

Curriculum

Giorgio Ottaviani

- July 1983 Degree in Mathematics at the University of Florence. Thesis: Fibrati vettoriali sugli spazi proiettivi, advisor Francesco Gherardelli.
- 1983-1987 Ph. D. in Mathematics at the University of Florence. Thesis: Vector bundles on grassmannians and quadrics, advisor Vincenzo Ancona
- Teaching licence at high school for Mathematics and Physics
- 1987-1989 Teacher in Mathematics and Physics at Istituto Magistrale Rodari, Prato. Teacher in courses of Introduction to Computer Science at Scuola Elementare e Media S. Maria degli Angeli.
- Fondazione Severi Prize 1988/89.
- 1989-1992 Researcher assistant in Geometry at Rome, University Tor Vergata.
- 1992-1994 Associate Professor in Geometry at Faculty of Engineering, University of Florence.
- 1994-1997 Full Professor at Faculty of Sciences, University of L' Aquila.
- Since November 1st 1997 Full Professor at [University of Florence](#).

- Head of [Department of Mathematics and Computer Science](#) 2016-2020.

- Member of Academic Senate of University of Florence, 2016-2020.

- Chairman of the Mathematics courses in Florence for the SSIS (Specialization School for Teaching in Higher School), 1999-2007. Coordinator of Mathematics-Physics-Computer Science SSIS in Tuscany since 2001 to 2003. Chairman of the Courses in Mathematics of University of Florence, 2008-2012.

- Chair of [MEGA](#) (Effective Methods in Algebraic Geometry) 2015-2017, member of Advisory Board since 2013.
- Responsible of research funds ex 60% "Classificazione delle varietà reali e complesse" of Department of Mathematics of University of Florence, years 2003 2005 2007 2009 2011 2013
- Local responsible (Florence) of MIUR PRIN 2015 research group "Geometry of Algebraic Varieties" (PI A. Verra). Member of the GNSAGA of Italian INDAM. Member of UMI, SIMAI, AMS and SIAM.

- Supervisor for Florence node of H2020-MSCA-ITN-2018 network [POEMA \(Polynomial Optimization throug Efficiency in Algebra\)](#).

- Executive Board member of Scuola Matematica Interuniversitaria (SMI) (2008-2017), Scientific Council member of Centro Internazionale Matematico Estivo (CIME) (2011-2017), member of Commissione Italiana per l'Insegnamento della Matematica (CIIM) 2013-2019, member of Scientific Council of [Unione Matematica Italiana \(UMI\)](#) since 2019

Research area

Main research area is Algebraic Geometry and its applications. In particular, projective subvarieties and vector bundles. Homogeneous vector bundles on rational homogeneous varieties. Secant varieties and tensor decomposition. Tensor rank. Identifiability of tensors. Complexity of matrix multiplication algorithm. Entanglement and applications to Quantum Information. Developing algorithms by current symbolic software ([Macaulay2](#)).

Conference Talks and Seminars (main)

"Analisi complessa e geometria 6" CIRM Trento 1987,
"Giornate di Geometria Algebrica" L'Aquila 1991,
"Classification of algebraic Varieties" L'Aquila 1992,
"Vector bundles in Algebraic Geometry" Durham 1993,
"Vector bundles on Fano 3-folds" Trento 1994,
"Algebraic Geometry and Physics" Trieste 1996,
"Conference in Algebraic Geometry", Roma 1998,
"Algebraic Geometry and Commutative Algebra" Madrid 1998,
"Global Geometry of Algebraic Varieties", Madrid 2002,
"Geometry of Algebraic Varieties AGAFE 2005, Ferrara 2005,
"Vector Bundles and Low Codimensional Subvarieties", CIRM Trento 2006,
"Algebraic Geometry Conference ABB70, Bedlewo (Polonia), 2006,
"Algebraic Geometry in higher dimension, Levico 2007;
Special session on Secant Varieties and Applications at AMS Joint Meeting, San Diego California (2008);
Moduli spaces of vector bundles: algebro-geometric aspects, Barcelona 2008
International Conference in Algebraic Geometry, Bucharest, 2008
Workshop on Geometry and Representation Theory of tensors for computer science, statistics and other areas, AIM Palo Alto (California), 2008,
"Geometry of Projective Varieties (Rome, 2008),
Workshop on tensors and interpolation, (Nice, 2009),
Algebraic Geometry Party after Carnival (Torino, 2010),
Journ?s Palois de G?m?rie alg?rique, (Pau, 2010),
Solving Polynomial Equations (KTH Stockholm, 2011),
Texas Algebraic Geometry Seminar (Rice University, Houston, Texas, 2011),
Foundations of Computational Mathematics Conference, (Budapest 2011),
Western Algebraic Geometry Seminar (Colorado State University, 2011),
SIAM Meeting on Applied Algebraic Geometry (North Carolina State University, 2011)
International Conference on the Spectral Theory of Tensors (Nankai University, Tianjin, 2012)
Algebraic Statistics in the Alleghenies (Pennsylvania State University, 2012)
Convegno UMI-CIIM (Bergamo, 2012)
Varietà reali e complesse, geometria, topologia e analisi armonica, Scuola Normale Superiore, Pisa, 2013
MEGA (Effective methods in Algebraic Geometry), Frankfurt 2013 (plenary)
SIAM Meeting on Applied Algebraic Geometry (Colorado State University, 2013)
International Conference on Engineering and Computational Mathematics (Hong Kong, 2013)
Vector Bundles Days II, Mezzetti 60th, Trieste 2014
Computational Nonlinear Algebra, ICERM, Providence, 2014
Effective moduli spaces and applications to cryptography, Rennes, 2014
Program Algorithms and Complexity in Algebraic Geometry, Simons Institute, Berkeley, 2014
Theory and Applications of Syzygies, Schreyer 60th, Saarbruecken, 2015
SIAM Conference on Applied Algebraic Geometry, NIMS, Daejeon, 2015 (plenary)
Geometry of Algebraic Varieties, Verra 65th, Berlin, 2015
Coloquio Latinoamericano de Algebra, Buenos Aires, 2016
Tensors: Algebra meets Numerics, MPI Leipzig, 2016
On crossroads of Algebra, Analysis and Geometry, Shapiro 60th, Stockholm, 2017
Modern Algebra and Classical Geometry, together with Edoardo, Sernesi 70th, Trento, 2017
FOCM Barcelona, 2017 (semi-plenary)
Tensors, Turin, 2018
Italian-Polish meeting, Wroclaw, 2018 (plenary)
Nonlinear algebra in applications, ICERM, Providence, 2018
A journey through projective and birational Geometry (Andreatta 60th), Trento, 2019

POEMA 1st workshop, Florence, 2020

He gave seminar talks at the University of Milano, Roma, Firenze, L'Aquila, Poitiers, Trento, Trieste, Catania, Bayreuth, Kaiserslautern, Varsavia, Torun, Ferrara, Barcelona, Perugia, Pisa, Siena, Madrid, Grenoble, Versailles, Pau, Bucarest, Pavia, Genova, Fort Collins (Colorado), Denver (Colorado), Boulder (Colorado), College Station (Texas), Politecnico di Torino, Recife (Brasil), San Diego (California), MSRI Berkeley (California), AIM (California), Leuven (Belgio).

I have organized 4 international and 4 national conferences, often taking part in the Scientific Committee.

Doctoral Students

Chiara Brandigi, On the j -normality of small codimension projective varieties, Firenze, 1999
Carla Dionisi, Multidimensional matrices and minimal resolutions of vector bundles, Napoli, 2000
Daniele Faenzi, Vector bundles over Fano varieties, Firenze, 2003
Chiara Brambilla, Simplicity of vector bundles on P^n and exceptional bundles, Firenze, 2004
Ada Boralevi, Quiver representations and Homogeneous Vector Bundles on Flag Manifolds, Firenze, 2008
Alessandro Bernardi, Normal Bundle of rational Curves and the Waring Problem, Firenze, 2011
Elena Angelini, The Torelli problem for logarithmic bundles of hypersurfaces arrangements in the projective space, Firenze 2013
Maurizio Banchi, Typical ranks of ternary cubic forms over \mathbb{R} , Firenze, 2013
Davide Vanzo, Instanton bundles and their moduli spaces, Firenze, 2017
Mauro Maccioni, Tensor rank and eigenvectors, Firenze 2017
Luca Sodomaco, Firenze 2020
Ettore Turatti, Cosimo Flavi, Vincenzo Galgano, current

PostDoctoral Scholars and Fellows who have collaborated with me in Florence

Flavio Angelini (in L'Aquila)
Robert Braun
Jean Vallès (european grant)
Chiara Brandigi
Laura Costa (EAGER grant)
Carla Dionisi
Pierre Emmanuel Chaput (EAGER grant)
Daniele Faenzi
Oskar Kedzierski (EAGER grant)
Beatriz Grana Otero (EAGER grant)
Chiara Brambilla
Luke Oeding (2 years through NSF grant)
Juan Luis Pons
Simone Marchesi
Alessandra Bernardi
Nick Vannieuwenhoven
Kangjin Han
Pierre-Jean Spaenlehauer
Alicia Tocino Sanchez
Yang Qi
Zahra Shahidi

Main Visiting Positions






- Bayreuth, through the DFG program "Komplexe Mannigfaltigkeiten", 5 visits in period 1990-1996, invited by M. Schneider
- research fellowship haute niveau CNRS at Versailles, one month in 2003
- Colorado State University, one month in 2006
- MSRI at Berkeley, one month in 2009, Algebraic Geometry
- Mittag Leffler Institute, one month in 2011, Algebraic Geometry with a view toward applications
- Simons Institute, Berkeley, three months in 2014, Program Algorithms and Complexity in Algebraic Geometry

Schools and Teaching activity for graduate students



















- 1992/93 Algebra Commutativa Computazionale, Ph. D. course at the University of Florence
- 1993/94 INDAM course (intensive week) at Florence on "Varietà proiettive di codimensione piccola" , with V. Ancona
- 1994/95 INDAM course at Rome in Algebraic Geometry.
- 1995 SMI summer course in Cortona about "Rational Homogeneous Varieties" , with W. Decker
- 2001 Autumn School in Algebraic Geometry, Moduli of bundles and group actions, Wykno(Poland), with J. Vallès
- 2007 Scuola di dottorato: Geometria proiettiva e birazionale delle varietà algebriche. Gargnano, 2007, with P. Ionescu, M. Mella
- Doctorate Course on Algebraic Geometry in Florence (several)
- Doctorate Course on Geometric Invariant Theory, Pisa 2007 (repeated in Florence in 2009)
- School on Geometry and Representation Theory of tensors for computer science, statistics and other areas, MSRI Berkeley (California), 2008, with P. Comon, J.M. Landsberg, J. Weyman.
- Pragmatic School: Vector bundles, from classical techniques to new perspectives, Catania, 2009, with Rosa M. Mirò-Roig
- Nordfjordeid summer school, Geometry of tensors and applications, 2010, with J.M. Landsberg, J. Weyman
- School on Invariant Theory and Projective Geometry, Trento, 2012
- Tensors and their geometry in high dimension, Berkeley 2012
- Winter School on Algebraic Geometry KAIST (South Korea), 2013
- Power sum decompositions and apolarity, a geometric approach; Lukecin (Poland), 2013
- Tensors, geometric approach and its applications; Seoul, 2014
- *Quartiche piane*, mappa di Scorza e argomenti correlati, Catania, 2016
- Masterclass on Tensors: Geometry and Quantum Information, Copenhagen, 2018
- Research School on Applied Algebraic Geometry, Zanjan (Iran), 2019
- Thematic Einstein Semester on Algebraic Geometry, Fall School, Berlin, 2019







Scientific publications by Giorgio Ottaviani

- [83] The critical space for orthogonally invariant varieties, [arXiv:2104.14998](#).
- [82] (with L. Chiantini) A footnote to a footnote to a paper of B. Segre, [arXiv:2103.04659](#), to appear in *Cilberto 70th volume*, Springer.
- [81] (with Z. Shahidi) Tensors with eigenvectors in a given subspace, [arXiv:2010.03843](#), to appear *Rend. Circ. Mat. Palermo*.
- [80] (with L. Sodomaco, E. Ventura) Asymptotics of degrees and ED degrees of Segre products, [arXiv:2008.11670](#), to appear *Advances in Applied Mathematics*
- [79] (with C. Ciliberto) The Hessian map, [arXiv:2006.07213](#), *Int. Math. Res. Notices*, 2020, [free access](#), doi:10.1093/imrn/rnaa288
- [78] (with P. Reichenbach) Tensor Rank and Complexity, [arXiv:2004.01492](#).
- [77] (with M. Gharahi, S. Mancini,) Fine-Structure Classification of Multiqubit Entanglement by Algebraic Geometry, *Physical Review Research* 2, 043003 (2020), DOI 10.1103/PhysRevResearch.2.043003, [arXiv:1910.09665](#).
- [76] (with L. Sodomaco) The Distance Function from a Real Algebraic Variety, *Comput. Aided Geom. Design*, 2020, 82, 101927, DOI 10.1016/j.cagd.2020.101927 [arXiv:1807.10390](#).
- [75] (with J. Draisma, A. Tocino) Best rank k approximation for tensors, generalizing Eckart-Young, *Res. Math. Sci.* (2018) 5:27, [open access](#) <https://doi.org/10.1007/s40687-018-0145-1> [arXiv:1711.06443](#).
- [74] (with A. Tocino) Best rank k approximation for binary forms, [arXiv:1707.04696](#), *Collectanea Mathematica*, 69(1) (2018), 163-171 DOI 10.1007/s13348-017-0206-6
- [73] (with L. Chiantini, J. Hauenstein, C. Ikenmeyer, J.M. Landsberg) Polynomials and the exponent of matrix multiplication, *Bull. London Math. Soc.*, 50(3) (2018), 369-389 [arXiv:1706.05074](#), doi:10.1112/blms.12147
- [72] (with L. Chiantini, C. Ikenmeyer, J.M. Landsberg) The geometry of rank decompositions of matrix multiplication I: 2x2 matrices, *Experimental Mathematics*, 28 (2019), no. 3, 322-327, DOI 10.1080/10586458.2017.1403981, [arXiv:1610.08364](#)
- [71] (with L. Chiantini, N. Vannieuwenhoven) Effective criteria for specific identifiability of tensors and forms, *SIAM Journal on Matrix Analysis and Applications*, 38 (2017), 656-681, DOI 10.1137/16M1090132 [arXiv:1609.00123](#)
- [70] (with G. Fløystad, J. Kileel) The Chow form of the essential variety in computer vision, *Journal of Symbolic Computation*, 86 (2018), 97-119, DOI 10.1016/j.jsc.2017.03.010 [arXiv:1604.04372](#)
- [69] (with D. Drusvyatskiy, H.-L. Lee, R. Thomas) The Euclidean Distance Degree of Orthogonally Invariant Matrix Varieties, *Israel J. Math.*, 221 (2017), 291-316 DOI 10.1007/s11856-017-1545-4 [arXiv:1601.07210](#)
- [68] (with E. Angelini, F. Galuppi, M. Mella) On the number of Waring decompositions for a generic polynomial vector, *Journal of Pure and Applied Algebra*, 222 (2018), 950-965, DOI 10.1016/j.jpaa.2017.05.016 <https://doi.org/10.1016/j.jpaa.2017.05.016> [arXiv:1601.01869](#)
- [67] (with A. Bernardi, G. Blekherman) On real typical ranks, *Bollettino dell'Unione Matematica Italiana*, 11(3), (2018), 293-307, DOI 10.1007/s40574-017-0134-0 <http://link.springer.com/article/10.1007/s40574-017-0134-0> [arXiv:1512.01853](#)
- [66] (with L. Chiantini, N. Vannieuwenhoven) On generic identifiability of symmetric tensors of subgeneric rank, *Trans. Amer. Math. Soc.* 369 (2017), 4021-4042, [arXiv:1504.00547](#)
- [65] (with R. Paoletti) A Geometric Perspective on the Singular Value Decomposition, [arXiv:1503.07054](#), *Rend. Matem. Trieste* 47 (2015), 107-125
- [64] (with J. Hauenstein, L. Oeding, A. Sommese) Homotopy techniques for tensor decomposition and perfect identifiability, *J. Reine Angew. Math.* 753 (2019), 1-22 [arXiv:1501.00090](#)
- [63] (with L. Chiantini, N. Vannieuwenhoven) An algorithm for generic and low-rank specific identifiability of complex tensors, *SIAM Journal on Matrix Analysis and Applications*, 35 (4), (2014),






- 1265–1287, [arXiv:1403.4157](#)
- [62] (with P.J. Spaenlehauer, B. Sturmfels) Exact solutions in structured low-rank approximation, SIAM Journal on Matrix Analysis and Applications, 35 (4) (2014), 1521-1542, [arXiv:1311.2376](#)
 - [61] (with J. Draisma, E. Horobet, B. Sturmfels, R. Thomas) The Euclidean distance degree of an algebraic variety, [arXiv:1309.0049](#), Foundations of Computational Mathematics, 16 (2016), no. 1, 99–149.
 - [60] Five Lectures on projective Invariants, lecture notes for Trento school, September 2012, Rendiconti del Seminario Matematico Univ. Politec. Torino, vol. 71, 1 (2013), 119-194, [arXiv:1305.2749](#)
 - [59] (with L. Chiantini, M. Mella) One example of general unidentifiable tensors, Journal of Algebraic Statistics, 5 (1), (2014), 64-71, DOI 10.18409/jas.v5i1.25 [arXiv:1303.6914](#)
 - [58] (with C. Bocci, L. Chiantini) Refined methods for the identifiability of tensors, Annali di Matematica Pura e Applicata, 193, (6) (2014), 1691-1702, DOI:10.1007/s10231-013-0352-8 [arXiv:1303.6915](#)
 - [57] An introduction to the hyperdeterminant and to the rank of multidimensional matrices, [arXiv:1301.0472](#), in I. Peeva (ed.), Commutative Algebra, Expository Papers Dedicated to David Eisenbud on the Occasion of His 65th Birthday, 609-638, Springer, New York 2013
 - [56] (with S. Friedland) The number of singular vector tuples and uniqueness of best rank one approximation of tensors, [arXiv:1210.8316](#), Foundations of Computational Mathematics, (2014) 14, 1209–1242, DOI:10.1007/s10208-014-9194-z
The number of singular vector tuples in the cubic case appears as sequence [A271905](#) in [OEIS](#), see the [front](#) by D. Zeilberger and Shalosh B. Ekhad and the related [article](#), [arXiv:1605.00172](#), with the amazing asymptotics.
 - [55] A computational approach to Lüroth quartics, Rendiconti del Circolo Matematico di Palermo (2)62 (2013), no.1, 165-177 [arXiv:1208.1372](#)
 - [54] (with J.M. Landsberg), New lower bounds for the border rank of matrix multiplication, [arXiv:1112.6007](#), Theory of Computing, 11 (2015), 285-298
 - [53]  (with R. Fröberg, B. Shapiro), [On the Waring problem for polynomial rings, Proc. Nat. Acad. Sci. 109, \(15\) \(2012\), 5600-5602](#)
 - [52]  (with E. Mezzetti, Rosa M. Miró-Roig), Laplace Equations and the Weak Lefschetz Property, Canadian J. of Math., 65 (3), (2013), 634-654
 - [51]  (with L. Chiantini), On generic identifiability of 3-tensors of small rank, SIAM Journal on Matrix Analysis and Applications, 33 (3), (2012), 1018-1037
 - [50] (with L. Oeding), Eigenvectors of tensors and algorithms for Waring decomposition, Journal of Symbolic Computation, 54 (2013), 9–35,  [highly cited paper, arXiv:1103.0203](#)
 - [49] (with B. Sturmfels), Matrices with Eigenvectors in a Given Subspace, Proc. AMS 141 (2013), no. 4, 1219-1232, [arXiv:1012.1016](#)
 - [48] (with J.M. Landsberg), Equations for secant varieties of Veronese and other varieties, Annali di Matematica Pura e Applicata, 192 (2013), 569-606, [arXiv:1111.4567](#)
 - [47]  (with E. Sernesi), On singular Lüroth quartics, Science China Mathematics Vol. 54 No. 8: 1757–1766, 2011, (Catanese 60th volume)
 - [46] (with P. Comon), On the typical rank of real binary forms, [arXiv:0909.4865](#), Linear and Multilinear Algebra, 60 (6) (2012), 657-667
 - [45]  (with E. Sernesi), On the hypersurface of Lüroth quartics, Michigan Math. J. 59 (2010), 365–394

- [44] (with H. Abo, C. Peterson), Non-Defectivity of Grassmannians of planes, J. of Alg. Geom., 21, 1-20 (2012) [arXiv:0901.2601](#)
- [43]  An invariant regarding Waring's problem for cubic polynomials, [arXiv:0712.2527](#), Nagoya Math. J., 193 (2009). 95-110
- [42]  (with C. Brambilla), On partial polynomial interpolation, Linear Algebra and Applications 435, 1415-1445 (2011)
- [41]  Symplectic bundles on the plane, secant varieties and Lueroth quartics revisited, [math.AG/0702151](#), in Quaderni di Matematica, vol. 21 (eds. G. Casnati, F. Catanese, R. Notari), Vector bundles and Low Codimensional Subvarieties: State of the Art and Recent Developments, Aracne, 2008.
- [40]  (with C. Brambilla), On the Alexander-Hirschowitz Theorem, J. Pure Appl. Algebra, 212 (2008), 1229-1251 , doi:10.1016/j.jpaa.2007.09.014
- [39]  (with H. Abo, C. Peterson), Induction for secant varieties of Segre varieties, Trans. Amer. Math. Soc. 361 (2009) 767-792.
- [38bis] From a homogeneous bundle to the quiver representation. Examples of tensor products. [Informal note](#), November 2004
- [38]  (with E. Rubei), Quivers and the cohomology of homogeneous vector bundles, Duke Math. J. 132, 3, 459-508 (2006)
- [37]  (with E. Rubei), Resolutions of homogeneous bundles on P^2 , [math.AG/0401405](#), Ann. Inst. Fourier 55 (2005), 973-1015
- [36] (with C. Dionisi) The Binet-Cauchy Theorem for the Hyperdeterminant of boundary format multidimensional Matrices, [math.AG/0104281](#) , Journal of Algebra, 259 (2003), 87-94
- [35]  (with L. Costa) Group action on instanton bundles over P^3 , Math. Nachr. 246-247 (2002), 31-46, [math.AG/0103076](#)
- [34]  (with L. Costa) Nondegenerate multidimensional matrices and instanton bundles, Trans. Amer. Math. Soc. 355 (2003), 49-55. [math.AG/0103078](#),
- [33]  (with P. Katsylo) Regularity of the moduli space of instanton bundles $MI_{P^3}(5)$, Transformation Groups, vol. 8, n.2, 2003, 147-158, [math.AG/9911184](#) [latest version](#)
- [32]  (with V. Ancona) Unstable hyperplanes for Steiner bundles and multidimensional matrices, Advances in Geometry, 1 (2001), 165-192 [math.AG/9910046](#)
- [31]  (with A. Alzati and E. Ballico) The theorem of Mather on generic projections for singular varieties, Geom. Dedicata 85, 113-117 (2001) [math.AG/0006072](#)
- [30] (with R. Paoletti) Syzygies of Veronese embeddings, [math.AG/9811131](#), Compositio Math. 125, 31-37 (2001)
- [29]  Real and complex 'tHooft instanton bundles over P^{2n+1} , Rend. Sem. Mat. e Fis. di Milano, 66(1996), 169-199
- [28]  (with L. Fania) Boundedness for codimension two subvarieties in quadrics, Collectanea Mathematica 49, 2-3 (1998), 293-315 [abstract and file](#)
- [27]  Mathematical instanton bundles on projective spaces : an algorithmic approach (with V.Ancona, G. Anzidei, P. Breglia, A. Pizzotti), Colloque "Opérateurs différentiels et Physique Mathématique" Textos Mat. Ser. B, 24, 2000 J. Vaillant, J. Carvalho e Silva (ed.) p. 143-159

- [26]  (with V. Ancona) On the irreducible components of the moduli space of instanton bundles on \mathbf{P}^5 , Seminari di Geometria 1998-99, Bologna 2000, ed. S. Coen.
- [25]  (with V. Ancona) On singularities of $M_{\mathbf{P}^3}(c_1, c_2)$, International J. of Math., 9, (1998), 407-419
- [24] [Notes](#) Varietà proiettive di codimensione piccola, Quad. INDAM, Aracne, Roma 1995
- [23]  (with G. Trautmann) The tangent space at a special symplectic instanton bundle, Manuscr. Math. 85 (1994), 97-107
- [22]  (with V. Ancona) The Horrocks bundles of rank 3 on \mathbf{P}^5 , Journal reine angew. Math. 460 (1995), 69-92, [preliminary version](#) (it contains a few details more and some tables in the appendix with computed dimension of moduli spaces).
- [21]  (with V. Ancona) On moduli of instanton bundles on \mathbf{P}^{2n+1} , Pacific J. Math. 171 (1995), 343-351
- [20]  (with R. Braun, M. Schneider, F.O. Schreyer), Classification of conic bundles in \mathbf{P}^5 , Annali Sc. Norm. Sup. Pisa 23 (1996), 69-97
- [19]  (with A. Alzati) A vanishing theorem for the ideal sheaf of codimension two subvarieties of \mathbf{P}^n , Rend. Matem. Trieste 22 (1992), 136-139
- [18]  (with M. Szurek, N. Manolache), On moduli of stable 2-bundles with small Chern classes on \mathbf{Q}_3 , Annali di Matem. 167 (1994), 191-241
- [17]  On 3-folds in \mathbf{P}^5 which are scrolls, Annali Sc. Norm. Sup. Pisa 19, 451-471 (1992)
- [16]  (with R. Braun, M. Schneider, F.O. Schreyer), Boundedness for non-general type 3-folds in \mathbf{P}^5 , in "Complex Analysis and Geometry", ed. V. Ancona, A. Silva, 311-338, Plenum Press, New York 1993
- [15]  (with V. Ancona) Canonical resolutions of sheaves on Schubert and Brieskorn varieties, Proc. Int. Workshop "Complex Analysis" dedicated to H. Grauert, Wuppertal 1990, 14-19
- [14]  (with V. Ancona), On the stability of special instanton bundles on \mathbf{P}^{2n+1} , Trans. AMS 341 (1994), 677-693
- [13]  [\(english\)](#)  [\(italiano\)](#) (with F. Ghione) A tribute to Corrado Segre, in Complex Projective Geometry, London Math. Soc. Lect. Notes Series 179, 175-188, Cambridge 1992
This historical paper contains Segre's approach to the result that every vector bundle on the projective line splits as a sum of line bundles, which is commonly quoted as Grothendieck Theorem, proved by Segre in 1884.
- [12]  (with A. Alzati), On the 3 and 4-normality of codimension two subvarieties of \mathbf{P}^n , Archiv der Math. 55 (1990), 610-618
- [11]  (with V. Ancona), An introduction to the derived categories and the theorem of Beilinson, Atti Accad. Pelor. cl. I, 67 (1989), 99-110
- [10]  (with V. Ancona), Some applications of Beilinson theorem to projective spaces and quadrics, Forum Math. 3 (1991), 157-176
- [9]  (with A. Alzati), The theorem of Mather on generic projections in the setting of algebraic geometry, Manuscr. Math. 74 (1992), 391-412

- [8]  On Cayley bundles on the five-dimensional quadric, Boll. UMI 4-A (1990), 87-100
- [7]  (with A. Alzati), A linear bound on the t-normality of codimension two subvarieties of \mathbf{P}^n , Journal reine angew. Math. 409 (1990), 35-40
- [6]  Some extensions of Horrocks criterion to vector bundles on grassmannians and quadrics, Annali di Matem. 155 (1989), 317-341
- [5]  Spinor bundles on quadrics, Trans. AMS 307 (1988), 301-316
- [4] (with A. Alzati), Small codimension subvarieties of \mathbf{P}^n , Boll. UMI 2-A (1988), 81-89
- [3]  Critères de scindage pour les fibrés vectoriels sur les grassmanniens et les quadriques, C.R. Acad. Sci. 305 (1987), 257-260
- [2]  A class of n-bundles on $Gr(k,n)$, Journal reine angew. Math. 379 (1987), 182-208
- [1] Alcune proprietà dei 2-fibrati su \mathbf{P}^2 , Boll. UMI Alg. e Geom. 3-D (1984), 5-18

Pubblicazioni didattiche e divulgative

- [1] [Introduzione alle varietà algebriche: un punto di vista costruttivo](#)
- [2]  Rational Homogeneous Varieties, SMI course in Algebraic Geometry, Cortona (Italy) 1995.
[.ps](#),
These notes contains a proof of the Borel-Weil-Bott Theorem (following Demazure) and of the Ramanan Theorem on the stability of irreducible homogeneous bundles
- [3] [Appunti di un viaggio da Euclide a Einstein](#), presentata a "L'arrocco matematico", L'Aquila 1996
- [4]  Riflessioni sulla geometria e sul suo insegnamento oggi, Atti "Matematica, formazione scientifica e nuove tecnologie", Montevarchi 2001, ed. M. Cerasoli
- [5]  La formazione dell'insegnante di matematica nell'esperienza della SSIS Toscana: un primo bilancio, DidatticaMente 1, 183-200 (2003)
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