

Yassine El Maazouz

Personal Information

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Citizenship: French and Moroccan.

Research Interests

My research is primarily in non-archimedean geometry, geometric measure theory and probability. The aim of my research is to develop combinatorial and probabilistic methods to study algebraic varieties over valued fields, and the application of these methods to solve problems both of contemporary and classical interest.

Academic Employment

2023–2024 **Postdoctoral researcher**, *RWTH Aachen University*, Aachen Germany.
2019–2022 **Teaching assistant**, *University of California, Berkeley*, Berkeley Clifornia.

Education

2019–2022 **PhD in Statistics**, *University of California, Berkeley*, Berkeley California.
Advisor: Bernd Sturmfels; Thesis: *Non-archimedean Excursions in Probability, Number Theory, Combinatorics and Geometry*.
2018–2019 **MS in Mathematics**, *École Polytechnique*, Palaiseau France.
2016–2018 **BS in Mathematics**, *École Polytechnique*, Palaiseau France.
2014–2016 **Admission to École Polytechnique**, *Moulay Youssef school*, Rabat Morocco.
Two years of preparation for entrance exams of French engineering schools.

Publications and preprints

- 2023 **On the topology of the moduli space of prime cyclic covers of genus g curves**. With Paul Helminck, Felix Röhrle, Pedro Souza and Claudia Yun. Draft in preparation.
- 2022 **A non-archimedean version of Kostlan's theorem**. With Antonio Lerario. Preprint: arxiv:2209.13634.
- 2022 **Sampling from p -adic algebraic manifolds**. With Enis Kaya. Preprint: arxiv:2207.05911.
- 2022 **The Bernoulli clock: probabilistic and combinatorial interpretations of the Bernoulli polynomials by circular convolution**. With Jim Pitman. To appear in *Combinatorics, Probability and Computing*.

- 2022 **Tropical invariants for binary quintics and reduction types of Picard curves.** With Paul A. Helminck and Enis Kaya. To appear in *Glasgow Mathematical Journal*.
- 2022 **Lines on p -adic and real cubic surfaces.** With Rida Ait El Manssour, Enis Kaya and Kemal Rose. To appear in *Abh. Math. Semin. Univ. Hambg.*
- 2021 **Bolytrope orders.** With Gabriele Nebe and Mima Stanojkovski. *International Journal of Number Theory* 19 (2023), no. 5, 937–954.
- 2021 **Valued rank metric codes.** With Marvin A. Hahn, Mima Stanojkovski and Alessandro Neri. To appear in *J. Algebra Appl.*
- 2021 **The Gaussian entropy map in valued fields** *Algebraic statistics* 13 1–18 (2022).
- 2021 **Orders and Polytropes: Matrix Algebras from Valuations.** With Marvin A. Hahn, Gabriele Nebe, Mima Stanojkovski and Bernd Sturmfels. *Beiträge zur Algebra und Geometrie* 63 515–531 (2021).
- 2019 **Statistics and tropicalization of local field Gaussian measures.** With Ngoc M. Tran. Unpublished.

Honors and Awards

- 2021 Outstanding Graduate Student Instructor Award.
- 2020 U.C. Berkeley EWJ Gateway Fellowship.
- 2020 SEEDS OCP Foundation scholarship.
- 2019 École Polytechnique's *Prix du stage de recherche*.
- 2016 French major excellence scholarship.
- 2014 King Mohamed VI Foundation, Istihqaq scholarship.

Invitations for talks, conferences, and workshops

- Sep. 2023 *SFB annual meeting 2023*, Saarland University, September, Saarbrücken Germany.
- Apr. 2023 *Algebra and Representation Theory seminar*, University of Cologne, Cologne Germany.
- Mar. 2023 *Arithmétique en Plat Pays*, KU Leuven, Leuven, Belgium.
- Jan. 2023 *Quadratic Forms, Modular Forms, and Applications*, Joint Mathematics Meetings, Boston Massachusetts.
- Sep. 2022 *Probability seminar*, U.C. Berkeley, Berkeley California.
- Jul. 2022. *Joint algebra seminar*, RWTH Aachen University, Aachen Germany.
- Jul. 2022 *Non-Linear Algebra seminar*, MPI MiS, Leipzig Germany.
- Jun. 2022 *Algebraic geometry seminar*, U.C. San Diego, San Diego California.
- Mar. 2022. *Algebraic geometry seminar*, MSRI, Berkeley California.
- Nov. 2021. *Geometric structures research seminar*, SISSA Trieste, Italy.
- Aug. 2021 *Branching from number theory: p -adics in the sciences*, MPI MiS, Leipzig Germany.
- Nov. 2019 *Buildings varieties and applications*, MPI MiS, Leipzig Germany.

Jul. 2019 *Oberseminar*, Otto-von-Guericke-University, Magdeburg Germany.

Long term invitations

Jun. 2022 **MPI MiS**, Leipzig Germany. (3 months)

Jun. 2021 **MPI MiS**, Leipzig Germany. (6 months)

Teaching and advising

2023–2024 **Postdoctoral researcher**, *RWTH Aachen*, Aachen Germany.

- Teaching a special topics course on Local Fields, (Spring 2024).
- Lead a reading group seminar on Algebraic Groups, (Spring 2023).

2019–2022 **Teaching assistant**, *University of California, Berkeley*, Berkeley CA.

- STAT 201A: *Introduction to Probability at an Advanced Level* (Fall 2020).
- STAT 150: *Stochastic processes* (Spring 2022).
- STAT 134: *Concepts of Probability* (Spring 2020, Spring 2021, Fall 2022).
- Lead instructor for *UC Berkeley Statistics MA bridge program* (summer 2020).

2016–2018 **Oral examiner in Mathematics**, *École Polytechnique*, Palaiseau France.

Mentored students and administered oral examinations preparing for entrance exams of French engineering schools.

Administrative and scientific duties

1. Co-organized the *Algebraic groups seminar* at RWTH Aachen (Spring 2023).
2. Co-organized the *Non-linear algebra seminar* at UC Berkeley (Fall 2022).
3. Reviewed articles for:
 - *Arch. Math.*,
 - *ANTS XV*,
 - *Int. J. Number Theory*,
 - *J. Théor. Nombres Bordeaux*,
 - *Electron. J. Probab.*
 - *Mathscinet*,

Languages

Tamazight: Native.

Arabic: Native.

French: Fluent.

English: Fluent.

German: Beginner.