CURRICULUM VITA

YILONG WANG

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Education

- 2011 - 2018 Ph.D., Mathematics, The Ohio State University.
- 2011 - 2018 M.S., Mathematics, The Ohio State University.
- 2007 - 2011 B.S. (Hons.), Mathematics, Zhejiang University.

Employments

- 2018-present Postdoc Researcher, Louisiana State University.
- 2011-2018 Graduate Teaching Assistant, The Ohio State University.

Publications and preprints

1. Modular categories with transitive Galois actions (with Siu-Hung Ng and Qing Zhang). *Submitted*, arXiv:2007.01366.
2. Higher central charges and Witt groups (with Siu-Hung Ng, Eric C. Rowell and Qing Zhang). *Submitted*. arXiv:2002.03570v2.
3. Classification of spherical fusion categories of Frobenius-Schur exponent 2 (with Zheyan Wan). *Algebra Colloq.* **28** (2021), no. 1, 39-50. arXiv:1811.02004.
4. Higher Gauss sums of modular categories (with Siu-Hung Ng and Andrew Schopieray). *Selecta Math. (N.S.)* **25** (2019), no. 4, Paper No. 53, 32 pp.
5. On modular group representations associated to $SO(p)_2$-TQFTs. *J. Knot Theory Ramifications* **28** (2019), no. 5, 1950037, 20 pp.

6. Random walk invariants from R-matrices (with Thomas Kerler).

   Algebr. Geom. Topol. **16** (2016), no. 1, 569-596.

7. On integrality of SO(n)-Level-2 TQFTs. Thesis. The Ohio State University, 2018.

Papers in preparation

1. Integrality of metaplectic representations of modular categories (with Luca Candelori, Patrick Gilmer and Siu-Hung Ng).

2. On the Torelli group action in RT-TQFTs. (with Liang Chang and Siu-Hung Ng).

3. On the rationality of quantum invariants (with Siu-Hung Ng and Samuel Wilson).

4. On modular categories with 2 fixed-point free Galois orbits (with Siu-Hung Ng and Samuel Wilson).

Talks

1. *Modular categories with transitive Galois group actions*, FRG Seminar, September 2020 (online).

2. *Witt group invariants of modular categories*, Operator Algebra Seminar, University of California, Riverside, May 2020 (online).

3. *Algebraic properties of modular tensor categories*, Colloquium, Wayne State University, February 2020.

4. *Integrality of modular tensor categories*, Algebra seminar, University of Louisiana at Lafayette, November 2019.

5. *Classification of spherical fusion categories of Frobenius-Schur exponent 2*, Southern Regional Algebra conference, University of Louisiana at Lafayette, April 2019.

6. *On higher Gauss sums of modular categories*, Southern Regional Number Theory Conference, Louisiana State University, April 2019.

7. *Classification of spherical fusion categories of Frobenius-Schur exponent 2*, Quantum Algebra and Quantum Topology seminar, The Ohio State University, February 2019.

8. *Modular categories and RT-TQFTs*, Virtual Topology Seminar, Louisiana State University, September 2018.

9. *Higher Gauss sum and higher central charges of premodular fusion categories*, AMS Sectional Meeting Special Session on Quantum Symmetries, The Ohio State University, March 2018.

10. *Integrality for $SO(p)_2$-TQFTs for once-punctured torus*, Virtual Topology seminar, Louisiana State University, October 2017.

11. *Two constructions of the Jones polynomial*, Quantum Algebra and Quantum Topology seminar, The Ohio State University, September 2017.

12. *Integrality for $SO(p)_2$-TQFTs in genus 1*, AMS Sectional Meeting Special Session on Fusion Categories and Applications, Indiana University, Bloomington, April 2017.

13. *Metaplectic modular categories and the associated TQFT*, Quantum Algebra and Quantum Topology seminar, The Ohio State University, November 2016.

14. *Mapping class group representation from metaplectic modular categories and integrality*, Advances in Quantum and Low-dimensional topology, University of Iowa, March 2016.

15. *Random walk invariants of string links from R-matrices*, Knot Theory and Quantum Computation, UT Dallas, January 2015.

16. *Random walk invariants of string links via representation theory*, Knots in Washington, George Washington University, May 2014.

17. *Approximation of colored Jones polynomials*, Low-Dimensional/Quantum Topology seminar, The Ohio State University, November 2013.

18. *Temperley-Lieb algebra, Jones-Wenzl idempotents, and the colored Jones Polynomial*, Low-Dimensional/Quantum Topology seminar, The Ohio State University, September 2012.

Conferences organized

- *AMS Special Session on Quantum Symmetries: Subfactors and Fusion Categories (a Mathematics Research Communities Special Session).* Joint Mathematics Meeting, January 2019, Baltimore, Maryland.

Teaching experience

Louisiana State University

- Fall 2020 Math 2070 Mathematical Methods in Engineering
- Fall 2019 Math 7290 Modular tensor categories and quantum invariants
- Fall 2019 Math 1550 Calculus I
- Fall 2018 Math 1550 Calculus I

The Ohio State University

- 2015-2017 Math 1152 Calculus II
- 2013-2015 Math 1172 Engineering Mathematics A
- 2012-2013 Math 1151 Calculus I

Awards

Special Graduate Assignments, The Ohio State University, 2015, 2016, 2017.

Other Activities

1. *Tensor categories and topological quantum field theories.* Mathematical Science Research Institute (MSRI) Workshop. Berkeley, California (Moved online), March 2020.
2. *Introductory workshop: Quantum symmetries.* Mathematical Science Research Institute (MSRI) Workshop. Berkeley, California, January 2020.
3. *Quantum symmetries: Summer research program.* The Ohio State University, June 2019.
4. *Quantum symmetries: subfactors and fusion categories.* Mathematical Research Community (MRC) Program. University of Rhode Island, June 2018.
5. *Subfactors: planar algebras, quantum symmetries, and random matrices.* Mathematical Science Research Institute (MSRI) Summer School. Berkeley, California, June 2017.