

# Piotr Achinger

Institute of Mathematics  
Polish Academy of Sciences  
ul. Śniadeckich 8  
00-656 Warszawa  
Poland

[pachinger@impan.pl](mailto:pachinger@impan.pl)  
[achinger.impan.pl](http://achinger.impan.pl)

## Positions

- 2016–2026 Assistant Professor, Institute of Mathematics, Polish Academy of Sciences
- 2019 Berlekamp Postdoctoral Fellow, MSRI, Berkeley
- 2016–2017 EPDI postdoc at IHÉS, Bures-sur-Yvette
- 2015–2016 EPDI postdoc at Institute of Mathematics, Polish Academy of Sciences

## Degrees

- 2022 Habilitation, Institute of Mathematics, Polish Academy of Sciences (IMPAN)
- 2011–2015 Ph.D. in Mathematics, University of California, Berkeley, Advisor: Arthur Ogus
- 2005–2011 Master's Degree in Computer Science, University of Warsaw, Advisor: Mikołaj Bojańczyk
- 2005–2010 Master's Degree in Mathematics, University of Warsaw, Advisor: Adrian Langer

## Awards and scholarships

- 2020–2023 Outstanding Young Scientist Fellowship, Ministry of Science and Higher Education
- 2019 Invited Plenary Address, 100th Anniversary Congress of the Polish Mathematical Society, Kraków
- 2019 Medal Młodego Uченоgo, Politechnika Warszawska
- 2019 XXIII Wojtek Pulikowski Lecture, Uniwersytet Adama Mickiewicza, Poznań
- 2016 The [START](#) award of the Foundation for Polish Science
- 2016 The [Kazimierz Kuratowski Award](#) of the Polish Mathematical Society and IMPAN
- 2015 Kenneth Ribet and Lisa Goldberg Award in Algebra
- 2014 UC Berkeley Outstanding Graduate Student Instructor Award
- 2011–2014 [International Fulbright Science and Technology Award](#)

## Membership and responsibilities

- 2019–2023 Jury Member of the Kazimierz Kuratowski Award
- 2017–2022 Member of the Scientific Board of IMPAN
- 2016– Member of the Warsaw regional committee of the Polish Mathematical Society

## Publications

1. (with M. Lara and A. Youcis) *Variants of the de Jong fundamental group*  
arXiv preprint [arXiv:2203.11750](https://arxiv.org/abs/2203.11750), 2021, submitted
2. (with M. Lara and A. Youcis) *Geometric arcs and fundamental groups of rigid spaces*  
arXiv preprint [arXiv:2105.05184v3](https://arxiv.org/abs/2105.05184v3), 2021, submitted

3. (with M. Lara and A. Youcis) *Specialization for the pro-étale fundamental group*  
arXiv preprint [arXiv:2107.06761](https://arxiv.org/abs/2107.06761), 2021, to appear in *Compositio Mathematica*
4. (with J. Suh) *Some refinements of the Deligne–Illusie theorem*  
arXiv preprint [arXiv:2003.09857](https://arxiv.org/abs/2003.09857), 2020, to appear in *Algebra & Number Theory*
5. *Hodge symmetry for rigid varieties via log Hard Lefschetz*  
arXiv preprint [arXiv:2005.02246](https://arxiv.org/abs/2005.02246), 2021, to appear in *Mathematical Research Letters*
6. (with J. Witaszek and M. Zdanowicz) *Global Frobenius liftability II: Surfaces and Fano threefolds*  
arXiv preprint [arXiv:2102.02788](https://arxiv.org/abs/2102.02788), 2017, to appear in *Annali della Scuola Normale Superiore di Pisa*.
7. (with M. Zdanowicz) *Serre-Tate theory for Calabi-Yau varieties*  
*Journal für die reine und angewandte Mathematik*, vol. 2021, no. 780, 2021, pp. 139-196.
8. (with J. Witaszek and M. Zdanowicz) *Global Frobenius liftability I*  
*Journal of the European Mathematical Society* 23 (2021), no. 8, 2601–2648.
9. (with M. Talpo) *Betti realization of varieties defined by formal Laurent series*  
*Geometry & Topology* 25 (2021) 1919–1978.
10. (with A. Ogus) *Monodromy and Log Geometry*  
*Tunisian Journal of Mathematics* 2 (2020), no. 3, 455-534.
11. *Wild ramification and  $K(\pi, 1)$  spaces*  
*Inventiones Mathematicae* 210 (2017), no. 2, 453–499.
12. (with M. Zdanowicz) *Some elementary examples of non-liftable varieties*  
*Proceedings of the American Mathematical Society* 145 (2017), 4717-4729.
13. (With N. Ilten and H. Süß) *F-split and F-regular varieties with a diagonalizable group action*  
*Journal of Algebraic Geometry* 26 (2017), 603–654.
14.  *$K(\pi, 1)$ -neighborhoods and comparison theorems*  
*Compositio Mathematica* 151 (2015), no. 10, 1945—1964.
15. *A characterization of toric varieties in positive characteristic*  
*International Mathematics Research Notices* 2015, no. 16, 6879—6892.
16. (with N. Perrin) *Spherical multiple flags*  
in *Schubert Calculus – Osaka 2012*, *Advanced Studies of Pure Mathematics* vol. 71, 2017.
17. *Frobenius Push-Forwards on Quadrics*  
*Communications in Algebra* 40:8 (2012)

## Funding

- 2019–2024 *Homotopy Theory of Algebraic Varieties and Wild Ramification* (KAPIBARA)  
ERC Starting Grant, grant 802787
- 2019–2024 Premia na Horyzontcie, Ministry of Science and Higher Education
- 2018–2022 *Deformations and Degenerations of Algebraic Varieties*  
National Science Centre (NCN), grant 2017/26/D/ST1/00913 (SONATA 13)

## Research visits

- Nov 2021 *Moduli and Algebraic Cycles*, Mittag-Leffler Institute, Sweden
- 2019 *Derived Algebraic Geometry* program at MSRI, Berkeley
- 2018 *Periods in Algebraic Geometry, Number Theory and Physics*, Hausdorff Center for Mathematics, Bonn
- Jan 2017 *Hypergeometric Motives and Calabi-Yau Differential Equations*, MATRIX Institute, Creswick, Australia
- Apr 2016 University of Utah (host: Karl Schwede)
- Sep 2015 IHÉS, Bures-sur-Yvette (host: Ahmed Abbes)
- Feb 2015 University of Tokyo (host: Takeshi Saito)
- Jun 2014 IHÉS, Bures-sur-Yvette (host: Ahmed Abbes)

## Refereeing and editorial work

**Referee for:** *Compositio Mathematica*, *Duke Mathematical Journal*, *Journal of Differential Geometry*, *Journal of Algebraic Geometry*, *Geometry & Topology*, *Algebra & Number Theory*, *Selecta Mathematica*, *Mathematische Annalen*, *Israel Journal of Mathematics*, *Bulletin SMF*, *Proceedings of the London Mathematical Society*, *Mathematical Research Letters*, *Documenta Mathematica*, *Geometry & Topology*, *International Mathematics Research Notices*, *Archiv der Mathematik*, *Acta Mathematica Vietnamica*, *Annales Polonici Mathematici*, *Proceedings – Mathematical Sciences*, *Mathematische Nachrichten*

Member of the Editorial Board of [Fundamenta Mathematicae](#) (since June 2022)

## Organization of conferences and seminars

1. Conference *Cohomology of Varieties* (joint with W. Nizioł), IMPAN, Mar 2022
2. [IMPANGA](#) (joint with J. Buczyński, M. Kapustka, Ch. Eyrat, P. Pragacz), algebraic geometry research seminar at IMPAN (since 2020)
3. Współorganizator sesji z geometrii algebraicznej, Jubileuszowy Zjazd Matematyków Polskich w stulecie Polskiego Towarzystwa Matematycznego, 09.2019
4. Conference *Wild Ramification and Irregular Singularities* (joint with H. Esnault and J. Fresán), IMPAN, Sep 2019
5. *Varieties: Arithmetic and Transformations (VAT)* (jointly with J. Buczyński, N. Ilten, and M. Vlasenko), Simons Foundation topics semester at IMPAN, Fall 2018
6. Współorganizator szkoły letniej Arithmetic of Differential Equations, Łukęcin 09.2018
7. Young Researchers Colloquium at IMPAN (2015–2016)
8. UC Berkeley Student Algebraic Geometry Seminar (2011–2014)
9. *Géométrie Algébrique en Liberté (GAeL)* (editions 2012 in Grenoble and 2013 in Stockholm), graduate student algebraic geometry conference

## Supervision of students

1. Mateusz Kobak (Ph.D. at IMPAN, starting Fall 2022)
2. Feliks Rączka (Ph.D. at IMPAN and University of Warsaw, since 2020), co-supervised with Adrian Langer
3. Paweł Poczobut (Magister at University of Warsaw 2022, expected)

4. Mateusz Kobak (Magister at University of Warsaw 2022, expected)
5. Paweł Poczobut (Bachelors's Degree at University of Warsaw 2020)
6. Przemysław Grabowski (Magister at University of Warsaw 2020)
7. Maciej Zdanowicz (University of Warsaw, Ph.D. 2017), secondary supervisor. Principal supervisor: Adrian Langer
8. Paweł Karasek (Polish Academy of Sciences, Ph.D. 2017), secondary supervisor. Principal supervisor: Maciej Radziejewski

### Postdocs

1. Gabriela Guzman (2020–2022)
2. Marcin Lara (2019–2021)
3. Alex Youcis (2010–2021)

### Teaching and outreach

- **As a TA at UC Berkeley:** Precalculus (Math 32), Calculus (Math 1A), Honors Calculus (Math H1B), Graduate Introduction to Topology and Analysis (Math 202A and 202B)
- **Math circles:** Teaching at the Berkeley, Stanford, and Marin Math Circles (2012–2015), Assistant for the Berkeley Math Circle (Spring 2013)
- **Outreach:** Co-organizer of three subsequent editions of [Scientific Summer Workshops](#), aimed at exceptional high-school students interested in mathematics, computer science and physics. Tutor at the [Polish Children's Fund](#) since 2015.

### Invited talks

1. Sep 2022 (scheduled), conference Around  $p$ -adic cohomologies (Chiarellotto 60), Padova
2. Aug 2022 (scheduled), conference Motivic Geometry, University of Oslo
3. Jul 2022 (scheduled), conference Fourth Killing–Weierstrass Colloquium, University of Gdańsk
4. Feb 2022, workshop Non-Archimedean Geometry and Applications, MFO Oberwolfach
5. Nov 2021, workshop Moduli spaces and logarithmic geometry, Mittag-Leffler Institute, Sweden
6. May 2021, CMI Mathematics Seminar, Chennai (online)
7. Jun 2021, conference Recent Developments in Algebraic Geometry, Arithmetic and Dynamics, IMS Singapore (online)
8. Nov 2020, Seminar Arithmetic Seminar, Binghamton University (online)
9. Oct 2020, RAMpAGe Seminar (online)
10. Sep 2020, Motivic Geometry, Conference at CAS Oslo (online)
11. Dec 2019, University of Pisa
12. Nov 2019,  $p$ -adic cohomology and arithmetic geometry, Tohoku University, Sendai
13. Jul 2019, Derived Categories and Geometry in Positive Characteristic, Banach Center, Warsaw
14. Sep 2018, UMI–SIMAI–PTM Joint Meeting, Wrocław
15. Sep 2018, The 4th KTGU Mathematics Workshop for Young Researchers, Kyoto University
16. Sep 2018, Belgian–Dutch AG seminar (Ben Moonen 50), Nijmegen
17. Jul 2018, Conference Witt Vectors, Deformations and Absolute Geometry, University of Vermont
18. Oberwolfach AG
19. Jan 2018, Conference on Arithmetic and Algebraic Geometry, University of Tokyo

20. Apr 2018, Arbeitsgemeinschaft: Topological Cyclic Homology, MFO Oberwolfach
21. Nov 2017, Algebraic Geometry Seminar, EPFL
22. Nov 2017, IMPANGA Algebraic Geometry Seminar, IMPAN, Warsaw
23. Sep 2017, GRFA Seminar, Jussieu
24. Sep 2017, Workshop Étale and motivic homotopy theory, Universität Heidelberg
25. Aug 2017, Conference Algebraic  $K$ -theory and Arithmetic, Bedlewo
26. Jul 2017, Workshop on Higgs bundles, K3 surfaces and moduli, HU Berlin
27. Jul 2017, Seminar, Universität Frankfurt
28. Jun 2017, Seminar, Universität Heidelberg
29. Jun 2017, Arithmetic Geometry Seminar, ENS Lyon
30. May 2017, Seminar, Universität Zürich
31. May 2017, Workshop Beyond Toric Geometry, CMO Oaxaca
32. Apr 2017, Seminar Cycles Algébriques, Jussieu
33. Apr 2017, Seminar Variétés Rationnelles, ENS Paris
34. Feb 2017, Universität Münster
35. Jan 2017, MATRIX semester Hypergeometric Motives and Calabi–Yau Differential Equations, Creswick, Australia
36. Dec 2016, Seminar, IHES
37. Sep 2016, plenary address at the 7th Forum of the Polish Mathematical Society following the receipt of the Kuratowski Award, Olsztyn
38. Feb 2015, Algebraic Geometry Seminar, University of Tokyo
39. Dec 2014, Berkeley Number Theory Seminar
40. Jun 2014, Seminar, IHES
41. Mar 2014, Stanford Special Algebraic Geometry Seminar
42. Nov 2013, Seminar, University College Dublin
43. May 2013, Frobenius Singularity Day, MSRI
44. Sep 2012, Algebraic Geometry and Commutative Algebra Seminar, UC Berkeley