

UGA Algebra Seminar — October 29, 2007

Speaker: Carrie Wright (UGA)

Title: Second Cohomology Groups for Frobenius Kernels

Abstract: Let G be a simple, simply connected, affine algebraic group scheme defined over an algebraically closed field k of characteristic p , B be a Borel subgroup of G , and U be the unipotent radical of B . Let $F : G \rightarrow G$ be the Frobenius map and G_r (respectively B_r, U_r) be the r -th Frobenius kernels of G (respectively B, U). Bendel, Nakano, and Pillen computed the following cohomology groups when $p \geq 3$: $H^2(B, \lambda)$, $H^2(G_r, H^0(\lambda))$, $H^2(B_r, \lambda)$, and $H^2(U_1, \lambda)$, where $H^0(\lambda) = \text{ind}_B^G \lambda$.

In this talk, I will present my results which complete the project when $p = 2$ and illustrate how the aforementioned cohomology calculations are interrelated.