

1087-05-198

Michael Joyce* (mjoyce3@tulane.edu), Department of Mathematics, 424 Gibson Hall, St. Charles Ave., New Orleans, LA 70118. *Chains in the weak order for twisted involutions and Borel orbits in symmetric spaces*. Preliminary report.

The combinatorics of twisted involutions in Weyl groups and the related posets of Borel orbits in symmetric spaces have been much studied since seminal work by R.W. Richardson and T.A. Springer on the subject. The latter posets describe the (B, K) double cosets of a reductive algebraic group G , where B is a Borel subgroup of G and K is the fixed point subgroup of an involution of G . Work of M. Brion gives two interpretations of the chains in the weak order for these posets: they determine the cohomology classes of K -orbit closures in G/B as well as the restriction to the closed G -orbit of the cohomology classes of B -orbit closures in the wonderful compactification of G/K . In this report, we describe certain subsets of the Weyl group of G whose reduced decompositions parametrize the weak order chains for twisted involutions and Borel orbits in symmetric spaces. (Received December 03, 2012)