

Coxeter Combinatorics and Braid Varieties

Nathan Williams

University of Texas at Dallas

We discuss a recent framework for finding and proving interesting combinatorial formulas. The combinatorics parametrizes a decomposition of certain braid varieties over finite fields, while the proofs relate the point count of these varieties to traces in Hecke algebras. We present several case-studies and open problems using this framework. This is based on joint work with Pavel Galashin, Thomas Lam, and Minh-Tâm Trinh.