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

1001-22-53 **Cristian P. Lenart*** (lenart@csc.albany.edu), Department of Mathematics and Statistics, State University of New York at Albany, 1400 Washington Avenue, Albany, NY 12222. *A New Combinatorial Model for the Equivariant K-theory of G/P.*

We present new Chevalley-type and Pieri-type multiplication formulas in the T-equivariant K-theory of generalized flag varieties G/P. By these, we mean formulas for multiplying arbitrary Schubert classes in equivariant K-theory, on the one hand, with classes of certain line bundles, and Schubert classes indexed by simple reflections, on the other hand. The construction is given in terms of decompositions of a fixed affine Weyl group element, and saturated chains in the Bruhat order on the (nonaffine) Weyl group. Our model has certain advantages over the Littelmann path model, on which a Chevalley-type formula due to Pittie and Ram is based. As an application, we are able to give simple proofs of certain symmetries of the coefficients in the Chevalley-type formula, which are difficult to derive by other methods. This is a joint work with Alexander Postnikov. We also discuss the way in which our model leads to a more general multiplication formula (by certain Schubert classes pulled back from a Grassmannian projection) in the K-theory of the type A flag variety. The latter formula was obtained in collaboration with Frank Sottile. (Received July 23, 2004)