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Daniel K. Nakano* (nakano@math.uga.edu), Department of Mathematics, University of Georgia, Athens, GA 30602. *Cohomology for Finite Groups of Lie Type.*

In this talk I will present new techniques (inspired by work of Bendel-Nakano-Pillen) for computing cohomology for the finite Chevalley group $G(\mathbb{F}_q)$ directly in terms of cohomology for the ambient algebraic group G and its associated Frobenius kernels. These techniques will be used to compute the first and second cohomology group when M is a simple $G(\mathbb{F}_q)$ -module. A salient feature of our results is that we require no twisting of the coefficient module by the Frobenius morphism, which enables us to make calculations for relatively small values of p and q .

Our calculations extend the seminal cohomological calculations of Cline-Parshall-Scott (1975), Jones (1975), Bell (1978), and Kleshchev (1994). This research was conducted by the University of Georgia VIGRE Algebra Group during the academic years 2009-10 and 2010-11. (Received September 12, 2011)