (July 2020), University of Bonn, 53 pages, Unpublished.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  $\pi$ "**, 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**, Centre de Recherches Mathématiques, Montréal.

June 2023 **Groups around 3-manifolds**, Centre de Recherches Mathématiques, Montréal.

May 2023 **Geometry of subgroups**, 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**