

# A classification of spherical Schubert varieties in the Grassmannian

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Over the last several years, in joint work with Venkatramani Lakshmibai and Mahir Bilal Can, I have been studying Levi subgroup actions on Schubert varieties. This project has two overarching goals. The first goal is the classification of those Schubert varieties that are spherical varieties for the action of a Levi subgroup. In recent years the classification of spherical varieties was completed and was achieved via colored fans (a generalization of fans for toric varieties) and combinatorial data referred to as homogeneous spherical data. Hence the second goal of the project has been to determine the colored fans and homogeneous spherical data of those Schubert varieties that are spherical varieties. In this talk, I will discuss our recent results that give a complete classification of the Schubert varieties  $X_w$  in the Grassmannian and the Levi subgroups  $L$  for which  $X_w$  is a spherical  $L$ -variety. I will also discuss progress towards computing the colored fans and homogeneous spherical data of spherical Schubert varieties in the Grassmannian.