1146-22-384 **J. Matthew Douglass*** (`mdouglas@nsf.gov`). *A factorization of the T-equivariant K-theory of flag varieties, II.*

Suppose that G is a reductive algebraic group and that $T \subseteq B \subseteq P$ are a maximal torus, Borel subgroup, and parabolic subgroup, respectively. The canonical projection from G/B to G/P is a G-equivariant fibre bundle with fibre P/B that induces a factorization in cohomology, $H^*(G/B) \cong H^*(G/P) \otimes H^*(P/B)$. This cohomological factorization may be viewed as a geometric incarnation of the factorization $W = W^P W_P$ of the Weyl group, W, of (G,T), induced by P. In this talk I will describe an analogous factorization of the T-equivariant K-theory of G/B in geometric terms that make sense for any generalized cohomology/homology theory. This equivariant K-theory factorization leads immediately to a uniform, geometric construction of factorizations in ordinary K-theory, T-equivariant cohomology, and ordinary cohomology. Two new features of the approach described in this talk are (1) a geometric construction of an associative product on $K^T(G/B \times G/B)$ that is analogous to the associative product on the nil-Hecke algebra defined by Kostant and Kumar that leads to a recursion formula for the structure constants in $K^T(G/B)$, and (2) a new (to me) invariant of elements of W (that depends on P). (Received January 27, 2019)