Yairon Cid Ruiz

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https://ycid.github.io

CONTACT INFORMATION

Professional address: Max Planck Institute for Mathematics in the Sciences,
Inselstrasse 22, 04103 Leipzig, Germany.

EMPLOYMENT

09/2019 - Center: *Max Planck Institute for Mathematics in the Sciences.*
Position: Postdoctoral Researcher.

09/2016 - 08/2019 Center: *Universitat de Barcelona.*
Position: Early Stage Researcher & PhD candidate in the ARCADES network (http://arcades-network.eu) under the Marie Skłodowska-Curie grant agreement No 675789.

09/2014 - 07/2015 Center: *Universidad Central "Marta Abreu" de las Villas.*
Position: Graduate Teaching Assistant in the Department of Mathematics.

EDUCATION

09/2016 - 08/2019 **Ph.D. in Mathematics**, summa cum laude.
Center: *Universitat de Barcelona.*
City, Country: Barcelona, Spain.
Advisor: Carlos D'Andrea.

09/2015 - 08/2016 **Postgraduate Diploma Programme in Mathematics**, *top student prize.*
Center: *Abdus Salam International Centre for Theoretical Physics* (ICTP).
City, Country: Trieste, Italy.
Advisor: Lothar Göttsche.

09/2009 - 07/2014 **Bachelor in Computer Science**, *summa cum laude.*
Center: *Universidad Central "Marta Abreu" de las Villas* (UCLV).
City, Country: Santa Clara, Cuba.
Advisor: Eberto Morgado.

PUBLICATIONS & PREPRINTS

1. *"Bounding the degrees of a minimal μ-basis for a rational surface parametrization"*, J. Symbolic Comput. 95 (2019), 134–150, arXiv:1611.07506.
2. *"A D-module approach on the equations of the Rees algebra"*, to appear in J. Commut. Algebra, arXiv:1706.06215.
3. *"Regularity and Gröbner bases of the Rees algebra of edge ideals of bipartite graphs"*, Le Matematiche Vol 73 No 2 (2018), pp. 279–296, arXiv:1801.06731.
4. (with Sepehr Jafari, Beatrice Picone and Navid Nemati), *"Regularity of bicyclic graphs and their powers"*, to appear in J. Algebra Appl., arXiv:1802.07202.
5. (with Laurent Busé and Carlos D'Andrea), *"Degree and birationality of multi-graded rational maps"*, Proc. Lond. Math. Soc. (3) 121 (2020) 743–787, arXiv:1805.05180.
6. *"Multiplicity of the saturated special fiber ring of height two perfect ideals"*, Proc. Amer. Math. Soc. 148 (2020), no. 1, 59–70, arXiv:1807.03189.
7. (with Aron Simis), *"Degree of rational maps via specialization"*, to appear in International Mathematics Research Notices, arXiv:1901.06599.
8. *"Noetherian operators, primary submodules and symbolic powers"*, to appear in Collect. Math., arXiv:1909.07253.

9. (with Vivek Mukundan), *"Multiplicity of the saturated special fiber ring of height three Gorenstein ideals"*, to appear in Acta Mathematica Vietnamica, arXiv:1909.13633.
10. *"Mixed multiplicities and projective degrees of rational maps"*, to appear in Journal of Algebra, arXiv:2001.00547.
11. (with Roser Homs and Bernd Sturmfels), *"Primary ideals and their differential equations"*, arXiv:2001.04700.
12. (with Marc Chardin and Aron Simis), *"Generic freeness of local cohomology and graded specialization"*, arXiv:2002.12053.
13. (with Federico Castillo, Binglin Li, Jonathan Montaño and Naizhen Zhang), *"When are multidegrees positive?"*, to appear in Advances in Mathematics, arXiv:2005.07808.

AWARDS & DISTINCTIONS

- Winner of the top student prize in Mathematics in ICTP, 2016.
- One of the 10 selected students in the Postgraduate Diploma Programme in Mathematics in ICTP, 2015.
- Best graduate student in 2014 in the Universidad Central "Marta Abreu" de Las Villas, 2014.
- SILVER MEDAL in the XV Iberoamerican Mathematical Olympiad, 2012.
- BRONZE MEDAL in the XIII Iberoamerican Mathematical Olympiad, 2010.
- BRONZE MEDAL in the Caribbean Regional Final of the Latin American programming ACM-ICPC, 2012.

RESEARCH VISITS

- INRIA Sophia Antipolis, 6 months, 10/2017 – 03/2018, host: Lurent Busé.
- Johannes Kepler University Linz, 2 months, 10/2018 – 11/2018, host: Josef Schicho.
- Polictenico di Torino, 1 week, 05/11/2018 – 09/11/2018, host: Aron Simis.
- International Centre for Theoretical Physics, 1 week, 11/02/2019 – 15/02/2019, host: Tarig Abdelgadir.
- Universidad de Sevilla, 1 week, 22/04/2019 - 26/04/2019, host: Francisco Jesús Castro Jiménez.

FELLOWSHIPS

- 09/2016 - 08/2019: Marie Skłodowska-Curie Fellowship, Universitat de Barcelona, Barcelona, Spain.
- 09/2015 - 08/2016: Awarded a fully funded scholarship to pursue the Postgraduate Diploma in Mathematics at ICTP, Trieste, Italy.

INVITED TALKS

- *"Noetherian operators, primary submodules and symbolic powers"*, V congreso de jóvenes investigadores RSME, Castellón, Spain, January 2020.
- *"Noetherian operators, primary submodules and symbolic powers"*, Algebra Seminar, Osnabrück, Germany, November 2019.
- *"Rational maps, syzygies and specialization"*, Seminar on Nonlinear Algebra, Leipzig, Germany, September 2019.
- *"Ehrenpreis – Palamodov Theorem"*, Second edition of the conference: Computing with D-modules, Leipzig, Germany, September 2019.
- *"Rational maps and syzygies"*, Seminario de Álgebra de la Universidad de Sevilla, Sevilla, Spain, April 2019.
- *"Saturated special fiber ring and rational maps"*, Seminari de Geometria Algebraica de Barcelona, Barcelona, Spain, March 2019.
- *"Saturated special fiber ring and rational maps"*, Mathematics Seminar, International Centre for Theoretical Physics, Italy, February 2019.

- *"Rational maps and the saturated special fiber ring"*, Joint Meeting of the Czech, Slovenian, Austrian, Slovak and Catalan Mathematical Societies, Bratislava, Slovakia, September 2018.
- *"Degree and birationality of multi-graded rational maps"*, ARCADES Doctoral School II and ESR Days in Barcelona, Barcelona, Spain, September 2018.
- *"Regularity and Gröbner bases of the Rees algebra of edge ideals of bipartite graphs"*, XVI Encuentro de Álgebra Computacional y Aplicaciones (EACA), Zaragoza, Spain, July 2018.
- *"Regularity of bicyclic graphs and their powers"*, IPPI Workshop 2018 (post-Pragmatic 2017 event), Turin, Italy, March 2018.
- *"Regularity and Gröbner bases of the Rees algebra of edge ideals of bipartite graphs"*, Journées Nationales de Calcul Formel, CIRM, Luminy, France, January 2018.
- *"A D-module approach on the equations of the Rees algebra"*, Séminaire d'algèbre, topologie et géométrie, University of Nice, France, November 2017.
- *"Bounding the degrees of a minimal μ-basis for a rational surface parametrization"*, Society for Industrial and Applied Mathematics, Applied Algebraic Geometry Conference, Atlanta, United States, August 2017.
- *"Bounding the degrees of a minimal μ-basis for a rational surface parametrization"*, Effective Methods in Algebraic Geometry MEGA 2017, Nice, France, June 2017.
- *"Bounding the degrees of a minimal μ-basis for a rational surface parametrization"*, Seminari de Geometria Algebraica de Barcelona, Barcelona, Spain, March 2017.

CONFERENCES & WORKSHOPS

- Summer School on Randomness and Learning in Non-Linear Algebra, Leipzig, Germany, July 2019.
- Thematic Program in Commutative Algebra and its Interaction with Algebraic Geometry. In Honor of Bernd Ulrich. Notre Dame University, United States, June 2019.
- Learning Week III in ARCADES, Nice, France, March 2019.
- Second ARCADES Software & Industrial Workshop, Cambridge, UK, January 2019.
- Frobenius Action in Commutative Algebra: Recent Developments, Barcelona, Spain, January 2019.
- Macaulay2 Workshop, Leipzig, Germany, June 2018.
- Learning Week II in ARCADES, Nice, France, March 2018.
- Workshop on Commutative Algebra, Syzygies and Singularities, Nice, France, December 2017.
- First Software & Industrial Workshop, and Midterm Review ARCADES, Athens, Greece, November 2017.
- Research school in Algebraic Geometry and Commutative Algebra, *Pragmatic 2017*, Catania, Italy, June 2017.
- Learning Week I in *Algebraic Representations in Computer-Aided Design for complEx Shapes (ARCADES)*, Nice, France, March 2017.
- 1st Doctoral School ARCADES, Oslo, Norway, December 2016.
- Workshop in Algebra, Algebraic Geometry, Algebraic Topology and Applications sponsored by *Centro de Investigaciones en Matemáticas(CIMAT, Guanajato, México)* in Ciego de Avila, Cuba, 2014.

LANGUAGES

Spanish: Mother tongue.
English: Fluent.

COMPUTER SKILLS

C/C++, JAVA, LaTeX, Linux, Wolfram Mathematica, MACAULAY2, SINGULAR.