Daping Weng

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Research Interest

Cluster algebras and cluster varieties, and their applications in algebraic geometry, representation theory, and mathematical physics in general.

Education

B.S. Mathematics, University of Chicago, 2012.

B.A. Physics, University of Chicago, 2012.

Ph.D. Mathematics, Yale University, 2018.
Advisor: Alexander B. Goncharov

Academic Papers

Donaldson-Thomas Transformation of Grassmannian, arXiv:1603.00972, 2016 (submitted to Adv. Math.).

Donaldson-Thomas Transformation of Double Bruhat Cells in GL_n, arXiv:1606.01948, 2016.

Donaldson-Thomas Transformation of Double Bruhat Cells in Semisimple Lie Groups, arXiv:1611.04186, 2016 (accepted to Ann. Sci. Éc. Norm. Supér.).

Cyclic Sieving and Cluster Duality for Grassmannian, with L. Shen, arXiv:1803.06901, 2018

Presentations

Seminar talk titled *Donaldson-Thomas Transformation of Grassmannian*, presented at

Harvard University, May 2017;

Notre Dame University, May 2017;

Tsinghua University, June 2017;

Yale University, September 2017;

A short version at the AMS Special Session on Non-Commutative Birational Geometry, Cluster Structures and Canonical Bases, University of California at Riverside, November 2017.

Conference on Low Dimensional Topology, Southwest Jiaotong University at Emei, June 2018;

Michigan State University, September 2018.

Seminar talk titled *Cluster Duality of Grassmannian*, presented at

A short version at Spring School: Tropical Geometry meets Representation Theory, University of Cologne, March 2018;

Yale University, March 2018;

University of North Carolina at Chapel Hill, April 2018;

Tsinghua University, June 2018;

Honors and Awards

Paul R. Cohen Memorial Prize, University of Chicago, 2012.

NSF Graduate Research Fellowship Honorable Mention, Yale University, 2014

Teaching Experience

Counselor at Young Scholar Program, University of Chicago, 2009 - 2012.

Teaching Assistant of Math 112 (single variable calculus I), Yale University, Spring 2013.

Coach of Math 118 (multi-variable calculus with application in economics), Yale University, Fall 2014

Instructor of Math 120 (multi-variable calculus), Yale University, Fall 2014, Spring 2016, Spring 2018, and Summer 2018.

Instructor of Math 112 (single variable calculus I), Yale University, Fall 2016 and Fall 2017.

Instructor of Math 115 (single variable calculus II), Yale University, Summer 2017.

Instructor of Math 132 (single variable Calculus I), Michigan State University, Fall 2018.

Attended Workshops and Conferences

The Geometry and Physics of Scattering Amplitude, Simons Center for Geometry and Physics, December 2013.

Second GEAR Network Retreat, University of Maryland, March 2014.

Math Research Conference on Cluster Algebra, Snowbird, June 2014.

Workshop on Moduli Spaces and Representation Theory, University of North Carolina, October 2014.

6d QFT Workshop, University of California at Berkeley, December 2014.

The Interrelations between Mathematical Physics, Number Theory and Non-Commutative Geometry, Erwin Schrödinger Institute, March 2015.

PCMI Summer Session, Park City, June 2015.

Springer Theory and Related Topics Workshop, University of Massachusetts at Amherst, October 2015.

Hot Topics: Cluster Algebras and Wall-Crossing, MSRI, March 2016.

Representation Theory, Integrable System and Quantum Fields, Northwestern University, April 2016.

Cluster Algebras in Mathematical Physics, University of Mainz, March 2017.

Cluster Algebra Spring School, University of Connecticut, May 2017.

Interactions between Representation Theory and Algebraic Geometry, University of Chicago, August 2017.

AGNES workshop, Northeaster University, October 2017.

AMS Special Session on Non-Commutative Birational Geometry, Cluster Structures and Canonical Bases, University of California at Riverside, November 2017.

Spring School: Tropical Geometry meets Representation Theory, University of Cologne, March 2018.

Cluster Algebras: Twenty Years On, CIRM, March 2018.

Cluster Algebras and Math Physics, Michigan State Unviersity, May 2018.

Conference on Low Dimensional Topology, Southwest Jiaotong University at Emei, June 2018.