1147-14-565   **Mahir Bilen Can*** (`mahirbilencan@gmail.com`), 6823 St Charles Ave, Mathematics Department, New Orleans, LA 70118. *From Decompositions of Reductive Groups to Spherical Actions on Smooth Schubert Varieties.* Preliminary report.

There is a well known classification of spherical actions of a simple algebraic group G on its homogeneous spaces. The starting point of our talk is the following related question: When is the diagonal action of G on the product of two of its homogeneous spaces spherical? If both of these homogeneous spaces (factors) are projective, then there is a complete answer. In the first part of our talk, we will present our results for the situation where one of the factors is affine and the other is projective. In the second part of our talk, we will discuss a related problem, that is, the spherical actions of a Levi subgroup of G on the Schubert varieties. Because of the singularities this is a rather intricate topic with rich combinatorics. Modestly, we will focus on the easier, smooth Schubert varieties case. This second part of our talk is based on our joint works with R. Hodges and V. Lakshimibai. (Received January 26, 2019)