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Reuven Hodges* (rhodges@illinois.edu), **Venkatramani Lakshmibai** and **Mahir Bilén Can**. *Spherical and toroidal Schubert varieties.*

Over the last several years, in joint work with V. Lakshmibai and M. Bilén Can, I have been studying Levi subgroup actions on Schubert varieties. In an earlier work, we gave a combinatorial description of the decomposition of the homogeneous coordinate ring of Schubert varieties in the Grassmannian into irreducible modules for the induced Levi action. I will discuss two subsequent results, in which we use the decomposition to classify which Schubert varieties in the Grassmannian are spherical varieties for the Levi action (i.e. the Borel of the Levi has an open dense orbit) and to provide necessary conditions for spherical Schubert varieties to be toroidal. (Received September 09, 2019)