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Peter Crooks* (peter.crooks@utoronto.ca), Department of Mathematics, University of Toronto, 40 St. George Street, Room 6290, Toronto, Ontario M5S 2E4, Canada, and **Hiraku Abe**. *Hessenberg Varieties for the Minimal Nilpotent Orbit*.

To each nilpotent orbit of a simple complex algebraic group G , one can associate a family of nilpotent Hessenberg varieties. These are subvarieties of the flag variety of G , with examples including Springer fibers and the Peterson variety.

In this presentation, we will examine the family of nilpotent Hessenberg varieties arising from the minimal nilpotent orbit. In particular, we will explain a combinatorial procedure for determining the Poincaré polynomials and irreducible components of these varieties in Lie type A . Secondly, we will offer two presentations of the T -equivariant cohomology rings of our varieties. The first arises from GKM theory, while the second comes from exhibiting the T -equivariant cohomology rings as quotients of $H_T^*(G/B)$.

This presentation will represent joint work with Hiraku Abe. (Received July 14, 2016)