1014-20-739   **Stacy L Beun*** (`slrahber@unity.ncsu.edu`), Department of Mathematics, North Carolina State University, Box 8205, Raleigh, NC 27695, and **Aloysius Helminck** (`loek@math.ncsu.edu`), Department of Mathematics, North Carolina State University, Box 8205, Raleigh, NC 27695. *On the Classification of Orbits of Symmetric Varieties Acting on Flag Varieties of $SL(2, k)$.*

The orbits of a symmetric subgroup acting on a flag variety are essential in the study of Harish Chandra modules, representation theory, and many other areas of mathematics. For reductive groups defined over algebraically closed fields or the real numbers these orbits have been studied in great detail in the literature. For general fields, Helminck and Wang gave several characterizations of these orbits. However, a classification for specific fields is still needed, and in fact, quite complicated. These various characterizations of the orbits require one to first classify the orbits of the θ-stable maximal k-split tori under the action of the k-points of the symmetric subgroup. Here θ is the involution defining the symmetric subgroup.

In this talk, we consider the group $SL(2, k)$ and discuss for this group a classification of the orbits of a symmetric subgroup acting on the flag variety for a number of base fields k, including finite fields and the p-adic numbers. This includes a classification of the orbits of the θ-stable maximal k-split tori under the action of the k-points of the symmetric subgroup.

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