

References

- [1] M. Amasaki. Application of the generalized Weierstrass preparation theorem to the study of homogeneous ideals. *Trans. Amer. Math. Soc.*, 317:1–43, 1990.
- [2] M. Amasaki. Generators of graded modules associated with linear filter-regular sequences. *J. Pure Appl. Algebra*, 114:1–23, 1996.
- [3] M. Amasaki. Generic Gröbner bases and Weierstrass bases of homogeneous submodules of graded free modules. *J. Pure Appl. Algebra*, 152:3–16, 2000.
- [4] J. Apel. A Gröbner approach to involutive bases. *J. Symb. Comp.*, 19:441–457, 1995.
- [5] J. Apel. The computation of Gröbner bases using an alternative algorithm. In M. Bronstein, J. Grabmeier, and V. Weispfenning, editors, *Symbolic Rewriting Techniques*, Progress in Computer Science and Applied Logic 15, pages 35–45. Birkhäuser, Basel, 1998.
- [6] J. Apel. Theory of involutive divisions and an application to Hilbert function computations. *J. Symb. Comp.*, 25:683–704, 1998.
- [7] J. Apel. On a conjecture of R.P. Stanley. Part I – monomial ideals. *J. Algebr. Comb.*, 17:39–56, 2003.
- [8] J. Apel. On a conjecture of R.P. Stanley. Part II – quotients modulo monomial ideals. *J. Algebr. Comb.*, 17:57–74, 2003.
- [9] D. Bayer and M. Stillman. A criterion for detecting m -regularity. *Invent. Math.*, 87:1–11, 1987.
- [10] I. Bermejo and P. Gimenez. Saturation and Castelnuovo-Mumford regularity. *J. Alg.*, 303:592–617, 2006.
- [11] D. Eisenbud and S. Goto. Linear free resolutions and minimal multiplicity. *J. Alg.*, 88:89–133, 1984.
- [12] S. Eliahou and M. Kervaire. Minimal resolutions of some monomial ideals. *J. Alg.*, 129:1–25, 1990.
- [13] V.P. Gerdt. On the relation between Pommaret and Janet bases. In V.G. Ghanza, E.W. Mayr, and E.V. Vorozhtsov, editors, *Computer Algebra in Scientific Computing — CASC 2000*, pages 167–182. Springer-Verlag, Berlin, 2000.
- [14] V.P. Gerdt and Yu.A. Blinkov. Involutive bases of polynomial ideals. *Math. Comp. Simul.*, 45:519–542, 1998.
- [15] V.P. Gerdt and Yu.A. Blinkov. Minimal involutive bases. *Math. Comp. Simul.*, 45:543–560, 1998.

- [16] V.P. Gerdt, Yu.A. Blinkov, and D.A. Yanovich. Construction of Janet bases I: Monomial bases. In Ghanza et al. [18], pages 233–247.
- [17] V.P. Gerdt, Yu.A. Blinkov, and D.A. Yanovich. Construction of Janet bases II: Polynomial bases. In Ghanza et al. [18], pages 249–263.
- [18] V.G. Ghanza, E.W. Mayr, and E.V. Vorozhtsov, editors. *Computer Algebra in Scientific Computing — CASC 2001*. Springer-Verlag, Berlin, 2001.
- [19] V.W. Guillemin and S. Sternberg. An algebraic model of transitive differential geometry. *Bull. Amer. Math. Soc.*, 70:16–47, 1964. (With a letter of Serre as appendix).
- [20] A. Hashemi. Polynomial-time algorithm for Hilbert series of Borel type ideals. *Albanian J. Math.*, 1:145–155, 2007.
- [21] A. Hashemi. Efficient algorithm for computing Noether normalization. In D. Kapur, editor, *Computer Mathematics (ASCM 2007)*, Lecture Notes in Computer Science 5081, pages 97–107. Springer-Verlag, Berlin, 2008.
- [22] A. Hashemi. Strong Noether position and stabilized regularities. *Comm. Alg.*, 38:515–533, 2010.
- [23] M. Hausdorf, M. Sahbi, and W.M. Seiler. δ - and quasi-regularity for polynomial ideals. In J. Calmet, W.M. Seiler, and R.W. Tucker, editors, *Global Integrability of Field Theories*, pages 179–200. Universitätsverlag Karlsruhe, Karlsruhe, 2006.
- [24] H. Hironaka. Idealistic exponents of singularity. In J.-I. Igusa, editor, *Algebraic Geometry – The Johns Hopkins Centennial Lectures*, pages 52–125. Johns Hopkins University Press, Baltimore, 1977.
- [25] M. Janet. Sur les systèmes d'équations aux dérivées partielles. *J. Math. Pure Appl.*, 3:65–151, 1920.
- [26] M. Janet. *Leçons sur les Systèmes d'Équations aux Dérivées Partielles*. Cahiers Scientifiques, Fascicule IV. Gauthier-Villars, Paris, 1929.
- [27] H. Kredel and V. Weispfenning. Computing dimension and independent sets for polynomial ideals. *J. Symb. Comp.*, 6:231–247, 1988.
- [28] D. Mall. On the relation between Gröbner and Pommaret bases. *Appl. Alg. Eng. Comm. Comp.*, 9:117–123, 1998.
- [29] W. Plesken and D. Robertz. Janet's approach to presentations and resolutions for polynomials and linear PDEs. *Arch. Math.*, 84:22–37, 2005.
- [30] D. Rees. A basis theorem for polynomial modules. *Proc. Cambridge Phil. Soc.*, 52:12–16, 1956.

- [31] C. Riquier. *Les Systèmes d'Équations aux Dérivées Partielles*. Gauthier-Villars, Paris, 1910.
- [32] D. Robertz. Noether normalization guided by monomial cone decompositions. *J. Symb. Comp.*, 44:1359–1373, 2009.
- [33] W.M. Seiler. Spencer cohomology, differential equations, and Pommaret bases. In M. Rosenkranz and D. Wang, editors, *Gröbner Bases in Symbolic Analysis*, Radon Series on Computation and Applied Mathematics 2, pages 171–219. Walter de Gruyter, Berlin, 2007.
- [34] W.M. Seiler. A combinatorial approach to involution and δ -regularity I: Involutive bases in polynomial algebras of solvable type. *Appl. Alg. Eng. Comm. Comp.*, 20:207–259, 2009.
- [35] W.M. Seiler. A combinatorial approach to involution and δ -regularity II: Structure analysis of polynomial modules with Pommaret bases. *Appl. Alg. Eng. Comm. Comp.*, 20:261–338, 2009.
- [36] W.M. Seiler. *Involution — The Formal Theory of Differential Equations and its Applications in Computer Algebra*. Algorithms and Computation in Mathematics 24. Springer-Verlag, Berlin, 2009.
- [37] W.M. Seiler. Effective genericity, δ -regularity and strong Noether position. *Comm. Alg.*, to appear, 2011.
- [38] R.P. Stanley. Hilbert functions of graded algebras. *Adv. Math.*, 28:57–83, 1978.
- [39] R.P. Stanley. Linear diophantine equations and local cohomology. *Invent. Math.*, 68:175–193, 1982.
- [40] B. Sturmfels and N. White. Computing combinatorial decompositions of rings. *Combinatorica*, 11:275–293, 1991.
- [41] N.G. Trung. Evaluations of initial ideals and Castelnuovo–Mumford regularity. *Proc. Amer. Math. Soc.*, 130:1265–1274, 2002.
- [42] W.T. Wu. On the construction of Gröbner basis of a polynomial ideal based on Riquier-Janet theory. *Syst. Sci. Math. Sci.*, 4:194–207, 1991.