Boaz Moerman

PhD student

- Born in Nieuwegein, the Netherlands on April 21st 1998
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About Me ———

I am doing a PhD studying special subsets of rational points on algebraic varieties. These points, called $\mathcal{M}$-points generalize integral, Campana, and Darmon points. Currently I am working on adelic approximation for $\mathcal{M}$-points as well as an analogue for Manin's conjecture for such points, particularly on toric varieties. Alongside this, I am working on connections between stacks and such points.

Employment

2021 – 2025	**PhD**	Utrecht University

Currently ongoing thesis in arithmetic geometry, with emphasis on Campana points and toric varieties. Advisor: Dr. M. Pieropan

2017 – 2021	**Tutorial assistant**	Radboud University

Taught and graded students in 10 courses

Education

2019 – 2021	**Master in Mathematics, cum laude**	Radboud University

Thesis: *Genus 2 fibrations*, Advisor: Prof. Dr. B. Moonen

2017 – 2019	**Honours program**	Radboud University

Two year extracurricular program of 48 ECTS
First year project: wrote research proposal for planetesimal formation. Joint with J. de Kleuver, J. Nieuwveld, C. ten Dam
Second year project: greatly extended bachelor thesis (see below)

2016 – 2019	**Bachelor in Mathematics, cum laude**	Radboud University

Thesis: *Eisenstein series and periods*, Advisor: Prof. Dr. W. Zudilin. Expanded on during my masters program and published as *L-values for conductor* 32.

Publications

2025	**Generalized Campana points of bounded height**	

In preparation

2024	**Generalized Campana points and adelic approximation on toric varieties**	

Preprint
arXiv:2407.03048

2022	**L-values for conductor 32**	

Journal of Number theory
DOI: 10.1016/j.jnt.2021.09.013, ISSN: 0022-314X

Research visits

09/2024	**Visit Dr. V. Mitankin**	Bulgarian Academy of Sciences

Visit to discuss approximation properties for M-points and the associated Brauer-Manin obstruction, 9 September – 13 September

02/2024	**Workshop Campana points on toric varieties II**	University of Bristol

Small scale meeting to discuss counting Campana points on toric varieties, 19 February – 23 February

04/2019	**Visit Dr. M. Neururer**	TU Darmstadt

For discussing bachelor thesis (for honours program), 1 April – 5 April

03/2019	**Visit Dr. F. Brunault (and R. Pengo)**	ENS Lyon

For discussing bachelor thesis (for honours program), 21 March – 27 March

Research talks given

11/2024	**Oberseminar Diophantische Geometrie (online)**	Georg-August Universitat Göttingen, Germany

M-points and adelic approximation on toric varieties

10/2024	**Intercity number theory seminar**	Leiden University, Leiden, the Netherlands

M-points and adelic approximation on toric varieties

09/2024	**ICMS seminar**	Bulgarian Academy of Sciences, Sofia, Bulgaria

Generalized integral points and strong approximation

07/2024	**The Mordell conjecture 100 years later**	MIT, Cambridge, United States

Generalized Campana points and adelic approximation

04/2024	**Campana points seminar**	Utrecht University

M-approximation on toric varieties

04/2024	**Campana points seminar**	Utrecht University

M-points

11/2023	**Junior AG day**	Utrecht University

Generalized integral points and strong approximation

08/2023	**GQT school and colloquium**	Groesbeek, the Netherlands

Adelic approximation of generalized integral points

Boaz Moerman

PhD student

06/2023	**Journées Arithmétiques**	Université de Lorraine, Nancy, France
	Approximation for generalized Campana points	
06/2023	**Geometric and Arithmetic Frontiers of Orbifolds II: Arithmetic and hyperbolicity**	Université de Strasbourg
	Approximation for generalized Campana points	
04/2023	**DIAMANT symposium**	Utrecht
	Approximation for generalized Campana points on projective space	
03/2023	**LENT seminar**	Utrecht University
	Approximation for generalized Campana points on toric varieties	

Posters presented

11/2024	**Instructional workshop on rational points**	Groningen, the Netherlands
	M-points and adelic approximation	
06/2024	**GAeL XXXI**	Turin, Italy
	M-points and adelic approximation	
03/2024	**Enumerative Geometry and Arithmetic**	Lorentz Center, Leiden
	M-points and adelic approximation	

Seminars organized

05/2024	**Gong show**	Utrecht University
	Series of lighting talks by PhD students at the Utrecht Geometry Centre	

Learning seminar talks given

11/2024	**Learning seminar on log stacks**	Utrecht University
	Log schemes 1	
06/2024	**Learning seminar on stacks**	Online
	Deligne-Mumford stacks and examples	
03/2024	**Rational points consortium**	Utrecht University
	Arakelov theory: arithmetic curves	
02/2024	**Campana points seminar**	Utrecht University
	Darmon points and root stacks	
09/2022	**Algebraic Geometry seminar**	Utrecht University
	Weak approximation and the Hilbert property for Campana points	
02/2022	**Algebraic Geometry seminar**	Utrecht University
	Cox coordinates for toric varieties	
11/2021	**Mazur seminar**	Utrecht University
	Jacobians and criteria for the rank	
10/2021	**Circle method seminar**	Online
	Introduction to the Circle method and Warings problem	

Teaching experience

Teaching assistant

Summer/Fall 2024	Commutative Algebra	Utrecht University
Spring 2024	Probability Theory	Utrecht University
Summer/Fall 2023	Commutative Algebra	Utrecht University
Spring 2023	Probability Theory	Utrecht University
Winter 2023	Analyis	Utrecht University
Summer/Fall 2022	Commutative Algebra	Utrecht University
Winter 2022	Analysis	Utrecht University
Summer 2021	Linear Algebra and Infinitesimal Calculus 1	Utrecht University
Winter/Spring 2021	Complex Analysis	Radboud University
Summer/Fall 2020	Analysis 2	Radboud University
Spring 2020	Elementary Number Theory	Radboud University
Winter 2020	Introduction to Fourier Theory	Radboud University
Summer/Fall 2019	Calculus A	Radboud Universiry
Winter/Spring 2019	Topology	Radboud University
Summer/Fall 2018	Analysis 2	Radboud University
Spring 2018	Linear Algebra B	Radboud University
Winter 2018	Famous Problems in Mathematics	Radboud University
Fall 2017	Kepler and Newton in Historical Perspective	Radboud University

Boaz Moerman

PhD student

Conferences attended

11/2024	**Instructional workshop on rational points**	Groningen, the Netherlands
	Link to site	
07/2024	**The Mordell conjecture 100 years later**	MIT, Cambridge, United States
	Link to site	
06/2024	**GAeL XXXI**	Turin, Italy
	Link to site	
04/2024	**Diamant symposium**	Utrecht, the Netherlands
03/2024	**Enumerative Geometry and Arithmetic**	Lorentz Center, Leiden, the Netherlands
	Link to site	
11/2023	**Diamant symposium**	Eindhoven, the Netherands
08/2023	**GQT school and colloquium**	Groesbeek, the Netherlands
	School and conference on geometry and topology.	
08/2023	**ENTR23**	Bielefeld University
	Link to site	
06/2023	**Journées Arithmétiques**	Université de Lorraine, Nancy, France
	Link to site	
06/2023	**Geometric and Arithmetic Frontiers of Orbifolds II: Arithmetic and hyperbolicity**	Université de Strasbourg, France
	Link to site	
05/2023	**An Expedition into Arithmetic Geometry**	Lorentz Center, Leiden, the Netherlands
	Link to site	
04/2023	**Diamant symposium**	Utrecht, the Netherlands
03/2023	**FRACASSO**	Université de Bordeaux, France
	Workshop on rationally connected varieties. *Link to site*	
02/2023	**SAGA**	CIRM, Marseille, France
	Conference on arithmetic geometry. *Link to site*	
02/2023	**intro to SAGA**	CIRM, Marseille, France
	Winter school on arithmetic geometry. *Link to site*	
11/2022	**DIAMANT symposium**	Leiden, the Netherlands
08/2022	**GQT school and colloquium**	Zeist, the Netherlands
	School and conference on geometry and topology.	
07/2022	**Meeting on GDR singularities**	Aussois, France
	Conference on singularities of algebraic varieties. *Link to site*	
06/2022	**Geometric and Arithmetic Frontiers of Orbifolds**	UQAM, Montreal, Canada
	Workshop on orbifolds and stacks. *Link to site*	
04/2022	**Rational Points on Higher-Dimensional Varieties**	ICMS, Edinburgh, Scotland
	Conference on Diophantine geometry. *Link to site*	
04/2022	**DIAMANT symposium**	Utrecht, the Netherlands
11/2021	**DIAMANT symposium**	Utrecht, the Netherlands

Seminars attended

11/2022 - present	LENT seminar	Utrecht University
10/2021 - present	Algebraic / Arithmetic Geometry Seminar	Utrecht University
01/2025	Rational points consortium	Leiden University
11/2024 - 1/2025	Log Stacks seminar	Utrecht University/Leiden University
12/2024	Flatland Arithmetic	Utrecht University
12/2024	Rational points consortium	Utrecht University
10/2024	Belgian-Dutch Algebraic Geometry Seminar	University of Antwerp, Belgium
10/2024	Intercity number theory seminar	Leiden University
06/2024	Rational points consortium	Utrecht University
06/2024	Intercity number theory seminar	Utrecht University
05/2024– 06/2024	Learning seminar on stacks	Online
05/2024	Rational points consortium	Leiden University
05/2024	Young KWG day	Utrecht University
05/2024	Intercity number theory seminar	University of Groningen
04/2024	Belgian-Dutch AG day	Utrecht University
04/2024	Rational points consortium	University of Groningen
04/2024	Campana points seminar	Utrecht University

Boaz Moerman

PhD student

03/2024	Rational points consortium	Utrecht University
02/2024	Campana points seminar	Utrecht University
02/2024	Flatland Arithmetic	KU Leuven
01/2024	Rational points consortium	Leiden University
12/2023	Intercity number theory seminar	University of Amsterdam
12/2023	Rational points consortium	University of Groningen
11/2023	Intercity number theory seminar	Leiden University
11/2023	Junior AG day	Utrecht University
11/2023	Rational points consortium	Utrecht University
10/2023	Belgian-Dutch Algebraic Geometry Seminar	Leiden University
10/2023	Rational points consortium	Utrecht University
09/2023	Intercity number theory seminar	Utrecht University
09/2023– 12/2023	Seminar on the conjectures of Campana, Lang and Vojta	Radboud University
09/2023	Rational points consortium	Utrecht University
06/2023	Junior AG day	University of Amsterdam
03/2023	Belgian-Dutch AG day	Radboud University
03/2023	EWM meeting	Utrecht University
01/2023	Junior AG day	Radboud University
12/2022	Intercity Geometry seminar	Utrecht University
11/2022	Intercity Geometry seminar	Leiden University
10/2022	Intercity number theory seminar	Leiden University
10/2022	Intercity Geometry seminar	Radboud University
10/2022	Junior AG day	Leiden University
10/2022	Intercity Geometry seminar	University of Amsterdam
09/2022	Belgian-Dutch Algebraic Geometry Seminar	KU Leuven, Belgium
09/2022	Getaltheorie in het vlakke land	Utrecht University
09/2022	EWM meeting	Vrije Universiteit Amsterdam
09/2022	Curves over finite fields and arithmetic of K3 surfaces	University of Groningen
05/2022	Intercity number theory seminar	Utrecht University
12/2021	Junior AG day	Online
11/2021	Intercity number theory seminar	Leiden University
10/2021	Intercity number theory seminar	Leiden University