Devlin Mallory

malloryd@umich.edu   `http://www-personal.umich.edu/~malloryd/`   (831) 234-5488

Interests: Singularities in algebraic geometry and commutative algebra, positivity of vector bundles, differential operators, jet schemes, Macaulay2.

EDUCATION

University of Michigan   Fall 2015 – Current
PhD Candidate (expected graduation Spring 2021)
Advisor: Mircea Mustață

University of California, Berkeley   Fall 2009 – Fall 2013
BA Pure Mathematics (honors), BA Physics

PAPERS

- D. Mallory. Bigness of the tangent bundle of del Pezzo surfaces and D-simplicity. To appear in *Algebra & Number Theory*. arXiv:2002.11010.
- D. Mallory. Minimal log discrepancies of determinantal varieties via jet schemes. *J. Pure Appl. Algebra*, 225(2):106497, 2021.
- D. Mallory. Triviality of arc closures and the local isomorphism problem. *J. Algebra*, 544:47–61, 2020.

TALKS

- "Bigness of the tangent bundle and differential properties of singularities," University of Utah Algebraic Geometry Seminar, October 2020.
- "D-simplicity in characteristic 0 and characteristic p," AMS Fall Eastern Sectional, Special Session on Algebraic Singularities in Arbitrary Characteristic, October 2020
- "D-simplicity in characteristic 0 and characteristic p," Differential Operators in Commutative Algebra Seminar, May 29 and June 5, 2020.
- "Triviality of jet closures and the local isomorphism problem," University of Michigan Commutative Algebra Seminar, October 2019.
- "Minimal log discrepancies of determinantal varieties via jet schemes," AMS Fall Central Sectional, AMS Contributed Paper Session on Algebra, Geometry and Lie Theory, September 2019.
- (poster presentation) "Arc closures and the local isomorphism problem," Midwest Algebraic Geometry Graduate Conference, March 2019.

TEACHING

- Fall 2020: Course co-coordinator, Math 105 (precalculus).
- Fall 2018: Instructor of record, Math 115 (calculus I).
- Winter 2018: Grader, Math 632 (algebraic geometry II).
- Fall 2017: Grader, Math 631 (algebraic geometry I).
- Winter 2016: Instructor of record, Math 105 (precalculus).
- Fall 2015: Instructor of record, Math 105 (precalculus).

Service

- Mentor, Directed reading program (for undergraduate math students), Summer 2020.
- Organizer, Student algebraic geometry seminar, Fall 2018–Winter 2021.
- Organizer, Seminar on singularities in algebraic geometry and commutative algebra, Fall 2018–Winter 2019.
- Organizer, Summer graduate student minicourse series, Summer 2018, Summer 2019, Summer 2020.

Awards and Fellowships

- University of Michigan Math Department Graduate Student Award, for "contributions to the scholarly life of the Mathematics department," May 2019.
- NSF Graduate Research Fellowship, 2015–2020.
- Dorothea Klumpke Roberts Prize in Mathematics, Department of Mathematics, UC Berkeley, May 2014.
- Honors in Mathematics, Department of Mathematics, UC Berkeley, December 2013.
- Highest Honors, Budapest Semesters in Mathematics, May 2013.
- Most Outstanding Presentation, Young Mathematicians Conference, Ohio State University, July 2012.
- Phi Beta Kappa, UC Berkeley Chapter, June 2012.