



SOUTH EAST ASIAN MATHEMATICAL SOCIETY

SEAMS SCHOOL PROPOSAL

IMH-SEAMS SCHOOL ON ALGEBRAIC GEOMETRY

Hanoi

March 2016

Organized by

Institute of Mathematics, VAST, Hanoi, Vietnam

2016

SEAMS SCHOOL PROPOSAL

1. The proposed title, place and dates of the SEAMS School

Title of the SEAMS School	:	IMH-SEAMS School on Algebraic Geometry
Place	:	HANOI
Dates	:	29/FEBRUARY - 11/MARCH 2016

2. Organizers (write the names, place of work, and email address, if you have more than two then add the necessary lines)

1. Name	:	Le Tuan Hoa
Institution	:	Institute of Mathematics, Hanoi
Email and Phone	:	LTHOA@MATH.AC.VN
2. Name	:	Phung Ho Hai
Institution	:	Institute of Mathematics, Hanoi
Email and Phone	:	PHUNG@MATH.AC.VN
3. Name	:	Nguyen Chu Gia Vuong
Institution	:	Institute of Mathematics, Hanoi
Email and Phone	:	NCGVUONG@MATH.AC.VN
4. Name	:	Doan Trung Cuong
Institution	:	Institute of Mathematics, Hanoi
Email and Phone	:	DTCUONG@MATH.AC.VN

INFORMATION ON BANK ACCOUNT

- Beneficiary's name: Institute of Mathematics
Address: 18 Hoang Quoc Viet Road, Cau Giay, Hanoi , Vietnam
- Account No (EUR): 001.1.14.0341412
- Beneficiary's bank: Bank for foreign trade of Vietnam
Address: Operations Centre, 198 Tran Quang Khai Str., Hanoi, Vietnam
- SWIFT code: BFTV VNVX

3. Short Description of the Scientific Content (max 100 words)

The IHM-SEAMS school will be an activity aiming to boost the interaction and collaboration between junior and senior researchers in mathematics in the region and with experts from France. This is planned to be a regular school, organized once a year in the Fall semester, focus on one topic. The topic for the academic year 2015 - 2016 is Algebraic Geometry.

4. The speakers of the school (names, address, emails)

1) Mr. Arnaud Beauville

Current position: Professeur émérite.

Professional address:

Laboratoire J.-A. Dieudonné
Université de Nice
Parc Valrose
06108 Nice cedex 2, France

Email: beauville@unice.fr

2) Mr. Michel Brion

Current position: Directeur de recherches.

Professional address:

Institut Fourier
Bureau 43 C, B.P. 74
38402 Saint-Martin d'Hères Cedex, France

Email: Michel.Brion@ujf-grenoble.fr

3) Tutors:

Dr. Đoàn Trung Cường (Institute of Mathematics, VAST).

Dr. Nguyễn Chu Gia Vượng (Institute of Mathematics, VAST).

5. Describe in a few lines the local institution related to this school, including the main academic program and its strength. Give also the Internet site of the local institutions.

The Institute of Mathematics, Hanoi (IMH) is a leading research institute of Vietnam. Along its 45 year history, it is recognized by the Third World Academy of Science (TWAS) as a Center of Excellence in developing countries. It has collaborated with CIMPA since many years in organizing Research Schools and Workshops. Since 2005, IMH organizes the International Master Program. This is a joint program with several universities in France and Germany. Most

of the students of IMP finish the first year (M1) in Hanoi and continue the second year (M2) in France and Germany. Many of them continue their Ph.D. study in France, Germany, Italy and the USA. Some of the students from the program have received their Master or Ph.D. degree, returned to Vietnam and joint different universities in Vietnam.

Website: <http://www.math.ac.vn>

6. Provide information about the expected participants. The number and the distribution of expected participants.

Audience: Graduate students

30 from Vietnam, of which 10 are from the International Master Program of the IMH (at least 10 female students)

08 (at least) from neighboring SEAMS countries

7. Describe the objectives and the program of the proposed school, including the courses, speakers, abstracts (8 lines each) and tentative schedules for each course.

The school is two weeks long in March 2016. There are two mini-courses, each consists of 5 x 90 minute lectures and 5 x 120 minute lectures. There are also tutorial sessions and discussion, led by young researchers of the Institute of Mathematics and other universities in Hanoi.

Lecture 1: Introduction to Algebraic geometry.

Lecturer: **Arnaud Beauville**

Abstract: The aim of the course is to introduce the main notions of algebraic geometry: algebraic varieties, morphisms, rational maps. The emphasis will be on examples; the necessary theoretical tools will be developed only when needed.

Detailed plan:

1. Affine and projective varieties. Examples: curves, hypersurfaces.
2. Functions and morphisms. Examples: Veronese and Segre embeddings, projections.
3. Some algebra: ideals of varieties, irreducibility, irreducible decomposition.
4. Grassmannians
5. Rational functions and rational maps. Rational varieties, examples.
6. Dimension; smooth and singular varieties, tangent spaces. Examples : tangent space to the Grassmannian.
7. Degree of a projective variety. Bézout's theorem, applications.
8. Families of varieties
9. Quadrics, cubics, ...

Lecture 2: Algebraic curves.

Lecturer: **Michel Brion**

Abstract: The aim of this course is to give an introduction to algebraic curves. This will illustrate and complement the course of Beauville on algebraic geometry.

Detailed plan:

1. Projective plane curves : linear systems of curves, theorems of Bézout and Max Noether.
2. Resolution of singularities of curves : blowing-up of a point, quadratic transformations, nonsingular models of curves.
3. Normalization of algebraic varieties; the case of curves.
4. Derivations, differentials on algebraic varieties; the case of curves (canonical divisors).
5. Riemann-Roch theorem and applications.
6. Automorphisms of curves.

References:

- [Ful] William Fulton, Algebraic Curves: an introduction to algebraic geometry. Addison-Wesley Pub. Co., Advanced Book Program, 1989.
- [DoI] Igor Dolgachev, Basic Algebraic Geometry, vol. 1. : A Modern View. Cambridge University Press; 1st edition (October 8, 2012).

Tentative Schedule

Date	Morning 9h00-11h00	Afternoon 14h00-16h00
29/2	Beauville: Affine and projective varieties. Examples: curves, hypersurfaces.	Brion: Projective plane curves : linear systems of curves, theorems of Bézout and Max Noether 1
1/3	Beauville: Functions and morphisms. Examples: Veronese and Segre embeddings, projections.	Brion: Projective plane curves : linear systems of curves, theorems of Bézout and Max Noether 2
2/3	Beauville: Some algebra: ideals of varieties, irreducibility, irreducible decomposition	Brion: Resolution of singularities of curves : blowing-up of a point, quadratic transformations, nonsingular models of curves 1
3/3	Beauville: Grassmannians	Brion: Resolution of singularities of curves : blowing-up of a point, quadratic transformations, nonsingular models of curves 2

4/3	Beauville: Rational functions and rational maps. Rational varieties, examples	Brion: Normalization of algebraic varieties; the case of curves
7/3	Brion: Derivations, differentials on algebraic varieties; the case of curves (canonical divisors)	Beauville: Dimension; smooth and singular varieties, tangent spaces. Examples : tangent space to the Grassmannian
8/3	Brion: Riemann-Roch theorem and applications 1	Beauville: Degree of a projective variety. Bézout's theorem, applications 1
9/3	Brion: Riemann-Roch theorem and applications 2	Beauville: Degree of a projective variety. Bézout's theorem, applications 2
10/3	Brion: Automorphisms of curves 1	Beauville: Families of varieties
11/3	Brion: Automorphisms of curves 2	Beauville: Quadrics, cubics, ...

8. Provide information about provisional budget and the expected funding.

	Items	Request fund (in EURO)	
		IMH and other sources	CIMPA
1	Payment for lecturers 30 lectures x 40 EUR	1.200	
2	Payment for tutors 20 sessions x 20 EUR	400	
2	Travel for Vietnamese students 20 persons x 100 EUR	2.000	
3	Lodging for Vietnamese students 20 persons x 15 days x 10 EUR	3.000	
4	Meals for Vietnamese students 20 persons x 15 days x 10 EUR	3.000	
5	Travel for foreign SEAMS students 8 persons x 300 EUR		2.400
6	Lodging for foreign SEAMS students 8 persons x 15 days x 20 EUR		2.400
7	Meals for foreign SEAMS students 8 persons x 15 days x 10 EUR		1.200

8	Logistics	2.000	
	Total	11.600 EUR	6.000 EUR

9. Provide CVs for the organizers.

A. Le Tuan Hoa

- Born in 1957 in Vietnam
- Full Professor
- Director of Institute of Mathematics - VAST
- List of publication listed in MathSciNet: 52

List of recent publications:

1. MR2891129 Hoa, Lê Tuấn; Morales, Marcel Non-linear behaviour of Castelnuovo-Mumford regularity. *J. Algebra* 356 (2012), 207–215.
2. MR2889471 Dung, Le Xuan; Hoa, Le Tuan Castelnuovo-Mumford regularity of associated graded modules and fiber cones of filtered modules. *Comm. Algebra* 40 (2012), no. 2, 404–422.
3. MR2775813 Chardin, Marc; Dao Thanh Ha; Lê Tuấn Hoa Castelnuovo-Mumford regularity of Ext modules and homological degree. *Trans. Amer. Math. Soc.* 363 (2011), no. 7, 3439–3456
4. MR2731325 Đỗ Hoàng Giang; Lê Tuấn Hoa On local cohomology of a tetrahedral curve. *Acta Math. Vietnam.* 35 (2010), no. 2, 229–241.
5. MR2670214 Lê Tuấn Hoa; Trần Nam Trung Partial Castelnuovo-Mumford regularities of sums and intersections of powers of monomial ideals. *Math. Proc. Cambridge Philos. Soc.* 149 (2010), no. 2, 229–246.
6. MR2643966 Hoa, Le Tuan; Tam, Nguyen Duc On some invariants of a mixed product of ideals. *Arch. Math. (Basel)* 94 (2010), no. 4, 327–337.
7. MR2550167 Hellus, Michael; Hoa, Lê Tuấn; Stückrad, Jürgen Castelnuovo-Mumford regularity and the reduction number of some monomial curves. *Proc. Amer. Math. Soc.* 138 (2010), no. 1, 27–35.
8. MR2591091 Hellus, Michael; Hoa, Lê Tuấn; Stückrad, Jürgen Gröbner bases of simplicial toric ideals. *Nagoya Math. J.* 196 (2009), 67–85.
9. MR2403695 Lê Tuấn Hoa Finiteness of Hilbert functions and bounds for Castelnuovo-Mumford regularity of initial ideals. *Trans. Amer. Math. Soc.* 360 (2008), no. 9, 4519–4540.
10. MR2394265 Ha, Dao Thanh; Hoa, Lê Tuấn Castelnuovo-Mumford regularity of some modules. *Comm. Algebra* 36 (2008), no. 3, 992–1004.
11. MR2388042 Hoa, Lê Tuấn; Trung, Trần Nam Castelnuovo-Mumford regularity of sums of powers of polynomial ideals. *Comm. Algebra* 36 (2008), no. 2, 806–820.

B. Phung Ho Hai

- Born in 1970 in Vietnam
- Full Professor
- Deputy Director of Institute of Mathematics –VAST
- List of publication listed in MathSciNet: 28

List of recent publications:

1. MR3237447 Phùng, Hồ Hai, Gauss-Manin stratification and stratified fundamental group schemes. *Ann. Inst. Fourier (Grenoble)* 63 (2013), no. 6, 2267–2285.
2. MR2908525 Nguyen Thi Phuong Dung; Phung Ho Hai; Nguyen Huy Hung, Construction of irreducible representations of the quantum super group $GL_q(3|1)$. *Acta Math. Vietnam.* 36 (2011), no. 2, 215–229.
3. MR2761929 Esnault, Hélène; Hai, Phùng Hồ Two small remarks on Nori fundamental group scheme. *Algebraic geometry in East Asia—Seoul 2008*, 237–243, *Adv. Stud. Pure Math.*, 60, Math. Soc. Japan, Tokyo, 2010.
4. MR2498355 Esnault, Hélène; Hai, Phùng Hồ, The fundamental groupoid scheme and applications. *Ann. Inst. Fourier (Grenoble)* 58 (2008), no. 7, 2381–2412.
5. MR2448024 Phùng Hồ Hai, Tannaka-Krein duality for Hopf algebroids. *Israel J. Math.* 167 (2008), 193–225.
6. MR2402410 Esnault, Hélène; Hai, Phùng Hồ; Sun, Xiaotao, On Nori's fundamental group scheme. *Geometry and dynamics of groups and spaces*, 377–398, *Progr. Math.*, 265, Birkhäuser, Basel, 2008.
7. MR2407940 Esnault, Hélène; Hai, Phùng Hồ, Packets in Grothendieck's section conjecture. *Adv. Math.* 218 (2008), no. 2, 395–416.
8. MR2366123 Hai, Phùng Hồ; Kriegk, Benoit; Lorenz, Martin N-homogeneous superalgebras. *J. Noncommut. Geom.* 2 (2008), no. 1, 1–51.
9. MR2346948 Hai, Phùng Hồ; Lorenz, Martin Koszul algebras and the quantum MacMahon master theorem. *Bull. Lond. Math. Soc.* 39 (2007), no. 4, 667–676.

C. Nguyen Chu Gia Vuong

- Born in 1976 in Vietnam
- Researcher
- Deputy director of Graduate Center of the Institute of Mathematics - VAST
- List of publication listed in MathSciNet: 2

List of recent publications:

1. MR2398756 Nguyen-Chu, G.-V. Quelques calculs de traces compactes et leurs transformées de Satake. *Canad. J. Math.* 60 (2008), no. 2, 412–442.
2. MR2103221 Nguyen-Chu, Gia-Vuong Intégrales orbitales unipotentes stables et leurs transformées de Satake. *Mém. Soc. Math. Fr. (N.S.)* No. 97 (2004), vi+110 pp.

D. Doan Trung Cuong

- Born in 1981 in Vietnam
- Researcher.
- Institute of Mathematics - VAST
- List of publication listed in MathSciNet: 8

List of recent publications:

1. MR3210930 Đoàn, Trung Cường Fibers of flat morphisms and Weierstrass preparation theorem. *J. Algebra* 411 (2014), 337–355.
2. MR3166066 Đoàn, Trung Cường Local rings with zero-dimensional formal fibers. *J. Algebra* 403 (2014), 77–92.
3. MR2748131 Cuong, Nguyen Tu; Cuong, Doan Trung; Truong, Hoang Le On a new invariant of finitely generated modules over local rings. *J. Algebra Appl.* 9(2010), no. 6, 959–976.
4. MR2581037 Cuong, Đoàn Trung Hodge cohomology of étale Nori finite vector bundles. *Int. Math. Res. Not. IMRN* 2010, no. 2, 320–333.

10. Provide CVs for the main lecturers

A) Prof. Arnaud Beauville (Mr.)

- Current Position: Professeur émérite.
- Address: Laboratoire J.-A. Dieudonné, Université de Nice, Parc Valrose, 06108 Nice cedex 2, France.
- Email: beauville@unice.fr.
- Phone: 04 92 07 62 69
- Fax: 04 93 51 79 74

- Leading researcher in Algebraic geometry.

- Professionnal experience:
 - o Researcher CNRS (1971-1977),
 - o Professor (Universite d'Angers, 1978-1980),
 - o Matre de Conférences (Ecole Polytechnique, 1981-1982), Professor (Universite Paris-Sud (Orsay), 1982-1994),
 - o Professor (Ecole Normale Supérieure, 1995-2000) and Chairman of the Math. Dept. (1997-2000),
 - o Professor (Universite de Nice, 2000-2008).

- Honours
 - o Professor "exceptional class" (classe exceptionnelle) since 1991
 - o Prize of the Comite du rayonnement francais (95)

- Prix Servant ("Grand Prix" of the French Academy of Sciences), 2001
- Member of the Institut Universitaire de France" since 2001
- Fellow of the AMS since 2012
- Prix Ampere ("Grand Prix" of the French Academy of Sciences), 2013

List of publication in MathSciNet

1. MR3278569 Beauville, Arnaud On the second lower quotient of the fundamental group. Algebraic and complex geometry, 41–45, Springer Proc. Math. Stat., 71, Springer, Cham, 2014.
2. MR3322784 Beauville, Arnaud Some surfaces with maximal Picard number. J. Éc. polytech. Math. 1 (2014), 101–116.
3. MR3204388 Beauville, Arnaud Theta functions, old and new. Open problems and surveys of contemporary mathematics, 99–132, Surv. Mod. Math., 6, Int. Press, Somerville, MA, 2013
4. MR3114935 Beauville, Arnaud Abelian varieties associated to Gaussian lattices. A celebration of algebraic geometry, 37–44, Clay Math. Proc., 18, Amer. Math. Soc., Providence, RI, 2013.
5. MR3087251 Beauville, Arnaud Quelques aspects de l'œuvre mathématique de F. Hirzebruch. (French) [Some aspects of the mathematical works of F. Hirzebruch] Gaz. Math. No. 135 (2013), 99–102.
6. MR3031568 Beauville, Arnaud Vanishing thetanulls on curves with involutions. Rend. Circ. Mat. Palermo (2) 62 (2013), no. 1, 61–66
7. MR2987652 Beauville, Arnaud Non-rationality of the symmetric sextic Fano threefold. Geometry and arithmetic, 57–60, EMS Ser. Congr. Rep., Eur. Math. Soc., Zürich, 2012.
8. MR2963489 Beauville, Arnaud De combien de paramètres dépend l'équation générale de degré n ? (French) [On how many parameters does the general equation of degree n depend?] Gaz. Math. No. 132 (2012), 5–15.
9. MR2964467 Beauville, Arnaud Holomorphic symplectic geometry: a problem list. Complex and differential geometry, 49–63, Springer Proc. Math., 8, Springer, Heidelberg, 2011.
10. MR2818714 Beauville, Arnaud; Ritzenthaler, Christophe Jacobians among abelian threefolds: a geometric approach. Math. Ann. 350 (2011), no. 4, 793–799.
11. MR2805992 Beauville, Arnaud Antisymplectic involutions of holomorphic symplectic manifolds. J. Topol. 4 (2011), no. 2, 300–304.
12. MR2757649 Beauville, Arnaud Surfaces algébriques complexes. (French) [Complex algebraic surfaces] Algebraic surfaces, 5–56, C.I.M.E. Summer Sch., 76, Springer, Heidelberg, 2010.
13. MR2724276 Beauville, Arnaud The action of SL_2 on abelian varieties. J. Ramanujan Math. Soc. 25 (2010), no. 3, 253–263.

14. MR2681719 Beauville, Arnaud Finite subgroups of $\mathrm{PGL}_2(K)$. Vector bundles and complex geometry, 23–29, *Contemp. Math.*, 522, Amer. Math. Soc., Providence, RI, 2010.
15. MR2655320 Beauville, Arnaud Moduli of cubic surfaces and Hodge theory (after Allcock, Carlson, Toledo). *Géométries à courbure négative ou nulle, groupes discrets et rigidités*, 445–466, *Sémin. Congr.*, 18, Soc. Math. France, Paris, 2009.
16. MR2576681 Beauville, Arnaud On the Brauer group of Enriques surfaces. *Math. Res. Lett.* 16 (2009), no. 6, 927–934.
17. MR2588789 Beauville, Arnaud The primitive cohomology lattice of a complete intersection. *C. R. Math. Acad. Sci. Paris* 347 (2009), no. 23-24, 1399–1402.
18. MR2435837 Beauville, Arnaud; Ji, Lizhen; Katzarkov, Ludmil; Liu, Kefeng; Tschinkel, Yuri; Yau, Shing-Tung Preface to Bogomolov special issue. *Pure Appl. Math. Q.* 4 (2008), no. 3, Special Issue: In honor of Fedor Bogomolov. Part 2, i. 14-06
19. MR2400876 Beauville, Arnaud; Ji, Lizhen; Katzarkov, Ludmil; Liu, Kefeng; Tschinkel, Yuri; Yau, Shing-Tung Preface to Bogomolov special issue. *Pure Appl. Math. Q.* 4 (2008), no. 2, Special Issue: In honor of Fedor Bogomolov. Part 1, i. 14-06
20. MR2187148 Beauville, Arnaud On the splitting of the Bloch-Beilinson filtration. *Algebraic cycles and motives. Vol. 2*, 38–53, *London Math. Soc. Lecture Note Ser.*, 344, Cambridge Univ. Press, Cambridge, 2007.
21. MR2344578 Beauville, Arnaud p -elementary subgroups of the Cremona group. *J. Algebra* 314 (2007), no. 2, 553–564.
22. MR2343347 Beauville, Arnaud Riemannian holonomy and algebraic geometry. *Enseign. Math.* (2) 53 (2007), no. 1-2, 97–126.
23. MR2310248 Beauville, Arnaud Vector bundles on curves and theta functions. *Moduli spaces and arithmetic geometry*, 145–156, *Adv. Stud. Pure Math.*, 45, Math. Soc. Japan, Tokyo, 2006.
24. MR2273860 Beauville, Arnaud Orthogonal bundles on curves and theta functions. *Ann. Inst. Fourier (Grenoble)* 56 (2006), no. 5, 1405–1418.
25. MR2230918 Beauville, Arnaud Vector bundles and theta functions on curves of genus 2 and 3. *Amer. J. Math.* 128 (2006), no. 3, 607–618.
26. MR2167199 Beauville, Arnaud La conjecture de Green générique (d'après C. Voisin). (French) [The generic Green conjecture (following C. Voisin)] *Séminaire Bourbaki. Vol. 2003/2004. Astérisque No. 299* (2005), Exp. No. 924, vii, 1–14.
27. MR2112574 Beauville, Arnaud Fano threefolds and K3 surfaces. *The Fano Conference*, 175–184, Univ. Torino, Turin, 2004.
28. MR2092009 Beauville, Arnaud; Blanc, Jérémy On Cremona transformations of prime order. *C. R. Math. Acad. Sci. Paris* 339 (2004), no. 4, 257–259.
29. MR2047674 Beauville, Arnaud; Voisin, Claire On the Chow ring of a K3 surface. *J. Algebraic Geom.* 13 (2004), no. 3, 417–426.
30. MR2041776 Beauville, Arnaud Algebraic cycles on Jacobian varieties. *Compos. Math.* 140 (2004), no. 3, 683–688.

31. MR2001133 Beauville, Arnaud The Coble hypersurfaces. *C. R. Math. Acad. Sci. Paris* 337 (2003), no. 3, 189–194.
32. MR1969005 Beauville, Arnaud Some stable vector bundles with reducible theta divisor. *Manuscripta Math.* 110 (2003), no. 3, 343–349.
33. MR1954057 Beauville, Arnaud The Szpiro inequality for higher genus fibrations. *Algebraic geometry*, 61–63, de Gruyter, Berlin, 2002.
34. MR1941574 Beauville, Arnaud Vector bundles on the cubic threefold. *Symposium in Honor of C. H. Clemens (Salt Lake City, UT, 2000)*, 71–86, *Contemp. Math.*, 312, Amer. Math. Soc., Providence, RI, 2002.
35. MR1809497 Beauville, Arnaud Endomorphisms of hypersurfaces and other manifolds. *Internat. Math. Res. Notices* 2001, no. 1, 53–58
36. MR1802909 Bayle, Lionel; Beauville, Arnaud Birational involutions of P^2 . Kodaira's issue. *Asian J. Math.* 4 (2000), no. 1, 11–17.
37. MR1786479 Beauville, Arnaud Determinantal hypersurfaces. Dedicated to William Fulton on the occasion of his 60th birthday. *Michigan Math. J.* 48 (2000), 39–64.
38. MR1760872 Beauville, Arnaud Complex manifolds with split tangent bundle. *Complex analysis and algebraic geometry*, 61–70, de Gruyter, Berlin, 2000.
39. MR1738060 Beauville, Arnaud Symplectic singularities. *Invent. Math.* 139(2000), no. 3, 541–549.
40. MR1714819 Beauville, Arnaud A Calabi-Yau threefold with non-abelian fundamental group. *New trends in algebraic geometry (Warwick, 1996)*, 13–17, *London Math. Soc. Lecture Note Ser.*, 264, Cambridge Univ. Press, Cambridge, 1999.
41. MR1682284 Beauville, Arnaud Counting rational curves on $K3$ surfaces. *Duke Math. J.* 97 (1999), no. 1, 99–108.
42. MR1639888 Beauville, Arnaud Fano contact manifolds and nilpotent orbits. *Comment. Math. Helv.* 73 (1998), no. 4, 566–583.
43. MR1626025 Beauville, Arnaud; Laszlo, Yves; Sorger, Christoph The Picard group of the moduli of G -bundles on a curve. *Compositio Math.* 112 (1998), no. 2, 183–216.
44. MR1664668 Beauville, Arnaud Quantum cohomology of complete intersections. *R.C.P.* 25, Vol. 48, 57–68, *Prépubl. Inst. Rech. Math. Av.*, 1997/42, Univ. Louis Pasteur, Strasbourg, 1997.
45. MR1490854 Beauville, A. The Verlinde formula for PGL_p . *The mathematical beauty of physics (Saclay, 1996)*, 141–151, *Adv. Ser. Math. Phys.*, 24, World Sci. Publ., River Edge, NJ, 1997.
46. MR1406314 Beauville, Arnaud Complex algebraic surfaces. Translated from the 1978 French original by R. Barlow, with assistance from N. I. Shepherd-Barron and M. Reid. Second edition. *London Mathematical Society Student Texts*, 34. Cambridge University Press, Cambridge, 1996. x+132 pp.

47. MR1385680 Beauville, Arnaud Vector bundles on Riemann surfaces and conformal field theory. Algebraic and geometric methods in mathematical physics (Kaciveli, 1993), 145–166, Math. Phys. Stud., 19, Kluwer Acad. Publ., Dordrecht, 1996.
48. MR1360497 Beauville, Arnaud Conformal blocks, fusion rules and the Verlinde formula. Proceedings of the Hirzebruch 65 Conference on Algebraic Geometry (Ramat Gan, 1993), 75–96, Israel Math. Conf. Proc., 9, Bar-Ilan Univ., Ramat Gan, 1996.
49. MR1484335 Beauville, Arnaud Quantum cohomology of complete intersections. Mat. Fiz. Anal. Geom. 2 (1995), no. 3-4, 384–398.
50. MR1397056 Beauville, Arnaud Vector bundles on curves and generalized theta functions: recent results and open problems. Current topics in complex algebraic geometry (Berkeley, CA, 1992/93), 17–33, Math. Sci. Res. Inst. Publ., 28, Cambridge Univ. Press, Cambridge, 1995.
51. MR1351502 Beauville, Arnaud Sur la cohomologie de certains espaces de modules de fibrés vectoriels. (French) [On the cohomology of certain moduli spaces of vector bundles] Geometry and analysis (Bombay, 1992), 37–40, Tata Inst. Fund. Res., Bombay, 1995.
52. MR1320381 Beauville, Arnaud; Laszlo, Yves Un lemme de descente. (French) [A descent lemma] C. R. Acad. Sci. Paris Sér. I Math. 320 (1995), no. 3, 335–340.
53. MR1331615 Beauville, Arnaud Vector bundles on Riemann surfaces and conformal field theory. R.C.P. 25, Vol. 46 (French) (Strasbourg, 1992/1994), 127–147, Prépubl. Inst. Rech. Math. Av., 1994/29, Univ. Louis Pasteur, Strasbourg, 1994.
54. MR1289330 Beauville, Arnaud; Laszlo, Yves Conformal blocks and generalized theta functions. Comm. Math. Phys. 164 (1994), no. 2, 385–419.
55. MR1246395 Beauville, Arnaud Monodromie des systèmes différentiels linéaires à pôles simples sur la sphère de Riemann (d'après A. Bolibrukh). (French) [Monodromy of linear differential systems with simple poles on the Riemann sphere (after A. Bolibrukh)] Séminaire Bourbaki, Vol. 1992/93. Astérisque No. 216 (1993), Exp. No. 765, 4, 103–119.
56. MR1178716 Beauville, Arnaud Annulation du H^1 pour les fibrés en droites plats. (French) [Vanishing of H^1 for flat line bundles] Complex algebraic varieties (Bayreuth, 1990), 1–15, Lecture Notes in Math., 1507, Springer, Berlin, 1992.
57. MR1273370 Beauville, A. Systèmes hamiltoniens complètement intégrables associés aux surfaces K3. (French) [Completely integrable Hamiltonian systems associated with K3-surfaces] Problems in the theory of surfaces and their classification (Cortona, 1988), 25–31, Sympos. Math., XXXII, Academic Press, London, 1991.
58. MR1125667 Beauville, Arnaud Fibrés de rang deux sur une courbe, fibré déterminant et fonctions thêta. II. (French) [Rank-two vector bundles over a curve, determinant bundle and theta functions. II] Bull. Soc. Math. France 119 (1991), no. 3, 259–291.

59. MR1111207 Beauville, Arnaud Erratum: "Vanishing of H^1 and paracanonical systems on surfaces" [J. Reine Angew. Math. 388 (1988), 149–157; MR0944188 (89i:14032)]. (French) J. Reine Angew. Math. 418 (1991), 219–220.
60. MR1086884 Beauville, Arnaud Sur les hypersurfaces dont les sections hyperplanes sont à module constant. (French) [On hypersurfaces whose hyperplane sections have constant moduli] With an appendix by David Eisenbud and Craig Huneke. Progr. Math., 86, The Grothendieck Festschrift, Vol. I, 121–133, Birkhäuser Boston, Boston, MA, 1990.
61. MR1049157 Beauville, Arnaud Jacobiennes des courbes spectrales et systèmes hamiltoniens complètement intégrables. (French) [Jacobians of spectral curves and completely integrable Hamiltonian systems] Acta Math. 164 (1990), no. 3-4, 211–235.
62. MR1034254 Beauville, Arnaud; Debarre, Olivier Sur les fonctions thêta du second ordre. (French) [On second-order theta functions] Arithmetic of complex manifolds (Erlangen, 1988), 27–39, Lecture Notes in Math., 1399, Springer, Berlin, 1989.
63. MR1013156 Beauville, Arnaud Prym varieties: a survey. Theta functions—Bowdoin 1987, Part 1 (Brunswick, ME, 1987), 607–620, Proc. Sympos. Pure Math., 49, Part 1, Amer. Math. Soc., Providence, RI, 1989.
64. MR0998478 Beauville, Arnaud; Narasimhan, M. S.; Ramanan, S. Spectral curves and the generalised theta divisor. J. Reine Angew. Math. 398 (1989), 169–179.
65. MR1005388 Beauville, Arnaud Fibrés de rang 2 sur une courbe, fibré déterminant et fonctions thêta. (French) [Rank-2 vector bundles over a curve, determinant bundle and theta functions] Bull. Soc. Math. France 116 (1988), no. 4, 431–448 (1989).
66. MR0964111 Beauville, Arnaud; Debarre, Olivier; Donagi, Ron; van der Geer, Gerard Sur les fonctions thêta d'ordre deux et les singularités du diviseur thêta. (French) [On second-order theta functions and the singularities of the theta divisor] C. R. Acad. Sci. Paris Sér. I Math. 307 (1988), no. 9, 481–484.
67. MR0945851 Beauville, Arnaud Le problème de Schottky: une introduction. (French) [The Schottky problem: an introduction] Gaz. Math. No. 37 (1988), 54–63.
68. MR0944188 Beauville, Arnaud Annulation du H^1 et systèmes paracanoniques sur les surfaces. (French) [Vanishing of H^1 and paracanonical systems on surfaces] J. Reine Angew. Math. 388 (1988), 149–157.
69. MR0963492 Beauville, A.; Debarre, O. Sur le problème de Schottky pour les variétés de Prym. (French) [On the Schottky problem for Prym varieties] Ann. Scuola Norm. Sup. Pisa Cl. Sci. (4) 14 (1987), no. 4, 613–623 (1988).
70. MR0936851 Beauville, Arnaud Le problème de Schottky et la conjecture de Novikov. (French) [The Schottky problem and Novikov's conjecture] Séminaire Bourbaki, Vol. 1986/87. Astérisque No. 152-153 (1987), 4, 101–112 (1988).
71. MR0934265 Beauville, Arnaud L'approche géométrique du problème de Schottky. (French) [The geometric approach to the Schottky problem] Proceedings of the International Congress of Mathematicians, Vol. 1, 2 (Berkeley, Calif., 1986), 628–633, Amer. Math. Soc., Providence, RI, 1987.

72. MR0916124 Beauville, A.; Mérindol, J.-Y. Sections hyperplanes des surfaces K3. (French) [Hyperplane sections of K3 surfaces] Duke Math. J. 55 (1987), no. 4, 873–878.
73. MR0880023 Beauville, Arnaud Le problème de Torelli. (French) [The Torelli problem] Séminaire Bourbaki, Vol. 1985/86. Astérisque No. 145-146 (1987), 3, 7–20.
74. MR0855873 Beauville, Arnaud Le groupe de monodromie des familles universelles d'hypersurfaces et d'intersections complètes. (French) [The monodromy group of universal families of hypersurfaces and complete intersections] Complex analysis and algebraic geometry (Göttingen, 1985), 8–18, Lecture Notes in Math., 1194, Springer, Berlin, 1986.
75. MR0853450 Beauville, Arnaud; Debarre, Olivier Une relation entre deux approches du problème de Schottky. (French) [A connection between two approaches to the Schottky problem] Invent. Math. 86 (1986), no. 1, 195–207.
76. MR0826463 Beauville, Arnaud Sur l'anneau de Chow d'une variété abélienne. (French) [The Chow ring of an abelian variety] Math. Ann. 273 (1986), no. 4, 647–651.
77. MR0818549 Beauville, Arnaud; Donagi, Ron La variété des droites d'une hypersurface cubique de dimension 4. (French) [The line manifold of a cubic fourfold] C. R. Acad. Sci. Paris Sér. I Math. 301 (1985), no. 14, 703–706.
78. MR0786350 Beauville, Arnaud; Colliot-Thélène, Jean-Louis; Sansuc, Jean-Jacques; Swinnerton-Dyer, Peter Variétés stablement rationnelles non rationnelles. (French) [Nonrational stably rational varieties] Ann. of Math. (2) 121 (1985), no. 2, 283–318.
79. MR0785234 Beauville, Arnaud Variétés kählériennes compactes avec $c_1=0$. (French) [Compact Kähler manifolds with $c_1=0$] Geometry of K3 surfaces: moduli and periods (Palaiseau, 1981/1982). Astérisque No. 126 (1985), 181–192.
80. MR0785231 Beauville, Arnaud Application aux espaces de modules. (French) [Application to moduli spaces] Geometry of K3 surfaces: moduli and periods (Palaiseau, 1981/1982). Astérisque No. 126 (1985), 141–152.
81. MR0785230 Beauville, Arnaud Toute surface K3 est kählérienne. (French) [Every K3-surface is Kähler] Geometry of K3 surfaces: moduli and periods (Palaiseau, 1981/1982). Astérisque No. 126 (1985), 137–140.
82. MR0785228 Beauville, Arnaud Surjectivité de l'application des périodes. (French) [Surjectivity of the period mapping] Geometry of K3 surfaces: moduli and periods (Palaiseau, 1981/1982). Astérisque No. 126 (1985), 123–128.
83. MR0785227 Beauville, Arnaud Le théorème de Torelli pour les surfaces K3: fin de la démonstration. (French) [The Torelli theorem for K3-surfaces: end of the proof] Geometry of K3 surfaces: moduli and periods (Palaiseau, 1981/1982). Astérisque No. 126 (1985), 111–121.
84. MR0785226 Beauville, Arnaud Le théorème de Torelli pour les surfaces de Kummer. (French) [The Torelli theorem for Kummer surfaces] Geometry of K3 surfaces: moduli and periods (Palaiseau, 1981/1982). Astérisque No. 126 (1985), 99–110.

85. MR0785225 Beauville, Arnaud Préliminaires sur les périodes des surfaces K3.(French) [Preliminary comments on the periods of K3-surfaces] Geometry of K3surfaces: moduli and periods (Palaiseau, 1981/1982). Astérisque No. 126 (1985), 91–97.
86. MR0785221 Beauville, Arnaud Surfaces complexes et orientation. (French) [Complex surfaces and orientation] Geometry of K3 surfaces: moduli and periods (Palaiseau, 1981/1982). Astérisque No. 126 (1985), 41–43.
87. MR0785217 Beauville, Arnaud Introduction à l'application des périodes.(French) [Introduction to the period mapping] Geometry of K3 surfaces: moduli and periods (Palaiseau, 1981/1982). Astérisque No. 126 (1985), 7–18.
88. MR0732439 Beauville, Arnaud Complex algebraic surfaces. Translated from the French by R. Barlow, N. I. Shepherd-Barron and M. Reid. London Mathematical Society Lecture Note Series, 68. Cambridge University Press, Cambridge, 1983. iv+132 pp. ISBN: 0-521-28815-0
89. MR0730926 Beauville, Arnaud Variétés Kähleriennes dont la première classe de Chern est nulle. (French) [Kähler manifolds whose first Chern class is zero] J. Differential Geom. 18 (1983), no. 4, 755–782 (1984).
90. MR0728990 Beauville, Arnaud Surfaces K3. (French) [K3-surfaces] Bourbaki seminar, Vol. 1982/83, 217–229, Astérisque, 105-106, Soc. Math. France, Paris, 1983.
91. MR0728605 Beauville, Arnaud Some remarks on Kähler manifolds with $c_1=0$. Classification of algebraic and analytic manifolds (Katata, 1982), 1–26, Progr. Math., 39, Birkhäuser Boston, Boston, MA, 1983.
92. MR0726428 Beauville, A. Quelques remarques sur la transformation de Fourier dans l'anneau de Chow d'une variété abélienne. (French) [Some remarks on the Fourier transform in the Chow ring of an abelian variety] Algebraic geometry (Tokyo/Kyoto, 1982), 238–260, Lecture Notes in Math., 1016, Springer, Berlin, 1983.
93. MR0714740 Beauville, A. Variétés rationnelles et unirationnelles. (French) [Rational and unirational varieties] Algebraic geometry—open problems (Ravello, 1982), 16–33, Lecture Notes in Math., 997, Springer, Berlin, 1983.
94. MR0685767 Beauville, Arnaud Diviseurs spéciaux et intersection de cycles dans la jacobienne d'une courbe algébrique. (French) [Special divisors and intersection of cycles in the Jacobian of an algebraic curve] Enumerative geometry and classical algebraic geometry (Nice, 1981), pp. 133–142, Progr. Math., 24, Birkhäuser, Boston, Mass., 1982.
95. MR0672617 Beauville, Arnaud Les singularités du diviseur Θ de la jacobienne intermédiaire de l'hypersurface cubique dans P^4 . (French) [The singularities of the theta-divisor of the intermediate Jacobian of the cubic hypersurface in P^4] Algebraic threefolds (Varenna, 1981), pp. 190–208, Lecture Notes in Math., 947, Springer, Berlin-New York, 1982.
96. MR0664643 Beauville, Arnaud Les familles stables de courbes elliptiques sur P^1 admettant quatre fibres singulières. (French) [The stable families of elliptic curves on P^1 with four singular fibers] C. R. Acad. Sci. Paris Sér. I Math. 294 (1982), no. 19, 657–660.

97. MR0656611 Beauville, Arnaud Sous-variétés spéciales des variétés de Prym.(French) [Special subvarieties of Prym varieties] Compositio Math. 45 (1982), no. 3, 357–383.
98. MR0605342 Beauville, Arnaud Sur le nombre maximum de points doubles d'une surface dans P^3 ($\mu(5)=31$). (French) Journées de Géométrie Algébrique d'Angers, Juillet 1979/Algebraic Geometry, Angers, 1979, pp. 207–215, Sijthoff & Noordhoff, Alphen aan den Rijn—Germantown, Md., 1980.
99. MR0572420 Beauville, Arnaud Géométrie des tissus [d'après S. S. Chern et P. A. Griffiths]. (French) Séminaire Bourbaki (1978/79), Exp. No. 531, pp. 103–119, Lecture Notes in Math., 770, Springer, Berlin, 1980.
100. MR0553705 Beauville, Arnaud L'application canonique pour les surfaces de type général. (French) Invent. Math. 55 (1979), no. 2, 121–140.
101. MR0485887 Beauville, Arnaud Surfaces algébriques complexes. (French) Avec une sommaire en anglais. Astérisque, No. 54. Société Mathématique de France, Paris, 1978. iii+172 pp.
102. MR0572974 Beauville, Arnaud Prym varieties and the Schottky problem. Invent. Math. 41 (1977), no. 2, 149–196.
103. MR0472843 Beauville, Arnaud Variétés de Prym et jacobiniennes intermédiaires. (French) Ann. Sci. École Norm. Sup. (4) 10 (1977), no. 3, 309–391.
104. MR0349674 Beauville, Arnaud Foncteurs sur les anneaux artiniens application aux déformations verselles. (French) Quelques problèmes de modules (Sém. Géom. Anal., École Norm. Sup., Paris, 1971–1972), pp. 82–104. Asterisque, No. 16, Soc. Math. France, Paris, 1974.
105. MR0437796 Beauville, A. Une notion de résidu en géométrie analytique. Séminaire Pierre Lelong (Analyse), Année 1970, pp. 183–203. Lecture Notes in Math., Vol. 205, Springer, Berlin, 1971.

B) Prof. Michel Brion (Mr.)

- Born on October 13, 1958. French citizen
- Current position: Directeur de recherches
- Professional adress: Institut Fourier, Bureau 43 C, B.P. 74, 38402 Saint-Martin d'Hères Cedex, France.
- Email: Michel.Brion@ujf-grenoble.fr
- Téléphone : (+33) 4 76 51 42 98
- Fax : (+33) 4 76 51 44 78
- Specialization
 - o Main field: algebraic transformation groups.
 - o Other fields: representation theory, algebraic geometry.
 - o Current research interests: structure of algebraic groups over arbitrary fields
 - o and applications to algebro-geometric problems.
- Positions

- Ecole Normale Sup_erieure, Paris, 1977-82.
- Charge de recherches, CNRS, Grenoble, 1984-93.
- Directeur de recherches, CNRS; Ecole Normale Superieure, Lyon, 1994-97;
- Institut Fourier, since 1997.
- Honours, Awards, Membership of Professional Societies
 - Invited speaker at the International Congress of Mathematicians, Zurich 1994 (45 minutes talk).
 - Prix P. Doistau-E. Blutet de l'Academie des Sciences, Paris 1997
 - Medaille d'argent du CNRS, 1999
 - Prix Alexandre Joannides de l'Academie des Sciences, Paris 2010
 - Member of the Soci_et_e math_ematique de France since 1984

List of publications in MathSciNet:

1. MR3319917 Brion, Michel Which algebraic groups are Picard varieties? *Sci. China Math.* 58 (2015), no. 3, 461–478.
2. MR3308315 Brion, Michel; Renner, Lex E. Algebraic semigroups are strongly π -regular. *Algebraic monoids, group embeddings, and algebraic combinatorics*, 55–59, *Fields Inst. Commun.*, 71, Springer, New York, 2014.
3. MR3308314 Brion, Michel On algebraic semigroups and monoids. *Algebraic monoids, group embeddings, and algebraic combinatorics*, 1–54, *Fields Inst. Commun.*, 71, Springer, New York, 2014.
4. MR3164163 Brion, Michel On algebraic semigroups and monoids, II. *Semigroup Forum* 88 (2014), no. 1, 250–272.
5. MR3194649 Brion, Michel Homogeneous projective bundles over abelian varieties. *Algebra Number Theory* 7 (2013), no. 10, 2475–2510.
6. MR3184162 Pending Brion, Michel Invariant Hilbert schemes. *Handbook of moduli*. Vol. I, 64–117, *Adv. Lect. Math. (ALM)*, 24, Int. Press, Somerville, MA, 2013.
7. MR3115187 Brion, Michel On connected automorphism groups of algebraic varieties. *J. Ramanujan Math. Soc.* 28A (2013), 41–54.
8. MR3087341 Brion, Michel Restriction de représentations et projections d'orbites coadjointes (d'après Belkale, Kumar et Ressayre). (French) [Restriction of representations and projections of coadjoint orbits (following Belkale, Kumar and Ressayre)] *Séminaire Bourbaki*. Vol. 2011/2012. Exposés 1043–1058. *Astérisque* No. 352 (2013), Exp. No. 1043, vii, 1–33. ISBN: 978-2-85629-371-3
9. MR3102962 Brion, Michel The coherent cohomology ring of an algebraic group. *Algebr. Represent. Theory* 16 (2013), no. 5, 1449–1467.
10. MR3088271 Brion, Michel; Samuel, Preena; Uma, V. Lectures on the structure of algebraic groups and geometric applications. *CMI Lecture Series in Mathematics*, 1. Hindustan Book Agency, New Delhi; Chennai Mathematical Institute (CMI), Chennai, 2013. viii+120 pp. ISBN: 978-93-80250-46-5

11. MR3065029 Brion, Michel; Szamuely, Tamás Prime-to- p étale covers of algebraic groups and homogeneous spaces. *Bull. Lond. Math. Soc.* 45 (2013), no. 3, 602–612.
12. MR3202702 Brion, Michel Representations of quivers. *Geometric methods in representation theory. I*, 103–144, *Sémin. Congr.*, 24-I, Soc. Math. France, Paris, 2012.
13. MR2959443 Brion, M.; Joshua, R. Notions of purity and the cohomology of quiver moduli. *Internat. J. Math.* 23 (2012), no. 9, 1250097, 30 pp.
14. MR2933488 Brion, Michel Homogeneous bundles over abelian varieties. *J. Ramanujan Math. Soc.* 27 (2012), no. 1, 91–118.
15. MR2866845 Brion, Michel Spherical varieties. *Highlights in Lie algebraic methods*, 3–24, *Progr. Math.*, 295, Birkhäuser/Springer, New York, 2012.
16. MR3012239 Brion, Michel On automorphism groups of fiber bundles. *Publ. Mat. Urug.* 12 (2011), 39–66.
17. MR2769315 Brion, Michel On the geometry of algebraic groups and homogeneous spaces. *J. Algebra* 329 (2011), 52–71.
18. MR2673424 Brion, Michel; Peyre, Emmanuel Counting points of homogeneous varieties over finite fields. *J. Reine Angew. Math.* 645 (2010), 105–124.
19. MR2562620 Brion, Michel Some basic results on actions of nonaffine algebraic groups. *Symmetry and spaces*, 1–20, *Progr. Math.*, 278, Birkhäuser Boston, Inc., Boston, MA, 2010.
20. MR2568260 Brion, Michel Vanishing theorems for Dolbeault cohomology of log homogeneous varieties. *Tohoku Math. J. (2)* 61 (2009), no. 3, 365–392.
21. MR2488561 Brion, Michel Anti-affine algebraic groups. *J. Algebra* 321 (2009), no. 3, 934–952.
22. MR2499350 Brion, Michel Local structure of algebraic monoids. *Mosc. Math. J.* 8 (2008), no. 4, 647–666, 846.
23. MR2452601 Brion, M.; Joshua, R. Equivariant Chow ring and Chern classes of wonderful symmetric varieties of minimal rank. *Transform. Groups* 13 (2008), no. 3-4, 471–493.
24. MR2500349 Brion, Michel Log homogeneous varieties. *Proceedings of the XVIth Latin American Algebra Colloquium (Spanish)*, 1–39, *Bibl. Rev. Mat. Iberoamericana*, Rev. Mat. Iberoamericana, Madrid, 2007.
25. MR2359037 Brion, Michel Compactification de l'espace des modules des variétés abéliennes principalement polarisées (d'après V. Alexeev). (French) [Compactification of the moduli space of principally polarized abelian varieties (after V. Alekseev)] *Séminaire Bourbaki. Vol. 2005/2006. Astérisque No. 311* (2007), ISBN: 978-2-85629-230-3 Exp. No. 952, vii, 1–31.
26. MR2348903 Brion, Michel Construction of equivariant vector bundles. *Algebraic groups and homogeneous spaces*, 83–111, *Tata Inst. Fund. Res. Stud. Math.*, Tata Inst. Fund. Res., Mumbai, 2007.
27. MR2326138 Brion, Michel The total coordinate ring of a wonderful variety. *J. Algebra* 313 (2007), no. 1, 61–99.

28. MR2321575 Brion, Michel; Rittatore, Alvaro The structure of normal algebraic monoids. *Semigroup Forum* 74 (2007), no. 3, 410–422.
29. MR2268490 Alexeev, Valery; Brion, Michel Stable spherical varieties and their moduli. *IMRP Int. Math. Res. Pap.* 2006, Art. ID 46293, 57 pp.
30. MR2251590 Brion, Michel; Thomsen, Jesper Funch F-regularity of large Schubert varieties. *Amer. J. Math.* 128 (2006), no. 4, 949–962.
31. MR2216242 Brion, Michel; Kausz, Ivan Vanishing of top equivariant Chern classes of regular embeddings. *Asian J. Math.* 9 (2005), no. 4, 489–496.
32. MR2143072 Brion, Michel Lectures on the geometry of flag varieties. *Topics in cohomological studies of algebraic varieties*, 33–85, Trends Math., Birkhäuser, Basel, 2005.
33. MR2107324 Brion, Michel; Kumar, Shrawan Frobenius splitting methods in geometry and representation theory. *Progress in Mathematics*, 231. Birkhäuser Boston, Inc., Boston, MA, 2005. x+250 pp. ISBN: 0-8176-4191-2
34. MR2092127 Alexeev, Valery; Brion, Michel Moduli of affine schemes with reductive group action. *J. Algebraic Geom.* 14 (2005), no. 1, 83–117.
35. MR2134452 Alexeev, Valery; Brion, Michel Toric degenerations of spherical varieties. *Selecta Math. (N.S.)* 10 (2004), no. 4, 453–478.
36. MR2112568 Alexeev, Valery A.; Brion, Michel Boundedness of spherical Fano varieties. *The Fano Conference*, 69–80, Univ. Torino, Turin, 2004.
37. MR2094400 Brion, Michel; Joshua, Roy Intersection cohomology of reductive varieties. *J. Eur. Math. Soc. (JEMS)* 6 (2004), no. 4, 465–481.
38. MR2076923 Alexeev, Valery; Brion, Michel Stable reductive varieties. I. Affine varieties. *Invent. Math.* 157 (2004), no. 2, 227–274.
39. MR2054021 Alexeev, Valery; Brion, Michel Stable reductive varieties. II. Projective case. *Adv. Math.* 184 (2004), no. 2, 380–408.
40. MR2043405 Brion, Michel; Carrell, James B. The equivariant cohomology ring of regular varieties. *Michigan Math. J.* 52 (2004), no. 1, 189–203.
41. MR2017584 Brion, Michel The cone of effective one-cycles of certain G -varieties. *A tribute to C. S. Seshadri (Chennai, 2002)*, 180–198, Trends Math., Birkhäuser, Basel, 2003.
42. MR2017071 Brion, M.; Lakshmibai, V. A geometric approach to standard monomial theory. *Represent. Theory* 7 (2003), 651–680.
43. MR2011763 Brion, Michel Multiplicity-free subvarieties of flag varieties. *Commutative algebra (Grenoble/Lyon, 2001)*, 13–23, *Contemp. Math.*, 331, Amer. Math. Soc., Providence, RI, 2003.
44. MR1993758 Brion, Michel Group completions via Hilbert schemes. *J. Algebraic Geom.* 12 (2003), no. 4, 605–626.
45. MR1958901 Brion, Michel Positivity in the Grothendieck group of complex flag varieties. *Special issue in celebration of Claudio Procesi's 60th birthday. J. Algebra* 258(2002), no. 1, 137–159.

46. MR1943906 Brion, Michel; Peyre, Emmanuel The virtual Poincaré polynomials of homogeneous spaces. *Compositio Math.* 134 (2002), no. 3, 319–335.
47. MR1888479 Brion, M. Erratum to: "Rational smoothness and fixed points of torus actions" [*Transform. Groups* 4 (1999), no. 2-3, 127–156; MR1712861 (2000f:14072)]. *Transform. Groups* 7 (2002), no. 1, 107.
48. MR1866494 Brion, Michel; Joshua, Roy Vanishing of odd-dimensional intersection cohomology. II. *Math. Ann.* 321 (2001), no. 2, 399–437.
49. MR1839347 Brion, Michel On orbit closures of spherical subgroups in flag varieties. *Comment. Math. Helv.* 76 (2001), no. 2, 263–299.
50. MR1786481 Brion, Michel Poincaré duality and equivariant (co)homology. Dedicated to William Fulton on the occasion of his 60th birthday. *Michigan Math. J.* 48(2000), 77–92.
51. MR1789463 Brion, Michel; Polo, Patrick Large Schubert varieties. *Represent. Theory* 4 (2000), 97–126 (electronic).
52. MR1760629 Brion, Michel; Vergne, Michèle Arrangement of hyperplanes. II. The Szenes formula and Eisenstein series. *Duke Math. J.* 103 (2000), no. 2, 279–302.
53. MR1755778 Brion, Michel; Helminck, Aloysius G. On orbit closures of symmetric subgroups in flag varieties. *Canad. J. Math.* 52 (2000), no. 2, 265–292.
54. MR1712861 Brion, M. Rational smoothness and fixed points of torus actions. Dedicated to the memory of Claude Chevalley. *Transform. Groups* 4 (1999), no. 2-3, 127–156.
55. MR1710758 Brion, Michel; Vergne, Michèle Arrangement of hyperplanes. I. Rational functions and Jeffrey-Kirwan residue. *Ann. Sci. École Norm. Sup. (4)* 32(1999), no. 5, 715–741.
56. MR1703350 Brion, Michel; Polo, Patrick Generic singularities of certain Schubert varieties. *Math. Z.* 231 (1999), no. 2, 301–324.
57. MR1677271 Brion, Michel On the general faces of the moment polytope. *Internat. Math. Res. Notices* 1999, no. 4, 185–201.
58. MR1649623 Brion, Michel Equivariant cohomology and equivariant intersection theory. Notes by Alvaro Rittatore. *NATO Adv. Sci. Inst. Ser. C Math. Phys. Sci.*, 514, Representation theories and algebraic geometry (Montreal, PQ, 1997), 1–37, Kluwer Acad. Publ., Dordrecht, 1998.
59. MR1610599 Brion, Michel The behaviour at infinity of the Bruhat decomposition. *Comment. Math. Helv.* 73 (1998), no. 1, 137–174.
60. MR1451789 Brion, Michel Differential forms on quotients by reductive group actions. *Proc. Amer. Math. Soc.* 126 (1998), no. 9, 2535–2539.
61. MR1635672 Brion, M. Curves and divisors in spherical varieties. *Algebraic groups and Lie groups*, 21–34, *Austral. Math. Soc. Lect. Ser.*, 9, Cambridge Univ. Press, Cambridge, 1997.
62. MR1601139 Brion, Michel Sur certains modules gradués associés aux produits symétriques. (French) [Some graded modules associated with symmetric

- products]Algèbre non commutative, groupes quantiques et invariants (Reims, 1995), 157–183, Sémin. Congr., 2, Soc. Math. France, Paris, 1997.
63. MR1466694 Brion, M. Equivariant Chow groups for torus actions. *Transform. Groups* 2 (1997), no. 3, 225–267.
 64. MR1446364 Brion, Michel; Vergne, Michèle Residue formulae, vector partition functions and lattice points in rational polytopes. *J. Amer. Math. Soc.* 10 (1997), no. 4, 797–833.
 65. MR1431267 Brion, Michel The structure of the polytope algebra. *Tohoku Math. J.* (2) 49 (1997), no. 1, 1–32.
 66. MR1427657 Brion, Michel; Vergne, Michèle An equivariant Riemann-Roch theorem for complete, simplicial toric varieties. *J. Reine Angew. Math.* 482 (1997), 67–92.
 67. MR1415319 Brion, Michel; Vergne, Michèle Lattice points in simple polytopes. *J. Amer. Math. Soc.* 10 (1997), no. 2, 371–392.
 68. MR1481478 Brion, Michel The push-forward and Todd class of flag bundles. *Parameter spaces* (Warsaw, 1994), 45–50, Banach Center Publ., 36, Polish Acad. Sci., Warsaw, 1996.
 69. MR1481477 Brion, Michel Piecewise polynomial functions, convex polytopes and enumerative geometry. *Parameter spaces* (Warsaw, 1994), 25–44, Banach Center Publ., 36, Polish Acad. Sci., Warsaw, 1996.
 70. MR1420707 Bien, Frédéric; Brion, Michel Automorphisms and local rigidity of regular varieties. *Compositio Math.* 104 (1996), no. 1, 1–26.
 71. MR1393261 Brion, Michel; Joshua, Roy Equivariant intersection cohomology of semi-stable points. *Amer. J. Math.* 118 (1996), no. 3, 595–610.
 72. MR1378506 Brion, Michel; Vergne, Michèle Une formule d'Euler-Maclaurin pour les polytopes convexes rationnels. (French) [An Euler-Maclaurin formula for rational convex polytopes] *C. R. Acad. Sci. Paris Sér. I Math.* 322 (1996), no. 4, 317–320.
 73. MR1378294 Brion, Michel Polytopes convexes entiers. (French) [Integral convex polytopes] *Gaz. Math.* No. 67 (1996), 21–42.
 74. MR1378255 Brion, Michel; Vergne, Michèle Une formule d'Euler-Maclaurin pour les fonctions de partition. (French) [An Euler-Maclaurin formula for partition functions] *C. R. Acad. Sci. Paris Sér. I Math.* 322 (1996), no. 3, 217–220.
 75. MR1403975 Brion, Michel Spherical varieties. *Proceedings of the International Congress of Mathematicians, Vol. 1, 2* (Zürich, 1994), 753–760, Birkhäuser, Basel, 1995.
 76. MR1363813 Brion, Michel Plethysm and Verma modules. *J. London Math. Soc.* (2) 52 (1995), no. 3, 449–466.
 77. MR1326770 Brion, Michel Corrigendum: "Representations of reductive groups in cohomology spaces". (French) *Math. Ann.* 301 (1995), no. 4, 821–822.
 78. MR1321646 Brion, Michel Points entiers dans les polytopes convexes. (French) [Integral points in convex polytopes] *Séminaire Bourbaki, Vol. 1993/94. Astérisque No. 227* (1995), Exp. No. 780, 4, 145–169.

79. MR1322696 Brion, Michel; Knop, Friedrich Contractions and flips for varieties with group action of small complexity. *J. Math. Sci. Univ. Tokyo* 1 (1994), no. 3, 641–655.
80. MR1314736 Brion, Michel Représentations des groupes réductifs dans des espaces de cohomologie. (French) [Representations of reductive groups in cohomology spaces] *Math. Ann.* 300 (1994), no. 4, 589–604.
81. MR1278708 Brion, M.; Inamdar, S. P. Frobenius splitting of spherical varieties. *Algebraic groups and their generalizations: classical methods* (University Park, PA, 1991), 207–218, *Proc. Sympos. Pure Math.*, 56, Part 1, Amer. Math. Soc., Providence, RI, 1994.
82. MR1273926 Brion, Michel Factorisation de certains morphismes birationnels.(French) [Factorization of certain birational morphisms] *Compositio Math.* 91 (1994),no. 1, 57–66.
83. MR1268726 Brion, Michel On the representation theory of $SL(2)$. *Indag. Math. (N.S.)* 5 (1994), no. 1, 29–36.
84. MR1248677 Brion, Michel Variétés sphériques et théorie de Mori. (French) [Spherical varieties and Mori theory] *Duke Math. J.* 72 (1993), no. 2, 369–404.
85. MR1243152 Brion, Michel Stable properties of plethysm: on two conjectures of Foulkes. *Manuscripta Math.* 80 (1993), no. 4, 347–371.
86. MR1209911 Brion, Michel Sur les modules de covariants. (French) [On modules of covariants] *Ann. Sci. École Norm. Sup. (4)* 26 (1993), no. 1, 1–21.
87. MR1181480 Brion, Michel A note on two-orbit varieties. *Topology Hawaii* (Honolulu, HI, 1990), 35–40, *World Sci. Publ.*, River Edge, NJ, 1992.
88. MR1175892 Brion, Michel Parametrization and embeddings of a class of homogeneous spaces. *Proceedings of the International Conference on Algebra, Part 3* (Novosibirsk, 1989), 353–360, *Contemp. Math.*, 131, Part 3, Amer. Math. Soc., Providence, RI, 1992.
89. MR1175519 Brion, Michel Polyèdres et réseaux. (French) [Polyhedra and lattices] *Enseign. Math. (2)* 38 (1992), no. 1-2, 71–88.
90. MR1129578 Brion, Michel Cohomologie équivariante des points semi-stables.(French) [Equivariant cohomology of semistable points] *J. Reine Angew. Math.* 421(1991), 125–140.
91. MR1116846 Brion, Michel; Dixmier, Jacques Comportement asymptotique des dimensions des covariants. (French) [Asymptotic behavior of the dimensions of covariants] *Bull. Soc. Math. France* 119 (1991), no. 2, 217–230.
92. MR1107840 Brion, Michel Sur la géométrie des variétés sphériques. (French) [On the geometry of spherical varieties] *Comment. Math. Helv.* 66 (1991), no. 2, 237–262.
93. MR1103602 Brion, Michel; Procesi, Claudio Action d'un tore dans une variété projective. (French) [Action of a torus in a projective variety] *Operator algebras, unitary representations, enveloping algebras, and invariant theory* (Paris, 1989), 509–539, *Progr. Math.*, 92, Birkhäuser Boston, Boston, MA, 1990.

94. MR1071627 Brion, Michel Cohomologie équivariante des points semi-stables.(French) [Equivariant cohomology of semistable points] C. R. Acad. Sci. Paris Sér. I Math. 311 (1990), no. 6, 281–284.
95. MR1068418 Brion, Michel Vers une généralisation des espaces symétriques.(French) [Toward a generalization of symmetric spaces] J. Algebra 134 (1990), no. 1,115–143.
96. MR1045394 Brion, Michel Une extension du théorème de Borel-Weil. (French) [An extension of the Borel-Weil theorem] Math. Ann. 286 (1990), no. 4, 655–660.
97. MR1040855 Brion, Michel Spherical varieties: an introduction. Topological methods in algebraic transformation groups (New Brunswick, NJ, 1988), 11–26, Progr. Math., 80, Birkhäuser Boston, Boston, MA, 1989.
98. MR1021273 Brion, Michel On spherical varieties of rank one (after D. Ahiezer, A. Huckleberry, D. Snow). Group actions and invariant theory (Montreal, PQ, 1988), 31–41, CMS Conf. Proc., 10, Amer. Math. Soc., Providence, RI, 1989.
99. MR1016427 Brion, Michel Groupe de Picard et nombres caractéristiques des variétés sphériques. (French) [Picard group and characteristic numbers of spherical varieties] Duke Math. J. 58 (1989), no. 2, 397–424.
100. MR0982338 Brion, Michel Points entiers dans les polyèdres convexes.(French) [Lattice points in convex polyhedra] Ann. Sci. École Norm. Sup. (4) 21 (1988),no. 4, 653–663.
101. MR0932055 Brion, Michel Sur l'image de l'application moment. (French) [On the image of the moment mapping] Séminaire d'algèbre Paul Dubreil et Marie-Paule Malliavin (Paris, 1986), 177–192, Lecture Notes in Math., 1296, Springer, Berlin, 1987.
102. MR0919424 Brion, M.; Luna, D. Sur la structure locale des variétés sphériques. (French) [The local structure of spherical varieties] Bull. Soc. Math. France 115 (1987), no. 2, 211–226.
103. MR0906369 Brion, M. Classification des espaces homogènes sphériques.(French) [Classification of spherical homogeneous spaces] Compositio Math. 63 (1987),no. 2, 189–208.
104. MR0896097 Brion, Michel; Pauer, Franz Valuations des espaces homogènes sphériques. (French) [Valuations of spherical homogeneous spaces] Comment. Math. Helv. 62 (1987), no. 2, 265–285.
105. MR0837530 Brion, M.; Luna, D.; Vust, Th. Espaces homogènes sphériques.(French) [Spherical homogeneous spaces] Invent. Math. 84 (1986), no. 3, 617–632. (Reviewer: Vladimir L. Popov) 14M17 (14L30 20G99 22E45)
106. PDF Clipboard Journal Article
107. MR0833243 Brion, Michel Quelques propriétés des espaces homogènes sphériques. (French) [Some properties of spherical homogeneous spaces] Manuscripta Math. 55 (1986), no. 2, 191–198. (Reviewer: V. L. Popov) 14L30 (14M17)
108. PDF Clipboard Journal Article

109. MR0822838 Brion, Michel Classification des espaces homogènes sphériques.(French) [Classification of spherical homogeneous spaces] C. R. Acad. Sci. Paris Sér. I Math. 301 (1985), no. 18, 813–815.
110. MR0816368 Brion, M. Représentations exceptionnelles des groupes semi-simples. (French) [Exceptional representations of semisimple groups] Ann. Sci. École Norm. Sup. (4) 18 (1985), no. 2, 345–387.
111. MR0696482 Brion, Michel Surfaces quotients par un groupe unipotent.(French) [Quotient surfaces by a unipotent group] Comm. Algebra 11 (1983), no. 9, 1011–1014.
112. MR0691014 Brion, Michel Sur certaines représentations des groupes semi-simples. (French) [On some representations of semisimple groups] C. R. Acad. Sci. Paris Sér. I Math. 296 (1983), no. 1, 5–6.
113. MR0698847 Brion, Michel Invariants d'un sous-groupe unipotent maximal d'un groupe semi-simple. (French) [Invariants of a maximal unipotent subgroup of a semisimple group] Ann. Inst. Fourier (Grenoble) 33 (1983), no. 1, 1–27.
114. MR0694759 Brion, Michel Invariants de plusieurs formes binaires. (French) [Invariants of several binary forms] Bull. Soc. Math. France 110 (1982), no. 4, 429–445.
115. MR0637102 Brion, Michel La série de Poincaré des U-invariants. (French) [The Poincaré series of U-invariants] C. R. Acad. Sci. Paris Sér. I Math. 293 (1981), no. 2, 107–110.
116. MR0641090 Brion, Michel Représentations irréductibles des groupes de Lie simples dont l'algèbre des U-invariants est régulière. (French) [Irreducible representations of simple Lie groups whose algebra of U-invariants is regular] C. R. Acad. Sci. Paris Sér. I Math. 293 (1981), no. 8, 377–379.