

# Pol van Hoften

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<https://polvanhoften2.github.io/>

## Employment

- 2025- **Associate professor** *Zhejiang University*.
- 2023-2025 **Assistant professor (tenured since 2024)** *Vrije Universiteit Amsterdam*.
- 2021-2023 **Postdoctoral fellow** *Stanford University*.

## Education

- 2017-2021 **PhD in mathematics**, *King's College London*, supervised by James Newton and Ana Caraiani, Thesis: "Mod  $p$  points on Shimura varieties of parahoric level".
- 2012-2017 **Bachelor and Master in mathematics**, *Utrecht University*, *cum laude*.

## Grants

- 2024-2028 **NWO Veni €317 221**, Zeta functions of Shimura varieties.

## Publications and preprints

- 2025  *$p$ -adic Fourier theory in families*, with Andrew Graham and Sean Howe, <https://arxiv.org/abs/2507.05374>.
- 2024 *Igusa stacks and the cohomology of Shimura varieties*, with Patrick Daniels, Dongryul Kim and Mingjia Zhang, <https://arxiv.org/abs/2408.01348>, submitted.
- 2024 *On a conjecture of Pappas and Rapoport*, with Patrick Daniels, Dongryul Kim and Mingjia Zhang, <https://arxiv.org/abs/2403.19771>, submitted.
- 2024 *On the Piatetski-Shapiro construction for integral models of Shimura varieties*, with Jack Sempliner, <https://arxiv.org/abs/2403.10653>, submitted.
- 2022 *Hecke orbits on Shimura varieties of Hodge type*, with Marco D'Addezio, <https://arxiv.org/abs/2205.10344>, submitted.
- 2021 *On the ordinary Hecke orbit conjecture*, *Algebra and Number theory* **18** (2024), No. 5, 847–898.
- 2021 *The Langlands–Rapoport conjecture*, *Automorphic forms, Automorphic representations, Galois representations, and its related topics*, pages 124–133.
- 2021 *Monodromy and irreducibility of Igusa varieties*, with Luciana Xiao Xiao, *American Journal of Mathematics* **147** (2025), no. 2, 355–400.
- 2020 *Mod  $p$  points on Shimura varieties of parahoric level*, with an appendix by Rong Zhou, *Forum of Mathematics, Pi* **12** (2024).
- 2019 *A geometric Jacquet–Langlands correspondence for paramodular Siegel threefolds*, *Mathematische Zeitschrift* **299** (2021), 2029–2061 .

## Invited lecture series

- Jun 2025 *Mini-course (4.5 hours)*, Workshop "Alpbach 2025".
- Jan 2024 *Mini-course (6 hours)*, Yau Mathematical Sciences Center, Tsinghua University and Morningside Center of Mathematics, Chinese Academy of Sciences.

## Invited conference talks

- Dec 2025 *2025 Taipei conference on arithmetic geometry*.
- Nov 2025 *Arithmetic geometry in Shenzhen*.
- July 2025 *New Tools in the local and global Langlands program*, Hangzhou.
- Nov 2024 *Arithmetica Transalpina*, Milan.
- Sep 2024 *Clay research conference: New Advances in the Langlands program*, Oxford.
- Sep 2024 *Workshop on  $p$ -adic geometry*, Chicago.
- Nov 2023 *Compositio Mathematica prize symposium*, University of Amsterdam.
- Aug 2023 *Conference on global Langlands, Shimura varieties and  $shtukas$* , HIM Bonn.
- Feb 2023 *Oberwolfach workshop on arithmetic of Shimura varieties*.
- Jun 2022 *Arithmetic and topology around the Langlands program*, Stockholm.
- Aug 2021 *Arithmetic of Shimura varieties over global fields*, Cetraro.
- Jan 2021 *Galois representations and related topics*, RIMS, Kyoto.
- Oct 2019 *Supersingular abelian varieties and related arithmetic*, Nagoya.

## Selected invited seminar talks

- June 2025 *Algebra and number theory seminar*, Vienna.
- May 2025 *Séminaire arithmétique et géométrie algébrique*, IRMA Strasbourg.
- Apr 2025 *Number theory seminar*, Stanford University.
- Mar 2025 *Arithmetic geometry seminar*, Princeton University.
- Nov 2024 *Oberseminar*, MPI Bonn.
- Nov 2024 *Seminar on Arithmetic Geometry*, TU Darmstadt.
- Oct 2024 *Algebra seminar*, Groningen.
- Jun 2024 *Arithmetic algebraic geometry seminar*, Münster.
- Jun 2024 *Séminaire groupes réductifs et formes automorphes*, Paris.
- Mar 2024 *Intercity number theory seminar*, Amsterdam.
- Jan 2024 *Number theory seminar*, Peking University.
- Jan 2024 *Number theory seminar*, Tsinghua University.
- Dec 2023 *Friday arithmetic geometry seminar*, Imperial College London.
- Dec 2023 *London number theory seminar*.
- Apr 2023 *Princeton university/IAS number theory seminar*.
- Feb 2023 *Number theory seminar*, Johns Hopkins University.
- Dec 2022 *Algebra-number theory seminar*, University of Maryland.
- Oct 2022 *Stanford number theory seminar*, Stanford University.

Sep 2022 *Number theory and representation theory seminar*, University of Utah.  
 Jul 2022 *Séminaire arithmétique et géométrie algébrique*, Université Paris-Saclay.  
 Jul 2022 *Algebraic geometry seminar*, TU Darmstadt.  
 Jun 2022 *Geometry and algebra seminar*, Utrecht University (two talks).  
 Jun 2022 *Arithmetic and algebraic geometry seminar*, University of Amsterdam (two talks).  
 Jun 2022 *Number theory seminar*, Imperial College London.  
 Jun 2022 *Number theory seminar*, University of Cambridge.  
 Feb 2022 *Number theory seminar*, University of Wisconsin-Madison.  
 Feb 2022 *Number theory seminar*, University of Chicago.  
 Oct 2021 *Berkeley–Caltech–Stanford number theory seminar*.  
 Jul 2021 *Oberseminar*, University of Duisburg-Essen.  
 May 2021 *Number theory seminar*, University of Münster.  
 Apr 2021 *Number theory seminar*, Massachusetts Institute of Technology.  
 Apr 2021 *RGR webinar*, Institut de Mathématiques de Marseille.  
 Mar 2021 *Number theory seminar*, UCLA.  
 Feb 2021 *Algebra-number theory seminar*, University of Maryland (two talks).  
 Nov 2020 *London-Paris number theory seminar*.  
 Nov 2020 *Algebra and geometry seminar*, Stockholm.  
 Nov 2020 *Number theory lunch seminar*, University of Sheffield.  
 Jun 2020 *Séminaires de géométrie arithmétique et motivique*, Paris 13.  
 Apr 2020 *Number theory seminar*, University of Warwick.  
 Dec 2019 *Algebra, geometry and number theory seminar*, Leiden University.  
 Nov 2019 *ENS de Lyon number theory seminar*, École normale supérieure de Lyon.

## Supervision

2024-present *Dongryul Kim (secondary supervisor, primary supervisor Richard Taylor), PhD.*  
 2024-2025 *Benedek Biczó, David Bukva, Rikkie Gieler, Bachelor's thesis.*  
 2023-2024 *Pedro Gómez de Terreros Oramas, Master's thesis.*

## Teaching Experience

2023-2025 *VU Amsterdam.*  
 ○ Linear algebra for FAR/SBI (Spring 2025)  
 ○ Linear algebra for computer science (Spring 2024/Spring 2025)  
 ○ Fourier Analysis (Fall 2023/Fall 2024)  
 2022-2023 *Stanford University.*  
 ○ Topics in algebraic geometry: Deligne–Lusztig theory (Winter 2023)  
 ○ Graduate algebraic geometry (Fall 2022)  
 ○ Reading course on Shimura varieties in characteristic  $p$  (Spring 2022)  
 2018-2020 **Graduate teaching assistant** *King's College London.*  
 ○ Groups and Symmetry (Fall 2020)  
 ○ Introduction to number theory (Fall 2019/Fall 2018)

Summer 2018 **Counselor** *Ross mathematics program Asia*, 5 weeks.

2013-2017 **Teaching assistant** *Utrecht University*.

- Rings and Galois theory (Spring 2017)
- Introduction to probability and statistics (Winter 2016)
- Measure theory (Fall 2016/Fall 2015)
- Summer school in geometry at Utrecht University (two weeks in August 2016).
- Lab course optics (Spring 2014). In the summer of 2014 I was involved in redesigning part of the curriculum for this course.
- Introduction to special relativity (Fall 2013)

### Teaching training

2023-2024 *University teaching qualification (BKO)*, VU Amsterdam, 6 months.

Fall 2022 *Math teaching workshop*, Stanford University, 3 days.

Fall 2018 *Graduate teaching assistant workshop*, King's College London, 1 day.

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## Service and other professional activities

*Referee for journals including IMRN, JEMS, Math. Ann., Math. Res. Lett., and Math. Z.*

2024-2025 *Member of the exam board for mathematics/business analytics at VU Amsterdam..*

2023 *Member of Sean Cotner's thesis committee.*

2022 *Member of Konstantin Miagkov's area exam committee.*

### Seminars organised

2024-2025 *Learning seminar on prismatic cohomology*, with Dhyan Aranha.

2022-2023 *Berkeley–Stanford number theory learning seminar on EG stacks*, with Lie Qian.

Spring 2022 *Berkeley–Stanford number theory learning seminar on moduli of  $L$ -parameters.*

Fall 2021 *Reading group on "A unipotent circle action on  $p$ -adic modular forms".*

Winter 2020 *Reading group on Deligne–Lusztig theory*, with Miriam Norris.

Winter 2019 *Organised the London number theory reading group on 'derived structures in the Langlands programme', with Carl Wang-Erickson, Ashwin Iyengar and Alice Pozzi.*

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## Languages

Dutch **Native speaker**

English **Fluent**