

Gianluca Occhetta | Curriculum Vitae

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Born in Buenos Aires, the 17th of April, 1972

Last updated: September 22, 2022

Career

Full professor	University of Trento <i>December 2018 – today</i>
Associate professor	University of Trento <i>2006 – 2018</i>
Researcher	University of Trento <i>2001 – 2006</i>
Post Doc position (Assegno di ricerca)	University of Milan <i>1999 – 2001</i>

Education

PhD in Mathematics	University of Trento <i>1996 – 1999</i>
Thesis: <i>Extremal rays of smooth projective varieties</i>	
Advisor: Professor Marco Andreatta	
Degree in Mathematics	University of Milan <i>1990 – 1995</i>
Thesis: <i>Rivestimenti doppi delle rigate geometriche razionali e sezioni iperpiane</i>	
Advisor: Professor Antonio Lanteri	

Research

Research interests

My research activity is in the field of Algebraic Geometry; more specifically it is about smooth complex projective manifolds of any dimension whose canonical bundle is not numerically effective.

These varieties, which play a fundamental role in the classification problem for algebraic varieties in any dimension (Minimal Model Program) have, among others, two very interesting features: first of all they admit special morphisms with connected fibers - called Mori extremal contractions - onto normal varieties, and moreover they have families of rational curves which, if the canonical bundle is not pseudo effective, are dominating families, i.e., through the general point of the variety there is a rational curve.

At the early stages of my career I have studied particular classes of Mori contractions and the problem of extending a contraction defined on an ample subvariety to the ambient variety [AO99, AO02a, AO02b, O03, O05]. Part of this work has been developed in collaboration with Marco Andreatta.

On the other hand the study of families of rational curves allowed me to prove results about characterizations of product of projective spaces [O06a] and (with Jaroslaw Wiśniewski) varieties dominated by toric varieties [OW02].

I then started to deal with some classification problems for Fano manifold, i.e. manifolds whose anticanonical bundle is ample, proving some special cases of a general conjecture which relates some numerical invariants of these manifolds [ACO04], and using these results to describe the Mori cones of Fano manifolds of coindex four and dimension at least five [CO06]. This description has been the starting point for some classification results on the varieties [NO07, CO08]. This project has been carried on in collaboration with Marco Andreatta, Elena Chierici and Carla Novelli.

In 2009 I started a collaboration with Roberto Muñoz and Luis Solá Conde. At first our research has been focused on the study vector bundles on Fano manifolds. Some of the obstructions to constructing indecomposable vector bundles of low rank on projective spaces are present in other Fano manifolds, so combining cohomological techniques together with Mori Theory ideas, one can get classification results.

In particular we obtained a general result about the splitting of uniform vector bundles [MOS12b] and classification results for Fano bundles [MOS12a, MOS13, MOS14].

As a by-product, we have found [MOS14] a counterexample to a Conjecture of Hwang and Mok, that claimed that the Variety of Minimal Rational Tangents of a Fano manifold of Picard number one is either zero-dimensional or irreducible.

Since 2012 I've been working in the framework of Campana-Peternell Conjecture, which states that every Fano manifold with nef tangent bundle is homogeneous. With Muñoz, Solá Conde, Watanabe and Wiśniewski we have so far obtained the homogeneity of a special type of Fano manifolds with nef tangent bundle, that we call FT-manifolds and that may be described as the Fano manifolds having the maximum number of \mathbb{P}^1 -fibration structures [MOSW15, OSWW17].

A slight generalization of the characterization of complete flags given in [OSWW17] has been used in [OSW15] to prove that a Fano manifold of Picard number one such that the varieties parametrizing minimal rational curves by a point are all homogeneous (and isomorphic) is itself homogeneous. This last paper contains also a study of flag bundles over the projective line; this is the starting point for the study of flag bundles - especially uniform ones - on Fano manifolds. The known examples in fact suggest that the relation between homogeneity and uniformity of a vector bundle should be explained within the general framework of rational homogeneous spaces and representation theory. This topic is treated in [MOS16, MOS20].

Uniformity may also be related to characterizations of rational homogeneous manifold. For instance one may expect that a manifold with Picard number two and two structures of (uniform) rational homogeneous bundle is itself rational homogeneous. In order to prove results on this direction one needs to understand special morphisms between rational homogeneous manifolds, the so-called nestings. This is the object of [MOS19].

In the last couple of years I've been working, with Solá Conde, Romano and Wiśniewski, on manifolds with a \mathbb{C}^* -action, in the framework of the LeBrun-Salamon conjecture. In [ORSW22a] the relations of actions of small bandwidth with birational geometry have been explored, while in [ORSW21] we were able to prove LeBrun-Salamon conjecture for contact Fano manifolds of dimension $2n + 1$ whose group of automorphisms is reductive of rank $\geq \max(2, (n - 3)/2)$. We are currently working on varieties with a \mathbb{C}^* -action, in particular studying the birational transformations related to special type of \mathbb{C}^* -actions.

Most significant publications

- ORSW22a** Occhetta, G., Solá Conde, L. E., Romano, E. A. and Wiśniewski, J. A. Small bandwidth \mathbb{C}^* -actions and birational geometry. *Journal of Algebraic Geometry* (2022).
- ORSW21** Occhetta, G., Solá Conde, L. E., Romano, E. A. and Wiśniewski, J. A. High rank torus actions on contact manifolds. *Selecta Mathematica New Ser.* 27 (1) (2021)
- OSWW17** Occhetta, G., Solá Conde, L. E., Watanabe, K., and Wiśniewski, J. A. (2017). Fano manifolds whose elementary contractions are smooth \mathbb{P}^1 -fibrations. *Annali Sc. Norm. Super. Pisa Cl. Sci.*, 17(2), 573-607
- OSWi16** Occhetta, G., Solá Conde, L. E., and Wiśniewski, J. (2016). Flag bundles on on Fano manifolds. *Journal de Mathématiques Pures et Appliquées*, 106, 651-669
- MOSW15** Muñoz, R., Occhetta, G., Solá Conde, L. E., and Watanabe, K. (2014). Rational curves, Dynkin diagrams and Fano manifolds with nef tangent bundle. *Math. Ann.*, 361, 583-609
- MOS14b** Muñoz, R., Occhetta, G., and Solá Conde, L. E. (2014). A classification theorem for Fano bundles. *Ann. Inst. Fourier.*, 64, no. 1, 341-373
- MOS12b** Muñoz, R., Occhetta, G., and Solá Conde, L. E. (2012). Uniform vector bundles on Fano manifolds and applications. *J. Reine Angew. Math.*, 664:141–162.
- MOS10** Muñoz, R., Occhetta, G., and Solá Conde, L. E. (2010). An extension of Fujita's non-extendability theorem for Grassmannians. *Math. Ann.*, 348(3):577–592.
- NO11** Novelli, C. and Occhetta, G. (2011). Projective manifolds containing a large linear subspace with nef normal bundle. *Michigan Math. J.*, 60(2):441–462.
- OW02** Occhetta, G. and Wiśniewski, J. A. (2002). On Euler-Jaczewski sequence and Remmert-van de Ven problem for toric varieties. *Math. Z.*, 241(1):35–44.

Complete list of publications

Preprints.....

- MOS22a** Muñoz, R., Occhetta, G., and Solá Conde, L. E. Maximal disjoint Schubert cycles in Rational Homogeneous Varieties Preprint, arXiv:
- NO22** A. Naldi and Gianluca Occhetta, Morphisms between Grassmannians (2022) Preprint arXiv: 2202.11411 .
- ORSW22c** Occhetta, G., Solá Conde, L. E., Romano, E. A. and Wiśniewski, J. A. (2022) Geometric realizations of birational transformations via \mathbb{C}^* -actions. Preprint, arXiv:2205.08190

Published papers.....

- ORSW22b** Occhetta, G., Solá Conde, L. E., Romano, E. A. and Wiśniewski, J. A. Small modifications of Mori dream spaces arising from \mathbb{C}^* -actions. *European Journal of Mathematics* (2022) <https://doi.org/10.1007/s40879-022-00540-w>
- ORSW22a** Occhetta, G., Solá Conde, L. E., Romano, E. A. and Wiśniewski, J. A. Small bandwidth \mathbb{C}^* -actions and birational geometry. *Journal of Algebraic Geometry* (2022).
- ORS22** Occhetta, G., Solá Conde, L. E. and Romano, E. A. Manifolds with two projective bundle structures. *Proc. Amer. Math. Soc.* 150 (2022), 1381-1395
- MOS22** Muñoz, R., Occhetta, G., and Solá Conde, L. E. Nestings of rational homogeneous varieties. *Transformations Groups* 27(1) (2022) 189-223.
- ORSW21** Occhetta, G., Solá Conde, L. E., Romano, E. A. and Wiśniewski, J. A. High rank torus actions on contact manifolds. *Selecta Mathematica New Ser.* 27 (1) (2021)
- MOS21** Muñoz, R., Occhetta, G., and Solá Conde, L. E. On uniform flag bundles on Fano manifolds. *Kyoto Journal of Mathematics*, 61 (4), (2021), 843-872
- OS20** Occhetta, G., and Solá Conde, L. E. Deformation of Bott-Samelson varieties and variations of isotropy structures. *Journal of Pure and Applied Algebra*, 224(7) (2020).
- MOS20** Muñoz, R., Occhetta, G., and Solá Conde, L. E. Splitting conjectures for uniform flag bundles. *European Journal of Mathematics*, 6 (2020), 430-452.
- OSWa18** Occhetta, G., Solá Conde, L. E. and Watanabe, K. Characterizing the homogeneous variety $F_4(4)$. *Mathematische Nachrichten*, 291(14-15) (2018), 2334-2346.
- OSWa17** Occhetta, G., Solá Conde, L. E. and Watanabe, K. A characterization of symplectic Grassmannians. *Mathematische Zeitschrift*, 286(3-4) (2017), 1421-1433.

- OSWW17** Occhetta, G., Solá Conde, L. E., Watanabe, K., and Wiśniewski, J. A. Fano manifolds whose elementary contractions are smooth \mathbb{P}^1 -fibrations. *Annali Sc. Norm. Super. Pisa Cl. Sci.*, 17(2), (2017), 573-607.
- OSWi16** Occhetta, G., Solá Conde, L. E., and Wiśniewski, J. Flag bundles on Fano manifolds. *Journal de Mathématiques Pures et Appliquées*, 106 (2016), 651-669
- OSWa16** Occhetta, G., Solá Conde, L. E., and Watanabe, K. Uniform families of minimal rational curves on Fano manifolds. *Revista Matemática Complutense*, 29 (2016), 423-437.
- MOSWW15** Muñoz, R., Occhetta, G., Solá Conde, L. E., Watanabe, K., and Wiśniewski, J. A. A survey on the Campana-Peternell conjecture. *Rend. Istit. Mat. Univ. Trieste*, 47 (2015), 127-185.
- MOSW15** Muñoz, R., Occhetta, G., Solá Conde, L. E., and Watanabe, K. Rational curves, Dynkin diagrams and Fano manifolds with nef tangent bundle. *Math. Ann.*, 361 (2015), 583-609.
- MOS14a** Muñoz, R., Occhetta, G., and Solá Conde, L. E. On rank 2 vector bundles on Fano manifolds. *Kyoto J. Math.*, 54(1) (2014), 167-197.
- MOS14b** Muñoz, R., Occhetta, G., and Solá Conde, L. E. A classification theorem for Fano bundles. *Ann. Inst. Fourier.*, 64, no. 1, (2014), 341-373.
- OP12a** Occhetta, G. and Paterno, V. Rationally cubic connected manifolds I: manifolds covered by lines. *J. Math. Soc. Japan*, 64(3) (2012), 941-967.
- OP12b** Occhetta, G. and Paterno, V. Rationally cubic connected manifolds II. *Rev. Mat. Iberoam.*, 28(3) (2012), 815-838.
- NO12** Novelli, C. and Occhetta, G. Manifolds covered by lines and extremal rays. *Canad. Math. Bull.*, 55(4) (2012), 799-814.
- MOS12a** Muñoz, R., Occhetta, G., and Solá Conde, L. E. Rank two Fano bundles on $\mathbb{G}(1, 4)$. *J. Pure Appl. Algebra*, 216(10) (2012), 2269-2273.
- MOS12b** Muñoz, R., Occhetta, G., and Solá Conde, L. E. Uniform vector bundles on Fano manifolds and applications. *J. Reine Angew. Math.*, 664 (2012), 141-162.
- NO11** Novelli, C. and Occhetta, G. Projective manifolds containing a large linear subspace with nef normal bundle. *Michigan Math. J.*, 60(2) (2011), 441-462.
- MOS10** Muñoz, R., Occhetta, G., and Solá Conde, L. E. An extension of Fujita's non-extendability theorem for Grassmannians. *Math. Ann.*, 348(3) (2010), 577-592.

- CO10** Chierici, E. and Occhetta, G. Fano manifolds and blow-ups of low-dimensional subvarieties. *J. Korean Math. Soc.*, 47(1) (2010), 189–213.
- NO10** Novelli, C. and Occhetta, G. Rational curves and bounds on the Picard number of Fano manifolds. *Geom. Dedicata*, 147 (2010), 207–217.
- CO08** Chierici, E. and Occhetta, G. Fano fivefolds of index two with blow-up structure. *Tohoku Math. J.*, 60(4) (2008), 471–498.
- NO07** Novelli, C. and Occhetta, G. Ruled Fano fivefolds of index two. *Indiana Univ. Math. J.*, 56(1) (2007), 207–241.
- O06a** Occhetta, G. A characterization of products of projective spaces. *Canad. Math. Bull.*, 49(2) (2006), 270–280.
- O06b** Occhetta, G. Extending rationally connected fibrations. *Forum Math.*, 18(5) (2006), 853–867.
- ANO06** Andreatta, M., Novelli, C., and Occhetta, G. . Connections between the geometry of a projective variety and of an ample section. *Math. Nachr.*, 279(13-14) (2006), 1387–1395.
- CO06** Chierici, E. and Occhetta, G. The cone of curves of Fano varieties of coindex four. *Internat. J. Math.*, 17(10) (2006), 1195–1221.
- OP05** Occhetta, G. and Panizzolo, D. Fano-Mori elementary contractions with reducible general fiber. *Kodai Math. J.*, 28(3) (2005), 559–576.
- O05** Occhetta, G. A note on the classification of Fano manifolds of middle index. *Manuscripta Math.*, 117(1) (2005), 43–49.
- AO05** Andreatta, M. and Occhetta, G. Fano manifolds with long extremal rays. *Asian J. Math.*, 9(4) (2005), 523–543.
- ACO04** Andreatta, M., Chierici, E., and Occhetta, G. Generalized Mukai conjecture for special Fano varieties. *Cent. Eur. J. Math.*, 2(2) (2004), 272–293.
- O03** Occhetta, G. Small contractions of smooth varieties. *Pacific J. Math.*, 208(1) (2003), 125–149.
- AO02a** Andreatta, M. and Occhetta, G. Extending extremal contractions from an ample section. *Adv. Geom.*, 2(2) (2002), 133–146.
- AO02b** Andreatta, M. and Occhetta, G. Special rays in the Mori cone of a projective variety. *Nagoya Math. J.*, 168 (2002), 127–137.

- OW02** Occhetta, G. and Wiśniewski, J. A. On Euler-Jaczewski sequence and Remmert-van de Ven problem for toric varieties. *Math. Z.*, 241(1) (2002), 35–44.
- O02** Occhetta, G. Ample vector bundles, low degree rational curves and Fano-Mori contractions. *Istit. Lombardo Accad. Sci. Lett. Rend. A*, 134(1-2) (2002), 117–132.
- O01** Occhetta, G. On some Fano manifolds of large pseudoindex. *Manuscripta Math.*, 104(1) (2001), 111–121.
- AO99** Andreatta, M. and Occhetta, G. Ample vector bundles with sections vanishing on special varieties. *Internat. J. Math.*, 10(6) (1999), 677–696.
- LO98** Lanteri, A. and Occhetta, G. Double covers of some Fano manifolds as hyperplane sections. *Math. Nachr.* 193 (1998), 93–110.

Talks and communications at conferences

Online Nottingham Algebraic Geometry Seminar <i>Seminar Talk</i> Maximal disjoint Schubert cycles in Rational Homogeneous Spaces	Remote <i>September 2022</i>
Classical Algebraic Geometry in Milano <i>Conference Talk</i> On projective manifolds with two \mathbb{P} -bundle structures	Milano <i>July 2019</i>
Warsaw University <i>Seminar Talk</i> Uniform bundles	Warsaw <i>May 2019</i>
University of Padova <i>Seminar Talk</i> On projective manifolds with two \mathbb{P} -bundle structures	Padova <i>May 2019</i>
A Journey through Projective and Birational Geometry <i>Conference Talk</i> Uniform bundles	Trento <i>January 2019</i>
UMI-SIMAI-PTM meeting <i>Conference Talk</i> A geometric characterization of flag manifolds	Wroclaw <i>September 2018</i>
Warsaw University <i>Seminar Talk</i> A geometric characterization of flag manifolds	Warsaw <i>June 2018</i>
Complutense University <i>Seminar Talk</i> Flag bundles on Fano manifolds	Madrid <i>January 2017</i>
GVA 2016 <i>Conference Talk</i> Flag bundles on Fano manifolds	Levico Terme <i>June 2016</i>
Mediterranean Complex Projective Geometry <i>Conference Talk</i> A geometric characterization of flag manifolds	Carry le Rouet <i>May 2016</i>
KIAS Winter School Rational Curves on Algebraic Varieties <i>Conference Talk</i> Flag manifolds, Fano manifolds whose contractions are \mathbb{P}^1 -fibrations and Campana- Peternell conjecture	Busan <i>January 2016</i>
INdAM Italian-Korean Meeting on Algebraic Geometry 2015 <i>Conference Talk</i> A characterization of complete flag manifolds	Cortona <i>July 2015</i>
University of Turin <i>Seminar Talk</i> Fano manifolds whose elementary contractions are \mathbb{P}^1 -fibrations	Turin <i>November 2013</i>

Complutense University <i>Seminar Talk</i> VMRT'sand Congruences of lines - A "classical" counterexample to a modern conjecture	Madrid <i>December 2012</i>
Congresso UMI <i>Conference Talk</i> Uniform vector bundles on Fano manifolds	Bologna <i>September 2011</i>
KIAS Workshop "Geometry of projective varieties" <i>Conference Talk</i> Splitting criteria for rank two vector bundles on Fano manifolds	Seoul <i>April 2011</i>
Complutense University <i>Seminar Talk</i> Rationally cubic connected varieties	Madrid <i>January 2011</i>
Workshop "Minimal model program and Shokurov's ACC Conjecture" <i>Conference Talk</i> Vector bundles on Fano manifolds	Trento <i>July 2010</i>
Workshop "Projective Algebraic Geometry in Milano" <i>Conference Talk</i> Rational curves and bounds on the Picard number of Fano manifolds	Milan <i>July 2009</i>
Complutense University <i>Seminar Talks</i> "Families of rational curves" and "Mukai conjecture for Fano manifolds"	Madrid <i>January 2019</i>
Workshop "Birational automorphism groups and birational geometry" <i>Conference Talk</i> Projective manifolds containing large linear subspaces with nef normal bundle	Pisa <i>October 2008</i>
Workshop "Giornate Genovesi II" <i>Conference Talk</i> Projective manifolds containing large linear subspaces with nef normal bundle	Genova <i>January 2008</i>
Workshop "A day of higher dimensional Algebraic Geometry" <i>Conference Talk</i> A characterization of products of projective spaces	Milano <i>October 2006</i>
KIAS Workshop: "Rational curves on Algebraic Varieties" <i>Conference Talk</i> Mukai conjecture for Fano manifolds and related problems	Seoul <i>March 2006</i>
Conference Algebraic Geometry in Ferrara <i>Conference Talk</i> Rational curves and classification of Fano manifolds	Ferrara <i>June 2005</i>
University of Pisa <i>Seminar Talk</i> Contrazioni estremali di varietà lisce: nuovi fenomeni in dimensione alta	Pisa <i>June 2005</i>
University of L'Aquila <i>Seminar Talk</i> Varietà elementari da un punto di vista superiore	L'Aquila <i>November 2004</i>

University of Ferrara <i>Seminar Talk</i> Congettura di Mukai generalizzata per varietà di Fano speciali	Ferrara <i>November 2003</i>
XVII convegno UMI <i>Conference Talk</i> Una generalizzazione del criterio di contrazione di Castelnuovo	Milano <i>September 2003</i>
Tor Vergata University <i>Seminar Talk</i> Extending extremal contractions from an ample section	Rome <i>March 2002</i>
Politecnico di Milano <i>Seminar Talk</i> On Euler-Jaczewski sequence and Remmert-van de Ven problem for toric varieties.	Milano <i>April 2001</i>
Warsaw University <i>Seminar Talk</i> Lifting of contractions from an ample section	Warsaw <i>April 2001</i>
Convegno "Geometria Algebrica e argomenti correlati" <i>Conference Talk</i> Deformazione di curve e fibre di contrazioni estremali	Gargnano <i>May 2000</i>
University of Notre Dame <i>Seminar Talk</i> Ample vector bundles with sections vanishing on special varieties	South Bend, Indiana <i>April 1999</i>
Mathematical Institute of the Romanian Academy <i>Seminar Talk</i> Extremal contractions of smooth varieties	Bucarest <i>November 1997</i>

PhD thesis supervision

I have been the advisor of the PhD Thesis:

- (2004) Elena Chierici: The cone of curves of Fano varieties (with Marco Andreatta).
- (2009) Valentina Paterno: Rationally connected varieties.

Conference organizations

I've been a member of the Organizing Committee of the Conferences:

- Algebraic Geometry in higher dimensions, Levico Terme (Trento), June 2007;
- Giornate di Geometria Algebrica e argomenti correlati IX, Levico Terme (Trento), May 2008.
- Classification of Projective Varieties, Levico Terme (Trento), September 2015.

Activity as reviewer and referee

- I've been a reviewer for MathSciNet and ZBL for more than fifteen years.
- I am a referee for some international Journals, such as: Advances in Geometry, International Journal of Mathematics, Journal of Algebra, Journal of Pure and Applied Algebra, Journal of Algebraic Geometry, Journal of the Mathematical Institute of Jussieu, Mathematische Nachrichten, International Mathematics Research Notices, Compositio Mathematica, Mathematische Annalen, Canadian Journal of Mathematics, Transactions of the American Mathematical Society, Revista Matematica Complutense, Transformation Groups.

Research Groups and grants

- In 2018, I've received the FFABR grant of MIUR.
- I've been a member of the Trento unit of the PRIN project "Geometria delle varietà algebriche", funded for the period 2013 – 2016.
- I've been a member of the PRIN projects "Proprietà geometriche delle varietà reali e complesse" (PRIN 2002, PRIN 2005, PRIN 2007).
- In 2000-2001 my project "Extremal contractions of smooth varieties" has been funded by the "Progetto Giovani Ricercatori".

Teaching

Courses and other teaching activities

Linear Algebra <i>BSc in Computer Science and Engineering</i>	2022–now
Foundations of Geometry <i>Master in Mathematics</i>	2015–now
Introduction to Algebraic Geometry <i>BSc in Mathematics</i>	2020–now
Linear Algebra <i>BSc in Computer Science and Engineering</i>	2014–2020
Algebraic Geometry I <i>Master in Mathematics</i>	2014–2019
Differential Geometry <i>BSc in Mathematics</i>	2010–2015
Ample line bundles and Mori cone theorem <i>PhD in Mathematics</i>	2012–2013
Geometry III (Algebraic Topology and Complex Analysis) <i>BSc in Mathematics</i>	2010–2014
Complex Analysis <i>BSc in Mathematics</i>	2009–2010
Algebraic Geometry II <i>PhD in Mathematics</i>	2009–2010
Algebraic Geometry I <i>Master in Mathematics</i>	2009–2010
Linear Algebra <i>BSc in Engineering</i>	2006–2009
Algebraic Topology <i>Master in Mathematics</i>	2005–2006
Geometry IV and V (General and Algebraic Topology, Differential Geometry) <i>BSc in Mathematics</i>	2002–2008
Exercise sessions and teaching collaborations <i>Various degrees</i> Calculus, University of Milan-Bicocca, Algebra, University of Milan, Geometry I, University of Milan, Linear Algebra, University of Trento, Advanced Geometry, University of Trento	1996–2001

BSc and Master Thesis supervised

Master thesis

- AA 2021/2022
Valeria Ginato: La teoria delle proporzioni; analisi ed approfondimenti
- AA 2020/2021
Alice Cattani: Problemi numerativi sulle coniche. Da Apollonio a Steiner
- AA 2019/2020
Arianna Coller: Geometria Proiettiva e Geometria della visione
Valentina Poli: Uno strano e nuovo Universo. Storia e Modelli della Geometria Iperbolica
Maria Teresa Alfano: Teoria dell'area in geometria euclidea e in geometria iperbolica
Marta Spinielli: Il Teorema di Bézout: ricerca di soluzioni di sistemi di equazioni polinomiali e calcolo della relativa molteplicità
- AA 2018/2019
Nicholas Frigo: Sistemi elettorali: dal voto a maggioranza ai teoremi di impossibilità
Angelo Naldi: Good divisibility of rational homogeneous varieties and applications
- AA 2017/2018
Mattia Martinelli: Dai poliedri ai politopi regolari
- AA 2016/2017
Marco Pezzoli: Costruzioni geometriche: riga, compasso e Origami
Francesco Pirovano: Il gioco della logica di Lewis Carroll: esperienza con i sillogismi a scuola
- AA 2015/2016
Annalisa Ficara: Riga e compasso iperbolici nel disco di Poincaré
- AA 2014/2015
Giorgio Sbicego: Cohomology of line bundles on Bott-Samelson varieties
Emilia Ramazzotti: Morphisms to Grassmannians
- AA 2013/2014
Valeria Volpini: Special Fano manifolds of Picard number two
- AA 2012/2013

Federico Masini: Geometry and Algebra of Paper folding

○ AA 2011/2012

Ester Donatoni: The geometry of vision: classical and modern aspects

○ AA 2008/2009

Laura Facchini: Geometria Tropicale

Elisa Veronesi: A spasso per i grafi - Un laboratorio per le scuole

○ AA 2007/2008

Davide Frapporti: Fano 4-folds of pseudoindex ≥ 2

Pietro Zanoni: A special case of the generalized Mukai conjecture

○ AA 2006/2007

Maria Morandi: Grassmanniane e calcolo di Schubert

Sara Santoni: Il problema di Malfatti: due secoli di storia

○ AA 2005/2006

Valentina Paterno: Scoppiamenti di Grassmanniane e varietà di Fano

BSc Thesis.....

○ AA 2021/2022

Giuseppe Federico: Mappe razionali e scoppiamenti lungo sottovarietà

Luca Dal Forno: Famiglie di spazi lineari contenuti in ipersuperfici quadriche

○ AA 2020/2021

Marco Ghirlanda: Anelli di Chow e calcolo di Schubert - Risoluzione del caso $G(2, n)$

Stefano Zalla: Sistemi elettorali e dimostrazioni del teorema dell'impossibilità di Arrow

Davide Pantaleoni: Spazi proiettivi pesati

○ AA 2019/2020

Valeria Ginato: Gruppi finiti di riflessioni e Caleidoscopi

○ AA 2018/2019

Alice Cattani: Ad ogni ruota la sua strada - Costruzione geometrica di coppie road-wheel

○ AA 2017/2018

Marco Vallortigara: Geometria tropicale: classificazione di coniche tropicali

- AA 2016/2017
 - Dario Amadori:** Breve storia della compattezza
- AA 2015/2016
 - Elena Peterle:** Nuova visione dell'area delle cicloidi
 - Piero Dalla Rosa:** Il Lemma di Schwarz
 - Stefano Arrigoni:** La costruzione del Triangolo di Pascal (mod p^b)
- AA 2014/2015
 - Sara Bonora:** Il Teorema di Borsuk-Ulam
 - Letizia Corazzola:** Il Teorema di Gauss-Bonnet
- AA 2013/2014
 - Ilaria Carreri:** Questioni geometriche connesse al ripiegamento della carta
 - Katia Simoni:** Geometria numerativa delle coniche: il Problema di Steiner
 - Valentina Graziola:** Dall'esagono di Pascal alle curve in gabbia
- AA 2012/2013
 - Edoardo Lanari:** Immersione di categorie abeliane piccole
 - Constanze Ciavarella:** Homology of CW-complexes and applications
 - Annalisa Ficara:** Alcune generalizzazioni del concetto di evoluta
- AA 2011/2012
 - Nicole Bussola:** Caustiche di curve piane
 - Patrick Harasser:** Il Teorema di Borsuk-Ulam
 - Chiaramaria Panozzo:** Sul Teorema dei quattro vertici
 - Anna Rodighiero:** Due teoremi di Eulero sulle rotazioni spaziali
 - Natascia Zangani:** Variazioni sul Lemma di Schwarz
- AA 2010/2011
 - Ilaria Geat:** Una generalizzazione del Teorema di non retrazione
 - Antonio Toreno:** Il Teorema di Jordan secondo Jordan
 - Margherita Zanella:** Incontri con il triangolo di Sierpinski
- AA 2009/2010

- Giulia Parisi:** Curve ad ampiezza costante
- Chiara Rubbo:** La Topologia e il movimento dei robot
- Elena Scandola:** Topologia reale da un punto di vista complesso
- AA 2008/2009

Stefano Martin: Curve elastiche

Elisa Paoli: Anelli di fumo ed equazione non lineare di Schrodinger
 - AA 2007/2008

Carmen Maria Raso: Teorema di Gauss-Bonnet e applicazioni

Chiara Zarpellon: Cartamodelli del piano proiettivo
 - AA 2005/2006

Davide Frapporti: Cobordismi elementari e funzioni di Morse

Silvia Rumpel: Poligoni piani e teoria di Morse
 - AA 2004/2005

Katia Danieli: Trasformazioni quadratiche e risoluzione di singolarità

Sara Santoni: Rivestimenti topologici e gruppi fondamentali

Elisa Veronesi: Diversi approcci al Teorema di Bezout

Pietro Zanoni: Omologia simpliciale e omologia singolare
 - AA 2003/2004

Michele Cascarano: Un problema di geometria numerativa

Martina De Nisi: Gruppi di Omotopia di sfere n-dimensionali

Valentina Paterno: Il modello di Poincare' per la geometria iperbolica

Francesca Paolucci: Forme differenziali e il Teorema di De Rham

Susan Veronesi: Un approccio geometrico alle funzioni ellittiche
 - AA 2002/2003

Marina Cetto: Piani proiettivi finiti

Igor Donadello: Geometria numerativa e calcolo di Schubert

Administration and responsibilities

Deputy director for Teaching <i>Department of Mathematics</i>	November 2018 – October 2021
Member of the Committee “Gruppo di Riesame” <i>Department of Mathematics</i>	2012 – 2021
Node Coordinator <i>Erasmus Program for students going to/coming from Warsaw University</i>	2012 – now
Member of the Teaching Committee <i>Department of Mathematics</i>	2017 – now
Member of the Executive Committee <i>PhD Program in Mathematics</i>	2013 – 2018
Member of the Antiplagiarism Committee <i>University of Trento</i>	2012 – 2015