MICHELE GRAFFEO

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EDUCATION

PhD in Geometry and Mathematical Physics at *SISSA* - Trieste (Italy)   10/2018-present

Thesis: " *Hilbert schemes, constellations and resolutions of singularities* "

Supervisors: U. Bruzzo & A. T. Ricolfi

Master of Science in Mathematics 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"* - Sciacca (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

PREPRINTS

- *"Moduli spaces of $\mathbb{Z}/k\mathbb{Z}$-constellations over $\mathbb{A}^2$ "*.   2022
- *"On the Behrend function and the blowup of some fat points"*, with A. T. RICOLFI.   2022

TEACHING

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 & WRITTEN ESSAYS

- *"Minimal resolutions of A_k singularities as moduli spaces of $\mathbb{Z}/(k+1)\mathbb{Z}$-constellations"*   *Federal University of Paraíba*
- *"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*
- *"Crepant 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

- *"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.
- Latex, Windows OS, Android OS, Microsoft application, Office suite (ECDL) (Advanced). Ubuntu, C programming language, html, Macaulay2 (Good command)

REFEREES

Ugo Bruzzo	**Marco Franciosi**	**Andrea Tobia Ricolfi**
SISSA	University of Pisa	University of Bologna
bruzzo@sissa.it	marco.franciosi@unipi.it	andreatobia.ricolfi@unibo.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.

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