Curriculum Vitae

Peter Tingley

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Education:

2008 Ph.D.	University of California, Berkeley, Mathematics (Advisor: Nicolai Reshetikhin. Thesis title: Some results on the crystal commutor and $\widehat{\mathfrak{sl}}_n$ crystals).
2002 M. Sc.	Carleton University, Canada (Advisor: Yuly Billig. Thesis title: An extension of the KdV hierarchy arising from Weyl algebra representations of toroidal Lie algebras).
2001 B. Math.	University of Waterloo, Canada.

Academic employment:

July 2009-	NSF postdoctoral fellow/CLE Moore Instructor. Massachusetts Institute of Technology.
2008-2009	Postdoctoral research fellow. University of Melbourne, Australia.

Teaching experience:

2010 and 2011	Recitation leader at MIT. Two sections of 20-25 first year calculus students, each meeting for 2 hours a week.
2005-2006	Full time 8^{th} grade math teacher.
Summer 2004	Instructor, University of California Berkeley. I taught math 54 (linear algebra) as the sole instructor, running all aspects of the course.
2003-2004	GSI (teaching assistant) for 3 semesters, U.C. Berkeley. Each semester I had two sections of 20-30 students which each met for 3 hours a week.

Scientific/Academic Honors and Grants:

July 2009	National Science foundation postdoctoral research fellowship (held at MIT).
May 2008	Herbert Alexander prize for an outstanding dissertation in pure mathematics (University of California, Berkeley).
May 2002	Senate medal for outstanding academic achievement (Carleton University, Canada).
2001-2002	NSERC PGS A, Canadian government post graduate scholarship.

Publications and Preprints:

Peer reviewed journal articles:

2011 1. Alistair Savage and Peter Tingley. Quiver grassmannians, quiver varieties and the preprojective algebra. PJM 251-2 (2011), 393–429. arXiv:0909.3746

2. Cedric Boutillier, Sevak Mkrtchyan, Nicolai Reshetikhin and Peter Tingley. Random skew plane partitions with a piecewise periodic back wall. To appear in Annales Henri Poincare. arXiv:0912.3968

2010 3. Arun Ram and Peter Tingley. Universal Verma modules and the Misra-Miwa Fock space. Int. J. Math. Math. Sci. 2010, Art. ID 326247, 19 pp. arXiv:1002.0558

4. Peter Tingley. Monomial crystals and partition crystals. SIGMA 6 (2010), 035, 8 pages. arXiv:0909.2242

5. Tingley, Peter. A formula for the R-matrix using a system of weight preserving endomorphisms. Represent. Theory 14 (2010), 435-445. arXiv:0711.4853

2009 6. Noah Snyder and Peter Tingley. The half twist for $U_q(\mathfrak{g})$ representations. Algebra & Number Theory. Vol. 3 (2009), No. 7, 809-834. arXiv:0810.0084

7. Joel Kamnitzer and Peter Tingley. The crystal commutor and Drinfeld's unitarized R-matrix. Journal of Algebraic Combinatorics. 29 Issue 3 (2009), 315-335. arXiv:0707.2248

8. Joel Kamnitzer and Peter Tingley. A definition of the crystal commutor using Kashiwara's involution. Journal of Algebraic Combinatorics, 29 Issue 2 (2009), 261-268. arXiv:math/0610952

2008 9. Peter Tingley. Three combinatorial models for $\widehat{\mathrm{sl}}_n$ crystals, with applications to cylindric plane partitions. International Mathematics Research Notices. 2008, no 2. Article ID rnm143, 40 pages. arXiv:math/0702062

2002 10. P.E. Haxell, T. Luczak and P.W. Tingley. Ramsey numbers for trees of small maximum degree. Special issue: Paul Erdos and his mathematics. Combinatorica 22 (2002), no 2, 287-320.

2001 11. Dragomir Doković and Peter Tingley. Natural group actions on tensor products of three real vector spaces with finitely many orbits. Electron. J. Linear Algebra 8 (2001), 60-82 (electronic).

Preprints:

12. Anne Schilling and Peter Tingley. Demazure crystals, Kirillov-Reshetikhin crystals, and the energy function. Submitted to the Electronic Journal of Combinatorics. arXiv:1104.2359

13. Pierre Baumann, Joel Kamnitzer and Peter Tingley. Affine Mirković-Vilonen polytopes. Submitted to Publ. Math. IHES. arXiv:1110.3661

14. Pierre Baumann, Thomas Dunlap, Joel Kamnitzer and Peter Tingley. Affine sl(2) MV polytopes. In preparation.

Research Talks:

2011 Nov. 15 University of Illinois at Urbana-Champaign: Affine Mirković-Vilonen polytopes.
Nov. 10 Dartmouth College: Affine Mirković-Vilonen polytopes.
Oct. 14 University of New Hampshire: Affine Mirković-Vilonen polytopes.
Sept. 24 AMS sectional meeting, Wake Forest University, NC: Demazure crystals, Kirillov–Reshetikhin crystals, and the energy function.
Sept. 16 Representation Theory, Geometry, and Combinatorics workshop, UC Berkeley: Affine MV Polytopes.
Aug.12 Banff international research station: Combinatorics of affine sl(2) MV polytopes.
April Maurice Auslander Distinguished Lectures and International Conference, Woods Hole MA: Towards affine MV polytopes.
March 22 University of Connecticut: Towards affine MV polytopes.
March 8 University of Oregon: Universal Verma modules and the Misra-Miwa Fock space.
March 7 University of Oregon, departmental colloquium: Affine sl(n) crystals and cylindric partitions.
March 1 Brown University: Affine sl(n) crystals and cylindric partitions.
2010 July 14 Affine Schubert Calculus Workshop, Fields Institute, Toronto: Affine sl(n) crystals and fusion rules.
June 4 Special session on algebraic combinatorics, Canadian math society summer meetings: Universal Verma modules and the Misra-Miwa Fock space.

April 24 Maurice Auslander Distinguished Lectures and International Conference, Woods Hole MA: Braidings, commutors, and quiver varieties.

March 8 U. of Massachusetts, Amherst: Quiver grassmannians, quiver varieties and the preprojective algebra.

Feb 22 MIT probability seminar: Random (skew) plane partitions.

Feb 8 Northeastern U.: Quiver grassmannians, quiver varieties and the preprojective algebra.

Jan 8 U.C. Davis: Universal Verma modules and the Misra-Miwa Fock space.

2009 Oct 30 SUNY Albany (colloquium): Some combinatorics related to affine sl(n) representation theory.

Oct 7 MIT combinatorics seminar: Realizations of affine sl(n) crystals.

Sept 23 NIMS International workshop on combinatorial and geometric approach to representation theory, Seoul Korea: Affine sl(n) crystals and cylindric partitions.

June 12 U. of Sydney: Quantum groups, braidings and crystals.

June 9 U. of New South Wales: Some combinatorics of affine sl(n) crystals.

March 9 U. of Melbourne: Quantum groups, braidings and crystals.

Jan 28 UC Berkeley: The Fock space for affine sl(k) and representations of gl(n).

Jan 18 Lie theory workshop, UC Riverside: Three combinatorial models for affine sl(n) crystals.

2008 Dec 11 University of Toronto: Quiver grassmannians and a geometric realization of the Schützenberger involution.

Dec 9 Queens university, Canada: Three combinatorial models for affine sl(n) crystals.

Dec 8 Winter 2008 meeting of the Canadian Mathematical Society: Half-twist type formulas for the universal R-matrix.

Nov 13 University of Queensland, Brisbane Australia (colloquium): A minus sign that used to annoy me but now I know why it is there (two constructions of the Jones polynomial).

Nov 4 U. of Melbourne, Australia: Combinatorial models for affine sl(n) crystals and applications.

Oct 23 Special session on representation theory at the Global Korean Math Society International Conference: Three combinatorial models for affine sl(n) crystals.

Oct 22 Mini-symposium on representation theory, Jeju Island South Korea: Braidings, coboundary structures and crystals

Oct 2 Victorian algebra conference, Royal Melbourne Institute of Technology, Melbourne Australia. The half twist in ribbon categories.

May 4 AMS sectional meeting, Claremont California. The half twist in ribbon categories.

Feb 8 MIT: The crystal commutor and Drinfeld's unitarized R-matrix.

Feb 6 Princeton: Three combinatorial models for $\widehat{\mathrm{sl}}_n$ crystals, with applications to cylindric plane partitions.

2007 Sept 26 UC Berkeley: The crystal commutor and Drinfeld's unitarized R-matrix.

May 9 RTG workshop, UC Berkeley: The moduli space of genus zero real stable curves, and commutors for quantum groups.

April 30 CTQM topology seminar, Aarhus Denmark: Commutors and moduli space.

Feb 8 UC Davis: Three combinatorial models for $\widehat{\mathrm{sl}}_n$ crystals, with applications to cylindric plane partitions.

Jan 29 UC Berkeley: Three combinatorial models for $\widehat{\mathrm{sl}}_n$ crystals, with applications to cylindric plane partitions.

2006 Dec 2 Nielson Retreat, Sandberg Gods Denmark: A definition of the crystal commutor using Kashiwara's involution.

Nov 21 Oberwolfach Germany: A definition of the crystal commutor using Kashiwara's involution.

Other Professional Activities:

1. Referee for: Advances in math.; J. of Algebra; J. of Combinatorial Theory A; Pacific Journal of Mathematics; Representation theory; Symmetry, Integrability and Geometry: Methods and Applications.
2. Reviewer for MathSciNet.
3. I have given numerous presentations in programs for school aged children and their teachers, including leading a math circle class for 8-10 year olds (meet once a week for 10 weeks, Sept-Dec 2010), and individual presentations in the Boston math circle, the Davis math circle, the Oakland/East Bay math circle, and the Hampshire College Summer Studies in Mathematics.
4. Fall 2011: Mentor in a program to prepare graduate students to be recitation leaders at MIT. This involves working individually with one graduate student, having him observe my class, and then having him prepare and teach the class himself for a couple days.
5. Sept -Dec. 2011, MIT: Coorganizer (with Andrew Carroll, Steven Sam and Salvatore Stella) of the MIT-Northeastern student seminar on Cluster Algebras and Categorification.
6. Jan.-May 2011, MIT: Coorganizer (with Steven Sam) of a learning seminar on Quantum groups, combinatorics and geometry.
7. May-June 2009, U. of Melbourne: Coorganizer (with Wendy Baratta) of the pure math student seminar series.
8. March-May 2009, U. of Melbourne: Coorganizer (with Arun Ram and Stephan Tillmann) of the Algebra, Geometry and Topology seminar.
9. Fall 2007, UC Berkeley: Coorganizer (with Vera Serganova) of the student representation theory, geometry and combinatorics seminar.