

GIANNI PETRELLA

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KEYWORDS

Moduli Spaces of Quiver Representations, Geometric Invariant Theory, Birational Geometry, Elliptic Fibrations, K3 Surfaces

EDUCATION

Doctoral Researcher, University of Luxembourg Sep 2022 - present

Master Student in Mathematics, École Polytechnique Fédérale de Lausanne Sep 2021 - Jul 2022
Via SEMP exchange program.

Master Student in Mathematics, Universiteit Antwerp Sep 2020 - Jun 2021
Via Interuniversitair Akkoord voor Wetenschappen.

Bachelor Student in Mathematics, École Polytechnique Fédérale de Lausanne Sep 2019 - Feb 2020
Via SEMP exchange program.

Student in Mathematics Université Libre de Bruxelles Sep 2017 - Jul 2022
Alma Mater.

DEGREES

Doctoral degree in Mathematics, University of Luxembourg expected in 2026

Master degree in Mathematical Sciences, Université Libre de Bruxelles Jul 2022
Graduated with the greatest distinction. Research oriented.

Bachelor degree in Mathematical Sciences, Université Libre de Bruxelles Jul 2020
Graduated with great distinction. Minor in Physics.

MAIN WORKS

Master Thesis: *Models of Trigonal Elliptic K3 Surfaces* Sep 2021 - Jun 2022
EPFL; Advisor: Stefano Filipazzi.

Semester Project: *Scheme Theory, Derived Categories and Orlov's Blow-up Formula* Jan 2021 - Jun 2021
ULB; Advisor: Špela Špenko.

Semester Project: *Derived Categories* Sep 2020 - Jan 2021
ULB; Advisor: Joost Vercruyse.

Bachelor Thesis: *Spectral Sequences and Algebraic Topology* Jan 2020 - Jun 2020
ULB; Advisor: Špela Špenko.

CONFERENCES

This is a list of the conferences, schools and workshops I have attended.

- **Swiss-French workshop in Algebraic Geometry** - January 30th - February 3rd, 2023 - Charmey;
- **Quivers, Clusters, Moduli and Stability** - January 9th - 13th, 2023 - Oxford;
- **Algebra, Geometries and Groups, A conference in memory of Jacques Tits** - December 20th - 21st, 2022 - Brussels;

- **Noncommutative Shapes, A conference in honor of Michel Van den Bergh** - September 12th - 16th, 2022 - Antwerp;
- **Invariants in Algebraic Geometry, Spring School** - May 16th - 20th, 2022 - Dijon.

OTHER

Teaching Experience

- Teaching Assistant for the Algèbre course of Prof. Pieter Belmans, Winter 2022;
- EML Cosupervisor with Prof. Gabor Wiese, Winter 2022;
- Tutored high school students in math and physics both individually and in group on behalf of my high school.

Distinctions: Participated and won Bifrost-One 2017 competition among Brussels high schools: our team came up with an experiment to perform in 0-g, in a parabolic flight, and built a robotic module to perform it. I programmed the module, consisting in an Arduino based hydraulic system to measure soil irrigation speed in 0-g, remotely operated by another Arduino-based controller. Both components performed successfully during parabolic flights. Project was in collaboration with TUDelft.

Service and Outreach: I collaborated with eXtemporanea, a collective of Italy-based academics, students and journalists dedicated to science outreach and sensibilization of the general public to academic and social justice themes. We organized several activities in collaboration with Festivaletteratura, Italy's largest literature festival; I held a reading group in 2018 on Cathy O'Neil book *Weapons of Math Destruction*, animated permanent workshops on statistics and big data for the general public and conducted interviews to scientific personalities.

Software: L^AT_EX (proficient), Windows 10/11 (proficient), MacOS (proficient), GNU/Linux (good), Python 3.x (good), Office Suite (good), Arduino IDE (good), Matlab (basic).

Languages: Italian (native), French (native), English (proficient), Dutch (basic), Spanish (basic).

Hobbies: Reading, cooking, video games, programming, robotics, archery, hiking, winter sports.