

Hanmeng (Harmony) Zhan

CONTACT INFORMATION

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RESEARCH INTERESTS EDUCATION

Algebraic Graph Theory, Quantum Walks

University of Waterloo, Waterloo, ON, Canada

- Ph.D. Student May 2014 - Present
Department of Combinatorics and Optimization, Faculty of Mathematics
Supervisor: Chris Godsil
- Master of Mathematics Sept 2012 - Apr 2014
Department of Combinatorics and Optimization, Faculty of Mathematics
Thesis: *Uniform Mixing on Cayley Graphs over \mathbb{Z}_3^d*
Supervisor: Chris Godsil
- Bachelor of Arts Jan 2010 - Aug 2012
Department of Economics, Faculty of Arts
Thesis: *Second-Price Auction with Resale*
Supervisor: Philip Curry

Xiamen University, Xiamen, Fujian, China

- Bachelor of Economics Sept 2008 - Jun 2014
Department of Statistics, Faculty of Economics
Thesis: *Multi-Player Multi-State Quantum Games*
Supervisor: Zhengming Qian

PUBLICATIONS

Journal Publications

1. G. Coutinho, C. Godsil, M. Shirazi, H. Zhan, *Equiangular Lines and Covers of the Complete Graph*. *Equiangular Lines and Covers of the Complete Graph*. Linear Algebra and its Applications (2016) 488: 264-283.
2. R. Alvir, S. Dever, B. Lovitz, J. Myer, C. Tamon, Y. Xu, H. Zhan. *Perfect State Transfer in Laplacian Quantum Walk*. Journal of Algebraic Combinatorics (2016) 43(4): 801-826.

Preprints

3. C. Godsil, H. Zhan, *Uniform Mixing on Cayley Graphs*. arXiv:1504.00721 (2015). Submitted.
4. C. Godsil, H. Zhan, *Discrete-Time Quantum Walks and Graph Structures*. arXiv: 1701.04474 (2017).

In Preparation

4. C. Godsil, H. Zhan, *Mixing Time of Quantum Walks*.

PRESENTATIONS

Conference Talks

1. *From Covers to Tight Frames*. In: AMS Sectional Meeting, College of Charleston, Charleston, SC, United States, March 10 - 12, 2017.
2. *Spectra of Discrete Quantum Walks*. In: CMS Summer Meeting, University of Alberta, Edmonton, AB, Canada, June 24 - 27, 2016.
3. *Lines and Covers of Complete Graphs 2*. In: Systems of Lines: Applications of Algebraic Combinatorics, Worcester Polytechnic Institute, Worcester, MA, United States, August 10 - 14, 2015.
4. *Uniform Mixing in Continuous-Time Quantum Walks*. In: Summer Combo, Saint Michael's College, Burlington, VT, United States, July 21, 2015.
5. *Uniform Mixing in Quantum Walks*. In: 22nd Ontario Combinatorics Workshop, York University, Toronto, ON, Canada, May 16 - 17, 2014.

Invited Talks

4. *Some Open Problems in Uniform Mixing*. In: Summer Research Program, Clarkson University, Potsdam, NY, United States, July 20, 2015.
5. *Uniform Mixing on Cayley Graphs*. In: Grad Seminar, University of Waterloo, Waterloo, ON, Canada, Oct 8, 2014.

WORKING EXPERIENCE

- Journal Reviewer
Discrete Mathematics, Linear Algebra and Its Applications
- Teaching Assistant
Algebraic Enumeration, Algebraic Graph Theory, Calculus, Coding Theory, Graph Theory, Introduction to Combinatorics, Linear Algebra, Portfolio Optimization Models, Special Topics in Mathematical Connections
- Research Assistant
Continuous and Discrete Quantum Walks, Uniform Mixing, Periodic Vertices

AWARDS AND DISTICTIONS

University of Waterloo

- Outstanding Achievement in Graduate Studies 2015
- Cotton Family Women in Mathematics Graduate Scholarship 2014, 2016, 2017
- Faculty of Arts Upper-Year Scholarship 2011-2012
- Robin K. Banks Scholarship 2011-2012
- Dean's Honours List 2011-2012

Xiamen University

- First-Class Scholarship 2009-2010