

Alessio Borzì

Curriculum vitae

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(Last updated on January 15, 2024)

Employment

10/07/2023– **Postdoctoral researcher**, *Max-Planck-Institut für Mathematik in den Naturwissenschaften*, Leipzig, Germany.

Education

30/09/2019– **PhD in Mathematics**, *University of Warwick*, Coventry, United Kingdom.

Advisor: [Diane Maclagan](#)

18/12/2020 **Diploma of Scuola Superiore di Catania**, *Scuola Superiore di Catania*, Catania, Italy, *Summa cum laude*.

Advisor: [Ivan Martino](#), Opponent: [Alicia Dickenstein](#)

29/07/2019 **Master's degree in Mathematics**, *Università di Catania*, Catania, Italy, *Summa cum laude*.

Advisor: [Marco D'Anna](#)

20/07/2017 **Bachelor's degree in Mathematics**, *Università di Catania*, Catania, Italy, *Summa cum laude*.

Advisor: [Marco D'Anna](#)

Publications and Preprints

1. Borzì, A. A characterization of the Arf property for quadratic quotients of the Rees algebra. *J. Algebra Appl.* **19**, 7 (2020), 2050127, 14.
2. Borzì, A. Patterns on the numerical duplication by their admissibility degree. In *Numerical semigroups*, vol. 40 of *Springer INdAM Ser.* Springer, Cham, 2020, pp. 9–25.
3. Borzì, A., and D'Alì, A. Graded algebras with cyclotomic Hilbert series. *J. Pure Appl. Algebra* **225**, 12 (2021), Paper No. 106764, 9.
4. Borzì, A., Herrera-Poyatos, A., and Moree, P. Cyclotomic numerical semigroup polynomials with at most two irreducible factors. *Semigroup Forum* **103**, 3 (2021), 812–828.
5. Borzì, A. Weierstrass sets on finite graphs. *Electron. J. Combin.* **29**, 1 (2022), Paper No. 1.4, 13.
6. Borzì, A., Chen, X., Motwani, H. J., Venturello, L., and Vodička, M. The leading coefficient of Lascoux polynomials. *Discrete Math.* **346**, 2 (2023), Paper No. 113217.

7. Borzì, A., and Martino, I. Set of independencies and Tutte polynomial of matroids over a domain. **arXiv preprint** [arXiv:1909.00332](#) (2019).
8. Borzì, A. Tropical computations for toric intersection theory in Macaulay2. **arXiv preprint** [arXiv:2209.13414](#) (2022).
9. Borzì, A., and Schleis, V. Linear degenerate tropical flag varieties. **arXiv preprint** [arXiv:2308.04193](#) (2023).

Awards

- 21/12/2022 [Angelo Marcello Anile Award](#), *Best master thesis in mathematics and computer science at the University of Catania*
- 09/2014 [Scuola Superiore di Catania fellowship](#), *Awarded to the top 10 candidate students in a scientific field at the University of Catania*

Selected Talks

- 25/10/2023 [Cyclotomic Numerical Semigroups and Graded Algebras](#), (virtually at) University of York, UK
- 19/04/2023 [Tropical Weierstrass Semigroups](#), University of Catania, Italy
- 17/06/2022 [Cyclotomic Numerical Semigroups and Graded Algebras](#), *International Meeting on Numerical Semigroups (IMNS)*, Roma, Italy
- 17/03/2022 [Weierstrass sets on finite graphs](#), *Online Algebraic Geometry Seminar*, (virtually at) Nottingham University, UK
- 18/11/2021 Birational geometry of blow-ups of \mathbb{P}^2 , *Oberseminar Geometrie*, Universität Tübingen, Germany
- 01/11/2021 [Tropical moduli spaces and toric embeddings](#), $\overline{M}_{0,n}$ seminar, (virtually at) University of Warwick, United Kingdom
- 22/04/2021 [Graded algebras with cyclotomic Hilbert series](#), *Graduate student meeting on Applied Algebra and Combinatorics*, (virtually at) Københavns Universitet, Denmark
- 04/02/2021 Tropical methods in toric intersection theory, *Oberseminar Geometrie*, (virtually at) Universität Tübingen, Germany
- 20/11/2019 [Cyclotomic Numerical Semigroups](#), *Postgraduate Seminar*, University of Warwick, United Kingdom
- 17/07/2019 [Face poset and Grothendieck-Tutte polynomial of matroids over a domain](#), *Algebra meets combinatorics in Neuchâtel*, Université de Neuchâtel, Switzerland
- 25/03/2019 Arf property on quadratic quotients of the Rees algebra, *Problem solving seminar*, Stockholm University, Sweden
- 04/09/2018 [A characterization of the Arf property for quadratic quotients of the Rees algebra](#), *International Meeting on Numerical Semigroups (IMNS)*, Cortona, Italy

Conferences

- 13-15/11/2023 [Workshop on Geometry and Machine Learning](#), MPI MiS Leipzig, Germany
- 08-10/11/2023 [IMPRS Combo 1](#), MPI MiS Leipzig, Germany
- 16-18/10/2023 [Chow Lectures](#), MPI MiS Leipzig, Germany
- 03-07/07/2023 [GAeL XXX](#), University of Warwick, UK
- 12-16/06/2023 [PRAGMATIC 2023](#), University of Catania, Italy
- 27/06-01/07/2022 [Arrangements in Ticino](#), Locarno and Lugano, Switzerland
- 13-17/06/2022 [International meeting on numerical semigroups \(IMNS\) 2022](#), Rome, Italy
- 30/05-01/06/2022 [Göran Gustafsson lectures in mathematics 2022](#), Institute Mittag-Leffler, Sweden
- 23-27/05/2022 [Géométrie Algébrique en Liberté XXIX \(GAeL\)](#), Université Paris-Saclay, France
- 04-05/05/2022 [Tropical Mathematics & its Applications](#), Durham University, UK
- 28/02-04/03/2022 [OSCAR developer meeting - Tropical Geometry](#), TU Kaiserslautern, Germany
- 03/12/2021 [Applied Algebra and Geometry Research Network](#), Online Conference
- 24-30/10/2021 [Tropical Curves, Logarithmic Structures, and Enumerative Geometry](#), Oberwolfach, Germany
- 26/07-06/08/2021 [Combinatorial Algebraic Geometry](#), Online conference
- 28/06-02/07/2021 [Tropical Moduli Spaces](#), Online conference
- 21-23/04/2021 [Graduate student meeting on Applied Algebra and Combinatorics](#), Online conference
- 19/03/2021 [Birational Geometry and Thereabouts](#), Online conference
- 15/02-05/03/2021 [Research Encounters in Algebraic and Combinatorial Topics \(REACT\)](#), Online conference
- 08/06-24/07/2020 [Algebraic and Tropical Online Meetings \(ATOM\)](#), Online conference
- 01-05/06/2020 [Warwick Macaulay 2 Workshop](#), University of Warwick, United Kingdom
Online conference
- 06/12/2019 [Tropical Differential Algebra Workshop](#), Queen Mary University of London, United Kingdom
- 02-04/12/2019 [Einstein Workshop on Polytopes and Algebraic Geometry](#), Freie Universität Berlin, Germany
- 15-17/07/2019 [Algebra meets combinatorics in Neuchâtel](#), Université de Neuchâtel, Switzerland
- 03-07/09/2018 [International Meeting on Numerical Semigroups \(IMNS\)](#), Cortona, Italy
- 31/05-04/06/2021 [Encounter in Topology and Algebra \(ET'nA\)](#), Scuola Superiore di Catania, Italy

Teaching

- Winter 2022 **Teaching assistant**, for the course [MA453 Lie Algebras](#).
Taught by Andrew Macpherson, *University of Warwick*
- Fall 2021 **Teaching assistant**, for the course [MA131 Analysis I](#).
Taught by Daniel Ueltschi, *University of Warwick*
- Winter 2021 **Teaching assistant**, for the course [MA377 Rings and Modules](#).
Taught by Samir Siksek, *University of Warwick*
- Fall 2020 **Teaching assistant**, for the course [MA4L7 Algebraic Curves](#).
Taught by Diane Maclagan, *University of Warwick*

Research visits

- 29/10–28/11/2021 Research period at the Universität Tübingen (Germany) in the combinatorial algebraic geometry group, under the supervision of [Hannah Markwig](#).
- 07/03–05/06/2019 Research period at the KTH Royal Institute of Technology (Sweden) in the combinatorics group, under the supervision of [Ivan Martino](#).

Other professional activities

Member of the [Associazione Alumni Scuola Superiore di Catania](#).

Member of the [London Mathematical Society](#) (LMS).

Member of the [GNSAGA](#)

Referee for: European Journal of Combinatorics, Journal of Commutative Algebra, Australasian Journal of Combinatorics.

Outreach

- 02–03/10/2021 Speaker at the [Simposio Matematico RIMSE 2021](#).
- 19–22/04/2018 **Organizer** for the [Training Course for Mathematical Olympiad](#) (fourth edition) at the Scuola Superiore di Catania.
- 20–23/04/2017 **Organizer** for the [Training Course for Mathematical Olympiad](#) (third edition) at the Scuola Superiore di Catania.
- 22–24/04/2016 **Lecturer** for the [Training Course for Mathematical Olympiad](#) (second edition) at the Scuola Superiore di Catania.