

# Dmitrii Pavlov

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## Education

- 2022 – **PhD Student in Mathematics**, *Max Planck Institute for Mathematics in the Sciences*, Advisors: Bernd Sturmfels and Simon Telen.
- 2016–2022 **Specialist (equivalent to Masters) in Mathematics**, *Moscow State University*, Advisors: Yu.P. Razmyslov, G.A. Pogudin.  
GPA: 5.0/5.0

## Employment

- 2021–2022 **Huawei Russian Research Institute, Moscow Optic Algorithm Laboratory**, *Junior research engineer*.  
Research in digital signal processing, discrete optimization and numerical methods for solving Nonlinear Schrödinger equation.
- 2019–2021 **Moscow Center for Continuous Mathematical Education**, *Editor of interactive courses and textbooks in mathematics*.
- 2019–2020 **Yandex.Math**, *Consultant of interactive courses in mathematics*.
- 2018–2019 **Mathematical Circle of MSU Faculty of Mechanics and Mathematics**, *Tutor*.

## Scholarships

- 2021 **Kolmogorov Scholarship for Academic Excellence**, *Moscow State University*

## Publications

- Combinatorics of  $m = 1$  Grasstopes** Y. Mandelshtam, D. Pavlov, and E. Pratt, <https://arxiv.org/abs/2307.09603>, 2023.
- On real and observable realizations of input-output equations** S. Falkensteiner, D. Pavlov, and J. R. Sendra, <http://arxiv.org/abs/2303.16799>, 2023.
- Logarithmically Sparse Symmetric Matrices** D. Pavlov, <http://arxiv.org/abs/2301.10042>, 2023.
- Gibbs Manifolds** D. Pavlov, B. Sturmfels, and S. Telen, *Information Geometry*, <https://doi.org/10.1007/s41884-023-00111-2>, 2023.
- On realizing differential-algebraic equations by rational dynamical systems** D. Pavlov and G. Pogudin, *Proceedings of the ACM International Symposium on Symbolic and Algebraic Computation (ISSAC 2022)*, doi:10.1145/3476446.3535492, 2022.

**From algebra to analysis: new proofs of theorems by Ritt and Seidenberg**  
D. Pavlov, G. Pogudin, and Yu. Razmyslov, *Proceedings of the American Mathematical Society*, <https://doi.org/10.1090/proc/16065>, 2022.

## Talks

- 11 July 2023 **Gibbs manifolds**, *SIAM AG23, Minisimposium on Geometric and Algebraic Methods in Quantum Information, Eindhoven.*
- 10 May 2023 **Real realizations of algebraic differential equations**, *Nonlinear Algebra Seminar, MPI MiS.*
- 21 Mar 2023 **Gibbs manifolds**, *New Directions in Real Algebraic Geometry, Mathematisches Forschungsinstitut Oberwolfach.*
- 9 Mar 2023 **What is a Gibbs manifold?**, *Algebra, Geometry and Computation, CWI Amsterdam.*
- 1 Mar 2023 **What is a Gibbs manifold?**, *Nonlinear Algebra Seminar, MPI MiS.*
- 5 Oct 2022 **Realizability of algebraic differential equations by rational dynamical systems**, *Nonlinear Algebra Seminar, MPI MiS.*
- 12 Apr 2022 **Realizability of algebraic differential equations by rational dynamical systems**, *Algebra and Model Theory Seminar, Moscow State University.*
- 8 Dec 2020 **Analytic spectrum of differential  $\mathbb{C}$ -algebra with several commuting derivations**, *Algebra and Model Theory Seminar, Moscow State University.*
- 28 Mar 2020 **Differentials of morphisms of algebraic groups**, *Algebraic Transformation Groups Seminar, Moscow State University.*
- 8 May 2019 **Differentially flat systems**, *Algebra and Model Theory Seminar, Moscow State University.*
- 6 Oct 2018 **Structure theory of Lie algebras**, *Algebraic Transformation Groups Seminar, Moscow State University.*

## Computer skills

Languages: Python, Julia, Macaulay2, Sage,  
C/C++  
Software: LaTeX, GitLab, Linux

## Language proficiency

Russian (native), English (C1/C2), French (B2), German (B1)