

# Andrés Ahumada Gómez

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**ResearcherID:** F-9402-2019

## Education

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- 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

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- 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

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

## Publications

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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

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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

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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

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- 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

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

## Fellowships

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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

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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

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

## Affiliations

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Sociedad Matemática Mexicana  
Real Sociedad Matemática Española  
European Mathematical Society