Curriculum vitae - Michele Bolognesi

Name: Bolognesi
Surname: Michele
Birth date:09/09/1979
Status: married, 2 children
Professional situation: Full Professor - Université de Montpellier

Cursus

2017 Habilitation pour la position de *Professore Ordinario* en Italie, dans le
secteur disciplinaire **MAT/03 - Geometria e Algebra** .
2015 Full Professor - IMAG, Université de Montpellier
2012 Habilitation pour la position de *Professore Associato* en Italie, dans le
secteur disciplinaire **MAT/03 - Geometria e Algebra** .
2013 Habilitation thesis, Université Rennes 1. *Fibrés vectoriels, espaces de
modules et catégories dérivées.*
2010 Maître de Conférences (Associate Professor) - Université de Rennes 1.
2003-2006 Phd: Université de Montpellier II. *Surfaces de Weddle et leurs espaces
de modules.* Advisor: Christian Pauly.
2003 DEA en Mathématiques, Université de Nice Sophia-Antipolis. Advisor:
Christian Pauly. *Un résultat de birationnelité entre $\mathcal{M}_3$ et $\mathcal{M}_3^{paire}$.*
2002 Master degree thesis: University of Pavia (Italy). Advisor: Bert Van
Geemen. *Curves and symmetric spaces.*
2002 Diploma "cum laude" du IUSS, School of Advanced Studies of Pavia. *Study
of a compartment model with Matlab.*

Scholarships, personal grants and prizes

2022 Grant "Dotation exceptionnelle" from Université de Montpellier.
2021 Prime d'encadrement doctorale et de recherche (Prize for research and
doctoral advice) :October 2021 - October 2025.
2020 Grant "Soutien á la recherche" from Université de Montpellier.
2019-20 One semester of temporary assignement at the CNRS.
2016 Prime d'encadrement doctorale et de recherche (Prize for research and
doctoral advice) :October 2016 - October 2020.
2015-16 One semester of temporary assignement at the CNRS.
2012 Prime d'excellence scientifique (Prize for excellence in research): October
2012 - October 2016.
2012-13 One semester of temporary assignement at the CNRS.
2012, 2013 et 2014 Personal Grant Défi Scientifique Émergent of l'Université de
Rennes 1. (3000 euros)
2009 Personal grant for young researchers at the Scuola Normale Superiore in
Pisa (5000 Euros).
2004 "Berzolari Prize" of the University of Pavia for the best mathematics
subject written in 2001/2002/2003.
2002-2005 Scholarship from INDAM (Italian national institute of high
mathematics - whatever this means) for 3 years of studies in Europe.

Positions

2012-13, 2015-16, 2019-20 (3 times) one semester of temporary assignement at
CNRS.
2015-... Full professor: Université de Montpellier
2010-2015 Maître de conférences: Université de Rennes 1.

2010 Post-doc: Universitá di RomaTre.
2009-2010 Post-doc; Humboldt University Berlin.
2007-2009 Post-doc; Scuola Normale Superiore di Pisa.

Conferences and talks

2023 Univ. Genova, Univ. Versailles, Univ. Edinburgh, Conference "Geometria in Bicocca" - Milan.
2022 Univ. Strasbourg, Workshop FanoHK - Toulouse, Conference "Derived Categories and Rationality" - Grenoble (declined)
2021 2021 Univ. de Paris Sud, Univ. Roma Tre, Univ. Bologna, Univ. Nacional de Colombia - Bogotá, "Workshop FanoHK" - Dijon
2020 Phd Course (12h) "Rationality and cubic hypersurfaces", University of Pavia, Conference "Geometria in Bicocca", Université de Nice, Università di Milano, Duesseldorf Universität
2019 UMI Conference - Pavia (Italy), Bayreuth (Ger), Conference "Positivity and Vanishing Theorems" - Lille.
2018 Nancy, Paris-Jussieu, IMB Dijon - Workshop "Tresse exceptionnelles", Rome III, Imperial College (UK).
2017 Catania, Genova, Padova, Workshop "Moduli spaces of curves, Integrable Systems and related subjects" - IMB Dijon, Conference "Periods and Ricci flat manifolds" - Banach Institute (Warsaw).
2016 Mini-course "Derived categories and rationality questions" (Université de Poitiers), Paris UPMC, Mediterranean Complex Projective Geometry (Carry Le Rouet), conference Algebraic Geometry days in Poitiers, Séminaire méditerranéen de géométrie algébrique - Marseille.
2015 Bayreuth, Brest, Italo-Korean Conference in Algebraic Geometry (Cortona, ITA - declined), Poitiers, Lille, Rome III, Angers, CNRS-Paris, Genova, Conference "Fourier-Mukai, 34 years on" (Warwick - declined)
2014 Lyon 1, Nice Sophia-Antipolis, Workshop "Derived Categories" at the Hausdorff Center in Bonn, Strasbourg, Pavia, Dijon, Grenoble, MFO Oberwolfach, Montpellier, Conference "Géométrie Algébrique Complexe" at the CIRM of Luminy.
2013 Workshop "Catégories Dérivées et rationalité" Univ. Lille I, Turin, Florence, Conference "New trends in Algebraic Geometry" - Calabria University, Aix-Marseille University, Thematic Term "The Geometry of Topological D-Branes, Categories, and Applications" at the Schrodinger Center - Wien, Pavia, Neuchatel (declined), Barcelona.
2012 School on GIT in Trento, Poitiers, Conference "Derived categories in Dijon, Zurich, Hannover, Rome I and II, Complutense in Madrid, "Journées sur les Hypersurfaces de Coble et Kummer" (Toulouse).
2011 Nantes, XIX UMI conference - Bologna, "Semaine spéciale de Géométrie Algébrique" - Strasbourg, Conference "Moduli Spaces" at the Newton Center in Cambridge, SNS Pisa, Pavia.
2010 Rennes 1, Rome III, Poitiers, Conference "Géométrie Algébrique Complexe" at the CIRM in Luminy, Marseille.
2009 Conference "North Germany Algebraic Geometry Seminar", Freie Universität Berlin, Humboldt University in Berlin, Freie University in Berlin - Conference Vector Bundles on Algebraic Curves, Rome III, Padova, Florence, Nice Sophia-Antipolis.
2008 Complutense University in Madrid, conference "Giornate di Geometria algebrica e argomenti correlati IX" - Levico Terme (Italy).
2007 Pavia, Pisa, Milan.

2006 Nantes, Montpellier II.
2005 Pavia, Freie Univ. Berlin.

Publications

(1) "On the Chow Ring of Fano Fourfolds of K3 type", with R.Laterveer, 1-19, (preprint 2022)

(2) "Some motivic properties of Gushel-Mukai sixfolds", with R.Laterveer, 1-21, (preprint 2022).

(3) "Universal Families of Gushel-Mukai fourfolds" (preprint https://arxiv.org/abs/2009.11770, with H.Awada and G. Stagliano'), p. 1-15, (2020). To appear on the **European Journal of Mathematics.**

(4) "K3 surfaces and Cubic Fourfolds with Abelian Motive", (preprint https://arxiv.org/abs/2007.07193, with H.Awada and C.Pedrini), p. 1-30, (2021).

(5) "The Hitchin connection in arbitrary characteristic", (preprint https://arxiv.org/abs/2002.12288, with T.Baier, J.Martens and C.Pauly), p.1-48, (2020). To appear on the **Journal of the Institut Mathématique de Jussieu.**

(6) "Unirationality of certain universal families of cubic fourfolds", (with H. Awada) p. 1-15, in **"Rationality of algebraic varieties"** (Schiermonnikoog, April 15-19, 2019), Birkhauser Verlag.

(7) "The hyperelliptic theta map and osculating projections", (preprint https://arxiv.org/abs/1905.09830, with N.F.Vargas) p.1-22, to appear on the **Nagoya Mathematical Journal** .

(8) "The transcendental motive of a cubic fourfold", (preprint https://arxiv.org/abs/1710.05753, with C.Pedrini) p.1-20, to appear on the **Journ. of Pure and App. Algebra** .

(9) "Varieties of sums of powers and moduli spaces of (1,7)-polarized abelian surfaces", (preprint https://arxiv.org/abs/1704.06964, with A.Massarenti),**Journal of Geometry and Physics,** Volume 125, February 2018, Pages 23-32.

(10) "Birational geometry of moduli spaces of configurations of points on the line - A variation on a conjecture of Fulton and Faber " (preprint https://arxiv.org/abs/1702.00068, avec A. Massarenti), p. 1-27. To appear on **Algebra and Number Theory.**

(11) "Some loci of rational cubic fourfolds", with F.Russo and G.Staglianó. **Math. Annalen** , 373, 165-190, (2019).

(12) "Moduli of abelian surfaces, symmetric theta functions and theta characteristics"., with A. Massarenti, **Commentarii Mathematici Helvetici** , Volume 91, Issue 3, 2016, pp. 563-608.

(13) "Homological projective duality for determinantal varieties", with M.Bernardara and D.Faenzi, **Advances in Math.** 296 (2016), p. 1–23.

(14) "Mapping Class Groups of Trigonal Loci", with M.Lönne, **Selecta Mathematica,**(2016), Vol. 22, Issue 1, p. 417-445.

(15) "Rational cubic fourfold containing a plane with nontrivial Clifford invariant" with M.Bernardara, A.Auel and A.Varilly Alvarado, **Algebraic Geometry** , Vol.**1** , n.2, 181–193, (March 2014).

(16) "Factorization of point configurations, cyclic covers and conformal blocks", with N.Giansiracusa, **Journ. of the Eur. Math. Soc.** , Vol. 17, p.2453-2471 (2015).

(17) "Fibrations in complete intersections of quadrics, Clifford algebras, derived categories, and rationality problems", with M.Bernardara and A.Auel. **Journ. de Math. Pures et App.** , Vol. 102, n.1, p. 249–291 .

(18) "Categorical representability and intermediate Jacobians of Fano threefolds", with M.Bernardara in **Derived Categories in Algebraic Geometry**, EMS Series of Congress Reports, pagg. 1-26, (2012), ISBN 978-3-03719-115-6.

(19) "Derived categories of rational conic bundles" with M.Bernardara **Compositio Math.**, **149** , (2013), n.11, p. 1789-1817.

(20) "Coherent systems and modular subvarieties of $\mathcal{SU}_C(r)$", with S.Brivio **Int. J. Math.** 23, 1250037 (2012) - 23 pages, n.4.

(21) "Forgetful linear systems on the projective space and rational normal curves over $\mathcal{M}_{0,2n}^{GIT}$." **Bullettin of the London Math. Soc.** (2011) 43 (3): 583-596.

(22) "A structure theorem for SU(2) and moduli of pointed rational curves" , with A.Alzati, **Journal of Algebraic Geometry**, Vol 24, 283–310, (2015).

(23) "Stacks of Trigonal Curves", with A.Vistoli. **Trans. Amer. Math. Soc.** 364 (2012), pagg. 3365-3393.

(24) "Osculating Spaces and Diophantine equations", with G.Pirola (and an appendix of P.Corvaja et U.Zannier), **Math. Nachrichten** Volume 284, Issue 8 and 9, p. 960–972, (2011).

(25) "A Conic Bundle Degenerating on the Kummer Surface", **Mathematische Zeitschrift** n.187 (2009).

(26) "On Weddle Surfaces and Their Moduli", **Advances in Geometry**, Vol.7, n.1, pagg. 113-144, (2007).

Scientific and administrative responsibilities.

- I have been refereeing on several international journals (Ann. Sci. ENS, Compositio Math., Journ. of Algebraic Geom., Algebraic Geometry, Journ. of the LMS, Selecta Math. - New Series, Journ. of the LMS, Algebra and Number Theory, Fulton's 80th VOlume, Annali della SNS, Ann. de l'Institut Fourier, Math. Zeit., Michigan Math. Journ., PRIMS, Mahtematische Nachrichten, Centr. Eur. Journ of Maths, Manuscripta Math., Forum Math., Disc. Cont. Dyn. Syst., C.R.A.S., etc.). I am reviewer for *MathSciNet* and *Zentralblatt*.

- I have been (or will be) the referee of the thesis of R.Moschetti (Univ. Pavia - Advisor: A. Canonaco), M.Galeotti (UPMC - Advisor: A.Chiodo), Z.Turčinović (Imperial College, Adv: R.Thomas), A.J. Edo (Univ. Lille, Adv: J. d'Almeida), C.Bonandrini (Univ. Paris Sud, Adv.: E. Macrì), S.Durighetto (Ferrara and Toulouse - Adv: M.Mella and M.Bernardara) and member of the respective Phd Committees, member of the Phd Committee of F.Amodeo (Univ. Milan - Advisor: P.Stellari), F.Galuppi (Univ. Ferrara - Adv: M.Mella), P.Steffens (Univ. Montpellier, D.Calaque) and M.Portioli (Univ.Bologna). I was referee of the Habilitation Thesis of S.Novakovic (Univ. Duesseldorf).

- I was member of the project ANR-BLANC PEACE (Parameter spaces for Efficient Arithmetic and Curve security Evaluation - 2013/17). I am member of the ANR project *FanoHK* (2020/24).

- I have been refereeing for the Italian Ministry of Research and University for: "Rita Levi Montalcini" positions, "FARE" projects, "PRIN" projects, VQR ANVUR.

- I have been reviewing projects pour the Swiss National Science Foundation.
- I am member of the HCERES, the High Authority for evaluations of research institutes in France. I have been in the panel evaluating the Maths Institute in Dijon.
- Organizer of the Geometry Seminar of IRMAR in Rennes for 3 years. Organizer of the algebraic geometry seminar in Montpellier for one year
- Organizer of a School on conformal blocks in 2012 at the ICMAT in Madrid (http://confblocks.sciencesconf.org/)
- Organizer of a Workshop on conformal blocks, moduli of curves and of vector bundles, in Rome in 2013, (http://conformalmoduli.sciencesconf.org/)
- Co-organizer of the thematic semester "Around moduli spaces" in 2014, in Rennes, Nantes, Angers and Brest: 2 spring schools, 4 conferences, 2 workshops and several master classes, more than 500 inscriptions.
- Organizer of the School on Derived Categories in Nantes and of the conference on effective moduli spaces and applications to cryptography.
- Co-organizer of the conference "New methods in birational geometry" in 2016 in Toulouse
- I have been directing of the 1st year of Mathematics at the University of Rennes 1 (2012/14) managing the relations with the "Pole Handicap" for maths students. For 4 years I have been the director the M2 (5th year, 2nd of Master) "Mathematiques Fondamentales" in Montpellier.
- I am the director of the Doctoral School of the University of Montpellier for Mathematics and Modelling.
- Member of the research group GDR n.3064 "Géométrie Algébrique Géométrie Complexe" of the CNRS and of the research network GNSAGA (Algebraic and geometric structures, and their applications)
- President of the Section Committee 25 (Pure Maths) of the University of Montpellier. It is a board that takes care of the administration of part of the scientific activities at the department (PhD scholarships, some post-doc recruitment, composition of the hiring commitees)
- Member (and President, twice) of several hiring committees in France and Italy for assistent or associate professor positions.
- Co-organizer of "A tale of algebra and geometry - Angelo Vistoli's 60th birthday" in June 2018 in Pisa.
- Co-organizer of A day in Algebraic Statistics in Montpellier, fall 2017.
- Co-founder of the semestral seminar "Séminaire méditerranéen de Géometrie Algébrique" (Nice-Marseille-Montpellier-Toulouse).
- Member of the board of the Institut de Cybersécurité d'Occitanie.

Teaching, advice and doctoral service

- I am in charge of the speciality Mathematics and Modelling for the doctoral school of Montpellier.
- I have been the director of the Master 2 "Mathématiques Fondamentales" in Montpellier
- I have been memoir advisor of 20 undergraduate students
- **Phd students: Néstor Fernandez Vargas** (coadvised by F.Loray, 2014/2017, 2 papers, defended in april 2018), **Hanine Awada** (2018/2021) (5 papers), **Elena Poma** (2020/2023, co-advised by A.Massarenti), **Zakaria Brahimi** (2021/2024, co-advised by A.Verra).

- **Mini-Courses:** Doctoral courses: Thomae's formulas and GIT (Rennes, 10h - 2014), Derived categories and rationality questions (8h - Poitiers, 2016), Rationality and cubic hypersurfaces (Pavia, 12h, 2020)

Computer skills

Linux, Windows, Maple, Macaulay2, C++, Python, Java, html.

Languages spoken

Italian (mother tongue), English, French, German (basic knowledge).