

# 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 Mihailescu, 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  $\mathrm{PGL}(n)$* . Arxiv:2401.02741 (2024)

## **INVITED TALKS**

- “The sup-norm problem for newforms in higher rank”, Texas A&M number theory seminar, online, March 2024

- “The sup-norm problem for newforms in higher rank”, *Rényi automorphic forms seminar*, Budapest, March 2024
- “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”, *Rényi 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
- “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
- “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****Organiser of career event for PhDs and postdocs**

April 2024

*Mathematisches Institut, Rheinische Friedrichs-Wilhelm-Universität Bonn***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 &amp; 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: March 2024