

RADU TOMA

Endenicher Allee 60, 53115 Bonn, Germany
 +49 152 560 675 71, toma@math.uni-bonn.de
<https://www.math.uni-bonn.de/people/toma/>
 *02.07.1997, Bucharest
 Nationality: Romanian

EDUCATION

Rheinische Friedrichs-Wilhelm-Universität Bonn

October 2020 – June 2024

Doctor rerum naturalium

- Research in the field of automorphic forms on higher rank groups, in particular around the sup-norm problem
- Advisor: Prof. Dr. Valentin Blomer
- Research stay at EPFL from September to December 2022

University of Cambridge

October 2019 – June 2020

Master of Advanced Studies in Pure Mathematics

- Part III essay “The spectral theory of automorphic forms”, advised by Prof. Dr. Anthony J. Scholl

Georg-August-Universität Göttingen

October 2016 – August 2019

Bachelor of Science, Mathematics

- Finished with highest overall grade of 1,0
- Class rank: 1st of 85
- Bachelor's thesis with title “The Arithmetic of Binary Quadratic Forms”, supervised by Prof. Dr. Valentin Blomer and Prof. Dr. Preda Mihăilescu, grade 1,0
- Minor in Philosophy

PUBLICATIONS

- Toma, R. *Hybrid bounds for the sup-norm of automorphic forms in higher rank*. Trans. Amer. Math. Soc. 376 (2023)
- Toma, R. *Estimates for representation numbers of binary quadratic forms and Apollonian circle packings*. Journal of Number Theory 214 (2020)

PREPRINTS

- Toma, R. *The sup-norm problem for newforms of large level on $PGL(n)$* . Arxiv:2401.02741 (2024)

INVITED TALKS

- “Integer points on spheres throughout the centuries”, Bonn Graduate Colloquium, November 2023

- “On the sup-norm of automorphic forms in higher rank”, *ETH Zürich Number Theory Seminar*, Zürich, October 2022
- “Hybrid bounds for the sup-norm of automorphic forms in higher rank”, *Renyi automorphic forms seminar*, online, May 2022
- “On the sup-norm of automorphic forms”, *ENTR Seminar Darmstadt/Köln*, online, April 2022
- “How loud is an arithmetic drum?”, *Cambridge Junior Algebra/Number Theory seminar*, online, February 2022
- “Binary quadratic forms and Apollonian circle packings”, *Seminaire d'Arithmétique*, Laboratoire Paul Painlevé, Lille, October 2021
- “The spectral theory of automorphic forms”, *Workgroup Formes automorphes*, Laboratoire Paul Painlevé, Lille, October 2021
- “Binary quadratic forms and Apollonian circle packings”, *Number theory lunch seminar*, Max-Planck-Institut für Mathematik, Bonn, February 2020

CONTRIBUTED TALKS

- “On the size of newforms of large level on $\mathrm{PGL}(n)$ ”, *Y-RANT Conference*, Cambridge, September 2023
- “On the size of newforms of large level on $\mathrm{PGL}(n)$ ”, *ArStAFANT Workshop*, Lausanne, June 2023
- “On the sup-norm of automorphic forms in higher rank”, *Building Bridges 5*, Sarajevo, August 2022
- “Duistermaat-Heckman localisation”, *Bonn-Paris hybrid workgroup on automorphic forms*, online, December 2021
- “Binary quadratic forms and Apollonian circle packings”, *Jahrestagung der Deutschen Mathematiker-Vereinigung, Studierendenkonferenz*, Karlsruhe, September 2019

CONFERENCES & SEMINARS ORGANISED

- Reading seminar: *Equidistribution, the modern ergodic method*, Winter semester 23/24, University of Bonn
- Conference: *Young Scholars in the Analytic Theory of Numbers and Automorphic Forms*, 28-29 March 2022, Bonn

TEACHING EXPERIENCE

Algebra & Complex Analysis tutor

October 2021 – September 2022

Rheinische Friedrichs-Wilhelm-Universität Bonn

- Presented solutions each week for the Algebra/Complex Analysis exercise sheets, marked student submissions, and reviewed topics from the lecture

Algebra tutor

October 2018 – March 2019

Georg-August-Universität Göttingen

Tutor for the preliminary course in mathematics

September 2017

Georg-August-Universität Göttingen

- Organised an additional workshop on Combinatorics, wrote lecture notes, selected and adapted exercises

AWARDS AND SCHOLARSHIPS

Scholarship from the Studienstiftung des deutschen Volkes

October 2018 – September 2020

- Awarded for exceptional academic performance
- Obtained funding for pursuing Master's degree in Cambridge, UK

International Mathematics Competition

- 2nd Prize 2018 and 3rd Prize 2017

Scholarship Deutschlandstipendium

October 2016 – September 2018

- Awarded for academic performance and social engagement

COMMUNITY SERVICE

Reporter for Oberwolfach workshop

May 2023

Group actions and harmonic analysis in number theory, Report no. 22/2023

Founded Mathematics Graduate Students Association

April 2023

Mathematisches Institut, Rheinische Friedrichs-Wilhelm-Universität Bonn

- Organised social events for PhD students, improved communications infrastructure

Student representative in institute's council

October 2021 - September 2022

Mathematisches Institut, Rheinische Friedrichs-Wilhelm-Universität Bonn

Science communication: Mathematics YouTube channel

August 2021

- Created video explaining mathematical ideas (in particular related to number theory) to a large audience with minimal background

Tutor at How-To-Prove-It Weekend

November 2017 & October 2018

With the Mathematics & Computer Science Student Association in Göttingen

- Taught strategies for writing and understanding mathematical proofs to a group of beginning students and supervised them for the weekend on an organised trip to another city

Volunteer at the Mathematics Olympiad in Lower Saxony

February 2017

Göttingen

- Marked papers of high-school students

LANGUAGES

- **Romanian:** native, **English:** fluent, **German:** fluent, **French:** intermediate

COMPUTER SKILLS

- Programming languages: C++, Latex, Python

Updated: January 2024