

1139-20-278

Reuven Hodges*, Mathematics Department, 360 Huntington Ave., Boston, MA 02115, and
Venkatramani Lakshmibai. *A classification of spherical Schubert varieties in the
Grassmannian.*

Let L_w be the largest Levi subgroup of GL_N which acts stably by left multiplication on a Schubert variety $X(w)$ in the Grassmannian $G(d, N)$. We say that $X(w)$ is a spherical Schubert variety if $X(w)$ is a spherical variety for the action of L_w . In earlier work, V. Lakshmibai and I have given a combinatorial description of the decomposition of the homogeneous coordinate ring of $X(w)$ into irreducible L_w -modules for the induced action of L_w . In fact, our decomposition results hold for any Levi subgroup of GL_N contained in L_w . We classify those decompositions that are multiplicity-free. This can be applied towards giving a complete classification of the spherical Schubert varieties. Additionally, we may enumerate all spherical Schubert varieties for a given Levi subgroup of GL_N . I will conclude by discussing some results on orbits in spherical Schubert varieties. (Received February 13, 2018)