

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

1001-14-428      **Julianna S Tymoczko\*** (tymoczko@umich.edu), Department of Mathematics, 525 E. University, Ann Arbor, MI 48109. *Generalizing group exponents using the topology of subvarieties of the flag variety.*

Subvarieties of the flag variety defined by certain linear conditions arise naturally in many areas, including geometric representation theory, number theory, and numerical analysis. These subvarieties, called Hessenberg varieties, are naturally paved by the intersection of a Bruhat decomposition with the Hessenberg variety. In many cases, the Bruhat decomposition can be chosen so that each Schubert cell intersects the Hessenberg variety in an affine cell. We discuss properties of this cell decomposition. In particular, we show that the Poincare polynomials of a family of Hessenberg varieties factor in a way that generalizes the exponents of the group. Part of these results are joint work with E. Sommers. (Received September 01, 2004)