Chung Yin Amy Pang 彭頌賢

LaCIM, UQAM, CP 8888, Succ. Centre-ville, Montréal, Québec, H3C 3P8, Canada

amypang@lacim.ca

www.thales.math.uqam.ca/~amypang/

British citizen, Hong Kong permanent resident

Research Interests:

Symmetric functions and other combinatorial Hopf algebras, and their interaction with Markov chains.

Employment

2014-present	CRM-ISM postdoctoral fellow, Laboratoire de Combinatoire et d'Informatique Mathématiques (LaCIM), Université du Québec à Montréal (UQAM), Canada

Education

2014	PhD in Mathematics, Stanford University, USA (*Advisor: Persi Diaconis; dissertation title: Hopf Algebras and Markov Chains*)
2009	Certificate of Advanced Study in Mathematics ('Part III') with distinction, Trinity Hall, University of Cambridge, UK
2008	BA in Mathematics, Trinity Hall, University of Cambridge, UK

Publications

4   *Card-Shuffling via Convolutions of Projections on Combinatorial Hopf Algebras*, 27th Annual International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2015), 49-60, Discrete Math. Theor. Comput. Sci. Proc., Assoc. Discrete Math. Theor. Comput. Sci., Nancy, 2015

3   (with P. Diaconis, A. Ram) *Hopf Algebras and Markov Chains: Two Examples and a Theory*, J. Algebraic Combin., 39(3):527–585, 2014.

2   *A Hopf-power Markov chain on Compositions*, 25th Annual International Conference on Formal Power Series and Algebraic Combinatorics (FPSAC 2013), 499-510, Discrete Math. Theor. Comput. Sci. Proc., AS, Assoc. Discrete Math. Theor. Comput. Sci., Nancy, 2013

1   (with 27 others) *Supercharacters, Symmetric Functions in Noncommuting variables, and related Hopf Algebras*, Adv. Math. 229 (2012), no. 4, 2310–2337

Preprints

A Hopf-Algebraic Lift of the Down-up Markov Chain on Partitions to Permutations arxiv.org/abs/1508.01570

Hopf Algebras and Markov Chains arxiv.org/abs/1412.8221

Invited Talks

October 2015
(expected)
A Hopf-Algebraic Lift of the Down-Up Markov Chain on Partitions to Permutations, Special Session on Hopf Algebraic Combinatorics, AMS Sectional Meeting, Chicago, USA.

January 2015
September 2014
Card Shuffling and Convolutions of Projections on graded Hopf Algebras,
York University Applied Algebra Seminar
LaCIM Combinatorics Seminar

December 2014
Card Shuffling, Tree-Pruning and Convolutions of Projections on graded Hopf Algebras, CRM-ISM Probability Seminar

June 2014
January 2014
August 2013
March 2013
Card Shuffling and other Hopf-Power Markov Chains,
LaCIM Combinatorics Seminar
University of Michigan Combinatorics Seminar
University of Melbourne Algebra/Geometry/Topology Seminar
Loyola University Chicago Algebra and Combinatorics Seminar

February 2014
Markov Chains from Combinatorial Hopf Algebras, Cornell University Probability Seminar

Other Research Presentations

July 2015
Card-Shuffling via Convolutions of Projections on Combinatorial Hopf Algebras, 27th International Conference on Formal Power Series and Algebraic Combinatorics, Daejeon, South Korea.

March 2015
Card Shuffling and Markov Chains on Combinatorial Hopf Algebras, University of Ottawa Probability Seminar

January 2015
Card Shuffling and Convolutions of Projections on graded Hopf Algebras, Combinatorial Algebra meets Algebraic Combinatorics, Kingston, Canada.

July 2013
A Hopf-power Markov chain on Compositions (poster), 25th International Conference on Formal Power Series and Algebraic Combinatorics, Paris, France.

April 2012
Ribbon Characters, Garsia-Reutenauer idempotents and a Biased Amazing Matrix??, Stanford Student Probability and Related Fields Seminar

May 2011
Kolmogorov's Rock-Breaking and Related Walks on Species, Stanford Student Probability and Related Fields Seminar

Expository Presentations

March 2014
What is a Combinatorial Hopf Algebra? Stanford Graduate Student Colloquium

May 2011
Card Games and Crystals, Stanford Graduate Student Colloquium

April 2010	*The Art Gallery Problem*, Stanford University Mathematics Organisation Speaker Series
October 2009, March 2009	*Hopf Algebras and Representation Theory* Stanford Graduate Student Colloquium Cambridge Part III seminar

Teaching Experience

Instructor at McGill University: giving lectures, holding office hours, writing exams, coordinating 5 teaching assistants:

Autumn 2015	Math 141, Integral Calculus

Teaching Assistant at Stanford University: leading recitation sessions, holding office hours, grading exams:

Autumn 2013	Math 41A, Accelerated Differential Calculus
Spring 2013, Winter 2012, Autumn 2010	Math 51, Linear Algebra and Multivariable Calculus

Course Assistant at Stanford University: holding office hours, grading exams:

Autumn 2012	Math 19, Differential Calculus
Spring 2012	Math 110, Applied Number Theory and Field Theory
Winter 2011	Math 210B, Graduate Algebra
Spring 2010	Math 113, Linear Algebra and Matrix Theory
Autumn 2009	Math 120, Introduction to Abstract Algebra

Administrative Teaching Assistant at Stanford University: managing course registration, coordinating exam arrangements, liaising with homework graders, grading exams

Spring 2014	Math 51, Linear Algebra and Multivariable Calculus (200 students)

Teaching Assistant at Stanford University Mathematics Camp: holding one-on-one feedback sessions

2010, 2009	Program I, Abstract Algebra and Number Theory

Teaching Assistant at Enrichment Program for Young Mathematical Talents, Chinese University of Hong Kong: holding recitation sessions with other TAs

2007	Non-Euclidean Geometry

Conference and Workshop Participation

August 2015 (expected)	BIRS workshop on Positivity in Algebraic Combinatorics, Banff, Canada
June 2015	SageDays65, Chicago, USA
April 2015	SageDays67, Montreal, Canada

January 2013   Algebraic Groups and Representation Theory - a Conference in
                      Memory of Tonny A. Springer, Hong Kong

July 2012   24th International Conference on Formal Power Series and
                      Algebraic Combinatorics, Nagoya, Japan

2011, 2012, 2013   Bay Area Discrete Mathematics Days

Awards

2009   Parks Prize (for Part III mathematics), Trinity Hall, University of
                      Cambridge

Activities

2011 - 2013   Stanford Women in Math, co-organiser

2010 - 2011   Stanford Graduate Student Colloquium, co-organiser