

Andrés Ahumada Gómez

E-mail: andres.hmd.gmz@gmail.com
andres.ahumada@cunef.edu
Webpage: andres-ahumada-gomez.github.io
ORCID: <https://orcid.org/0000-0003-2452-4653>
ResearcherID: F-9402-2019

Education

- 2019 - 2024 **Doctorado en Ciencias Matemáticas (Ph. D. in Mathematics)**
Universidad Nacional Autónoma de México (UNAM)
Thesis: “Actions on Spaces with Bounded Curvature”
Advisor: Dr. Fernando Galaz García
- 2015 - 2017 **Maestría en Ciencias Matemáticas (M. Sc. in Mathematics)**
Universidad Nacional Autónoma de México
Thesis: “Sobre una generalización del teorema de la esfera”
(On a generalization of the Sphere Theorem)
Advisor: Dr. Oscar Alfredo Palmas Velasco
- 2010 - 2015 **Matemáticas (B. Sc. in Mathematics)**
Facultad de Ciencias, Universidad Nacional Autónoma de México
Thesis: “Teorema de la esfera” (Sphere’s Theorem) (with honors)
Advisor: Dr. Mónica Alicia Clapp Jiménez Labora

Experience

- 09/2024 - **Assistant Professor**
Department of Mathematics
CUNEF Universidad
- 02/2024 - 07/2024 **Adjunct Professor A**
Facultad de Ciencias
Universidad Nacional Autónoma de México
- 09/2023 - 05/2024 **Adjunct Professor**
Escuela de Ciencias e Ingeniería
Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Ciudad de México
- 07/2017 - 07/2024 **Teaching Assistant B**
Facultad de Ciencias
Universidad Nacional Autónoma de México
- 2016 - 2025 21 Presentations in National and International Scientific Conferences
- 2022 Research stay at Durham University, England
- 2019 Research stay at Karlsruhe Institute of Technology, Germany

Research Interests

Riemannian Geometry, Metric Geometry, Geometric Topology, Lie Group Actions

Publications

1. **Gromov–Hausdorff convergence of metric pairs and metric tuples** (with Mauricio Che).
Differential Geometry and Its Applications, Volume 94, 2024.
<https://doi.org/10.1016/j.difgeo.2024.102135>

Preprints

1. **Equivariant Smoothing Processes on Currents and Spaces with Bounded Curvature**
<https://arxiv.org/abs/2407.14674>
2. **Metric pairs and tuples in theory and applications** (with Mauricio Che and Manuel Cuerno).
<https://arxiv.org/abs/2505.12735>

Teaching

Academic Year 25-26

CUNEF Universidad

1. *Programming for Data Science*
2. *Programming in R (x2)*
3. *Programming in R (taught in Spanish)*
4. *Operations Research (taught in Spanish)*

Academic Year 24-25

CUNEF Universidad

1. *Data Collection and Processing (x2)*
2. *Programming in R (x2) (taught in Spanish)*

Academic Year 23-24

**Facultad de Ciencias
Universidad Nacional Autónoma de México**

1. *Analytic Geometry (taught in Spanish)*

**Escuela de Ciencias e Ingeniería
Instituto Tecnológico y de Estudios Superiores de Monterrey**

1. *Fundamental Mathematical Modeling (x2) (taught in Spanish)*
2. *Mathematical Reasoning (taught in Spanish)*
3. *Modeling with Systems of Differential Equations (taught in Spanish)*
4. *Intermediate Mathematical Modeling*

Invented Talks

- 2023 **Acciones en espacios con curvatura acotada (Actions on Spaces with Bounded Curvature)**
56 Congreso Nacional de la Sociedad Matemática Mexicana
(56th National Conference of the Mexican Mathematical Society)
Universidad Autónoma de San Luis Potosí
San Luis Potosí, México
- 2023 **Convergencia de Gromov–Hausdorff para pares y tuplas métricas (Gromov-Hausdorff convergence of metric pairs and metric tuples)**
56 Congreso Nacional de la Sociedad Matemática Mexicana
(56th National Conference of the Mexican Mathematical Society)
Universidad Autónoma de San Luis Potosí
San Luis Potosí, México
- 2023 **Acciones en espacios con curvatura acotada (Actions on Spaces with Bounded Curvature)**
Workshop on Modern Techniques in Riemannian Geometry 2023
Instituto de Matemáticas, UNAM
Ciudad de México, México
- 2022 **Sobre corrientes equivariantes y aproximaciones (On equivariant currents and approximations)**
Diálogos Virtuales de Análisis y Geometría (DIVAGEO)
Facultad de Ciencias, UNAM, México
Online
- 2021 **Spaces with Bounded Curvature**
Mathematical Conference of the Americas
Universidad de Buenos Aires, Argentina
Online

Conference Participation

- 2024 **57 Congreso Nacional de la Sociedad Matemática Mexicana**
(57th National Conference of the Mexican Mathematical Society)
Universidad Juárez del Estado de Durango
Durango, México
- 2023 **56 Congreso Nacional de la Sociedad Matemática Mexicana**
(56th National Conference of the Mexican Mathematical Society)
Universidad Autónoma de San Luis Potosí
San Luis Potosí, México
- 2023 **Workshop on Modern Techniques in Riemannian Geometry 2023**
Instituto de Matemáticas, UNAM
Ciudad de México, México
- 2022 **Workshop on Modern Techniques in Riemannian Geometry 2022**
Universidad Autónoma de Yucatán (UADY), México
Online
- 2022 **55 Congreso Nacional de la Sociedad Matemática Mexicana**
(55th National Conference of the Mexican Mathematical Society)
Universidad de Guadalajara, México
Online
- 2021 **54 Congreso Nacional de la Sociedad Matemática Mexicana**
(54th National Conference of the Mexican Mathematical Society),
Benemérita Universidad Autónoma de Puebla, México
Online
- 2021 **Mathematical Conference of the Americas 2021**
Universidad de Buenos Aires, Argentina
Online

2021	Workshop on Modern Techniques in Riemannian Geometry 2021 Online
2020	Congreso Nacional Virtual de la Sociedad Matemática Mexicana (Virtual National Conference of the Mexican Mathematical Society), Online
2019	Escuela "Fico González Acuña" de Nudos y 3-Variedades 2019 ("Fico González Acuña" School of Knots and 3-Manifolds 2019), Centro de Investigación en Matemáticas (CIMAT) Guanajuato, Mexico
2019	52 Congreso Nacional de la Sociedad Matemática Mexicana (52th National Conference of the Mexican Mathematical Society) Universidad Autónoma de Nuevo León Monterrey, Mexico
2019	1ª Escuela Nacional de Geometría Diferencial (National School on Differential Geometry), CIMAT Guanajuato, Mexico
2018	11th Minimeeting on Differential Geometry CIMAT Guanajuato, Mexico
2018	Workshop on Modern Techniques in Riemannian Geometry 2018 Facultad de Matemáticas, UADY Mérida, Yucatán, México
2018	Tercer Encuentro de Estudiantes de Posgrado Centro de Ciencias Matemáticas (CCM), UNAM Morelia, México
2017	50 Congreso Nacional de la Sociedad Matemática Mexicana (50th National Conference of the Mexican Mathematical Society) Facultad de Ciencias, UNAM Ciudad de México, México
2017	PRIMA Third Conference The Pacific Rim Mathematical Association Oaxaca, México
2017	Encuentro de foliaciones y singularidades Instituto de Matemáticas, UNAM Ciudad de México, México
2014	CIMPA School on Singularity Theory in Topology, Geometry and Foliations Instituto de Matemáticas, UNAM Cuernavaca, México

Fellowships

2019 - 2023	Ph. D. scholarship awarded by Consejo Nacional de Ciencia y Tecnología (CONACYT) (National Council of Science and Technology)
2022	UNAM Graduate School support for a research stay at Durham University, England
2019	UNAM Graduate School support for a research stay at Karlsruhe Institute of Technology
2017	Stimulus for the timely graduation in the Graduate School of UNAM
2015 - 2017	Master's scholarship awarded by CONACYT
2015	Academic Excellence Scholarship of UNAM to the successful obtaining of the bachelor degree

Courses

2023	Excel Skills for Business, Coursera, Macquarie University
2023	Mathematics for Machine Learning, Coursera, Imperial College London
2023	Python for Everybody, Coursera, University of Michigan

Languages

Spanish (Native)
English (TOEFL ITP 603)
German (ÖSD B1)

Affiliations

Sociedad Matemática Mexicana
Real Sociedad Matemática Española
European Mathematical Society