

Rafael Mohr

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Academic Positions

- 2025- **PostDoc**, KU Leuven, Applied Algebraic Geometry Group
- 2024-2025 **PostDoc**, Inria Saclay, MATHEXP team
- 2020-2024 **PhD student**, Sorbonne Université and RPTU Kaiserslautern-Landau

Other Activities

- 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

Education

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

Research Activity

PUBLICATIONS

- 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

- 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 **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)