

Curriculum Vitae Rosa Winter

Contact:

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Research Interests

Arithmetic geometry, rational points on surfaces, density of rational points, del Pezzo surfaces of degree one and the configurations of their lines, elliptic fibrations, Brauer groups.

Education

- 2016 - 2020 PhD in Mathematics, Leiden University, supervised by Martin Bright and Ronald van Luijk (degree obtained 05/01/2021).
- 2014 - 2015 Master degree in Mathematics Teaching (cum laude), University of Amsterdam.
- 2011 - 2014 Master degree in Mathematics (cum laude), Leiden University and University of Padua.
- 2008 - 2011 Bachelor degree in Mathematics, Leiden University.

Academic positions

- Sep 2020 - current Max Planck Institute for Mathematics in the Sciences, Leipzig.
Postdoctoral researcher in the Nonlinear Algebra group of Bernd Sturmfels.

Teaching

- Fall 2016 - 2019 Calculus (Course developer and Teacher), Leiden University College, The Hague.
- Spring 2018 Elliptic curves (Teaching assistant), Dutch Mastermath course.
- 2014 - 2016 Full-time mathematics teacher, Calandlyceum Amsterdam (high school).
- Fall 2013 Rational Points on Varieties (Teaching assistant), Dutch Mastermath course.

Papers and Preprints

Published

- The action of the Weyl group on the E_8 root system (with R. van Luijk).
Graphs and Combinatorics (2021). <https://doi.org/10.1007/s00373-021-02315-8>.

Accepted for publication

- Fields of definition of elliptic fibrations on covers of certain extremal rational elliptic surfaces (with V. Cantoral-Farfán, A. Garbagnati, C. Salgado, and A. Trbović). arXiv: 2007.14043.
To appear in Women in Numbers Europe III: Research Directions in Number Theory.
- Linear Spaces of Symmetric Matrices with Non-Maximal Maximum Likelihood Degree (with Y. Jiang and K. Kohn). arXiv: 2012.00145.
To appear in Le Matematiche.

Submitted for publication

- Concurrent exceptional curves on del Pezzo surfaces of degree one (with R. van Luijk).
arXiv: 1906.03162.
- Density of rational points on a family of del Pezzo surfaces of degree 1 (with J. Desjardins).
arXiv: 2102.05563v2.
- Recovery from Power Sums (with B. Sturmfels and H. Melánová).
arXiv: 2106.13981.

Nominations/awards/grants

- Finalist for the PhD prize of the Dutch Royal Mathematical Society (KWG) in 2020.
- Research in Paris Grant 2020, funding for a three week research stay at the Institut Henri Poincaré, Paris (with J. Desjardins and J. Park). *Postponed to 2022 due to Corona.*

Invited talks

11/11/2021	Zoom Algebraic Geometry Seminar (ZAG).
07/07/2021	Browning group working seminar (online), IST Austria, Vienna.
22/06/2021	Nonlinear Algebra Seminar, MPI-MiS, Leipzig.
25/02/2021	Number Theory Seminar (online), University of California Irvine.
19/02/2021	Zoom On Rational Points (ZORP).
02/02/2021	Nonlinear Algebra Seminar Online, MPI-MiS Leipzig.
17/12/2020	Séminaire Arithmétique et Théorie de l'Information (online), Aix-Marseille Université.
11/11/2020	Algebra Seminar (online), Rijksuniversiteit Groningen.
29/10/2020	Quarantined Number Theory and Algebraic Geometry Seminar (online), Simon Fraser University.
22/09/2020	Arithmetic Geometry Seminar (online), Ohio State University.
03/06/2020	PhD colloquium (online), Universiteit Leiden.
14/04/2020	Nonlinear Algebra Seminar Online, MPI-MiS Leipzig.
26/02/2020	Heilbronn Number Theory Seminar, University of Bristol.
07/02/2020	Intercity Number Theory Seminar, Universiteit Leiden.
18/12/2019	Seminario di Natale, University of Milan.
11/12/2019	Number Theory Seminar, University of Copenhagen.
06/03/2019	Number/Representation Theory seminar, University of Toronto.
26/06/2018	Konstanz Women in Mathematics lecture series, University of Konstanz.
31/05/2018	Bernoullis Tafelrunde, Graduate Student Seminar, University of Basel.

Contributed talks and poster sessions

18/06/2018	<i>Concurrent exceptional curves on del Pezzo surfaces of degree one</i> (poster) Géométrie Algébrique en Liberté (GAeL XXVI), University of Strasbourg
21/03/2018	<i>Counting Curves</i> Seminar 'Tropical Geometry', Leiden University
11/09/2017	<i>Concurrent exceptional curves on del Pezzo surfaces of degree one</i> (poster) Diophantine problems (DIOP), University of Manchester
07/07/2017	<i>Concurrent exceptional curves on del Pezzo surfaces of degree one</i> XXX-èmes Journées Arithmétiques, Université de Caen Normandie
15/02/2017	<i>Introduction to local-global principles: the Hasse principle and weak approximation</i> Seminar 'Obstructions to local-global principles', Leiden University
02/11/2016	<i>Isogenies</i> Seminar 'Good reduction of Abelian Varieties', University of Amsterdam
23/06/2014	<i>Concurrent exceptional curves on del Pezzo surfaces of degree one</i> ALGANT master theses defense, Leiden University

Schools, seminars, conferences

June 2021	Summer School "Polynomial Methods" (Online), Hausdorff Research Institute, Bonn
June 2021	Workshop on Software and Applications of Numerical Nonlinear Algebra (Online), MPI Leipzig
May 2021	Swinnerton-Dyer Memorial conference (Online), Isaac Newton Institute, Cambridge
September 2020	Modern Breakthroughs in Diophantine Problems (Online), Banff, Canada
April 2020	Western Algebraic Geometry Online, virtual edition of WAGS
March 2020	Arizona Winter School on Nonabelian Chabauty, University of Arizona
August 2019	Women in Numbers Europe 3, Rennes, France
April-June 2019	Trimester: À la redécouverte des points rationnels, Institut Henri Poincaré, Paris
2018/2019	Algebraic Statistics Seminar, Leiden University (co-organizer)
July 2018	Homotopy Theory and Arithmetic Geometry: Motivic and Diophantine Aspects, Imperial College London
July 2018	Rational Points on Schiermonnikoog, The Netherlands
June 2018	Géométrie Algébrique en Liberté (GAeL XXVI), University of Strasbourg
Spring 2018	Tropical Geometry (co-organizer), Leiden University
Nov 2017	Algebraic Geometry with Fancy Coefficients, Université de Caen Normandie

Oct 2017	Autumn school: Topics in arithmetic and algebraic geometry, University of Mainz
Sept 2017	Diophantine problems (DIOP), University of Manchester
Fall 2017	Neron models, Leiden University
July 2017	XXX-èmes Journées Arithmétiques , Université de Caen Normandie
15/05/2017	Getaltheorie in het vlakke land / Arithmetique en plat pays, University of Leuven
Spring 2017	Obstructions to local-global principles (co-organizer), Leiden University
31/01/2017	Mini-workshop on arithmetic and moduli of K3 surfaces, University of Amsterdam
09/12/2016	11th Belgian-Dutch Algebraic Geometry Day
Fall 2016	Good reduction of Abelian Varieties, University of Amsterdam
5-6 Feb 2016	Nationale Wiskunde Dagen 2016
2016 - 2020	DIAMANT symposium, twice a year, The Netherlands
	Algebra, geometry and number theory seminar, Leiden University
	Intercity Seminar, several universities in The Netherlands
	Dutch Mathematical Congress (NMC), yearly event in The Netherlands
	PhD colloquium, Leiden University (co-organizer)
Ongoing	Nonlinear Algebra Seminar, MPI MiS Leipzig

Organized events

- **Seminars** at Leiden University:
 - Obstructions to local-global principles (Spring 2017)
 - Tropical Geometry (Spring 2018)
 - Algebraic Statistics Seminar (Fall 2018 – Spring 2019)
 - PhD Colloquium (ongoing, Fall 2016 – Spring 2020)
- **Workshop** *Show your worth: bluffing without a blush*, for the European Women in Mathematics - Netherlands network, November 2018.
- Second round of the **Nederlandse Wiskunde Olympiade** (2017 – 2019), annual Dutch mathematics competition for high school students, hosted at Leiden University.

Skills

Languages: **Dutch** (first language), **English** (fluent), **Italian** (intermediate), **German** (intermediate), **French** (basic)

Software: Magma, Sage, Oscar, Mathematica, Macaulay2