

Hélène Esnault

## List of publications.

### Thèse de Doctorat de 3<sup>o</sup> cycle :

Singularités rationnelles et groupes algébriques. Université Paris VII, October 1976

### Thèse de Doctorat d'Etat :

corresponds to the publications 3 - 6, Université Paris VII, Feb. 1984

### Publications:

#### REFERENCES

- [1] Sur l'identification de singularités apparaissant dans des groupes algébriques complexes. *Publ. Math. de l'Université Paris VII*, **7** (1979), 31 - 59 (résumé of the "Thèse de 3<sup>o</sup> cycle").
- [2] Classification des variétés de dimension 3 et plus. Séminaire Bourbaki, exp 568, Fév 81. *Springer Lect. Notes in Math.* **901**, 111 - 131, (survey).
- [3] Fibre de Milnor d'un cône sur une courbe plane singulière. *Inventiones math.* **68** (1982), 477 - 496.
- [4] (with E. Viehweg) Revêtement cycliques. Algebraic Threefolds, Proc. Varenna 1981, *Springer Lect. Notes in Math.* **947**, 241 - 250, (survey).
- [5] (with E. Viehweg) Sur une minoration du degré d'hypersurfaces s'annulant en certain points. *Math. Ann.* **263** (1983), 75 - 86.
- [6] (with E. Viehweg) Dyson's lemma for polynomials in several variables (and the theorem of Roth). *Inventiones math.* **78** (1984), 445 - 490.
- [7] (with E. Viehweg) Two dimensional quotient singularities deform to quotient singularities. *Math. Ann.* **271** (1985), 439 - 449.
- [8] Reflexive modules on quotient surface singularities. *Journ. reine angew. Math.* **362** (1985), 63 - 71.
- [9] (with E. Viehweg) Revêtements cycliques II. Proc. Algebraic Geometry, La Rabida 1984, *Hermann, Travaux en cours* **23** (1987), 81 - 96.
- [10] (with H. Knörrer) Reflexive modules over rational double points. *Math. Ann.* **272** (1985), 545 - 548.
- [11] (with E. Viehweg) Logarithmic De Rham complexes and vanishing theorems. *Inventiones math.* **86** (1986), 161 - 194.
- [12] Characteristic classes of flat bundles. *Topology* **27** (1988), 323 - 352.
- [13] (with E. Viehweg) Deligne-Beilinson cohomology. In: Beilinson's Conjectures on Special Values of L-Functions ( Ed.: Rapoport, Schappacher, Schneider ). *Perspectives in Math.* **4**, Academic Press (1988), 43 - 91.
- [14] (with E. Viehweg) A remark on a non-vanishing theorem of P. Deligne and G.T. Mostow. *Journ. reine angew. Math.* **381** (1987), 211 - 213.
- [15] (with E. Viehweg) Vanishing and non-vanishing theorems. Proc. Hodge Theory, Luminy 1987 (Ed.: Barlet, Elzein, Esnault, Verdier, Viehweg). *Astérisque* **179-180** (1989), 97 - 112.
- [16] On the Loday symbol in the Deligne-Beilinson cohomology. *K-Theory* **3** (1989), 1 - 28.
- [17] A note on the cycle map. *Journal reine angew. Math.* **411** (1990), 51 - 65.
- [18] (with E. Viehweg) Effective bounds for semipositive sheaves and the height of points on curves over complex function fields. *Compositio math.*, **76** (1990), 69 - 85.
- [19] A regulator map on singular varieties. *Math. Ann.* **286** (1990), 169 - 191.
- [20] Une remarque sur la cohomologie du faisceau de Zariski de la  $K$ -théorie de Milnor sur une variété lisse complexe. *Math. Zeitschrift* **205** (1990), 373 - 378.

- [21] Some examples of computation of a regulator map on singular varieties. *Contemporary Mathematics*, **131** (1992) (Part 3), 399-417, Proc. of the "A.I. Maltsev Conf." on Algebra and Analysis, Novosibirsk 1989.
- [22] Hodge type of subvarieties of  $P^n$  of small degrees. *Math. Ann.* **288** (1990), 549 - 551.
- [23] (with E. Viehweg) Ample sheaves on moduli schemes. "Proceedings of the Conference in Algebraic and Analytic Geometry", Tokyo, (1990), *ICM 90, Lecture Notes*, 53 - 80.
- [24] (with J. Seade and E. Viehweg) Characteristic divisors on complex manifolds. *Journ. reine angew. Math.* **424** (1992), 17-30
- [25] (with V. Srinivas) Chern classes of vector bundles with holomorphic connections on a complete smooth complex variety. *Journal of Diff. Geometry*, **36** (1992), 257-267.
- [26] (with V. Schechtman and E. Viehweg) Cohomology of local systems on the complement of hyperplanes. *Inventiones math.* **109** (1992), 557-561. Erratum: *Inventiones math.* **112** (1993), 447.
- [27] (with M. V. Nori and V. Srinivas) Hodge type of projective varieties of low degree. *Math. Ann.* **293** (1992), 1-6.
- [28] (with E. Viehweg) Lectures on Vanishing Theorems. Book. *DMV-Seminar Band 20*, Birkhäuser, 164 pages.
- [29] (with B. Kahn and E. Viehweg) Coverings of odd degree and Stiefel-Whitney classes. *Journ. reine angew. Math.* **441** (1993), 145-188.
- [30] (with E. Viehweg) Higher Kodaira-Spencer classes. *Math. Ann.* **299** (1994), 491-527.
- [31] Characteristic classes of flat bundles, II. *K-Theory* **6** (1992), 45-56.
- [32] (with M. Levine) Surjectivity of cycle maps. In Journées de Géométrie Algébrique d'Orsay, Juillet 1992, *Astérisque* **218** (1993), 203-226.
- [33] (with V. Srinivas and E. Viehweg) Decomposability of Chow groups implies decomposability of cohomology. In Journées de Géométrie Algébrique d'Orsay, Juillet 1992, *Astérisque* **218** (1993), 227-242.
- [34] (with K. Paranjape) Remarks on absolute de Rham and absolute Hodge cycles. *C. R. Acad. Sc. Paris*, t. **319**, Série I (1994) 67-72.
- [35] Coniveau of classes of flat bundles trivialized on a smooth covering of a complex manifold. *K-Theory* **8** (1994), 483-488
- [36] (with K. Corlette) Classes of local systems of  $\mathbb{Q}$  hermitian vector spaces. Preprint 1994, 6 pages, appendix to "Riemann-Roch for flat bundles" by J.-M. Bismut, *Chinese Annals of Mathematics* **26B:1** (2005), 15-44.
- [37] (with S. Bloch) The coniveau filtration and non-divisibility for algebraic cycles. *Math. Ann.* **304** (1996), 303-314.
- [38] (with M. Levine and E. Viehweg) Chow groups on projective varieties of very small degree. *Duke Math. J.* **87** (1997), 29-58.
- [39] (with S. Bloch) Algebraic Chern-Simons theory. *Am. J. of Mathematics* **119** (1997), 903-952.
- [40] Recent developments on characteristic classes of flat bundles on complex algebraic manifolds. *Jber. d. Dt. Math.-Verein.* **98** (1996), 182-191, (survey).
- [41] (with B. Kahn, M. Levine, E. Viehweg) The Arason invariant and mod 2 algebraic cycles. *Journal of the American Mathematical Society* **11** (1998), 73-118.
- [42] Algebraic Differential Characters. In Regulators in Analysis, Geometry and Number Theory, *Progress in Mathematics*, Birkhäuser Verlag, **171** (2000), 89-117.
- [43] A remark on an algebraic Riemann-Roch formula for flat bundles. *K-Theory* **13** (1998), 61-68.
- [44] (with V. Srinivas, E. Viehweg) The universal regular quotient of the Chow group of 0-cycles on a singular projective variety. *Inventiones math.* **135** (1999), 595-664.
- [45] (with E. Viehweg) Germs of de Rham cohomology classes which vanish at the generic point. *C. R. Acad. Sci. Paris* **326** (1998) 857-862.
- [46] Algebraic theory of characteristic classes of bundles with connection. In Algebraic K-theory, *Proceedings of Symposia in pure Mathematics* **67** (1999), 13-25.
- [47] (with S. Bloch) A Riemann-Roch theorem for flat bundles, with values in the algebraic Chern-Simons theory. *Annals of Mathematics* **151** (2000), 1-46.
- [48] (with E. Viehweg) Semistable bundles on curves and irreducible representations of the fundamental group. Algebraic Geometry: Hirzebruch 70, *Contemporary Mathematics* **241** (1999), 129-141.

- [49] (with S. Bloch) Lectures on Algebro-Geometric Chern-Weil and Cheeger-Chern-Simons Theory for Vector Bundles. In Arithmetic and Geometry of Algebraic Cycles. *Nato Science Series* **548** (2000), 3-29.
- [50] (with S. Bloch) Gauß-Manin determinants of rank 1 irregular connection on curves. *Math. Ann.* **321** (2001), 15-87, with an addendum: the letter of P. Deligne to J.-P. Serre (Feb. 74) on  $\epsilon$ -factors, 65-87.
- [51] (with M. Levine) The Steinberg curve. *Am. J. of Mathematics* **122** (2000), 783-804.
- [52] (with I.H. Tsai) Determinant bundle in a family of curves, after A. Beilinson and V. Schechtman. *Comm. Math. Phys.* **211** (2000), 359-363.
- [53] (with S. Bloch) Relatives Algebraic Characters. In Motives, Polylogarithms and Hodge Theory, *International Press Lecture Series*, vol. **3**, part I (2002), 47-75.
- [54] (with S. Bloch) Gauß-Manin determinant connections and periods for irregular connections. *Geom. funct. anal. Special Volume-GAFA 2000*, 1-31, Birkhäuser Verlag.
- [55] (with S. Bloch) A formula for Gauß-Manin determinants. Preprint 2000, 37 pages.
- [56] (with S. Bloch) Homology for irregular connections. *Journal de Théorie des Nombres de Bordeaux* **16** (2004) no 2, 357-371.
- [57] (with C. Hertling) Semistable bundles and reducible representations of the fundamental group. *International Journal of Mathematics* **12**, no7 (2001), 847-855.
- [58] (with A. Beilinson and S. Bloch)  $\epsilon$ -factors for Gauß- Manin determinants. *Moscow Mathematical Journal*, **2** no 3 (2002), 1-56.
- [59] (with S. Bloch) An additive version of higher Chow groups. *Annales Scientifiques de l'École Normale Supérieure*, 4-o série, **36** (2003), 463-477.
- [60] (with E. Viehweg) Chern classes of Gauß-Manin bundles of weight 1 vanish. *K-Theory* **26** (2002), 287-305.
- [61] Characteristic classes of flat bundles and determinant of the Gauß-Manin connection. *Proceedings of the International Congress of Mathematicians, Beijing 2002*, Higher Education Press, 471-483.
- [62] Varieties over a finite field with trivial Chow group of 0-cycles have a rational point. *Inventiones math.* **151** (2003), 187-191.
- [63] (with S. Bloch) The additive dilogarithm. *Documenta Math.* Extra Volume: Kazuya Kato's Fiftieth Birthday (2003), 131-155.
- [64] (with D. Wan) Hodge type of the exotic cohomology of complete intersections. *C. R. Acad. Sci. Paris, Ser. I* **336** (2003), 153-157.
- [65] (with S. Bloch) Congruences for the number of rational points, Hodge type and motivic conjectures for Fano varieties. *Cubo A Mathematical Journal*, **05**, no 03 (2003), 251-262.
- [66] (with S. Bloch and M. Levine) Decomposition of the diagonal and eigenvalues of Frobenius for Fano hypersurfaces. *Am. J. of Mathematics*, **127** no1 (2005), 193-207.
- [67] Eigenvalues of Frobenius acting on the  $\ell$ -adic cohomology of complete intersections of low degree. *C. R. Acad. Sci. Paris, Ser. I* **337** (2003), 317-320.
- [68] (with N. Katz) Cohomological divisibility and point count divisibility. *Compositio math.* **141** 01 (2005), 93-100.
- [69] (with A. Beilinson, S. Bloch, P. Deligne) Periods for irregular connections on curves. Preprint 2003, 59 pages.
- [70] Some elementary theorems about divisibility of 0-cycles on abelian varieties defined over finite fields. *International Mathematics Research Notices* **19** (2004), 929-935.
- [71] (with S. Bloch) Local Fourier transforms and rigidity for  $D$ -modules. *Asian Journal of Mathematics*, special issue dedicated to Armand Borel, Vol. **8**, No 4 (2004), 587-606.
- [72] Appendix to "Congruences for rational points on varieties over finite fields" by N. Fakhruddin and C. S. Rajan. *Math. Ann.* **333** (2005), 811-814.
- [73] Deligne's integrality theorem in unequal characteristic and rational points over finite fields. *Annals of Mathematics* **164** (2006), 715-730.
- [74] (with P. Deligne) Appendix to "Deligne's integrality theorem in unequal characteristic and rational points over finite fields". *Annals of Mathematics* **164** (2006), 726-730.
- [75] Variation of Artin's vanishing theorem. *Advances of Mathematics* **198** (2005) issue 2, 435-438, special issue dedicated to M. Artin.
- [76] (with S. Bloch) Künneth projectors and correspondences for open varieties. In *Algebraic Cycles and Motives*, vol. 2, 54-72, *London Math. Soc. Lecture Note Ser.* **344** (2007).

- [77] A remark on higher congruences for the number of rational points of varieties defined over a finite field. Preprint 2005, 6 pages.
- [78] (with Phùng Hô Hai) The Gauß-Manin connection and Tannaka duality. *International Mathematics Research Notices* **93878** (2006), 1-35.
- [79] (with S. Bloch and D. Kreimer) On motives attached to graph polynomials. *Comm. Math. Phys.* **267** no1 (2006), 181-225.
- [80] (with P. Berthelot and S. Bloch) On Witt vector cohomology for singular varieties. *Compositio math.* **143** (2007), 363-392.
- [81] (with M. Blickle and K. Rülling) Characteristic 0 and  $p$  analogies, and some motivic cohomology. In *Global Aspects of Complex Geometry*, ed. Catanese, Esnault, Huckelberry, Hulek, Peternell, Springer Verlag (2006), 59-82.
- [82] (with M. Blickle) Rational singularities and rational points. *Pure Appl. Math. Q.* **4** (2008), no. 3, part 2, 729-741.
- [83] (with Phùng Hô Hai and X. Sun) On Nori's Fundamental Group Scheme. *Progress in Mathematics*, Vol. **265** (2007), 377-398.
- [84] Partial connection for  $p$ -torsion line bundles in characteristic  $p > 0$ . Inspired by S. S. Chern, 173-178, *Nankai Tracts Math.* **11**, World Sci. Publ. Hackensack, NJ (2006).
- [85] (with Phùng Hô Hai) The fundamental groupoid scheme and applications. *Annales de l'Institut Fourier* **58** (2008), 2381-2412.
- [86] (with Phùng Hô Hai) Packets in Grothendieck's Section Conjecture. *Advances in Mathematics* **218** (2008), 395-416.
- [87] Coniveau over  $p$ -adic fields and points over finite fields. *C. R. Acad. Sci. Paris, Ser. I* **345** (2007) 73-76.
- [88] (with C. Xu) Congruence for rational points over finite fields and coniveau over local fields. *Transactions of the AMS* **361** (2009), 2679-2688.
- [89] (with M. Levine) Tate motives and fundamental group. Preprint 2007, 65 pages.
- [90] (with A. Ogus) Hodge cohomology of invertible sheaves, in *Motives and Algebraic Cycles, A Celebration in Honour of Spencer J. Bloch*, American Mathematical Society, Fields Institute, **56** (2009), 83-91.
- [91] Algebraic differential characters of flat connections with nilpotent residues. In *Algebraic Topology*, Abel Prisen **4** (2007), Springer Verlag, 83-94.
- [92] (with O. Wittenberg) Remarks on the cycle classes of sections of the arithmetic fundamental group. *Moscow Mathematical Journal* **9** no3 (2009), 1-17.
- [93] (with O. Wittenberg) On abelian birational sections. *Journal of the American Mathematical Society* **23** (2010), 713-724.
- [94] (with Phùng Hô Hai) Two small remarks on Nori fundamental group scheme. *Advanced Studies in Pure Mathematics* **60** (2010), 237-243.
- [95] (with V. Mehta) Simply connected projective manifolds in characteristic  $p > 0$  have no nontrivial stratified bundles. *Inventiones math.* **181** (2010), 449-465.
- [96] (with E. Viehweg) On a rationality question in the Grothendieck ring of varieties. *Acta Mathematica Vietnamica* **35** (1) (2010), 31-41.
- [97] (with V. Mehta) Weak Density of the Fundamental Group Scheme. *Int. Math. Res. Not. IMRN* **13** (2011), 3071-3081.
- [98] (with E. Viehweg) Surface singularities dominated by smooth varieties. *Journ. reine angew. Math.* **649** (2010), 1-9.
- [99] (with A. Hogadi) On the algebraic fundamental group of smooth varieties in characteristic  $p > 0$ . *Transactions of the AMS* **364** (2012), 2429-2442.
- [100] (with P. Berthelot and K. Rülling) Rational points over finite fields for regular models of algebraic varieties of Hodge type  $\geq 1$ . *Annals of Mathematics* **176** (2012), 1-96.
- [101] (with J. Nicaise) Finite group actions, rational fixed points and weak Néron models. *Pure Applied Math. Q.* **7:4** in the *Special issue in memory of Eckart Viehweg* (2011), 1209-1240.
- [102] (with V. Srinivas) Algebraic versus topological entropy for surfaces over finite fields. *Osaka J. Math.* **50** (2013) no3, 827-846.
- [103] (with M. Kerz) Notes on Deligne's letter to Drinfeld dated Marc 5, 2007. Preprint 2011, 19 pages. Not for publication.

- [104] (with A. Langer) On a positive equicharacteristic variant of the  $p$ -curvature conjecture. *Documenta mathematica* **18** (2013), 23–50.
- [105] (with X. Sun) Stratified bundles and étale fundamental group. *Ann. Sc. Norm. Pisa Cl. Sci.* (5) **XIII** (2014), 1–18.
- [106] (with S. Bloch and M. Kerz)  $p$ -adic deformation of algebraic cycle classes. *Inventiones math.* **195**, issue 3 (2014), 673–722.
- [107] On flat bundles in characteristic 0 and  $p > 0$ . *European Congress of Mathematics*, Kraków, 2-7 July, 2012, European Mathematical Society, 301–313.
- [108] (with M. Levine and O. Wittenberg) Index of varieties over Henselian fields and Euler characteristic of coherent sheaves. *J. Algebraic Geometry* **24** (2015), 693–718.
- [109] (with M. Kerz) A finiteness theorem for Galois representations of function fields over finite fields (after Deligne). *Acta Mathematica Vietnamica* **37** 4 (2012), 531–562.
- [110] (with C. Sabbah and J.-D. Yu)  $E_1$ -degeneration of the irregular Hodge filtration (with an appendix by Morihiro Saito). *Journ. reine angew. Mathematik* **729** (2017), 171–227.
- [111] (with O. Wittenberg) On the cycle class map for 0-cycles over local fields. *Annales Scientifiques de l'École Normale Supérieure* **49** (2016) 2, 481–518.
- [112] (with S. Bloch and M. Kerz) Deformation of algebraic cycle classes in characteristic 0. *Algebraic Geometry* **3** (2014), 290–310.
- [113] (with V. Srinivas) Simply connected varieties in characteristic  $p > 0$ , with an appendix by Jean-Benoit Bost. *Compositio math.* **152** (2016), 255–287.
- [114] (with K. Oguiso) Non-liftability of automorphism groups of a K3 surface in positive characteristic. *Math. Ann.* **363** (2015), 1187–1206.
- [115] (with K. Oguiso and X. Yu) Automorphisms of elliptic K3 surfaces and Salem numbers of maximal degree. *Algebraic Geometry* **3** (2016), 496–507.
- [116] (with A. Shiho) Convergent isocrystals on simply connected varieties, preprint 2015, 30 pages, to appear in the *Annales de l'Institut Fourier*.
- [117] (with M. Kerz and O. Wittenberg) A restriction isomorphism for cycles of relative dimension zero. *Cambridge Journal of Mathematics*, **4** 2 (2016), 163–196.
- [118] (with L. Kindler) Lefschetz theorems for tamely ramified coverings. *Proc. of the AMS* **144** (2016), 5071–5080.
- [119] (with A. Shiho) Chern classes of crystals, preprint 2015, 22 pages, to appear in *Transactions of the AMS*.
- [120] Some fundamental groups in arithmetic geometry, preprint 2015, 9 pages, to appear in *the Clay Proceedings of the Algebraic Geometry*, Utah 2015.
- [121] A remark on Deligne's finiteness theorem, *International Mathematics Research Notices*, **16** (2017), 4962–4970.
- [122] Survey on some aspects of Lefschetz theorems in algebraic geometry, *Revista Matemática Complutense* **30** (2) (2017), 217–232.
- [123] (with T. Abe) A Lefschetz theorem for overconvergent isocrystals with Frobenius structure. Preprint 2016, 21 pages, appears in the *Annales de l'École Normale Supérieure*.
- [124] (with M. Kisin)  $D$ -modules and finite monodromy, *Selecta Mathematica*, volume dedicated to Alexander Beilinson **24** (2018) (1), 145–155.
- [125] (with M. Harris) Chern classes of automorphic bundles. Preprint 2017, 18 pages, to appear in the *Pure and Applied Mathematics Quarterly* issue in honor of Prof. Manin's 80th birthday.
- [126] (with M. Groechenig) Rigid connections,  $F$ -isocrystals and  $p$ -curvature. Preprint 2017, 28 pages.
- [127] (with V. Srinivas) A relative version of Gieseker's problem on stratifications in characteristic  $p > 0$ . Preprint 2017, 11 pages, to appear in *International Mathematics Research Notices*, <https://doi.org/10.1093/imrn/rnx281>
- [128] (with M. Groechenig) Cohomologically rigid local systems and integrality, *Selecta Mathematica*, to appear. Preprint 2018, 13 pages.
- [129] (with M. Harris) Chern classes of automorphic vector bundles, II. Preprint 2018, 29 pages.