



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, leaded by Doan Trung Cuong (IMH) and Nguyen Chu Gia Vuong (IMH).

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.

[Dol] Igor Dolgachev, Basic Algebraic Geometry, vol. 1. : A Modern View. Cambridge University Press; 1st edition (October 8, 2012).

Tentative Schedule

From 29/2-4/3/2016:

	Monday 29/2	Tuesday 1/3	Wednesday 2/3	Thursday 3/3	Friday 4/3
9:00-11:00	Beauville	Beauville	Beauville	Beauville	Beauville
11:00-11:15	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>
11:15-12:00	Tutor (Vuong)	Tutor (Vuong)	Tutor (Vuong)	Tutor (Vuong)	Tutor (Vuong)
14:00-16:00	Brion	Brion	Brion	Brion	Brion
16:00-16:15	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>
16:15-17:00	Tutor (Cuong)	Tutor (Cuong)	Tutor (Cuong)	Tutor (Cuong)	Tutor (Cuong)

From 7-11/3/2016:

	Monday 7/3	Tuesday 8/3	Wednesday 9/3	Thursday 10/3	Friday 11/3
9:00-11:00	Brion	Brion	Brion	Brion	Brion
11:00-11:15	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>
11:15-12:00	Tutor (Cuong)	Tutor (Cuong)	Tutor (Cuong)	Tutor (Cuong)	Tutor (Cuong)
14:00-16:00	Beauville	Beauville	Beauville	Beauville	Beauville
16:00-16:15	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>	<i>Break</i>
16:15-17:00	Tutor (Vuong)	Tutor (Vuong)	Tutor (Vuong)	Tutor (Vuong)	Tutor (Vuong)

Detailed 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.

9.

	Items	Request fund (in EURO)	
		IMH and other sources	CIMPA
1	Lodging for lecturers 15 nights x 2 persons x 40 EUR	1.200	
2	Living expenses for lecturers 15 days x 2 person x 20 EUR	600	
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	1.400	
	Total	11.200 EUR	6.000 EUR

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10. 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, Hô 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 Hô 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 Hô, The fundamental groupoid scheme and applications. *Ann. Inst. Fourier (Grenoble)* 58 (2008), no. 7, 2381–2412.
5. MR2448024 Phùng Hô Hai, Tannaka-Krein duality for Hopf algebroids. *Israel J. Math.* 167 (2008), 193–225.
6. MR2402410 Esnault, Hélène; Hai, Phùng Hô; 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 Hô, Packets in Grothendieck's section conjecture. *Adv. Math.* 218 (2008), no. 2, 395–416.
8. MR2366123 Hai, Phùng Hô; Kriegk, Benoit; Lorenz, Martin N-homogeneous superalgebras. *J. Noncommut. Geom.* 2 (2008), no. 1, 1–51.
9. MR2346948 Hai, Phùng Hô; 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, 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.

11. 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),
 - o 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)
 - o Prix Servant ("Grand Prix" of the French Academy of Sciences), 2001
 - o Member of the Institut Universitaire de France" since 2001
 - o Fellow of the AMS since 2012
 - o 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 $PGL_2(K)$. 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.
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- Specialization
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 - 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
 - o Ecole Normale Sup_erieure, Paris, 1977-82.
 - o Charge de recherches, CNRS, Grenoble, 1984-93.
 - o Directeur de recherches, CNRS; Ecole Normale Supérieure, Lyon, 1994-97;
 - o 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 Societe mathematique de France since 1984

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