

Hans Parshall

Department of Mathematics
The Ohio State University
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Education

Ph.D. Mathematics, University of Georgia, August 2017.

Point configurations over finite fields.

Advisors: Neil Lyall and Ákos Magyar.

B.A. Mathematics, Humboldt State University, May 2011.

Positions

Zassenhaus Assistant Professor, The Ohio State University, August 2017 - present.

Research Interests

additive combinatorics, density Ramsey theory, number theory, Fourier analysis

Publications

1. "On the quotient set of the distance set"
(with Alex Iosevich and Doowon Koh)
preprint available at <https://arxiv.org/abs/1802.08297>
2. "Embedding distance graphs in finite field vector spaces"
(with Alex Iosevich)
preprint available at <https://arxiv.org/abs/1802.06460>
3. "Spherical configurations over finite fields"
(with Neil Lyall and Ákos Magyar)
preprint available at <http://hansparshall.com/pdf/scoff.pdf>
4. "Simplices over finite fields"
Proc. Amer. Math. Soc. 145 (2017), 2323-2334.
5. "Small gaps between configurations of prime polynomials"
J. Number Theory 162 (2016), 35-53.
6. "Primes represented by binary quadratic forms"
(with Pete L. Clark, Jacob Hicks, and Katherine Thompson)
Integers 13 (2013), A37.

Selected Talks

External

1. "Falconer-type problems over finite fields", Spring Mini Courses in Analysis and Geometry, Louisiana State University, Feb 2018.
2. "Distance sets in finite fields", West Coast Number Theory, Pacific Grove, Dec 2017.
3. "Three-term arithmetic progressions", Colloquium, California State University, Chico, Oct 2017.
4. "Three-term arithmetic progressions", Colloquium, Humboldt State University, Oct 2017.
5. "Spherical quadrilaterals over finite fields", Combinatorial and Additive Number Theory, CUNY Graduate Center, May 2017.
6. "Spherical configurations over finite fields", Joint Mathematics Meetings, Atlanta, Jan 2017.
7. "Spherical configurations in dense sets", Analysis Seminar, The Ohio State University, Nov 2016.
8. "Triangles and quadrilaterals over finite fields", Colloquium, Missouri State University, Nov 2016.
9. "Spherical configurations over finite fields", INTEGERS, University of West Georgia, Oct 2016.
10. "Long arithmetic progressions of twin primes", Gaps Between Primes and Analytic Number Theory, Summer Graduate School, MSRI, July 2015.
11. "Incidence geometry and problems of Erdős", guest lecture, Humboldt State University, Dec 2012.

Internal

The Ohio State University

1. "Euclidean Ramsey theory over finite fields", Welcome Seminar, Jan 2018.
2. "Distance sets in finite fields", Combinatorics Seminar, Nov 2017.
3. "Density Euclidean Ramsey theory", Ergodic and Combinatorial Number Theory Seminar, Nov 2017.

University of Georgia

1. "Small sumsets", Graduate Summer Conference, July 2017.
2. "Spherical configurations over finite fields", Number Theory Seminar, Nov 2016.
3. "Three types of Ramsey problems", Undergraduate Math Club, Sept 2016.
4. "Long arithmetic progressions of twin primes", Number Theory Seminar, Apr 2015.
5. "Ergodic methods in number theory", Graduate Student Seminar, Oct 2014.
6. "Bourgain-Katz-Tao without Balog-Szemerédi-Gowers", Arithmetic Combinatorics Seminar, Nov 2013.
7. "Szemerédi-Trotter via the polynomial method", Arithmetic Combinatorics Seminar, Feb 2013.

Humboldt State University

1. "Problems of coloring and density", Colloquium, Nov 2010.

Workshops

NSF-CBMS Conference on Additive Combinatorics, University of South Carolina, May 2018.
Spring Mini Courses in Analysis and Geometry, Louisiana State University, Feb 2018.
Ximera Workshops, The Ohio State University, July 2014, July 2015, and June 2017.
Introductory Workshop, Analytic Number Theory, MSRI, Feb 2017.
Introductory Workshop, Harmonic Analysis, MSRI, Jan 2017.
Gaps Between Primes and Analytic Number Theory, Summer Graduate School, MSRI, July 2015.
Summer School in Computational Number Theory, University of North Carolina, Greensboro, May 2015.
Algebraic Techniques for Combinatorial and Computational Geometry, IPAM, May 2014.

Fellowships & Awards

William Armor Wills Memorial Scholarship, University of Georgia, 2017.
Outstanding Teaching Assistant Award, University of Georgia, 2017.
Presidential Graduate Fellow, University of Georgia, 2011–2016.
Scientific Leadership Scholar, Humboldt State University, 2009–2011.
Robert S. Chambers Mathematics Scholarship, Humboldt State University, 2010.
Harry S. Kieval Mathematics Scholarship, Humboldt State University, 2009.
Waldemar J. Trjitzinsky Award, American Mathematical Society, 2008.
Harry S. Kieval Mathematics Transfer Scholarship, Humboldt State University, 2008.

Teaching Experience

The Ohio State University

Engineering Mathematics A (Calculus II): Fall 2017.
Foundations of Higher Mathematics: Spring 2018 ($\times 2$).

University of Georgia

Precalculus: Fall 2013, Spring 2015, Spring 2017 ($\times 2$).
Calculus I for Science and Engineering: Spring 2014, Fall 2014, Fall 2016.
Calculus II for Science and Engineering: Fall 2015.
Arithmetic and Problem Solving: Spring 2016.

Service & Outreach

The Ohio State University

Ximera Calculus II committee, Spring 2018.

University of Georgia

Graduate student ombudsman, Department of Mathematics, 2012–2017.

Co-organizer, Graduate Summer Program, Department of Mathematics, 2017.

Panelist, AWM Career Panel, April 2017.

Graduate student leader, “Primes and Cryptography”, MathCamp, June 2016.

Panelist, NSF RTG Professional Development Seminar, March 2016 and June 2016.

Organizer, Graduate Student Seminar, Department of Mathematics, Fall 2015.

Founding treasurer, Graduate Student Chapter of the AMS, 2014–2015.

Grader, UGA High School Math Tournament, Nov 2014.

Software Proficiency

Course management: Canvas, Desire2Learn, Moodle, Piazza.

Homework: MyMathLab, WebAssign, WeBWorK.

Languages: HTML, \LaTeX , Python.

Mathematics: Desmos, MATLAB, Sage.

References

Research

Alex Iosevich, Department of Mathematics, University of Rochester

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Neil Lyall, Department of Mathematics, University of Georgia

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Teaching

Joe Fu, Department of Mathematics, University of Georgia

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Lisa Townsley, Department of Mathematics, University of Georgia

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