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Bibliography

- [1] M. Artin. *Some numerical criteria for contractibility of curves on algebraic surfaces*. Amer. J. Math., 84:485–496, 1962.
- [2] M. Artin, A. Grothendieck, and J.-L. Verdier, editors. *Tome 2 of Séminaire de géométrie algébrique du Bois-Marie 1963–1964. Théorie des topos et cohomologie étale des schémas (SGA4) - (Avec la collaboration de N. Bourbaki, P. Deligne, B. Saint-Donat), exposés V–VIII*. Volume 270 of *Lecture Notes in Mathematics*. Springer, Berlin–New York, 1972.
- [3] M. F. Atiyah. *On analytic surfaces with double points*. Proc. Roy. Soc. London Ser. A, 247:237–244, 1958.
- [4] M. Auslander and O. Goldman. *The Brauer group of a commutative ring*. Trans. Amer. Math. Soc., 97:367–409, 1960.
- [5] M. J. Bright. *Computations on diagonal quartic surfaces*. Ph.D. Thesis, University of Cambridge, 2002.
- [6] M. J. Bright. *Efficient evaluation of the Brauer–Manin obstruction*. Math. Proc. Cambridge Philos. Soc., 142(1):13–23, 2007.
- [7] M. J. Bright. *Bad reduction of the Brauer–Manin obstruction*. J. Lond. Math. Soc. (2), 91(3):643–666, 2015.
- [8] M. J. Bright, T. D. Browning, and D. Loughran. *Failures of weak approximation in families*. Compos. Math., 152(7):1435–1475, 2016.
- [9] M. J. Bright, A. Logan, and R. M. van Luijk. *Finiteness theorems for K3 surfaces over arbitrary fields*. To appear in Eur. J. Math., arXiv:1810.04905v3, 2019.
- [10] M. J. Bright and J. T. Lyczak. *A uniform bound on the Brauer groups of certain log K3 surfaces*. Michigan Math. J., 68(2):377–384, 2019.
- [11] V. Cantoral-Farfán, Y. Tang, S. Tanimoto, and H. D. Visse. *Effective bounds for Brauer groups of Kummer surfaces over number fields*. J. Lond. Math. Soc. (2), 97(3):353–376, 2018.



- [12] J. W. S. Cassels. *Global Fields in Algebraic Number Theory* - (proc. instructional conf., Brighton, 1965), pages 42–84. Thompson, Washington, D.C., 1967.
- [13] J.-L. Colliot-Thélène. *Formes quadratiques multiplicatives et variétés algébriques: deux compléments*. Bull. Soc. Math. France, 108(2):213–227, 1980.
- [14] J.-L. Colliot-Thélène. *Points rationnels sur les fibrations in Higher Dimensional Varieties and Rational Points*, pages 171–221. Volume 12 of *Bolyai Society Mathematical Studies*. Springer, Berlin, 2003.
- [15] J.-L. Colliot-Thélène, D. Wei, and F. Xu. *Brauer–Manin obstruction for Markoff surfaces*. To appear in Ann. Sc. Norm. Super. Pisa Cl. Sci. (5), arXiv:1808.01584v4, 2019.
- [16] J.-L. Colliot-Thélène and O. Wittenberg. *Groupe de Brauer et points entiers de deux familles de surfaces cubiques affines*. Amer. J. Math., 134(5):1303–1327, 2012.
- [17] J.-L. Colliot-Thélène and F. Xu. *Brauer–Manin obstruction for integral points of homogeneous spaces and representation by integral quadratic forms*. Compos. Math., 145(2):309–363, 2009.
- [18] B. Conrad. *Weil and Grothendieck approaches to adelic points*. Enseign. Math. (2), 58(1-2):61–97, 2012.
- [19] D. F. Coray and M. A. Tsfasman. *Arithmetic on singular Del Pezzo surfaces*. Proc. London Math. Soc. (3), 57(1):25–87, 1988.
- [20] P. K. Corn. *Del Pezzo surfaces and the Brauer–Manin obstruction*. Ph.D. Thesis, University of California, 2005.
- [21] D. A. Cox, J. B. Little, and H. K. Schenck. *Toric Varieties*. Volume 124 of *Graduate Studies in Mathematics*. American Mathematical Society, Providence, RI, 2011.
- [22] P. del Pezzo. *Sulle superficie dell’ n mo ordine immerse nello spazio di n dimensioni*. Rend. Circ. Mat. Palermo (1), 1:241–271, 1887.
- [23] M. Demazure. *Surfaces de Del Pezzo: I–V in Séminaire sur les Singularités des Surfaces*, pages 21–69. Volume 777 of *Lecture Notes in Mathematics*. Springer-Verlag, Berlin–New York, 1980.
- [24] D. Eisenbud and J. D. Harris. *The Geometry of Schemes*. Volume 197 of *Graduate Texts in Mathematics*. Springer-Verlag, New York, 2000.
- [25] A. Vistoli. *Grothendieck topologies, fibered categories and descent theory in Fundamental algebraic geometry - (Grothendieck’s FGA explained)*, pages 1–104. Volume 123 of *Mathematical Surveys and Monographs*. American Mathematical Society, Providence, RI, 2005.

-
- [26] W. Fulton. *Algebraic curves - (An Introduction to Algebraic Geometry)*. Addison-Wesley Publ. Co., Redwood City, CA, 1989.
- [27] W. Fulton. *Intersection theory*, second edition. Volume 2 of *Ergeb. Math. Grenzgeb. (3)*. Springer-Verlag, Berlin, 1998.
- [28] P. Gille and T. Szamuely. *Central simple algebras and Galois cohomology*. Volume 101 of *Cambridge Studies in Advanced Mathematics*. Cambridge University Press, Cambridge, 2006.
- [29] J. González-Sánchez, M. Harrison, I. Polo-Blanco, and J. Schicho. *Algorithms for Del Pezzo surfaces of degree 5 (construction, parametrization)*. *J. Symbolic Comput.*, 47(3):342–353, 2012.
- [30] A. Grothendieck. *Le groupe de Brauer. III. Exemples et compléments* in *Dix exposés sur la cohomologie des schémas*, pages 88–188. Volume 3 of *Advanced Studies in Pure Mathematics*. North-Holland Publ. Co., Amsterdam, 1968.
- [31] A. Grothendieck. *Revêtements étales et groupe fondamental (SGA 1)*. Volume 224 of *Lecture Notes in Mathematics*. Springer-Verlag, Berlin–New York, 1971.
- [32] Y. Harpaz. *Geometry and arithmetic of certain log K3 surfaces*. *Ann. Inst. Fourier (Grenoble)*, 67(5):2167–2200.
- [33] R. Hartshorne. *Algebraic Geometry*. Volume 52 of *Graduate Texts in Mathematics*. Springer-Verlag, New York, 1977.
- [34] E. Ieronymou, A. N. Skorobogatov, and Y. G. Zarhin. *On the Brauer group of diagonal quartic surfaces*. *J. Lond. Math. Soc. (2)*, 83(3):659–672, 2011.
- [35] J. Jahnel and D. Schindler. *On integral points on degree four del Pezzo surfaces*. *Israel J. Math.*, 222(1):21–63, 2017.
- [36] R. K. Lazarsfeld. *Positivity in algebraic geometry, I. Classical setting: line bundles and linear series*. Volume 48 of *Ergeb. Math. Grenzgeb. (3)*. Springer-Verlag, Berlin, 2004.
- [37] J. Lipman. *Rational singularities, with applications to algebraic surfaces and unique factorization*. *Inst. Hautes Études Sci. Publ. Math.*, (36):195–279, 1969.
- [38] D. Loughran and V. Mitankin. *Integral Hasse principle and strong approximation for Markoff surfaces*. arXiv:<https://arxiv.org/abs/1807.10223v3>, 2018.
- [39] J. T. Lyczak. *Magma code for computing algebraic Brauer groups*. <http://www.julianlyczak.nl/#code>.
- [40] Y. I. Manin. *Le groupe de Brauer-Grothendieck en géométrie diophantienne* in *Actes du Congrès International des Mathématiciens (Nice, 1970), Tome 1*, pages 401–411. Gauthier-Villars, Paris, 1971.



- [41] Y. I. Manin. *Cubic forms: algebra, geometry, arithmetic*, second edition. Volume 4 of *North-Holland Mathematical Library*. North-Holland Publ. Co., Amsterdam, 1986.
- [42] L. Merel. *Bornes pour la torsion des courbes elliptiques sur les corps de nombres*. *Invent. Math.*, 124(1-3):437–449, 1996.
- [43] J. S. Milne. *Class Field Theory*, version 4.02. Available at www.jmilne.org/math/, 2013.
- [44] R. D. Newton. *Transcendental Brauer groups of products of CM elliptic curves*. *J. Lond. Math. Soc. (2)*, 93(2):397–419, 2016.
- [45] M. Orr and A. N. Skorobogatov. *Finiteness theorems for K3 surfaces and abelian varieties of CM type*. *Compos. Math.*, 154(8):1571–1592, 2018.
- [46] B. Poonen. *Rational Points on Varieties*. Volume 186 of *Graduate Studies in Mathematics*. American Mathematical Society, Providence, RI, 2017.
- [47] J.-P. Serre. *Local Class Field Theory in Algebraic Number Theory* - (proc. instructional conf., Brighton, 1965), pages 128–161. Thompson, Washington, D.C., 1967.
- [48] J. H. Silverman. *The Arithmetic of Elliptic Curves*, second edition. Volume 106 of *Graduate Texts in Mathematics*. Springer, Dordrecht, 2009.
- [49] A. N. Skorobogatov and Y. G. Zarhin. *A finiteness theorem for the Brauer group of abelian varieties and K3 surfaces*. *J. Algebraic Geom.*, 17(3):481–502, 2008.
- [50] The Stacks Project Authors. *Stacks Project*. <https://stacks.math.columbia.edu>, 2019.
- [51] P. Stevenhagen. *The arithmetic of number rings in Algorithmic number theory: lattices, number fields, curves and cryptography*, pages 209–266. Volume 44 of *Math. Sci. Res. Inst. Publ.*. Cambridge Univ. Press, Cambridge, 2008.
- [52] H. P. F. Swinnerton-Dyer. *The Brauer Group of Cubic Surfaces*. *Math. Proc. Camb. Phil. Soc.*, 113:449–460, 1993.
- [53] J. T. Tate. *Global Class Field Theory in Algebraic Number Theory* - (proc. instructional conf., Brighton, 1965), pages 162–203. Thompson, Washington, D.C., 1967.
- [54] D. Testa, A. Várilly-Alvarado, and M. Velasco. *Big rational surfaces*. *Math. Ann.*, 351(1):95–107, 2011.
- [55] A. Várilly-Alvarado. *Arithmetic of del Pezzo surfaces in Birational geometry, rational curves, and arithmetic*, pages 293–319. Volume 1 of *Simons symposia*. Springer, Berlin–New York, 2013.

-
- [56] A. Várilly-Alvarado. *Arithmetic of K3 surfaces in Geometry over nonclosed fields*, pages 197–248. Volume 5 in *Simons symposia*. Springer, Cham, 2017.
- [57] A. Várilly-Alvarado and B. L. Viray. *Abelian n -division fields of elliptic curves and Brauer groups of product Kummer and abelian surfaces*. *Forum of Mathematics, Sigma*, 5:e26, 2017.
- [58] C. A. Weibel. *An introduction to homological algebra*. Volume 38 of *Cambridge Studies in Advanced Mathematics*. Cambridge University Press, Cambridge, 1994.



