

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 Universität Bonn	Fall 2020 - Spring 2023
Mathematics, Master of Science Universität Bonn	Spring 2023 - Spring 2025
Mathematics, Exchange École Polytechnique Fédérale de Lausanne	Fall 2024 - Spring 2025
Mathematics, Ph.D. École Polytechnique Fédérale de Lausanne	Fall 2025 -

WRITINGS

On split coverings of Calabi-Yau threefolds in positive characteristics

This is my master thesis supervised by Prof. Zsolt Patakfalvi and Prof. Dr. Daniel Huybrechts. I classified weakly ordinary Calabi-Yau threefolds that are finite quotients of abelian varieties in characteristic > 2 , using purely algebraic techniques.

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 École Polytechnique Fédérale de Lausanne, Lecturer: Prof. Andrei Negut	Fall 2025
Tutor of Algebra I (Commutative Algebra) Universität Bonn, Lecturer: Prof. Dr. Daniel Huybrechts	Spring 2024
Tutor of Einführung in die Algebra (Introduction to the Algebra) Universität Bonn, Lecturer: Prof. Dr. Daniel Huybrechts	Fall 2023
Tutor of Algebraic Geometry II Universität Bonn, Lecturer: Dr. Gebhard Martin	Spring 2023
Tutor of Algebraic Geometry I Universität Bonn, Lecturer: Dr. Gebhard Martin	Fall 2022
Tutor of Mathematik für Physiker (Mathematics for phycists) II Universität Bonn, Lecturer: Dr. Illia Karabash	Spring 2022

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.

Klassische 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 (native), German (C1+), English (C1+), French (A2).

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.