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 & POSTER SESSIONS & WRITTEN ESSAYS

- *"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*
- *"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

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

REFEREES

Ugo Bruzzo
SISSA
bruzzo@sissa.it

Andrea Tobia Ricolfi
University of Bologna
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.