1083-20-56 **Brian Parshall*** (bjp8w@virginia.edu). *Shifted generic cohomology.*

The cohomology of finite groups can be approached via the cohomology of ambient semisimple algebraic groups, by papers by Cline-Parshall-Scott and (later) by Cline-Parshall-Scott-van der Kallen. The notion of generic cohomology arose as an intermediary between finite Chevalley group and algebraic group cohomology obtained through a limiting process.

We report on work with L. Scott and D. Stewart showing that, for irreducible modules as coefficients, the limits can be eliminated in all but finitely many cases. These exceptional cases depend only on the root system and cohomological degree. In fact, for $r \gg 0$, depending on the root system and m, and not on the prime p or the irreducible module L, there are isomorphisms $H^m(G(p^r), L) \cong H^m(G(p^r), L') \cong H^m_{gen}(G, L') \cong H^m(G, L')$, where "gen" refers to generic cohomology and L' is a constructibly determined irreducible "shift" of the irreducible module L for the finite Chevalley group $G(p^r)$. This leads to the notion of a module being "shifted m-generic.". The approach is based on questions raised earlier by Stewart, which are answered here in the cohomology cases. (Received August 13, 2012)