Algebraic Geometry Foundations

14Axx

- [1] E. Ballico, E. Gasparim, and T. Kölppe, Vector bundles near negative curves: Moduli and local Euler characteristic, Comm. Algebra **37** (2009), no. 8, 2688–2713.
- [2] Pavel Etingof and Victor Ginzburg, Noncommutative complete intersections and matrix integrals, Pure Appl. Math. Q. 3 (2007), no. 1, part 3, 107–151. MR MR2330156 (2008b:16044)

 Stefan Schröer, Singularities appearing on generic fibers of morphisms between smooth schemes, Michigan Math. J. 56 (2008), no. 1, 55–76. MR MR2433656 (2009i:14003)

Cycles and Subschemes $_{14Cxx}$

- [1] Timothy G. Abbott, Kiran S. Kedlaya, and David Roe, *Bounding Picard numbers of* surfaces using p-adic cohomology, 2006.
- [2] Anita Buckley and Balázs Szendröi, Orbifold Riemann-Roch for threefolds with an application to Calabi-Yau geometry, J. Algebraic Geom. 14 (2005), no. 4, 601–622. MR MR2147356 (2006b:14013)
- [3] Ulrich Derenthal, On the Cox ring of del Pezzo surfaces, 2006.
- [4] Pierre Guillot, The Chow rings of G_2 and $Spin(\gamma)$, J. Reine Angew. Math. **604** (2007), 137–158. MR MR2320315
- [5] F. Hess, Computing Riemann-Roch spaces in algebraic function fields and related topics, J. Symbolic Comput. 33 (2002), no. 4, 425–445. MR MR1890579 (2003j:14032)
- [6] David Joyner and Amy Ksir, Modular representations on some Riemann-Roch spaces of modular curves X(N), Computational Aspects of Algebraic Curves, Lecture Notes Ser. Comput., vol. 13, World Sci. Publ., Hackensack, NJ, 2005, pp. 163–205. MR MR2182040 (2006k:11112)
- [7] Roger Oyono, Non-hyperelliptic modular Jacobians of dimension 3, Math. Comp. 78 (2009), no. 266, 1173–1191. MR MR2476578
- [8] Magda Sebestean, Correspondance de Mckay et Equivalences Derivees, Ph.D. thesis, Paris VII, 2005, p. 169.
- [9] Kaori Suzuki, On Fano indices of Q-Fano 3-folds, Manuscripta Math. 114 (2004), no. 2, 229–246. MR MR2067795 (2005c:14046)
- [10] Ronald van Luijk, K3 surfaces with Picard number one and infinitely many rational points, Algebra and Number Theory 1 (2007), no. 1, 1–15.

Families and Fibrations 14Dxx

- Anthony Henderson and Eric Rains, The cohomology of real De Concini-Procesi models of Coxeter type, Int. Math. Res. Not. IMRN (2008), no. 7, Art. ID rnn001, 29. MR MR2428302
- Benjamin Howard, John Millson, Andrew Snowden, and Ravi Vakil, The equations for the moduli space of n points on the line, Duke Math. J. 146 (2009), no. 2, 175–226.
 MR MR2477759 (2009m:14070)
- [3] Alan G.B. Lauder, Degenerations and limit Frobenius structures in rigid cohomology, 2009.
- [4] Claus Lehr and Michel Matignon, Wild monodromy and automorphisms of curves, Duke Math. J. 135 (2006), no. 3, 569–586. MR MR2272976 (2008a:14039)
- [5] Adrien Poteaux, Computing monodromy groups defined by plane algebraic curves, SNC'07, ACM, New York, 2007, pp. 36–45. MR MR2404912
- [6] Carlos Rito, On surfaces with $p_g = q = 1$ and non-ruled bicanonial involution, Ann. Sc. Norm. Super. Pisa Cl. Sci. (5) **6** (2007), no. 1, 81–102. MR MR2341516
- [7] Kira Samol and Duco van Straten, Frobenius polynomials for Calabi-Yau equations, Commun. Number Theory Phys. 2 (2008), no. 3, 537–561. MR MR2482942
- [8] James P Smith, *Picard-Fuchs differential equations for families of K3 surfaces*, Ph D thesis, University of Warwick, 2007.
- [9] H. A. Verrill, Sums of squares of binomial coefficients, with applications to Picard-Fuchs equations, 2004.
- [10] Bianca Viray, A family of varieties with exactly one pointless rational fiber, 2009.

Birational Geometry 14Exx

- [1] I. C. Bauer, F. Catanese, and F. Grunewald, The classification of surfaces with $p_g = q = 0$ isogenous to a product of curves, Pure Appl. Math. Q. 4 (2008), no. 2, part 1, 547–586. MR MR2400886 (2009a:14046)
- [2] Christian Böhning, The rationality of the moduli space of curves of genus 3 after P. Katsylo, 2008.
- [3] Gavin Brown and Daniel Ryder, *Elliptic fibrations on cubic surfaces*, J. Pure Appl. Algebra **214** (2010), no. 4, 410–421. MR MR2558749
- [4] Laurent Busé and Jean-Pierre Jouanolou, On the closed image of a rational map and the implicitization problem, J. Algebra 265 (2003), no. 1, 312–357. MR MR1984914 (2004e:14024)
- [5] Tetsuo Nakano, On the moduli space of pointed algebraic curves of low genus. II. Rationality, Tokyo J. Math. 31 (2008), no. 1, 147–160. MR MR2426799
- [6] Tetsuo Nakano and Hiroyasu Nishikubo, On some maximal Galois coverings over affine and projective planes. II, Tokyo J. Math. 23 (2000), no. 2, 295–310. MR MR1806466 (2002a:14014)
- [7] Stavros Argyrios Papadakis, Type II unprojection, J. Algebraic Geom. 15 (2006), no. 3, 399–414. MR MR2219843
- [8] Miles Reid, Graded rings and birational geometry, 2000.

Homology and Cohomology Theory $_{14Fxx}$

- [1] Timothy G. Abbott, Kiran S. Kedlaya, and David Roe, *Bounding Picard numbers of surfaces using p-adic cohomology*, 2006.
- Martin Bright, Brauer groups of diagonal quartic surfaces, J. Symbolic Comput. 41 (2006), no. 5, 544–558. MR MR2209163
- [3] Michael Dettweiler and Stefan Reiter, On exceptional rigid local systems, 2006.
- [4] Anthony Henderson and Eric Rains, The cohomology of real De Concini-Procesi models of Coxeter type, Int. Math. Res. Not. IMRN (2008), no. 7, Art. ID rnn001, 29. MR MR2428302
- Kiran S. Kedlaya, Computing zeta functions via p-adic cohomology, Algorithmic Number Theory, Lecture Notes in Comput. Sci., vol. 3076, Springer, Berlin, 2004, pp. 1–17. MR MR2137340 (2006a:14033)
- [6] Andrew Kresch and Yuri Tschinkel, On the arithmetic of del Pezzo surfaces of degree 2, Proc. London Math. Soc. (3) 89 (2004), no. 3, 545–569. MR MR2107007 (2005h:14060)
- [7] _____, Effectivity of Brauer-Manin obstructions, Adv. Math. 218 (2008), no. 1, 1–27.
 MR MR2409407
- [8] G. I. Lehrer, The cohomology of the regular semisimple variety, J. Algebra 199 (1998), no. 2, 666–689. MR MR1489931 (98k:20080)
- Stefan Schröer, Singularities appearing on generic fibers of morphisms between smooth schemes, Michigan Math. J. 56 (2008), no. 1, 55–76. MR MR2433656 (2009i:14003)

Arithmetic and Diophantine Geometry 14Gxx

- Matthew H. Baker, Enrique González-Jiménez, Josep González, and Bjorn Poonen, *Finiteness results for modular curves of genus at least 2*, Amer. J. Math. **127** (2005), no. 6, 1325–1387. MR MR2183527
- [2] Edoardo Ballico, Antonio Cossidente, and Alessandro Siciliano, External flats to varieties in symmetric product spaces over finite fields, Finite Fields Appl. 9 (2003), no. 3, 300–309. MR MR1983050 (2004c:14041)
- [3] Tatiana Bandman, Gert-Martin Greuel, Fritz Grunewald, Boris Kunyavskiĭ, Gerhard Pfister, and Eugene Plotkin, *Identities for finite solvable groups and equations in finite simple groups*, Compos. Math. **142** (2006), no. 3, 734–764. MR MR2231200 (2007d:20027)
- [4] Arthur Baragar and Ronald van Luijk, K3 surfaces with Picard number three and canonical vector heights, Math. Comp. 76 (2007), no. 259, 1493–1498 (electronic). MR MR2299785
- [5] M. Borovoi, J.-L. Colliot-Thélène, and A. N. Skorobogatov, The elementary obstruction and homogeneous spaces, Duke Math. J. 141 (2008), no. 2, 321–364. MR MR2376817
- [6] Nigel Boston, Reducing the Fontaine-Mazur conjecture to group theory, Progress in Galois theory, Dev. Math., vol. 12, Springer, New York, 2005, pp. 39–50. MR MR2148459
- [7] Kristian Brander, An optimal unramified tower of function fields, Algebraic geometry and its applications, Ser. Number Theory Appl., vol. 5, World Sci. Publ., Hackensack, NJ, 2008, pp. 351–365. MR MR2484064 (2010b:14051)
- [8] Friederike Brezing and Annegret Weng, Elliptic curves suitable for pairing based cryptography, Des. Codes Cryptogr. 37 (2005), no. 1, 133–141. MR MR2165045
- [9] Ezra Brown, Bruce T. Myers, and Jerome A. Solinas, *Hyperelliptic curves with compact parameters*, Des. Codes Cryptogr. 36 (2005), no. 3, 245–261. MR MR2162578

- [10] Nils Bruin, Visualising Sha[2] in abelian surfaces, Math. Comp. 73 (2004), no. 247, 1459–1476 (electronic). MR MR2047096 (2005c:11067)
- [11] Jan H. Bruinier and Tonghai Yang, CM values of automorphic Green functions on orthogonal groups over totally real fields, 2010.
- [12] Patrick Corn, The Brauer-Manin obstruction on del Pezzo surfaces of degree 2, Proc.
 Lond. Math. Soc. (3) 95 (2007), no. 3, 735–777. MR MR2368282 (2009a:14027)
- [13] Patrick Corn, Tate-Shafarevich groups and K3 surfaces, Math. Comp. To appear (2007).
- [14] R. de la Bret'che and T.D. Browning, Manin's conjecture for quartic del Pezzo surfaces with a conic fibration, 2008.
- [15] Jan Denef and Frederik Vercauteren, An extension of Kedlaya's algorithm to Artin-Schreier curves in characteristic 2, Algorithmic Number Theory (Sydney, 2002), Lecture Notes in Comput. Sci., vol. 2369, Springer, Berlin, 2002, pp. 308–323. MR MR2041093 (2005d:11088)
- [16] Xander Faber and Benjamin Hutz, On the number of rational iterated pre-images of the origin under quadratic dynamical systems, 2008.
- [17] Xander Faber, Benjamin Hutz, Patrick Ingram, Rafe Jones, Michelle Manes, Thomas J. Tucker, and Michael E. Zieve, Uniform bounds on pre-images under quadratic dynamical systems, Math. Res. Lett. 16 (2009), no. 1, 87–101. MR MR2480563
- [18] Tom Fisher, A new approach to minimising binary quartics and ternary cubics, Math. Res. Lett. 14 (2007), no. 4, 597–613. MR MR2335986 (2008k:11058)
- [19] _____, Finding rational points on elliptic curves using 6-descent and 12-descent, J. Algebra **320** (2008), no. 2, 853–884. MR MR2422319
- [20] E. V. Flynn, The Hasse principle and the Brauer-Manin obstruction for curves, Manuscripta Math. 115 (2004), no. 4, 437–466. MR MR2103661 (2005j:11047)
- [21] David Freeman and Kristin Lauter, Computing endomorphism rings of Jacobians of genus 2 curves over finite fields, Algebraic geometry and its applications, Ser. Number Theory Appl., vol. 5, World Sci. Publ., Hackensack, NJ, 2008, pp. 29–66. MR MR2484047

- [22] Steven D. Galbraith, Weil descent of Jacobians, Discrete Appl. Math. 128 (2003), no. 1, 165–180, International Workshop on Coding and Cryptography (WCC 2001) (Paris). MR MR1991424 (2004m:14046)
- [23] Steven D. Galbraith and Xibin Lin, Computing pairings using x-coordinates only, Des. Codes Cryptogr. 50 (2009), no. 3, 305–324. MR MR2480678
- [24] Ralf Gerkmann, Relative rigid cohomology and deformation of hypersurfaces, Int. Math. Res. Pap. IMRP (2007), no. 1, Art. ID rpm003, 67. MR MR2334009
- [25] Josep González and Victor Rotger, Non-elliptic Shimura curves of genus one, J. Math. Soc. Japan 58 (2006), no. 4, 927–948. MR MR2276174 (2007k:11093)
- [26] Cem Güneri, Henning Stichtenoth, and Ihsan Taşkın, Further improvements on the designed minimum distance of algebraic geometry codes, J. Pure Appl. Algebra 213 (2009), no. 1, 87–97. MR MR2462987
- [27] Johan P. Hansen, Toric varieties, Hirzebruch surfaces and error-correcting codes, Appl. Algebra Engrg. Comm. Comput. 13 (2002), no. 4, 289–300. MR MR1953195 (2003j:14029)
- [28] David Harari and Tamás Szamuely, Galois sections for abelianized fundamental groups, Math. Ann. 344 (2009), no. 4, 779–800, With an appendix by E. V. Flynn. MR MR2507624
- [29] Florian Hess, A note on the Tate pairing of curves over finite fields, Arch. Math.
 (Basel) 82 (2004), no. 1, 28–32. MR MR2034467 (2004m:14040)
- [30] Christopher Holden, Mod 4 Galois representations and elliptic curves, Proc. Amer. Math. Soc. 136 (2008), no. 1, 31–39 (electronic). MR MR2350385
- [31] David Holmes, Canonical heights on hyperelliptic curves and effective Q-factoriality for arithmetic surfaces, 2010. MR 14G40; 11G30, 11G50, 37P30
- [32] E. W. Howe and K. E. Lauter, Improved upper bounds for the number of points on curves over finite fields, Ann. Inst. Fourier (Grenoble) 53 (2003), no. 6, 1677–1737.
 MR MR2038778 (2005c:11079)
- [33] Everett W. Howe, Supersingular genus-2 curves over fields of characteristic 3, Computational arithmetic geometry, Contemp. Math., vol. 463, Amer. Math. Soc., Providence, RI, 2008, pp. 49–69. MR MR2459989 (2009j:11103)

- [34] Everett W. Howe, Kristin E. Lauter, and Jaap Top, Pointless curves of genus three and four, Arithmetic, Geometry and Coding Theory (AGCT 2003), Sémin. Congr., vol. 11, Soc. Math. France, Paris, 2005, pp. 125–141. MR MR2182840 (2006g:11125)
- [35] Nathan Owen Ilten and Hendrik Süß, AG codes from polyhedral divisors, 2008.
- [36] Farzali A. Izadi and V. Kumar Murty, Counting points on an abelian variety over a finite field, Progress in Cryptology—Indocrypt 2003, Lecture Notes in Comput. Sci., vol. 2904, Springer, Berlin, 2003, pp. 323–333. MR MR2092391 (2005f:11127)
- [37] Rafe Jones and Jeremy Rouse, Iterated endomorphisms of abelian algebraic groups, Proc. London Math. Soc. 100 (2010), 763–794.
- [38] Samuel Kadziela, Rigid analytic uniformization of curves and the study of isogenies, Acta Appl. Math. 99 (2007), no. 2, 185–204. MR MR2350208
- [39] Kiran S. Kedlaya, Computing zeta functions via p-adic cohomology, Algorithmic Number Theory, Lecture Notes in Comput. Sci., vol. 3076, Springer, Berlin, 2004, pp. 1–17. MR MR2137340 (2006a:14033)
- [40] Kenji Koike and Annegret Weng, Construction of CM Picard curves, Math. Comp. 74 (2005), no. 249, 499–518 (electronic). MR MR2085904 (2005g:11103)
- [41] Aristides Kontogeorgis and Victor Rotger, On abelian automorphism groups of Mumford curves and applications to Shimura curves, 2006.
- [42] Andrew Kresch and Yuri Tschinkel, Integral points on punctured abelian surfaces, Algorithmic Number Theory (Sydney, 2002), Lecture Notes in Comput. Sci., vol. 2369, Springer, Berlin, 2002, pp. 198–204. MR MR2041084 (2005d:11081)
- [43] _____, On the arithmetic of del Pezzo surfaces of degree 2, Proc. London Math. Soc.
 (3) 89 (2004), no. 3, 545–569. MR MR2107007 (2005h:14060)
- [44] _____, Effectivity of Brauer-Manin obstructions, Adv. Math. 218 (2008), no. 1, 1–27. MR MR2409407
- [45] L. Kulesz, G. Matera, and É. Schost, Uniform bounds on the number of rational points of a family of curves of genus 2, J. Number Theory 108 (2004), no. 2, 241–267. MR MR2098638 (2005h:11130)

- [46] Gilles Lachaud and Christophe Ritzenthaler, On a conjecture of Serre on abelian threefolds, Algebraic Geometry and its applications, Proceedings of the First SAGA conference, Papeete, France 2007, 2008, pp. 1–28.
- [47] Alan G. B. Lauder, Counting solutions to equations in many variables over finite fields, Found. Comput. Math. 4 (2004), no. 3, 221–267. MR MR2078663 (2005f:14048)
- [48] _____, A recursive method for computing zeta functions of varieties, LMS J. Comput. Math. 9 (2006), 222–269 (electronic). MR MR2261044 (2007g:14022)
- [49] F. Leprévost, M. Pohst, and A. Schöpp, Rational torsion of J₀(N) for hyperelliptic modular curves and families of Jacobians of genus 2 and genus 3 curves with a rational point of order 5, 7 or 10, Abh. Math. Sem. Univ. Hamburg 74 (2004), 193–203. MR MR2112831 (2005h:11131)
- [50] John Little and Hal Schenck, Toric surface codes and Minkowski sums, SIAM J. Discrete Math. 20 (2006), no. 4, 999–1014 (electronic). MR MR2272243
- [51] Adam Logan, The Brauer-Manin obstruction on del Pezzo surfaces of degree 2 branched along a plane section of a Kummer surface, Math. Proc. Cambridge Philos. Soc. 144 (2008), no. 3, 603–622. MR MR2418706
- [52] Michelle Manes, Q-rational cycles for degree-2 rational maps having an automorphism, Proc. Lond. Math. Soc. (3) 96 (2008), no. 3, 669–696. MR MR2407816 (2009a:14029)
- [53] David Savitt, The maximum number of points on a curve of genus 4 over F₈ is 25, Canad. J. Math. 55 (2003), no. 2, 331–352, With an appendix by Kristin Lauter. MR MR1969795 (2004i:11059)
- [54] Eric Schost, Computing parametric geometric resolutions, Appl. Algebra Engrg. Comm. Comput. 13 (2003), no. 5, 349–393. MR MR1959170 (2003k:13035)
- [55] R. Shaw, The polynomial degrees of Grassmann and Segre varieties over GF(2), Discrete Math. 308 (2008), no. 5-6, 872–879. MR MR2378937
- [56] Edlyn Teske, An elliptic curve trapdoor system (extended abstract), High Primes and Misdemeanours: Lectures in Honour of the 60th Birthday of Hugh Cowie Williams, Fields Inst. Commun., vol. 41, Amer. Math. Soc., Providence, RI, 2004, pp. 341–352. MR MR2076258

- [57] Ronald van Luijk, Quartic K3 surfaces without nontrivial automorphisms, Math. Res. Lett. 13 (2006), no. 2-3, 423–439. MR MR2231128 (2007b:14084)
- [58] Ronald van Luijk, Cubic points on cubic curves and the Brauer-Manin obstruction on K3 surfaces, 2007.
- [59] Bianca Viray, A family of varieties with exactly one pointless rational fiber, 2009.
- [60] John Voight, Shimura curves of genus at most two, Math. Comp. 78 (2009), no. 266, 1155–1172. MR MR2476577
- [61] Gabor Wiese, Dihedral Galois representations and Katz modular forms, Doc. Math. 9 (2004), 123–133 (electronic). MR MR2054983 (2005c:11065)

Curves

14Hxx

- S. Arita, S. Miura, and T. Sekiguchi, An addition algorithm on the Jacobian varieties of curves, J. Ramanujan Math. Soc. 19 (2004), no. 4, 235–251. MR MR2125500 (2005m:14114)
- [2] Philip Boalch, Higher genus icosahedral Painlevé curves, Funk. Ekvac. (Kobe), 50 (2007), 19–32.
- [3] Irene I. Bouw and Stefan Wewers, Indigenous bundles with nilpotent p-curvature, Int. Math. Res. Not. (2006), Art. ID 89254, 37. MR MR2219211
- [4] Louis Hugo Brewis, Liftable D_4 -covers, Manuscripta Math. **126** (2008), no. 3, 293–313. MR MR2411230
- [5] Nils Bruin, The arithmetic of Prym varieties in genus 3, Compos. Math. 144 (2008), no. 2, 317–338. MR MR2406115
- [6] Nils Bruin and Kevin Doerksen, The arithmetic of genus two curves with (4,4)-split Jacobians, arXiv:0902.3480v2 (2010).
- [7] E. Bujalance, Marston Conder, J. M. Gamboa, G. Gromadzki, and M. Izquierdo, Double coverings of Klein surfaces by a given Riemann surface, J. Pure Appl. Algebra 169 (2002), no. 2-3, 137–151. MR MR1897339 (2003e:14023)
- [8] Emilio Bujalance, F. J. Cirre, and Marston Conder, On extendability of group actions on compact Riemann surfaces, Trans. Amer. Math. Soc. 355 (2003), no. 4, 1537–1557 (electronic). MR MR1946404 (2003k:20079)
- [9] Gabriel Cardona, Representations of G_k -groups and twists of the genus two curve $y^2 = x^5 x$, J. Algebra **303** (2006), no. 2, 707–721. MR MR2255131 (2007e:14049)
- [10] Wouter Castryck and John Voight, Nondegenerate curves of low genus over small finite fields, Arithmetic, Geometry, Cryptography and Coding Theory, Contemporary Mathematics, vol. 521, AMS, Providence, R.I., 2009, pp. 21–28.
- [11] J.-M. Couveignes, Linearizing torsion classes in the Picard group of algebraic curves over finite fields, J. Algebra 321 (2009), no. 8, 2085–2118. MR MR2501511

- [12] J. E. Cremona, T. A. Fisher, C. O'Neil, D. Simon, and M. Stoll, *Explicit n-descent on elliptic curves*, II: Geometry, J. reine angew. Math **2009** (2009), no. 632, 63–84.
- [13] Laurent Ducrohet, The Frobenius action on rank 2 vector bundles over curves in small genus and small characteristic, Ann. Inst. Fourier (Grenoble) 59 (2009), no. 4, 1641–1669. MR MR2566970
- [14] Tom Fisher, Genus one curves defined by Pfaffians, 2004.
- [15] _____, Testing equivalence of ternary cubics, Algorithmic Number Theory (Berlin, 2006), Lecture Notes in Comput. Sci., vol. 4076, Springer, Berlin, 2006, pp. 333–345.
 MR MR2282934 (2007j:11074)
- [16] _____, The invariants of a genus one curve, Proc. Lond. Math. Soc. (3) 97 (2008), no. 3, 753–782. MR MR2448246
- [17] Stéphane Flon, Roger Oyono, and Christophe Ritzenthaler, Fast addition on nonhyperelliptic genus 3 curves, Algebraic geometry and its applications, Ser. Number Theory Appl., vol. 5, World Sci. Publ., Hackensack, NJ, 2008, pp. 1–28. MR MR2484046
- P. Gaudry, T. Houtmann, D. Kohel, C. Ritzenthaler, and A. Weng, *The 2-adic CM method for genus 2 curves with application to cryptography*, Advances in cryptology—ASIACRYPT 2006, Lecture Notes in Comput. Sci., vol. 4284, Springer, Berlin, 2006, pp. 114–129. MR MR2444631 (2009j:94110)
- [19] P. Gaudry and E. Schost, On the invariants of the quotients of the Jacobian of a curve of genus 2, Applied Algebra, Algebraic Algorithms and Error-correcting Codes (Melbourne, 2001), Lecture Notes in Comput. Sci., vol. 2227, Springer, Berlin, 2001, pp. 373–386. MR MR1913484 (2003e:14020)
- [20] Martine Girard, The group of Weierstrass points of a plane quartic with at least eight hyperflexes, Math. Comp. 75 (2006), no. 255, 1561–1583 (electronic). MR MR2219046 (2007b:14072)
- [21] Martine Girard and David R. Kohel, Classification of genus 3 curves in special strata of the moduli space, Algorithmic Number Theory (Berlin, 2006), Lecture Notes in Comput. Sci., vol. 4076, Springer, Berlin, 2006, pp. 346–360. MR MR2282935
- [22] Edray Herber Goins and Davin Maddox, *Heron triangles via elliptic curves*, Rocky Mountain J. Math. **36** (2006), no. 5, 1511–1526. MR MR2285297

- [23] Enrique González-Jiménez and Roger Oyono, Non-hyperelliptic modular curves of genus 3, J. Number Theory 130 (2010), no. 4, 862–878. MR 2600407
- [24] Jordi Guàrdia, Jacobian Nullwerte, periods and symmetric equations for hyperelliptic curves, Ann. Inst. Fourier (Grenoble) 57 (2007), no. 4, 1253–1283. MR MR2339331 (2008g:11105)
- [25] Robert Guralnick and John Shareshian, Symmetric and alternating groups as monodromy groups of Riemann surfaces. I. Generic covers and covers with many branch points, Mem. Amer. Math. Soc. 189 (2007), no. 886, vi+128, With an appendix by Guralnick and R. Stafford. MR MR2343794
- [26] Emmanuel Hallouin, Study and computation of a Hurwitz space and totally real $PSL_2(F_8)$ -extensions of Q, J. Algebra **292** (2005), no. 1, 259–281. MR MR2166804 (2006h:14041)
- [27] F. Hess, Computing Riemann-Roch spaces in algebraic function fields and related topics, J. Symbolic Comput. 33 (2002), no. 4, 425–445. MR MR1890579 (2003j:14032)
- [28] Florian Hess, An algorithm for computing Weierstrass points, Algorithmic Number Theory (Sydney, 2002), Lecture Notes in Comput. Sci., vol. 2369, Springer, Berlin, 2002, pp. 357–371. MR MR2041097 (2005b:14048)
- [29] Christopher Holden, Mod 4 Galois representations and elliptic curves, Proc. Amer. Math. Soc. 136 (2008), no. 1, 31–39 (electronic). MR MR2350385
- [30] Hendrik Hubrechts, Quasi-quadratic elliptic curve point counting using rigid cohomology, J. Symb. Comput. 44 (2009), no. 9, 1255–1267.
- [31] Samuel Kadziela, Rigid analytic uniformization of curves and the study of isogenies, Acta Appl. Math. 99 (2007), no. 2, 185–204. MR MR2350208
- [32] Sotiris Karanikolopoulos, On holomorphic polydifferentials in positive characteristic, 2010, p. 25.
- [33] A. Kontogeorgis, The ramification sequence for a fixed point of an automorphism of a curve and the Weierstrass gap sequence, Math. Z. 259 (2008), no. 3, 471–479. MR MR2395122 (2009a:14041)
- [34] Aristides Kontogeorgis and Victor Rotger, On abelian automorphism groups of Mumford curves and applications to Shimura curves, 2006.

- [35] Aristides Kontogeorgis and Yifan Yang, Automorphisms of hyperelliptic modular curves $X_0(n)$ in positive characteristic, LMS J. Comput. Math. **13** (2010), 144–163.
- [36] Aristides Kontogeorgis and Yifan Yang, Automorphisms of hyperelliptic modular curves X₀(N) in positive characteristic, LMS J. Comput. Math. 13 (2010), 144–163. MR 2638986
- [37] D. Lehavi and C. Ritzenthaler, An explicit formula for the arithmetic-geometric mean in genus 3, Experiment. Math. 16 (2007), no. 4, 421–440. MR MR2378484 (2008k:14070)
- [38] Claus Lehr and Michel Matignon, Wild monodromy and automorphisms of curves, Duke Math. J. 135 (2006), no. 3, 569–586. MR MR2272976 (2008a:14039)
- [39] Adam Logan and Ronald van Luijk, Nontrivial elements of Sha explained through K3 surfaces, Math. Comp. 78 (2009), no. 265, 441–483. MR MR2448716
- [40] Kay Magaard, Tanush Shaska, and Helmut Völklein, Genus 2 curves that admit a degree 5 map to an elliptic curve, Forum Math. 21 (2009), no. 3, 547–566. MR MR2526800
- [41] Coy L. May and Jay Zimmerman, The groups of symmetric genus $\sigma \leq 8$, Comm. Algebra **36** (2008), no. 11, 4078–4095. MR MR2460404 (2009i:14038)
- [42] Josep M. Miret, Jordi Pujolàs, and Anna Rio, Bisection for genus 2 curves in odd characteristic, Proc. Japan Acad. Ser. A Math. Sci. 85 (2009), no. 4, 55–60. MR MR2517297 (2010d:14039)
- [43] Santiago Molina, Equations of hyperelliptic Shimura curves, 2010.
- [44] Ian Morrison and David Swinarski, *Groebner techniques for low degree Hilbert stability*, 2009.
- [45] Tetsuo Nakano, On the moduli space of pointed algebraic curves of low genus. II. Rationality, Tokyo J. Math. **31** (2008), no. 1, 147–160. MR MR2426799
- [46] Laura Hitt O'Connor, Gary McGuire, Michael Naehrig, and Marco Streng, CM construction of genus 2 curves with p-rank 1, 2008.
- [47] Adrien Poteaux, Computing monodromy groups defined by plane algebraic curves, SNC'07, ACM, New York, 2007, pp. 36–45. MR MR2404912

- [48] Carlos Rito, On the computation of singular plane curves and quartic surfaces, 2010.
- [49] Magali Rocher, Large p-group actions with a p-elementary abelian derived group, Journal of Algebra 321 (2009), no. 2, 704 – 740.
- [50] Mohammad Sadek, Counting models of genus one curves, 2010.
- [51] Josef Schicho and David Sevilla, *Tschirnhaus-Weierstrass curves*, 2008.
- [52] Jasper Scholten and Hui June Zhu, Families of supersingular curves in characteristic 2, Math. Res. Lett. 9 (2002), no. 5-6, 639–650. MR MR1906067 (2003i:14038)
- [53] T. Shaska, Computational aspects of hyperelliptic curves, Computer Mathematics, Lecture Notes Ser. Comput., vol. 10, World Sci. Publishing, River Edge, NJ, 2003, pp. 248–257. MR MR2061839 (2005h:14073)
- [54] Tanush Shaska, Determining the automorphism group of a hyperelliptic curve, Proceedings of the 2003 International Symposium on Symbolic and Algebraic Computation (New York), ACM, 2003, pp. 248–254 (electronic). MR MR2035219 (2005c:14037)
- [55] Tony Shaska, Genus 2 curves with (3,3)-split Jacobian and large automorphism group, Algorithmic Number Theory (Sydney, 2002), Lecture Notes in Comput. Sci., vol. 2369, Springer, Berlin, 2002, pp. 205–218. MR MR2041085 (2005e:14048)
- [56] Vijaykumar Singh and Gary McGuire, The intersection of two Fermat hypersurfaces in P^3 via computation of quotient curves, 2009.
- [57] Paul B. van Wamelen, Computing with the analytic Jacobian of a genus 2 curve, Discovering Mathematics with Magma, Algorithms Comput. Math., vol. 19, Springer, Berlin, 2006, pp. 117–135. MR MR2278925
- [58] Yuri G. Zarhin, Absolutely simple Prymians of trigonal curves, Proceedings of the Steklov Institute of Mathematics 264 (2009), no. 1, 204–215.
- [59] Alexander Zvonkin, Megamaps: Construction and examples, Discrete Models: Combinatorics, Computation, and Geometry (Paris, 2001), Discrete Math. Theor. Comput. Sci. Proc., AA, Maison Inform. Math. Discret. (MIMD), Paris, 2001, pp. 329–339 (electronic). MR MR1888783 (2003d:14036)

Surfaces and Higher Dimensional Varieties $_{14\mathrm{Jxx}}$

- Selma Altınok, Gavin Brown, and Miles Reid, Fano 3-folds, K3 surfaces and graded rings, Topology and Geometry: Commemorating SISTAG, Contemp. Math., vol. 314, Amer. Math. Soc., Providence, RI, 2002, pp. 25–53. MR MR1941620 (2004c:14077)
- [2] Arthur Baragar and Ronald van Luijk, K3 surfaces with Picard number three and canonical vector heights, Math. Comp. 76 (2007), no. 259, 1493–1498 (electronic). MR MR2299785
- [3] I. C. Bauer, F. Catanese, and F. Grunewald, The classification of surfaces with $p_g = q = 0$ isogenous to a product of curves, Pure Appl. Math. Q. 4 (2008), no. 2, part 1, 547–586. MR MR2400886 (2009a:14046)
- [4] Ingrid Bauer, Fabrizio Catanese, and Fritz Grunewald, *Beauville surfaces without real structures*, Geometric Methods in Algebra and Number Theory, Progr. Math., vol. 235, Birkhäuser Boston, Boston, MA, 2005, pp. 1–42. MR MR2159375 (2006f:14040)
- [5] Ingrid Bauer, Fabrizio Catanese, and Fritz Grunewald, The absolute Galois group acts faithfully on the connected components of the moduli space of surfaces of general type, 2007.
- [6] Ingrid Bauer, Fabrizio Catanese, Fritz Grunewald, and Roberto Pignatelli, *Quotients* of a product of curves by a finite group and their fundamental groups, 2008.
- [7] Ingrid Bauer, Fabrizio Catanese, and Roberto Pignatelli, Surfaces of general type with geometric genus zero: A survey, 2010.
- [8] Ingrid Bauer and Roberto Pignatelli, The classification of minimal product-quotient surfaces with $p_g = 0, 2010$.
- [9] Ingrid C. Bauer and Fabrizio Catanese, A volume maximizing canonical surface in 3-space, Comment. Math. Helv. 83 (2008), no. 2, 387–406. MR MR2390050
- [10] Ingrid C. Bauer, Fabrizio Catanese, and Roberto Pignatelli, Complex surfaces of general type: Some recent progress, Global Aspects of Complex Geometry, Springer, Berlin, 2006, pp. 1–58. MR MR2264106

- [11] _____, The moduli space of surfaces with $K^2 = 6$ and $p_g = 4$, Math. Ann. **336** (2006), no. 2, 421–438. MR MR2244379
- [12] Tobias Beck, Formal desingularization of surfaces: The Jung method revisited, J. Symb. Comput. 44 (2009), no. 2, 131–160.
- [13] Tobias Beck and Josef Schicho, Adjoint computation for hypersurfaces using formal desingularizations, J. Algebra **320** (2008), no. 11, 3984–3996. MR MR2464803 (2009k:14029)
- [14] Gilberto Bini, Quotients of hypersurfaces in weighted projective space, 2009.
- [15] Martin Bright, Brauer groups of diagonal quartic surfaces, J. Symbolic Comput. 41 (2006), no. 5, 544–558. MR MR2209163
- [16] S. Allen Broughton, Enumeration of the equisymmetric strata of the moduli space of surfaces of low genus.
- [17] Gavin Brown, Datagraphs in algebraic geometry and K3 surfaces, Symbolic and Numerical Scientific Computation (Hagenberg, 2001), Lecture Notes in Comput. Sci., vol. 2630, Springer, Berlin, 2003, pp. 210–224. MR MR2043707 (2005a:14051)
- [18] _____, Graded rings and special K3 surfaces, Discovering Mathematics with Magma, Algorithms Comput. Math., vol. 19, Springer, Berlin, 2006, pp. 137–159. MR MR2278926
- [19] _____, A database of polarized K3 surfaces, Experiment. Math. 16 (2007), no. 1, 7–20. MR MR2312974
- [20] Gavin Brown, Alexander Kasprzyk, and Daniel Ryder, *Computational birational geometry of minimal rational surfaces*, 2009.
- [21] Gavin Brown and Kaori Suzuki, Computing certain Fano 3-folds, Japan J. Indust. Appl. Math. 24 (2007), no. 3, 241–250. MR MR2374989 (2008j:14076)
- [22] _____, Fano 3-folds with divisible anticanonical class, Manuscripta Math. 123 (2007), no. 1, 37–51. MR MR2300058 (2008a:14054)
- [23] Nils Bruin, Visualising Sha[2] in abelian surfaces, Math. Comp. 73 (2004), no. 247, 1459–1476 (electronic). MR MR2047096 (2005c:11067)

- [24] Anita Buckley and Balázs Szendröi, Orbifold Riemann-Roch for threefolds with an application to Calabi-Yau geometry, J. Algebraic Geom. 14 (2005), no. 4, 601–622.
 MR MR2147356 (2006b:14013)
- [25] Jorge Caravantes, Low codimension Fano–Enriques threefolds, 2006.
- [26] A. Clingher, C.F. Doran, J. Lewis, and U. Whitcher, Normal forms, K3 surface moduli, and modular parametrizations, Groups and Symmetries: Proceedings of the CRM conference in honor of John McKay, CRM-AMS Proceedings and Lecture Notes, vol. 47, 2008.
- [27] Patrick Corn, Tate-Shafarevich groups and K3 surfaces, Math. Comp. To appear (2007).
- [28] Alessio Corti and Miles Reid, Weighted Grassmannians, Algebraic Geometry, de Gruyter, Berlin, 2002, pp. 141–163. MR MR1954062 (2003m:14076)
- [29] Willem A. de Graaf, Michael Harrison, Jana Pílniková, and Josef Schicho, A Lie algebra method for rational parametrization of Severi-Brauer surfaces, J. Algebra 303 (2006), no. 2, 514–529. MR MR2255120 (2007e:14058)
- [30] Willem A. de Graaf, Jana Pílniková, and Josef Schicho, Parametrizing del Pezzo surfaces of degree 8 using Lie algebras, J. Symbolic Comput. 44 (2009), no. 1, 1 – 14.
- [31] Ulrich Derenthal, On the Cox ring of del Pezzo surfaces, 2006.
- [32] Ulrich Derenthal, Universal torsors of del Pezzo surfaces and homogeneous spaces, Adv. Math. 213 (2007), no. 2, 849–864. MR MR2332612
- [33] Luis V. Dieulefait, Computing the level of a modular rigid Calabi-Yau threefold, Exp. Math 13 (2004), no. 2, 165–169.
- [34] Noam D. Elkies, Three lectures on elliptic surfaces and curves of high rank, 2007.
- [35] Pavel Etingof, Alexei Oblomkov, and Eric Rains, Generalized double affine Hecke algebras of rank 1 and quantized del Pezzo surfaces, Adv. Math. 212 (2007), no. 2, 749–796. MR MR2329319
- [36] Alice Garbagnati and Alessandra Sarti, Elliptic fibrations and symplectic automorphisms on K3 surfaces, Comm. Algebra 37 (2009), no. 10, 3601–3631. MR MR2561866

- [37] Shelly Garion and Matteo Penegini, New Beauville surfaces, moduli spaces and finite groups, 2009.
- [38] Victor Ginzburg, Calabi-Yau algebras, 2007.
- [39] Hans-Christian Graf v. Bothmer, *Finite field experiments*, Higher-dimensional Geometry over Finite Fields, NATO Sci. Peace Secur. Ser. D Inf. Commun. Secur., vol. 16, IOS, Amsterdam, 2008, pp. 1–62. MR MR2484075 (2009m:14032)
- [40] V. A. Gritsenko, K. Hulek, and G. K. Sankaran, The Kodaira dimension of the moduli of K3 surfaces, Invent. Math. 169 (2007), no. 3, 519–567. MR MR2336040
- [41] Johan P. Hansen, Toric surfaces and codes, techniques and examples, 2004.
- [42] Brendan Hassett, Anthony Vàrilly-Alvarado, and Patrick Varilly, *Transcendental ob*structions to weak approximation on general K3 surfaces, 2010.
- [43] Kiran S. Kedlaya, Computing zeta functions of surfaces, Mathematisches Forschungsinstitut Oberwolfach Report 32 (2005), 1808–1810.
- [44] Adam Logan, The Brauer-Manin obstruction on del Pezzo surfaces of degree 2 branched along a plane section of a Kummer surface, Math. Proc. Cambridge Philos. Soc. 144 (2008), no. 3, 603–622. MR MR2418706
- [45] Stefan Maubach and Roel Willems, Polynomial automorphisms over finite fields: Mimicking non-tame and tame maps by the Derksen group, 2009.
- [46] Jan-Steffen Müller, Explicit Kummer surface theory for arbitrary characteristic, London Math. Soc. J. Comput. Math. 13 (2010), 47–64.
- [47] Francesco Polizzi, Standard isotrivial fibrations with $p_g = q = 1$, Journal of Algebra **321** (2009), no. 6, 1600 1631.
- [48] Gopal Prasad and Sai-Kee Yeung, Fake projective planes, Invent. Math. 168 (2007), no. 2, 321–370. MR MR2289867
- [49] Carlos Rito, On surfaces with $p_g = q = 1$ and non-ruled bicanonial involution, Ann. Sc. Norm. Super. Pisa Cl. Sci. (5) **6** (2007), no. 1, 81–102. MR MR2341516
- [50] _____, A note on Todorov surfaces, Osaka J. Math. 46 (2009), no. 3, 685–693. MR MR2583324

- [51] Carlos Rito, Involutions on surfaces with $p_g = q = 1$, Collectanea Mathematica **61** (2010), no. 1, 81–106.
- [52] ____, On equations of double planes with $p_g = q = 1$, Math. Comp **79** (2010), 1091–1108.
- [53] Maria Marti Sanchez, Even sets of (-4)-curves on rational surface, 2010.
- [54] Stefan Schröer, Kummer surfaces for the self-product of the cuspidal rational curve,
 J. Algebraic Geom. 16 (2007), no. 2, 305–346. MR MR2274516 (2007i:14038)
- [55] Matthias Schütt, Tetsuji Shioda, and Ronald van Luijk, *Lines on Fermat surfaces*, J. Number Theory **130** (2010), no. 9, 1939–1963.
- [56] James P Smith, Picard-Fuchs differential equations for families of K3 surfaces, Ph D thesis, University of Warwick, 2007.
- [57] Kaori Suzuki, On Fano indices of Q-Fano 3-folds, Manuscripta Math. 114 (2004), no. 2, 229–246. MR MR2067795 (2005c:14046)
- [58] Damiano Testa, Anthony Vàrilly-Alvarado, and Mauricio Velasco, Cox rings of degree one del Pezzo surfaces, Algebra and Number Theory 3 (2009), 729–761.
- [59] Ronald van Luijk, Quartic K3 surfaces without nontrivial automorphisms, Math. Res. Lett. 13 (2006), no. 2-3, 423–439. MR MR2231128 (2007b:14084)
- [60] _____, An elliptic K3 surface associated to Heron triangles, J. Number Theory 123 (2007), no. 1, 92–119. MR MR2295433 (2007k:14077)
- [61] _____, K3 surfaces with Picard number one and infinitely many rational points, Algebra and Number Theory **1** (2007), no. 1, 1–15.
- [62] Anthony Várilly-Alvarado, Weak approximation on del Pezzo surfaces of degree 1, Adv. Math. 219 (2008), no. 6, 2123–2145. MR MR2456278
- [63] Anthony Vàrilly-Alvarado and Bianca Viray, Failure of the Hasse principle for Enriques surfaces, Advances in Mathematics 226 (2011), 4884–4901.
- [64] Anthony Várilly-Alvarado and David Zywina, Arithmetic E₈ lattices with maximal Galois action, LMS J. Comput. Math. **12** (2009), 144–165. MR MR2559115

- [65] Bogdan G. Vioreanu, Mordell-Weil problem for cubic surfaces, numerical evidence, 2008.
- [66] Bianca Viray, A family of varieties with exactly one pointless rational fiber, 2009.

Abelian Varieties and Schemes 14Kxx

- Nils Bruin, E. Victor Flynn, Josep González, and Victor Rotger, On finiteness conjectures for endomorphism algebras of abelian surfaces, Math. Proc. Cambridge Philos. Soc. 141 (2006), no. 3, 383–408. MR MR2281405
- [2] Robert Carls, David Kohel, and David Lubicz, Higher-dimensional 3-adic CM construction, J. Algebra 319 (2008), no. 3, 971–1006. MR MR2379090
- John Cullinan, Local-global properties of torsion points on three-dimensional abelian varieties, J. Algebra **311** (2007), no. 2, 736–774. MR MR2314732 (2008b:14077)
- [4] Arsen Elkin and Yuri G. Zarhin, Endomorphism algebras of hyperelliptic Jacobians and finite projective lines, J. Ramanujan Math. Soc. 21 (2006), 169–187. MR MR2244543
- [5] Eyal Z. Goren and Kristin E. Lauter, The distance between superspecial abelian varieties with real multiplication, J. Number Theory 129 (2009), no. 6, 1562–1578. MR MR2521493
- [6] Hans-Christian Graf v. Bothmer, *Finite field experiments*, Higher-dimensional Geometry over Finite Fields, NATO Sci. Peace Secur. Ser. D Inf. Commun. Secur., vol. 16, IOS, Amsterdam, 2008, pp. 1–62. MR MR2484075 (2009m:14032)
- [7] Everett W. Howe and Hui June Zhu, On the existence of absolutely simple abelian varieties of a given dimension over an arbitrary field, J. Number Theory 92 (2002), no. 1, 139–163. MR MR1880590 (2003g:11063)
- [8] Rafe Jones and Jeremy Rouse, Iterated endomorphisms of abelian algebraic groups, Proc. London Math. Soc. 100 (2010), 763–794.
- [9] Gilles Lachaud and Christophe Ritzenthaler, On a conjecture of Serre on abelian threefolds, Algebraic Geometry and its applications, Proceedings of the First SAGA conference, Papeete, France 2007, 2008, pp. 1–28.
- [10] N. I. Shepherd-Barron, Perfect forms and the moduli space of abelian varieties, Invent. Math. 163 (2006), no. 1, 25–45. MR MR2208417

Algebraic Groups 14Lxx

- Thomas Bayer, An algorithm for computing invariants of linear actions of algebraic groups up to a given degree, J. Symbolic Comput. 35 (2003), no. 4, 441–449. MR MR1976577 (2004c:13045)
- [2] David J. Benson, Philip Bergonio, Brian D. Boe, Leonard Chastkofsky, Bobbe Cooper, Jeremiah Hower, Jo Jang Hyun, Jonathan Kujawa, Nadia Mazza, Daniel K. Nakano, Kenyon J. Platt, and Caroline Wright, Support varieties for Weyl modules over bad primes, J. Algebra **312** (2007), no. 2, 602–633.
- [3] Arjeh M. Cohen, Sergei Haller, and Scott H. Murray, Computing in unipotent and reductive algebraic groups, LMS J. Comput. Math. 11 (2008), 343–366. MR MR2452553
- [4] _____, Computing with root subgroups of twisted reductive groups, 2009.
- [5] Willem A. de Graaf, Constructing algebraic groups from their Lie algebras, J. Symbolic Comput. 44 (2009), no. 9, 1223–1233.
- [6] Michael Dettweiler and Stefan Reiter, On exceptional rigid local systems, 2006.
- [7] Ben Howard, John Millson, Andrew Snowden, and Ravi Vakil, *The ring of projective invariants of eight points on the line via representation theory*, 2008.
- [8] Benjamin Howard, John Millson, Andrew Snowden, and Ravi Vakil, The equations for the moduli space of n points on the line, Duke Math. J. 146 (2009), no. 2, 175–226. MR MR2477759 (2009m:14070)
- [9] Rafe Jones and Jeremy Rouse, Galois theory of iterated endomorphisms, Proc. London Math. Soc. (3) 100 (2010), 763–794.
- [10] P. I. Katsylo and V. L. Popov, On fixed points of algebraic actions on Cⁿ, Funktsional. Anal. i Prilozhen. 34 (2000), no. 1, 41–50, 96. MR MR1756733 (2001c:14072)
- [11] Masanari Kida, Kummer theory for norm algebraic tori, J. Algebra 293 (2005), no. 2, 427–447. MR MR2172348 (2007h:14061)
- [12] Stefan Maubach and Roel Willems, Polynomial automorphisms over finite fields: Mimicking non-tame and tame maps by the Derksen group, 2009.

- [13] Ian Morrison and David Swinarski, Groebner techniques for low degree Hilbert stability, 2009.
- [14] University of Georgia VIGRE Algebra Group, Varieties of nilpotent elements for simple Lie algebras. II. Bad primes, J. Algebra 292 (2005), no. 1, 65–99, The University of Georgia VIGRE Algebra Group: David J. Benson, Philip Bergonio, Brian D. Boe, Leonard Chastkofsky, Bobbe Cooper, G. Michael Guy, Jeremiah Hower, Markus Hunziker, Jo Jang Hyun, Jonathan Kujawa, Graham Matthews, Nadia Mazza, Daniel K. Nakano, Kenyon J. Platt and Caroline Wright. MR MR2166796
- [15] _____, Support varieties for Weyl modules over bad primes, J. Algebra 312 (2007), no. 2, 602–633, University of Georgia VIGRE Algebra Group: David J. Benson, Philip Bergonio, Brian D. Boe, Leonard Chastkofsky, Bobbe Cooper, Jeremiah Hower, Jo Jang Hyun, Jonathan Kujawa, Nadia Mazza, Daniel K. Nakano, Kenyon J. Platt and Caroline Wright. MR MR2333175
- [16] Stefan Schröer, Kummer surfaces for the self-product of the cuspidal rational curve, J. Algebraic Geom. 16 (2007), no. 2, 305–346. MR MR2274516 (2007i:14038)
- [17] Magda Sebestean, Correspondance de Mckay et Equivalences Derivees, Ph.D. thesis, Paris VII, 2005, p. 169.
- [18] R. James Shank and David L. Wehlau, Noether numbers for subrepresentations of cyclic groups of prime order, Bull. London Math. Soc. 34 (2002), no. 4, 438–450. MR MR1897423 (2003a:13005)

Special Varieties 14Mxx

- Tatiana Bandman, Fritz Grunewald, Boris Kunyavskii, and Nathan Jones, Geometry and arithmetic of verbal dynamical systems on simple groups, Groups, Geometry, and Dynamics 4 (2010), no. 4, 607–655.
- [2] Christian Böhning, The rationality of the moduli space of curves of genus 3 after P. Katsylo, 2008.
- [3] Weronika Buczyńska, *Phylogenetic varieties on graphs*, 2010.
- [4] Jarosław Buczyński, Legendrian subvarieties of projective space, Geom. Dedicata 118 (2006), 87–103. MR MR2239450
- [5] Wouter Castryck and John Voight, Nondegenerate curves of low genus over small finite fields, Arithmetic, Geometry, Cryptography and Coding Theory, Contemporary Mathematics, vol. 521, AMS, Providence, R.I., 2009, pp. 21–28.
- [6] Alessio Corti and Miles Reid, Weighted Grassmannians, Algebraic Geometry, de Gruyter, Berlin, 2002, pp. 141–163. MR MR1954062 (2003m:14076)
- Ulrich Derenthal, Universal torsors of del Pezzo surfaces and homogeneous spaces, Adv. Math. 213 (2007), no. 2, 849–864. MR MR2332612
- [8] Johan P. Hansen, Toric varieties, Hirzebruch surfaces and error-correcting codes, Appl. Algebra Engrg. Comm. Comput. 13 (2002), no. 4, 289–300. MR MR1953195 (2003j:14029)
- Stephen P. Humphries, Action of braid groups on determinantal ideals, compact spaces and a stratification of Teichmüller space, Invent. Math. 144 (2001), no. 3, 451–505.
 MR MR1833891 (2002c:20056)
- [10] Michael Joswig and Nikolaus Witte, Products of foldable triangulations, Adv. Math.
 210 (2007), no. 2, 769–796. MR MR2303239 (2008c:52017)
- [11] Stavros Argyrios Papadakis, Type II unprojection, J. Algebraic Geom. 15 (2006), no. 3, 399–414. MR MR2219843

- [12] Vladimir L. Popov, Irregular and singular loci of commuting varieties, Transform. Groups 13 (2008), no. 3-4, 819–837.
- [13] Miles Reid, Examples of type IV unprojection, 2001.
- [14] Diego Ruano, On the parameters of r-dimensional toric codes, Finite Fields Appl. 13 (2007), no. 4, 962–976. MR MR2360532
- [15] Helena Verrill and David Joyner, Computing with toric varieties, J. Symbolic Comput.
 42 (2007), no. 5, 511–532. MR MR2322471 (2008e:68162)

Real Algebraic Geometry 14Pxx

- Bernd Bank, Marc Giusti, Joos Heintz, Mohab Safey El Din, and Eric Schost, On the geometry of polar varieties, Appl. Algebra Engrg. Comm. Comput. 21 (2010), no. 1, 33–83. MR 2585564
- [2] Saugata Basu and Michael Kettner, Computing the Betti numbers of arrangements in practice, Computer Algebra in Scientific Computing, Lecture Notes in Computer Science, vol. 3718, Springer Berlin/Heidelberg, 2005, pp. 13–31.
- [3] Mbakop Guy Merlin, Eziente losung reeller polynomialer gleichungssysteme, PhD Thesis, Humboldt-Universität, Berlin, 1999.
- [4] S. Petitjean, Algebraic geometry and computer vision: Polynomial systems, real and complex roots, J. Math. Imaging Vision 10 (1999), no. 3, 191–220. MR MR1695944 (2001e:68197)
- [5] Mohab Safey El Din, Testing sign conditions on a multivariate polynomial and applications, Math. Comput. Sci. 1 (2007), no. 1, 177–207. MR MR2384818
- [6] Mohab Safey El Din and Éric Schost, Properness defects of projections and computation of at least one point in each connected component of a real algebraic set, Discrete Comput. Geom. **32** (2004), no. 3, 417–430. MR MR2081634 (2005h:14136)

Computational Methods 14-04, 14Qxx

- Fatima K. Abu Salem and Kamal Khuri-Makdisi, Fast Jacobian group operations for C_{3,4} curves over a large finite field, LMS J. Comput. Math. 10 (2007), 307–328 (electronic). MR MR2335723
- [2] S. Arita, S. Miura, and T. Sekiguchi, An addition algorithm on the Jacobian varieties of curves, J. Ramanujan Math. Soc. 19 (2004), no. 4, 235–251. MR MR2125500 (2005m:14114)
- [3] Tobias Beck and Josef Schicho, Adjoint computation for hypersurfaces using formal desingularizations, J. Algebra 320 (2008), no. 11, 3984–3996. MR MR2464803 (2009k:14029)
- [4] _____, Curve parametrization over optimal field extensions exploiting the Newton polygon, Geometric Modeling and Algebraic Geometry, Springer, Berlin, 2008, pp. 119–140. MR MR2381607 (2009b:65032)
- [5] Gavin Brown, A database of polarized K3 surfaces, Experiment. Math. 16 (2007), no. 1, 7–20. MR MR2312974
- [6] Gavin Brown and Daniel Ryder, *Elliptic fibrations on cubic surfaces*, J. Pure Appl. Algebra 214 (2010), no. 4, 410–421. MR MR2558749
- [7] Gavin Brown and Kaori Suzuki, *Computing certain Fano 3-folds*, Japan J. Indust. Appl. Math. **24** (2007), no. 3, 241–250. MR MR2374989 (2008j:14076)
- [8] Laurent Busé and Marc Chardin, Implicitizing rational hypersurfaces using approximation complexes, J. Symbolic Comput. 40 (2005), no. 4-5, 1150–1168. MR MR2172855 (2006g:14097)
- [9] Gweltaz Chatel and David Lubicz, A point counting algorithm using cohomology with compact support, 2008.
- [10] David A. Cox, John Little, and Donal O'Shea, Using Algebraic Geometry, second ed., Graduate Texts in Mathematics, vol. 185, Springer, New York, 2005. MR MR2122859 (2005i:13037)

- [11] Willem A. de Graaf, Constructing algebraic groups from their Lie algebras, J. Symbolic Comput. 44 (2009), no. 9, 1223–1233.
- [12] Willem A. de Graaf, Michael Harrison, Jana Pílniková, and Josef Schicho, A Lie algebra method for rational parametrization of Severi-Brauer surfaces, J. Algebra 303 (2006), no. 2, 514–529. MR MR2255120 (2007e:14058)
- [13] Wolfram Decker and Christoph Lossen, Computing in algebraic geometry, Algorithms and Computation in Mathematics, vol. 16, Springer-Verlag, Berlin, 2006, A quick start using SINGULAR. MR MR2220403 (2007b:14129)
- [14] André Galligo and David Rupprecht, Irreducible decomposition of curves, J. Symbolic Comput. 33 (2002), no. 5, 661–677, Computer algebra (London, ON, 2001). MR MR1919909 (2003h:14091)
- [15] Ralf Gerkmann, Mao Sheng, and Kang Zuo, Computational details on the disproof of modularity, 2007.
- [16] Martine Girard and Leopoldo Kulesz, Computation of sets of rational points of genus-3 curves via the Demjanenko-Manin method, LMS J. Comput. Math. 8 (2005), 267–300 (electronic). MR MR2193214
- [17] Massimo Giulietti, Algebraic curves over finite fields and MAGMA, Ital. J. Pure Appl. Math. (2000), no. 8, 19–32. MR MR1793739 (2001i:14082)
- [18] Michael Harrison and Josef Schicho, Rational parametrisation for degree 6 Del Pezzo surfaces using Lie algebras, ISSAC 2006, ACM, New York, 2006, pp. 132–137. MR MR2289111
- [19] Hendrik Hubrechts, Memory efficient hyperelliptic curve point counting, 2006.
- [20] Gabriela Jeronimo, Teresa Krick, Juan Sabia, and Martín Sombra, The computational complexity of the Chow form, Found. Comput. Math. 4 (2004), no. 1, 41–117. MR MR2035410 (2005c:14083)
- [21] Tanja Lange, Formulae for arithmetic on genus 2 hyperelliptic curves, Appl. Algebra Engrg. Comm. Comput. 15 (2005), no. 5, 295–328. MR MR2122308 (2005j:14082)
- [22] Alan G. B. Lauder, A recursive method for computing zeta functions of varieties, LMS J. Comput. Math. 9 (2006), 222–269 (electronic). MR MR2261044 (2007g:14022)

- [23] Walter D. Neumann and Penelope G. Wightwick, Algorithms for polynomials in two variables, Combinatorial and Computational Algebra (Hong Kong, 1999), Contemp. Math., vol. 264, Amer. Math. Soc., Providence, RI, 2000, pp. 219–235. MR MR1800698 (2002g:14091)
- [24] Jana Pílniková, Parametrizing algebraic varieties using Lie algebras, 2006.
- [25] Carlos Rito, On equations of double planes with $p_g = q = 1$, Math. Comp **79** (2010), 1091–1108.
- [26] _____, On the computation of singular plane curves and quartic surfaces, 2010.
- [27] Mohab Safey El Din, Testing sign conditions on a multivariate polynomial and applications, Math. Comput. Sci. 1 (2007), no. 1, 177–207. MR MR2384818
- [28] Mohab Safey El Din and Eric Schost, Properness defects of projections and computation of at least one point in each connected component of a real algebraic set, Discrete Comput. Geom. 32 (2004), no. 3, 417–430. MR MR2081634 (2005h:14136)
- [29] Tanush Shaska, Computational algebra and algebraic curves, Comm. Comp. Alg. 37 (2003), no. 4, 117–124.
- [30] Dongming Wang, *Decomposing algebraic varieties*, Automated Deduction in Geometry (Beijing, 1998), Lecture Notes in Comput. Sci., vol. 1669, Springer, Berlin, 1999, pp. 180–206. MR MR1775951 (2001f:68144)