

COMBINATORICS AND BRAID VARIETIES

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ABSTRACT. 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.