

Christopher Dodd

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Personal

Born: 1984, Washington, D.C.
Citizenship: United States

Education

2011 PhD in Mathematics
 Massachusetts Institute of Technology
 Advisor: Roman Bezrukavnikov

2006 A.B. in Mathematics (with honors)
 University of Chicago

Previous Positions

Postdoctoral Fellow, Mathematical Sciences Research Institute, Fall 2014
NSF Postdoctoral Fellow, University of Toronto
September 2011 through August 2014, Spring 2015

Awards and Fellowships

2011 NSF Postdoctoral Fellowship in Mathematical Sciences

2006 Akami Foundation Fellowship at MIT

2006 Paul R. Cohen Memorial Prize (Graduating Student Mathematics Prize, University of Chicago)

2006 Phi Beta Kappa, member, Beta of Illinois Chapter

2005 Sigma Xi, associate member, University of Chicago chapter

2002-2006 University of Chicago National Merit Scholarship

Research Interests

Algebraic geometry and geometric representation theory, in particular quantization of symplectic varieties (in characteristic zero and positive characteristic), and connections with representation theory and noncommutative algebra, via localization. I am also interested in Hodge theoretic techniques in D-module theory, in particular the theory of mixed Hodge modules and its

generalizations to the non-abelian Hodge theory context; both in the complex setting and in positive characteristic.

Publications

Dodd, C., Jeasakul, P., Jirapattanakul, A., Kane, D., Robinson, R., Stein, N., Silva, C., *Ergodic Properties of a Class of Discrete Abelian Group Extensions of Rank-One Transformations*, Colloquium Mathematicum, 119 (2010), pp. 1-22.

Dodd, C., Marks, A., Meyerson, V., Richert, B., *Minimal Betti Numbers*, Communications in Algebra, Volume 35, Issue 3, 2007.

Dodd, C., and Kremnizer, K., *A Localization Theorem for Finite W-Algebras*, arxiv:0911.2210, submitted.

Dodd, C., *Injectivity of the cycle map for finite dimensional W-algebras*, Int Math Res Notices (2014) Vol 2014, 5398-5436.

Dodd, C., *Equivariant Coherent Sheaves, Soergel Bimodules, and Categorification of Affine Hecke Algebras*, arxiv:1108.4028, under final revision, Representation Theory

Bellamy, G., Dodd, C., McGerty, K., Nevins, T., *Categorical Cell Decomposition of Quantized Symplectic Algebraic Varieties*, arxiv:1311.6804, submitted.

Bellamy, G., Dodd, C., McGerty, K., Nevins, T., *Lagrangian Skeleta and Koszul Duality on Bionic Symplectic Varieties*, in preparation.

Cautis, S., Dodd, C., Kamnitzer, J., *Categorical Actions From Filtered D-modules on Quiver Varieties: $SL(2)$ case*, in preparation

Dodd, C. *The p -Cycle of Holonomic D-modules and Automorphisms of the Weyl Algebra*, in preparation.

Talks Given

- September 2015, University of Illinois, Algebraic geometry seminar
- June 2015, Workshop on Symplectic Representation Theory, University of Glasgow
- February 2015, Michigan State University, Colloquium
- February 2015, Cornell University, Oliver Club
- October 2014, University of Sydney, Algebra Seminar
- October 2014, Australian National University, Algebra Seminar
- September 2014, MSRI Geometric Representation theory seminar
- May 2014, Oberwolfach Workshop, Interactions between Algebraic Geometry and Noncommutative Algebra
- November 2013, University of Oxford, Algebra Seminar, 2 talks
- October 2013, University of Glasgow, Algebra Seminar
- October 2013, University of Edinburgh, Hodge Institute Seminar, 4 talks
- May 2013, University of Oxford, Algebra Seminar
- April 2013, AMS Special Session on Geometric Methods in the Representation Theory of Reductive Groups
- February 2013, Louisiana State University Algebra Seminar
- December 2012, Luminy Conference on Category O: Geometry and Categorification

- October 2012, University of Illinois Algebra Seminar
- October 2012, Queens University Algebra Seminar
- August 2012, CRM Workshop on Infinite Dimensional Lie Theory, Algebraic Geometry, and Combinatorics.
- June 2012, Luminy Conference on Representation Theory and Symplectic Algebraic Geometry
- September 2011, Geometric Representation Theory Seminar, University of Toronto
- May 2009, Noncommutative Algebra Seminar, MIT.
- Several Talks given at the Pure Math Graduate Student Seminar about topics including complex analysis, quantum groups, intersection cohomology theory, and Springer theory.
- Several Talks given at graduate student representation theory seminars at MIT, about topics including quantization, lie algebras in positive characteristic, and Deligne's theory of weights.

Teaching and Mentoring

- Spring 2015, taught Math 234, Ordinary Differential Equations, and Math 187, Calculus 2
- Spring 2014, taught Math 234, Ordinary Differential Equations
- Spring 2013, taught Math 187, Calculus 2
- Fall 2012, taught Math 186, Calculus 1
- Summer 2010, Head Teacher for Calculus 2 for Interphase, an MIT program for pre-freshman from minority and underrepresented groups.
- Spring 2009, Teaching Assistant for 18.821, Project Laboratory in Mathematics.
- Fall 2009, Recitation Instructor for 18.01A/02A, Calculus.
- Fall 2008, Recitation Instructor and Course Administrator for 18.06, Linear Algebra.
- January 2008, Recitation Instructor for 18.095, Mathematics Lecture Series.
- Fall 2007, Recitation Instructor for 18.03, Differential Equations
- Summer 2007, Head Teacher for 18.03, Differential Equations (first five weeks).
- Graded and held office hours for many calculus courses as an undergraduate at the University of Chicago.

Service Activities

Referee for: Journal of Algebraic Combinatorics, Selecta Mathematica, Transformation Groups, and IMRN

Co-organizer of the MIT-RTG Geometry Workshop with David Nadler, Breckenridge, CO, June 12-18, 2011

Co-organizer of the Fields institute workshop on Higher Algebraic and Geometric Structures, May 7-9, 2012

Co-organizer of the postdoc seminar, Fall 2014, MSRI