Joachim Jelisiejew

arXiv | mathscinet | homepage | j.jelisiejew@uw.edu.pl | papers | group

Positions

Associate professor (profesor UW), **University of Warsaw** Jul 2024 – current

Assistant professor, **University of Warsaw** Oct 2023 – Jun 2024

Samuel Eilenberg's assistant professor, **University of Warsaw** Oct 2019 – Sep 2023

Assistant professor, **Polish Academy of Sciences** Oct 2017 – Sep 2019

Supervision

See full list of my students and postdocs. If you would like to become part of the group, feel free to get in touch.

Selected publications

Martijn Kool, Joachim Jelisiejew, and Reinier F. Schmiermann. Behrend's function is not constant on $Hilb^n(\mathbb{C}^3)$. To appear in Geom. Topol. 2025.

Joachim Jelisiejew, J. M. Landsberg, and Arpan Pal. Concise tensors of minimal border rank. *Math. Ann.*, 388(3):2473–2517, 2024.

Joachim Jelisiejew. Open problems in deformations of Artinian algebras, Hilbert schemes and around. In *Deformation of Artinian algebras and Jordan type*, volume 805 of *Contemp. Math.*, pages 3–25. Amer. Math. Soc., [Providence], RI, [2024] ©2024.

Marc Hoyois, Joachim Jelisiejew, Denis Nardin, Burt Totaro, and Maria Yakerson. The Hilbert scheme of infinite affine space and algebraic K-theory. *J. Eur. Math. Soc. (JEMS)*, 27(5):2037–2071, 2025.

Joachim Jelisiejew and Klemen Šivic. Components and singularities of Quot schemes and varieties of commuting matrices. *J. Reine Angew. Math.*, 788:129–187, 2022.

Marc Hoyois, Joachim Jelisiejew, Denis Nardin, and Maria Yakerson. Hermitian K-theory via oriented Gorenstein algebras. *J. Reine Angew. Math.*, 793:105–142, 2022.

Joachim Jelisiejew and Łukasz Sienkiewicz. Białynicki-Birula decomposition for reductive groups in positive characteristic. *J. Math. Pures Appl. (9)*, 152:189–210, 2021.

Joachim Jelisiejew. Pathologies on the Hilbert scheme of points. *Invent. Math.*, 220(2):581–610, 2020.

Joachim Jelisiejew and Łukasz Sienkiewicz. Białynicki-Birula decomposition for reductive groups. *Journal de Mathématiques Pures et Appliquées*, 131:290 – 325, 2019.

Jarosław Buczyński, Tadeusz Januszkiewicz, Joachim Jelisiejew, and Mateusz Michałek. Constructions of k-regular maps using finite local schemes. *J. Eur. Math. Soc. (JEMS)*, 21(6):1775–1808, 2019.

Selected schools and lecture courses conducted

Oberwolfach Graduate Seminar, **Będlewo, near Poznań, Poland** Nov 2025

MFO-run series of lectures on recent advancements *Modern Algebraic Geometry in Algebraic Combinatorics and Tensors*. The second course was run by Mateusz Michałek.

Lectures series on Hilbert schemes, **Cluj, Romania** Sep 2025

Series of lectures during the *Moduli, Hilbert Schemes and Singularities* conference.

Lecture series on apolarity and tensors, **Texam A&M** Summer 2020

Remote informal lecture series.

Lecture series on BB decompositions, **EPFL** Feb 2020

Education and titles

University of Warsaw, **Habilitation** April 2023

Granted with distinction for the work on *Generalizations of Białynicki-Birula decompositions and applications to moduli spaces*

University of Warsaw, **PhD in Mathematics** Oct 2013 – Sep 2017

PhD Thesis *Hilbert schemes of points and their applications* (summa cum laude)
Advisor: Jarosław Buczyński. Auxiliary advisor: Weronika Buczyńska.

Grants

Geometry behind tensors, **NCN** 2024 – current

Principal investigator, Sonata Bis grant.

Generalizations and applications of Białynicki-Birula decompositions, **NCN** 2021 – 2024

Principal investigator, Sonata grant.

Local geometry of the Hilbert scheme of points and its applications, **NCN** 2015 – 2017

Principal investigator, Preludium grant.

Selected prizes and honours

Sierpiński's Scientific Award, **Polish Academy of Sciences, Poland** 2025

Awarded by the III Faculty of Polish Academy of Sciences. (Different from Sierpiński's Medal.)

Scholarship for outstanding young scientists, **Minister of Education, Poland** 2021

Rector of University of Warsaw prize, **University of Warsaw** 2021

START scholarship, **Foundation for Polish Science** 2020

Kuratowski's prize, **IMPAN and Polish Math Society** 2019

Prize for PhD dissertation, **Prime Minister of Poland** 2018

Popularization

Białystok University of Technology, **Coorganizer of local math compretition** 2009 – current

The competition is designed as an intermediate step between school and Mathematical Olympiad, four relatively easy proof tasks are given/4h. https://pb.edu.pl/km

Junior Mathematical Olympiad, **Member of the Central Committee** 2019 – 2025

http://www.omj.edu.pl

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