

Rafael Mohr

Laboratoire d'Informatique de Paris 6
Campus Pierre et Marie Curie
Paris, France

Email: rafael.mohr@lip6.fr

Website: <https://rafaeldavidmohr.github.io/>

Academic Positions

- 2026- **Maître de conférences**, Sorbonne Université, LIP6, PolSys group
- 2025-2026 **PostDoc**, KU Leuven, Applied Algebraic Geometry Group
- 2024-2025 **PostDoc**, Inria Saclay, MATHEXP team
- 2020-2024 **PhD student**, Sorbonne Université and RPTU Kaiserslautern-Landau

Teaching & Other Positions

- 2026 **Tutor** in computer science, KU Leuven
- 2025 **Tutor** in computer science, École Polytechnique
- 2022-2024 **Software developer** for the computer algebra system OSCAR, RPTU Kaiserslautern-Landau
- 2021-2022 **Tutor** in mathematics and computer science, RPTU Kaiserslautern-Landau
- 2016-2020 **Tutor** in mathematics and computer science, Universität Leipzig

Supervision & Committees

- 2026 **Jury member** for the Master thesis of Lael John, KU Leuven
- 2025 **Co-supervision** of the M2 thesis of Théo Ternier, Inria Saclay

Education

- 2020 **Diploma** in Mathematics, Universität Leipzig, GPA of 1.1
- 2014 **Abitur**, Altes Gymnasium Flensburg, GPA of 1.5

Research Activity

PUBLICATIONS

- 2026 **A New Data Structure for Monomial Ideals with Applications to Signature Gröbner Bases**
joint with Pierre Lairez, Théo Ternier
ISSAC '26 Proceedings
- 2026 **Faster Computation of Whitney Stratifications and their Minimization**
joint with Martin Helmer
Journal of Algebra
- 2025 **Wronski Pairs of Honeycomb Curves**
joint with Laura Casabella, Michael Joswig
Journal of Symbolic Computation, MEGA 2024 Special Edition
- 2025 **Computing Newton Polytopes of Eliminants**
joint with Yulia Mukhina
ISSAC '25 Proceedings
- 2025 **A Syzygial Method for Equidimensional Decomposition**
Journal of Symbolic Computation
- 2025 **Gröbner Bases for Polynomial Ideals and Applications**
joint with Christian Eder, Mohab Safey El Din
The Computer Algebra System OSCAR. Algorithms and Examples.
- 2024 **Computing Generic Fibers of Polynomial Ideals Using FGLM and Hensel Lifting**
joint with Jérémy Berthomieu
ISSAC '24 Proceedings
- 2023 **A Direttissimo Algorithm for Equidimensional Decomposition**
joint with Christian Eder, Pierre Lairez, Mohab Safey El Din
ISSAC '23 Proceedings
- 2023 **A Signature-Based Algorithm for Computing the Nondegenerate Locus of a Polynomial System**
joint with Christian Eder, Pierre Lairez, Mohab Safey El Din
Journal of Symbolic Computation

INVITED TALKS

- 2026 **Faster Computation of Whitney Stratifications and Their Minimization**
IBOF Study Day, KU Leuven
- 2025 **Polyhedral Elimination Techniques**
Pascaline Seminar, ENS Lyon

- 2025 **Polyhedral Elimination Techniques**
Number Theory and Algebraic Geometry Seminar, KU Leuven
- 2025 **Mixed Fiber Polytopes** (joint lecture with Yulia Mukhina)
SLMath Summer School: New Perspectives on Discriminants and Applications, MPI Leipzig
- 2025 **Linearization in Polynomial System Solving: New Algorithms and Perspectives**
Seminar of ECO team, Université de Montpellier
- 2024 **Gröbner Basis Algorithms in Service of Algebraic Set Decomposition**
DRN + EFI Conference '24
- 2023 **Direttissimo Equidimensional Decomposition**
SLAM AG '23

ORGANIZATION

- 2025 **Weekly Reading Seminar “Gröbner Bases and Applications”**, *KU Leuven*
- 2025 **Mini-symposium “Software in Algebraic Geometry”**, *SLAM AG '25*
- 2023 **Workshop on Polynomial System Solving**, *MPI Leipzig*

Skills

Programming Languages: C, C++, Python, Java, Julia

Technical Skills: Basic Linux system administration, version control, continuous integration

Languages: German (native), English (C1), French (B2)