

Adam Topaz

Curriculum Vitae

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Mathematical Institute
University of Oxford
Andrew Wiles Building
Radcliffe Observatory Quarter
Woodstock Road
Oxford OX2 6GG
United Kingdom

topaz[at]maths[dot]ox[dot]ac[dot]uk
<http://adamtopaz.com>

Personal

- **Full Name:** Adam Topaz.
- **Date of Birth:** Nov. 12th, 1986.
- **Research Interests:** Arithmetic/Algebraic geometry, Galois theory and anabelian geometry, algebraic cycles, valuation theory, model theory of fields.

Employment

- **Fall 2016 – present:** Mathematical Institute, University of Oxford.
 - Postdoctoral Research Assistant – EPSRC Programme Grant Symmetries and Correspondences.
- **Fall 2013 – Summer 2016:** University of California, Berkeley.
 - National Science Foundation Postdoctoral Fellow. **Supervisor:** Thomas Scanlon.
- **Spring 2014:** Mathematical Sciences Research Institute.
 - MSRI Postdoc – MSRI semester on Model Theory, Arithmetic Geometry and Number Theory.

Education

- **2008-2013:** University of Pennsylvania – Philadelphia, PA. USA
 - Ph.D. in mathematics (May 2013).
 - **Thesis title:** *Commuting-liftable subgroups of Galois groups.*
 - **Advisor:** Florian Pop.

- **2004-2008:** Davidson College – Davidson, NC. USA
 - BS. in mathematics (May 2008): *magna cum laude* with high honors in mathematics.
 - **Honors Thesis:** *Galois Module Structure of Square Classes of Fields*.
 - **Advisor:** John Swallow.

Awards and Honors

- NSF Mathematical science postdoctoral research fellowship (2013-2016).
- Carlitz-Zippen Prize for outstanding Ph.D. Thesis – University of Pennsylvania (May 2013).
- Benjamin Franklin Fellowship – University of Pennsylvania (2008 - 2013).
- High Honors in Mathematics – Davidson College (May 2008).
- Phi Beta Kappa – Davidson College (May 2008).
- Barry M. Goldwater Scholar – Davidson College (2007-2008).
- William G. McGavock Mathematics Award – Davidson College (2008).

Publications in Journals and Refereed Proceedings

1. *Reconstructing Function Fields from Rational Quotients of Mod- ℓ Galois Groups*
Math. Annalen (2016) 366 (1), Pg. 337-385.
2. *Abelian-by-Central Galois Groups of Fields II: Definability of Inertia/Decomposition Groups*
Israel J. Math. (2016) 215 (2), Pg. 713-748.
3. *Abelian-by-Central Galois Groups of Fields I: a formal description*
Trans. Amer. Math. Soc. (2016, ahead of print). Available at <http://arxiv.org/abs/1310.5613>.
4. *On the Nature of Base Fields*
An appendix to *On The Minimized Decomposition Theory of Valuations* by F. Pop (2015).
Bull. Math. Soc. Sci. Math. Roumanie. Tome 58(106) No. 3. Pg. 331-357.
5. *Commuting-Liftable Subgroups of Galois Groups II*
J. reine angew. Math. (2015, ahead of print). Available at <http://arxiv.org/abs/1208.0583>.
6. *Galois Module Structure of \mathbb{Z}/ℓ^n -Classes of Fields* – with J. Mináč and J. Swallow
Bull. London Math. Soc. (2014) 46 (1). Pg. 143-154.
7. *Detecting Valuations Using Small Galois Groups*
In *Valuation Theory in Interaction*, EMS Series of Congress Reports (2014). Pg. 566-578
Eds: Campillo, Kuhlmann, Teissier.

Preprints and Manuscripts

1. *Four-fold Massey products in Galois cohomology* – with P. Guillot, J. Mináč and D. T. Nguyễn.
With an Appendix by O. Wittenberg.
Preprint (2016). Available at <https://arxiv.org/abs/1610.05748>.
2. *The Galois Action on Geometric Lattices and the Mod- ℓ I/OM*
Preprint (2015). Available at <http://arxiv.org/abs/1510.08836>. Submitted.

Other Publications

1. *On Milnor K -groups of Function Fields*
In Oberwolfach Reports – Valuation theory (2014).
2. *Pro- ℓ Galois Groups and Valuations*
In Oberwolfach Reports – Arithmetic of Fields (2013).
3. *Commuting-Liftable Subgroups of Galois Groups*
Ph.D. Thesis – University of Pennsylvania (2013).
4. *Almost-Commuting-Liftable Subgroups of Galois Groups*
Available at <http://arxiv.org/abs/1202.1786> (2012).

Upcoming Conferences

- **BIRS Workshop: Nilpotent Fundamental Groups**
 - **Organizers:** Florian Pop, Ján Mináč, Kirsten Wickelgren, Adam Topaz
 - **Date:** June, 2017.

Teaching Experience

- **University of California, Berkeley** – Berkeley, CA:
 - Math 114 – Second-Semester Abstract Algebra – Instructor – Fall 2015.
 - Math 250B – Second-Semester Graduate-Level Algebra – Instructor – Spring 2015.
 - Math 254A – Graduate-Level Number Theory – Instructor – Fall 2014.
 - Math 113 – Abstract Algebra – Instructor – Fall 2013.
 - Sample teaching evaluations available upon request.*
- **University of Pennsylvania** – Philadelphia, PA:
 - Math 312 – Linear Algebra – Grader – Fall 2009.
 - Math 103 – Introduction to Calculus – Teaching Assistant (4 sections) – Spring 2010.
 - Math 502 – Abstract Algebra I (master’s level) – Teaching Assistant (2 sections) – Fall 2010.
 - Math 503 – Abstract Algebra II (master’s level) – Teaching Assistant (2 sections) – Spring 2011.
 - Math 312 – Linear Algebra – Instructor – Summer 2012.
 - Math 602 – Abstract Algebra I (graduate level) – Grader – Fall 2012.
 - Math 603 – Abstract Algebra II (graduate level) – Grader – Spring 2013.

Selected Research Talks

1. “On the Ihara/Oda-Matsumoto Conjecture.” Algebra Seminar – University of Western Ontario – London, Ontario (April, 2016).
2. “On Mod- ℓ Anabelian Geometry.” Algebra and Number Theory Seminar – University of California, Santa Cruz (Oct. 2015).
3. “On Mod- ℓ Birational Anabelian Geometry.” Algebraic Geometry Seminar – University of Chicago (May 2015).

4. “On Mod- ℓ Birational Anabelian Geometry.” Algebra Seminar – University of Western Ontario – London, Ontario (April 2015).
5. “On Milnor K-groups of Function Fields.” Workshop on Valuation Theory – Oberwolfach (Oct. 2014).
6. “Towards a \mathbb{Z}/ℓ analogue of Bogomolov’s program in birational anabelian geometry” – Galois Seminar – University of Pennsylvania (April 2014).
7. “Towards a Mod- ℓ Analogue of Bogomolov’s Program in Anabelian Geometry” MSRI Seminar – MSRI (April 2014).
8. “Some recent developments in anabelian geometry” MSRI Postdoc Seminar – MSRI (March 2014).
9. “Pro- ℓ Galois Groups and Valuations” Arithmetic of Fields – Oberwolfach (June 2013).
10. “On the connection between valuation theory and Galois theory.” Algebra Seminar – Wesleyan University (Feb. 2013).
11. “Galois module structure of Kummer theory and automatic realizations.” Galois Seminar – University of Pennsylvania (Nov. 2012).
12. “Valuations controlling Galois groups and vice-versa.” Galois Seminar – University of Pennsylvania (Oct. 2012).
13. “The remains of valuations in pro- ℓ Galois groups.” Field Arithmetic Seminar – Tel-Aviv University, Israel (Dec. 2011).
14. “Detecting valuations in small Galois groups” (2 talks). Galois Seminar – University of Pennsylvania (Oct./Nov. 2011).
15. “ (\mathbb{Z}/ℓ) commuting-liftable-pairs in Galois groups.” Field Arithmetic Seminar – HIM in Bonn, Germany (July 2011).
16. “Detecting valuations in very small Galois groups.” Workshop on Valuation Theory in Positive Characteristic – Şirince, Turkey (June 2011).
17. “On Bogomolov’s conjecture in Birational Anabelian Geometry” (2 talks). Galois Seminar – University of Pennsylvania (Nov. 2010).
18. “Quotients of Galois groups and Galois cohomology” (2 talks). Galois Seminar – University of Pennsylvania (Oct./Nov. 2009).
19. “Galois module structure of square classes of fields.” Algebra Seminar – University of Western Ontario – London, Ontario (April 2008).

Selected Conferences Attended

- Non-Abelian Fundamental Groups in Arithmetic Geometry (INI NAG Programme) – Cambridge University – Cambridge, UK (Summer 2009).
- Joint MSJ/RIMS Conference – Development of Galois-Teichmüller Theory and Anabelian Geometry – RIMS, Kyoto University – Kyoto, Japan (Fall 2010).
- The 10th Colloquiumfest – Boğaziçi University – Istanbul, Turkey (Summer 2011).
- Workshop on Valuation Theory in Positive Characteristic – Şirince, Turkey (Summer 2011).
- Arizona Winter School 2012: Ramification and Geometry – Tucson, Arizona (Feb. 2012).

- Clay Mathematics Institute Summer School 2012: The Resolution of Singular Algebraic Varieties – Obergurgl, Austria (June 2012).
- Oberwolfach Workshop on Arithmetic of Fields – Oberwolfach, Germany (June 2013).
- MSRI Semester on Model Theory, Arithmetic Geometry and Number Theory – MSRI (Spring 2014).
- Oberwolfach Workshop on Valuation Theory – Oberwolfach, Germany (Oct. 2014).
- AMS Summer Institute in Algebraic Geometry – Salt Lake City, Utah (July 2015).
- Interuniversal Teichmüller Theory Summit – RIMS, Kyoto University – Kyoto, Japan (July 2016).

Service Activities

- Referee for: Tans. Amer. Math. Soc.; Ann. of Pure and Applied Logic; Math. Nachrichten.
- Supervisor of Undergraduate honors theses – University of California, Berkeley (Fall 2015, Spring 2016).
- Speaker on Berkeley’s Mathematics Undergraduate Students Association graduate school panel (Sept. 2013).
- Compiler of Oberwolfach Reports – Oberwolfach workshop on Arithmetic of Fields (June 2013).