

Fabio Tanturri

Curriculum Vitae

Dipartimento di Matematica
Università di Genova
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Academic record

- Dec 2021 – **Researcher (RTDb)**, *Dipartimento di Matematica, Università di Genova, Genoa, Italy.*
present
- May 2020 – **Researcher (RTDa)**, *Dipartimento di Matematica, Università di Genova, Genoa, Italy.*
Nov 2021
- July 2019 – **Postdoc (assegnista di ricerca)**, *Dipartimento di Matematica “Giuseppe Peano”, Università di Torino,*
April 2020 *Turin, Italy.*
- Oct 2017 – **Postdoc**, *Laboratoire Paul Painlevé, UMR CNRS 8524, Villeneuve d’Ascq, France.*
June 2019 *Labex CEMPI*
- Oct 2015 – **Postdoc**, *I2M, UMR 7373, Marseille, France.*
Sept 2017 *A*MIDEX, Research group of Laurent Manivel*
- Oct 2013 – **Postdoc**, *Universität des Saarlandes, Saarbrücken, Germany.*
Sept 2015 *Research group of Frank-Olaf Schreyer*

Education

- 11 Oct 2013 **Ph.D. cum laude (highest mark) in Geometry**, *SISSA - International School for Advanced Studies,*
Trieste, Italy.
Subject: Algebraic Geometry
Advisors: Emilia Mezzetti, Ugo Bruzzo
Thesis title: *On degeneracy loci of morphisms between vector bundles*
Referees: Chris Peterson (Colorado State University), Edoardo Sernesi (Università Roma Tre)
Committee: Ugo Bruzzo (SISSA), Daniele Faenzi (Université de Bourgogne), Barbara Fantechi (SISSA), Emilia Mezzetti (Università di Trieste), Alessandro Tanzini (SISSA)
Starting date: 4 October 2010
Note: 7 months spent as invited PhD student at the Université de Pau et des Pays de l’Adour for a collaboration with Daniele Faenzi
- 23 Sep 2010 **Master of Science, 110/110 cum laude (highest mark)**, *Università degli Studi di Trieste, Trieste,*
Italy.
Joint Curriculum with SISSA
Advisor: Emilia Mezzetti
Thesis title: *Determinantal and Pfaffian hypersurfaces*
- 24 July 2008 **Bachelor of Science, 110/110 cum laude (highest mark)**, *Università degli Studi di Torino, Turin,*
Italy.
Curriculum in Pure Mathematics
Advisor: Andrea Mori
Thesis title: *p-adic numbers and Hensel’s Lemma*

Research interests

Construction of algebraic varieties, hyperkähler varieties, Fano varieties, degeneracy loci, determinantal varieties, birational geometry of moduli spaces of curves, Hurwitz spaces, Brill–Noether spaces, effective methods, computational algebraic geometry

Publications

Preprints

13. *Fano fourfolds of K3 type*, with Marcello Bernardara, Enrico Fatighenti, and Laurent Manivel. Preprint ArXiv:2111.13030.
12. *Polyvector fields for Fano 3-folds*, with Pieter Belmans and Enrico Fatighenti. Preprint ArXiv:2104.07626.

Publications

11. *Fano 3-folds from homogeneous vector bundles over Grassmannians*, with Lorenzo De Biase and Enrico Fatighenti. **Rev. Mat. Complut.**
10. *On the unirationality of moduli spaces of pointed curves*, with Hanieh Keneshlou. **Math. Z.**, 299(3-4):1973–1986, 2021.
9. *The geometry of the Coble cubic and orbital degeneracy loci*, with Vladimiro Benedetti and Laurent Manivel. **Math. Ann.**, 379:415–440, 2021.
8. *Orbital degeneracy loci II: Gorenstein orbits*, with Vladimiro Benedetti, Sara Angela Filippini, and Laurent Manivel. **Int. Math. Res. Not. IMRN**, 24:9887–9932, 2020.
7. *Orbital degeneracy loci and applications*, with Vladimiro Benedetti, Sara Angela Filippini, and Laurent Manivel. **Ann. Sc. Norm. Super. Pisa Cl. Sci. (5)**, 21:169–206, 2020.
6. *The unirationality of the Hurwitz schemes $\mathcal{H}_{10,8}$ and $\mathcal{H}_{13,7}$* , with Hanieh Keneshlou. **Atti Accad. Naz. Lincei Rend. Lincei Mat. Appl.**, 30:31–39, 2019.
5. *Matrix factorizations and curves in \mathbb{P}^4* , with Frank-Olaf Schreyer. **Doc. Math.**, 23:1895–1924, 2018.
4. *On the Hilbert scheme of degeneracy loci of twisted differential forms*. **Trans. Amer. Math. Soc.**, 368:4561–4583, 2016.
3. *Degeneracy loci of twisted differential forms and linear line complexes*. **Arch. Math.**, 105:109–118, 2015.
2. *Pfaffian representations of cubic surfaces*. **Geom. Dedicata**, 168:69–86, 2014.
1. *On degeneracy loci of morphisms between vector bundles*. PhD Thesis, SISSA, Trieste, 2013.

Computer Algebra

- `UnirationalHurwitzSchemes`, with Hanieh Keneshlou, package for Macaulay2.
- `MatFacCurvesP4`, with Frank-Olaf Schreyer, package for Macaulay2.
- `ExtensionsAndTorsWithLimitedDegree`, with Michael Hoff, package for Macaulay2.

Honors, Awards, Fellowships, and Qualifications

- 11/11/2020 – 11/11/2029 **Abilitazione Scientifica Nazionale alle funzioni di professore universitario di seconda fascia**, Italian National Scientific Habilitation for Associate Professor, Settore Concorsuale 01/A2.
- feb 2020 **RIP – Research in Paris**, IHP, Paris, 3000€.
Grant for the research project *The hunt for Fano varieties of K3 type*, in collaboration with Enrico Fatighenti
- 2016 **Qualification aux fonctions de maître de conférences.**
- 2015 **Postdoctoral INdAM Fellowship**, declined.
- Apr 2011 **TOYP award**, JCI Italy, Italy.
National award *TOYP – The Outstanding Young Person*, given by the JCI Italy (Junior Chamber International) for the contribution in spreading mathematical knowledge.
- 2010 – 2013 **SISSA Ph.D. Fellowship.**
- 2008 – 2010 **SISSA M.Sc. Scholarship.**
- Sep 2009 **Menzione Optime Award**, for the excellent *B.Sc. curriculum*.
- 2005–2008 **INdAM B.Sc. Scholarship.**

Participation in research projects

Member of the PRIN 2020 research programme “Curves, Ricci flat Varieties and their Interactions”, *Ministero dell’Istruzione, dell’Università e della Ricerca, 2020KKWT53*, scientific coordinator: Giovanni Mongardi.

Member of the Labex (Laboratoire d'Excellence) "Centre Européen pour les Mathématiques, la Physique et leurs interactions (CEMPI)" of the Université de Lille, as a postdoc, Agence nationale de la recherche, ANR-11-LABX-0007-01, scientific coordinator: Stephan De Bièvre, starting date and duration: february 2012, 8 years.

Member of Laurent Manivel's AMIDEX Chaires d'Excellence at Aix-Marseille Université, as a postdoc, starting date and duration: 2015, 3 years.

Member of the PRIN 2008 research programme "Problemi di classificazione e moduli in geometria algebrica", Ministero dell'Istruzione, dell'Università e della Ricerca, 2008F3Z77Z, scientific coordinator: Alessandro Verra, starting date and duration: 22/03/10, 24 months.

Research visits

- Feb 2020 **IHP, Paris**, Research in Paris with Enrico Fatighenti, 3 weeks.
- Sep 2019 **Jagiellonian University and IMPAN Krakow, Krakow**, 1 week.
- Sep 2019 **MPI MiS Leipzig, Germany**, 1 week.
- Jan 2018 **Kavli IPMU, University of Tokyo, Japan**, 10 days.
- Feb 2017 **Università degli Studi di Trieste, Italy**, with Emilia Mezzetti, 1 week.
- Mar 2016 **Université de Bourgogne, Dijon, France**, with Daniele Faenzi, 1 week.
- Jan 2016 **Università degli Studi di Trieste, Italy**, with Emilia Mezzetti, 1 week.
- Nov 2015 **Universität des Saarlandes, Saarbrücken, Germany**, with Frank-Olaf Schreyer, 1 week.

Teaching

- 2021 – 2022 **Geometria 2.**
Università di Genova, 2nd year students, Laurea Triennale in Ingegneria Navale, Lecturer, 30H
- 2021 – 2022 **Geometria 2.**
Università di Genova, 2nd year students, Laurea Triennale in Matematica, Teaching Assistant, 24H
- 2021 – 2022 **Geometria.**
Università di Genova, 1st year students, Laurea Triennale in Ingegneria Navale e Ingegneria Civile e Ambientale, Teaching Assistant, 12H
- 2021 – 2022 **Geometria 1.**
Università di Genova, 2nd year students, Laurea Triennale in Matematica, Teaching Assistant, 24H
- 2020 – 2021 **Geometria 2.**
Università di Genova, 2nd year students, Laurea Triennale in Ingegneria Navale, Lecturer, 30H
- 2020 – 2021 **Geometria 2.**
Università di Genova, 2nd year students, Laurea Triennale in Matematica, Teaching Assistant, 30H
- 2019 **Representation Theory.**
Università di Torino, PhD students, Lecturer 15H
- 2019 **Mathématiques fondamentales 2.**
Université de Lille, 1st year students, Sciences Exactes et Sciences de l'Ingénieur (SESI), Teaching Assistant, 12H
- 2015 **Tensors in computer science.**
Universität des Saarlandes, master students in Mathematics, Teaching Assistant, 30H
- 2014 – 2015 **Representation Theory.**
Universität des Saarlandes, master and PhD students in Mathematics, Lecturer, 60H
- 2014 **Advanced Computational Algebraic Geometry.**
Universität des Saarlandes, master and PhD students in Mathematics, Teaching Assistant, 30H
- 2013 – 2014 **Algebraic Geometry.**
Universität des Saarlandes, 3rd year students in Mathematics, Teaching Assistant, 30H

Talks

Conference talks as invited speaker

18. *Ypatia Conference 2020*, Rome, Italy, 10/6/22
17. *Conference on algebraic groups and representation theory*, Nancy, France, 11/2/20
16. *Algebraic Geometry – Torino 2020*, Turin, Italy, 6/2/20
15. *Workshop EXARCHOS*, Ravenna, Italy, 23/1/20
14. *Young Algebraic Geometry Meeting*, Trieste, Italy, 19/12/19
13. *GTM seminar*, Genova, Italy, 26/9/19
12. *III Congresso Brasileiro de Jovens Pesquisadores em Matemática Pura, Aplicada e Estatística*, Curitiba, Brazil, 13/12/18
11. *Young Perspectives in Algebraic Geometry*, Universität Bayreuth, Germany, 7/3/18
10. *Workshop of Algebraic Geometry*, Università di Milano, Italy, 18/12/17
9. *School (and Workshop) on Syzygies*, Trento, Italy, 9/9/17
8. *From students to mathematicians: an excellence master program in Trieste*, Trieste, Italy, 15/6/17
7. *Séminaire Méditerranéen de Géométrie Algébrique*, Nice, France, 16/3/17
6. *Algebraic Geometry Days*, Poitiers, France, 24/3/16
5. *ACM Bundles on Algebraic Varieties*, METU, Ankara, Turkey, 15/6/15
4. *Giornate di Geometria Algebrica ed Argomenti Correlati XII*, Turin, Italy, 4/6/14
3. *Young Geometry Day 2012*, Turin, Italy, 21/12/12
2. *TULSF VII*, Trieste, Italy, 17/2/12

Conference talks as contributed speaker

6. *MEGA 2017 — International Conference on Effective Methods in Algebraic Geometry*, Nice, France, 12/6/17
5. *Algebraic Geometry and Complex Geometry*, Luminy, France, 26/1/17
4. *Welcome Home 2015*, Università di Torino, Italy, 22/12/15
3. *Vector Bundles Days II*, Trieste, Italy, 29/1/14
2. *GAeL XXI — Géométrie Algébrique en Liberté*, Stockholm, Sweden, 28/6/13
1. *Workshop GEOLMI*, Rennes, France, 25/11/11

Other talks

32. Università di Milano, Milan, Italy, 30/4/20
31. Università di Trieste, Trieste, Italy, 28/1/20
30. Jagiellonian University, Krakow, Poland, 17/9/19
29. Università di Bari, Italy, 2/7/19
28. KU Leuven, Belgium, 14/11/18
27. Università Roma Tre, Italy, 5/7/18
26. Universität Augsburg, Germany, 24/5/18
25. Politecnico di Torino, Italy, 18/4/18
24. Séminaire arithmétique et géométrie algébrique, Université de Strasbourg, France, 5/4/18
23. Séminaire de géométrie algébrique, Jussieu, Paris, France, 29/3/18
22. Séminaire géométrie et systèmes dynamiques, Université de Bourgogne, Dijon, France, 1/3/18
21. Séminaire de géométrie algébrique, Université de Montpellier, France, 6/2/18
20. Mathematics - String Theory Seminar, Kavli IPMU, University of Tokyo, Japan, 17/1/18
19. Seminario di Algebra e Geometria, Università di Genova, Italy, 9/1/18
18. Séminaire de géométrie algébrique, Université Lille 1, France, 28/11/17
17. Séminaire Géométrie Complexe, Aix-Marseille Université, Marseille, France, 27/6/17
16. Séminaire de géométrie complexe, Université de Lorraine, Nancy, France, 27/3/17
15. Séminaire de géométrie algébrique, Université d'Angers, France, 24/3/17
14. Séminaire Groupes, Algèbre et Géométrie, Université de Poitiers, France, 23/3/17
13. Séminaire (algèbre et géométries), Institut Fourier, Grenoble, France, 20/3/17
12. Séminaire de géométrie algébrique, Université Lille 1, France, 14/3/17
11. Séminaire géométrie algébrique, champs et homotopie, Université Toulouse III - Paul Sabatier, France, 7/3/17
10. Università di Trieste, Italy, 14/2/17

9. Séminaire géométrie et systèmes dynamiques, Université de Bourgogne, Dijon, France, 17/3/16
8. Séminaire de géométrie algébrique, Université de Rennes 1, France, 12/2/16
7. Séminaire de géométrie algébrique, Université de Montpellier, France, 9/2/16
6. Politecnico di Torino, Italy, 3/2/16
5. Università di Trieste, Italy, 20/1/16
4. Séminaire (algèbre et géométries), Institut Fourier, Grenoble, France, 18/1/16
3. Séminaire Géométrie, Dynamique et Topologie, Aix-Marseille Université, Marseille, France, 7/12/15
2. Oberseminar Algebraische Geometrie, Universität des Saarlandes, Saarbrücken, Germany, 5/11/15
1. Oberseminar Algebraische Geometrie, Universität des Saarlandes, Saarbrücken, Germany, 23/4/13

Other activities

Organized Conferences

Mediterranean Complex Projective Geometry, 23–27 May 2016, Carry-le-Rouet, France.

Theory and applications of syzygies, 1–3 July 2015, Saarbrücken, Germany.

GAeL XXII – Géométrie Algébrique en Liberté, 23–27 June 2014, Trieste, Italy.

Organized Seminars

2020–2021 **Algebra & Geometry Seminar**, *Università di Genova*, Genova, Italy.

2019 **Séminaire de Géométrie Algébrique**, *Université de Lille*, Lille, France.

2014 **Derived Categories and Homological Projective Duality**, *Universität des Saarlandes*, Saarbrücken, Germany.

Referee/Reviewer

Int. Math. Res. Not. IMRN, Comm. Algebra, Doc. Math., Math. Z.

Mathematical Reviews, reviewed items: MR3936624, MR3861048, MR3847076, MR3752497, MR3646290, MR3565359, MR3552495, MR3519108, MR3489598.

Participation in Conferences, Schools, Workshops

A rather exhaustive list of all the conferences, schools, workshops I have ever attended can be found here.

Dissemination activities

Sep 2011 **Participation to the European Researchers' Night**, Trieste, Italy.

Aug 2011 **Teacher in the mathematical summer schools of excellence *SuperMath* and *Summer Math Camp***, organised by Mathesis Vicentina, Paderno del Grappa, Italy.

2010 – 2012 **High School Teacher for extracurricular courses in preparation for the *Italian Mathematical Olympiad***, Trieste, Italy.

2010 – 2012 **Founder and Team Leader of *GOMUTS***, a group of young students and researchers in mathematics aimed at the implementation of extracurricular courses in high schools in preparation for the *Italian Mathematical Olympiad*, Trieste, Italy.

Oct 2007 **Guide for a mathematical exhibition on conics and construction tools**, organized by Ottobre Scienza, Turin, Italy.

Dec 2006 **Lecture notes for the preparation to the *Italian Mathematical Olympiad***, freely available publication ([link](#)) in collaboration with A. Astolfi, G. Audrito, A. Carignano, edited by A.S. Mathesis – Sezione Bettazzi, Turin, Italy.

2005 – 2008 **High School Teacher for extracurricular courses in preparation for the *Italian Mathematical Olympiad***, Turin, Italy.

Language Skills

Italian **Native**

English **CEFR level: C1**

French **CEFR level: C1**

German **CEFR level: B2**