

# ARTURO MARTÍNEZ-CELIS

plac Grunwaldzki 2, Wrocław, Poland

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## EDUCATION

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**Universidad Michoacana de San Nicolás de Hidalgo** *August 2005 - November 2009*

Licenciatura en Ciencias Físico Matemáticas (Bachelors in Mathematical and Physical Sciences)

Facultad de Ciencias Físico Matemáticas

Thesis title: *Espacios de Dowker*

Thesis supervisor: *Michael Hrušák*

**Posgrado Conjunto en Ciencias Matemáticas UMSNH-UNAM** *August 2009 - October 2011*

Maestría en Ciencias Matemáticas (Master degree in Mathematics)

Centro de Ciencias Matemáticas, UNAM

Thesis: *Invariantes Cardinales de los Espacios Métricos Monótonos*

Thesis supervisor: *Michael Hrušák*

**Posgrado Conjunto en Ciencias Matemáticas UMSNH-UNAM** *August 2012 - May 2018*

Doctorado en Ciencias Matemáticas (Ph.D. in Mathematics)

Centro de Ciencias Matemáticas, UNAM

Thesis title: *Aplicaciones de la Combinatoria Infinita a la Topología*

Thesis supervisor: *Michael Hrušák*

Available in English:

<http://canguromatematico.com/arturo/pdf/phdthesis.pdf>

## POSTDOCTORAL FELLOWSHIPS

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**Instytut Matematyczny Polskiej Akademii Nauk**

*October 2018 - October 2020*

Warsaw, Poland.

Adjunkt.

**Instytut Matematyczny Uniwersytetu Wrocławskiego**

*Since October 2020*

Wrocław, Poland.

Adjunkt.

## ACADEMIC NOMINATIONS

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**Sistema Nacional de Investigadores**

*January 2020 - December 2022*

Candidate to the Sistema Nacional de Investigadores, Mexico.

## STUDENTS

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- **Aleksander Cieślak.** Assistant supervisor. Expected date for Ph.D. thesis defense: June/July 2025.  
Wrocław University of Science and Technology.
- **Tomasz Żuchowski.** Assistant supervisor. Expected date for Ph.D. thesis defense: June/July 2026.  
University of Wrocław.
- **Adam Morawski.** Supervisor. Expected date for Ms.C. thesis defense: June/July 2024.  
University of Wrocław.

## ORGANIZATION OF CONFERENCES

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- **2nd Wrocław Logic Conference.** 31st May - 2nd June 2024, in Wrocław. Organizing and Scientific committee.

## RESEARCH

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- Guzmán O., Hrušák M & Martínez-Celis A. *Canjar Filters*. Notre Dame Journal of Formal Logic, Volume 58, Number 1. (2017).
- Guzmán O., Hrušák M & Martínez-Celis A. *Canjar Filters II: proofs of  $b < s$  and  $b < a$  revisited*. RIMS Kokyuroku No. 1895. (2014).
- Guzmán O., Hrušák M & Martínez-Celis A. *Cardinal Invariants of Strongly Porous Sets*. Journal of Logic and Analysis, Vol 9. (2017).
- Koszmider P. & Martínez-Celis A. *Rosenthal Families, Pavings and Generic Cardinal Invariants*. Proc. Amer. Math. Soc. 149 (2021), 1289-1303.
- Martínez-Celis A. *Michael Spaces and Ultrafilters*. Topology and its Applications, Volume 346 (2024).
- Cieślak A., & Martínez-Celis A. *On ideals related to Laver and Miller trees*. Submitted. (arXiv:2312.01387 [math.LO]).
- Martínez-Celis A. & Żuchowski T. *On cardinal invariants related to Rosenthal families and large-scale topology*. (arXiv: 2404.06639 [math.LO]).

## TEACHING

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<b>Cálculo I</b> (Calculus I) Facultad de Ciencias Físico Matemáticas Universidad Michoacana de San Nicolás de Hidalgo	<i>August 2011 - January 2012</i>
<b>Matemáticas Discretas I</b> (Discrete Mathematics) Facultad de Ciencias Físico Matemáticas Universidad Michoacana de San Nicolás de Hidalgo	<i>August 2011 - January 2012</i>
<b>Análisis Funcional</b> (Functional Analysis) Facultad de Ciencias Físico Matemáticas Universidad Michoacana de San Nicolás de Hidalgo	<i>August 2016 - January 2017</i>
<b>Álgebra Superior I</b> (Algebra I) Facultad de Ciencias Físico Matemáticas Universidad Michoacana de San Nicolás de Hidalgo	<i>March 2018 - August 2018</i>
<b>Cálculo Complejo</b> (Complex Calculus) Facultad de Ciencias Físico Matemáticas Universidad Michoacana de San Nicolás de Hidalgo	<i>March 2018 - August 2018</i>
<b>Miara i Całka</b> (Measure Theory) Instytut Matematyczny Uniwersytet Wrocławski	<i>October 2020 - February 2021</i>
<b>Seminar on Infinitary Combinatorics</b> Instytut Matematyczny Uniwersytet Wrocławski	<i>October 2020 - February 2021</i>
<b>Mathematical Programming and Optimization</b> Instytut Matematyczny Uniwersytet Wrocławski	<i>February 2021 - June 2021</i>
<b>Descriptive Set Theory</b> Instytut Matematyczny Uniwersytet Wrocławski	<i>February 2021 - June 2021</i>
<b>Miara i Całka</b> (Measure Theory)	<i>October 2021 - February 2022</i>

Instytut Matematyczny Uniwersytet Wrocławski <b>LaTeX</b>	<i>October 2021 - February 2022</i>
Instytut Matematyczny Uniwersytet Wrocławski <b>Mathematics</b>	<i>October 2021 - February 2022</i>
Wydział Biotechnologii Uniwersytet Wrocławski <b>Mathematical Programming and Optimization</b>	<i>February 2022 - June 2022</i>
Instytut Matematyczny Uniwersytet Wrocławski <b>Measures on Topological Spaces</b>	<i>February 2022 - June 2022</i>
Instytut Matematyczny Uniwersytet Wrocławski <b>Combinatorics of the Reals</b>	<i>February 2022 - June 2022</i>
Instytut Matematyczny Uniwersytet Wrocławski <b>Latex</b>	<i>October 2022 - February 2023</i>
Instytut Matematyczny Uniwersytet Wrocławski <b>Combinatorics and Topology in Banach Spaces</b>	<i>October 2022 - February 2023</i>
Instytut Matematyczny Uniwersytet Wrocławski <b>Mathematics</b>	<i>October 2022 - February 2023</i>
Wydział Biotechnologii Uniwersytet Wrocławski <b>Forcing</b>	<i>February 2023 - June 2023</i>
Instytut Matematyczny Uniwersytet Wrocławski <b>Mathematical Programming and Optimization</b>	<i>February 2023 - June 2023</i>
Instytut Matematyczny Uniwersytet Wrocławski <b>Infinitary Combinatorics</b>	<i>October 2023 - February 2024</i>
Instytut Matematyczny Uniwersytet Wrocławski <b>Mathematics in Life Sciences</b>	<i>October 2023 - February 2024</i>
Wydział Biotechnologii Uniwersytet Wrocławski <b>Mathematical Programming and Optimization</b>	<i>February 2024 - June 2024</i>
Instytut Matematyczny Uniwersytet Wrocławski <b>Descriptive Set Theory</b>	<i>February 2024 - June 2024</i>
Instytut Matematyczny Uniwersytet Wrocławski	

*Additionally I have held a seminar for the Linear Algebra and the Analysis course at the Institute of Mathematics of the University of Wrocław from October 2021 to June 2023.*

## CONFERENCES

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- XLII Congreso Nacional de la Sociedad Matemática Mexicana. Talk Title: **Espacios de Dowker**. Zacatecas, Mexico. October 2009.
- VII Jornadas de Topología. Talk Title: **Invariantes Cardinales de los Espacios Métricos Monótonos**. Puebla, Mexico. October 2010.
- XLV Congreso Nacional de la Sociedad Matemática Mexicana. Talk Title: **Algunos Invariantes Asociados a Espacios (fuertemente) Porosos**. Querétaro, Mexico. October 2012.
- Winter School in Abstract Analysis 2013. Talk Title: **Cardinal Invariants of Porous Sets**. Hejnice, Czech Republic. January 2013.
- International Conference in Topology and Geometry. Talk Title: **Canjar and Branching Ideals**. Matsue, Japan. September 2013.
- Seminario de Matemáticas Discretas. Talk Title: **De la Combinatoria Finita a la Infinita**. Morelia, Michoacán, Mexico. May 2013.
- RIMS Set Theory Workshop 2013. Talk Title: **Canjar Ideals**. Kyoto, Japan. September 2013
- XLVI Congreso Nacional de la Sociedad Matemática Mexicana. Talk Title: **Gráficas y Particiones No Amigables**. Yucatán, Mexico. October 2013.
- Segunda Escuela de Lógica y Conjuntos. Talk Title: **Número Cromático del Plano**. Morelia, Mexico. November 2013.
- Winter School in Abstract Analysis 2014. Talk Title: **Porous Sets and Martin Numbers**. Hejnice, Czech Republic. January 2014.
- 29th Summer Conference on Topology and its Applications. Talk Title: **Michael Ultrafilters**. New York City, NY, USA. July 2014.
- Tercera escuela de Lógica y Conjuntos. Talk Title: **Axioma de Determinación II**. Zacatlán, Mexico. November 2014.
- 60 years of Dow. Ithaca, NY, USA. December 2014.
- Winter School in Abstract Analysis 2015. Talk Title: **Ultrafilters and Michael Spaces**. Hejnice, Czech Republic. January 2015.
- Cuarta escuela de Lógica y Conjuntos. Talk Title: **Ultrafiltros de Ramsey**. Distrito Federal, Mexico. December 2015.
- Winter School in Abstract Analysis 2016. Talk Title: **Combinatorics Related to the Michael Space Problem**. Hejnice, Czech Republic. January 2016.
- Banff International Research Station conference: Set Theory and its Applications in Topology. Oaxaca, Mexico. September 2016.
- XLIX Congreso Nacional de la Sociedad Matemática Mexicana. Talk Title: **Conjuntos especiales de números reales**. Aguascalientes, Mexico. October 2016.
- Degustaciones Matemáticas. Talk Title: **El axioma de elección en la vida cotidiana**. Morelia, Michoacán, Mexico. January 2017.
- Encuentro de sociedades de matemáticas de Colombia y México. Talk Title: **Conjuntos porosos y su relación con el axioma de Martin**. Barranquilla, Colombia. June 2018. **Invited Speaker**.
- European Set Theory Conference 2019. Talk Title: **Cardinal Invariants related to Rosenthal's lemma**. Vienna, Austria. July 2019.
- Set-theoretic methods in topology and real functions theory. Talk Title: **Rosenthal families and the cardinal invariants of Cichoń's diagram**. Košice, Slovakia. September 2019.
- Winter School in Abstract Analysis 2020. Talk Title: **Reaping and Rosenthal families**. Hejnice, Czech Republic. February 2020.
- Winter School in Abstract Analysis 2022. Hejnice, Czech Republic. February 2022.
- Winter School. Talk Title: **Ideals and filters**. Pisary Mountains, Poland. February 2022.
- YSTW 2022 + SETTOP 2022. Talk Title: **Forcing a Michael Space**. Novi Sad, Serbia. August 2022.
- Spanish+Polish Mathematical Meeting. Talk Title: **Ultraproducts and Michael spaces**. Łódź,

Poland. September 2023. **Invited speaker.**

- Winter School in Abstract Analysis 2024. Talk Title: **Marczewski-like ideals related to superperfect trees..** Hejnice, Czech Republic. February 2024.

## SCIENCE COMMUNICATION

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Webmaster for the Math Kangaroo website in Mexico.

*Since 2009*

[www.canguromatematico.com](http://www.canguromatematico.com)

Author of a problem for the final exam for the Mathematical Olympiad in Mexico. November 2012

I consent, within the meaning of Articles 4 and 7 of RODO, i.e. Regulation (EU) 2016/679 of the European Parliament and of the Council of 27 April 2016 on the protection of natural persons with regard to the processing of personal data and on the free movement of such data, and repealing Directive 95/46/EC (General Data Protection Regulation) (Official Journal of the EU L of 4.05.2016, pp. 1-88), to the processing of my personal data by the University of Wrocław, pl. Uniwersytecki 1, 50-137 Wrocław, for the purpose of recruitment for employment at the University of Wrocław. I am aware that the consent given may be withdrawn at any time in a manner appropriate to its giving.