Frederik Benirschke

Curriculum Vitae

Mathematics Department 2-115
Stony Brook University
100 Nicolls Road
Stony Brook, NY 11794-3651
✉ frederik.benirschke@stonybrook.edu
🖃 www.math.stonybrook.edu/~benirschke/

RESEARCH INTERESTS

Algebraic Geometry and Teichmüller dynamics, Strata of differentials, Degeneration of differential forms on Riemann surfaces and their periods, Applications to $\mathrm{GL}(2,\mathbb{R})$-orbit closures

EDUCATION

2015–2021   **Stony Brook University**, *Stony Brook, NY*, PH.D. candidate in Mathematics, Advisor: Prof. Samuel Grushevsky.

2015   **Johann Wolfgang Goethe-Universität**, *Frankfurt, Germany*, M.S. in Mathematics, Advisor: Prof. Martin Möller.

2014   **Johann Wolfgang Goethe-Universität**, *Frankfurt, Germany*, B.S. in Mathematics, Advisor: Prof. Martin Möller.

RESEARCH PAPERS

3. (joint with Benjamin Dozier and Samuel Grushevsky)*Equations of linear subvarieties of strata of differentials* Preprint arXiv:2011.11664, 2020

2. *The closure of double ramification loci via strata of exact differentials*, Preprint arXiv:2012.07703, 2020

1. *The boundary of linear subvarieties*, Preprint arXiv:2007.02502, 2020

TEACHING

Teaching Assistant   Stony Brook University

Fall 2020   **Grader** for MAT 530 - Topology and Geometry

Spring 2020   **TA** for MAT 118 - Mathematical Thinking(two sections)

Fall 2019   **Grader** for MAT 364 - Topology and Geometry

Spring 2019   **TA** for MAT 118 - Mathematical Thinking

Summer 2018   **Instructor** for MAT 122 - Calculus with applications

Spring 2018   **TA** for MAT 123 - Precalculus (two sections)

Fall 2017   **TA** for MAT 123 - Precalculus (two sections)

Summer 2017   **Instructor** for MAT 125 - Calculus A

Spring 2017   **TA** for MAT 132 - Calculus II

Fall 2016   **TA** for MAT 236 - Calculus B (two sections)

Spring 2016   **TA** for MAT 310 - Linear Algebra (two sections)

Fall 2015 **TA** for MAT 123 - Introduction to Calculus

Teaching Assistant Johann Wolfgang Goethe-Universität

Linear Algebra, Discrete mathematics

INVITED TALKS

June 2020 Johann Wolfgang Goethe-Universität, Frankfurt, Oberseminar Algebraic Geometry

October 2020 Michigan University, Geometry Seminar

October 2020 MAP Seminar (Moduli across the Pandemic)

Nov. 2020 BiSTRO Seminar (Billiards and Surfaces à la Teichmüller and Riemann, Online)

CONFERENCES(ATTENDED)

January 2020 Winter School "Dynamics, Topology and Numbers",
Hausdorff Institute Mathematics,Bonn

2015—2019 Algebraic Geometry North East Series (AGNES),
various locations in northeastern US, bianually

Sept. 2018 Flat Surfaces and Algebraic Curves, Oberwolfach, Germany

January 2018 Seventh Iberoamerican Congress on Geometry, Valladolid, Spain

June 2018 Teichmüller dynamics, mapping class groups and applications, Grenoble, France

August 2016 Cycles on Moduli Spaces, Geometric Invariant Theory, and Dynamics, ICERM, RI

AWARDS AND STIPENDS

2018 The John W. Milnor Endowed Graduate Fund in Math, Stony Brook

2013-2014 Scholarship 'Deutschlandstipendium', Johann Wolfgang Goethe-Universität

COMMUNITY AND EXTRA-CURRICULAR ACTIVITIES

2018-2019 Co-organizer of the Student Algebraic Geometry Seminar, Stony Brook

July 2019 Teacher for Summer Math Camp for high school students, Stony Brook

LANGUAGES

- German: Native speaker
- English: Fluent