Meeting: 1001, Evanston, Illinois, SS 1A, Special Session on Modern Schubert Calculus

1001-05-383   **Alexander Postnikov***, Department of Mathematics, MIT, 2-389, 77 Massachusetts Ave,
Cambridge, MA 02139. *Degrees of Schubert varieties.*

We study a family of polynomials whose values express degrees of Schubert varieties in the generalized flag manifold G/B. The polynomials are given by weighted sums over saturated chains in the Bruhat order. We derive several explicit formulas for these polynomials, and investigate their relations with Schubert polynomials, harmonic polynomials, Demazure characters, and generalized Littlewood-Richardson coefficients. We specialize the results to the classical (type A) flag manifold and discuss related combinatorial objects: flagged Schur polynomials, 312-avoiding permutations, generalized Gelfand-Tsetlin polytopes, Stanley-Pitman polytopes, parking functions, binary trees, and the inverse extended Kostka matrix. The talk is based on a joint work with Richard Stanley. (Received August 31, 2004)