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Research Interests

Algebraic Geometry, Tropical Geometry, Logarithmic Geometry, Enumerative Geometry, Mirror Symmetry, Birational Geometry, Moduli Spaces and Degenerations

Employment

10/23–	Postdoctoral Researcher, Leibniz Universität Hannover
04/22–10/23	Research Associate, DPMMS, University of Cambridge
04/21–03/22	Postdoctoral Reseacher, SFB/TRR 191, Ruhr-Universität Bochum

Education

10/17–03/21	PhD in Mathematics, Universität Hamburg Supervisor: Bernd Siebert
04/15–05/17	MSc in Mathematical Physics, Universität Hamburg
10/12–06/15	BSc in Mathematics, Universität Hamburg
10/11–06/15	BSc in Physics, Universität Hamburg

Publications/Preprints

to appear	<i>Quest for 5D Polytopes Using a Genetic Algorithm</i> , with Malik Amir, Andreas Hatziliou, Alexander Rahn and Eldar Sutanow.
to appear	<i>Quantum Theta Functions from Open Mirror Symmetry</i> , with Helge Ruddat, Eric Zaslow and Benjamin Zhou.
to appear	<i>0-mutable polynomials, crepant log resolutions and smoothing Gorenstein affine toric 3-folds</i> , with Alessio Corti and Helge Ruddat.

- Apr 2024** *Gromov-Witten invariants and mirror symmetry for non-Fano varieties using scattering diagrams*, with Per Berglund and Michael Lathwood, arXiv:2404.16782.
- Dec 2023** *Scattering diagrams: polynomiality and the dense region*, with Patrick Luo, arXiv:2312.13990.
- Oct 2022** *Counting (tropical) curves via scattering.sage*, arXiv:2210.10455, to appear in the Proceedings of the Online Nottingham Algebraic Geometry Seminar.
- Apr 2022** *The proper Landau-Ginzburg potential is the open mirror map*, with Helge Ruddat and Eric Zaslow, Adv. Math. 447 (2024), 109639, arXiv:2204.12249.
- Apr 2022** *Theta functions, broken lines and 2-marked log Gromov-Witten invariants*, arXiv:2204.12257.
- May 2020** *Tropical correspondence for smooth del Pezzo log Calabi-Yau pairs*, J. Alg. Geom. 31 (2022) 4, 687–749, arXiv:2005.14018.

Supervision Work

- Summer 2023** Summer Research Project, University of Cambridge
- Lent 2023** Essay on Mirror Symmetry, University of Cambridge

Organization

- Easter 2023** Log Enumerative Seminar, University of Cambridge
- Lent 2023** Log Enumerative Seminar, University of Cambridge
- Michaelmas 22** Log Enumerative Seminar, University of Cambridge
- Winter 19/20** RTG Student Seminar, Universität Hamburg

Teaching

- Summer 24** Exercise class *Math for Engineers 2*, Leibniz Universität Hannover
- Winter 23/24** Exercise class *Math for Engineers 1*, Leibniz Universität Hannover
- Lent 2023** Graduate course *Toric Geometry*, University of Cambridge
- Lent 2023** Supervisions *Analysis I*, University of Cambridge
- Winter 22/23** Exercise class *Analysis 1*, Ruhr-Universität Bochum
- Summer 2022** Exercise class *Analysis 2*, Ruhr-Universität Bochum
- Winter 20/21** Exercise class *Enumerative Geometry*, Universität Hamburg
Exercise class *Mathematics for Physicists 1*, Universität Hamburg

- Summer 2020** Exercise class *Complex Geometry*, Universität Hamburg
- Summer 2016** Exercise class *Mathematics for Physicists 2*, Universität Hamburg
 Exercise class *Mathematics for Physicists 4*, Universität Hamburg
- Winter 15/16** Exercise class *Mathematics for Physicists 3*, Universität Hamburg
- Summer 2015** Tutorial class *Mathematics for Physicists 2*, Universität Hamburg
 Exercise class *Mathematics for Physicists 2*, Universität Hamburg
- Winter 14/15** Tutorial class *Mathematics for Physicists 3*, Universität Hamburg
 Exercise class *Mathematics for Physicists 1*, Universität Hamburg
- Summer 2014** Tutorial class *Mathematics for Physicists 2*, Universität Hamburg
- Winter 13/14** Tutorial class *Mathematics for Physicists 3*, Universität Hamburg

Conference and Seminar Talks

- May 2024** Workshop *Real and Logarithmic Enumerative Geometry*, Oberwolfach
 Talk: *Tropical correspondence and mirror symmetry for log CY surfaces*
- Apr 2024** Seminar, University of New Hampshire
 Talk: *A journey to the tropics*
- May 2023** Workshop *Homological Mirror Symmetry*, Eyam
 Talk: *Lefschetz fibrations and SYZ-fibrations*
- Feb 2023** Seminar *Fanosearch group meeting*, Imperial College London
 Talk: *(Log) smoothings of (degenerations of) Tom and Jerry*
- Feb 2023** Workshop *COW meets EAGLE*, Birmingham
 Talk: *Mirror symmetry for (\mathbb{P}^2, E) and tropical geometry*
- Sep 2022** Conference *BPS states, mirror symmetry, and exact WKB – II*, Sheffield
 Talk: *The proper Landau-Ginzburg potential is the open mirror map*
- Jul 2022** Program *K-theory, algebraic cycles and motivic homotopy theory*, Isaac
 Newton Institute, Cambridge
 Talk: *Counting (tropical) curves*
- Apr 2022** Junior Algebraic Geometry Seminar, Cambridge University
 Talk: *Tropical correspondence for smooth del Pezzo log Calabi-Yau pairs*
- Feb 2021** Online Algebraic Geometry Seminar, Nottingham University
 Talk: *Tropical correspondence for smooth del Pezzo log Calabi-Yau pairs*
- Nov 2020** MIST Seminar, CUHK Hongkong
 Talk: *Tropical correspondence for smooth del Pezzo log Calabi-Yau pairs*

- Feb 2020** RTG 1670 Concluding Colloquium, Hamburg
Talk: *Tropical correspondence for the log Calabi-Yau pair* (\mathbb{P}^2, E)
- Feb 2020** Gross-Siebert Program Learning Seminar, Boston College
Talk: *Tropical correspondence for the log Calabi-Yau pair* (\mathbb{P}^2, E)
- Feb 2020** Seminar *Geometry and Physics*, Boston University
Talk: *Tropical correspondence for the log Calabi-Yau pair* (\mathbb{P}^2, E)
- Jul 2019** Conference *Non-Archimedean and Tropical Geometry*, Regensburg
Talk: *Tropical correspondence for the log Calabi-Yau pair* (\mathbb{P}^2, E)
- Jun 2019** Workshop *Logarithmic Enumerative Geometry and Mirror Symmetry*,
Oberwolfach
Talk: *Tropical correspondence for the log Calabi-Yau pair* (\mathbb{P}^2, E)
- Nov 2018** *Chow Lectures and Conference NoGAGS*, Max Planck Institute, Leipzig
Poster: *Tropical correspondence for the log Calabi-Yau pair* (\mathbb{P}^2, E)