

## ***Curriculum vitae et studiorum of Emilia Mezzetti***

Laurea in Mathematics at the University of Trieste “*summa cum laude*” in 1976. Full professor of Geometry at the University of Trieste since 2002.

Research field: Algebraic geometry, in particular classification problems of projective varieties and vector bundles on algebraic varieties.

Visiting professor in the following institutions (selected): University of Oslo (Norway), Université de Nice – Sophia Antipolis (France), University of Loughborough (UK), Newton Institute for Mathematical Sciences - Cambridge (February-March 2002), KIAS - Korean Institute for Advanced Study - Seoul (February 2001), Georgia Institute of Technology, Atlanta (USA), Texas A&M University (USA), Universität Bayreuth (Germany), Univerza v Ljubljani (Slovenia), KTH – Royal Institute of Technology – Stockholm (Sweden), Universidad Complutense de Madrid (Spain), MSRI - Mathematical Sciences Research Institute - Berkeley (January – March 2009), Universitat de Barcelona (Spain), Université de Lille, Université Pierre et Marie Curie - Paris.

Invited talks in conferences (selected): NAVF Conference “Vector bundles and special projective embeddings”, Bergen, Norway, 1989; Workshop “Hyperplane sections and bounds of the genus of curves in  $P^n$ ”, Nice, 1991; VII EWM General Conference, Madrid, 1995; Symposium of Algebraic Geometry, Warwick, 1995; Conference of Algebraic Geometry, Commutative Algebra and Computer Algebra, Constanta, Romania, 1996; Workshop on Syzygies, Catania, 1997; Conference in honour of David Buchsbaum, Catania, 1998; Conference Oberwolfach “Algebraic Geometry”, 1998; COW (Cambridge-Oxford-Warwick) Seminar, Oxford, 1999; Giornate di Geometria Algebraica, Ferrara, 1999; IX Oporto Meeting on Geometry, Topology and Physics, Oporto, 2000; Workshop on Algebraic Varieties, Roma, 2002; Newton Institute Programme Higher dimensional complex geometry, Cambridge, 2002; Mamaia, Romania, Conference Algebraic geometry, commutative algebra and topology, 2002; Workshop in algebraic geometry, Ljubljana 2003; Greek Mathematical Society Conference on Mathematical Education, Trikala 2004; Segovia, Spain, Satellite Conference on Algebraic Geometry, 2006; Genova, Convegno Giornate Genovesi, 2006; Workshop Linear Systems and Subschemes, Ghent 2007; Homage to Corrado Segre, Torino, 2013; Joint meeting AMS-EMS-SPM, 2015; AgaFe Conference, Ferrara, 2015; Banff (Canada), Workshop “Lefschetz properties and Artinian algebras”, 2016; Carry-le-Rouet (Francia), “Mediterranean Complex projective geometry”, 2016; Mittag-Leffler Institute, Stockholm “Lefschetz properties in Geometry, Algebra and Combinatorics”, 2018; GO60, CIRM Trento -online, 2021

Conferences organized (selected): International conference “Projective Varieties”, Marina di Aurisina (Trieste), June 1989; 8° EWM General Meeting, Miramare, Trieste, 12-16 December 1997; 10° EWM General Meeting, Malta, 24-30 August 2001; Conference “Birational and Projective Geometry of Algebraic Varieties”, Ferrara, 3-7 September 2002; Conference “Geometry of algebraic varieties”, Ferrara, 22-25 June 2005; “Giornate di Geometria algebraica e argomenti correlati”, Trieste 26 – 29 May 2006; EWM Summer School Mathematical Theories toward environmental models, ICTP 2013; Workshop Vector Bundles Days, Pau 2013; Giornata INdAM 2014, Trieste, 11 June 2014; Conferenza GVA 2016, 20-25 giugno 2016, Levico Terme (Trento); Lefschetz properties and Jordan type in Algebra, Geometry and Combinatorics, June 2018, Levico Terme.

Fellow of Istituto Nazionale di Alta Matematica. Managing Editor of “Rendiconti dell’Istituto di Matematica dell’Università di Trieste. An international journal of mathematics”.

Chair of the committee "Women and Mathematics" of European Mathematical Society (1999 – 2005); Expert evaluator of the European Commission for the 7th Framework Programme; Member of Central Appointments Committee of KTH, Stockholm; expert evaluator for the University of Ljubljana; member of committee for selection of professor, Université de Lille.

Member of the Council of the Research Doctorate in Mathematics, University of Milano (2000 - 2010); Member of the Council of the Research Doctorate in Mathematics and Physics, University of Udine (2012, 2013).

Coordinator of the European Project "European Women in Mathematics Project", financed by the EC in the Fifth Framework programme, Improving Human Research Potential, Accompanying Measures (Contract HPWS-CT-2001-00007), 23 August 2001-22 August 2003.

Member of the research projects: PRIN Geometria delle varietà algebriche, 2002/04; PRIN Geometria sulle varietà algebriche, 2004/06; INdAM Birational geometry of projective varieties 2005, PRIN Geometria delle varietà algebriche e dei loro spazi di moduli, 2007/09.

Coordinator of the unit of the University of Trieste of the PRIN project Geometria delle varietà algebriche, 2013 -2016 and 2017-2020.

Coordinator of FRA project 2011 "Geometria e topologia delle varietà".

PhD advisor of Pietro De Poi (SISSA 1999), Fabio Tanturri (SISSA 2013). Supervisor of over 40 master degree theses including Irene Raspanti, Antonella Buraggina, Valentina Beorchia, Silvia Guarrera, Dolores Bazan, Giovanna Scataglini, Dalide Pontoni, Alessandra Dragotto, Orsola Tommasi, Anna Scaramuzza, Piero Coronica, Marta Panizzut, Sara Erbeti, Luca Sodomaco.

Supervisor of post-doc researchers: Pietro De Poi, Victor Vuletescu, Alessandra Dragotto, Ada Boralevi, Andrea Pustetto. Referee/reviewer for many international journals.

Academic service: Chair of the Council of the Studies in Mathematics (2002 – 2005, and 2017 - 2020); vice-director of the Department of Mathematics and Computer Science (2002 – 2008); member of the committee "Studenti e Formazione" of the University of Trieste (2003 - 2006); coordinator of CIRD, Interdepartmental Centre for Research in Education (2005 - 2008); coordinator of the Unit of University of Trieste of Progetto Lauree scientifiche "Orientamento e formazione degli insegnanti – Matematica" (2005 – 2010); member of the Senate of the University of Trieste (2012-2015); member of the Scientific Council of INdAM – Istituto Nazionale di Alta Matematica "Francesco Severi" (2015-2019); scientific director of Collegio universitario "Luciano Fonda" - Trieste.

## Publications

Research articles with original contributions:

47. A. Boralevi, M.L. Fania, E. Mezzetti, *Quadric surfaces in the pfaffian hypersurface*, Linear and Multilinear Algebra, DOI: [10.1080/03081087.2021.1895048](https://doi.org/10.1080/03081087.2021.1895048)

46. L. Colarte, E. Mezzetti, R.M. Mirò-Roig, M. Salat, *On the invariants by the dihedral group and the weak Lefschetz property*, Israel J. Math. (to appear)

45. L. Colarte, E. Mezzetti, R.M. Mirò-Roig, *On the arithmetic Cohen-Macaulayness of varieties parameterized by Togliatti systems*, Annali Mat. Pura Appl. **200**, 1757–1780 (2021)

44. P. De Poi, E. Mezzetti, M. Michalek, R.M. Mirò-Roig, E. Nevo, *Circulant matrices and Galois-Togliatti systems*, J. Pure Appl. Algebra, 224, n.11, Article 106404, 2020
43. L. Colarte, E. Mezzetti, R.M. Mirò-Roig, M. Salat, *On the coefficients of the permanent and the determinant of a circulant matrix. Applications*, Proceedings AMS, **147** no. 2 (2019), 547–558
42. *Osculating behavior of the Kummer surface in  $P^5$* , European Journal of Mathematics **4** (2018), 372-380
41. *Togliatti systems and Galois coverings* (w. R. M. Mirò-Roig), J. Algebra **509** (2018), 263-291
40. *Fano congruences of index 3 and alternating 3-forms* (w. P. De Poi, D. Faenzi, K. Ranestad), Annales Inst. Fourier, **67** no. 5 (2017), p. 2099-2165, doi: 10.5802/aif.3131
39. *The minimal number of generators of a Togliatti system* (w. R.M. Mirò-Roig), Ann. Mat. Pura Appl. (4) **195** (6) (2016), 2077-2098
38. *Geometry of lines and degeneracy loci of morphisms of vector bundles*, in “From classical to modern algebraic geometry – Corrado Segre’s masterchief and legacy”, 475-484, Birkhauser, 2016
37. *Planes of matrices of constant rank and globally generated vector bundles* (w. A. Boralevi), Annales Institut Fourier **65**(5) (2015), 2069-2089
36. *Linear spaces of matrices of constant rank and instanton bundles* (w. A. Boralevi and D. Faenzi), Adv. Math. **248** (2013), 895-920
35. *Laplace equations and the weak Lefschetz property* (w. R. M. Mirò-Roig and G. Ottaviani), Canad. J. Math. **65** (3) (2013), 634-654
34. *Vector spaces of skew-symmetric matrices of constant rank* (w. M.L. Fania), Linear Algebra Appl. **434** (12) (2011) 2383–2403
33. *On the quadratic normality and the triple curve of three dimensional subvarieties of  $P^5$*  (w. P. De Poi and J.C. Sierra) Advances in Geometry **10**, Issue 3 (2010), 419–426
32. *On a class of first order congruences of lines* (w. P. De Poi), Bull. Belg. Math. Soc. Simon Stevin **16** (2009), 805-821
31. *On congruences of linear spaces of order one* (w. P. De Poi), Rend. Ist. Mat. Univ. Trieste, **39** Volume dedicated to the memory of Fabio Rossi (2007), 177-206
30. *Erratum to “On the Hilbert scheme of Palatini threefolds”* (w. M.L. Fania), Adv. Geom. **8** (2008), 153–154,
29. *Congruences of lines in  $P^5$ , quadratic normality, and completely exceptional Monge-Ampère equations* (w. P. De Poi), Geom. Dedicata **131**, No. 1 (2008), 213-230
28. *Linear congruences and hyperbolic systems of conservation laws* (w. P. De Poi), in “Projective Varieties with Unexpected Properties, Siena 2004”, De Gruyter, Berlin, 2005
27. *On linear spaces of skew-symmetric matrices of constant rank* (w. L. Manivel), Manuscripta Math. **117** (2005), n.3, 319-331

26. *Some remarks on projective varieties with degenerate Gauss image* (w. O. Tommasi), Pacific Journal of Mathematics 213, No.1 (2004), 79-88
25. *On the Hilbert scheme of Palatini threefolds* (w. M.L. Fania), Advances in Geometry 2 (4) (2002), 371-389
24. *On projective varieties of dimension  $n+k$  covered by  $k$ -spaces* (w. O. Tommasi), Illinois J. Math., 46, 2, Summer 2002, 443-465
23. *On quadrisecant lines of threefolds in  $P^5$* , "Le Matematiche", Vol. LV (2), (2000), 469-481
22. *On the construction of some Buchsbaum varieties and the Hilbert scheme of elliptic scrolls in  $P^5$*  (w. D. Bazan), Geometriae Dedicata 86 (2001), 191-204
21. *On threefolds covered by lines* (w. D. Portelli), Abh. Math. Sem. Univ. Hamburg, 70 (2000), 211 - 238
20. *Linear systems representing threefolds which are scrolls on a rational surface* (w. D. Portelli), Collect. Math. 49, 2-3 (1998), 417-431
19. *On smooth rational threefolds of  $P^5$  with rational non-special hyperplane section* (w. D. Portelli), Math. Nachr. 207 (1999), 157-182
18. *A tour through some classical theorem on algebraic surfaces* (w. D. Portelli), in Analele Universitatii Ovidius Constanta 5, no. 2 (1997), 51 - 78
17. *An algorithm for computing minimal curves* (w. S. Guarrera e A. Logar), Arch. Math. 68 (1997), 285-296
16. *Threefolds in  $P^5$  with a 3-dimensional family of plane curves* (w. D. Portelli), Manuscripta Math. 90 (1996), 365-381
15. *Projective varieties with many degenerate subvarieties*, Bollettino U.M.I. (7) 8-B (1994), 807-832
14. *Differential-geometric methods for the lifting problem and linear systems on plane curves*, J. Algebraic Geometry 3 (1994), 375-398
13. *On the number of irreducible components of the Hilbert scheme of smooth space curves* (w. Ph. Ellia and A. Hirschowitz), International J. of Math. 3 (1992), 799-807
12. *The border cases of the lifting theorem for surfaces in  $P^4$* , J. reine angew. Math. 433 (1992), 101 - 111
11. *A Laudal-type theorem for surfaces in  $P^4$*  (w. I. Raspanti), Rend. Sem. Mat. Univ. Pol. Torino, 48 (1990), 529 - 537
10. *The non - existence of a smooth sectionally non-special surface of degree 11 and sectional genus 8 in the projective fourspace* (w. K. Ranestad), Manuscripta Math. 70 (1991), 279-283
9. *Smooth non-special surfaces of  $P^4$*  (w. M. Idà), Manuscripta Math. 68, (1990), 57-67

8. *Gonality and Hilbert schemes of smooth curves* (w. G. Sacchiero), in "Algebraic Curves and Projective Geometry", Lecture Notes in Mathematics 1389, Springer Verlag (1989), 183 - 194
7. *Families of curves with ordinary singular points on regular surfaces* (w. M.A. Gradolato), Ann. Mat. Pura e appl. (IV), Vol.CL (1988), 281 - 298
6. *Curves with nodes, cusps and ordinary triple points* (w. M.A. Gradolato), Ann. Univ. Ferrara, Sez.VII, Vol.XXXI (1985), 23 - 47
5. *Un'operazione su ideali in anelli graduati* (w. P. Viola), Rend. Ist. Mat. Univ. Trieste, Vol.XII (1980), 50 - 60
4. *Semifactorialité locale et anneaux de fractions généralisés* (w. W. Spangher), Boll. U.M.I. (5) 17 - B (1980), 1 - 17
3. *Alcuni criteri per il prolungamento di proprietà aritmetiche nell'operazione di chiusura proiettiva* (w. W. Spangher), Rend. Ist. Mat. Univ. Trieste, Vol.X (1978), 101 - 122
2. *Su alcune generalizzazioni di un noto teorema di M.Nagata* (w. W. Spangher), Rend. Ist. Mat. Univ. Trieste, Vol.IX (1977), 113 - 121
1. *Anelli di polinomi su domini  $C_2FD$  e  $C_3FD$*  (w. W. Spangher), Rend. Ist. Mat. Univ. Trieste, Vol.IX (1977), 103 - 112

Books:

Mezzetti E. (a cura di), *Con le mani e con la mente. I laboratori di matematica del Progetto Lauree Scientifiche dell'Università di Trieste*. Trieste, EUT, 2009. pp. 1-184. ISBN: 978-88-8303-251-6

Mezzetti E., Paycha S. (editors), *European women in mathematics. Proceedings of the tenth general meeting*, Malta, August 24--30, 2001, Singapore: World Scientific (2003)

Other publications:

1. *Introduzione alle curve dello spazio proiettivo* (notes of a course given by Ph. Ellia, University of Trieste, 1989), Quaderni Matematici, Dip. Sc. Mat. Univ. Trieste, II Serie, 273 (1992)
2. *On classification of projective varieties of small codimension*, in Proceedings of the 7<sup>th</sup> EWM meeting, Madrid (1996), 105-110
3. *Women mathematicians count on brighter future*, in "News from ICTP", n.84, spring 1998, 4-5
4. *Introduction to Algebraic Geometry*, Notes for the ICTP Diploma Course in Mathematics, ICTP, Miramare, Trieste, 1998
5. *EMS Committee for Women and Mathematics*, EMS Newsletter 37 (2000), p. 15
6. *Mathematicians' Careers* (w. Ina Kersten), EMS Newsletter 43 (2002), 22-24
7. *Mathematicians' Careers - analysis of a questionnaire* (w. Ina Kersten), in European women in mathematics. Proceedings of the tenth general meeting, Malta, August 24--30, 2001, Singapore: World Scientific (2002), 367-372
8. *Antiche operazioni - Le figure cosmiche di Pitagora - I numeri primi e la crittografia*, in Nella rete della scienza - Domande e risposte su natura, universo e tecnologia, a cura di Laura Tonon, Edizioni Dedalo, Bari (2003)

9. *Perchè studiare matematica e latino? Un'analisi delle finalità comuni nell'insegnamento di queste due materie* (w. Luciana Zuccheri), in Atti del Convegno Nazionale "Latino e matematica, per l'identità culturale del Liceo", Pordenone, March 2004, L'Ippogrifo - Atti e documenti, Libreria Al Segno Editrice, Pordenone (2004), 24-31
10. *Percorsi verso le lauree scientifiche*, in Atti del Convegno "Scienziati si nasce o si diventa? Riflessioni e strumenti per orientare alla ricerca e alla scienza", Area Science Park, Trieste, 21 febbraio 2006, Quaderni di orientamento, Regione FVG, 15 n.28, giugno 2006
11. *Review of the book: Differential Geometry of Varieties with Degenerate Gauss Maps*, by M.A. Akivis and V.V. Goldberg, SIAM Review vol. 48, n.1, pp. 183-185 (2006)
12. *Women and mathematics in Europe*, in: "S. Badaloni, C. A. Drace, O. Gia, M. C. Levorato, F. Vidotto (Eds.), Under - representation of women in Science and Technology", Atti del convegno W&S, Padova, 21-23 settembre 2006, Cleup, Padova, 2008
13. *Laboratori di matematica in classe. L'esperienza del Progetto "Lauree Scientifiche" a Trieste*, in: Atti 2° Convegno Comunicare Fisica e altre Scienze, Trieste, 1-6 ottobre 2007, Frascati Physics Series, Italian Collection - Scienza Aperta Volume II, pp. 95-96, 2010 (ISBN 978-88-86409-59-9)
14. *Curve celebri* (w. M. Ughi), in E. Mezzetti (a cura di), Con le mani e con la mente. I laboratori di matematica del Progetto Lauree Scientifiche dell'Università di Trieste, pp. 30-43, EUT, Trieste, 2009
15. *La catenaria* (w. M. Ughi), in L. Catastini, F. Ghione (ed.), Matematica e Arte. Forme del pensiero artistico, Convergenze, Springer, Milano, 2011, pp. 11-30
16. *La sezione aurea, la spirale logaritmica e i numeri di Fibonacci* (w. F. Ghione and M. Ughi), in L. Catastini, F. Ghione (ed.), Matematica e Arte. Forme del pensiero artistico, Convergenze, Springer, Milano, 2011, pp. 31-60
17. *Matematici e matematiche*, in G. Bolondi (ed.), Perché studiare la matematica, Pearson, Milano, 2012, pp. 107-118
18. *Equazioni e duelli matematici. Un laboratorio sulla risoluzione delle equazioni di terzo grado* (w. L. Zuccheri), Atti del Convegno PLS, Napoli Città della Scienza 2013, Mondadori Università, 2014