RADU TOMA

IMJ-PRG, Sorbonne Université, Campus Pierre et Marie
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https://radustoma.github.io

ACADEMIC CAREER

Sorbonne Université, IMJ-PRG, CNRS, Paris   **October 2024 – September 2026**
Postdoc - Cofund MathInGreaterParis, advised by Prof. Dr. Farrell Brumley

Rheinische Friedrichs-Wilhelm-Universität Bonn   **October 2020 – September 2024**
Doctor rerum naturalium, advised by Prof. Dr. Valentin Blomer
- The sup-norm problem for automorphic forms in higher rank - Summa cum laude, best dissertation award
- 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
- Bachelor's thesis with title "The Arithmetic of Binary Quadratic Forms", supervised by Prof. Dr. Valentin Blomer and Prof. Dr. Preda Mihăilescu

PUBLICATIONS

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

PREPRINTS

- K. de Boer, A. Page, R. Toma, B. Wesolowski, *Average hardness of SIVP for module lattices of fixed rank*, arXiv:2511.13659 (2025, accepted at STOC 2026)
- A.C. Nordentoft, R. Toma. *Joint equidistribution of newforms.* arXiv:2509.01602 (2025)
- E. Assing, R. Toma. *The orbit method in number theory through the sup-norm problem for GL(2).* arXiv:2503.06224 (2025)
- R. Toma. *The sup-norm problem for newforms of large level on* PGL(n). arXiv:2401.02741 (2024, accepted at Invent. Math.)

RECENT INVITED TALKS

- "Hecke equidistribution in cryptography", Swissmap International Workshop on Automorphic Forms, Les Diablerets, September 2025
- "Archimedean and nonarchimedean microlocal analysis in the sup-norm problem", ANTAF conference, Lille, September 2025
- "Random self-reducibility of SIVP for module lattices of fixed rank", CHARM Lattice-based Cryptography Workshop, Bordeaux, June 2025
- "Automorphic forms and cryptography", Heilbronn Number Theory Seminar, Bristol, June 2025
- "Effective equidistribution in analysing algorithmic hardness", *N Cube XXI*, Kiel, November 2024
- "The size of automorphic forms", *Séminaire Formes Automorphes*, IMJ-PRG, Paris, November 2024

- "The size of automorphic forms", *Séminaire d'Arithmétique Lyon*, November 2024
- "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

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

Algebra tutor　　　　　　　　**October 2018 – March 2019**
Georg-August-Universität Göttingen

AWARDS AND SCHOLARSHIPS
Seal of Excellence: Marie Skłodowska-Curie Actions
- Postdoc Fellowship proposal, evaluated at 96/100

Hausdorff Memorial Prize for best dissertation in mathematics
- Awarded by University of Bonn Mathematics, 15th January 2025

Scholarship from the Studienstiftung des deutschen Volkes
- 2018 – 2020, awarded for exceptional academic performance

International Mathematics Competition
- 2nd Prize 2018 and 3rd Prize 2017

COMMUNITY SERVICE
Referee work
For Essential Number Theory, Journal de Théorie des Nombres de Bordeaux

Member of scholarship selection committee　　　**April 2025, February 2026**
Studienstiftung des deutschen Volkes

Organiser of event on academic careers 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

Founder of Mathematics Graduate Students Association　　**April 2023**
Mathematisches Institut, Rheinische Friedrichs-Wilhelm-Universität Bonn

Student representative in institute's council　　**October 2021 - September 2022**
Mathematisches Institut, Rheinische Friedrichs-Wilhelm-Universität Bonn

Science communication: Mathematics YouTube channel
- Channel "mathcaltea": created videos explaining mathematical ideas to a large audience with minimal background