YANG ZHANG

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PROFILE

I'm currently a Ph.D. student at École Polytechnique Fédérale de Lausanne, under the supervision of Prof. Zsolt Patakfalvi. My interest is in algebraic geometry in positive characteristics.

EDUCATION

Mathematik, Bachelor of Science   Fall 2020 - Spring 2023
Universität Bonn

Mathematics, Master of Science   Spring 2023 - Spring 2025
Universität Bonn

Mathematics, Exchange   Fall 2024 - Spring 2025
École Polytechnique Fédérale de Lausanne

Mathematics, Ph.D.   Fall 2025 -
École Polytechnique Fédérale de Lausanne

WRITINGS

On the Bounded Negativity Conjecture
This is my bachelor thesis supervised by Dr. Gebhard Martin and Prof. Dr. Daniel Huybrechts. I summarized some recent results concerning the bounded negativity conjecture, which is still open in characteristic 0 for now.

Automorphisms of $(2,2)$-complete intersections in characteristic 2
Jointly with Dr. Gebhard Martin, we computed the automorphism schemes of smooth odd dimensional $(2,2)$-complete intersections in characteristic 2. This is the unique case among all complete intersections (besides the quadric hypersurfaces and genus 1 curves) whose connected component of the automorphism scheme is non-trivial.

TEACHING

Tutor of Algebra II - groups   Fall 2025
École Polytechnique Fédérale de Lausanne, Lecturer: Prof. Andrei Negut

Tutor of Algebra I (Commutative Algebra)   Spring 2024
Universität Bonn, Lecturer: Prof. Dr. Daniel Huybrechts

Tutor of Einführung in die Algebra (Introduction to the Algebra)   Fall 2023
Universität Bonn, Lecturer: Prof. Dr. Daniel Huybrechts

Tutor of Algebraic Geometry II   Spring 2023
Universität Bonn, Lecturer: Dr. Gebhard Martin

Tutor of Algebraic Geometry I   Fall 2022
Universität Bonn, Lecturer: Dr. Gebhard Martin

Tutor of Mathematik für Physiker (Mathematics for phycists) II   Spring 2022
Universität Bonn, Lecturer: Dr. Illia Karabash

SEMINAR TALKS

Kunz's Theorem
Fall 2024

Technische Universität München

I presented an alternative proof of the Kunz's theorem on the regularity in positive characteristics using perfection. The proof is given by Bhatt and Scholze.

K-Stability
Spring 2024

Universität Bonn

My talk involves the construction of the moduli stack of K-semistable Fano varieties by discussing their boundedness and openness.

Compactified Moduli of K3
Spring 2024

Universität Bonn

I gave the first talk which discusses the basic properties of complex K3 surfaces and moduli spaces of polarized K3 of low degrees.

Chow Groups and Motives
Fall 2022

Universität Bonn

The content of my talk consists of introducing the intersection product on the chow ring of a variety, proof of the moving lemma and the projection formula, and the compatibility of intersection product and cup product.

Klassiche Algebraische Geometrie(Classical Algebraic Geometry)
Fall 2021

Universität Bonn

I gave a half part in each of two talks. The first talk is about defining product of two projective spaces using the Segre map. The second talk presents the classification of cubic curves on the projective plane.

DISTINCTIONS

IMC Maths 2023, Bronze medal.
IMC Maths 2022, Silver medal.
NOIP China 2018, first award.

EXTRAS

Language skills

Chinese (mother tongue), German (C1+), English (C1+).

Accountant of student company AMBIX
Fall 2017 - Fall 2018

I was active in AMBIX, a student party focusing on organizing business imitation contest for middle school students in grade 9 to 12.