

# The cohomology of Hessenberg varieties and representations of symmetric groups

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2016/02/25

Hessenberg varieties are defined as subvarieties of the full flag variety. Particular examples are the Springer varieties, the Peterson varieties, and the toric varieties associated with root systems. In this talk, we will concentrate on the Lie type A, and we will discuss a relation between cohomology rings of regular nilpotent Hessenberg varieties (e.g. the Peterson varieties) and regular semisimple Hessenberg varieties (e.g. the toric varieties associated with root systems of type A) in terms of representations of symmetric groups. This is a joint work with Megumi Harada, Tatsuya Horiguchi, and Mikiya Masuda.