

Hanmeng (Harmony) Zhan

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RESEARCH INTERESTS Algebraic Graph Theory, Quantum Walks

EDUCATION **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).

In Preparation

4. C. Godsil, H. Zhan, *Discrete-Time Quantum Walks and Graph Structures.*
5. C. Godsil, H. Zhan, *Mixing Time of Quantum Walks.*

PRESENTATIONS **Conference Talks**

1. *Spectra of Discrete Quantum Walks*. In: CMS Summer Meeting, University of Alberta, Edmonton, AB, Canada, June 24 - 27, 2016.
2. *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.
3. *Uniform Mixing in Continuous-Time Quantum Walks*. In: Summer Combo, Saint Michael's College, Burlington, VT, United States, July 21, 2015.
4. *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

- Teaching Assistant 2012 – 2015
Graph Theory, Algebraic Enumeration, Coding Theory
Special Topics in Mathematical Connections, Portfolio Optimization Models,
Calculus for Honours Mathematics, Linear Algebra for Honours Mathematics
- Research Assistant 2014 – 2016
Continuous and Discrete Quantum Walks, Uniform Mixing, Periodic Vertices

AWARDS AND DISTINCTIONS

University of Waterloo

- Outstanding Achievement in Graduate Studies 2015
- Cotton Family Women in Mathematics Graduate Scholarship 2014, 2016
- 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