Curriculum Vitæ

Personal data

Surname : FAENZI, name : Daniele
Born in Rome, Italy. Pacsé, two children.

Current position

Professor (full)
Université de Bourgogne (UB) since 1 September 2014
Institut de Mathématiques de Bourgogne – UMR CNRS 5584
Team Géométrie, Algèbre, Dynamique, Topologie

CNU section

25 – mathématiques

Address and contact

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Previous positions

Maître de conférence

Université de Pau et des Pays de l'Adour (UPPA), 2007-2014

Post-doc

Università di Firenze, 2004-2006

Formation et parcours professionnel

Habilitation à Diriger des Recherches (HDR)

I obtained HDR - French "habilitation" at Pau on December 5, 2013, upon discussion of my "mémoire d'habilitation" entitled *Some applications of vector bundles in algebraic geometry*, the committee being formed by E. Artal Bartolo (Zaragoza), J. Cresson (Pau), O. Debarre (ENS Paris), L. Manivel (CNRS, Grenoble), F.-O. Schreyer (Saarbrücken), E. Sernesi (Roma III), J. Vallès (Pau).

Ph. D. Thesis

I obtained my Ph. D. at Florence (Italy) on September 30, 2003. My thesis, supervised by G. Ottaviani, was entitled *Vector bundles over Fano varieties*. My thesis obtained a special mention for the F. Enriques prize, the scientific committee being formed by C. Ciliberto (Roma I), M. Franciosi (Pisa), F. Ghione (Rome II), E. Vesentini (Politecnico Torino).

Highlights

PEDR in 2014 and 2019 - French "excellence grant"
ASN "prima fascia" in 2015 - Italian "habilitation"
Délégation CNRS, first semester 2013-2014 (at LMAP, Pau)
CRCT second semester 2013-2014 (at LMAP, Pau)
JSPS mobility in 2015 (Sapporo, Tokyo, Kyoto)

Publications

Journal articles

[1] *Ulrich bundles on cubic fourfolds*, with Y. KIM, YEONGRAK, Comment. Math. Helv. 97 (2022), no. 4, 691-728.
[2] *A construction of equivariant bundles on the space of symmetric forms*, with A. BORALEVI and P. LELLA. Rev. Mat. Iberoam. 38 (2022), no. 3, 761–782, arXiv math.AG/1804.06211.
[3] *On stability of logarithmic tangent sheaves. Symmetric and generic determinants*, with S. MARCHESI, Int. Math. Res. Not., rnab236 (2021), arXiv:2101.06946.
[4] *Non-Ulrich representation type* F. MALASPINA and G. SANNA. Algebr. Geom. 8 (2021), no. 4, 405-42, arXiv:1907.02694.
[5] *The CM representation type of projective varieties*, with J. PONS-LLOPIS. Épijournal de Géométrie Algébrique, 5, 2021.
[6] *Ulrich bundles on K3 surfaces*. Algebra Number Theory 13 (2019), no. 6, 1443–1454, arXiv math.AG/1807.07826.
[7] *Triple planes with $p_g = q = 0$*, with F. POLIZZI and J. VALLÈS. Trans. Amer. Math. Soc., 371 (2019), no. 1, 589-639.
[8] *Truncated modules and linear presentations of vector bundles*, with A. BORALEVI and P. LELLA. Int. Mat. Res. Not. IMRN 2018, no. 17, 5347-5377.
[9] *Rank two aCM bundles on the del Pezzo fourfold of degree 6 and its general hyperplane section*, with G. CASNATI and F. MALASPINA. J. Pure Appl. Algebra, 222 (2018), no. 3, 585-609.
[10] *Fano congruences of index 3 and alternating 3-forms*, with P. DE POI, E. MEZZETTI and K. RANESTAD. Ann. Inst. Fourier, 67 no. 5 (2017), 2099-2165.
[11] *Surfaces of minimal degree of tame representation type and mutations of Cohen-Macaulay modules*, with F. MALASPINA. Adv. Math. 310 (2017), 663-695.
[12] *Homological Projective Duality for Determinantal Varieties*, with M. BERNARDARA and M. BOLOGNESI. Adv. Math. 296 (2016), 181-209.
[13] *Logarithmic bundles of deformed Weyl arrangements of type A_2*, with T. ABE and J. VALLÈS. Bull. Soc. Math. France 144 (4) (2016), 745-761.
[14] *Moduli spaces of rank two aCM bundles on the Segre product of three projective lines*, with G. CASNATI and F. MALASPINA. J. Pure Appl. Algebra 220 (2016), no. 4, 1554-1575.
[15] *Yet again on two examples by Iyama and Yoshino*. Bull. London Math. Soc. 47 (2015), no. 5, 809-817.
[16] *Rank two aCM bundles on the del Pezzo threefold with Picard number 3*, with G. CASNATI and F. MALASPINA. J. Algebra 429 (2015), 413-446.
[17] *On the derived category of the Cayley plane II*, with L. MANIVEL. Proc. Amer. Math. Soc. 143 (2015), no. 3, 1057-1074.
[18] *Logarithmic bundles and Line arrangements, an approach via the standard construction*, with J. VALLÈS. J. London Math. Soc. 90 (2014), no. 3, 675-694.
[19] *On the Hilbert scheme of varieties defined by maximal minors*, with M. L. FANIA. Math. Res. Lett., 21 (2014), no. 2, 297–311.
[20] *A refined stable restriction theorem for vector bundles on quadric threefolds*, with I. COANDA, Ann. Mat. Pura Appl., (4) 193 (2014), no. 3, 859–887.
[21] *Even and odd instantons on Fano threefolds of Picard number 1*, Manuscripta Math.144 (2014), no. 1-2, 199–239.
[22] *Vector bundles on Fano threefolds of genus 7 and Brill-Noether loci*, with C. BRAMBILLA. Internat. J. Math. 25 (2014), no. 3, 1450023 (59 pages).
[23] *Linear spaces of matrices of constant rank and instanton bundles*, with A. BORALEVI and E. MEZZETTI. Adv. Math. 248 (2013), 895-920.
[24] *Hyperplane arrangements of Torelli type*, with D. MATEI and J. VALLÈS. Compositio Math., 149 (2013), no. 2, 309-332.
[25] *Rank 2 stable sheaves with odd determinant on Fano threefolds of genus 9*, with C. BRAMBILLA. Math. Z., 275 (2013), no. 1-2, 185-210.
[26] *A smooth surface of tame representation type*, with F. MALASPINA. C. R. Math. Acad. Sci. Paris, 351 (2013), no. 9-10, 371-374.
[27] *Moduli spaces of rank 2 ACM bundles on prime Fano threefolds*, with C. BRAMBILLA. Michigan Math. J. 60 (2011), no. 1, 113-148.
[28] *Skew-symmetric matrices and Palatini scrolls*, with M. L. FANIA. Math. Ann., 347 (2010), no. 4, 859-883.
[29] *Rank 2 arithmetically Cohen-Macaulay bundles on a general quintic surface*, with LUCA CHIANTINI. Math. Nachr., 282 (2009), no. 12, 1691-1708.
[30] *On general surfaces defined by an almost linear Pfaffian*, with LUCA CHIANTINI. Geom. Dedicata 142 (2009), 91-107.
[31] *Rank 2 arithmetically Cohen-Macaulay bundles on a nonsingular cubic surface*. J. Algebra 319 (2008) 143-186.
[32] *Homogeneous instanton bundles on $\mathbf{P}^3$ for the action of* $\mathsf{SL}(2)$. J. Geom. Phys. 57 (2007) no. 10. 2146-2157.
[33] *Bundles over Fano threefolds of type V_{22}*. Ann. Mat. Pura Appl. (4) 186 (2007), no. 1. 1-24.
[34] *Vector bundles with no intermediate cohomology on Fano threefolds of type V_{22}*, with ENRIQUE ARRONDO. Pacific J. Math. 225 (2006), no. 2, 201-220.

[35] *Cohomology of Tango Bundle on* $\mathbb{P}^5$. Boll. Unione Mat. Ital. Sez. B Artic. Ric. Mat. (8) 9 (2006), no. 2, 319–326.
[36] *Bundles over the Fano threefold* V_5. Comm. Algebra 33 (2005), no. 9, 3061-3080.
[37] *A geometric construction of Tango bundle on* $\mathbb{P}^5$. Kodai Math. J. 27 (2004), no. 1, 1-6.

Preprints

[38] *Codimension one foliations on homogeneous varieties*, with V. BENEDETTI and A. MUNIZ. Submitted. 35 pages (2022), arXiv:2209.06487.
[39] *Logarithmic sheaves of complete intersections*, with M. JARDIM and J. VALLÈS, 48 pages (2022), arXiv:2106.14453.
[40] *Rationality of Peskine varieties*, with V. BENEDETTI. Submitted. 17 pages (2022). arXiv math.AG/2211.16129.

Proceedings

[41] *A remark on hyperplane sections of rational normal scrolls*, with ALDO CONCA. Bull. Math. Soc. Sci. Math. Roumanie, 60 (108) (2017) no. 4, 337-349. Commutative Algebra meeting Algebraic Geometry: Dorin Popescu's 70th birthday.
[42] *A one-day tour of representations and invariants of quivers*. Rend. Semin. Mat. Univ. Politec. Torino 71 (2013), no. 1, 3-34.
[43] *Freeness of line arrangements with many concurrent lines*, with J. VALLÈS. Eleventh International Conference Zaragoza-Pau on Applied Mathematics and Statistics, 133-137, Monogr. Mat. García Galdeano, 37, Prensas Univ. Zaragoza, Zaragoza (2012).
[44] *Moduli spaces of arithmetically Cohen-Macaulay bundles on Fano manifolds of the principal series*, with M. C. BRAMBILLA. Boll. Unione Mat. Ital. (9) 2 (2009), no. 1, 71–91.
[45] *A remark on Pfaffian surfaces and aCM bundles*. Vector bundles and low codimensional subvarieties: state of the art and recent developments, 209–217, Quad. Mat., 21, Dept. Math., Seconda Univ. Napoli, Caserta, 2007.
[46] *A small resolution for triple convers in algebraic geometry*, with JANIS STIPINS. Le Matematiche (Catania) LVI (2001), no. 2, 257-267.

Supervising activities

1. *Supervision of D. Guimarães*. Post-doc MathAmSud, 2022-2023.
2. *Supervision of V. Benedetti*. Post-doc of EIPHI Graduate School, 2021-2023.
3. *Supervision of G. Comaschi*. Post-doc CAPES 2022-2023.
4. *Supervision of V. Pretti*. Post-doc CAPES-COFECUB 2021-2022.
5. *Supervision of A. Muniz*. Post-doc CAPES-COFECUB 2021-2022.
6. *Joint supervision of O. Gloton, Ph. D.*, with T. Kimura, 2021-2024.
7. *Co-supervision of D. Guimãraes. Ph. D.*, with M. Jardim, Campinas (Brazil), 2019-2022. Title of the thesis *Moduli spaces of quasitrivial sheaves on the three dimensional projective space*, 2022.
8. *Supervision of G. Menet*. Post-doc Brunella 2017-2018. G. Menet is now post-doc at Lille.
9. *Co-supervision of R. Bignalet-Cazalet, Ph. D.*, with A. Dubouloz, Université de Bourgogne-Franche Comté, from de 2015. Thesis title: *Géométrie de la projectivisation des idéaux et applications aux problèmes de birationalité*. Remi Bignalet-Cazalet is PRAG at Paris 2 Panthéon-Assas.
10. *Supervision of J. Pons Llopis, post-doc*, UPPA (2014). Post-doc of ANR GeoLMI project. Post-doc topic *The CM representation type of varieties*. J. Pons Llopis is now Ricercatore at Politecnico di Torino.
11. *Co-supervision of E. Angelini, Ph. D.*, with G. Ottaviani, Università di Firenze. Title of the thesis *The Torelli problem for Logarithmic bundles of hypersurface arrangements in the projective space*, 2013.
12. *Co-supervision of F. Tanturri, Ph. D.*, with E. Mezzetti and U. Bruzzo, SISSA, Trieste. Thesis title *On degeneracy loci of morphisms between vector bundles*, 2013. F. Tanturri is Ricercatore at Genova.

Talks

Invited talks at conferences and workshops from 2010

1. *Logarithmic vector fields and projective duality with applications to discriminants*, conference on Combinatorics, geometry and commutative algebra of hyperplane arrangements, Fukuoka, Japan, 2023.
2. *Higher rank instantons on Fano threefolds*, conference on Geometric Structure and Moduli Spaces, Córdoba, Argentina, 2022.
3. *The even-odd for instanton correspondence for Fano threefolds*, conference on New Perspectives on Hyperkähler Manifolds, Levico, 2022.
4. *Logarithmic sheaves of complete intersections*, Conference Bandoleros in Ankara, Turkey, 2022.
5. *Ulrich bundles on cubic fourfolds*, V Algebraic Geometry Summer Meeting, University of Campinas, Brazil, 2021.
6. *Stability of logarithmic tangents*, Brazilian Algebraic Geometry Seminar, 2020.
7. *Coble cubics and moduli of Fano threefolds of genus 10*. Workshop on Derived Categories, Moduli Spaces and Deformation Theory, Cetraro (Italy), 2019.

8. *Families of CM modules over singular varieties*. Moduli spaces in algebraic geometry and applications. ICM satellite conference, Campinas (Brazil) 2018.
9. *Equivariant bundles on the space of homogeneous forms*. Vector bundle days in Kyushu, Fukuoka (Japan), 2018.
10. *Ulrich and ACM sheaves on varieties*. Semiorthogonal decompositions, stability conditions, sheaves of categories, Toulouse, 2018.
11. *Ulrich sheaves and the representation type of varieties*. Mini-workshop of Algebraic Geometry, Milan (Italy), 2018.
12. *Vector bundles and rational maps of the projective space*, Rendiconti's Jubilee - an INdAM day in Trieste, 2018.
13. *The CM representation type of varieties*. Mediterranean Complex Projective Geometry, Carry-le-Rouet, 2016 and GVA, Levico Terme.
14. *Instanton bundles on Fano threefolds*. Instantons in Campinas, Brazil, 2016.
15. *On the representation type of projective varieties*, First Joint Meeting Brazil Italy of Mathematics, Rio de Janeiro, 2016.
16. *Remarks and conjectures on deformed Weyl arrangements beyond the free range*. Workshop Problems Around Hyperplane Arrangements, Hokkaido University Sapporo (Japan), 2015.
17. *What is a Fano threefold of genus ten ?*, Basel-Dijon seminar, Bâle, Suisse, 2016.
18. *Triple planes with* $p_g = q = 0$. Algebraic Geometry Genova-Nice-Torino, Nice, 2016.
19. *Fano threefolds of genus 10 and Coble cubics*, Porto (Portugal), International Meeting AMS / EMS / SPM, Special Session 53 Vector Bundles on Projective Varieties, 2015.
20. *Arrangements de droites and fibrés de rang 2 sur le plan projectif*. Journée sur les arrangements d'hyperplans à Nancy, 2014.
21. *The representation type of projective varieties*, mini-workshop France-Switzerland *Algebraic Geometry*, Dijon, 2014.
22. *Surfaces of minimal degree of tame and wild representation type*. First Joint International Meeting RSME-SCM-SEMA-SIMAI-UMI, Bilbao (Spain), 2014.
23. *Duality and logarithmic vector fields of projective hypersurfaces*. Workshop "Singular III", Zaragoza (Spain), 2013.
24. *Torelli problem for arrangements of divisors*. "Joint International Mathematics Meeting of the AMS and the RMS" Alba Iulia, (Romania), 2013.
25. *The representation type of Segre-Veronese varieties*, workshop "New Trends in Algebraic Geometry", Cosenza (Italy), 2013.
26. *The representation type of Segre-Veronese varieties*, workshop "Géométrie algébrique and catégories dérivées", Lille, 2013.
27. *On the derived category of the Cayley plane*. Workshop "Derived Categories in Algebraic Geometry", Dijon, 2012.
28. *Freeness of line arrangements with many concurrent lines*, School and Workshop "Arrangements in Pyrénées", Pau, 2012.
29. *On the derived category of the Cayley plane*. Groupe de travail ANR *Nouvelles symétries en théorie de Gromov-Witten*, Poitiers, 2011.
30. *Determinantal varieties, some results and conjectures*. Workshop GEOLMI, Rennes, 2011.
31. *Odd instantons on Fano threefolds*, Workshop *Instantons and Rationality of Moduli Spaces*, Freie Universität Berlin (Allemagne), 2010.
32. *Dolgachev's conjecture on logarithmic sheaves*, Workshop *Journées Paloises de Géométrie Algébrique*, Pau, 2010.
33. *Triples planes and Steiner bundles*, Rencontre d'algèbre and géométrie Pau-Saragosse, Zaragoza (Spain), 2010.

Organization of workshops and seminars

1. June 2022. Organization with A. Dubouloz, F. Déglise, and R. Terpereau of the *Spring School Invariant in Algebraic Geometry*, Dijon, France.
2. January 2022. Organization of the thematic workshop of ANR Fano-HK V. Benedetti, Dijon, France.
3. June 2021. Organization with E. Angelini, A. Boralevi, M. C. Brambilla, S. Naldi and E. Rubei of *Go 60 Pure & Applied Algebraic Geometry celebrating Giorgio Ottaviani's 60th birthday* Levico, Italy.
4. May 2019. Organization with A. Dubouloz, R. Terpereau, F. Déglise, D. Faenzi and J. Nagel of *Affine Algebraic Geometry and Transformation Groups – in honor of Lucy Moser-Jauslin*, Dijon, France.
5. October 2018. Organization with A. Dubouloz and R. Bignalet-Cazalet of *Journées de Géométrie Algébrique de Bourgogne*, Dijon.
6. July 2017. Organization with Rémi Bignalet-Cazalet, Adrien Dubouloz, Ronan Terpereau, of the summer school *Current Topics in the Theory of Algebraic Groups*, Dijon.
7. July 2016. Organization with A. Dubouloz and J. Nagel of the school and workhop *Interacting Algebraic Geometry*, Dijon.
8. Since 2015. Organization with J. Taflin of *Séminaire de Géométre et Systèmes Dynamiques*, Dijon.
9. April 2013 and January 2014. Organization with J. Vallès, A. Boralevi and E. Mezzetti of *Vector Bundle Days I and II*, in Pau and Trieste. 70 participants. Proceedings published by Rendiconti dell'Istituto di Matematica dell'Università di Trieste, edited by J. Vallès and myself.
10. June 2012. Organization with E. Artal, J. I. Cogolludo, D. Matei, V. Florens, J. Vallès, of *Arrangements in Pyrénées*.
11. December 2010 organization with P. Bellingeri, V. Florens, J. Vallès and L. Paris of the school and workshop *Tresses d'Hiver*, Pau.
12. October 2009. Organization with V. Florens, J. Vallès and L. Paris of *Tresses in Pau, Première École Franco-Espagnole*

Groupes de tresses and topologie en petite dimension.

13. Novembre 2009. Organization with D. Henrion, J. Vallès, R. Hildebrand, and J. Malick of the workshop GEOLMI at LAAS (Toulouse).
14. 2008 to 2014. Organization with V. Florens and J. Vallès of *Rencontres Transfrontalières d'algèbre and géométrie*. In 2011 the meeting took place in Bayonne, in the framework of Ateliers thématiques Bilbao-Pau-Zaragoza.
15. 2010 to 2014. Organization with B. Bertrand, T. Dedieu and J. Vallès of *Séminaire PTT Pau-Tarbes-Toulouse*. 8 meetings with 20 talks overall.
16. 2008 to 2014. Organization with V. Florens and J. Vallès of algebra and geometry seminar of algebra and geometry team in Pau. 30 talks overall. Thematic year in 2010-2011 on *arrangements of hyperplans*. D. Matei (IMAR, Bucarest) was invited for two months on "postes rouges CNRS" on this theme (2009).

Scientific responsabilities

Funded projects

1. In charge of the Eastern node of the ANR projet FANO-HK, 2021-2025, lead by L. Manivel (Toulouse).
2. In charge of the ANR international projet BRIDGES for Dijon, 2021-2025, lead by E. Legendre (Lyon) and E. Sa-Earp (Campinas).
3. In charge of the French side of the CampusFrance/CAPES/COFECUB project MODULI SPACES IN ALGEBRAIC GEOMETRY AND APPLICATIONS, 2019-2023, with M. Jardim (Campinas).
4. In charge with T. Kimura of the EUR-EIPHI project SUPTOPHAG, 2021-2024.
5. I collaborated to the submission of the I-SITE project MOTIVIC INVARIANTS OF ALGEBRAIC VARIETIES, lead by F. Déglise (ENS Lyon), 2018-2022.
6. I participate to MathAmSud project GS & MS, 2021-2022, lead by V. Del Barco (Campinas).
7. In charge of Pau's node of the project ANR GEOLMI. Project leader: D. Henrion (LAAS).
8. I collaborated to the submission of Pau-Hokkaido SAKURA 2-year project, funded in 2014.
9. I collaborated to the submission of ANR JCJC INTERLOW project, lead by V. Florens (UPPA) funded in 2009.

Thesis and Habilitation committees

1. Member of the Habilitation committee of R. Terpereau (Dijon, 2021).
2. President of the Habilitation committee of T. Kimura on *Instanton Counting and Quantum Geometry and Algebra* (Dijon, 2020).
3. Member of the Ph.D. committee of Fatmanur Yildirim on *Représentations matricielles des fibres finies d'applications rationnelles et problèmes de distances* (Sophia Antipolis, 2020).
4. Referee of the Ph. D. thesis and member of the Ph. D. committee on *Moduli Spaces of Pfaan Representations of Cubic Threefolds* (Lille, 2019).
5. Member of the Habilitation committee of P. Rossi on *Integrable systems and moduli spaces of curves* (Dijon, 2016).
6. Member of the Habilitation committee of E. Edo on *Automorphismes et limites d'automorphismes polynomiaux* (Nouvelle Calédonie – Dijon, 2015).
7. Referee of the Ph. D. thesis and member of the Ph. D. committee of G. Sanna, on *Rational curves and instantons on the Fano threefold* Y_5, supervised by A. Kuznetsov and U. Bruzzo (Trieste, 2014).
8. Member of the Ph. D. committee of M. Pedrini on *Moduli spaces of framed sheaves on stacky ALE spaces, deformed partition functions and the AGT conjecture*, (Trieste, 2013).
9. Member of the Ph. D. committee of J. Ortigas-Galindo on *Algebraic and Topological Invariants of Curves and Surfaces with Quotient Singularities* (Zaragoza, 2013).

Scientific committees

- Member of the scientific committee of the conference *Algebraic Geometry in Ischia*, organized by J. Vallès in October 2021, Italy.
- Member of the scientific committee of the conference *ACM Bundles on Algebraic Varieties*, organized by E. Coşkun, Ö. Genç, T. Karayayla, A. U. Ö. Kişisel in June 2015, Ankara.

Refereeing

- Referee for VQR 2011-2014.
- Referee for several research projects (submitted to Région Picardie, Région Aquitaine, NSA–USA etc).
- I served as referee for about 100 journal papers from 2003 for several journals, among others: Acta Mathematica, Advances in Mathematics, Annales de l'Institut Fourier, Compositio Mathematica, Crelle's Journal, International Mathematics Research Notices, Mathematische Annalen, Transactions of AMS.

Responsabilities of general interest

For Institut de Mathématiques de Bourgogne (IMB)

- Head of GADT team (Géométrie, Algèbre, Dynamique, Topologie) at IMB since 2020.
- Financial administrator of Institut de Mathématiques de Bourgogne 2016-2020.
- Member of Comité d'Animation de la Recherche of EUR EIPHI of Université de Bourgogne et Franche Comté, since 2019.
- Scientist in charge for the library of mathematics at IMB, 2015-2016.

For Université de Bourgogne (UB)

- Elected at CFVU, UB (Commission formation et vie universitaire) since 2020.
- Elected at Conseil UFR Sciences et Techniques, UB since 2018.
- Member of *Bureau de proposition du comité de sélection* at UB since 2014.

Recruiting committees

1. Member of the recruiting committee at Genova, 2020.
2. Member of the recruiting committee at Politecnico di Torino, 2020.
3. Member of the recruiting committee at Dijon, 2017 (recruitment of G. Carlet – professor).
4. Member of the recruiting committee at Università dell'Aquila, 2017.
5. President of the recruiting committee at Dijon, 2016 (recruitment of R. Terpereau – maître de conférence).
6. Member of the recruiting committee at Dijon, 2013 (recruitment of T. Combot – maître de conférence).

Other responsibilities

- *Math en Jeans* Project at UB – promoting mathematics through research in high school, since 2019.
- In charge of GDR *Géométrie Algébrique Géométrie Complexe* for Dijon, since 2020.
- In charge of Erasmus programme for mathematics at UPPA from 2008 to 2014.
- Member of the documentation council at UPPA, 2012 to 2014.

Teaching activity at UB

Master thesis since 2015

1. Galois Theory (M1, T. Luczszyn, 2021).
2. Twistor theory (M1, G. Soto, 2021).
3. The monster group (M1, J. Gaudin-De-Saint-Remy and M. Dewulf, 2021).
4. Discriminants in higher dimension (M2, A. Pinardin, Versailles, 2020).
5. The Riemann-Roch theorem (R. Dutta, 2020).
6. Classification of Compact surfaces (M1, A. Blanc, 2020).
7. A semi-orthogonal decomposition of $\mathbb{P}^n$ (M2, E. Dimitriadis Bermejo, Lyon, 2017).
8. The Sylvester-Gallai problem (M1, L. Mondon, 2017).
9. Polytopes and generating functions – a theorem of Brion (M1, S. Nowak, 2016).
10. The five colors theorem (M1, L. Singrelin, 2016).
11. The theorem of Poncelet (M1, M. Trapet and J. Oczkowski, 2015).

2014-2021

Teaching from 2014 to students of mathematics, physics, chemistry, geoscience and economics.

- M2 teaching for *Agregation* (algebra and geometry).
- Fist course of algebraic geometry, M1 (commutative algebra, affine and projective geometry).
- First course of geometry (projective and affine geometry, quadrics, linear and orthogonal groups).
- Basic algebra, M1 (factorial rings, resultant and discriminant, symmetric polynomials, field extensions).
- Second year calculus (sequences, series, power series, integration).
- Second year algebra (bilinear algebra, euclidean geometry).
- Mathematics for economics (analysis, mathematics for finance, linear algebra, univariate and bivariate statistics).
- Statistics for biosciences (univariate statistics, tests).