**Meeting:** 1003, Atlanta, Georgia, SS 8A, AMS Special Session on Modular Representation Theory of Finite and Algebraic Groups, I

1003-20-614 **Christopher P Bendel*** (bendelc@uwstout.edu), MSCS Department, University of Wisconsin-Stout, Menomonie, WI 54751, and **Daniel K. Nakano** and **Cornelius Pillen**.

*Cohomology of Frobenius kernels and Lie algebras.*

Let $G$ be a simple algebraic group over an algebraically closed field $k$ of characteristic $p > 0$ and $G_r$ denote the $r$th Frobenius kernel of $G$. For $p$ larger than the Coxeter number, an elegant formula was found by Andersen and Jantzen for the $G_1$-cohomology of standard induced modules in all degrees. This talk will present recent computations of second cohomology groups for small primes and higher Frobenius kernels. For $G_1$, the generic answer in fact holds for most primes. The computations for $G_r$ are made by computing $B_r$-cohomology groups of simple $B$-modules for a Borel subgroup $B$ of $G$. Also used are computations of ordinary Lie algebra cohomology of the Lie algebra of the unipotent radical of $B$ for small primes. (Received September 24, 2004)