

Unirationality of certain supersingular K3 surfaces in characteristic 5

Pho D.T., Shimada I.

Department of Mathematics, Vietnam National University, 334 Nguyen Trai Street, Hanoi, Viet Nam;

Department of Mathematics, Faculty of Science, Hokkaido University, Sapporo 060-0810, Japan

Abstract: We show that every supersingular K3 surface in characteristic 5 with Artin invariant ?? 3 is unirational. ?? Springer 2006.

Year: 2006

Source title: Manuscripta Mathematica

Volume: 121

Issue: 4

Page : 425-435

Cited by: 2

Link: Scopus Link

Correspondence Address: Shimada, I.; Department of Mathematics, Faculty of Science, Hokkaido University, Sapporo 060-0810, Japan; email: shimada@math.sci.hokudai.ac.jp

ISSN: 252611

DOI: [10.1007/s00229-006-0045-3](https://doi.org/10.1007/s00229-006-0045-3)

Language of Original Document: English

Abbreviated Source Title: Manuscripta Mathematica

Document Type: Article

Source: Scopus

Authors with affiliations:

1. Pho, D.T., Department of Mathematics, Vietnam National University, 334 Nguyen Trai Street, Hanoi, Viet Nam

2. Shimada, I., Department of Mathematics, Faculty of Science, Hokkaido University, Sapporo 060-0810, Japan

References:

1. Artin, M., Some numerical criteria for contractability of curves on algebraic surfaces (1962) Am. J. Math., 84, pp. 485-496
2. Artin, M., On isolated rational singularities of surfaces (1966) Am. J. Math., 88, pp. 129-136
3. Artin, M., Supersingular K3 surfaces (1975) Ann. Sci. ??cole Norm. Sup., 7 (4), pp. 543-567
4. Artin, M., Coverings of the rational double points in characteristic p (1977) Complex Analysis and Algebraic Geometry, pp. 11-22. , Iwanami Shoten, Tokyo
5. Conway, J.H., Sloane, N.J.A., Sphere packings, lattices and groups, 3rd edn (1999) Grundlehren der Mathematischen Wissenschaften, 290. , Springer, Berlin Heidelberg New York
6. Ebeling, W., Lattices and codes, revised ed (2002) Advanced Lectures in Mathematics, , Friedr. Vieweg & Sohn, Braunschweig
7. Edwards, H.M., Fermat's last theorem (1996) Graduate Texts in Mathematics, 50. , Springer, Berlin Heidelberg New York
8. Greuel, G.-M., Kr??ning, H., Simple singularities in positive characteristic (1990) Math. Z., 203, pp. 339-354

9. Illusie, L., Complexe de de Rham-Witt et cohomologie cristalline (1979) Ann. Sci. ??cole Norm. Sup., 12 (4), pp. 501-661
10. Namba, M., Geometry of projective algebraic curves (1984) Monographs and Textbooks in Pure and Applied Mathematics, 88. , Marcel Dekker, New York
11. Nikulin, V.V., Integer symmetric bilinear forms and some of their geometric applications (1979) Izv. Akad. Nauk SSSR Ser. Mat., 43, pp. 111-177. , 238
12. (1980) Math. USSR-Izv., 14, pp. 103-167. , English translation: 1979
13. Nikulin, V.V., Weil linear systems on singular K3 surfaces (1991) Algebraic Geometry and Analytic Geometry, pp. 138-164. , (Tokyo, 1990), Springer, Tokyo, ICM-90 Satell. Conference Proceedings
14. Ogus, A., Supersingular K3 crystals (1979) Journ??es de G??om??trie Alg??brique de Rennes, 2-64, pp. 3-86. , (Rennes, 1978), Ast??risque, (Soc. Math. France, Paris)
15. Ogus, A., A crystalline Torelli theorem for supersingular K3 surfaces (1983) Progr. Math., 2-36, pp. 361-394. , Arithmetic and geometry, Birkh??user, Boston, MA
16. Rudakov, A.N., Shafarevich, I.R., Supersingular K3 surfaces over fields of characteristic 2 (1978) Izv. Akad. Nauk SSSR Ser. Mat., 42, pp. 848-869
17. Shafarevich, I.R., (1989) Collected Mathematical Papers, pp. 614-632. , Reprinted, Springer, Berlin Heidelberg New York
18. Rudakov, A.N., Shafarevich, I.R., Surfaces of type K3 over fields of finite characteristic (1981) Current Problems in Mathematics, 18. , Akad. Nauk SSSR, Vsesoyuz. Inst. Nauchn. i Tekhn. Informatsii, Moscow
19. Shafarevich, I.R., (1989) Collected Mathematical Papers, pp. 657-714. , Reprinted, 115-207. Springer, Berlin Heidelberg New York
20. Saint-Donat, B., Projective models of K-3 surfaces (1974) Am. J. Math., 96, pp. 602-639
21. Serre, J.-P., A course in arithmetic (1973) Graduate Texts in Mathematics, (7). , Springer, Berlin Heidelberg New York
Translated from the French
22. Shimada, I., Rational double points on supersingular K3 surfaces (2004) Math. Comp., 73, pp. 1989-2017. , electronic
23. Shimada, I., Zhang, D.-Q., K3 Surfaces with Ten Cusps, , <http://www.math.sci.hokudai.ac.jp/~shimada/preprints.html>, Preprint
24. Shimada, I., Zhang, D.-Q., Dynkin Diagrams of Rank 20 on Supersingular K3 Surfaces, , <http://www.math.sci.hokudai.ac.jp/~shimada/preprints.html>, Preprint
25. Shioda, T., An example of unirational surfaces in characteristic p (1974) Math. Ann., 211, pp. 233-236
26. Shioda, T., On unirationality of supersingular surfaces (1977) Math. Ann., 225, pp. 155-159
27. Shioda, T., Some results on unirationality of algebraic surfaces (1977) Math. Ann., 230, pp. 153-168
28. Urabe, T., (1988) Combinations of Rational Singularities on Plane Sextic Curves with the Sum of Milnor Numbers Less Than Sixteen, 20, pp. 429-456. , Banach Center Publ., PWN, Warsaw
29. Wall, C.T.C., Quartic curves in characteristic 2 (1995) Math. Proc. Cambridge Philos. Soc., 117, pp. 393-414