
BIBLIOGRAFÍA

- [BCMP98a] E. BRIALES, A. CAMPILLO, C. MARIJUÁN, and P. PISÓN. Combinatorics of syzygies for semigroup algebra. *Collect. Math.*, 49:239–256, 1998.
- [BCMP98b] E. BRIALES, A. CAMPILLO, C. MARIJUÁN, and P. PISÓN. Minimal systems of generators for ideals of semigroups. *J. of Pure and Applied Algebra*, 127:7–30, 1998.
- [BH97] W. BRUNS and J. HERZOG. Semigroup rings and simplicial complexes. *J. of Pure and Applied Algebra*, 122:185–208, 1997.
- [BLSR99] A.M. BIGATTI, R. LA SCALA, and L. ROBBIANO. Computing toric ideals. *J. Symbolic Computation*, 27:351–365, 1999.
- [BLVS⁺93] A. BJÖRNER, M. LAS VERGNAS, B. STURMFELS, N. WHITE, and G. ZIEGLER. *Oriented Matroids*, volume 46 of *Encyclopedia of Mathematics and its Applications*. Cambridge Press, 1993.
- [BM93] D. BAYER and D. MUMFORD. What can be computed in algebraic geometry? *Simposia Mathematica*, XXXIV:1–48, 1993.
- [BMPCVT99] E. BRIALES-MORALES, P. PISÓN-CASARES, and A. VIGNERON-TENORIO. The regularity of a toric variety. *Preprint de la Universidad de Sevilla*, 55, 1999.
- [BS87] D. BAYER and M. STILLMAN. A criterion for detecting m -regularity. *Inventiones mathematicae*, 87:1–11, 1987.

- [BS98] D. BAYER and B. STURMFELS. Cellular resolution of monomial modules. *Journal für die Reine und Angewandte Mathematik*, 502:123–140, 1998.
- [BW93] T. BECKER and V. WEISPFENNING. *Gröebner Bases. A Computational Approach to Commutative Algebra*. Springer-Verlag, 1993.
- [CD94] E. CONTEJEAN and H. DEVIE. An efficient incremental algorithm for solving systems of linear equations. *Information and Computation*, 113:143–172, 1994.
- [CF89] M. CLAUSEN and A. FORTENBACHER. Efficient solution of linear diophantine equations. *J. Symbolic Computation*, 8:201–216, 1989.
- [CG00] A. CAMPILLO and P. GIMÉNEZ. Syzygies of affine toric varieties. *Journal of Algebra*, 225(1):142–161, 2000.
- [CM91] A. CAMPILLO and C. MARIJUÁN. Higher relations for a numerical semigroup. *Sém. Théor. Nombres Bordeaux*, 3:249–260, 1991.
- [CoC] CoCoA. Sistema de cálculo simbólico. <http://cocoa.dima.unige.it>.
- [COH93] H. COHEN. *A Course in Computational Algebraic Number Theory*, volume 138 of *Graduate Texts in Mathematics*. Springer-Verlag, 1993.
- [CP] A. CAMPILLO and P. PISÓN. Toric mathematics from semigroup viewpoint. *Lect. Notes in Pure and Applied Mathematics, SAGAV, por aparecer*.
- [CT91] P. CONTI and C. TRAVERSO. Buchberger algorithm and integer programming. *Lecture Notes in Comput. Sci., Springer*, 539, 1991.

- [DBU95] F. DI BIASE and R. URBANKE. An algorithm to calculate the kernel of certain polynomial ring homomorphisms. *Experimental Mathematics*, 4(3):227–234, 1995.
- [DOM91] E. DOMENJOUR. Solving systems of linear diophantine equations: An algebraic approach. *Lecture Notes in Computer Science*, Springer-Verlag, 520:141–150, 1991.
- [EIS95] D. EISENBUD. *Introduction to Commutative Algebra with a View Towards Algebraic Geometry*, volume 150 of *Graduate Texts in Mathematics*. Springer, New York, 1995.
- [ES96] D. EISENBUD and B. STURMFELS. Binomial ideal. *Duke Math. J.*, 84(1):1–45, 1996.
- [GOR73] P. GORDAN. Ueber die auflösung linearer gleichungen mit reellen coefficienten. *Mathematische Annalen*, 6:23–28, 1873.
- [HER70] J. HERZOG. Generators of relations of abelian semigroups and semigroups ring. *Manuscripta Math.*, 3:175–193, 1970.
- [HIL90] D. HILBERT. Ueber die theorie der algebraischen formen. *Math. Ann.*, 36:473–534, 1890.
- [HOC95] M. HOCHSTER. Cohen-macaulay rings, combinatorics, and simplicial complexes. In BR. McDonald, R.A. Morris editors, *Ring Theory II, LNPAM*, Marcel-Dekker, 26:171–223, 1995.
- [HS] S. HOSTEN and J. SHAPIRO. Primary decomposition of lattice basis ideals. *J. Symbolic Computation*, por aparecer.
- [HS95] S. HOSTEN and B. STURMFELS. Grin: An implementation of gröbner bases for integer programming. In E. Balas and J. Clausen editors, *Integer Programming and Combina-*

- torial Optimization, LNCS 920, Springer-Verlag, 920:267–276, 1995.*
- [HUE78] G. HUET. An algorithm to generate the basis of solutions to homogeneous linear diophantine equations. *Inform. Process. Lett.*, 7(3), 1978.
- [LAM87] J.L. LAMBERT. Une borne pour les gènerateurs des solutions entières positives d'une èquation diophantienne linèaire. *C. R. Acad. Sci. Paris.*, 305:39–40, 1987.
- [PCVT96] P. PISÓN CASARES and A. VIGNERON TENORIO. Ideales de semigrupos con torsión: Cálculos mediante maplev. *Actas del EACA'96, Sevilla (Spain)*, 1996.
- [PCVT98] P. PISÓN-CASARES and A. VIGNERON-TENORIO. \mathbb{N} -solutions to linear systems over \mathbb{Z} . *Preprint of University of Sevilla*, 43, 1998.
- [PCVTer] P. PISÓN-CASARES and A. VIGNERON-TENORIO. First syzygies of toric varieties and diophantine equations in congruence. *Communications in Algebra*, Por aparecer.
- [POT91] L. POTTIER. Minimal solutions of linear diophantine systems: bounds and algorithms. *Proceedings of the Fourth International Conference on Rewriting Techniques and Applications, Italy*, pages 162–173, 1991.
- [PS98] I. PEEVA and B. STURMFELS. Syzygies of codimension 2 lattice ideals. *Math. Z.*, 229:163–194, 1998.
- [RGS98] J. ROSALES and P. GARCÍA-SÁNCHEZ. Presentaciones de monoides cancelativos. *Proceedings of EACA'98, Guadalajara (Spain)*, pages 130–141, 1998.
- [ROS91] J.C. ROSALES. *Semigrupos numéricos*. PhD thesis, Universidad de Granada, 1991.

- [ROS95] J.C. ROSALES. On finitely generated submonoids of \mathbb{N}^k . *Semigroup Forum*, 50:251–262, 1995.
- [RUB96] J.C. ROSALES and J.M. URBANO-BLANCO. A deterministic algorithm to decide if a finitely presented abelian monoid is cancellative. *Communications in Algebra*, 24(13):4217–4224, 1996.
- [SCH96] A. SCHRIJVER. *Theory of Linear and Integer Programming*. Wiley-Interscience, 1996.
- [STA96] R. STANLEY. *Combinatorics and commutative algebra 2nd ed*, volume 41 of *Progress in Mathematics*. Boston Basel Berlin, Birkhäuser, 1996.
- [STU91] B. STURMFELS. Gröbner bases of toric varieties. *Tôhoku Math. J.*, 43:249–261, 1991.
- [STU95] B. STURMFELS. *Gröbner Basis and Convex Polytopes*, volume 8 of *University Lecture Series*. American Mathematical Society, Providence, RI, 1995.
- [TOM97] A.P. TOMAS. *On Solving Linear Diophantine Constraints*. PhD thesis, Facultad de Ciencias, Universidad de Oporto, 1997.
- [VAS98] W.V. VASCONCELOS. *Computational Methods in Commutative Algebra and Algebraic Geometry*, volume 2 of *Algorithms and Computations in Mathematics*. Springer, 1998.
- [VT99] A. VIGNERON-TENORIO. Semigroup ideals and linear diophantine equations. *Linear Algebra and its Applications*, 295:133–144, 1999.

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