

Tim-Henrik Buelles

ETH Zürich
Rämistr. 101
8092 Zürich
Switzerland

DATE OF BIRTH: 25.10.1995
NATIONALITY: German
PHONE: +41 76 358 51 16
E-MAIL: buelles@math.ethz.ch
WEB-PAGE: <https://people.math.ethz.ch/~tbuelles/>

Research interests

Algebraic geometry, Calabi–Yau spaces, Derived categories, Stability conditions

Employment

- Sep. 2018-
PH.D.-STUDENT AT ETH ZÜRICH
Research group Prof. Dr. Rahul Pandharipande
ERC Advanced Grant “Moduli, Algebraic Cycles, and Invariants”
- Oct. 2016-
Jul. 2018
TEACHING ASSISTANT AT BONN UNIVERSITY
Research group Prof. Dr. Daniel Huybrechts
SFB 45 “Periods, Moduli and Arithmetic of Algebraic Varieties”

Education

- Sep. 2018-
Ph.D. in Mathematics
ETH Zürich
Advisor: Rahul Pandharipande
- Oct. 2016-
Jul. 2018
M.Sc. with honors in Mathematics
Bonn University
Thesis: Motives of hyperkähler varieties and special cubic fourfolds
Advisor: Daniel Huybrechts
- Oct. 2013-
Jul. 2016
B.Sc. in Mathematics
Bonn University
Thesis: Fulton’s trace formula for coherent cohomology
Advisor: Daniel Huybrechts

Preprints

- 2021
Weyl symmetry for curve counting invariants via spherical twists (with Miguel Moreira)
arXiv:2108.06751 (47 pages).
- 2019
Gromov–Witten classes of K3 surfaces
arXiv:1912.00389 (17 pages).

Papers

- 2021
Curves on K3 surfaces in divisibility two (with Younghun Bae)
Forum of mathematics, Sigma, 9, e9 (2021)

2020 *Motives of moduli spaces on K3 surfaces and of special cubic fourfolds*
manuscripta math, 161, 109–124 (2020)

Teaching

Fall 2021 *401-3140-71L Complex Algebraic Surfaces*
Instructor, ETH Zürich

Spring 2021 *401-3140-21L Monstrous Moonshine*
Instructor, ETH Zürich

Spring 2020 *401-3202-09L The Representation Theory of the Finite Symmetric Groups*
Co-examiner, ETH Zürich

Spring 2020 *401-1152-02L Linear Algebra II*
Organizer, ETH Zürich

Fall 2019 *401-1152-02L Linear Algebra I*
Organizer, ETH Zürich

Spring 2019 *401-2004-00L Algebra I/ II*
Co-examiner, ETH Zürich

Spring 2019 *401-2004-00L Algebra II*
Teaching assistant, ETH Zürich

Spring 2018 *V3A1 Algebra I*
Teaching assistant, Bonn University

Fall 2017 *V2A1 Galois theory*
Teaching assistant, Bonn University

Spring 2017 *V1G4 Linear Algebra II*
Teaching assistant, Bonn University

Fall 2016 *V1G3 Linear Algebra I*
Teaching assistant, Bonn University

Spring 2016 *BA-INF 021 Linear Algebra*
Teaching assistant, Bonn University

Supervising

Fall 2021 *Lukas Bertsch: Master's thesis*
“Variation of curves on K3 surfaces”, ETH Zürich

Selected programs and talks

Sep. 2021 *ETHZ Moduli Seminar, Zurich*
Title: “Weyl symmetry for curve counting invariants via spherical twists”

Feb. 2021 *Algebraic Geometry, Physics, Gromov-Witten theory Seminar, Bonn*
Title: “Curves on K3 surfaces - what to do with multiple covers?”

Jul. 2021 *Enumerative Geometry, Physics, and Representation Theory*
Institut des Hautes Études Scientifiques

Oct. 2020 *ETHZ Moduli Zoom Seminar*
Title: “Symmetry for stable pair invariants via derived equivalences – the STU model”

Feb. 2020 *Perverse Sheaves in Enumerative Geometry*
Hausdorff Center for Mathematics

Sep. 2019 *Beijing-Zurich Moduli Workshop, BICMR*
Title: “Gromov–Witten classes of K3 surfaces”

- Jun. 2019 *Geometry and Arithmetic of Algebraic Varieties*
SFB/TRR45 Bonn/Essen/Mainz
- Jun. 2019 *Moduli of sheaves, curves, and maps*
Helvetic Algebraic Geometry Seminar
- Apr. 2019 *Moduli in Budapest*
Alfréd Rényi Institute of Mathematics
- Jan. 2019-
Feb. 2019 *Introductory Workshop: Derived Algebraic Geometry, Birational Geometry, Moduli Spaces*
Mathematical Sciences Research Institute

References

Rahul Pandharipande, ETH Zürich
rahul@math.ethz.ch

Richard Thomas, Imperial College London
richard.thomas@imperial.ac.uk

Daniel Huybrechts, Bonn University
huybrech@math.uni-bonn.de

Thomas Willwacher, ETH Zürich
thomas.willwacher@math.ethz.ch

Georg Oberdieck, Bonn University
georgo@math.uni-bonn.de

Languages

German (native)
English (fluent)
French (basic)