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Profile

I'm a PhD student in mathematics at Roma Tre, working in algebraic geometry.

My supervisor is Richard Thomas (Imperial College London)

Academic background: mathematics, engineering, material science.

Parents: US-American mother (archaeologist) and German father (full professor in classics).

During my bachelor and master I had a scholarship from Studienstiftung des Deutschen Volkes.

I completed my master thesis in Bonn in 2020 with the professors David Hansen and Peter Scholze.

In February 24 I handed in my PhD thesis on virtual cycles of Higgs sheaves, supervised by Richard Thomas (Imperial College London).

Early years

'94 born in Munich, raised in Salzburg, Austria. German citizenship, graduated with 17 from Akademisches Gymnasium Salzburg in 2011.

Bachelor in engineering 2011-2015

Completed a bachelor in mechanical engineering from Uni Salzburg/TU Munich in November 2015. Thesis "Gasphasensynthese von Zinkoxid Nanopartikeln" was supervised by professor Oliver Diwald.

Full scholarship from "Studienstiftung des Deutschen Volkes" in 2011-2015 and 2017-2020.

Bachelor in mathematics 2015-2017

Return to Salzburg for a bachelor in pure mathematics. Focus on analysis and calculus of variation under Verena Bögelein, also interested in algebra: Graduated in August 2017 with a thesis titled "The Group Law on Elliptic Curves", supervised by Volker Ziegler.

Master in mathematics 2017-2020

Begin of masters in mathematics at the university of Bonn, first with courses in analysis, differential geometry.

During second year, field of interest changed more to algebraic geometry and topology. Graduation in fall 2020.

Academic field of interest

During my masters I was a research assistant in Bonn: Tutoring bachelor students in subjects such as linear algebra, algebra and complex analysis under the professors e.g. Jan Schröer and Daniel Huybrechts.

I wrote my master thesis "Affine stratifications and cohomological dimension of morphisms" in the étale cohomology setting together with Hansen and Scholze, generalising a vanishing theorem for higher direct images of Gabber.

I have a solid background in algebraic geometry and algebra from my masters in Bonn. During my PhD I attended the following PhD courses:

- Galois representations of elliptic curves (Pedro Lemos, Imperial College)
- Stacks and moduli of curves (Jarod Alper, University of Seattle)
- "Selected topics in birational Geometry" (Tommaso di Fernex, University of Utah)

PhD research

I'm currently interested in sheaf theory and moduli of Higgs bundles. More precisely, I'm interested in deformation theory and virtual cycles.

Selected seminars and workshops

In July 2021 I attended the IHES summer school "enumerative geometry and representation theory" in Paris. Other conferences in Bonn, Rome, Calabria.

In July 22 I spent a week at Pisa for a workshop on Moduli spaces.

22/23: Organisation (together with Robert Crumplin, Imperial) of a PhD course on virtual cycles and related topics.

Dec. 23: Invited speaker at the geometry winter meeting (Rome).

February 24: Invited speaker at the geometry seminar (Roma 3)

Mai 24: Invited speaker at the geometry meeting (Glasgow).

Further interests

During my studies, I was an ambassador for the Studienstiftung des Deutschen Volkes, holding presentations at local schools, informing young students about possible scholarships.

I'm a passionate road cyclist at a local équipe and otherwise I enjoy teaching mathematics, coffee, drawing and visual arts.

Language skills

German, English (mother tongue), Italian (fluent) French (B2+), Latin (Großes Latinum), Ancient Greek (Graecum) .