

February 6: David Vogan (MIT), “Constant terms of Kazhdan-Lusztig polynomials.” This work is joint with Patrick Polo. In 2005 Fokko du Cloux finished software capable of computing the Kazhdan-Lusztig polynomials attached to arbitrary real reductive groups: the local intersection homology groups of closures of orbits of a symmetric subgroup K on a complete flag variety. He observed that the constant terms of the polynomials he computed (dimensions of degree zero intersection homology groups) were always equal to zero or a power of two. (For the classical KL polynomials of Schubert varieties, these constant terms are always equal to 1.) He asked whether this appearance of powers of two was always true. After more than two years of effort, the answer is . . . we’re not sure. But I will present geometric explanations due to Polo for the phenomenon, along with connections to Bott-Samelson resolutions of Schubert varieties.