

MICHELE GRAFFEO

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EDUCATION

PhD in Geometry and Mathematical Physics (cum Laude) at *SISSA - Trieste (Italy)* 10/2018-11/2022

Thesis: " *Zero-dimensional sheaves, group actions and blowups* "

Supervisors: U. Bruzzo & A. T. Ricoli

Master of Science in Mathematics (cum Laude) at *University of Pisa - Pisa (Italy)* 9/2015-9/2018

Thesis: " *Koszul cohomology and Hilbert schemes of points* "

Supervisors: M. Franciosi

Bachelor in Mathematics at *University of Pisa - Pisa (Italy)* 9/2010-5/2015

Thesis: " *Il teorema degli zeri in algebre analitiche reali e complesse* "

Supervisors: F. Acquistapace

Scientific High School diploma at *Liceo Scientifico "Enrico Fermi" - Siacca (Italy)* 9/2003-8/2008

RESEARCH INTERESTS

• Algebraic Geometry • Birational Geometry • Resolution of singularities • Hilbert schemes & Moduli spaces of sheaves • Representation theory • Toric Geometry • Enumerative Geometry • Minimal Model Program • Derived Category

TO APPEAR AND PUBLISHED

- "On the Behrend function and the blowup of some fat points", with A. T. RICOLFI. 2022
- To appear in *Advances in Mathematics*

PREPRINTS

- "Growth and integrability of some birational maps in dimension three", with Giorgio Gubbiotti 2023
- "Moduli spaces of $\mathbb{Z}/k\mathbb{Z}$ -constellations over \mathbb{A}^2 ". 2022

TEACHING

T.A. for Mathematical Analysis at *University of Trieste, School of Engineering - Trieste (Italy)* 9/2022-present

T.A. for Mathematical Analysis at *University of Trieste, School of Engineering - Trieste (Italy)* 9/2021-2/2022

T.A. for Mathematical Analysis at *University of Trieste, School of Engineering - Trieste (Italy)* 9/2020-2/2021

T.A. for Mathematical Analysis at *University of Trieste, School of Engineering - Trieste (Italy)* 9/2019-2/2020

T.A. for Mathematical Analysis at *University of Pisa, School of Engineering - Pisa (Italy)* 9/2017-2/2018

T.A. for Linear Algebra at *University of Pisa, School of Engineering - Pisa (Italy)* 9/2017-2/2018

T.A. for Linear Algebra at *University of Pisa, School of Engineering - Pisa (Italy)* 9/2016-2/2017

HELD SEMINARS & POSTER SESSIONS & WRITTEN ESSAYS

- "Dynamics of some birational maps of the projective 3-space" *University of Genova*
- "Dynamics of some birational maps of \mathbb{P}^3 " *SISSA*
- "GIT stability conditions on the space of G -Constellations" *University of Milan*
- "Minimal resolutions of A_k singularities as moduli spaces of $\mathbb{Z}/(k+1)\mathbb{Z}$ -constellations" *Federal University of Paraíba*
- Poster session at the Workshop "Integrable Probability, Classical and Quantum Integrability" *SISSA*
- "Moduli spaces of $\mathbb{Z}/k\mathbb{Z}$ -constellations over the affine plane" *University of Utrecht*
- "On the Behrend function and the blowup of some fat points" *University of Bologna*
- "How to get your hands dirty with canonical singularities" *SISSA*
- "Crepan resolutions of symplectic quotient singularities as moduli spaces of constellations" *SISSA*
- "Introduction to K3 surfaces" *SISSA*
- "Moduli of representation of quivers and first examples of scattering diagrams" *SISSA/ICTP*
- "Intersection theory and tautological ring of moduli space of curves" *SISSA*
- "Blowups: some properties and funny examples" *SISSA*
- "Towards the Kodaira vanishing theorem" *SISSA*
- "Playing with quotient singularities" *SISSA*
- "The real nullstellensatz" *University of Pisa*
- "Normalization of complex spaces" *University of Pisa*
- Fifty-pages extended essay on "Markov's Theorem" based on in-class lectures and individual research

ATTENDED SCHOOLS, WORKSHOPS & ADVANCED COURSES

- "5th Christmas Workshop on Moduli Spaces and Integrable Systems (Genova)" Winter 2022
- "AGATES-Deformation theory workshop" at IMPAN (Warsaw) Winter 2022
- "Young Researchers Meeting in Algebra and Geometry 2022" conference at SISSA Fall 2022

• “Recent Advances in Classical Algebraic Geometry” conference at Jagiellonian University (Krakow)	Summer 2022
• “Mini-workshop on Quiver Varieties and Related Topics” workshop at University of Oxford	Summer 2022
• “New Perspectives on Hyperkähler Manifolds” workshop at Levico Terme	Spring 2022
• “Moduli Spaces and Stability Conditions” school & workshop at Levico Terme	Spring 2022
• “Derived Functors” PhD course by U. Bruzzo	Fall 2020
• “Hilbert schemes, McKay correspondence and singularities” winter school at Univ. Paris Diderot (Paris)	Winter 2019
• “Localisation in Enumerative Geometry” PhD course by A. T. Ricolfi	Fall 2019
• “Differentiable Orbifolds” PhD course by B. Fantechi	Fall 2019
• “Foliations in algebraic geometry” summer school at Istitut Fourier (Grenoble)	Summer 2019
• “Gauge Theory” PhD course by A. Tikhomirov	Spring 2019
• “Advanced topics in algebraic geometry” PhD course by E. Arbarello	Fall 2018
• “Algebraic surfaces: the cubic surface, the Cayley cubic, lines on smooth surfaces” PhD course by F. Catanese	Fall 2018
• “Cones of divisors and positivity” PhD course by L. Lombardi	Fall 2018
• “Integrable systems from moduli spaces of stable curves” PhD course by P. Rossi	Fall 2018

LANGUAGES & IT SKILLS

- Italian: native; English: fluent; French: basic.
- Macaulay2, GAP, LaTeX, Unity, Windows OS, Android OS, Microsoft application, Office suite (ECDL) (Advanced), Ubuntu, C programming language, html.

REFEREES

Ugo Bruzzo
SISSA
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Andrea Tobia Ricolfi
SISSA
aricolfi@sissa.it

ORGANISATION OF EVENTS & OTHER TASKS

- Co-organiser of the Algebraic Geometry seminar in SISSA 2021-22
- Co-organiser of the Algebraic Geometry seminar in SISSA/IGAP 2020-21
- Co-organiser of the Algebraic Geometry seminar joint between SISSA and ICTP 2019-20
- Co-organiser of the Algebraic Geometry seminar in SISSA 2018-19
- Museum guide of a Mathematics exhibition named “*Mathematics in ancient Greece*” Pisa (Italy) 2018
- Developed strong analytical, problem-solving and time management skills, throughout my PhD studies at SISSA.
- Proven excellent communication, coaching and leadership skills, when working as a teaching assistant.
- Learnt how to be a team-player and how to get the best from joint outcome when working in a group.
- Learnt how to work and deliver results in high-pressure situations, such as studying and working at the same time.
- Volunteer work with both the needy and the elderly.
- Interests and hobbies: music, politics and chess.