

SCIENTIFIC PUBLICATIONS

1. *Implicit dose-response curves*, with M. Pérez Millán, to appear: *Journal of Mathematical Biology*, 2014.
2. *Sign conditions for injectivity of generalized polynomial maps with applications to chemical reaction networks and real algebraic geometry*, with Stefan Müller, Elisenda Feliu, Georg Regensburger, Carsten Conradi, and Anne Shiu, submitted, 2013: arXiv:2013:5493.
3. *Planar mixed discriminants and toric Jacobians*, with I. Emiris and A. Karasoulou, to appear in: *Advances in Shapes, Algebra, Geometry and Algorithms - Results from Marie Curie Initial Training Network SAGA*, Eds. Tor Dokken and Georg Muntigh, Springer.
4. *Higher order duality and toric embeddings*, with S. di Rocco and R. Piene, to appear: *Annales de l'Institut Fourier*, 2014.
5. *Combinatorics of 4-dimensional Resultant Polytopes*, with I. Emiris and V. Fisikopoulos: *Proc. ISSAC 2013*, Ed. M. Kauers, ACM Press, 2013, 173–180.
6. *Mixed discriminants*, with M. A. Cueto, E. Cattani, S. di Rocco and B. Sturmfels, *Math. Z.*, Vol. 274, Issue 3 (2013), 761–778.
7. *Complex-linear invariants of biochemical networks*, with R. Karp, M. Pérez Millán, T. Dasgupta and J. Gunawardena, *Journal of Theoretical Biology* (2012), 311, 130–138.
8. *A relation between number of integral points, volumes of faces and degree of the discriminant of smooth lattice polytopes*, with B. Nill and M. Vergne, *Comptes Rendus Mathématique, Académie des Sciences, France*, Vol. 350, No. 5-6 (2012), 229–233.
9. *Chemical reaction systems with toric steady states*, with M. Pérez Millán, A. Shiu and C. Conradi, *Bulletin of Mathematical Biology* (2012) 74(5), 1027–1065.
10. *Nilsson solutions for irregular A-hypergeometric systems*, with L. F. Matusevich and F. N. Martínez, *Revista Matemática Iberoamericana* (2012) 28(1), 1–36.
11. *Singular tropical hypersurfaces*, with L. Tabera, *Discrete & Computational Geometry (DCG)* (2012), 47(2), 430–453.
12. *Independent Sets from an Algebraic Perspective*, with E. Tobis, *International Journal of Algebra and Computation (IJAC)*, Vol. 22, No. 2 (2012) 1250014 (15 pages).
13. *How far is complex balancing from detailed balancing?*, with M. Pérez Millán, *Bulletin of Mathematical Biology* (2011), 73:811–828.

14. *Self-dual Toric Varieties*, with M. Bourel and A. Rittatore, J. London Math. Soc. (2011) 84(2): 514–540.
15. *The structure of Bivariate Rational Functions*, with E. Cattani and F. Rodríguez Villegas, Int. Math. Res. Notices (2011) Vol. 2011 2496-2533, doi: 10.1093/imrn/rnq168.
16. *A Simple Combinatorial Criterion for Projective Toric Manifolds with Dual Defect*, with B. Nill, Math. Res. Letters 17, N. 3 (2010), 435–448.
17. *Binomial D-modules*, with L.F. Matusevich and E. Miller, Duke Math. Journal (2010), vol. 151, no. 3, 1–46.
18. *Additive Edge Labelings*, with E. Tobis, Discrete Applied Math., Volume 158, Issue 5, 6 March 2010, 444–452.
19. *Combinatorics of binomial primary decomposition*, with L.F. Matusevich and E. Miller, Math. Z., Volume 264, Number 4/April 2010, 745–763.
20. *Classifying Polytopes via Toric Fibrations*, with S. di Rocco and R. Piene, Advances in Mathematics 222 (2009), 240–254.
21. *Matrix Representations of Toric Parametrizations*, with N. Botbol and M. Dohm, Computer Aided Geometric Design 16 (2009), 757–771.
22. *A world of binomials*, in: Foundations of Computational Mathematics: Hong Kong 2008, F. Cucker, A. Pinkus, M. Todd (Eds.), London Mathematical Society Lecture Note Series 363, 2009, 42–6.
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24. *Hypergeometric functions and binomials*, Rev. Unión Matemática Argentina, Vol. 49, No.2, 2008, 97–110.
25. *Una introducción al uso del álgebra computacional para el estudio de redes biológicas* (in Spanish), with M. Pérez Millán, Actas BIOMAT II, Academia Cs. Exactas de Córdoba, Argentina, 2008.
26. *Applications of residues and duality*, Chapter of the book: Residues and Duality for Projective Algebraic Varieties, Ernst Kunz, with the assistance and contributions of David A. Cox and Alicia Dickenstein, ULECT Series, American Mathematical Society, December 2008, 115–127.
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28. *Bases in the Solution Space of the Mellin System*, with T. Sadykov, Preprint MPIM Bonn, MPIM2006-12, 2006. Sbornik Mathematics 198:9, 59–80, 2007.

29. *Algebraicity of solutions to the Mellin system and its monodromy*, English translation: Doklady Math., 2007, Vol 75 No. 1, 80–82.
30. *Extremal real algebraic geometry and A-discriminants*, with J. M. Rojas, K. Rusek and J. Shih, Moscow Mathematical Journal, Volume 7 (2007), Number 3, Special Issue on the occasion of Askold Khovanskii’s 60th birthday, 425–452.
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32. *Complete Intersections in Toric Ideals*, with E. Cattani and R. Curran, Proc. Amer. Math. Soc. 135 (2007), 329–335.
33. *Some results on inhomogeneous discriminants*, with M. Angélica Cueto, in: : Actas del XVI Coloquio Latinoamericano de Algebra (Colonia del Sacramento, Uruguay, agosto 2005), Walter Ferrer Santos, Gerardo González Sprinberg, Alvaro Rittatore, Andrea Solotar (editores), Biblioteca de la Revista Matemática Iberoamericana, 2007. ISBN: 978-84-611-7907-7.
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37. *Complete Intersections in Toric Ideals*, with E. Cattani and R. Curran: Proc. Amer. Math. Soc. **135** (2007), 329–335.
38. *An introduction to residues and resultants*, with E. Cattani, Chapter of the Book *Solving Polynomial Equations: Foundations, Algorithms, and Applications*. Algorithms and Computation in Mathematics 14, Springer-Verlag, 1–61, 2005.
39. *Bivariate hypergeometric D-modules*, with L. Matusevich and T. Sadykov, Advances in Mathematics, **Vol. 196**, Issue 1, 2005, 78–123.
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EDITION

1. Special Issue of the Journal of Symbolic Computation: Effective Methods in Algebraic Geometry (MEGA 2013), in progress, coedited with B. Mourrain and J. Draisma.

2. Algebraic and Combinatorial Aspects of Tropical Geometry, edited with E. Brugallé, M. A. Cueto, E. M. Feichtner and I. Itenberg, Contemporary Mathematics 589, AMS, 2013.
3. Special Issue of the Journal of Symbolic Computation, Effective Methods in Algebraic Geometry (MEGA 2011), coedited with S. di Rocco, E. Hubert and J. Schicho, Volume 51, April 2013 (114 pages).
4. Book *Residues and Duality for Projective Algebraic Varieties*, Ernst Kunz, with the assistance and contributions of David A. Cox and Alicia Dickenstein, University Lecture Series, Vol. 147, American Mathematical Society, 2008.
5. Algorithms in Algebraic Geometry, The IMA Volumes in Mathematics and its Applications, Vol. 146, 2008 (160 pages), Ed. Springer, with F.-O. Schreyer and A. Sommese.
6. Special Issue of the Journal of Symbolic Computation, Volume 42, Numbers 1-2: Effective Methods in Algebraic Geometry (MEGA 2005), 2007 (264 pages), coedited with P. Gianni and T. Recio.
7. Book *Solving Polynomial Equations: Foundations, Algorithms, and Applications*. Algorithms and Computation in Mathematics 14, Springer-Verlag, 2005 (425 pages), coedited with I. Emiris.

PUBLICATIONS RELATED TO MATHEMATICAL EDUCATION and OTHER

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2. *Matemática y Cs. Sociales*, CD 22, educ.ar (Ministry of Education, Argentina), available online: <http://coleccion.educ.ar/coleccion/CD22/creditos/index.html>.
3. *Pensar con matemática 4, 5 & 6* (Three books, Mathematical teaching for elementary school, Coordinator and coauthor), Ed. Estrada, Buenos Aires, 1999, 1999 and 2000.
4. *Matemax, Mathematics Everywhere* (Book, Mathematical teaching for elementary school), Coquena Grupo Editor, B. Aires, 1994. 2nd. Edition, Ed. Novedades Educativas, B. Aires, 2000.
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Project related to Math Education (by means of mathematical software producing beautiful images): <http://moebius.dm.uba.ar>