

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

1001-14-295 **Prakash Belkale*** (belkale@email.unc.edu), CB# 3250, Phillips hall, University of North Carolina, Chapel Hill, NC 27599, and **Shrawan Kumar**. *Eigenvalue problems and a new product in the cohomology of flag varieties.*

We define a new ("smaller") product on the cohomology of projective homogenous spaces G/P based on a geometric degeneration and show that it this product which is relevant to Eigenvalue problems and the Geometric Horn problem. We exhibit a relation of this product to Lie algebra cohomology. We also obtain two (a priori) different sets of necessary recursive conditions on when a cohomology product of Schubert cycles in a G/P is non-zero (the Geometric Horn problem). (Received August 30, 2004)