Thao T. Do

Contact Information

MIT Department of Mathematics
Cambridge, MA
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Research Interests

Incidence geometry, combinatorial geometry, discrete and computational geometry, extremal combinatorics, additive combinatorics.

Education

Massachusetts Institute of Technology

Ph.D., Mathematics, 2014–now

- Advisor: Larry Guth

Stony Brook University

B.S., Mathematics, 2014

Honors and Awards

Ida M.Green Fellowship, MIT, 2015.

Levinson Fellowship, MIT, 2015-16.

Provost award and department award, Stony Brook University, 2014.

Honorable mention, Alice T. Schafer prize, 2013.

Silver medal, IMO, 2008.

Teaching and mentoring

Massachusetts Institute of Technology

Teaching Assistant

18.02 Multivariable Calculus, F17

18.03 Differential equation, S17.

18.821 Project lab in Maths, F16.

Mentor

Direct Reading Program, 2015 & 2017.

RSI, 2016, one student was Siemens Regional Semi-finalist and Regeneron Scholar.

PRIMES, 2015, three students were Siemens Regional Finalist.

Stony Brook University

Teaching Assistant

MAT125 Calculus I, F11.

Math and Science Summer Program

Co-founder and head mentor

Initiated a pseudo-research camp for high school students in Vietnam, 2016–now.

Publications and Preprints

T.Do, *Representation Complexity of Semi-algebraic Graphs*, preprint.
T.Do, *Zarankiewicz's problem for semi-algebraic hypergraphs*, submitted.
T. Do, *Extending Erdős-Beck theorem to higher dimensions*, submitted.
P. Demontingy, T. Do, A. Kulkarni, S. Miller, U. Varma, *A generalization of Fibonacci far-difference representations and Gaussian behavior*. Fibonacci Quarterly. Volume 52 (2014), no. 3, 247 – 273.
P. Demontingy, T. Do, A. Kulkarni, S. Miller, D. Moon, U. Varma, *Generalizing Zeckendorf's theorem to f-decompositions*. Journal of Number Theory. Volume 141(2014), 136 – 158.

T. Do, A. Kulkarni, S. Miller, D. Moon and J. Wellens, *Sums and differences of correlated random sets.* Journal of Number Theory. Volume 147(2015), 44 − 68.
T. Do, A. Kulkarni, S. Miller, D. Moon, J. Wellens and J. Wilcox, *Sets characterized by missing sums and differences in dilating polytopes.* Journal of Number Theory. Volume 157 (2015), 123 − 153.
A. Carney, T. Do, J. Hallett, X. Huang, Y. Jiang, Q. Sun, B. L. Weiss, E. Wells, Y. Xia and M. Zieve. *Diophantine Equations Involving Dickson Polynomials.* Preprint.
T. Do, J. Hallett, Y. Jiang, B. Weiss, E. Wells, and M. Zieve. *On the Diophantine Equation $f(x) = g(y)$, I: The irreducible case.* Preprint.
T. Do, M. Zieve. *On a Question of Lyubich and Minsky on Laminations in Complex Dynamics.* Preprint
T. Do, K. Kallal, M.Lipman F. Wang, M. Zieve. *Equal compositions of rational functions.* Preprint.

Recent Talks

MIT combinatorics seminar: *Zarankiewicz's problem for semi-algebraic hypergraphs.* April 2017.
SPAMS seminar (for applied math grad students) at MIT: *Polynomial method in combinatorics.* April 2016.
SPAMS seminar at MIT: *Incidence geometry and applications,* Oct 2015.
Garden State Undergraduate Math Conference: *Correlated MSTD sets*, April 2014.
Hudson River conference for undergraduates:*A generalization of Fibonacci far-difference representations and Gaussion behavior*, Oct 2013.
AMS sectional meeting at Temple University: *A generalization of Fibonacci far-difference representations and Gaussion behavior*, Oct 2013.
Young Math Conference: *Correlated MSTD sets* and *A generalization of Fibonacci far-difference representations and Gaussion behavior*, Aug 2013.

Programs attended

Summer grad school on Positivity Questions in Geometric Combinatorics, MSRI, Jul 2017.
Math Research Community workshop on Beyond Planarity: Crossing Numbers of Graphs, Utah, Jun 2017.
SMALL, Williams College, Jul-Aug 2013.
Women in Math program, IAS, May 2013.
REU, Univ of Michigan, Jul-Aug 2012.

Professional service

SPAMS seminar organizer.
Referee for Discrete & Comput Geo; Fibonacci Quarterly.