Kevin Salmon
NAU
M.S. Thesis talk

Exploring Temperley-Lieb algebras of type affine *C*

Given the Hecke algebra corresponding to an arbitrary Coxeter system of type Γ, there is a basis of particular interest, called the canonical basis that has some remarkable properties but is computationally difficult to work with. The change of basis matrix between the defining basis of the Hecke algebra and the canonical basis is determined by a set of mysterious polynomials, called the Kazhdan-Lusztig polynomials. One crux to computing these polynomials is determining the so-called μ-values, which are the coefficients of the highest possible degree terms of the polynomials. In my thesis, I studied a quotient of the Hecke algebra of type affine *C*, a type of generalized Temperley-Lieb algebra, which provides a combinatorially tractable model for Kazhdan-Lusztig theory. In particular, I obtained several original results concerning the computation of μ -values and products of canonical basis elements involving fully commutative elements of Coxeter groups of type affine *C*. Moreover, I constructed a diagram algebra that mirrors these results and which we believe is a faithful representation of the corresponding Temperley—Lieb algebra.

Algebra Combinatorics Geometry and Topology (ACGT) Seminar meets Tuesdays, 12:45 – 2:00 pm, AMB 164.
    Steve Wilson will continue speaking for the next several meetings.
Applied Math Seminar (AMS) meets Thursdays 12:45 – 1:45 pm, AMB 164.
    John Neuberger will continue demonstrating Matlab codes corresponding to the material in his recent colloquium talk.
Friday Afternoon Undergraduate Mathematics Seminar (FAMUS) meets Fridays, 3pm, AMB 164.