

# Andrés Ahumada Gómez

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**ResearcherID:** F-9402-2019

## Education

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

## Experience

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| 09/2024 -         | <b>Assistant Professor</b><br>Department of Mathematics<br>CUNEF Universidad   |
| 02/2024 - 07/2024 | <b>Adjunct Professor A</b><br>Facultad de Ciencias<br>Universidad Nacional Autónoma de México  |
| 09/2023 - 05/2024 | <b>Adjunct Professor</b><br>Escuela de Ciencias e Ingeniería<br>Instituto Tecnológico y de Estudios Superiores de Monterrey, Campus Ciudad de México |
| 07/2017 - 07/2024 | <b>Teaching Assistant B</b><br>Facultad de Ciencias<br>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 | <b>Acciones en espacios con curvatura acotada (Actions on Spaces with Bounded Curvature)</b><br>56 Congreso Nacional de la Sociedad Matemática Mexicana<br>(56th National Conference of the Mexican Mathematical Society)<br>Universidad Autónoma de San Luis Potosí<br>San Luis Potosí, México  |
| 2023 | <b>Convergencia de Gromov–Hausdorff para pares y tuplas métricas (Gromov-Hausdorff convergence of metric pairs and metric tuples)</b><br>56 Congreso Nacional de la Sociedad Matemática Mexicana<br>(56th National Conference of the Mexican Mathematical Society)<br>Universidad Autónoma de San Luis Potosí<br>San Luis Potosí, México |
| 2023 | <b>Acciones en espacios con curvatura acotada (Actions on Spaces with Bounded Curvature)</b><br>Workshop on Modern Techniques in Riemannian Geometry 2023<br>Instituto de Matemáticas, UNAM<br>Ciudad de México, México  |
| 2022 | <b>Sobre corrientes equivariantes y aproximaciones (On equivariant currents and approximations)</b><br>Diálogos Virtuales de Análisis y Geometría (DIVAGEO)<br>Facultad de Ciencias, UNAM, México<br>Online  |
| 2021 | <b>Spaces with Bounded Curvature</b><br>Mathematical Conference of the Americas<br>Universidad de Buenos Aires, Argentina<br>Online  |

## Conference Participation

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

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

## Fellowships

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|             |  |
|-------------|--|
| 2019 - 2023 | Ph. D. scholarship awarded by Consejo Nacional de Ciencia y Tecnología (CONACYT)<br>(National Council of Science and Technology) |
| 2022        | UNAM Graduate School support for a research stay<br>at Durham University, England  |
| 2019        | UNAM Graduate School support for a research stay<br>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